

## CHALLENGES OF INDONESIAN INDUSTRIALIZATION AND TRADE PROBLEMS IN THE INDUSTRIAL ERA 4.0 FOR THE INDONESIAN ECONOMY AND GOVERNMENT POLICY BREAKTHROUGH

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### ABSTRACT

*Industry 4.0 was born in 2011, for Indonesia it has brought benefits to industrialization and trade starting from 24-hour production automation, time efficiency because the process is fast and connected to the internet for unlimited distances with the help of internet signals, saving minds because AI-based technology is able to think to answer our questions and the ability to store and provide big data, production and trading costs are clearly more efficient because paperless, sending data without couriers, calculating the use of production inputs is more accurate so it is more economical. However, besides the advantages, there are also many challenging problems in Indonesia, starting from misuse of online media platforms, cyber crime (illegal taking of company data/hacking, misuse of other people's personal data for online fraud and illegal investment) which causes state losses of more than Rp. 232, 646 trillion until 2023. Therefore, the government has issued a policy breakthrough in the form of policies that have a broad impact and legal regulations that provide strict limits and sanctions.*

**KEYWORDS** *Industry 4.0, Industrialisation, Trade, Cyber Crime, Government Policy.*



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### INTRODUCTION

Since the era of globalization, Indonesia has entered the Industrial Era 4.0 characterized by the increasingly rapid development of information technology which has had a major impact on various sectors such as Industry and Trade, which has changed the industrial and trade paradigm by combining digital and physical technology to create more efficient production, transaction and distribution systems. , flexible, and quickly connect to each other. In short, Industry 4.0,

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industrial players let computers connect and communicate with each other to ultimately make decisions without human involvement.

The combination of cyber-physical systems, the Internet of Things (IoT), and the Internet of Systems makes Industry 4.0 possible, and makes smart factories a reality. There are 4 important principles in industry 4.0, namely interconnection or relationships between humans, tools and machines in communicating with each other using the Internet of Things (IOT) or Internet of People (IOP). In the Industrial 4.0 era, almost all aspects of the economy have been supported by information technology, especially internet use in Indonesia, which has increased rapidly in 2012, there were 63 million internet users, in 2015 it reached 139 million people, even in 2023 it reached 200 million users, to be precise, it reached 215 million users. or 79.34% of Indonesia's population has used the internet.

The development of the manufacturing industry in the industrial era 4.0 is certainly expected to optimize production because it provides benefits for companies and makes production time more efficient. This is of course very influential for industries that rely on expensive and sophisticated manufacturing equipment. There are several benefits felt by the industrial world with the industrial revolution 4.0, namely:

1. Has the potential to empower individuals and communities, creating new opportunities for social, economic and personal development.
2. Minimal risk of human error because the computer has full control so work results tend to be consistent.
3. Greater connectivity, especially through the Internet of Things (IoT). With broader connectivity, companies can monitor and optimize their production systems in real-time, reducing production costs and increasing efficiency.
4. Increased productivity efficiency in the production process so that you can produce goods in greater volumes and rely on fewer resources.
5. Technologies such as big data and artificial intelligence can also help companies make more precise and effective decisions.
6. Data connected to cloud computing is guaranteed to be secure.
7. The system used is more sophisticated and controlled and managed in real time.
8. Increase visibility of goods availability status and delivery processes.
9. Cut costs for handling the supply chain.

Apart from that, technological developments are being felt by the trading business world, for example with the emergence of e-commerce such as Bukalapak, Tokopedia. Lazada, Shopee make it easier for people to sell and connect directly with buyers without requiring a lot of capital for goods and renting display space. Google Ads really helps with advertising widely, the cashier application helps with bookkeeping for small businesses, payment transaction applications supported by m-banking and digital access (QRIS), internet banking, electronic wallets (OVO, Go Pay, Dana, etc.) really make it easier transactions, saving time and costs and accurate in nominal terms.

