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INDONESIA'S DIPLOMATIC STRATEGY IN OPTIMIZING THE POTENTIAL OF THE INTERNET OF THINGS (IOT) ON THE GLOBAL DIGITAL ECONOMY MAP

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Abstract

This article aims to analyze Indonesia's diplomatic strategy in optimizing the potential of the internet of things on the global digital economy map. To this end, researchers elaborated on Indonesia's diplomatic strategy in optimizing the potential of the internet of things on the global digital economy map as a diplomatic tool in improving economic relations with other countries, implementing challenges. Researchers use qualitative methods by collecting literature studies, documentation studies, and internet searches. The results of this study found that the use of the Internet of Things (IoT) in global economic mapping greatly affects economic growth in Indonesia, especially with the Nongsa Park project that allows all to be well integrated, and this project can also attract many investors to invest in the project

Keywords: *Digital Economy, IoT, Indonesia*

Introduction

In the present that has entered the industrial revolution 4.0, digital technology is one of the main assets needed by industry players to develop their business. The presence of industry 4.0 shows that current industrial progress cannot be separated from technological advances. The progress of the industrial sector is in line with technological advances that have a positive impact on a country, including the improvement of its economy. With the existence of digital technology, a country can encourage its economic growth towards the digital economy era. The era of digital economy has actually begun since the 1980s, using personal computers (PCs) and the internet as key technologies to improve business efficiency. The use of technology such as PCs and the internet is the starting point for the development of the digital economy, at this starting point, e-commerce or electronic commerce is the beginning of the developing digital economy sector. Along with the evolution of technology, the old digital economy era has finally turned to the new digital economy era, characterized by the presence of mobile technology, unlimited internet access, and cloud technology in the digital economy process. Indonesia also follows this trend.

The digital economy in Indonesia does have great potential positive impacts, but this is also a challenge for the government in formulating the right policies. With the advancement of the digital economy, the possibility of the emergence of new business models, integration between business sectors, as well as changes to business models in existing sectors has become more open. The development of information technology in the era of revolution 4.0 has had a significant impact on the Indonesian economy. These advances create new, highly dynamic business models and economic actors, shifting traditional economic practices that have come before them. This economy is now known as the concept of digital economy, which continues to evolve in line with advances in information and communication technology. Indonesia is also part of this development.

New technological innovations and advances generally arise from the collaboration of various parties who work to strengthen existing technological advances. As it has been seen today that the internet greatly affects the lives of every human being today, the internet itself is a good example of a technology platform that emerged through publicly supported research, government research focus, development of open communication standards and protocols, and physical infrastructure managed by private operators. And in today's all-digital era brings an easy and instant life, everything is faster, information is spread in seconds, one example is the emergence of the Internet of Things.

The Internet of Things (IoT) is a series of connected devices and is useful in supporting the communication process between devices, some technologies that utilize the Internet of

Things (IoT) involve sensors, actuators, operating systems, micrometres, communication technology, security, IoT platforms, and analytical tools. And the workings of Internet of Things technology involve processing and transferring digital information produced by sensor devices such as Radio Frequency Identification (RFID), infrared sensors, to the Global Positioning System (GPS). In addition to the application of IoT in business activities, this technology has also been integrated in residential facility systems more as smartgrid technology.

And in the context of international relations, we are also experiencing significant changes where information and technology play an important role in relation to efforts to achieve national interests, including through diplomatic instruments. Diplomacy involving actors also focuses on efforts to achieve national interests through traditional events such as negotiations between state representatives. In this chapter technological advances that cannot be avoided development certainly also affect political entities, there are changes that originally each country had the boundaries of state sovereignty determined, but due to globalization of information and communication countries are increasingly free and biased, all of which threats are only in the form of military power has shifted into diplomacy by utilizing technology. And the changes in the development of that era not only affect the diplomacy of each country but also affect the digital economy of each country itself.

The author uses previous research as a foundation to facilitate analysis and writing about Indonesia's Strategy in Optimizing the Potential of the Internet of Things (IoT) and Digital Economy, previous research is used as a reference in conducting discussions. Previous research that has been used as reference material is research that has been carried out by Hosana MJ, Novriest Umbu W, and Triesanto Romulo Simanjuntak from Satya Wacana Christian University in 2023 with the title "Indonesia's Economic Diplomacy Strategy towards Singapore in Improving the Digital Economy in 2020 2022" The difference between the research conducted by Hosana MJ, Novriest Umbu W, and Triesanto Romulo Simanjuntak with what we studied is the focus of the study where The research focuses more on the digital economy relationship between Indonesia and Singapore over a certain period of time, namely 2020 to 2022. In the title, attention is focused on Indonesia's economic diplomacy efforts directed specifically at Singapore with the aim of improving the digital economy sector in the period.

