

Indonesia-China Cooperation For The Development And Improvement of Digital Technology 4.0 in The Field of Security And Economy

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Abstrak

Kerjasama industri 4.0 antara Indonesia-China di sektor keamanan dan ekonomi digital merupakan suatu hal yang penting bagi kedua negara. China memiliki jumlah pengguna internet terbesar di dunia, dilanjutkan dengan Indonesia yang berada di peringkat kelima. Bagi Indonesia, kerjasama ini dipandang mampu mengakselerasi pembangunan infrastruktur digital disektor keamanan dan ekonomi. Sedangkan bagi China, kerjasama ini dipandang mampu membuka peluang sekaligus memperluas pasar ekonomi teknologi digitalnya di luar negeri. Penelitian ini berusaha untuk mengelaborasi kerjasama antara Indonesia-China dalam upaya pengembangan industri teknologi digital 4.0 di sektor keamanan dan ekonomi digital. Adapun metode yang penulis gunakan adalah metode kualitatif dengan kerangka teori kerjasama bilateral. Penelitian ini menemukan hasil bahwasannya kerjasama yang dilakukan kedua belah pihak telah memberikan dampak positif terutama dalam upaya pengembangan dan peningkatan industri 4.0 baik di sektor keamanan maupun ekonomi digital.

Katakunci: Industri 4.0, Ekonomi digital, Keamanan, Kerjasama bilateral

Introduction

The end of the Cold War and the emergence of the People's Republic of China (PRC) as the second largest economy in the world encouraged the further development of Indonesia-China relations. China's Open Door Policy is seen as an opportunity to mobilize the Chinese-Indonesian business community to promote the improvement of bilateral relations between China and Indonesia. China's global isolation as a result of an embargo from Western countries as a result of the government's crackdown on pro-democracy student protesters at Tiananmen Square in 1989 seemed to convince the political elite of this East Asian country to foster closer relations with Southeast Asian countries. Indonesia is politically and economically significant because of its strategic location, market size, and the economically powerful Chinese diaspora. On August 8, 1990, Indonesia and China officially restored their diplomatic relations which had been severed by the New Order military regime in 1967 due to accusations that China supported the September 30th Movement.

Indonesia's position in building strategic cooperation with China in international forums is not only based on the principle of an independent and active foreign policy, but also on its rational and pragmatic position in maintaining strong relations with the Asian giant (Arianto and Anggraini, 2020: 108). Also, according to Arianto and Anggraini (2020: 107) in specific paradigm of *Manunggalism* which is a paradigm or way of seeing the world that emphasizes the values of “*gotong royong*”, unity, and “*kerukunan Antarbangsa*”, Indonesia and China should achieve this situation, and of course becomes an important agenda for the two countries in responding to various possible changes in the “world order” in the future. The ways to build the world security architecture in the future are a challenge for Indonesia and China to achieve the goals that China wants, namely “World Harmony” and the goals desired by Indonesia, namely “*Kerukunan Antarbangsa*” (Arianto and Anggraini, 2020: 107). In terms of cultural relations, the challenges faced by the two countries include unbalanced information due to the uneven flow of news coming from the

West and from China to Indonesia and vice versa, the lack of high-level dialogue between the two countries, a lack of understanding between the two countries regarding the historical roots of culture as the basis of foreign policy (Arianto and Anggraini, 2020: 108).

It is in Indonesia's best interest to see China as a source of opportunity, especially from an economic perspective. China's economic prowess is indeed a special attraction, especially after 2010, when China succeeded in overtaking Japan as the second largest economy in the world and the China-ASEAN Free Trade Area (CAFTA) began to operate. In 2013, the leaders of the two countries signed the China-Indonesia five year development program for trade and economic cooperation.

As a member country of ASEAN and the largest importer, Indonesia is a key partner in the China-led Belt and Road Initiative (BRI) program, which builds and invests in infrastructure projects across Indonesia. Relations between Indonesia and China have developed in recent years. China is the second largest foreign investor (after Singapore), one of the main trading partners, and Indonesia's largest export destination country in 2019, with a value of US\$25.8 billion (around 16.68% of total exports). In the same year, China became the largest source of imports for Indonesia, valued at US\$44.5 billion, covering almost a third of Indonesia's total imports (Rakhmat, 2020).