### **Problems and Challenge**

The impact of the industrial revolution 4.0 era will definitely give rise to an era where technology will bring us to a world that some people call tangible virtuality, which will fundamentally change the way of life, the way of working in the national and international scope. Increased connectivity, increased interaction and the absence of boundaries between humans, machines and other resources, is a change in technological development that will create changes to the way people live in society, the way they work, think, communicate, socialize, consume, transact. and investment that is more practical, fast, independent, creative, but on the other hand individualistic, lacking mental resilience so they are easily persuaded by online fraud, want something instant and completely certain so they are easily persuaded into illegal investment, and a way to entertain themselves so they tend to be consumptive.

Even though it provides great opportunities, the development of industry 4.0 also brings various challenges that need to be overcome, especially the impact. However, the adoption of industry 4.0 also brings challenges for IT users, both individuals and companies. One of the main challenges is cyber security. As more and more connected devices and data are generated, companies must ensure that their systems are secure and protected from cyberattacks. Apart from that, industry 4.0 also requires human resources who have adequate skills and technological knowledge. This can be a challenge for companies that must adapt quickly to meet rapidly changing market needs. Apart from that, the adoption of technology can also affect traditional employment opportunities and produce uncertainty among the workforce, even the rise of fraud under the guise of job vacancies that make a lot of promises. These many problems are interesting to find out more about the impact of economic losses and what government policies will be used to overcome them?

### **Literature Review**

The term Industry 4.0 was first coined at the Hannover Fair, 4-8 April 2011. This term was used by the German government to advance the industrial sector to the next level, with the help of technology. Quoting from the Forbes page, the fourth generation industrial revolution can be interpreted as the intervention of intelligent systems and automation in industry. It is driven by data through machine learning and AI technology.

To understand industrial development, you must understand the history of the development of the world industrial revolution, which is as follows:

#### **1. Industrial Revolution 1.0**

This first revolution occurred at the beginning of the 18th century. The factor that triggered the emergence of the industrial revolution 1.0 was marked by the discovery of steam engine technology at that time, so that the manufacturing process using human power assisted by steam engines became more productive.

#### **2. Industrial Revolution 2.0**

After industrial revolution 1.0, of course we entered the industrial revolution 2.0 phase. This revolution began with the discovery of electricity. Machines have

started to use electricity so they can operate more quickly and efficiently so they can produce a lot (mass production) so they can be exported.

### 3. Industrial Revolution 3.0

At this time we entered the industrial revolution 3.0 phase which probably occurred in the early 1950s. In this revolution, the manufacturing industry had computer technology so it began to rely on computerization for the production process so that machines moved and thought automatically and ran the machines sequentially according to orders and without stopping 24 hours a day. So in this industrial phase workers who do not have computer skills will be eliminated.

### 4. Industrial Revolution 4.0

If we look at history, there was the first computer that was successfully developed as a machine to break codes made by Nazi Germany, the Colossus during World War 2. This giant machine has no RAM and requires a huge amount of electricity. However, after the second world war ended, computers experienced rapid progress because RAM was discovered in the form of diskettes so that computers were able to store data and were only as big as a 14 inch tube TV. Cyber fiber information technology for cable and satellite dish providers which is capable of moving kilos of bytes of data so that the Internet emerged, then the industrial sector has used robots

Then the development of memory in the form of a hard disk became even more rapid so that the size of the computer was reduced to the size of a bag that was easy to carry and was called a laptop. The next development is that memory is reduced in the form of chips so that it becomes an SSD which makes the brain equivalent to a computer can be moved into a gadget (smartphone) the size of a human hand. Progress in this industrial phase was also the forerunner of the change from analog data to very concise digital data, the "Digital Revolution". In Industry 4.0, information transparency occurs which can enable and make it easier for someone to collect various types of important data in the production process and decision making.

Prof. Dr. John Pieris (2018) believes that the Industrial Revolution 4.0 emerged along with the widespread use of science and Information Technology (IT) which will bring changes to the mindset, work patterns and lifestyle of citizens in various countries, where humans remain in the position of the subject of the development of a new civilization based on the industrial revolution 4.0. According to him, the Industrial Revolution 4.0 has 4 (four) characteristics, namely: (1) simple because it is not complicated, (2) a fast process, can be carried out at any time and reaches between countries, (3) cost which is lighter/cheaper/cheaper and (4) can be accessed easily/accessible.