Then research by Muhammad Fadhil Ahadiat Tajudin from Brawijaya University in 2023 with the title "Economic Diplomacy Strategy of the Republic of Indonesia towards the United Arab Emirates in 2020-2022", The difference between the research conducted by Muhammad Fadhil Ahadiat Tajudin and what we studied is the focus of the study where the research focuses more on In this title, the focus is on the economic diplomacy strategy carried out by the Republic of Indonesia towards the Union Arab Emirates during the period 2020-2022. The analysis includes measures and policies taken by Indonesia to strengthen economic ties with countries in the United Arab Emirates. This can involve cooperation in trade, investment, and joint projects to promote economic growth of both countries.

Further research by the Center for American and European regional policy studies and development of the Ministry of Foreign Affairs Policy Assessment and Development Agency in 2020 with the title "STRATEGY TO INCREASE INDONESIA'S ECONOMIC DIPLOMACY WITH COLOMBIA". The difference between the title that we raised and this title is about Indonesia's efforts to improve economic diplomacy with Colombia. The analysis covered in this title is concrete steps, trade agreements, and initiatives taken by Indonesia to strengthen economic ties with Colombia. Can involve cooperation in the trade, investment, and joint economic projects.

Furthermore, research by Sapta Dwikardana, from Parahyangan University in 2017 with the title "Transformation of Diplomacy Strategy in the Digital Era: Identification of Digital Diplomacy Posture in Indonesia". The Difference This title highlights the transformation of Indonesia's diplomatic strategy in facing the digital era. It includes an analysis of how Indonesia is adapting its traditional diplomacy strategy to the development of digital technology. The identification of digital diplomacy posture leads to an understanding of how Indonesia positions itself in the realm of digital diplomacy and how this strategy is changing amid technological change.

Literature Review

2.1. Digital Economy

Digital economy refers to an economic system that is highly dependent on the use of digital technology and the internet to manage, support, and optimize economic activity. In the digital economy, business transactions, information exchange, and interactions between key economic actors, such as companies, consumers, and governments, all occur digitally through online platforms. It covers various sectors, such as e-commerce, fintech, edtech, and other digital services. The digital economy has several key characteristics, including the use of information and communication technologies, the adoption of innovative business models, strong connectivity over the internet, and data as an important asset. Technological innovations, such as artificial intelligence, big data, and blockchain technology, are also becoming integral components in accelerating the growth of the digital economy.

2.2. Digital Diplomacy

Digital diplomacy is a type of diplomacy that is part of public diplomacy, but public diplomacy is not a substitute for diplomacy between countries, but to optimize diplomacy that has previously been done. Digital diplomacy itself is also a diplomacy that is currently rife to be developed. Digital diplomacy is more than just twitter. It is a conceptual shift in diplomatic practice that places and places emphasis on conversations with foreign residents. This is a cultural shift that requires the Ministry of Foreign Affairs to share information rather than safeguard it. This technological shift requires diplomats to develop digital skills ranging from knowledge of social media algorithms to writing computer programs and smartphone applications (Wangke, 2020).

Methodology

In this study, researchers used qualitative research methods. Qualitative research methods are tools, techniques, and strategies used by researchers to help collect, interpret, and analyze the data they have. In qualitative research, researchers are an important part of research. Because in producing valid interpretations of data, the subjective role of researchers is needed. The purpose of this qualitative research is to understand a phenomenon in a social context naturally by prioritizing the process of in-depth communication interaction between researchers and the phenomenon under study. Then, in the collection of data related to this study. Researchers used literature study techniques, reviewing relevant archives and internet searches, with the type of data coming from books, journals, articles, trusted online news, and other documents that support this research. This research discusses Indonesia's Diplomatic Strategy in Optimizing the Potential of the Internet of Things (IoT) on the Global Digital Economy Map.

Discussion

3.1. Cooperation with other countries in harnessing the potential of IoT to strengthen economic position

Indonesia's diplomatic strategy has been actively used to maximize the potential of much of the global digital economy. Enhancing economic cooperation and digital economic opportunities has been a major focus of the country's diplomatic campaign. Given Indonesia's significant digital economy presence in Asia, the Indonesian government has provided guidance for its economic diplomacy by emphasizing the exploration of various opportunities in the digital economy. This action is in line with the country's goal to maximize its economic potential and strengthen its position in the global market. In addition, Indonesia has considered its economic diplomacy, which includes relevant international forums, international economic agreements, and strategies to enhance its economic diplomacy, especially during the pandemic.

