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Indonesia's Digital Economy's Development

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Digital technology must be used in all facets of life and business for global advancements to lead to the employment of technology in all disciplines, including the economic sector. One of the nations that quickly digitized their economy was Indonesia. The issue is whether Indonesia can foresee the effects and dangers that the digital economy will pose. This study's objective is to examine the growth of Indonesia's digital economy and the challenges it poses from the standpoint of national defence. The descriptive qualitative methodology is used in this study. Interviews with representatives from the Ministry of Communication and Information, the Ministry of Defense, and the Indonesian Coordinating Ministry for Economic Affairs provided the data, which was then supplemented with secondary information from these agencies. The study's findings show that Indonesia's digital economy is growing quite well, which boosts the country's GDP. They also show that productivity is rising, production, consumption, and distribution are moving more quickly, there is economic growth in various sectors, and the country can continue to operate despite the Covid-19 pandemic. The digital economy, however, also poses a threat to national security because digitization forces all data to be connected to servers that are vulnerable to data misuse and exploitation; transactions that are not secure from malware-based cyberattacks; fraudulent transactions or hacks by hackers; and infrastructure limitations that have not yet reached all parts of Indonesia.

Keywords: Economic Growth, Defense Economy, Digital Economy

1. Introduction

Indonesia has the potential to become a great nation and country. Indonesia's natural resource potential, geographical location and other potential can be a threat or an advantage for the nation. This potential must be managed properly to become an advantage for the Indonesian nation. Indonesia must maintain its resources and develop its economy properly to survive the global economic competition in this Industry 4.0 era. This era demands digitalization in all fields. Digitalization is one of the characteristics of environmental changes in the globalization era characterized by advances in technology and information, dependence and borderless countries[1][2].

The digital economy is a business conducted through virtual media, creating and exchanging values, transactions and relationships between mature economic actors using the internet as a medium of exchange. The digital economy is based on utilizing and empowering digital information and communication technology[3][4]. In Southeast Asia, the digital economy is growing rapidly along with the large market potential. Five technologies have the most potential to trigger digital economic growth in the Southeast Asia region: mobile internet, big data, the internet of things, automation of knowledge, and cloud technology[5].

Digital users such as the public, business actors and even government agencies must have infrastructure, literacy and talent, and a digital cultural mindset. In this case, all communication networks, applications used and even the big data we have must be able to use wisely, comply with the law and intelligently filter existing information[6]. Society must be open to the development and progress of new technology and global communications. The cycle of production, consumption and distribution of information must have the support of the power of the digital economy supported by technological security[7].

Relations in international trade make countries including Indonesia cooperate with each other in fulfilling the country's needs. The current transformation framework starts from the outcomes obtained to increase efficiency and productivity in digital use and creates the latest innovations that continue to emerge so as to encourage inclusivity. In other words, inclusivity is trying to use the point of view of other people or other groups in understanding the problem. Digitalization is marked by the existence of an information society that has a high intensity in the exchange and use of communication technology[8].

Creation of internal added value as a technology enabler in the use of sophisticated technology in all fields. Innovation is developing rapidly and giving rise to a variety of new technology-based businesses[9]. For example, drones as robots that replace humans at work, videos, 3D printing, unmanned cars, and even all the data on our id-phones can be stored in the cloud or in other words, virtualized on an email network[10].

The digital economy is a form of socio-political change in the intelligence space economic system[11]. Changes in the form of digitalisation, including in the economy, of course, also change business transactions that were previously done manually, currently using the internet, explaining the global impact of information and communication technology not only on the internet, but also on the macro and micro economy. The definition of the Digital Economy version of Encarta Dictionary is that the digital economy is business transactions that exist on the internet. The digital economy provides flexibility for business transactions that no longer have to meet in person. This is an option during the Covid-19 pandemic. The digital economy is actually growing at this time. The Covid-19 pandemic has changed the mindset and behavior of people in interacting economically and socially. Activities are carried out with a new order and encourage people to comply with health protocols[12].

In the new normal era, all activities, both social and economic, must be limited. Countries around the world are constantly changing to adapt to unpredictable conditions. One of the levers that has become a breakthrough at this time is digital transformation. Old habits have now shifted with digital transformation. The global economy has adapted and digitized. The growth of various digital platforms makes it easier for business transactions such as buying and selling transactions through e-commerce[13].

