DEVELOPMENT STAGES OF E-COMMERCE IN SINGAPORE AND UZBEKISTAN

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Abstract: This study explores the development stages of e-commerce in Singapore and Uzbekistan, providing a comparative analysis of their respective journeys in building digital economies. Singapore's e-commerce evolution is marked by early investments in digital infrastructure, comprehensive regulatory frameworks such as the Electronic Transactions Act and the Personal Data Protection Act, and continuous innovation in cybersecurity and intellectual property protection. This strategic approach has positioned Singapore as a global e-commerce leader. Conversely, Uzbekistan is in the nascent stages of e-commerce development, focusing on expanding digital infrastructure and internet access. The country faces challenges due to an underdeveloped legal framework, with specific needs for robust data protection, cybersecurity measures, and clear e-commerce regulations. This study highlights the key milestones and current status of e-commerce in both countries, offering insights into how Uzbekistan can leverage Singapore's successful model to accelerate its e-commerce growth and integration into the global digital economy.

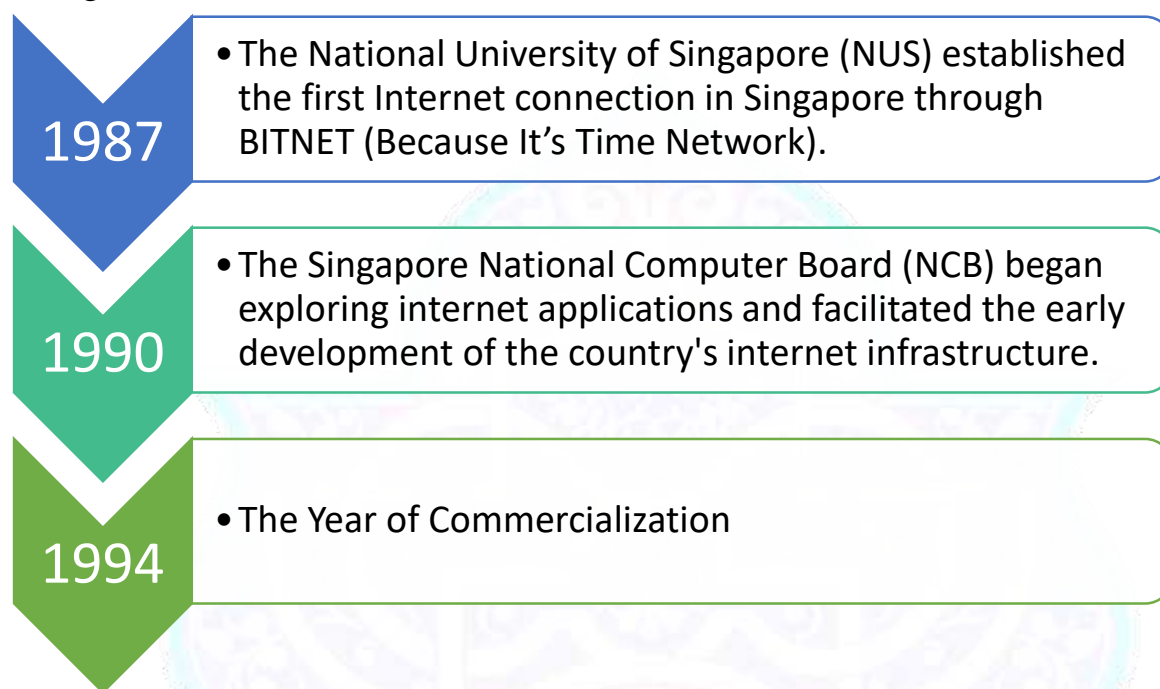**Key words:** e-commerce, commercialization, internationalization, growth stages of e-commerce

E-commerce in Singapore has seen significant growth over the past few decades, driven by high internet penetration, a tech-savvy population, and strong government support. Here is a detailed overview of its development:

Early Stages (1990s - Early 2000s)

1994 year: The internet was commercialized in Singapore, setting the stage for e-commerce development.

The Year 1994 was a pivotal moment in Singapore's technological landscape as it marked the commercialization of the Internet. This development laid the foundation for the country's growth and evolution of e-commerce. Here are the key details and resources related to this milestone:

Background

1987
- The National University of Singapore (NUS) established the first Internet connection in Singapore through BITNET (Because It's Time Network).

