

DIGITAL ECONOMY DEVELOPMENT IN SINGAPORE AND LESSONS FOR VIET NAM

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Abstract

In the current digitalization era, the digital economy has become an inevitable development trend for the global economy in general and Vietnam in particular. The digital economy includes many new and diverse economic forms. These types of economy also create many opportunities for agencies and businesses and create many job opportunities for workers. However, developing the digital economy is also a challenging issue in the current period considering problems of infrastructure, human resources and so on to boost the digital economy. Singapore is an experienced country in developing the digital economy in Southeast Asia today. In this article, the author focuses on some economic development experiences of Singapore, one of the countries with the highest level of digital economic development in Southeast Asia, thereby drawing some lessons for Vietnam in the process of developing the digital economy.

Keywords: *Singapore, Vietnam, digital economy, development*

1. Introduction

The Digital Economy also referred as the New Economy. It refers to an Economy in which digital computing technologies are used in Economic Activities. Digital economy is underpinned by the spread of Information and Communication Technologies (ICT) across all business sectors to enhance its productivity. Digital transformation of the economy is undermining conventional notions about how businesses are structured, how consumers obtain services, informations and goods and how states need to adapt to these new regulatory challenges.

Singapore is one of the leading countries in the region in terms of digital economy development. Now aday, Singapore is drastically conducting digital transformation with the ambition to become the first smart country in the world and has solid foundations ready for the 4.0 era. Human capital, digital competitiveness, and production capacity of Singapore are among the top in the world. Up to 2020, Singapore is also one of the leading Southeast Asian countries in developing facilities for promoting the digital economy.

In the current digitalization era, the digital economy has become an inevitable development trend for the global economy in general and Vietnam in particular. With a population of nearly 100 million people, Vietnam is considered as one of the countries with

a good digital economy development rate in the ASEAN region. With a large proportion of Internet and smartphone users, and relatively wide coverage of Internet and telecommunications infrastructure, Vietnam has great potential for developing the digital economy. However, there are many challenges that Vietnam has to face such as technological infrastructure, human resources to develop the digital economy... In this article, the author focuses on some economic development experiences of Singapore, one of the countries with the highest level of digital economic development in Southeast Asia, thereby drawing some lessons for Vietnam in the process of developing the digital economy.

2. Method

In the presentation, the authors use method of document collection, document analysis method to: analyzing Singapore's experiences in digital economic development, thereby drawing some lessons for Vietnam. Synthetic method: from the collected documents about Singapore, Vietnam and the digital economy, logically arrange and systematize the content. Analytical method: exploiting documents and selecting information about the digital economy, analyzing documents to come up with relevant content for the presentation

3. Results

Singapore is a multi-ethnic, multi-lingual country with almost no resources. After separating from Malaysia in 1965, Singapore faced many difficulties and urgent issues such as security, economy, ethnic conflicts, etc., Former Prime Minister of Singapore, Lee Kuan Yew assessed Singapore at that time, compared to many other countries: a huge gap with the uncertain future of survival (Lee Kuan Yew, 2000, p.19). Recognizing that, the Government had a series of correct and appropriate policies to bring the country from *the third world* economy to *the first world* economy. Through groundbreaking policies, Singapore has made a spectacular transformation and has become one of the four dragons of Asia. Today, Singapore is considered one of the world's major trade centers. People can live in a green, clean and modern environment. GDP per capita is ranked among the highest in the world.

Singapore is one of the leading countries in the region in terms of digital economy development. For many years, Singapore has focused on policies that promote economic restructuring towards economic innovation and increased labor productivity. Singapore has a very clear goal in developing the digital economy to become the world's leading digital economy. To achieve this goal, Singapore has implemented many different solutions, focusing on supporting businesses in digital transformation and preparing conditions and supporting factors for the development of the digital economy. It can be said that Singapore is drastically conducting digital transformation with the ambition to become the first smart country in the world and has solid foundations ready for the 4.0 era. Human capital, digital competitiveness, and production capacity of Singapore are among the top in the world. Up to 2020, Singapore is also one of the leading Southeast Asian countries in developing

facilities for promoting the digital economy. This is also an example that many countries are interested in and consulted about, including Vietnam.

