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*Digital Economy To Boost Economy Recovery Post-Pandemic:*
*Indonesia's Strategic Position As New Economic Power In Southeast Asia*

# Digital Economy To Boost Economy Recovery Post-Pandemic:

# Indonesia's Strategic Position as New Economic Power in

# Southeast Asia

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*The concept of the digital economy is a relatively new term used by Don Tapscott in 1995. Since then, this term has been widely discussed in different environments, and many countries have started transforming into digital economies using various strategies. The COVID-19 pandemic did not even stop the popularity of the digital economy; in fact, it is expected to be the core of economic recovery post-Covid-19, necessarily in Indonesia. Indonesia's massive number of internet users creates the opportunity to promote digitalization and eventually transform into a digital economy environment. In 2021, the digital trade valuation reached IDR 401 Trillion with an increasing preference for online spending habits. Supported by the rapid growth of the digital payment system and digital banking, the digital economy in Indonesia is projected to reach USD 146 billion valuations by the end of 2025. This study aims to discover the progression of the digital economy in Indonesia in regards to accelerating economic recovery post-pandemic covid-19 and how it would affect Indonesia's position in relations with South East Asia Countries. Furthermore, the article will also discuss the challenge and opportunity to transform into a digital society.*

## Introduction

The development of technology and the rapid growth of internet access has opened various digital streams. Digital data has grown exponentially over the internet in recent years, parallel to the expansion of big data, artificial intelligence, cloud computing, and a new business model based on a digital platform (UNCTAD, 2019, p. 3). All economic sectors began to adopt technology to enhance productivity, expand market research, and reduce operational costs (OECD, 2014, p. 70). These changes eventually shaped the new pattern of production and consumption, bringing out the notion of the digital economy. According to the World Bank (2016), the digital economy is a system of economic, social, and cultural relations based on digital information and communication technologies.

The digital economy has become a new phenomenon that has grown fast and is estimated to be an essential key factor for economic development. It is growing at

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a double-digit annual rate worldwide, especially in the Global South (Bukht & Heeks, 2017, p. 2). The transformation into a digital economy is expected to open new opportunities for creating economic inclusivity. During the Covid-19 pandemic, many countries rapidly declined their economic development. Nevertheless, it does not stop the popularity of the adoption of the digital economy; in fact, it is hoped to be a salvation to boost economic recovery post-Covid-19, including in Indonesia.

Indonesia's digital economy development is thriving at an extraordinary level due to its large and young populations, rising middle classes, and high-density megacities (Astuti S.A., 2021). Even though internet access was still relatively low initially, this did not impede the adoption of the digital economy. In 2016, Indonesia's internet penetration was around 34 percent, half that of ASEAN neighbor Malaysia, and far behind that of leaders such as the United Kingdom, Japan, and Canada (Das, Gryseels, Sudhir, & Tan, 2016, p. 9). Internet access was not evenly distributed across Indonesia and concentrated only in big cities, like Jakarta or Yogyakarta. Connected Indonesians, on the other hand, were very tech-savvy and heavily involved in social media and e-commerce. Despite having lower internet penetration, e-commerce revenue in Indonesia reached USD 6 billion, with 78 percent of purchases made online in 2016 (Das, Gryseels, Sudhir, & Tan, 2016, p. 9).

The Indonesian government also supports the opportunity to transform into a digital economy power, which initiates some policies to improve infrastructure to create a supportive environment for the digital economy's growth. In August 2017, through Presidential Regulation (Peraturan Presiden) No. 74/2017, the Government of Indonesia released Indonesia E-Commerce Roadmap 2017 – 2019. The purpose of this roadmap was to enhance the development of e-commerce by focusing on eight main points: funding; taxation; consumer protection; education and human resource, logistics, communication, cybersecurity, and management (Arfani et al., 2021). Furthermore, the Government of Indonesia also executed Palapa Ring II Project to improve the internet speed by planting underwater fiber optic cables. In 2019, the Ministry of Finance launched Indonesia Payment System Blueprint 2025 (Blueprint Sistem Pembayaran Indonesia 2025/BSPI), which directs the policy of payment systems in Indonesia with 23 key deliverables, which will be implemented gradually from 2019 to 2025. SPI is expected to support the integration of the national digital economy to achieve economic inclusivity (Bank Indonesia, 2019, p. 3).