Indonesia's economy is experiencing rapid growth, based on the McKinsey Report, Indonesia ranks first as a country that records the fastest growth in adopting the digital economy. This is seen from individual, business and government applications through the three pillars. The main assessments are assessed from the availability and download speed, the digital reach of data consumption per user, and the digital value of use in digital payments or e-commerce[14]. Indonesia's score is 99 percent, followed by India 90 percent, China 45 percent and Russia 44 percent. In fact, it is claimed that the digital economy is an opportunity for Indonesia in 2025. It will reach \$130 billion. Primarily growing in e-commerce and ridehailing, as well as digital payments[15][16].

The rapid digital economy is also strategic for increasing labor productivity in the country. Contribute to connecting workers with providers through online which is more efficient than offline. McKinsey predicts that Indonesia's digital economy will also increase productivity by up to US\$ 120 billion per year. This digitization includes the Manufacturing Sector US\$ 34 billion, the Retail Sector US\$ 24.5 billion, the Transportation Sector US\$ 15.5 billion, the Mining Sector US\$ 14.8 billion, the Agriculture Sector US\$ 11 billion, the Media Sector US\$ 7, 9 billion, the Health Sector US\$ 6.6 billion, the Public Sector US\$ 4.8 billion, and the Financial Sector US\$ 1.8 billion.

Business activities carried out through digital platforms are not without risk. All data can be recorded through digital media, all of which are connected to one server. This is not only a threat to business people, but to the state as well. Digitalization does not require space

and national boundaries to be blurred because economic transactions can be carried out easily across countries.

Digitalization is a non-military threat to national defense. In accordance with the Law of the Republic of Indonesia Number 3 of 2002 concerning National Defense article 7 paragraph (2) "The national defense system in dealing with military threats places the Indonesian National Armed Forces as the main component supported by reserve components and supporting components". Meanwhile, "The national defense system in dealing with non-military threats places government agencies outside the defense sector as the main element, in accordance with the form and nature of the threats faced, supported by other elements of national strength (Law of the Republic of Indonesia Number 3 of 2002 About National Defense article 7 paragraph (2))".

Based on the background above, this article aims to determine the development of the digital economy and the impact and efforts to overcome the threats posed by the digital economy.

2. Research Method

This study uses a descriptive qualitative method, namely data collected in the form of words, pictures, not numbers. Qualitative research is a research procedure that produces descriptive data in the form of written or spoken words from people and observed behavior[17].

This research was conducted at Pushansiber Ministry of Defense Office Address: Jl. hospital Fatmawati No. 1 Pondok Labu South Jakarta 12450. Tel: 021-7690009 and the Coordinating Ministry for Economic Affairs of the Republic of Indonesia which is located in DKI Jakarta. Ali Wardhana Building Office Coordinating Ministry for Economic Affairs[18].

The data source for this research is primary data obtained from interviews with informants at the Coordinating Ministry for Economic Affairs of the Republic of Indonesia, especially Deputy IV for digital economy, Pushansiber Ministry of Defense and Ministry of Communication and Information. While the secondary data sources in this study are data obtained from reports and other data that can be used as a reference for Indonesia's economic growth[19][20].