1990
- The Singapore National Computer Board (NCB) began exploring internet applications and facilitated the early development of the country's internet infrastructure.

1994
- The Year of Commercialization

Picture 1. Pre-1994 Internet Development in Singapore[1]

Key Events and Developments

Launch of SingNet: In 1994, Singapore Telecom (now Singtel) launched SingNet, the first commercial internet service provider (ISP) in Singapore. This made internet access widely available to the general public and businesses, fostering the growth of Internet usage.

- Services Offered by SingNet: SingNet provided dial-up internet services to homes and businesses, making it possible for a larger population to connect to the internet.

Government Initiatives: The Singapore government played a proactive role in promoting internet usage and the digital economy. The National Computer Board (NCB), in particular, was instrumental in creating policies and frameworks to support the Internet's growth.

- Example Initiative: The National IT Plan (1991) and IT2000 Masterplan (1992) set strategic directions for the development of Singapore's IT infrastructure, which included goals for internet proliferation.

The commercialization of the Internet provided the necessary infrastructure for online businesses to emerge. Early e-commerce pioneers in Singapore began experimenting with online retail and services. The increased internet penetration led to the growth of various online services, including online banking, ticketing systems (e.g., SISTIC), and early online shopping platforms.

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[1] https://www.tech.gov.sg/media/technews/history-of-the-internet

By commercializing the internet in 1994, Singapore set the stage for its robust digital economy, fostering an environment where e-commerce could thrive. The proactive government support, coupled with early adoption by businesses and consumers, positioned Singapore as a leader in the digital and e-commerce space in Southeast Asia.

1998 year: The Singapore government launched the "Electronic Commerce Hotbed Programme" to promote e-commerce adoption among businesses.

In August 1996, the NCB launched the Electronic Commerce Hotbed (ECH) Programme to jump-start the pervasive use of e-commerce and position Singapore as an international EC hub[2]. Much progress has since been made in the Singapore's EC landscape. Important milestones in legislative frameworks, payment methods, and trust systems have been achieved by the strong partnership among government agencies and the industry. International linkages are also being actively pursued.

This document provides an overview of the state of electronic commerce (EC) in Singapore. It provides a summary of the key efforts in the following areas:

    a) Laws and regulations

Pro-business and relevant laws and regulations are needed for the growth of e-commerce. The government is committed to create an environment of trust, predictability and certainty in the Singapore system so that companies can feel safe and secure in conducting their online business. The EC Policy Committee, formed in January 1997, was a direct response to this need. Its task was to ensure that the legal and policy environment in Singapore was most conducive to e-commerce development. The Committee completed its work in Dec 1997.

A major specific policy recommendation by the EC Policy Committee was the enactment of the Electronic Transactions Act (ETA). The ETA came into force in July 1998. It provides a legal foundation for electronic transactions, and gives predictability and certainty to the electronic formation of contracts

    b) Infrastructural services

Online businesses need an operating environment where key services such as network services, trust systems, payment services, are readily available for implementation of their online business processes. The government, together with IT industry partners and financial institutions, have been developing infrastructure services such as on-line payment systems, trust and security systems, directory services, as well as other intermediary e-commerce services.

In the area of connectivity, we have three Internet Access Service Providers, Singapore ONE, and numerous value added network providers such as SNS.

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[2] https://www.imda.gov.sg/resources/press-releases-factsheets-and-speeches/archived/ida/press-releases/1998/20050726105559

One of the challenges for an online business is the establishment of trust. A digital trust system, based on the use of digital signatures and certificates, enables the establishment of a trust relationship between online transacting parties. A company, Netrust, has been formed to issue and manage these digital keys and certificates.

c) Applications

There are more than 180 online retailers in the Shopping Village (www.shoppingvillage.com.sg). Among the most popular are the grocery stores (NTUC Fairprice, Cold Storage), ticketing services (Golden Village, SISTIC, TicketCharge), financial services (Internet banking, electronic stock trading).