The Covid-19 pandemic that started in early 2020 has impacted many sectors in Indonesia, notably resulting in economic decline. During the first quarter of 2020, the economy was steadily growing at a pace of 2,97 percent (Badan Pusat Statistik, 2020). As the daily cases increased and activity restriction was tightened, the economic growth after quarter I declined to minus 5,32 percent (Badan Pusat Statistik, 2020). However, the Covid-19 pandemic affected the adoption of the digital economy more positively. Mo-

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bility limitations have encouraged businesses – Micro, Small, and Medium Enterprises (MSMEs) in particular – to go digital. The government, via the Proudly Made in Indonesia movement initiation, had targeted to digitalize 2 million MSMEs. By December 2020, it was noted that 3,8 million MSMEs were entering the digital ecosystem, surpassing the target set.

Furthermore, on March 2021, this number steadily increased to 4,8 million – increasing by about 1 million within four months (Auliya et al., 2022). The increasing number of digital production and consumption activities has a good impact on economic growth. By early 2021, the financial sector showed solid and steady growth, and unemployment was successfully suppressed from 7,07 percent to 6,26 percent (Kementerian Keuangan, 2021).

Despite all the disruptions during the Covid-19 pandemic, the digital economy has flourished significantly during this time. In 2021, digital valuation trade amounted to around IDR 401 trillion, along with the increasing acceptance and public reference towards online spending habits (Bank Indonesia, 2022). In addition, e-commerce and fintech began to grow steadily and become the key elements in the process of digital economy adoption. Supported by the rapid growth of the digital payment system and digital banking, the digital economy in Indonesia is projected to reach USD 146 billion valuations by the end of 2025 (Bank Indonesia, 2022). Considering this growing pace, the Governor of Bank Indonesia also announced that digitalization is the pillar of In-

donesia Maju (Indonesia Onward) and fully supports the realization of the national digital economy to boost the economic recovery post-pandemic Covid-19 (Bank Indonesia, 2022).

The solid growth of the digital economy is unlocking more significant opportunities to expand economic power. This paper aims to discover the progression of digital economy adoption in Indonesia regarding the acceleration of economic recovery post-pandemic and how it would affect Indonesia's relations and cooperations with South East Asia countries. Further, this study will discuss the challenge and opportunity of optimizing resources in achieving a digital economy.

## THEORETICAL FRAMEWORK

### Digital Economy

Information communication technology has been growing at a breakneck speed over the past few decades, leading to the modern commercial internet in the early 1990s (Goldfarb & Tucker, 2019). The adoption of the internet for public use has become a game-changer that affected how people live, communicate, and work. The term digital economy itself was coined in the mid-1990 and generally describes the phenomena where the advancement of information communication technology started to impact the economy heavily. In its early development, the discussion about the digital economy was mainly focused on adopting the internet and early thinking on how it might affect the economy (UNCTAD, 2019, p. 4). The concept was explicitly correlated with the inter-

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net following internet mainstreaming during the 1990s (Bukht & Heeks, 2017). Along with the more significant influence of the internet over time, the concept of the digital economy is evolved, reflecting the changing nature of technology and its application by businesses and consumers (Barefoot et al., 2018; Unold, 2003). Starting in the mid-2000s, the focus was shifted increasingly to include the various analysis of different policies and the growth of digitally oriented firms as the key actors (UNCTAD, 2019, p. 4).