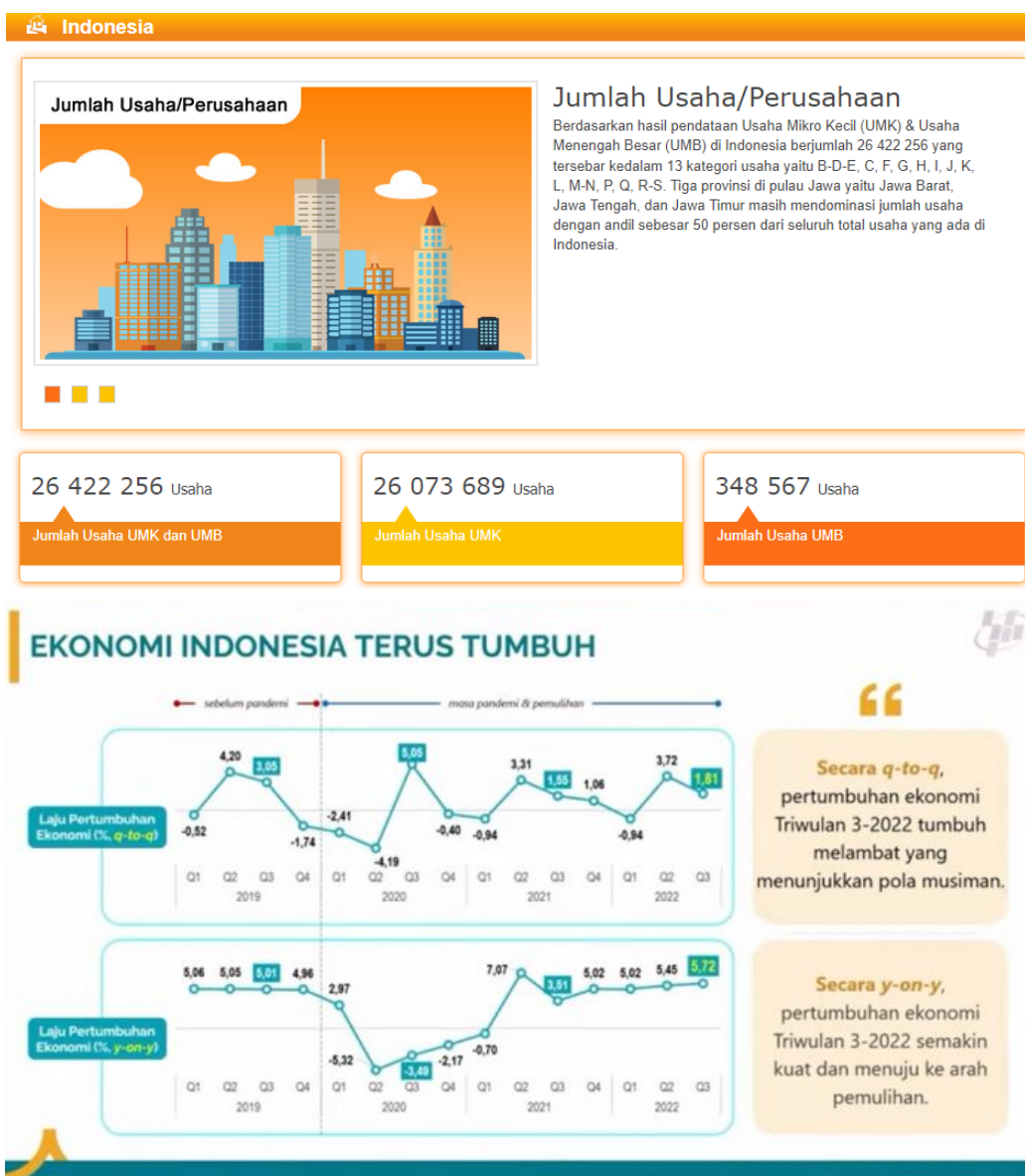
3. Findings

The data were obtained from the results of research conducted by interviewing the Coordinating Ministry for Economic Affairs of the Republic of Indonesia, the Ministry of Communication and Information, and the Ministry of Defence's Cyber Support. Indonesia's digital economy is experiencing quite rapid development.

The results of the presentation from the Coordinating Ministry for Economic Affairs stated that Indonesia was part of a Southeast Asian country which experienced an increase in the number of transactions by 30% during the Covid-19 pandemic.

Digital economic growth data was also obtained from Mikti and Bekraf showing that the development of Indonesia's digital economy has increased in terms of Indonesian startup growth which has reached 992 startups consisting of 35.48% or 352 in the e-commerce sector, in the financial technology sector 53 or 5, 34%, 55 or 5.54% in the game sector, and 532 or 53.63% in other fields.