Government departments have also taken the lead to jump-start e-commerce activities in Singapore. Several applications are already being made available through electronic means (www.gov.sg), e.g. URA Form Submission,

CPF On-Line and Electronic Procurement Service, and Electronic Income Tax Filing. It is the intention of the government to introduce more such electronic-based government services to the public in the next few years.

d) Promotion

To raise e-commerce awareness of the general public, events such as eSale are being organized to promote online shopping. Three eSale events have been organised to date (Jul 97, Feb 98, Aug 98). Roadshows are also conducted through SingaporeONE clubs at various community centers and other exhibition events to demonstrate EC to the public.

Several financial incentives and funding schemes are currently available to help companies venture into e-commerce. For example, the Cluster Development Fund (CDF) and the Innovation Development Scheme (IDS) are awarded to

qualifying companies to support their EC projects. The Approved Cyber Trader (ACT) scheme, which was announced by the Finance Minister at Budget 98, is an international trading incentive developed with the objective of developing an

Internet economy in Singapore and position Singapore into an EC hub in Asia. The ACT aims to attract and create a critical mass of core players in Singapore conducting offshore trading activities using the Internet.

e) Internationalisation

Singapore has been actively participating in international discussions (for example, ASEAN, APEC, WTO, and WIPO) on e-commerce-related issues and policies. Singapore is currently the co-chair of the APEC EC TaskForce.

Singapore is also looking into establishing bilateral agreements with other EC-ready countries. In early June 1998, the world's first international cross-certification was performed between Netrust and a counterpart in Canada.

Early 2000 years: Initial e-commerce platforms emerged, with local players like SISTIC (ticketing) and Qoo10 entering the market.

SISTIC was founded in 1991, initially operating as a ticketing agent before transitioning to an online platform. This platform was for ticketing and events industry. Initially, SISTIC operated through physical ticketing outlets and a telephone booking system. It quickly became the go-to platform for purchasing tickets for various events, including concerts, theatre performances, and sports events. In 2000, SISTIC launched its online ticketing portal (sistic.com.sg), allowing customers to purchase tickets online. This transition was facilitated by the growing internet penetration and the shift towards digital transactions. SISTIC became the leading ticketing service in Singapore, providing comprehensive ticketing solutions for event organizers and a convenient platform for consumers.

Qoo10, initially known as GMarket, was founded in South Korea in 2000. It entered the Singapore market in 2010 as Qoo10 after being acquired by eBay in 2009 and rebranded. This is for General e-commerce marketplace industry. Qoo10 entered the Singapore market at a time when online shopping was gaining momentum. The platform quickly attracted a large user base due to its wide range of products and competitive pricing. Qoo10 operates as a marketplace, allowing third-party sellers to list and sell products on its platform. This model facilitated rapid expansion of product categories and offerings.

The success of platforms like SISTIC and Qoo10 played a significant role in shaping consumer behavior towards online shopping and digital transactions. These platforms introduced consumers to the convenience and benefits of e-commerce, contributing to the overall growth of the industry.

Growth Phase (2005 - 2015)

2005: Broadband penetration in Singapore hit 50%, providing a crucial infrastructure for e-commerce.

The year 2005 was a significant milestone for Singapore's digital landscape as broadband penetration reached 50%. This development provided a crucial infrastructure for the growth of e-commerce, enhancing internet accessibility and reliability for consumers and businesses alike. By 2005, broadband penetration in Singapore reached 50%. This meant that half of the households in Singapore had access to high-speed internet connections.

The widespread availability of broadband provided a stable and fast internet connection, essential for the smooth functioning of e-commerce platforms. Improved internet speeds enhanced the user experience for online shopping, making it easier and more convenient to browse, search, and purchase products.

2008: The Infocomm Development Authority (IDA) launched the iN2015 Masterplan, aiming to transform Singapore into an intelligent nation by 2015, with a strong emphasis on digital services.

The iN2015 masterplan is developed in the past year with inputs from the People, Private and Public sectors. A steering committee chaired by IDA with representatives from the infocomm industry, sectors like education, healthcare, manufacturing & logistics, finance, tourism & retail and digital media, as well as the government, guided the development. The masterplan sets bold targets for 2015:

- Singapore to be No. 1 in the world in harnessing Infocomm to add value to the economy and society
- Achieve a two-fold increase in value-added1 of the Infocomm industry to S$26 billion
- See a three-fold increase in Infocomm export revenue to S$60 billion
- Create 80,000 additional jobs^2
- Have at least 90 percent of homes using broadband
- Ensure 100 percent computer ownership for all homes with school-going children

2010: E-commerce accounted for approximately 2% of total retail sales. Major global players like Amazon and eBay began targeting Singaporean consumers.