## **RESEARCH METHOD**

The research method used is a qualitative method with existing descriptive statistical analytics and normative juridical matters regarding the implementation of positive legal provisions of government policies in dealing with problems related to the negative impacts of industry 4.0. Types of data and data sources include secondary data from related agencies such as Databoks (BPK), APJII, Kominfo,

OJK, Ministry of Industry and Ministry of Trade as well as government policies obtained through legal product sources related to business and trade (JDIH).

## RESULT AND DISCUSSION

Globalization is a cultural process, where there is a tendency for regions in the world to become one in social, political and economic formats. In this process, it seems as if there is no region anywhere in the world that can avoid the global process. Globalization in the economic sector which is currently sweeping the world can be described as a double-edged sword. On the one hand, it provides material abundance, while on the other hand it creates a myriad of problems that are of concern to human civilization.

Globalization brings massive changes in various fields. In the economic field, globalization has brought about massive changes in market expansion, both in developed countries and in developing countries. Changes in market expansion in industrial countries have had an impact on consumer behavior in various generations, regardless of age or level of society. Excessive consumer behavior that cannot be controlled can cause various social problems in society, including crime. Social life is faced with contradictory and dilemmatic conditions.

The problem related to this matter that has recently become hot is the Tiktok Shop. Indonesia is the number 2 Tik-tok user in the world after the US, which is around 110 million people, as can be seen in the following graph:



Tik-tok Shop, with its large financial resources and global reach, can offer products at much lower prices than local MSMEs. There are even several Tik-Tok shops that match the products sold by locally MSMEs. This really threatens the development of MSMEs, even though MSMEs are the backbone of the economy in Indonesia.

If you look at the Tik-tok shop application platform, it is a social media and advertising medium, so it is not suitable for transactions because it is not systemized and connected to banking so that financial transactions cannot be traced and escape taxation. This creates unequal business competition and is an illegal transaction that is very detrimental to the country. These losses amount to:

**Table 1: State Losses Due to Tik-Tok Shop not Paying Taxes**

No	Name	Accumulative Value / US\$ Billion	Rupiah equivalent (1USD= Rp. 15,000)
1	2021	0,6	9 Trilyun
2	2022	4,4	66 Trilyun
3	sd Okt 2023	15	225 Trilyun

Imagine Rp. 225 trillion does not pay a penny in taxes for the development of this country. State losses amount to 11% PPH tax x IDR 225 trillion, which is IDR. 24.75 Trillion. Not to mention the incalculable impact of the decline in MSMEs, the government acted decisively through the Minister of Trade to issue Regulation of the Minister of Trade Number 31 of 2023 concerning Business Licensing, Advertising, Guidance and Supervision of Business Actors in Trading via Electronic Systems. In this regulation, it is emphasized that social media-based platforms are prohibited from acting as e-commerce or carrying out buying and selling transactions. Starting October 4 2023 at 17.00 WIB, Tik-tok Shop will eliminate the buying and selling feature on its application. Then the Government also regulated other e-commerce through Minister of Trade Regulation 50 of 2020 on September 26 2023. This policy is aimed at creating equal and fair playing field rules for e-commerce in the country.

The Ministry of Industry is trying to encourage increased employment opportunities and improved human resource skills in the Industrial Revolution 4.0 era, including by involving Small and Medium Industries (IKM) in its development, for example by conducting e-commerce training for 13,183 IKM since 2021 and holding an e-smart IKM webinar which supports digital marketing of SMEs which automatically encourages the trade sector to drive the economy. In the world of commerce itself, the internet has created a space for displaying merchandise that can cross world boundaries (between countries) without limits, which can be done by individuals with just a smartphone.

Then the next problem of misuse of information technology is cyber crime which takes people's personal data for fraud with a personal approach online. "Our society is most easily deceived online and online fraud is very high in Indonesia, there were more than 130 thousand reports to us last year," said the Director General of Information Applications (Dirjen Aptika) of the Ministry of Communication and Information, Samuel Abrijani Pangerapan. There have been complaints of 1730 cases of online fraud involving 130 thousand victims and community losses reaching Rp. 78,106 trillion.

