

# OPPORTUNITIES AND STRATEGIES FOR DIGITAL ECONOMY DEVELOPMENT IN MACROECONOMIC GROWTH

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**Abstract:** This study aims to provide an overview of the development of the digital economy in Indonesia and analyze the challenges and problems faced. The method used is a literature review covering the latest developments in the digital economy and a review of previous research results. The digital economy in Indonesia is showing rapid growth and will reach US\$ 44 billion by 2021. By 2025, transactions are expected to reach US\$ 124 billion or around Rp 1,744 trillion. In addition, the digital economy also contributes to employment and economic growth. Based on the characteristics of the digital economy and the problems faced, the proposed recommendations are: 1) Improvement of supporting infrastructure for the digital economy that is more inclusive and in favor of weak economic communities; 2) Management of the tax sector in favor of digital economy players given the enormous prospects of the digital economy; 3) Consumer protection and socialization of rights as well as procedures for complaints and settlements; 4) Penetration of e-commerce for people who have not been reached due to geographical and demographic structures, vulnerable communities; 5) Changes in business models and 6) standardization of logistics services.

**Keywords:** *Digital Economy, E-Commerce, Fintech, Business Model*

## INTRODUCTION

The rapid advancement of digital technology has made almost all countries in the world enter the era of industrial revolution. changes towards this era can be felt in all aspects of life, in the educational, social, cultural aspects, and especially in the business sector. digital technology is growing rapidly and is mainly based on mobile phone technology. this allows people to access information easily and effectively. the first identified components of the digital economy are the technology industry, e-commerce activities between companies and individuals, digital distribution of goods and services, and support for the sale of goods and services.

The digital economy is a business conducted through virtual media, the creation and relationship between mature economic actors with the internet as a medium of exchange. the transformation to a digital economy gives rise to new models that enhance the customer experience as activities become more efficient and responsive to market needs. The digital economy refers to

an economy based on digital computing technology, conducting business through internet-based markets. The digital economy is also referred to as the internet economy, web economy or new economy. The digital economy is underpinned by the spread of Information and Communication Technology (ICT) across all business sectors. The transformation of the digital economy overhauls the idea of conventional business structured around how consumers acquire services, information and goods (Wikipedia accessed January 19, 2021).

The Covid-19 pandemic is driving the development of the digital economy with the enactment of the New Normal and Large-Scale Social Restrictions (PSBB). On the other hand, the pandemic is actually maturing the level of digital adoption of society which will provide benefits in the future. During the lockdown, people began to get used to shopping, studying, consulting health online, it could be that these will become new habits that will last forever.

Indonesia has huge potential for economic growth from the development of digital technology. Digitalization is predicted to bring an impact with a value of 150 billion United States (US) dollars by 2025 and additional jobs for 3.7 million people. This potential can be seen from the number of startup technology companies (or commonly called startups) that have grown significantly. Indonesian startups grew from 1,400 in 2017 to 2,200 in 2019. This figure places Indonesia second in Asia and fifth in the world after the US, India, the UK, and Canada, as reported by the Startup Ranking Year 2020 website (Das et al. 2016).

The potential of the e-commerce industry in Indonesia is huge. The growth of online business sales value in the country every year increases by 40 percent. Data shows about 93.4 million internet users and 71 million smartphone users in Indonesia. smartphones in Indonesia. People in big cities are now making the internet and e-commerce a part of their lifestyle. The consumptive behavior of tens of millions of middle-class people in Indonesia is the reason why e-commerce in Indonesia will continue to grow (Kominfo.go.id. accessed January 19, 2021). E-commerce is not just trading goods and services via the internet, but also connecting other related industries, including: providing delivery or logistics services, telecommunications providers, smart device manufacturers, and others. Therefore, the e-commerce industry needs to be prioritized by various parties in order to encourage the pace of the national economy.

The enormous growth potential of e-commerce is not without obstacles, there are at least six issues that become obstacles, namely tax funding, consumer protection, communication infrastructure, logistics, and education and human resources. The government has formulated the main principles of developing e-commerce with five principles, namely: 1) All Indonesian citizens have equal opportunities to access and become e-commerce actors, 2) All Indonesian citizens have the knowledge and knowledge to be able to utilize information technology for the economy, 3) Minimize the loss of jobs during the transition era to the digital economy, 4) Implementation of legal instruments and policies must support e-commerce security which includes technology neutrality, transparency and international consistency, 5) Local e-commerce business actors, especially start-up businesses and SMEs, must get proper protection and become a top priority.

In addition to providing stimulus to e-commerce business actors from the beginner level, SMEs, to established businesses, the government must also be supported by the community, the private sector, the media, and non-profit organizations to encourage e-commerce to become a

national movement. The rapid growth of online businesses will encourage Indonesians to get positive benefits in the economy such as welfare growth, growth of new jobs and others. Thus Indonesia is no longer just a target market for international business, but instead can become a qualified e-commerce entrepreneur to reach foreign markets.

Internet has become a basic necessity, especially in big cities. The internet-based economy has also given a new color to world development, including Indonesia. The 2019 Susenas data shows that the proportion of internet users in Indonesia has grown rapidly in recent years and reached 43.52% in 2019 (Bachtiar, 2020). In line with the rapid growth of internet users, Google, Temasek, and Brain & Company (2019) predict that Indonesia will grow into a digital economic giant in Southeast Asia by 2025.



Sumber: Susenas (2019) dalam Bachtiar dkk (2020)

Gambar 1. Persentase Pengguna Internet dan Pertumbuhan PDB Tahunan di Indonesia

This huge potential holds great promise for Indonesia to increase income, expand employment opportunities, and facilitate connectivity between regions. However, data also shows that the rapid increase in the proportion of internet users in recent years has not correlated with GDP growth (Figure 1). One of the reasons is the high digital divide in Indonesia, which makes the proportion of internet users in the country still low internet users in Indonesia is still below 50% (Bachtiar, 2020). The digital economy is growing rapidly and has enormous potential, but has not been able to encourage equitable economic growth (inclusive) to all levels of society. This research aims to: first, provide an overview and understand the development of the digital economy in Indonesia and analyze the problems and challenges faced and provide solutions to increase the growth of the digital economy in Indonesia.