Bilateral relations between Indonesia and China continues to be strengthened by deepening strategic partnerships, which include security and economic cooperation in the digital sector. Indonesia is still in the early stages of creating a digital economy, although it has a strong foundation. Looking back a decade ago, e-commerce and ride-hailing services have become an industry locomotive to expand the reach of digitalization in Indonesia. Since then, new digital business models have become easier to accept. By 2025, Indonesia's digital economy is projected to be USD 130 billion which makes Indonesia the most significant digital economy player in ASEAN, which accounts for 22% of gross domestic product in 2020. (Kominfo, 2015) Indonesia is also a regional investment centre by venture capitalists, including some of the leading investors from China, namely Alibaba Ant Financial, Baidu, Tencent, and Meituan. China as the world's second largest digital economy and home to 162 unicorns, its digital economy is predicted to reach US\$4.2 trillion by 2025. Given its focus on the digital sector, China launched a massive Digital Maritime Silk Road project aimed at developing connectivity and digital infrastructure in the region. One of the factors supporting China's economy amid the pressure of the COVID-19 pandemic is China's progress in the digital economy sector. (CNN, 2022)

Indonesia is considered to have enormous potential in the digital economy sector as one of its advantages in supporting economic transformation. In 2021, there will be 21 million digital economy consumers in this country, with growth that will continue to increase significantly, especially in rural areas. It is recorded that 72 percent of new digital economy consumers are in rural areas. Indonesia also has a high digital economy utilization rate, with 98 percent of merchants using digital payments and 59 percent utilizing digital financing. (CNN, 2022) According to Google and Temasek (2018), one of the things that supports the development of the internet economy in Indonesia is the large number of internet users in Indonesia. And according to McKinsey & Company, Indonesia is estimated to have an online trading market of 5 billion for formal online trading, and more than 3 billion for informal online trading. Indonesia is estimated to have 30 million online shoppers in 2017 with a total population of around 260 million. By 2025, the digital economy in Indonesia is expected to create an additional 3.7 million jobs. Generate up to 80% higher revenue growth for small and medium enterprises (SMEs). Provide an additional 2% per year in GDP growth by increasing broadband penetration rates and digital technology adoption by SMEs. (Kominfo, 2019)

In the development of the digital economy, Indonesia and China have established several areas of cooperation, including work on the Bali Turtle Island project through the collaboration of the Bandung Institute of Technology (ITB) and Tsinghua University as an information technology R&D, cooperation in coding education, training at the Wekode School, launch of InaMall, virtual payments, IT education, vocational training, e-commerce, fintech, and digital infrastructure. Indonesia initiated collaborations with a number of leading Chinese companies, namely ByteDance, Meituan Inc, Alibaba Ant Financial, Jumore, JD.com, Baidu Inc, and Tencent Holdings Ltd. (Miao, 2022) It is on this basis that the two countries agreed to develop industry 4.0 cooperation in the digital economy and security sector. And Indonesia and China have signed several cooperation in this sector. This research seeks to elaborate on industry 4.0 cooperation between Indonesia and China. The research method that the author uses is descriptive qualitative research method.

Literature Study

In a nutshell, bilateral cooperation is a relationship between two countries with the goal of mutual benefit for both parties. Meanwhile, according to Holsti international cooperation is a view or expectation from a country that policies decided by other countries will help that country to achieve its interests and values. (Holsti, 1988). There are several reasons why countries cooperate with other countries: 1. in order to improve their economic welfare, many countries cooperate with other countries to reduce the costs that must be borne by the country in producing a product needed for its people because of the separation that the country has. 2. increase efficiency related to cost savings. 3. the existence of problems that threaten common security. 4. Reducing negative losses caused by the actions of individual countries that impact other countries (Holsti, 1988)

Furthermore, according to Kartasasmita, international cooperation is driven by several factors: 1) Advances in the field of technology which make it easier for countries to make relations so as to increase dependence on one another. 2) Economic progress and development affect the welfare of the nation and state. The welfare of a country can affect the welfare of nations. 3) Changes in the nature of war where there is a shared desire to protect and defend each other in the form of international cooperation. 4) There is awareness and a desire to negotiate, one of the methods of international cooperation which is based on that negotiating will make it easier to solve the problems encountered (Kartasasmita, 1997:19).

This research uses two concepts, namely the study concept of the economy and digital security. Radu (2015) cyber security is a set of policies, tools, instruments, risk management in preventing threats from cyberspace (Radu in Kremer & Muller, 2014). Furthermore Carr (2015) Cyber security is a form of threat that cannot be handled using the Westphalian paradigm, namely overcoming threats through state instruments such as the military. Carr emphasized that threats coming from cyberspace are borderless and invisible but the impact is very felt (Carr, 2015). Tapscott's digital economy is a social phenomenon that affects the economic system, where this phenomenon has characteristics as an intelligence space, including information, various access to information instruments, information capacity and information processing. (Tapscott, 1997) while according to Zimmerman, is a concept that often used to explain the global impact on the rapid development of Information and Communication Technology which has an impact on socio-economic conditions. (Zimmerman, 2000)