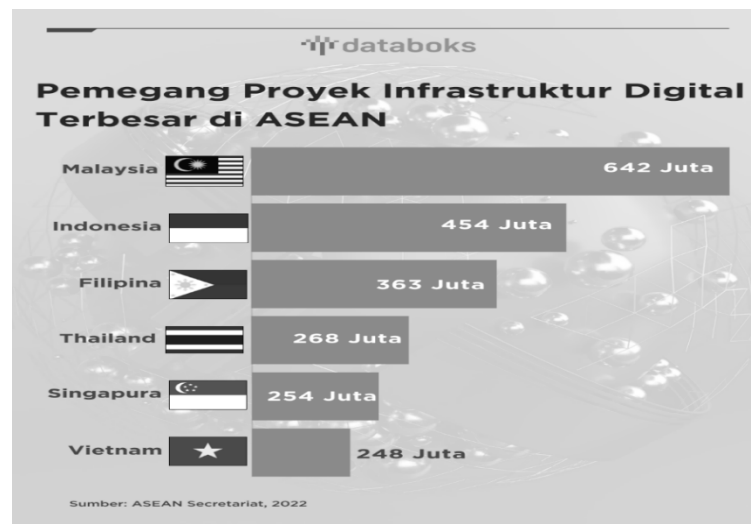
The victims are indiscriminate, from lower to upper middle class, most of whom are digitally savvy. There are various forms of online fraud, starting from mothers asking for credit, gift tax that must be paid up front to be able to collect the prize, job vacancies with down payments for training money, fake transactions of imported goods with fantastic value. In fact, based on a report by the Financial Services Authority (OJK), total public losses due to illegal investment in Indonesia will reach IDR 120.79 trillion in 2022. The value of these losses has reached a record high in the last decade. The amount of investment losses in 2022 even



jumped to 4,655.51% compared to the period the previous year (year-on-year / yoyo) which amounted to IDR 2.54 trillion.

To tackle these online crimes, the Ministry of Communication and Information has asked the relevant banks to block fake accounts used by online criminals. Apart from that, the Ministry of Communication and Information continues to strive to increase the digital literacy of society by involving 12 national universities to provide education to the public, especially in the digital security pillar. Total state losses from Tik-tok, online fraud and fraudulent investments in 2022 will reach 223.646 trillion.

Imagine this fantastic value if distributed as business capital for entrepreneurs and the unemployed in Indonesia, it will certainly be able to overcome unemployment, even the value of capital turnover will generate profits and taxes for the welfare of society and the progress of the country. On the other hand, the dynamics of the globalization process continue to demand the use of Information Technology which is developing rapidly and has a big impact on industry, making quite rapid progress in the field of telecommunications in the form of the internet which has become the main pillar of national and international trade. So the use of Information Technology must be wise and supported by safe devices for data privacy. In this case, Kominfo also continues to build Communication and Information Technology infrastructure for security from cyber attacks.



As explained in Law Number 11 of 2008 concerning Information and Electronic Technology (ITE), it is stated that the development and progress of information and communication technology has caused changes in human life activities in various fields and world relations have become borderless, which has caused significant changes to social, economic and cultural activities. The legal causes and consequences of misuse of information technology and electronic technology (ITE) are clearly stated in Law no. 19 of 2016.

The aim is to prevent (avoid, minimize) unlawful acts that can cause harm and anticipate the emergence of misuse of information technology as a means of committing crimes through cyberspace (cyber crime). The Ministry of Industry, in

order to boost industry in Industry 4.0, has also established the Making Indonesia 4.0 policy, which is an integrated Road Map to implement a number of strategies, with big aspirations to bring Indonesia into the top 10 world economies by 2030. Indonesia's relatively good economic resilience is also considered one of the a potential that can be optimized through the application of Industry 4.0. This is shown by higher growth in 2019 and smaller contraction in 2020 compared to peer countries.

One of the Making Indonesia 4.0 Roadmaps is determining investment in seven priority sectors, namely food and beverages, automotive, chemicals, textiles and textile products, electronics and medical devices. These seven sectors were chosen because they can contribute 70 percent of the total manufacturing Gross Domestic Product (GDP), 65 percent of manufacturing exports, and 60 percent of industrial workers. These sectors in the industrial era 4.0 are expected to be able to create smart factories using the internet of things (IoT) with all electronic systems that are safe, reliable, operate properly and responsibly so that investors feel comfortable and safe.