## Literature Review

### Definition of Digital Economy

The term digital economy was introduced by Don Tapscott in 1995 through his book entitled *The Digital Economy: Promise and Perl in the Age of Networked Intelligence*. The digital economy is an economic activity based on digital internet technology. Digital economy is also known as infemet economy, web economy, digital-based economy, new economy knowledge, or new economy (Hartono, 2016). The digital economy era or the new economy era emerged when organizations began to marry the productivity of asset resources with the knowledge of human resources to reach global transactions across borders in the form of a connected economy. Meanwhile, the concept of digital economy according to (Zimmerman, 2000), is a concept that is

often used to explain the global impact of the rapid development of Information and Communication Technology that has an impact on socio-economic conditions. This concept is a view of the interaction between the development of innovation and technological advances that have an impact on the macro and micro economy. The affected sectors include goods and services.

According to Don Tapscott in (Hartono, 2016), the digital economy has 12 attributes:

1. Knowledge. In the digital economy, the power of the knowledge translates into superior innovations through the latest opportunities to create a competitive advantage.
2. Digitization. Business transactions use digital technology and digital information. Customers are understood as digital customers using digital devices to conduct transactions with companies selling goods and services as digital enterprises.
3. Virtualization. In the digital economy it is possible to convert physical goods into virtual goods, intellectual capital is converted into digital capital.
4. Molecularization. In the digital economy, heavy organizations in traditional organizations turn into flexible light organizations, M-form organizations (multidivisional organizations) shift to E-form organizations or ecosystem form organizations that easily adapt to the environment.
5. Internetworking. Using the internet network to build Interconnection to form an economic network.
6. Disintermediation. No more intermediaries are needed, transactions can be done directly peer-to-peer.
7. Convergence. The convergence of computing, communication, and content together form interactive multimedia which is becoming an important platform.
8. Innovation. Human imagination and creativity are the main sources of value shaping the innovation economy.
9. Prosumption. In the era before the digital economy, the key aspect was mass production, while in the digital economy it is mass customization. The distinction between producer and customer is blurred, every customer on the information highway can also be a producer.
10. Immediacy. The time difference between ordering goods and when they are produced and shipped has shrunk drastically due to the speed of digital technology processes.
11. Globalization, according to Peter Drucker "knowledge knows no boundaries." There are no boundaries to global transactions.
12. Discordance. There will be a gap between those who understand technology and those who do not understand technology. To survive, all players in the digital economy must be technologically literate, that is, able to follow technological shifts towards interaction and integration in the form of an internet worked economy.

### **Internet as a Necessity**

The internet has become a way of life for many people. During the COVID-19 pandemic, for example, the role of the internet is needed when everyone has to stay at home, work and study from home. Therefore, the existence of the internet needs to be re-established, especially in relation

to citizens' rights. Globally, internet access has indeed been recognized as an achievement that must be pursued by every country. This is reflected in the Millennium Development Goals (MDGs) 2000-2015 and is further encouraged in the Sustainable Development Goals (SDGs) 2015-2030.

According to Edwards (2012) the internet is "transformative". The internet gives everyone the opportunity to exercise their right to opinion and participate in the progress of society. However, on the contrary, if there is no internet, it will interfere with community activities in carrying out their activities, for example in terms of education and work 2020. Jalli (2020) also revealed the important role of the internet in the learning process during the COVID-19 pandemic. The quality of learning and the ability of students who have limited internet networks will be left behind when compared to students with better internet networks. Internet access is more appropriate as a citizen's right whose provision is guaranteed by the government. So, the assertion lies in the government's obligation to expand internet access, build networks, and provide digital literacy<sup>2</sup>, especially for communities that have been unable to access the internet.

### Digital Divide

The term digital divide first emerged in 1990, where it was used to describe gaps in information, knowledge, computer skills or media literacy (Van Dijk, 2006). At that time, the issue only revolved around the presence or absence of access to equipment, Information and Communication Technology or internet connection. Ferro, Helbig and Gil-Garcia (2006) state that the digital divide is not just about answering the question "who can connect to the internet," but also "what people do, or what people can actually do, when using the internet".

The digital divide is mostly discussed in relation to the availability of necessary infrastructure and digital literacy. The geography aspect is often highlighted by academics. For example, Sujarwoto and Tampubolon (2016) processed Susenas 2010-2012 data and found a strong spatial influence on the digital divide. The digital divide occurs between villages and cities, and also between mainland and island regions. The model they developed showed that disparities in telecommunications infrastructure, human resources (HR) and education facilities correlated with the digital divide.

On the socio-economic dimension, Suwana and Lily (2017) highlighted the existence of a digital divide caused by differences in abilities between men and women. This difference can be seen in digital media literacy. Although women are active internet users, their digital literacy is still low due to low levels of education, limited facilities and training, and a strong patriarchal culture.

Another study by the Center for Digital Society-Universitas Gadjah Mada (CfDS- UGM) showed that the majority (62.5%) of female partners did not have access to the internet (Angendari, 2020). In addition, those who do not have smartphones are mostly older, never attended school, or only finished elementary school. The study concluded that the biggest barriers to an individual's internet and ICT access are (i) the individual does not find accessing the internet or ICT useful, (ii) it is not perceived as easy to use, and (iii) the individual does not have time to learn how to use it.

Onitsuka, Hidayat, and Huang (2018) looked at how the internet is used in Tumpukrenteng Village, Malang Regency. The village has a large youth population. Onitsuka, Hidayat and Huang found that age is a key determinant of the digital divide. In fact, the digital divide among young people is also determined by variations in their age. The researchers then concluded that the younger a person is when he or she first encounters the internet, the more consistently he or she will use it in the future. Furthermore, age also affects motivation and skills in using the internet. The internet can influence communication and participation, which can have a positive impact on villagers.