3.1. Singapore's digital economy development experiences

3.1.1. Infrastructure

In upgrading the digital infrastructure to promote capacity and expand the application of digitalization in businesses, Singapore has made remarkable progress. In 2010, the fiber optic network was put into use. In 2011, it was 4G mobile network. Thanks to the fiber optic network, Singapore's average internet connection speed has increased on par with countries like Japan and Finland. The average internet connection speed rose from 5.4 Megabits (Mbps) per second to 20 Mbps from 2012 to 2016 (Singapore, 2019). Thanks to continuous investment in infrastructure, Singapore is considered as one of the top countries with the fastest 4G connection speed in the world. According to data from the Singapore Information Media Development Authority (IMDA) between 2012 and 2016, after efforts to improve the digital infrastructure system in Singapore, there has been a double in the number of subscriptions to 4G services and broadband fiber networks. From 2012 to 2016, the total number of subscriptions to optical fiber broadband (OFB) services increased from about 0.3 million to over 1.1 million households; from 2013 to 2016, the total number of accounts registered to use 4G networks (both prepaid and postpaid) more than doubled from 2.1 million to nearly 4.9 million subscribers (Singapore, 2019)

For the corporate sector, the government has pushed business leaders to invest more in digital assets, developing digital infrastructure to improve their digital skills. In the period 2013 to 2015, the total capital expenditure of enterprises in fixed digital assets (including computers, peripheral devices and information and telecommunications equipment) achieved Compounded Annual Growth Rate (CAGR), at 7.1% (Singapore, 2019). In addition to investing in digital assets, businesses also in turn and continuously apply digital tools in their business activities.

Being aware of the importance of 5G technology will be the basis for the development of new applications, new business models and so on. Singapore has rapidly developed this advanced wireless mobile network technology. In 2019, the Singapore Information Media Development Authority (IMDA) implemented programs such as “5G Innovation” to research and support businesses; or “5G Grant” to promote research projects on applications and solutions for 5G technology. 5G networks provide data download speeds many times faster than 4G (Singapore, 2019). According to IMDA, at least 50% of the country will have independent 5G coverage by the end of 2022 (Singapore, 2019) Newly designed infrastructure using dedicated technologies for 5G is to develop new applications around smart factories, self-driving cars, and self-connected devices. This new investment will be more effective than upgrading the infrastructure from the existing 4G.

In addition to the above prominent trends, the level of application of digital tools and capabilities such as cloud computing services, smart factories, and so on has also increased rapidly in recent years. Singaporean Governments always strive to digitize the economy, maintain and develop the level of digitalization of households and businesses.

3.1.2. Support for digital economic transformation

Singapore has long been known as a country with a dynamic economy with the strongest potential for growth in the East Asia - Pacific region. With a favorable business environment, professionalism, and high-quality human resources, Singapore has attracted many foreign investors. From 2003 to 2017, Singapore was continuously ranked as the country with the highest global business climate index in the region. In 2018, 2019, Singapore continuously ranked second in the world on the ranking of business environment published by World Bank. This index shows that Singapore possesses a favorable regulatory environment that businesses to operate in the island nation. In the field of digital economy, Singapore is currently home to many large companies in the global technology field such as Google, Facebook, Alibaba, or leading businesses in the region such as Garena, Grab, Lazada and Razer,...(The World Bank, 2003). Besides, the Government of Singapore also introduces preferential policies to attract investment capital from abroad, encouraging multinational companies to set up headquarters in their country (Singapore Economic Development Board, 2019). At the same time, the Singapore government also promotes development through start-up projects in the fields of technology and science by offering preferential financial policies, supporting business orientation, building a startup ecosystem with the aim of acting as a bridge in cooperation, combining core values between organizations, businesses, and investors (Startup Decisions, 2019). Government digitization has contributed to make Singapore one of the best business environments in the world for many years in a row. Through two projects, SME Go Digital and SME Digital Tech Hub, small and medium enterprises (SMEs) in Singapore will better understand the opportunities and development potentials in digital technology application such as accessing new markets, improving high productivity and operational efficiency. It is not just about the media, government projects also provide businesses with suitable transformation roadmaps for each industry, specific advice on digital solutions from experts that was proven in each stage of the company's development and other support during implementation (SNDGO, 2018, p.32)