In 2010, e-commerce in Singapore reached a significant milestone, accounting for approximately 2% of total retail sales. This period saw major global players like Amazon and eBay increasingly targeting Singaporean consumers, driven by the country's robust digital infrastructure and growing internet penetration.

In 2010, e-commerce accounted for around 2% of total retail sales in Singapore. While this may seem modest, it marked a growing trend towards online shopping, reflecting the increasing consumer acceptance of e-commerce. Factors contributing to this growth included improved broadband penetration, higher smartphone adoption, and increased consumer confidence in online transactions.

2011: The launch of the government's "Digital Marketplace" initiative aimed to promote online transactions and e-commerce solutions among SMEs.

In 2011, the Singapore government launched the "Digital Marketplace" initiative, a strategic move aimed at promoting online transactions and encouraging e-commerce solutions among small and medium-sized enterprises (SMEs). This initiative was part of Singapore's broader efforts to strengthen its digital economy and ensure that businesses of all sizes could benefit from the opportunities offered by digital transformation.

Objectives of the Digital Marketplace Initiative

Promote E-Commerce Adoption Among SMEs: encourage SMEs to adopt e-commerce solutions to enhance their competitiveness; provide tools and platforms for SMEs to conduct online transactions efficiently.

Enhance Digital Capabilities: improve the digital capabilities of SMEs through training and support; facilitate access to digital marketing, payment solutions, and logistics services.

Boost Online Presence: help SMEs establish and enhance their online presence; support the creation of digital storefronts and e-commerce platforms.

Strengthen the Digital Ecosystem: foster a robust digital ecosystem that supports innovation and collaboration; promote partnerships between SMEs, technology providers, and e-commerce platforms.

Rapid Expansion (2016 - Present)

2016: E-commerce platforms like Lazada and Shopee gained significant market share. Lazada was acquired by Alibaba, enhancing its capabilities and market reach.

In 2016, the e-commerce landscape in Singapore witnessed significant developments, with platforms like Lazada and Shopee gaining substantial market share. One of the major highlights of the year was Lazada's acquisition by Alibaba, which significantly enhanced its capabilities and market reach. By 2016, Lazada had established itself as a leading e-commerce platform in Southeast Asia, including Singapore. Known for its extensive product range and frequent promotions, Lazada was popular among consumers. In April 2016, Alibaba Group acquired a controlling stake in Lazada for approximately USD 1 billion. This acquisition was part of Alibaba's strategy to expand its presence in Southeast Asia and leverage Lazada's established infrastructure and customer base.

Shopee was launched in 2015 by Sea Group (formerly Garena), Shopee quickly emerged as a strong contender in the e-commerce market.

2017: E-commerce sales reached USD 4.9 billion. The Singapore government launched the SME Go Digital Programme to help small and medium enterprises (SMEs) adopt digital technologies.

In 2017, the e-commerce sector in Singapore continued to expand significantly, with e-commerce sales reaching USD 4.9 billion. This growth was accompanied by the launch of the SME Go Digital Programme by the Singapore government, aimed at helping small and medium enterprises (SMEs) adopt digital technologies to enhance their competitiveness and productivity.

2018: Online retail sales made up 5.5% of total retail sales. The government announced the E-commerce Booster Package to support retailers in building online presence.

In 2018, Singapore continued to experience significant growth in e-commerce, with online retail sales accounting for 5.5% of total retail sales. This increase highlighted the growing importance of digital channels in the retail sector. To further support this trend and enhance digital capabilities among retailers, the Singapore government announced the E-commerce Booster Package.

The E-commerce Booster Package aimed to support retailers, especially SMEs, in building and enhancing their online presence, encouraged retailers to adopt digital technologies and e-commerce platforms to improve their competitiveness and expand market reach, provided resources and incentives to equip retailers with the necessary skills and tools to navigate the digital landscape effectively.

2019: E-commerce market size grew to USD 5.7 billion. The Digital Economy Framework for Action was introduced to drive digital transformation across various sectors.