The notion of the digital economy was initially known by various terms, including *new economy*, *internet economy* (Turban et al., 2002, p. 45), *knowledge-based economy, and information economy* (Brynjolfsson & Kahin, 2002). The term was first mentioned in the research conducted by Professor Don Tapscott. However, it needed to be clearly defined as Tapscott was more focused on describing its characteristics than exploring its definition (Puzina et al., 2021). In his book, "*The Digital Economy: Promise and Peril in the Age of Networked Intelligence,"* Tapscott called the digital economy as "*Age of Networked Intelligence*," where it was not only about the networking of technology, innovative machine but also the networking of humans through technology that combine intelligence, knowledge, and creativity for a breakthrough in the creation of wealth and social development (Tapscott, 1996). This definition emphasizes how the digital economy explains the relations between the new economy, new business, and new technology and how they enable one another (Bukht & Heeks, 2017, p. 6). Further, Brynjolfsson & Kahin stated that:

"The term "information economy" has come to mean the broad, long-term trend toward expanding information and knowledge-based assets and value relative to the tangible assets and products associated with agriculture, mining, and manufacturing. The term "digital economy" refers specifically to the recent and still largely unrealized transformation of all sectors of the economy by the computer-enabled digitization of information."

The definition above includes the aspect of transformation from the traditional economy to a digital-based environment. Although many researchers have tried to define the term digital economy, nevertheless, until today, there has yet to be a singular and standard definition of it.

Due to the extreme rising of the digital economy and its extensive adoption by many countries, International Monetary Fund (IMF) expressed the need to have a standard definition of the notion so that it can be measured. However, because of its complexity, finding a broad definition that could support political discussion and economic measurement proved challenging. The Organization for Economic Cooperation and Development (OECD) proposed a tiered definition as below (Hatem et al., 2020):

"The Digital Economy incorporates all economic activity reliant on, or significantly enhanced by the use of digital inputs, including digital technologies, infrastructure, digital services, and data. It refers to all producers and consumers, including govern-

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ment, utilizing these digital inputs in their economic activities."

The definition proposed was quite broad and included the consideration of current nature of digital advancement and data usage. Considering how broad and specific the definitions proposed by OECD are; therefore, OECD's definition will be used in this study.

**Measuring Digital Economy**

The existence of technology that started supporting many transactions makes it an inseparable aspect of the economy itself. The different technology and economic aspect can be breakdown into below elements (UNCTAD, 2019, pp. 4-5):

1. **Core Aspects** are the foundation of the digital economy, composed of various digital innovations and the enabling environment such as the internet and telecommunications network.

2. **Digital and Information Technology (IT) Sectors** provide crucial products and services based on core digital technology, including a digital platform, mobile application, and payment service. The digital development economy is heavily affected by this particular sector which simultaneously makes a thriving contribution and enables potential growth effects for other sectors.

3. **A Wider Set of Digitalizing Sectors** includes where digital products and services, such as e-commerce, are widely used. New activities and business models have emerged in response to the increasing digitalization. This is also supported by digitalized workers, consumers, and users with profound digital knowledge.

As explored in the previous explanation, OECD defined digital economy as all economic activities which depend on or are significantly enhanced by digital inputs. In this definition, OECD explained an underpinning tier to provide a consistent and consensual policy-making framework. The tiers are explained as follows (Hatem et al., 2020):

1. The **Core Measure** includes economic activity from producers of ICT goods and digital services. The existence of firms that produce ICT goods and services would be the primary indicator for this definition related to the digital economy.

2. The **Narrow Measure** includes the core industry and economic activity produced by enterprises relying on digital inputs.

3. The **Broad Measure** includes the first two measures added by firms' economic activity that is significantly enhanced by using digital inputs. The acceleration of information communication technologies has leveraged digitalization to improve the process of business activities. Some business sectors have transformed how they deliver their products to customers, and using digital units has enhanced

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their business processes.