The Internet of Things (IoT) has the ability to help strengthen the position of the global digital economy by speeding up processes and facilitating communication between countries. IoT can also help in technology development and innovation, which is one of the conditions for strengthening the position of the global digital economy. Through various programs, Indonesia has collaborated with other countries to harness the potential of the Internet of Things to strengthen the position of the global digital economy. For example, Indonesia has cooperated with Singapore in technology and has also cooperated with other countries in the digital economy, such as China and the EU in handling COVID-19.

Digital economy cooperation between Indonesia and Singapore has started since 2018 after the opening of Nongsa Digital Park and continues in the following years to increase global digital competitiveness in the industrial era 4.0. Nongsa Digital Park is an integrated digital park project that offers an ideal place to carry out various types of digital-based businesses and support the growth of digital businesses. The project will also build a data

development center certified by Uptime Institute Tier III, and will have residential facilities that can be combined with Nongsa Resorts, which is currently operated by Citramas Group.

The Nongsa Digital Park area, contributes greatly to increasing state revenue through investment. In addition to providing investment opportunities for Singapore, regional and international countries also have the opportunity to invest in Nongsa Digital Park. Once designated as a Special Economic Zone (SEZ), the area offers various facilities that can help the business of companies located there. In addition, Nongsa Digital Park has access to a data storage and development center certified by Uptime Institute tier IV, which will increase its business value. The opportunity for workers that can be absorbed by Nongsa Digital Park is around 1,500 workers, and this number will continue to increase along with the increasing demand in the digital economy sector.

The role of NDP in increasing the growth of startups engaged in the digital sector is by creating various facilities and programs that can support the activities of startup companies in that location. One of the programs offered by NDP is the startup incubator. The program is a business incubator that will provide special assistance and support for startups who want to start their business or are still in the early stages. In addition, Nongsa Digital Park offers various types of courses related to information and communication technology (ICT). Some of them are coding, web development, Internet of Things (IoT), software, fintech (financial technologies), AI (Artificial Intelligence), and application usage training. The training process that is routinely carried out at Nongsa Digital Park will certainly have a positive impact on every participant who attends, which in turn will produce a high-quality workforce needed for startup growth. Nongsa Digital Park started the E27 Academy training program about four years ago, or precisely in 2018. The event aims to bring together communities in today's Asian digital industry.

Nongsa Digital Park will strengthen Batam as a digital hub or digital bridge for Indonesia and Singapore by building various digital infrastructures and startup incubators. In addition, Nongsa Digital Park will be able to help the government achieve its target of establishing 1,000 startups with a value of 10 billion US dollars by 2020. The nickname "digital hub" is very appropriate because the area became a SEZ in 2021 and has many facilities aimed at digital communities, digital education, technology, and digital agriculture.

Nongsa Digital Park attracts leading international technology companies such as Apple, Huawei, Dimension Data, and Purwadhika IT School because it has very complete facilities that can help technopreneurs and digital startup workforce. In this area there is also internet with high fibber optic speeds, startup incubators, office buildings or blocks, co-working spaces, and data centre's that can be accessed by everyone.

In principle, the cooperative relationship between the two parties is based on the same goal, namely to improve the digital economy sector through HR training in the ICT field, creating startup incubator programs, animation training and so on. Both countries have an important role in the Nongsa Digital Park project, where Indonesia as a country that provides natural resources and human resources, while Singapore provides technology and capabilities in developing the digital economy in Indonesia.

3.2. Indonesia's diplomatic efforts in promoting international standards that support the use of IoT in the digital economy.

Indonesia's diplomacy can promote international standards that support the use of IoT in the digital economy through several efforts. Here are some of the efforts that can be made:

1. Holding a Discussion Forum: Economic diplomacy used to hold a discussion forum with partner countries regarding international standards that support the use of IoT in the digital economy. This forum can discuss issues related to standards, regulations, and policies that can affect the use of IoT in the digital economy.

2. Holding International Conferences: Economic diplomacy used to hold international conferences that discuss issues related to the use of IoT in the digital economy. This conference can involve experts, practitioners, and stakeholders from various countries to share experiences and knowledge related to the use of IoT in the digital economy.