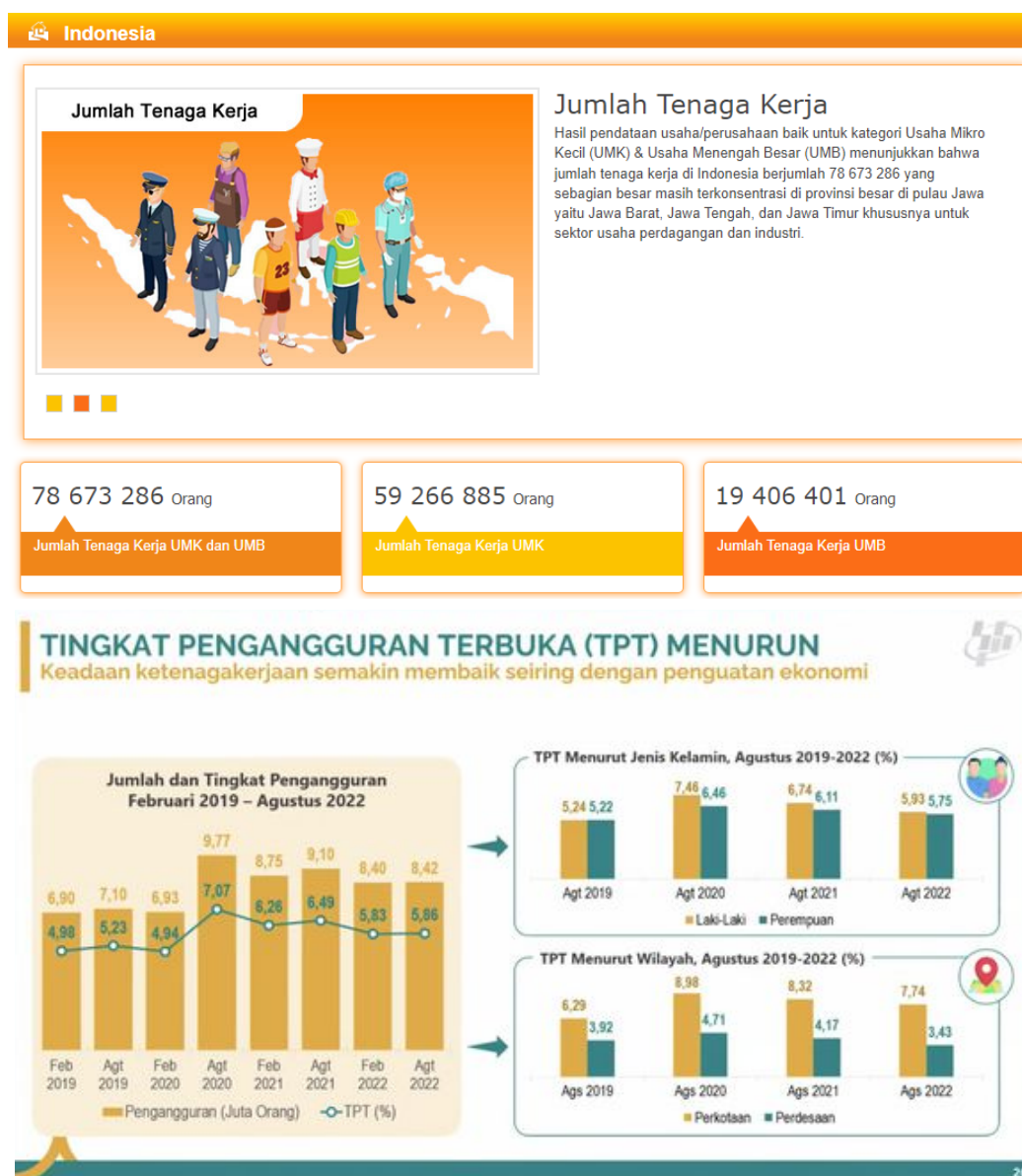
Several startups in Indonesia have also experienced growth and become unicorn startups with a business valuation of more than one billion, namely Go-jek with a value of 5 billion, Traveloka with a value of 2 billion, Tokopedia with a value of 1.3 billion, and Bukalapak with a value of 1 Billion. In the transportation, warehousing, information and data communication sectors are described in the following figure.



Picture 1. Indonesian economic Census
(source : <https://se2016.bps.go.id/umkumb/>)

Based on Figure 1, it can be seen that economic growth in Indonesia in 2022 will reach 5.72 percent. This shows that various economic sectors are trying to increase the use of technology in today's digital economy.

The growth of the digital economy in various sectors certainly also affects the workforce aspect. The use of technology does not mean that jobs that used to require labor have disappeared, in fact the data obtained in this study shows that digital economic growth has also increased in the workforce aspect which is explained in the following figure.