4. The final measure is **Digital Society**, which extends the digital economy and incorporates the digitalized interaction and activities not included in the GDP production boundaries, such as the usage of free digital platforms. Not all digital activities are counted in GDP. Nevertheless, any digital activity that can improve consumers' benefits should be part of the digital economy and be considered in policy-making.

5. Additional measurement covers all economic activity that is digitally ordered and digitally delivered. This measurement would be closely correlated with digital trade and e-commerce activity.

The digital technology measurement by OECD above would be used to analyze the progression digital economy in Indonesia as an essential component for boosting economic recovery post-covid-19. The measurement is also expected to identify the challenge and opportunity to transform into a digital society.

**International Image Theory**

Image Theory was brought up for the first time by Boulding, and its objective is to predict and understand the state's behavior in international relations (Bilali, 2010, p. 275). According to Boulding, Image Theory refers to "the total cognitive, affective, and evaluative structure of the behavioral unit, or its external view of itself and its universe" (Bould-

ing, 1959). This theory argued that the ideas of other nations could be the determinant factor on how a state behaves in correlation to that other nation. Images, perceptions, or stereotypes are essential in international relations as they "justify a nation's desired reaction or treatment toward another country" (Alexander et al., 2005, p. 28). There are three specific dimensions used to determine the perception of a country towards other nations, which then create behavioral tendencies, which are (1) goal compatibility; (2) relative power or capability; and (3) relative cultural status (Alexander et al., 2005, p. 29). The dimensions above identified five images in the international relations study (Herrmann & Fischerkeller, 1995). Every image defined resulted from the unique combination of goal compatibility, relative power, and cultural status. Those images are explained as follows (Bilali, 2010, pp. 276-277):

1. **Enemy.** The image as an enemy has risen when two nations have similar power and cultural status, but both are incompatible in goals, resulting in a competitive relationship. Both nations would perceive one another as a threat and trustworthy, thus inclined to attack to eradicate the threat.

2. **Ally.** When one nation sees the other as having equal power and cultural prestige, as well as mutual goals and interests, the ally image emerges. Both nations see their relationship as a possibility for mutual advantage, and hence

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a desire to collaborate with each other grows. Viewing the other as benign and akin to oneself, as driven by positive forces and led by moral leadership, facilitates bilateral collaboration.

3. **Barbarian.** When a nation is perceived as having incompatible goals, being strong in terms of power capability but culturally inferior, a barbarian image would emerges. The perceived cultural inferiority causes insecurity and unpredictability regarding the other nation's actions. Under these circumstances, self-protection (i.e., avoidance or retreat) is frequently viewed as the ideal method for dealing with such a threat.

4. **Imperialist.** The perceived threat posed by a nation regarded as more powerful and higher or similar in cultural standing to one's own nation leads to support for the imperialist image. The opinion of a state's relative cultural position determines whether it is imperialist or barbaric. The imperialist vision depicts the other as highly sophisticated in decision-making processes and institutions, capable of carrying out complicated tactics while exploiting one's own country's resources. This vision of the other legitimizes resistance and insurrection.

5. **Dependent.** The dependent image shows the other nation as inferior in terms of power and culture, but as an opportunity to increase one's benefits. As a result of such interaction, the more powerful nation takes advantage of the weaker one. A reliant picture of the other allows the exploitation propensity to seem justified and moral.

Table 1. Image of Other Nations as a Function of Goals Compatibility, Relative Cultural Status, and Relative Power (Alexander et al., 2005, p. 30)

| Relations Patterns with Other Nations | Image of Other Nations |
|---|---|
| Goal Compatibility<br>Status Equal<br>Power Equal | Ally |
| Goal Incompatibility<br>Status Equal<br>Power Equal | Enemy |
| Goal Incompatibility<br>Status Lower<br>Power Lower | Dependent |
| Goal Incompatibility<br>Status Lower<br>Power Higher | Barbarian |
| Goal Incompatibility<br>Status Higher<br>Power Higher | Imperialist |

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For the study, the Image Theory would be used to analyze how South East Asia countries perceived Indonesia and to find out if there is a changing pattern under the rising digital economy in Indonesia.