Meanwhile, studies on digital cooperation between Indonesia and China have been extensively researched, including; Puspita, (2023) article entitled digital sovereign in Indonesia-China trade relations, in this article discusses the Indonesia-China digital trade

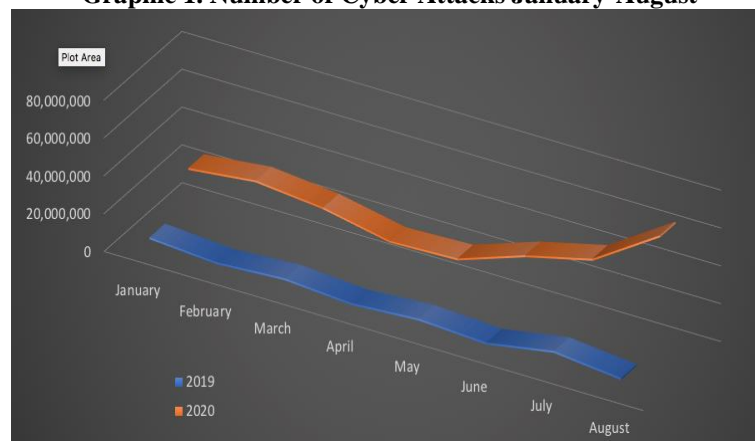
cooperation relationship and the threat of digital sovereignty in Indonesia's trade relations with China. Furthermore, Rafikasari, (2021) entitled Strategy for Indonesian Defence Diplomacy Through Space Cooperation in the Era of the Industrial Revolution 4.0, the result of the discussion of this article is that various threats that emerged from the presence of the Industrial Revolution 4.0 have triggered a country to modernize its defence equipment.

The third research conducted by Jasuma (2021), an article entitled China's Digital Silk Road: The Loss for Indonesia, in this article attempts to discuss DSR from Gramsci's point of view, and the results of this paper conclude that the DSR project, in Gramsci's view, encourages China to spreading its hegemony and taking over Indonesia's economic domination. Murti (2021) entitled comparative study of Indonesia's industry 4.0 policies with three countries of leading group of future of production. The result of this research is that Making Indonesia 4.0 is on the right track to pursue manufacturing competence and respond to future challenges that will be faced by Indonesia and the current baseline, has weaknesses in priority sectors that do not support increasing complexity. lies in the object of research. The author emphasizes cooperation with the economic and security fields.

Discussion

Cybersecurity cooperation with China is something important for Indonesia. Moreover, Indonesia and China have the same threat, namely in the form of a large wave of cybercrimes that can disrupt the national defence system. Based on BSSN data for the period January to August 2020, cyberattack crimes in the form of scanning hacks on open site ports by sending SYN scan packets increased up to 4 times, amount 190 million cyberattacks. Whereas in the previous year, cyberattack attempts amounted to only 39 million. (Kompas, 2020) The increase in cyberattack attempts was directly affected by changes in people's lifestyles during the pandemic.

Graphic 1. Number of Cyber Attacks January-August



Sumber; BSSN 2020

Based on the graphic, in the 2020 period cyberattack attempts increased sharply compared to 2019. In January 2019 cyberattack attempts were only 6.7 million while in the same month in 2020 it rose to 25.2 million. While the decline occurred in April. In April 2019 cybercrime attempts total 3.4 million while in the same month in 2020 there was an increase of around 18 million attack attempts. Furthermore, the spike in cyberattack attempts saw a sharp increase in August 2021, around 63 million. Even though in the same month of 2019 cyberattack attempts were only around 5.8 million.

Meanwhile, according Surfshark China is ranked third in the world with cases of internet data leakage after the US and Russia. China often gets cyberattacks from other countries. (Surfshark, 2022) According to the National Computer Network Emergency Response Technical Team/Coordination Centre of China (CNCERT) since February 2022, China continues to face cyberattacks from abroad. The attack involved taking over domestic computers to carry out cyberattacks on Russia, Ukraine and Belarus. (Antara, 2022) In addition, China is frequently attacked with the Nopen Trojan, which is a remote control tool for Unix/Linux computer systems. Used to steal files, access systems, route network communications, and view target device information. (CNBC, 2022) Cybersecurity analysts suggest the attack originates from abroad. The massive cyberattacks between the two countries are an important factor for both to establish cooperation in the economic sector and digital security. This cyber cooperation is manifested in the form of an MoU between the National Cyber and Crypto Agency and the Cyberspace Administration of China regarding cooperation in the development and capacity building of internet security and technology. In this cooperation adheres to the principle of respect for state sovereignty over cyber space and cooperates to encourage the realization of a multilateral, democratic and transparent international Internet governance system, data security, and the development of a peaceful, safe, open, cooperative, responsible cyber world. and orderly as well as the development of technology and information.