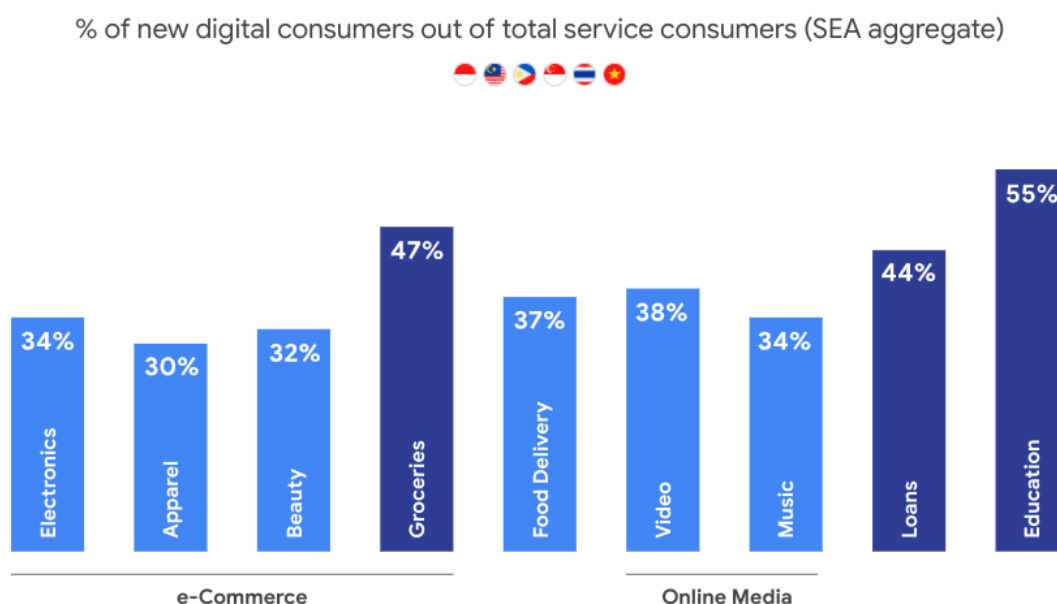
Picture 2. Number of Workers in Indonesia
(source : <https://se2016.bps.go.id/umkumb/>)

The figure above explains that the growth of workers has increased in the Information and Communication Technology sector even though it has a downward trend. The direction of Indonesia's digital economy transformation is based on the results of interviews with Dr. Rizal Edwin, Ak., M.Sc., Assistant Deputy for Digital Economy explained that "the direction of Indonesia's 2024 digital economy transformation which has been targeted by the government must achieve growth of 3.17% - 4.66%". This target is in accordance with the technocratic design of the 2020-2024 National Medium-Distance Development Plan in which the digital economy plays a role in increasing upstream and downstream efficiency and contributing to industry added value.

In achieving the target in 2024, various efforts have been made to achieve this digital economic growth. Because it turns out that in 2017 Indonesia is still in the lower ranking. Based on data from the World Digital Competitiveness ranking, Indonesia is ranked 59 out of 63 countries.

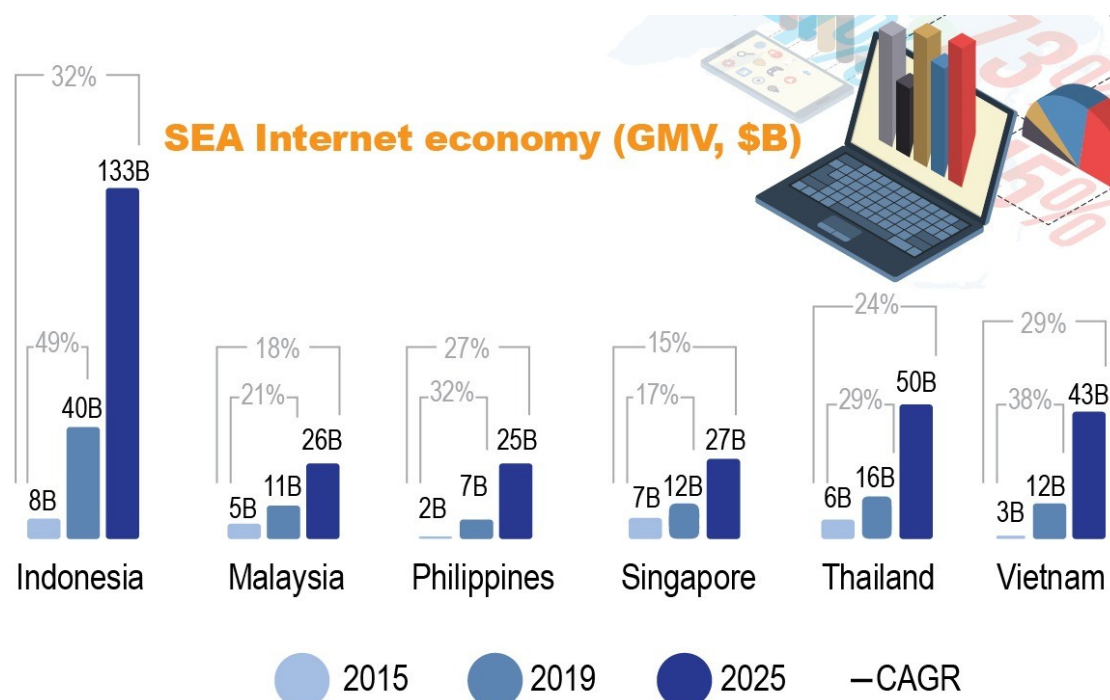
The same thing also happened to data from Network Readiness which measures a country's readiness to innovate in facing the digital revolution, Indonesia's position is still ranked 73 out of 139 countries.