### **Socio-economic and Geographic Dimensions**

Socio-economic and geographic dimensions are more important to describe the state of the digital divide in developing countries. Technology was originally predicted as a pathway to an open society. This prediction was heavily criticized in practice as the use of technology is also hampered by socio-economic factors, such as gender, race, and social hierarchy. Only the elite could use technology. Therefore, the utilization of technology makes the rich richer and the poor poorer. In essence, the digital divide can widen the social divide.

Willis and Trenter (2006) examined the impact of the internet in Australia: whether it encouraged the creation of an equal society as described by technology diffusion theory or widened the digital divide. Their findings show that in the early stages of internet utilization, the concept of digital divide occurred because only the elite could access it. However, at a later stage when the cost of internet connection and the price of hardware is getting cheaper, the description of technology diffusion theory will occur. Although not exactly the same as the concept of digital divide, social barriers to internet use still exist. For example, internet access can differ when gender factors are interacted with characteristics such as occupation, social class, and location.

### **Psychological Dimension**

Van Dijk and Hacker (2003) consider that psychological barriers, while important, have not been widely discussed. Moreover, data on them is not easily available, even in developed countries, but they consider that psychological dimensions are more important than material access, such as computer ownership and internet connection. Barriers in psychological access refer to the absence of the most basic digital experiences. These include fear of computers and lack of interest in new technologies.

Van Dijk and Hacker (2003) cite surveys conducted in the Netherlands, Germany and the US which show that, in fact, it is subjective and emotional factors that explain why people are not skilled at using computers and the internet. Although internet connections are available, many people refuse to use them. Van Dijk (2006) changes the term psychological access to motivational access. Motivational access is more important than material access. Before having a computer or being able to access the internet, one must have motivation first. In the digital divide, there are not only people who do not have or cannot afford (the have-nots), but also people who do not want (the want-nots).

### **Relevant Research**

A study conducted by Bachtiar et al (2020) from the SMERU Research Institute found at least four reasons why the digital economy in Indonesia has not contributed significantly to national economic growth. First, despite rapid growth, the number of internet users is still low,



even below the Millennium Development Goal (MDG) target of 50% of the population. Second, internet access is still uneven by region, gender, welfare level, education level, and business sector. For example, only 2% of the total workforce in the agricultural sector uses the internet, even though the number of workers in this sector reaches 27% of the total number of people working in Indonesia (Sakernas 2019). Third, the internet is still considered as a means of communication and entertainment. So far, the internet has not been widely considered as a business tool. Fourth, the digital economy in Indonesia is only at an early stage. The digitization and digitalization stage has not yet occurred thoroughly and data utilization is not yet optimal for making strategic decisions that can change the culture of the institution so as to generate new revenue streams.

The annual report created by Google, Temasek, and Bain & Company "e- Conomy SEA 2020" which reviews the development of digital or internet businesses in Southeast Asia. This time, the title is "At full velocity: Resilient and Racing Ahead" - indicating how ambitious digital players are to survive and try to maintain growth amid the global economic downturn. Seven digital sectors were highlighted. In addition to the existing ones, namely e-commerce, transport & food, online travel, online media, and financial services; this year the research added two new business landscapes namely healthtech and edtech - as both are experiencing significant growth amid the Covid-19 pandemic.

The pandemic has also boosted internet user penetration in the region, with around 40 million new users recorded in 2020. In total, Southeast Asia has around 400 million internet users - equivalent to 70% of the total population. The existence of social restrictions has formed a new culture such as work/school from home activities, which has an impact on the consumption of digital services to increase dramatically. Interestingly enough, in Indonesia 56% of the total digital service consumers this year came from outside the metro area, while the remaining 44% were still from around the metro area. So it can be said, until now, digital development is still Jabodetabek-centric; and that is undeniable because from accessibility to infrastructure, there is a significant level between metro and non-metro areas.

Another research conducted by Febriyantoro and Arisandi (2018) describes the impact of digital marketing on sales volume for MSEs in Batam city. This research is qualitative, using a triangulation model, which combines structured interview methods, in-depth interviews and observations of MSME players who are actively registered at the Market Community Empowerment Office - Cooperatives and Small and Medium Enterprises of the City. From the results of the study, it is known that digital marketing makes it easier for UKM to provide information and interact directly with consumers, expand market share, increase awareness and increase sales for UKM.

Idah and Pinilih (2019) MSMEs (Micro, Small and Medium Enterprises) in Indonesia are one of the dominant business sectors run by business actors. However, MSMEs experience challenges in facing digitalization competition in the business sector in order to survive in the midst of competition. Therefore, the research objectives will identify strategies for developing digitalization of MSMEs in Indonesia. The method used is SWOT analysis by looking at external and internal factors that can affect the development of MSME digitalization. The results of this study are the calculation of Internal Factor Evaluation and External Factor Evaluation with a value of (0.05; 0.1) which means that the position of digital-based MSME conditions in Indonesia is in quadrant I. In this position, in order to develop digitalization of MSMEs in Indonesia, it is necessary to develop digitalization of MSMEs. In this position, in order to develop the

digitalization of MSMEs in Indonesia, the priority strategies are to increase market share abroad (S2, S3, S4, O3, O5), increase production units and improve product quality (S3, S4, O1, O2, O4), improve the online marketing process (S2, S4, O3, O4).