3. Conducting Training and Workshops: Economic diplomacy used to hold trainings and workshops related to the use of IoT in the digital economy. This training and workshop can involve experts and practitioners from various countries to share experiences and knowledge related to the use of IoT in the digital economy

4. Forge Partnerships: Economic diplomacy used to forge partnerships with developed countries in the development of IoT technologies for the digital economy, in order to gain access to knowledge, resources, and markets that support the growth of the digital economy.

By taking these efforts, it is hoped that Indonesian diplomacy can promote international standards that support the use of IoT in the digital economy and strengthen Indonesia's position in the global market through mutually beneficial cooperation.

3.3. Obstacles to Indonesia's diplomacy in garnering international cooperation related to the application of IoT

In garnering international cooperation related to the application of IoT for the digital economy, of course, it will not run easily. There are several things that become obstacles in garnering international cooperation. The downscaling of established technology companies and startups around the world, both locally and internationally, as a result of these changes is the first obstacle to international cooperation. Certain factors are suspected to be the cause, including uncontrolled labour rates because the goal is to turn traction into transactions. Over recruitment is also common. When companies have high demand for services on their platform, they may miscalculate their business and not know how much talent is needed to achieve their goals. One of the common reasons a tech startup entity is governance issues. Management is usually not concerned with compliance and accountability aspects when business turnover is low. When most aspects of compliance have been breached, business processes are already underway and it is difficult to get back on track. Several companies in Indonesia are downsizing, namely GoTo, LinkAja, Sea Ltd, Ruang Guru, Tokocrypto, Xendit, and Zenius. Challenges due

to this global slowdown have the greatest impact on the Business-to-Consumer (B2C) business sector. In addition, data from the Financial Services Authority (OJK) also shows problems around financing carried out by the Fintech lending industry where the level of bad financing (TKB >90) as of July 2022 reached 181% worth IDR 1.2 T.

The second obstacle is digital governance. Governance becomes important for the integration of advanced technologies, or Emerging Technologies. These advanced technologies have traits such as having the ability to make some significant disruptive impacts, having the ability to solve significant problems, being the latest inventions, and explaining technically complex operations. This technology is still dominant at the development stage, has medium and high-risk levels, and is dominated by basic knowledge when used in business processes. Cybersecurity attacks are a major issue when adopting this new technology. That also applies to compliance aspects in data handling. In addition, Law No. 27 on Personal Data Protection requires controllers and processors to ensure that all business processes relating to personal data have a basis for processing. Derivative rules are required for this. Multi-level planning and synchronization at the corporate, industry, and national levels are things that need to be considered from a governance perspective. In the era of digital economy, understanding the risks of data management is crucial.

The last obstacle is the involvement of MSMEs in the global value chain (GVC) which is among the lowest compared to the five ASEAN countries at 6.3%, but its contribution to GDP continues to increase from 57% in 2017 to 61% in 2021. The last challenge is to bring MSMEs to digital. In addition, transactions increased by 26% and 2.1 million e-commerce transactions involving MSMEs. However, of the existing 64 million businesses, only 13% use digital in their business processes. This condition causes an MSME financing gap of Rp 2,326.5 trillion, which is 70% of national capacity. To escort digital onboard MSMEs to reach 47% by 2030, systematic and continuous efforts are needed to escort digital onboard MSMEs to reach 47% by 2030. These obstacles will be some considerations among others:

First, there is a lack of financial literacy because MSMEs usually do not enter banking institution audits, use technology minimally, and their assets are not guaranteed.

In addition, he continued, it is also due to asymmetric information which leads to credit rationing from banks. Credit rationalization causes many MSME players to be charged high financing costs by banks, in anticipation of potential defaults from debtors.

Third, there is a condition of the character of MSME financing which has been many but scattered in small numbers and increased monitoring of banking costs to supervise granular financing, thereby reducing the efficiency of financial institutions.

Conclusion and Recommendation

Indonesia's diplomatic strategy has been actively used to maximize the potential of the global digital economy. The main focus of the country's diplomatic campaign is to enhance economic cooperation and digital economic opportunities. Through various programs, such as cooperation with Singapore in technology and with other countries in handling COVID-19, Indonesia has harnessed the potential of the Internet of Things (IoT) to strengthen the position of the global digital economy. Nongsa Digital Park is an integrated digital park project that provides investment opportunities for regional and international countries. By providing various facilities and programs, such as startup incubators and information and communication technology (ICT) training, Nongsa Digital Park plays a role in increasing startup growth and producing high-quality workforce needed for the digital economy sector.

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