## DISCUSSION

### Boosting Economic Recovery Via Digital Economy

More substantial internet penetration is a starting point for the development of the digital economy in Indonesia. Along with faster and broader internet connections, internet users are steadily growing. In 2017, internet users reached 143,26 million, which increased by around 7,96 percent from the previous year (Aniqoh, 2022). By 2020, Indonesia became the world's fourth-largest number of internet users, with around 185 million (Deloitte, 2021). In conjunction with this situation, technology across the internet continuously improves, creating new business models and encouraging existing businesses to use the internet. Indonesia then becomes a potential market with millennials and Gen Z, notably avid internet users who spend an average of 2 – 7 hours daily online (Deloitte, 2021). The endorsement of the internet in various economic activities has become inevitable; thus, the narration of the digital economy is thriving at full speed.

The digital economy is expected to boost the economic recovery post-pandemic Covid-19. The reason behind it is that digital adoption has proved to help numerous businesses survive during Covid-19, which forced people to lessen their mobility, affecting economic activity immensely. Some significant factors determined the development of the digital economy in Indonesia, including the presence of e-commerce, the rapid growth of digital payment systems, and the increasing existence of financial technology. These three things played an enormous role as the backbone of supporting the development of the digital economy. According to Kenneth Laudon in Junadi and Sfenrianto (2015), *e-commerce* is a purchase activity made by internet users using an online buying and selling platform. E-commerce is designed to enable producers to market their products more accessible and the consumers to get the goods and services they need without going to physical stores.

Furthermore, adopting e-commerce has created efficiency in the production and marketing process. E-commerce does not require leasing fees, shop staff wages, power bills, or other operational costs. It could improve the reach of customers – thus helping the business to develop further in today's competitive business environments (Scupola, 2009). E-commerce has successfully provided more considerable access for Micro, Small, and Medium Enterprises (MSMEs) – which happens to be the backbone of Indonesia's economy – to thrive and endure even amid Covid-19.

Economic decline and crises had been predicted to be unavoidable following the spread of corona disease in early 2020. Indonesia's economic situation could have been better, considering the economic growth was freefalling to minus 5 percent after the first quarter of 2020 (BPS, 2020). Activity restriction was considered to be the main factor

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in this decline. People were forced to do all activities at home, thus affecting economic movement. The journey to the end of the quarter of 2020 was greeted with pessimism.

Nevertheless, against all odds, Indonesia's economic growth picked up by the end of 2020. Being at home, the online activities of people from various backgrounds increased, creating a more prominent digital market. During Covid-19, Indonesia emerged as the fastest and biggest adopter of e-commerce, with 87 percent of Indonesia's internet users purchasing something via an online platform (Deloitte, 2021). Eventually, these circumstances encouraged businesses to go digital and, in the case of Indonesia, including MSME in particular.

Before the Covid-19 pandemic, only about 8 million, or 13 percent of the total MSMEs in Indonesia, transformed its operation into digital units (Deloitte, 2021). Covid-19 affected the situation positively, as 15 to 20 percent of SMSE were estimated to join the digital transformation and extend their operation to a digital platform (Partogi, 2020). Lessons from the Covid-19 situation showed that digitalization is a prerequisite for creating a resilient economy. While around 42 percent of offline businesses had to halt their business operation, online businesses fare much better, as only 24 percent had to cease operating (Deloitte, 2021). The resiliency offered by the digital economy is one of the reasons why the government of Indonesia is vigorous in the effort to digitalize as much as MSMEs and encourages them to adopt e-commerce. Some of the policies that the government undertakes to support this transformation are as follows (Deloitte, 2021):

1. The creation of **Pasar Digital (PaDi)** by the Ministry of State-Owned Enterprises (SOEs) aims to encourage four central SoEs in Indonesia to use their expenditures for the program, which could include 540,000 MSMEs in Indonesia.