Research conducted by Kominfo (2019) shows that using SWOT analysis shows that the strengths of the digital economy in Indonesia are: 1) digital infrastructure and access are well developed in Indonesia; 2) open doors for collaboration between ministries, institutions, businesses and the private sector to develop the digital economy; 3) the population pyramid in Indonesia is dominated by young people; 4) Indonesia's target to become the world's e-commerce center in 2020; 5) the number of Indonesian internet users is ranked in the top 5 in the world. The weaknesses are: 1) there is no inclusive use of ICT for production activities; 2) the ability of human resources to adapt to digital developments is still relatively low; 3) policies and regulations that oversee the digital economy are still sectoral; 4) The current platform does not yet address locality; 5) Indonesian-ness and the existing digital product supply chain and value chain system are inefficient. Opportunities for the digital economy are: 1) high interest of foreign investors to enter the Indonesian digital market; 2) technological innovations that support the digital economy enter Indonesia massively; 3) the potential for managing remittances of Indonesian migrant workers is still very large. While the threats are: 1) high abuse opportunity in the digital world; 2) the entry of similar products from abroad with lower prices; 3) high bargaining power of buyers; and the nerve center of the existing platfor is currently entirely abroad.

The strategic recommendations proposed by Kominfo (2019) are: 1) develop end-to-end business policies through a multi-stakeholder collaborative action research approach that considers the uniqueness and diversity of Indonesia. 2) strengthen locality-based digital economy development governance in a synergistic implementation context; 3) encourage the birth of digital product platforms and creators on an e-commerce regional scale; 4) develop e-agrologistics and inclusive digital financial services through optimizing domestic nerve centers.

### **Definition of E-commerce**

The term e - commerce stands for electronic commerce, which is the process of buying and selling that occurs between entrepreneurs and consumers without having to be in a physical store. More precisely, buying and selling transactions that take place through electronic media online.

E-commerce is one of the results of the development of internet technology. E - commerce is a process of doing business using electronic technology that connects companies, consumers, and society in the form of electronic transactions. Thus, in principle, business using e-commerce is paperless trading.

E-commerce is a business activity that involves consumers, manufacturers, service providers, and intermediary traders using computer networks, namely the internet. This is because the internet is a computerized network that is very global in nature, and can be accessed in all parts of the world at unlimited times or in other words online 24 hours a day without limits. With all information accessible anytime, anywhere and at any time, so that the sophistication of this computer network called the internet is created by entrepreneurs and providers of the internet and utilizes this land as a commercialization arena by attracting maximum profit.



Although in this case it can be said to be a cliché, entrepreneurs and providers respond very creatively by shopping or making transactions in cyberspace, known as internet shopping or the cool language is better known as E - Commerce. This means that the purchase and sale of goods and services is carried out with online consumer services on the internet. This model is also called electronic transaction.

Electronic commerce is the distribution, buying, selling, marketing of goods and services through electronic systems such as the internet. E commerce can involve electronic funds transfer, electronic data exchange, automated inventory management systems, and automated data collection systems.

The digital economy is defined by Amir Hartman as "the virtual arena in which business is actually conducted, value is created and exchanged, transactions occur, and one-to-one relationships mature by using any internet initiative as medium of exchange" (Hartman, 2000). Its existence is characterized by the increasing development of business or trade transactions that utilize the internet as a medium of communication, collaboration, and cooperation between companies or between individuals. Look at how the rise of new and old companies that plunge into the electronic business format of e-business and e-commerce.

To survive and win the competition in the digital economy, players need to understand the characteristics of the underlying concept because it is very different from the classic economy that has been known so far. It is not uncommon for companies to have to transform their business in order to optimally play in the digital economy arena. This is because to implement it, an entirely new business model is required. For new companies (start-up companies), getting into this business is usually easier than for long-established companies. Statistics show that most existing companies that want to take advantage of the digital economy must radically change their business processes.

### **Characteristics of the Digital Economy**

Don Tapscott found twelve important characteristics of the digital economy that management practitioners should know and understand, namely: Knowledge, Digitization, Virtualization, Molecularization, Internetworking, Disintermediation, Convergence, Innovation, Prosumption, Immediacy, Globalization, and Discordance. The following is a brief explanation of each aspect:

#### **1. Knowledge**

If in the classical economy land, buildings, labor, and money were important factors of production, then in the digital economy, knowledge is the most important type of resource that organizations must have. Given that knowledge is inherent in the human brain, the intelligence factor of the company's human resources determines the success or failure of the organization in achieving its objectives. This collective knowledge is the value of the company in the process of creating products and services. In addition, technological advances have been able to create various artificial intelligence products that are basically able to help company management and staff to improve their intelligence capabilities (knowledge leveraging). Examples of software and hardware products that can become support systems decision making is a decision support system and expert system. The concept of knowledge management will be the key to the success of a company in this era.

## 2. Digitization

Digitization is a process of transforming information from various forms into the digit format of "0" and "1" (two-based numbers). Although the concept seems simple at first glance, its existence has resulted in a breakthrough and major changes in the world of business transactions. Look at how two-dimensional images such as paintings and photographs have been represented in bit-based formats so that they can be easily stored and exchanged through electronic media. This has certainly improved the efficiency of companies as it reduces the costs associated with the process of creating, storing, and exchanging such media. Even the latest technology has been able to convert analog video and audio formats into digital formats. The advancement of telecommunication technology that allows humans to exchange information quickly via email to all corners of the world has further facilitated the process of sending and exchanging all types of information that can be digitized. In other words, if the products and services offered can be represented in digital form, then companies can easily and cheaply offer their products and services throughout the world. Electronic publishing, virtual book stores, internet banking, and telemedicine are examples of various products and services that can be offered on the internet.

## 3. Virtualization

In contrast to running a business in the real world, which requires physical assets such as buildings and production equipment, in cyberspace, virtualization is known as a term that allows a person to start his business with simple devices and can reach all potential customers in the world. In cyberspace, a customer is only dealing with an internet site as a company (business to consumer), as well as relationships between various companies that want to work together (business to business). In establishing this relationship, the process that occurs more in the transaction is the exchange of data and information virtually, without physical presence between the parties or individuals conducting the transaction. In other words, business can be done anytime and anywhere for 24 hours per day and 7 days a week on-line and in real time.