The proportion of workers in the seven priority sectors in the Making Indonesia 4.0 program in the last five years shows an increasing trend, namely in 2015 it was 5.02 percent and in 2020 it was 5.70 percent, even though it was faced with the conditions of the Covid-19 pandemic. "Seeing this increase data certainly gives hope that technology adoption in seven priority sectors has the potential to increase national economic capability," explained Andi (2022). At the beginning of April 2018, regarding the Creative Industry, the Government through the Minister of Tourism and Creative Economy made a strategy for national industry, especially in facing the industrial revolution 4.0 era, namely focusing innovation on economic strength in the food and beverage, electronics, automotive, textile and chemical industries as well as the launch of "10 Bali New" namely an increase in handicraft industries, handicrafts, creative industries and tourism as a community-driven economy that will be an unmatched contributor to the global economy through the Creative Economy and Tourism (Kemenparekraft, 2018).

The next breakthrough, the latest in the form of Government Regulation in Lieu of Law (Perpu) no. 2 of 2022 concerning Ciptaker, is a government policy in the form of harmonization of legal products from several ministries. This Perpu explains efforts to change regulations related to the convenience, protection and empowerment of cooperatives and micro, small and medium enterprises, improving the investment ecosystem, and accelerating national strategic projects, including increasing worker protection and welfare, carried out through changes to sector laws that have not yet been implemented. supports the realization of synchronization in ensuring the acceleration of job creation, so that breakthroughs and legal certainty are needed to be able to resolve various problems in several laws into one law comprehensively using the omnibus method.

The scope of this Government Regulation in Lieu of the Law on Job Creation includes: 1) improving the investment ecosystem and business activities; 2) employment; 3) convenience, protection and empowerment of Cooperatives and MSMEs; 4) ease of doing business; 5) research and innovation support; 6) land acquisition; 7) economic area; 8) Central Government investment and acceleration



of national strategic projects; 9) implementation of government administration; and 10) imposition of sanctions.

In order to realize the policy direction mentioned above, in the field of updating legislation, it is hoped that legal harmonization can be created in accordance with the aspirations of society and the needs for legal development in the field of trade. Many factors influence the occurrence of legal changes in a country in this industrial era, both those originating from within the country (internal) which bring about rapid and radical changes that affect the current legal system and factors originating from outside (external) as a process of adjustment. national law to international law.

## CONCLUSION

One of the main challenges of industry 4.0 which is based on information technology is the problem of misuse of digital platforms which brings huge losses to the country such as illegal Tilk-tok transactions, cyber crime such as online fraud, illegal online investment and leakage of government agency data with a total loss of IDR 232.646 trillion. In relation to these challenging problems, the government through the relevant ministries has issued firm policies such as Minister of Trade Regulation Number 31 of 2023 concerning Business Licensing, Advertising, Development and Supervision of Business Actors in Trading via Electronic Systems and blocking the savings accounts of perpetrators of fraud and illegal investment. by online. Cyber Crime can also be subject to articles in Law no. 19 of 2016 concerning ITE, the legal causes and consequences of misuse of information technology and electronic technology (ITE) are clearly stated along with the sanctions in Law no. 19 of 2016. The aim is to prevent (avoid, minimize) unlawful acts such as misuse of technology which can cause material losses as well as significant social and environmental impacts. The government, through Kominfo, is also building infrastructure to strengthen, expand and secure internet access.

Apart from that, industry 4.0 also requires human resources who have adequate skills and technological knowledge to run information technology-based applications. In addition, technology adoption can also affect traditional employment and generate uncertainty among the workforce. Therefore, apart from implementing training programs to increase skills and competencies, the Government also carries out legal development, which is carried out both through reconstruction and harmonization between technological advances and existing and non-existing regulations, by the 4 ministers of the Ministry of Industry, Ministry of Trade, Ministry of Cooperatives, UMKM, and Ministry of Manpower. which is stated in Perpu no. 2 of 2022 concerning Job Creation aims to provide benefits for companies so they can grow and develop and open up job opportunities with decent wages for the community.

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