Cybersecurity and technology capacity development collaboration with China is a solution to the problem of cybersecurity development in Indonesia. According to Hasyim Gautama, a number of these problems include: 1) Weak understanding of state administrators or security related to the cyber world which requires restrictions on the use of services whose servers are located abroad and requires the use of a secured system. 2) The legality of handling attacks in the cyber world. 3) The pattern of cybercrime incidents is very fast so that it is difficult to handle. 4) National cyber-security institutional governance. 5) Low awareness of the threat of international cyberattacks that can paralyze a country's vital infrastructure. 6) Our industry is still weak in producing and developing hardware or hardware related to information technology which is a gap that can strengthen or weaken defence in the cyber world. (Hasyim, 2016)

The cooperation between Indonesia and China regarding cybersecurity and technology capacity development is a newly formed collaboration. Deputy for Strategy and Policy for Cybersecurity and Director General for the Bureau of International Cooperation of the PRC Cyberspace Administration. The programs contained in the MoU include 1) Encouraging the exchange of information on regulatory systems related to cyberspace governance 2) Sharing views, experiences, lessons learned, and best practices on protecting vital information infrastructure, responding to cyber threats, and cooperation from each Party; 3) Implement and facilitate dialogue on cyber security issues between governments, institutions, academia, commercial industry and other relevant stakeholders, as well as encourage mutual trust and cooperation in the field of data security. 4) Encouraging and coordinating the visit of cybersecurity experts between Indonesia and China. 5) Facilitate exchanges and training programs on cyberspace defence technologies and methods among relevant stakeholders. 6) Encouraging cooperation in capacity building on cybersecurity issues related to protecting vital information infrastructure, data security management, personal information protection and cyberthreat response. (Ministry of Foreign Affairs, 2021) This MoU is a reference for cybersecurity cooperation between Indonesia and China.

This collaboration is accordance with the Making Indonesia 4.0 Roadmap, by accelerating the development of digital infrastructure, including high-speed internet and digital capabilities with government, public and private partnerships to be able to invest in digital technology such as cloud, data centre, security management and broadband

infrastructure. (Beritasatu, 2021) Previously, Indonesia and China had also signed a memorandum of understanding regarding the development of internet security and technology capacities. This collaboration is the right step for both of them. For Indonesia, this collaboration focuses on efforts to accelerate internet infrastructure development, especially the development of the Palapa Ring network. Moreover, China is one of the most aggressive countries in developing 5G networks. The development of 5G technology developed by Huawei will indirectly accelerate the development of 5G infrastructure in Indonesia, as was done by China in the city of Sheinzen.

For China this cooperation agreement on developing internet security and technology capacity is the first agreement that China has entered into with another country. Furthermore, according to China, this cooperation is very important in terms of the digital economy market. Moreover, Indonesia is currently the largest digital economy market in Southeast Asia. With a Gross Domestic Product of around US\$ 1 trillion, Indonesia is the largest economy in Southeast Asia and its movements can impact to some degree in other Southeast Asian countries, most of which are growing independently. politically from the US and economically neutral. That way, it is possible that Chinese companies, such as Huawei, which are now withdrawing from the European market, can develop with certainty in the Southeast Asian market. (Nugroho, 2021)

Implementation of cooperation between BSSN and a company from China Huawei is an effort to build world class cyber security. This program is an implementation of the MoU between the two countries in the field of human resource capacity building in order to strengthen Indonesia's cyber security while at the same time building public awareness and understanding of security and early detection of cyber threats. This collaboration includes training and workshops in various sectors such as government, industry, society, and the community.

Huawei was also implemented by signing a triple-helix MoU between government, industry and academia. This collaboration is an effort to realize an inclusive digital transformation through the expansion of connectivity which is beneficial in the development of the digital sector. This is because internet network security affects the financial sector, banking, and other digital transactions. This collaboration focuses more on strengthening the information and communication technology ecosystem which has a positive impact on economic growth.