## 4. Molecularization

Organizations that will survive in the digital economy era are those that successfully implement the molecular form. The molecular form is a system where the organization can easily adapt to any dynamic changes that occur in the environment around the company. As is known, at this time the majority of organizations are managed using the concept of a hierarchical structure or more advanced matrix structure. Both of these concepts are very vulnerable to change so that it will slow down the company's movement in adjusting to market developments. One thing to remember is that going online means going head-to-head with companies all over the world. Their behavior on a daily basis will greatly affect the structure of the market and related industries, often changing conditions. This is of course a manifestation of the free and fierce competition that is taking place as well as a strategy to win the rivalry. In other words, change is a natural process that must be carried out by the company. Charles Darwin said that the nation that will survive is not the biggest or the strongest, but the most adaptable to change.

## **5. Internetworking**

No company can work alone without cooperating with others, which is one of the prerequisites for success in cyberspace. Based on the chosen business model, the company must determine its core activities and partner with other institutions to help carry out supporting activities. Examples of common partners are technology vendors, content partners, merchants, suppliers, and so on. A business concept that wants to control its own resources from upstream to downstream will not last long in the digital economy.

## **6. Disintermediation**

Another distinctive feature of the digital economic arena is the tendency to reduce mediators (brokers) as intermediaries for transactions between suppliers and customers. Examples of mediators in economic activity are wholesalers, retailers, broadcasters, record companies, and so on. Classic companies that relied on mediators were forced out of business with the internet business. The free market allows transactions to take place between individuals without having to involve other parties.

## **7. Convergence**

The key to the company's success in the internet business lies in the level of ability and quality of the company in converging three industry sectors, namely: computing, communications, and content. The computer, which is the core of the computing industry, is the nerve center of data and information processing needed in conducting business transactions. The most relevant product of the communications industry is the information and communication technology infrastructure as a pipe for distributing data and information from one place to another. The real competition lies in the content industry which is the type of service or service offered by a company to the market in cyberspace. The three things above are absolute requirements that must be owned and mastered by the user to be able to successfully run a successful business.

## **8. Innovation**

Internet activity is a 24-hour business, not 8 hours like companies in the real world. Competitive advantage is very difficult to maintain considering that what someone or another internet company does is very easy to copy. That's why rapid and continuous innovation is needed for a company to survive. Company management must be able to find a way for the key players in the organization (management and staff) to always innovate like a company in Silicon Valley. The concept of learning organization should be considered and implemented in the company.

## **9. Prosumption**

In the digital economy, the boundaries between consumers and producers are blurred. Almost any consumer of information technology can easily become a producer ready to offer their products and services to the public and the business community. An example is someone who has to pay 5 US dollars to get access to a mailing list system. He then creates a mailing list community where each member pays him US\$1. In a short period of time he has been able to make a profit from this small business. In this context, the individual is categorized as a prosumer.

## **10. Immediacy**

In cyberspace, customers are exposed to a variety of companies offering the same product or service. In choosing a company, they only use three main criteria. In principle, they will conduct transactions with companies that offer their products or services cheaper, better, and faster than similar companies. Given that switching costs on the internet are very easy and cheap, customers will continue to look for companies that provide the highest benefits for them. Seeing this, the company must always be sensitive to the various needs of customers who require certain service satisfaction.

### **11. Globalization**

The essence of globalization is the collapse of the boundaries of time and space. Knowledge, as the main resource, does not recognize geographical boundaries so that the existence of state entities becomes less relevant in running a business context in cyberspace. A pure capitalist will tend to conduct his business from a cheap and comfortable place, sell his products and services to the rich, and the profits will be transferred and deposited in the safest bank that provides the largest interest. Market segmentation that has often been done based on the boundaries of time and space must also be redefined given that the entire community has become one in cyberspace, both the producer and consumer communities.

### **12. Discordance**

The last characteristic of the digital economy is the phenomenon of changes in social and cultural structures as a logical consequence of changes in a number of paradigms related to daily life. The shortage of organizations will lead to unemployment everywhere, the livelihood of mediators (brokers) will disappear, workers will become workoholic due to fierce competition, the influence of western culture is difficult to prevent because it can be accessed freely by anyone through the internet, and so on are examples of phenomena that can be prevented. phenomena that occur in the digital economy era. The unpreparedness of an organization in facing all possible negative impacts that arise will result in a boomerang for the survival of the company.

## **Method**

This research uses the literature study method. First, various sources were searched to obtain a macro overview of the development of the digital economy in Indonesia. Second, a study of previous studies on the challenges and problems that occur in the digital economy in Indonesia.

### **Data and Data Collection Methods**

The data used in this research is secondary data. Secondary data to analyze macro data on the development of the digital economy in Indonesia, data sources are: National Socio-Economic Survey (Susenas) 2017-2019, Village Potential Data Collection (Podes) 2008-2018, Indonesian Internet Service Providers Association (APJII). The second stage is to conduct a literature review of previous research to identify the challenges and problems faced by the digital economy in Indonesia.

### **Data Analysis Technique**

This research is a literature study from various sources to identify the development of the digital economy, challenges and problems faced in general. The literature study is devoted to the results of previous relevant research.

## **Result and Discussion**

### **1. Benhmaking the Digital Economy**

The United States was one of the most visionary countries at the dawn of the internet age. In 1998, Bill Clinton passed the Digital Millennium Copyright Act (DMCA). Through this regulation, innovations such as eBay and YouTube were created. The DMCA regulation protects not consumers but innovation. It protects immunity for platform owners. The culprits are Amazon, Google and Facebook.

The Chinese government is so protective that it filters access to sites from outside. But the Chinese government is able to force foreign investment to enter there with a value of hundreds of millions of dollars. The government can also attract engineers who study in America or anywhere else to return to their country, build jobs and also build startup technology.

India has, for decades, been known as a destination for outsourcing. India's Prime Minister Narendra Modi is trying to bring in more foreign investors so that they can increase the number of local entrepreneurs who compete globally. As a result, Amazon has opened an office in India and poured billions of dollars there. The latest is Softbank, which has committed to invest Rp 130 trillion in India. The culprits are Flipkart, Inmobi and Snapdeal.