In addition, the Start Digital project supports small and medium enterprises to train human resources in digital marketing, electronic payments, and network security within 18 months. Enterprises are exempt from tuition fees for the first 6 months and reduce tuition fees for the remaining time. At the same time, Singapore also arranges experienced experts to give free advice from A to Z for small and medium enterprises in implementing digital transformation. During the Covid-19 pandemic, Singapore has used the threat as a driving force to accelerate digital transformation in order to control and minimize the consequences

of the pandemic, and on the other hand, to quickly reach the goal of becoming the first country that is smart in the world. As a result, up to 73% of both medium and large businesses have accelerated the pace of digitization in various ways to respond to the pandemic, from launching digital products, digital payments to e-commerce and automation.

In addition, Singapore has also implemented many other projects to support and encourage people and businesses to access, understand and apply digital technology in life and business. Through SkillsFuture or SG Innovate, the government builds and provides people with courses and media events on information technology, artificial intelligence (AI), robotics, blockchain and many more other in-depth technological topics...

Singapore also pays special attention to recruiting experienced technology experts with strategic vision to take the lead in the digital transformation journey. This is an important factor for Singapore's success in digital transformation. The reality shows that many countries make good policies, but due to the lack of effective implementation support institutions and talented and dedicated commanders, policies are often not implemented properly or they just exist on paper.

Singapore sets out key roadmaps each year, focusing on specific areas for innovation and digitization. The digital transformation journey is carried out step by step with a clear roadmap so that people and businesses have time to get used to and gradually adapt. Digital products and services are constantly being improved to be more complete. When problems arise between the Government and the people, even the smallest problems must be resolved immediately.

3.1.3. Building a smart nation

In 2014, the Singapore Government launched the “Smart Nation” initiative. In 2017, they announced the establishment of the Smart Nation Digital Government Office (SNDGO) to coordinate efforts from different government agencies towards the goal of becoming the world's first smart country.

The “Smart Nation” project aims to solve the main challenges that countries around the world are facing, which are 5 challenges: high urban population density, population aging, increasing demand for health care, difficult urban transport and lack of energy. By applying digital technologies to solve these problems, Singapore hopes its “Smart Nation” model can become a model for other countries.

Singapore's smart nation model aims to include the following contents: greener, cleaner and safer living environment for urban residents; more choices of means of transportation, better home health care for the elderly; more convenient public services and better living opportunities for citizens. Jurong Lak, a district in western Singapore has been chosen as a testbed for the smart city initiatives.

The Smart Nation Platform (SNP) is set up with many important features to support

individuals, governments and businesses, focusing on 3 aspects: connection, collection and understanding.

With ambitious and people-pleasing goals, Singapore has mobilized the whole system to participate, bringing together high-class technology experts, elite talents, businesses and people to join hands to build a Digital Government.

The most significant achievement of the implementation of the Smart Nation is the application of information solutions in implementing digital government, providing public services through a digital platform in order to reduce number, time, and cost for administrative procedures in not only businesses but also people's daily lives (SNDGO, 2018, p.32). According to the 2020 Business Environment Assessment Report of the World Bank (WB - The World Bank), the Singapore government has built digital platforms for receiving, processing and returning the results of documents for businesses, supporting businesses and experts to access information about land and plan publicly, in detail and completely free of charge. The digitization of government has contributed to make Singapore one of the best business environments in the world for many years in a row (The World Bank, 2020). In the social field, SNDGO has built and launched a lot of useful applications, in supporting Singaporeans and families to have a modern, smart, and easy life.

People participate in most of the stages of making digital products and services with a strict 5-step process: Surveying and collecting people's opinions; tested from the use of people; defect assessment; redesign and improve service digitization.

The government built 11 service journeys with essential utilities of the people such as those from birth to high school, workers looking for jobs, healthcare... All of them implemented as a one-stop shop, thus saving costs, time and effort, and changing awareness, habits and working methods of officials.

Typically, the application “Life Singapore” (LifeSG) has received the attention and enthusiastic participation of a large number of people. This digital service integrates more than 40 convenient services such as registration of birth certificates, child benefits, finding the best schools, information about programs, priorities for the elderly, about jobs, skills development courses, updating the latest government welfare programs...