In 2019, Indonesia's digital economy experienced rapid development due to the Covid-19 pandemic. At the start of this pandemic, the economy weakened, so a breakthrough was made by digitizing the economy. The Covid-19 pandemic has boosted Indonesia's digital economy. Social restrictions make everyone think about using technology in conducting economic transactions. Digital platforms are media for carrying out various activities. This is in accordance with the SEA E-economy 2020 digital economic growth data released by Google and Temasek explaining that internet usage is increasing along with social restrictions due to the co-19 pandemic. Market coverage data shows that there are 5 business sectors that lead the digital economy in Southeast Asian countries and 2 new sectors that are starting to enter the e-economy, namely e-commerce, transport and food, online travel, online media, and financial services. Whereas 2 newcomers to the internet e-economy are the health and education sectors which are experiencing very fast acceleration during this pandemic season. In addition to the emergence of many new users, Covid-19 has also caused an accelerated growth in the use of digital services. The increase in internet usage in Southeast Asia is explained in the following figure:



Picture 3. Consumption Sector Percentage Chart
(source : e-economy SEA 2022, report)

Based on the picture above, it can be explained that the use of the digital economy is divided into users in e-commerce where electronic consumption is 34%, apparel (fashion) is 30%, beauty is 32%, and the largest is groceries by 47%. While the use of online media is dominated by the education sector by 55%, then loans or online loans by 44%, videos by 38%, food delivery by 37% and music by 34%. The data shows that most countries in Southeast Asia have experienced an increase in the digital economy during the Covid-19 outbreak. The following presents a graph of digital economic growth for countries in Southeast Asia.



Picture 4. ASEAN Digital Economy Growth
(source : e-economy SEA 2022, report)

The growth of internet use in the digital economy in Indonesia has reached 37%, which in total this usage is greater than neighboring countries such as Malaysia, which is 36%, Singapore and Thailand, which are 30%. This is good information in Indonesia's digital economy, meaning that the target of digital transformation in Indonesia has begun to be felt. The growth of Indonesia's digital economy will certainly affect the increase in Indonesia's GDP. Previous research conducted explained that digital factors have a positive effect on GDP, meaning that digital consumption can increase GDP growth in ASEAN countries, but this consumption should be increased so that the increase is not only in consumption, but also as digital business actors.

Indonesian E-commerce Business Prospects (social Research & Monitoring Soclab.com) shows that the number of Indonesian internet users in 2015 was 93.4 million from the previous year 2014 of 88.1 million of which 77% used the internet for online shopping. The number of online shoppers in 2016 was 8.7 million people with an e-commerce transaction value of US\$ 4.89 billion.

3.1 Discussion

The research data above show that the development of Indonesia's digital economy is accelerating. This development did not just happen, but there have been various efforts made by the government and stakeholders. The government, in this case the coordinating Ministry for the economy of the Republic of Indonesia, the Ministry of Communication and Information, and the Ministry of Defense's Cyber Support synergize with each other to make strategic efforts to develop Indonesia's digital economy. However, the problem that occurs is that there is no responsible leader in this digital economy.

Not only the problem of the leader in this development, but also some of the negative impacts caused by the existence of the digital economy. Economic changes with digitalization have the characteristics of transactions that are not limited and can reach the whole world without crossing borders. These characteristics give rise to unclear tax subject and object, reduced intermediaries, financial transactions are not fully monitored, and legal territoriality

(state statutes).

State defense and sovereignty are threatened because digital transactions do not have to pass state regulations (Cunningham, 2012). Cross-border transactions can raise the problem of foreign acquisition of startups in Indonesia. Transactions that are not carried out directly give rise to the ease of manipulating circumstances, hyper-reality, and misinterpretation. This situation causes more and more fraud to occur when making online transactions.