Korea Selatan, the South Korean government's efforts to build infrastructure when they were selected to host the 2002 World Cup. The government wanted news from Korea to spread around the world quickly. They invested heavily in internet infrastructure. As a result, they are now the country with the highest internet penetration in the world. Not only about access, but also about speed.

### **2. Digital Economy Development in Indonesia**

The prospect of Indonesia's digital economy is huge, according to Google, Temasek, and Bain & Company (2020) noted, there were 202 domestic digital investment deals in the first semester of 2020. in the first semester of 2020. The total value is US\$ 2.8 billion or around Rp 39.4 trillion. Up 55.6% from the same period the previous year and the highest in Southeast Asia. Southeast Asia. Analysis of the report states, the large investment value shows that investors want big returns in the long term and sustainable. sustainable. This is in contrast to the past when they expected super-fast or short-term results. short term. The same report also projected the value of Indonesia's digital economy to reach US\$44 billion this year.Indonesia to reach US\$ 44 billion this year. Projections for 2025 even reached US\$ 124 billion or around Rp 1,744 trillion. Far behind other Southeast Asian countries countries that can only reach US\$ 22 billion-53 billion in the next five years. in the next five years.

One of the driving factors is the increasing number of domestic internet users. The Indonesian Internet Service Providers Association (APJII) in its survey noted that the



number of internet users in 2019-2020 reached 196.71 million, equivalent to 73.7% of the total population of 266.91 million. Increased from 2018 which is equivalent to 64.8% of the total population. The Covid-19 pandemic has also boosted the growth of Indonesia's digital service users. The implementation of large-scale social restrictions (PSBB) encourages people to switch to digital platforms as a solution to mobility limitations. as a solution to mobility limitations. Google, Temasek, and Bain & Co. Company noted that 37% of the total domestic digital service users are new. Of all new users, the majority or 56% come from non-metro areas. nonmetro areas. This means that the distribution has begun to spread evenly to the countryside. In accordance with the government's target to further socialize digital services through development of internet infrastructure, such as the Palapa Ring which was completed in 2020.

Indonesia is one of the countries that has great potential for the development of the digital economy. Google and TEMASEK (2018) in their research results, stated that one of the things that support the development of the internet and digital economy in Indonesia is the large number of internet users in Indonesia. Some other facts that support the development of the digital economy in Indonesia include the following:

1. Indonesia has an estimated online commerce market of 5 Billion for formal online commerce, and over 3 Billion for informal online commerce.
2. Indonesia is estimated to have 30 million online shoppers by 2017 with a total population of around 260 million.
3. By 2025, the digital economy in Indonesia is expected to create 3.7 million additional jobs.
4. Generate up to 80% higher revenue growth for small and medium enterprises (SMEs).
5. Provide an additional 2% per year in GDP growth by increasing broadband penetration rates and the use of digital technologies by UKM.

### **3. E-Commerce Providers in Indonesia**

According to Kominfo.go.id accessed on January 20, 2021 There are several E- commerce providers in Indonesia, including Commerce providers in Indonesia include:

1. Kaskus has daily page views: 3,283,582, number of users 5 million, transaction value of \$60 million (Rp 575 billion) per month. Number of visitors 22 million pr month.
2. Lazada which has a daily page view of 414,781, average transaction: 3000 transactions per day. Got investment from JP Morgan, Kinnevik, Summit Partners and Tnggelman to more than 1 million USD.
3. Bhinneka which has a daily page view of 281,090, transaction value of 300 billion in 2012, number of transactions 300,000 transactions.
4. Tokopedia with daily page views of 212,642, transaction value of Rp 6 billion/month. 9000 active registered stores. There are 200,000 types of products.
6. Zalora daily page view 116,266, number of transactions 2000/day, 500 brands and 25,000 types of products, transaction value 48 million Euro.
7. Berniage with a daily page view of 596,529 with 893,218 ads.

### **4. Changes in business models**

The study conducted by Kominfo in 2021 shows that there is a change in the business models per sector, the following is an example of business changes in the transportation sector.

Table 1. Shows business model changes in the transportation sector. Change in business model changes in the business model from the old model, the new model or the new model (existing) that is currently running, as well as the future model. and the future model. There are three basic business transactions that There are three basic business transactions that change, namely: information transactions, financial transactions and goods transactions and business model changes in the agricultural sector. changes in the business model in the agricultural sector. These changes include the type of information information needed, sources of information, how to place orders, business flow and business characteristics. business characteristics. An example is presented of business changes in the transportation sector.

**Tabel 1. Perubahan Bisnis Transportasi**

	<i>Old</i>	<i>Existing</i>	<i>Future</i>
Jenis Informasi	1.Rute/destinasi 2.Tarif transportasi	1.Identitas driver dan kendaraan. 2.tracking lokasi driver dan penumpang (misal Grab dan Gojek) 3.tarif transportasi	<i>Offer solution approach</i> melalui layanan intermoda
Sumber Informasi	1.Stasiun (darat, laut, udara) 2.Pool (pangkalan) 3.Perusahaan Penyedia Transportasi 4. <i>Word of Mouth</i>	Media perusahaan ( <i>call center, website, online newsletter</i> bagi anggota) ex: iklan promosi	1.Lokasi realtime seluruh jenis transportasi (termasuk bus, mrt, krl) berdasarkan GPS 2.Estimasi waktu kedatangan di tiap station 3.tarif
Cara Order	1.Datang langsung 2. <i>Call center</i> 3. Agen perjalanan	Mobile apps	1. <i>Website</i> 2. <i>Mobile apps</i> 3. <i>Intergrated order</i>
Alur	Perusahaan transport, stasiun, agen, penumpang	Perusahaan transport, <i>online travel agency</i> , penumpang	Ada dua tipe 1.Pemerintah, Driver 2. Pemilik Kendaraan, Perusahaan Jasa Transportasi Online dan Penumpang
Ciri-ciri	1. Lokasi pelayanan ditempat tertentu 2. Perusahaan harus memiliki sarana transportasi 3. Sarana transportasi termasuk driver berada di bawah satu entitas	1. <i>Online Travel Agency</i> 2. Perusahaan Jasa Transportasi Online (PJTO)	Tipe 1 Tujuan: dalam kota KRL, MRT, TransJak, APTB. Kondisi: angkot dan minibus yang tidak dikelola pemerintah ditiadakan Tipe 2. Model <i>ridesharing</i> Misal: GrabCar, UBER, Go-Car

Sumber: Kominfo (2021)

The financial sector is one of the industrial sectors that has developed along with the development of Information and Communication Technology (ICT). The banking industry is one industry that relies on ICT for services to its customers. For example, sms banking, mobile banking (m-banking), and internet banking (i-banking) services, which have become one of the service products provided by the banking industry in the past few

years. The public has also begun to get used to the use of digital technology-based financial services (Kominfo, 2019).