Efforts in improving the living conditions of the people, have contributed to help Singapore attract highly qualified laborers from all over the world to work, live, and contribute to the development of this small country.

3.1.4. E-payment development

Singapore is one of the first countries to apply electronic payments (EP) in the world. This is also the fastest growing e-commerce market in ASEAN countries. E-commerce activities have developed at a relatively fast rate. Since 2015, the country's e-marketing index has been

around 56%-57%. According to the Singapore e-commerce survey, almost everyone in Singapore has a smartphone, but 9 out of 10 people still want to pay for day-to-day transactions the old-fashioned way with cash. 43% of Singaporeans surveyed said they use cash the most, almost double the 25% in China. (Central Institute for Economic Management, 2018, p.4). The reason is that Singapore has many e-commerce programs, but there is a lack of connection and connection between these payment systems, so it causes a lot of trouble, especially people have to carry many cards and businesses also have to pay to install multiple systems.

Advocacy to turn Singapore into a cashless society is unanimously necessary to simplify and unify the different payment systems. To accelerate the process, the Monetary Authority of Singapore has launched an initiative with 2,000 POS systems (machines that accept card payments for customers to swipe cards) for uniform payment at more than 650 retail stores across the country. These POSs support a variety of payment options, including Samsung Pay and Apple Pay. Responding to the Government's policy of promoting e-commerce, many businesses have been implementing many innovative initiatives such as using RazerPay, Grabpay, NetsPay, etc.

POS has the advantage of being compact, occupying only a very small area, and can be easily installed in many places. In addition, the Singapore government has planned to develop a fast payment system, using a common QR code (a type of code that can be scanned with a smartphone) to conduct e-commerce across the country. In fact, QR codes offer a cheaper and less infrastructure alternative to debit and credit card schemes. Therefore, at present, QR codes are increasingly used in e-commerce, contributing to the promotion of cashless payments.

In 2020 Singapore's e-commerce market reached SGD 9.3 billion (about 7 billion USD) and is expected to grow by 40% in the next 4 years. Credit cards, e-wallets and bank transfers are the most popular online payment methods in Singapore, with 45%, 20% and 12% respectively in transaction volume. Among the above payment methods, e-wallets such as GrabPay and DBS PayLah are expected to account for about 27% of the Singapore market by 2024. (Hoang Linh, 2020)

E-commerce activities develop at a relatively fast rate. Even public services are allowed to pay electronically, from public services to fines. Singapore encourages specialized people to support the elderly and small businesses to use the Internet. To encourage more merchants to use electronic payments, the Singapore government plans to provide S\$300, equivalent to VND5 million per month, to small businesses for a period of five months. The goal of this activity is to support 18,000 small businesses and 100,000 elderly people to know and be able to use the electronic payment solution within 1 year. (Hoang Linh, 2020)

Before the global Covid-19 pandemic, Singapore made positive changes in the digital

transformation process. This has reduced the consequences of the Covid pandemic in recent years. The government has spent more than S\$500 million to support businesses and citizens to accelerate digital transformation to mitigate the impact of this crisis. In response to the pandemic, businesses and the government are also accelerating the digitization process. Singapore is considered one of the best countries to control the Covid-19 epidemic in the world. Because of this, the World Economic Forum chose Singapore instead of Switzerland to hold its annual conference in 2021.

3.2. Lessons learned for Vietnam

Until now, most countries in the world have attached great importance to the development of the digital economy, considering it a new development step and a new economic model in the future. Currently, the industrial revolution 4.0 has penetrated all aspects of social life. Right from the means of transportation through mobile booking applications such as Grab, Uber; living online thanks to Twitter, Instagram and Facebook to ordering food online or apps using cloud technology... It can be seen very clearly that the digital economy is booming in the world, becoming the leading factor driving the growth and development of each country.