Furthermore, Indonesia and China signed an MoU within the framework of digital economic cooperation. The signing was represented by the coordinating minister for the economy and the minister of commerce of the People's Republic of China. In terms of the creative economy including; the lack of industry attractiveness, the existence of a dominant position for creative businesses, the immature creative industry business model, and the business risks that must be faced; internet infrastructure is inadequate, performance building infrastructure is not up to standard, production machines are expensive, software is expensive for producing creative products and services, lack of content research, and lack of content archiving activities; Lack of expansion and market penetration for creative products and services at home and abroad, mainly caused by a lack of appreciation for local creativity, lack of connectivity of national distribution channels, concentration of foreign markets, high promotion costs, not yet implemented online payment system, and low monitoring of royalties, licenses, rights. (Kominfo, 2019)

This collaboration is one of the concrete deliverables from cooperation among G20 members. The Digital Economy Cooperation is one of the concrete deliverables from cooperation among G20 members. Indonesia is considered to have enormous potential in the digital economy sector as one of the advantages in supporting economic transformation. In 2021, there will be 21 million digital economy consumers in this country, with growth

that will continue to increase significantly, especially in rural areas. It is recorded that 72 percent of new digital economy consumers are in rural areas. Indonesia also has a high digital economy utilization rate, with 98 percent of merchants using digital payments and 59 percent utilizing digital financing. (CNN, 2022) The scope of cooperation does not only cover the government sector, but also the private sector of the two countries which are expected to encourage the development of their respective domestic digital economies.

The focus of this collaboration includes cooperation in exploring digital business opportunities between the two countries, accelerating digital transformation in all sectors, cooperation in the development of digital infrastructure, smart cities, e-commerce, digital technology innovation, and the development of new business formats and models such as telemedicine. The cooperation programs in this scheme include exchange of information and joint research in the field of digital economy, exchange of knowledge, expertise and best practices from the two countries in the field of digital economy strategy, policies, regulations, rules and standards. In addition, the two parties agreed to develop cooperation in information exchange and joint research in the digital economy. And exchange of knowledge, expertise, and best practices in digital economy strategies, policies, regulations, rules, and standards.

For MoU implementation phase, the two parties exchanged knowledge on investment facilitation, as well as research to identify priorities for investment cooperation in the digital economy in new business formats and models. And also the development of cooperation in promoting exploration on the integration of intelligent interactive technology, commercial circulation, transportation, business, digital finance, and digital health. Development of new formats and business models including virtual tourism, telemedicine, telecommuting, online education, with the aim of giving a new impetus to bilateral cooperation in the digital economy. (Republika, 2022) Indonesia and China also agreed to encourage the government, universities, research institutions and companies to carry out joint training programs, meetings and seminars in the digital economy.

Furthermore, in the capacity building training program, Indonesia and China held a joint forum with Indonesian digital science organized by communication sellers. This was followed by collaboration between training to develop Indonesian digital talents. (Kominfo, 2018) This collaboration is to prepare Indonesian human resources to face digital economy and war with other countries in the world. This capacity building is against the backdrop of the rapid development of the digital economy in Indonesia, which must be accompanied by the availability of human resources or local talents who master digital technology. In 2021, to strengthen the digital economy ecosystem, the government will carry out capacity building through the Digital Leadership Academy (DLA). This collaboration is aimed at accelerating the compliance of human resource needs which will accelerate the preparation of Indonesia's digital economy and anticipate uncertainty and complexity in the era of digital disruption. (Kominfo, 2021) This program is a flagship program in collaboration with Tsinghua University as a manifestation of the triple helix collaboration between government elements, business people, and academics in encouraging the acceleration of digital transformation in Indonesia.

And in the next stage, the Indonesian government implemented a creative campus cooperation pattern on the island of Bali. By cooperating with Tsinghua University which was one of the first Chinese Universities dedicated to environmental and research higher education. The Indonesian government is trying to make Bali a world digital talent center, one of which is by inaugurating the Tsinghua South East Asia Center and the United Nations Sustainable Development Solutions Network (SDSN) for South East Asia in the Kura Kura area of Bali, Serangan Island, Denpasar City, Bali. The vision of this collaboration, in addition to developing digital talent, is also to develop sustainable

development solutions in Kura-Kura Bali, and make this island a place to test all technologies and practices to support sustainable development such as reducing energy use, water consumption and disposal and reducing carbon emissions.

Conclusion

Bilateral cooperation between Indonesia and China in the development and improvement of industry 4.0 in the security sector and the digital economy is a mutually beneficial collaboration. China has transferred technology so that it has contributed greatly to the creation of infrastructure development for the digital technology industry 4.0. And for China, Indonesia has contributed greatly to the expansion of its digital technology business opportunities. Moreover, Huawei's China business has been banned in the US market. In addition, this bilateral cooperation is very important for Indonesia, especially in counteracting the massive threat of cyberattacks and digital economic growth. In the economic sector, this collaboration is important for the growth of Indonesia's digital economy, especially in the financial, cultural, agricultural and agribusiness sectors

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