Digital transactions are carried out in real time directly and can be monitored and quickly change and move (fast forward). This characteristic makes it easy for economic actors to enter or leave the market. The various impacts that exist require transaction security to avoid the problems that arise.

Threats in the Digital Economy are disruption and cyber that threaten the lives of both individuals, communities and countries (Brantas, 2014). Data security is a major threat issue for both economic data and national defense. Data stored virtually, work processes that are connected online in an application can be accessed to be misused.

The biggest threat from digitalization is transactions that penetrate national boundaries and are controlled by the world's major economic players. The great potential possessed by Indonesian youth is an attraction for foreign investors to invest their funds in Indonesia. Big economic players have high technology and capabilities so that important data from a country can be used for their economic interests. The biggest issue in this regard is big data and map analytics. With data collected on one server, everyone's profile can be known. The applications created and connected to Google become the data on Google's servers. Data is the new oil of the economy. With data many things can be done, without data many things cannot be done. Data around the world is centralized on one server, and does not want to be fragmented in all countries.

The Ministry of Defense takes a strategic role in anticipating existing threats. Law No. 3 of 2002 concerning National Defense stipulates that threats in the national defense system can be in the form of military threats and non-military threats which include cyber threats. Cyber threats consist of violations of cyber crime laws which, if carried out widely, can threaten state sovereignty.

Digital developments create threats in the form of cyber crime and cyber war which threaten individual security in the form of access to assets and personal data such as identity and data theft, account hijacking, virus spread through websites and important codes, slander, defamation. It is not only dangerous for individuals but also for the country with industrial espionage and theft of important information data, and the spread of hoaxes with the aim of provocation.

The defense economy aims to create defense and security in digital economic activities and the role of the defense economy in presenting economic security in society. Therefore the Ministry of Defense of the Republic of Indonesia launched the Sisfohaneg Program (State Defense Information System). Sisfohaneg has a role as a provider of data and information in a fast, accurate and real time manner so as to provide security guarantees in the process of establishing policy decisions.

The main priorities carried out by Sisfohaneg are data communication network systems, application systems, online data updating, data/password security systems, HR/ICT development. The program was developed in order to support the creation of a digital economy whose security is guaranteed and also as a manifestation of the functioning of the defense economy[21]. In accordance with the concept of defense economics which explains that defense economics is a branch of economics on national defense issues. The defense economy provides productivity and innovation that lead to the development and advancement of military and non-military technology which are inseparable, especially in the digital economy[22].

Digital development that raises problems in the form of malware-based cyber attacks can be anticipated by policies to maintain national security stability. The strategy developed is to strengthen resilience and cyber security[23]. The success of this policy can be measured by

a global score indicator, namely the Cyber Security Index with a value of 0.85 per year. The purpose of this policy is to increase the ability to deal with cyber attacks, and the integration of countermeasures against cyber attacks.

Electronic-based government system policies were developed to deal with strategic issues of quality public services. The strategy undertaken is to utilize ICT in public services and institutional management. The success of this policy is measured by a public service index indicator of 3.25.

Another strategy carried out by the Ministry of Defense refers to Presidential Regulation Number 133 of 2017 concerning the establishment of the BSSN (National Cyber and Crypto Agency) whose task is to ensure cyber security effectively and efficiently by utilizing, developing and consolidating all elements related to national cyber security.

The important role of the defense economy sector is in ensuring access to information for each individual, creating sensitivity and awareness of cyberspace resilience and security, guaranteeing the security of the personal data of Indonesian citizens and residents, achieving increased national capacity and competitiveness for economic growth and development[24].

4. Conclusion

Indonesia's digital economy is experiencing good development, and even has startups with unicorn criteria. The development of the digital economy must cover all economic sectors. Developments made on the results of various strategies and efforts carried out in synergy between ministries, institutions and stakeholders. The impact of the development of the digital economy is increasing Indonesia's GDP, increasing productivity, the flow of production, consumption and distribution is developing more rapidly, economic growth in the transportation and warehousing sector, as well as the information and communication sector and the survival of the economy even during the Covid-19 pandemic.

The digital economy also poses a major threat to the country with the potential use of big data, the threat of cyber crime and cyber war, as well as the occurrence of many frauds, malware-based cyber attacks, fraudulent transactions and hacking by hackers. The defense economy takes a role in providing anticipation of threats that occur with strategies developed by the BSSN, Ministry of Defence.

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