With a population of nearly 100 million people, Vietnam is considered as one of the countries with a good digital economy development rate in the ASEAN region. Vietnam has recorded the emergence of digitization trends in many fields and economic sectors, from commerce and payment to transportation, education, and healthcare. In addition, the e-commerce market is also growing. With a large proportion of Internet and smartphone users, and relatively wide coverage of Internet and telecommunications infrastructure, Vietnam has great potential for developing the digital economy. However, there are many challenges that Vietnam has to face such as technological infrastructure, human resources to develop the digital economy... The strong development of the Internet and technology is expected to create a support for the digital economy to develop rapidly and make an increasing contribution to Vietnam's economy in the coming time. However, for the digital economy to develop sustainably, it is necessary to have synchronous support solutions and efforts from many sides. From the experience of Singapore, we can draw lessons for Vietnam:

First, it is important to focus on investing and upgrading digital infrastructure as well as modern digital technology solutions, accelerate cashless payment applications, and make e-government efficient... There is a need to develop the fundamental fields of the digital economy such as digital infrastructure, digital resources, digital services, digital market... This helps to deploy smart connected digital applications, accelerate non-cash payment applications, effective e-government, etc. For Vietnam, first of all, it is necessary to focus on developing digital economy fields to help expand markets and promote consumption. These are the areas that help Vietnam take advantage of the opportunities of international

integration, especially free trade agreements, but also do not require a high level of technology. At the same time, the Government needs to provide digital service platforms to support businesses and reduce transaction time and costs such as online licensing and license approval... in the most convenient and fastest way.

Second, in addition to focusing on upgrading digital infrastructure, the issue of human resources to meet modern technology also plays a very important role. It is essential to focus on developing human resources for the digital economy, in which focus on developing and attracting digital technology experts and digital entrepreneurs. Paying attention to educational innovation and training, making the workforce catch up with digital technology trends are necessary. Accordingly, updating and supplementing training curricula on digital technology and digital skills in schools; create conditions for learners to access the technology field as soon as possible; promote training and practice linkages between schools and the business sector in digital technology application; focus on flexibility, practical learning, practice, lifelong learning, taking practice as the focus of the training program.

Third, there is a need to build and perfect institutions, laws and policies to create a framework for the development of the digital economy. The institutional framework must be able to adjust at the national, sectoral and corporate levels. Viet Nam need to develop very specific plans and guidelines on digital transformation for businesses, these plans are associated with financial sources and annual funds to facilitate business access to the economy.

In addition, it is necessary to pay attention to the development of policies on standards, to standardize production stages and processes to increase connectivity, interconnection and synchronization. Develop and promulgate laws and policies on network security and information security to serve as a basis for promulgating standards for information exchange between entities and to ensure information and data for organizations, individuals and businesses in the digital economy. Currently, only about half of ASEAN member states have comprehensive data protection laws and authorities have limited capacity to protect data. Therefore, Vietnam needs to complete and connect policies with the region for more effective implementation. In addition, the Government needs to have policies to exploit the digital potential effectively.

Fourth, the potential contribution of the digital economy to society is not small, but there are also many problems arising in the process of developing the digital economy: the disadvantages arising in the development of the digital economy; occupations that will be "dead", new occupations appear, workers will be replaced by robots, artificial intelligence; contradictions, conflicts between traditional business types and mechanisms and new ones appearing... Therefore, it is necessary to increase the awareness of people and businesses about the digital economy, paying attention to the benefits and challenges that come with it, with specific contents for each

industry and field, especially through agencies, offices, factories and schools.

4. Discussion and Conclusion

In conclusion, in today's digital age, the digital economy has become an inevitable development trend for economies around the world. Until now, most countries in the world, both developed and developing countries, have attached great importance to the development of the digital economy, considering it a new development step, a new economic model in the future, and a new economic model, offering solutions to transform to the digital economy. However, each country with its own characteristics and strengths will have different mechanisms, policies and measures to develop the digital economy. The Singapore Government's digital economy development policies and strategies have achieved many results, which focuses on supporting businesses in digital transformation, preparing the conditions and supporting factors for the development of the digital economy, supporting digital transformation on a large scale, and supporting digital transformation in each field. This is also an issue that many countries care about and refer to, including Vietnam. However, in this digital economic transformation, Vietnam also has to face many problems such as technology infrastructure, human resources to develop the digital economy... Therefore, digital economy requires synchronous support solutions and efforts from many sides.

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