Along with the development of startups in Indonesia, many startup players are developing technology-based financial service applications. The development of the fintech industry is becoming increasingly diverse, and not only in banking service applications.

The fintech industry in Indonesia is developing in the fields of payment financial services (payments), funding, banking (digital banking), capital markets, insurance (insurtech), and other financial services support services. markets, insurance (insurtech), and other financial services supporting fintech. (supporting fintech). Currently, the number of fintech providers in Indonesia is the highest in the fields of payment and lending financial services.

Along with the development of the financial sector, the following changes are explained payment method Table 2. explains if previously using cash payment methods and now Cash and Non-Cash (ATM, Transfer, Credit Card, m-banking, e-banking, e-money). So in the future the payment method is done by Non-Cash or Cashless (ATM Transfer, Credit Card, Payment Gateway, e-banking, emoney, EDC mobile) Near Field Communication (NFC), QR Code

**Tabel 2. Transaksi Finansial (Metode Bayar)**

Old	Existing	Future
Tunai	Tunai dan Nontunai (ATM, Transfer, Kartu Kredit, m-banking, e-banking, e-money)	NonTunai atau Cashless (ATM Transfer, Kartu Kredit, Payment Gateway, e-banking, e-money, EDC mobile) Near Field Communication (NFC), QR Code.

Sumber: Kominfo (2021)

In general, the fintech industry in Indonesia can be grouped into 3 (three) groups, namely:

1. Payment system (payment), developing into a non-cash payment tool which can be used for transactions with merchants. Example: OVO, Go-Pay, Funds, LinkAja.
2. Funding/financing (lending), for fintech players in the lending sector Indonesia, grouped into several parts, namely:
  - a) Peer-to-peer lending (P2P Lending), a platform that helps with lending (debtor) and the person who borrowed the funds (creditor). Examples: Modalku, Investree, Amarthia, KoinWorks.
  - b) Balance sheet lending, a platform that provides loans directly from funds themselves. Examples: Friends' Money, Julo, Our Cash, Doctor Rupiah
  - c) Online loan providers (online credit), platforms that provide facilities credit for transactions carried out online. Examples: Akulaku, Kredivo, Installments.
  - d) Online loan provider with pawn mechanism, platform that provides loan funds with a pawn mechanism. Example: Borrow.

## **5. Changes In Business Model Of Agricult**

Technological developments in various sectors encourage the growth of technology in agricultural sector. Some farmers have changed direction from agricultural patterns conventional, to digital farming patterns that suit current developments. A number startups in Indonesia see these problems and try to develop agricultural industry in Indonesia. Agricultural Technology 4.0 is an agricultural phase, namely practices, methods and techniques are based on digital technology, including Technology Information and Communication (ICT) and the internet. Each process is integrated and connected directly with outside parties, through data transmission and communication automation and autonomous systems. Referring to the meaning of the word agriculture, it means The scope of agriculture in Agriculture 4.0 is the agricultural value chain. Elements technology in agriculture 4.0, in accordance with the value chain, including; biotechnology and genes, agricultural technology, food technology and e-commerce for food products and foodstuffs.

The agricultural era 4.0 is an agricultural era when agricultural actors can interact directly with every node of the value chain, consumers, suppliers, distributors and retailers, where every activity is recorded so that predictions can be made, dosing and tracing, with an automatic control system and can be done remotely. The concept of agricultural development was widely developed in Currently, this is the concept of smart farming, which is also called smart farming or precision agriculture. This concept refers to the application of ICT in agriculture. Objective The main application of this technology is to carry out optimization in the form of increasing results (quality and quantity) and efficient use of resources there is (kominfo 2019).

## **6. Digital Economic Challenges in Indonesia**

The challenges faced in the financial sector, with the FINTECH is a society included in Unbanked Population began to experience the financial services facility. This is certainly a positive impact that occurs due to innovation of digital products in the FINTECH industry. However, in the Unbanked Population group there are groups of communities that are business in the rural and localized farm sector, which has not been fully reached by the Financial Services Services Objectives including FINTECH. Thus, the financial services organizers in the Fintech industry still need to develop the product to be used by the community. The existing FINTECH platform is until now is general, so that it is to develop developed policy of End to End Business Cycle relating to the value of Indonesian locality. Development of Fintech platforms should not always be packed on a large scale, it is also necessary to develop a local-scale FINTECH platform for the facilities provided in accordance with the needs of local communities.

Challenges in the agricultural sector based on Pyramid Popyrics, Indonesia will face the employment issues for young groups. The digital agricultural economy is predicted to encourage acceleration in preparing young people. In the process of regeneration of farmers. That is, they are not traditional farmers, but become a CEO of agricultural business with a digital basis. Estimated, without doing so, the interest in developing the agricultural sector will It is lost and will be a serious threat to the fulfillment of Indonesian food in the future.

## 7. Digital Economic Problems in Indonesia

The digital economy is grouped into: 1) The problems faced by the startup; 2) Financial sector problems 3) Purpose in the agricultural sector; 4) Consumer protection protection; 5) The problem appears due to the digital economic characteristics itself; 6) Digital Economic Process By According to Kominfo Research (2019). The problems can be described below.