The e-commerce market in Singapore expanded to USD 5.7 billion in 2019, reflecting sustained growth in online retail sales. This growth was driven by factors such as increasing internet penetration, smartphone usage, consumer confidence in online transactions, and the availability of diverse e-commerce platforms.

2020: The COVID-19 pandemic accelerated e-commerce adoption, with online retail sales soaring. By June 2020, online sales constituted 11.2% of total retail sales, driven by lockdown measures and changes in consumer behavior.

The year 2020 brought unprecedented challenges globally with the onset of the COVID-19 pandemic. In Singapore, the pandemic significantly accelerated the adoption of e-commerce as consumers and businesses adapted to new norms and digital solutions.

E-commerce in Asia and the Pacific performed better than in most other regions during the pandemic. For the 10 economies in Asia and the Pacific included in the IMF sample analysis, the estimated mean share of online spending over total consumption in 2019 is 14.4%—4.1 percentage points higher than the 10.3% estimate for all 47 economies (Table X). The region reached its "crisis peak" share of online spending of 20.1% which is 5.2 percentage points higher than the average for all samples. The latest estimates are also significantly higher at 16.9% while the difference between this and the pre-pandemic trend is also higher at 0.9 percentage points. This shows a higher deviation for each period observed—5.7 percentage points between the crisis peak and pre-pandemic level and 3.2 percentage points between the latest level and the crisis peak. Such large deviation as well as the higher online spending in Asia and the Pacific signifies a stronger e-commerce engagement of consumers in the region.

This is consistent with much of the estimates observed in other statistical databases in e-commerce market size in Asia and the Pacific.

Economy	2019 Average	Crisis Peak (peak year/month)	Latest	Latest Minus Pre-COVID-19 Trend
Australia	28.6	32.7 (09/2021)	32.1	2.0
Cambodia	1.0	1.4 (07/2021)	1.2	0.0
Hong Kong, China	26.0	34 (12/2020)	29.8	-2.1
India	4.4	7.4 (05/2021)	6.5	0.8
Indonesia	2.3	2.6 (07/2021)	2.5	-0.4
Malaysia	11.7	19 (08/2021)	15.8	0.9
New Zealand	28.3	39.2 (04/2020)	29.0	5.1
Philippines	5.1	7.6 (2021/09)	5.9	-0.5
Singapore	27.6	43.5 (09/2021)	34.7	3.2
Thailand	9.4	13.7 (08/2021)	11.9	0.0
Mean (Asia and the Pacific)	14.4	20.1	16.9	0.9
Mean (All — 47 economies)	10.3	14.9	12.2	0.6

Note: Mean estimate for Asia calculated by ADB staff based on International Monetary Fund (IMF) data.

Source: IMF. 2022. *E-Commerce During Covid: Stylized Facts from 47 Economies.* https://www.imf.org/en/Publications/WP/Issues/2022/01/28/E-commerce-During-Covid-Stylized-Facts-from-47-Economies-512014 (accessed 1 June 2022).

Picture 2. Online Share of Retail Sales before and during COVID-19 – Selected Asian Economies[3]

According to Picture 2, online share of retail sales in Singapore increased by around 7 percent due to pandemic. The region is set to maintain a high demand in online retail that is expected to last beyond the crisis. The pandemic was the main driver for consumers to switch to digital shopping and as these new digital consumers have become accustomed to online shopping, interest in traditional bricks-and-mortar shopping has declined.

2021: E-commerce market size was estimated at USD 6.8 billion. The government continued to support digital initiatives through grants and partnerships.

In 2021, Singapore's e-commerce sector continued to expand, with the market size estimated at USD 6.8 billion. This growth was driven by sustained consumer adoption of online shopping and ongoing digital transformation efforts across various sectors. The Singapore government maintained its commitment to supporting digital initiatives through grants, partnerships, and policy frameworks aimed at fostering innovation and competitiveness in the digital economy.

2022: E-commerce penetration reached 15% of total retail sales, highlighting a sustained shift towards online shopping.

E-commerce penetration in Singapore reached 15% of total retail sales in 2022, marking a significant increase from previous years. This growth was driven by various

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[3] https://www.imf.org/en/Publications/WP/Issues/2022/01/28/E-commerce-During-Covid-Stylized-Facts-from-47-Economies-512014

factors, including increasing internet and mobile penetration rates, convenience of online shopping, and the availability of diverse e-commerce platforms.