2. **Belanja Pengadaan (BELA)** is launched by Government Goods and Service Procurement Agency (LKPP) to include MSMEs in the government's procurement process.

3. **Laman UMKM (MSME Page)** was initiated by the Ministry of Cooperative and Small and Medium Enterprises to provide e-catalogs to support MSMEs going digital.

The massive adoption of e-commerce in both MSMEs and internet users as part of digital transformation to achieve a digital economy is expected to strengthen the economy's resiliency, thus promoting a faster economic recovery.

Furthermore, the digital payment system's development is also affecting the digital economy's growth in supporting Indonesia's economic recovery post-Covid 19. Digital payment enables people to purchase on online platforms. The current growth stream of digital payment has made any payment easier and cheaper. Conventional payment via bank transfer, for example, requires the users to transfer to the same bank; otherwise,

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they would be charged an additional transfer fee. BI-Fast innovation launched by the Central Bank of Indonesia has recently reduced inter-bank transfers. Launching Quick Response Code Indonesia Standard (QRIS) in 2020 enables users to pay the merchant using QR Scan and remove the transfer fee altogether. Besides that, the growing number of financial technology such as Doku, Go-Pay, or OVO not only helps to make payment easier for any online transactions but also to reach some segments of the population which did not have access to modern bank services – which eventually expected to promote economic inclusivity.

These developments are moving towards a more excellent digital economy, which is expected to create a more resilient economic system and promote inclusivity. The increasing number of digital trade valuations and their contributions to GDP indicate how the digital economy could accelerate economic recovery. In response to this potential, various government policies to promote greater adoption of technology in economic activities are launched, which include (Kominfo, 2020):

1.  Improving digital infrastructure by creating a roadmap to adopt 5G connection, establishing Base Transceiver Stations (BTS) in urban villages to expand the connectivity, and realizing Indonesia Single Data which aims to increase the effectiveness of public services.

2.  Enhancing digital talents by creating Digital Leadership Academy, Siber-

Kreasi, and Digital Talent Scholarship. The Government of Indonesia also encourages start-ups to scale up and secure digital space by eliminating illegal content and improving data protection.

3.  Increasing the adoption of technology in the government's dissemination of information to society.

How incessantly the government of Indonesia encourages people and businesses to adopt digital behavior shows the government's commitment to fully transforming into a digital economy power.

**Measuring the Digital Economy in Indonesia**

The process of digitalization has affected various sectors. It is not only impacting behavior on individual levels but also collectively changing the nature of business and governance and driving the policy direction. Economic sectors are one of the sectors that are heavily impacted by the advancement of technology as it shaped a new pattern of consumption and production. From this circumstance, the notion of the digital economy becomes apparent to explain the phenomena of digitalized economic activity. The trend of technological adoption in economic sectors has been rising over the past decades, mainly due to its abundant benefits. Using digital technology can increase productivity, save the cost of production, and improve the efficiency of developing and marketing products (Astuti S.A., 2021). Technology makes the market grows significantly, and business can reach more customer at a lower cost. More

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than that, technology has made it possible to collect consumers' data so that the company can evaluate the key between failure and success. It would also enable the company to understand customers' needs better through promotion targets and advertising, increasing the opportunity for cross-selling and upselling (Astuti S.A., 2021). From the consumers' side, the technology adoptions provide more extensive variant goods and services which considerably lower prices. The comfort of shopping from home has become a new preference of spending habits as it is simple.