According to the results of the APTIKA and IKP PusLitbang Research (2016), the problematators facing the statistics are as follows: 1) funding; 2) Networking, 3) Team Solidity; 4) Try less experience; 5) Market: Not accepted markets, market are not ready, habits (culture) and inaccurate targets and regulations; 6) Foreign investment and old process. While the problem of financial sector, as well as a variety of payment equipment organizations, Fintech platform with financing financial services will be more popping. 2018 The Ministry of Communications and Informatics closed 385 Illegal plantics platforms, and in 2019 OJK found that there were less 144 iclegal platform plates. This shows that the development of financial sectors, particularly on the service of the financing service, in the Digital Economic Erah allows the Abuse Opportunity to lead to criminal crime in the digital world. To anticipate that, literacy in terms of financial services in this digital economy era should be emphasized and becoming a concern to society (Kominfo, 2019).

Digital Economic Problems of Agricultural Sector include:

1. HR problem, most farmers are over 40 years and more than 70 percent of farmers in Indonesia are only educated equivalent to elementary school even underneath. The low formal education causes knowledge in agricultural processing not developing and monotons. Farmers only process agriculture as usual without creating the latest innovations for the improvement of abundant food products.
2. Agricultural land conditions, in fact that the spread of the population and development in Indonesia is not fully equitable. This is evidenced by the number of "sleeplands" or lands that have not been working by the community in the interior, while, land in a strategic region actually becomes a comprehension of expensive prices.
3. In the traditional transfer of technology to be modern in agricultural management has not been widely acceptable by farmers who still choose to use traditional equipment. In addition to cost limitations, knowledge of knowledge is also a factor that inhibits technology rate to increase the farm sector widely. This problem is also due to the digital gap between the city and rural communities, where farmers are generally in the terrestrial areas. In developing countries such as Indonesia, information technology infrastructure has not been evenly distributed across the region. Information technology infrastructure, such as telecommunication access and The internet is only within the urban area. Thus, technological adoption is largely only felt by urban society. The countryside, including farmers can not feel the impact on the maximum, even in some particular areas have not been touched at all

Digital economy also faces consumer protection problems. Consumer protection in digital economic transactions is still weak, consumers do not know the path to make complaints and rights they belong. Despite the increase in significant consumer complaints from year



to year. The problem also occurred as a result of the digital economic characteristics. Digital economic characteristics in Indonesia resulted in problems including:

1. Uncertainty objects and tax subjects, reduced intermediary, financial transactions are not entirely thermal and state-of-the-territorial laws.
2. Ecommerce fraud, transaction security, fake information for the fictitious token pocket, goods not appropriate, to the personal data security.
3. Evening the occurrence of foreign acquisition e-commerce or startup, no e-commerce database, eco -Ititem startup has not mature and occurrence of non-conformity between the improvement zone (ZIP), not in accordance with the development of the region.

The results of the Commitry Research (2019), analyzing the problems faced by the digital economy are 1) the absence of the use of ICT use for production activities; 2) The ability of human resources to adapt to digital development is still low, it is influenced by age structure, education and gender level; 3) Policy and regulation of the Digital Economics is still sectoral; 4) The current platform has not been able to experience the importance of locality, Indonesia with the area of region, geography and demographic structures encourage the need for flexibility of the locality; 5) Indonesia-and Indonesia and supply chain systems and the current value of digital product value chain is inefficient

## 8. Recommendations

The digital ecosystem relating to the financial sector needs to be equipped not only with artificial intelligence, but also contextual intelligence. In addition, for the development of local-based FINTECH platforms needs to be done research and action of the relevant Piloting Development Note Three (NS) and Intelegant Decision Support System (IDS).

Currently, many developed farming platforms, unfortunately the platform is still limited to facilitate operational on the trade side of various commodities. The opportunity of digital economic enhancement will increase more when in sector sector applying the Intellegence Ecommerce technology, supply chain mechanisms, and adequate logistics system. In addition, the development of digital economics is not only related to the application of technology but also through the improvement of the quality of human resources. Therefore, the development of digital economics is adjusted to the diversity of inter-regional progress in Indonesia from the technology and HR. Not all areas have speed The same in applying technology 4.0, both in terms of production, work ethic, to product marketing. Thus, the development of digital economics needs to social approach, in the form of digital literacy based on the region.

Based on the characteristics of digital economics and problems faced then the proposed recommendation is:

1. improvement of infrackers supporting digital economic support and in suspcit to economically weak societies;
2. Management of tax sector that is in the digital economic actor due to the enormous digital economic prospect;
3. Consumer protection and socialization of proprietary and resolution procedures and settlements;

4. E-commerce penetration for unprepared communities because of the geography and demographic structure especially the weak society;
5. Change model business: and 6. Standardization of logistics services.

## Conclusion

The digital economic description in Indonesia shows a very rapid development of value to reach US \$ 44 billion in 2021. In 2025 worth expecting US \$ 124 billion or about Rp 1.744 trillion is higher than other Southeast Asian countries that can only reach US \$ 22 billion in the same year. The digital economy contributes to the absorption of labor and economic growth. Developments also show a change of business from the past, now and future. The business change is very varying depending on the sector such as the financial sector, the transportation sector and the agricultural sector experiencing a very significant change.

The challenges faced in the financial sector, with the Intintegen Communities included in Unbanked Population began to experience the financial services facilities. This is certainly a positive impact that occurs due to innovation of digital products in the FINTECH industry. However, in the Unbanked Population group there are groups of communities that are business in the rich agricultural sector and live in the countryside, which has not been fully reached by the Financial Services Services Organizers including fintech.

The digital economic problem is grouped into: 1) the problems faced by the startup; 2) Financial sector of Finch; 3) In the field of agriculture sector; 4) Environment of protection of consumers; 5) The problem arises due to the digital economic characteristics itself; Digital Economic Problems According to Research Results of Kominfo (2019).

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