E-commerce encompassed a wide range of sectors, including electronics, fashion, beauty, groceries, and digital services. Each sector benefited from the shift towards digital commerce, with consumers preferring online channels for their shopping needs.

Development stages of e-commerce in UZBEKISTAN can be divided into 4 main steps:

Stage 1: Early Adoption (Late 1990s - Early 2000s)

Introduction of Internet and E-commerce:

- ✓ The Internet was first introduced in Uzbekistan in the late 1990s, primarily in urban areas and among businesses with international connections.
- ✓ Early adoption of e-commerce was limited, focused mainly on informational websites rather than transactional platforms.

Stage 2: Growth and Expansion (Mid-2000s - Early 2010s)

Technological Advancements:

- o Improved internet infrastructure and affordability contributed to broader internet penetration across Uzbekistan.
- o Mobile internet and smartphone adoption began to increase, facilitating access to online platforms.

Emergence of E-commerce Platforms:

- o Local e-commerce platforms and marketplaces started to emerge, offering opportunities for businesses to sell products online.
- o Sectors such as electronics, fashion, and consumer goods saw increased activity in online sales.

Regulatory Developments:

- o Basic regulatory frameworks were established to address online transactions, consumer protection, and data privacy.
- o Government initiatives aimed at promoting ICT development and digital literacy laid foundations for future e-commerce growth.

Stage 3: Maturation and Market Expansion (Mid-2010s - Early 2020s)

E-commerce Market Growth:

- o Significant expansion of the e-commerce market with increased participation from businesses across various sectors.
- o Global e-commerce players began entering the Uzbek market, bringing international standards and best practices.

Consumer Adoption and Behavior Shifts:

- o Growing consumer confidence in online shopping due to improved internet reliability, mobile accessibility, and convenience.

o Increased demand for a wider range of products online, driven by competitive pricing and promotional offers.

Government Support and Infrastructure Development:
 o Enhanced focus on digital transformation and e-commerce development as part of broader economic reforms.
 o Introduction of incentives, subsidies, and policy reforms to support digital entrepreneurship, innovation, and infrastructure development.

Stage 4: Current Landscape and Future Directions (2020s onwards)

Impact of COVID-19:
 o The COVID-19 pandemic accelerated e-commerce adoption in Uzbekistan as businesses and consumers adapted to lockdowns and social distancing measures.
 o Increased reliance on online platforms for shopping, services, and remote work further boosted e-commerce growth.

Technological Integration:
 o Adoption of advanced technologies like AI, big data analytics, and blockchain to optimize e-commerce operations and enhance customer experiences.

Regulatory Framework Enhancements:
 o Continued refinement of regulatory frameworks to support e-commerce growth, strengthen consumer rights, and ensure data protection and cybersecurity.

The development stages and history of e-commerce in Singapore and Uzbekistan reveal distinct trajectories influenced by each country's unique economic, technological, and regulatory environments.

Singapore has emerged as a leader in e-commerce development through a strategic, multi-stage approach. Initially, the country invested heavily in digital infrastructure and promoted digital literacy. Over time, Singapore introduced comprehensive regulations, such as the Electronic Transactions Act and the Personal Data Protection Act, providing a secure and transparent legal framework for e-commerce. Continuous innovation and proactive measures in cybersecurity and intellectual property rights have further solidified Singapore's position as a global e-commerce hub.

Uzbekistan is at an earlier stage of e-commerce development, focusing on expanding digital infrastructure and internet access. The country has made significant progress but faces challenges due to an underdeveloped legal and regulatory framework. Specific e-commerce regulations, robust data protection laws, and strong cybersecurity measures are still needed to create a more secure and conducive environment for digital commerce. Uzbekistan is currently in a transitional phase, with significant potential for growth by learning from established markets like Singapore.

In conclusion, while Singapore's e-commerce history is characterized by early investment, comprehensive regulation, and continuous innovation, Uzbekistan is in the process of building its foundational infrastructure and regulatory framework. By adopting best practices from Singapore, Uzbekistan can accelerate its e-commerce development, fostering a secure, efficient, and competitive digital economy.

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