The digital economy has become a global phenomenon as its adoption amongst countries increases. In Indonesia, various government policies have fostered its adoption process. Further, it is increasingly popular and proved more resilient during the Covid-19 pandemic. To what extent the development of Indonesia's digital economy can be measured using the tiered definition offered by OECD. There are four tiered which are, core measure, narrow measure, broad measure, and digital society. On the core and narrow measures, the digital economy is indicated by businesses that produce ICT goods and services and companies whose operational activity relies on digital inputs. In recent years, there has been rapid growth in the industry that produces ICT goods and services, which affects the development of companies whose operations rely on digital inputs. Companies offering ICT services have started growing in numbers, such as Biznet – offering internet service, and Telkom – offering telecommunication

products. The improvement of internet penetration and communication technology due to the development of these companies promotes the enormous company that relies on digital inputs. Nowadays, Indonesia is the home of one decacorn in this sector valued at around USD 18 million – GoTo (Gojek and Tokopedia). The company provides ICT services, including e-commerce, ride-hailing, delivery services, and financial technology. Bukalapak, which offers e-commerce service, and Traveloka, which engage in travel needs, have also become unicorn company with a valuation of around USD 3 million. These companies' existence indicates Indonesia's digital economy has passed core and narrow measurements.

Board measurement includes the first two measures added by firms' economic activity that is significantly enhanced by using digital inputs. Based on OECD, this measurement would consist of e-commerce, e-business, and Industry 4.0. In correlation with e-commerce, it is clearly shown how the adoption of e-commerce in Indonesia has been increasing over the years, surpassing any other country in South East Asia (Menko Perekonomian, 2022). In 2020, total online market sales in Indonesia reached USD 44 billion, of which 72 percent of the total value was accounted for by the e-commerce sector (Negara & Soesilowati, 2021). This valuation is predicted to be kept increasing in the years to come. Besides the growing e-commerce trend, the Government of Indonesia has started to care more about Industry 4.0 by creating Roadmap to Making Indonesia 4.0. There are five priority sectors in im-

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plementing Making Indonesia 4.0: food and beverages, textile, automotive, electronics, and chemistry (Kemenperin, 2022). Nevertheless, Indonesia still needs to be fully transformed into Industry 4.0. Therefore, in this case, the digital transformation in Indonesia is still under broad measurement but has yet to reach the level of a digital society.

The measurement of digital society includes all digitalized interactions, which indirectly extend to strengthening the economic sectors and eventually contribute to GDP. Indeed, digital interaction has started to form, yet total transformation has not occurred due to some factors related to the digital divide. Considering the massive size of internet users, it must still be recognized that the digital divide remains large. Hence, Indonesia still has a long way to go to fully transform into a digital society. However, Indonesia has much potential that allows the transformation to happen in the future.

**Indonesia-ASEAN Relations**

The emergence of digital disruption leads to the development of the digital economy at an unstoppable pace. It has kept growing in valuation and market (Britton & McGonegal, 2007). The increasing trend of digital economy adoption is caused by many factors, including the ability of the digital economy to promote prosperity and inclusivity through a variety of channels, such as lowering the production market, increasing existing market efficiency and size, creating a new market, improving quality of production, and promoting MSMEs and other sectors (Dahlman et al., 2016). ASEAN countries are also embracing the digital economy

to various degrees, as it is believed to help to leverage economic and social advancement (Box & Gonzalez-Lopez, 2016). Internet penetration started the adoption, which gradually increased in the 2000s. Nowadays, more than 80 percent population in Singapore is using the internet, and over 70 percent of people in Malaysia and Brunei are exposed to the internet (Box & Gonzalez-Lopez, 2016). Despite digital disparities amongst ASEAN countries, the situation does not restrain the development of the digital economy. ASEAN country members are still committed to transitioning towards a digital economy. The devotion is clearly shown in the AEC Blueprint 2025 – which drives toward the direction of ASEAN's economic integration – having the narration on electronic commerce under the main characteristic of Enhanced Connectivity and Sectoral Cooperation (Box & Gonzalez-Lopez, 2016). The blueprint implicitly shows that the digital economy is one of the key features to help ASEAN achieve economic integration.

Indonesia surprisingly becomes one country with a thriving digital economy among ASEAN countries members. Despite the late start in internet penetration and industrialization compared to neighboring countries – Singapore and Malaysia – digital valuation in Indonesia has recently become the largest in South East Asia. This growing number is expected to keep increasing and reach USD 146 billion by 2025 (Bank Indonesia, 2022). This circumstance is also supported by digital payment innovation, start-up scalation, and the expansion of financial technology. The magnitude of In-

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donesia's digital economy power would potentially strengthen Indonesia's prominent role in ASEAN, parallel to ASEAN's goal of achieving financial integration. As before, Indonesia would still be perceived as an ally by ASEAN Member countries due to its compatible goals. The QRIS innovation launched by the Central Bank of Indonesia, which enables cross-border transactions using QR codes, could be an essential starting point for financial integration, mainly as it has been implemented in 4 other countries, Malaysia, Singapore, Thailand, and the Philippines. Indonesia would also be benefited from ASEAN Chairmanship in 2023. The opportunity would allow Indonesia to become the leading party in the digital transformation process across ASEAN, which could promote economic and financial integration.

### Challenge and Opportunity

The structure of the current Indonesia population and the expanding middle and demand for consumers good become one of the opportunities to develop the digital economy further and achieve a digital society. Amid the strong growth of the digital economy in Indonesia, some frictions still prevent the government of Indonesia from achieving maximum transformation. The internet disparity is still a challenge as there are still around 12,500 villages with a minimum internet connection (Deloitte, 2021). The government's effort was employed to tackle the challenge by executing the Palapa Ring II Project to improve the internet speed and expand the internet reach by planting underwater fiber optic cables. Developing a 5G connection could also be an opportunity to

improve connectivity across Indonesia and eliminate the challenge altogether.

Another bottleneck that could impede Indonesia from achieving total transformation is data privacy and cybersecurity. It has to be acknowledged that security infrastructure is still below average, with an abundant risk of security breaches and data theft. Some incidents of data leakage have occurred recently, proving how the level of security is still challenging. Furthermore, the need for more digital talents with high digital literacy becomes urgent. To accelerate the digital economy's development, Indonesia needs nine million people to step up to the role known as digital talent (ADB & Kemenkeu, 2020).

### CONCLUSION

The development of technology and the rapid growth of internet access has opened various digitation streams. These changes eventually shaped the new pattern of production and consumption, bringing out the notion of the digital economy. It has become a new phenomenon that has grown fast and is estimated to be an essential key factor for economic development. The transformation into a digital economy is expected to open new opportunities for creating economic inclusivity. During the Covid-19 pandemic, many countries rapidly declined their economic development.

Nevertheless, it does not stop the popularity of the adoption of the digital economy; in fact, it is hoped to be a salvation to boost economic recovery post-Covid-19, necessarily in Indonesia. Economic decline

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and crises had been predicted to be unavoidable following the spread of corona disease in early 2020. The journey to the end of the quarter of 2020 was greeted with pessimism. Nevertheless, against all odds, Indonesia's economic growth picked up by the end of 2020. Being at home, the online activities of people from various backgrounds increased, creating a more prominent digital market that positively impacts economic development. In supporting the economic recovery through the digital economy, the Government of Indonesia launched various sets of policies to encourage businesses – MSMEs, in particular, to go digital and also conduct some innovations related to digital payment, including launching Bi-Fast and QRIS.

To what extent can the development of Indonesia's digital economy be measured using the tiered definition offered by OECD? According to the instrument provided, Indonesia is still under broad measurement but has yet to reach the level of a digital society. However, digital valuation and development in Indonesia has recently become the largest in South East Asia. The magnitude of Indonesia's digital economy power could change the power map in ASEAN. As before, Indonesia would still be perceived as an ally by ASEAN Member countries due to its compatible goals. Nevertheless, raising its digital economy power would make Indonesia more prominent in achieving ASEAN economic integration.

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