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The Paradox of Indonesian Digital Economy Development

Vience Mutiara Rumata and Ashwin Sasongko Sastrosubroto

Abstract

In line with the rapid growth of the global e-commerce industry today, Indonesia has enormous digital economic potential in the future. The Indonesian government is focusing on developing the digital economy by increasing the connectivity infrastructures as well as the local market. Nevertheless, there are some paradoxes caused by the existing regulations. This paper elaborates on the paradox of digital economy development in Indonesia. By using a mainstream-approach policy analysis method, this study describes the problematic situation of Indonesian digital economy governance. This is a qualitative study where the primary data derive from mostly statutes, government official documents, as well as reports. The discussion consists of (1) e-commerce: the main driver of Indonesian Digital Economy; (2) Indonesian Digital Regulatory Framework and Challenges; and (3) The Paradoxes of Indonesian Digital Economy. Due to various sectors of the digital economy, the discussion focuses on the e-commerce sector.

Keywords: digital economy, e-commerce, paradoxes, Indonesia

1. Introduction

Indonesia's digital economy is under the spotlight. Many studies have confirmed its potential in the future. A study report launched by Google and Temasek/Bain in 2019 states that Indonesia's internet economy grows in high-speed which estimated at 40 billion USD in 2019 and vigorously on track to reach 130 billion USD by 2025 [1]. At the regional level, the internet economy value in the South East Asia region reaches 100 billion USD in 2019 and would increase tripled by 300 billion USD in 2025 [1].

In order to boost the digital economy, the Ministry of Communication and Informatics of the Republic of Indonesia (the MCI) has embarked a national information and communication technology (ICT) infrastructure development. The Telecommunication and Information Accessibility Agency (BAKTI), the MCI's public service agency, launches "Merdeka Sinyal 2020" meaning Independent Signal 2020, which is a program to provide telecommunication access in 5000 frontier, outermost, and underdeveloped areas or known as "3T areas" in 2020 [2]. In addition, the Palapa Ring project was officially inaugurated and operated in October 2019 [3]. The Palapa Ring project is a telecommunication network development project that connects 514 districts/cities in Indonesia, which consists of Marine Cable and Fiber Optic Communication system development. This project was initiated in 2005 but the construction was started in 2016. All these activities are part of the effort to fulfill the Indonesian agreement as a member of WSIS. Besides

the Palapa Ring project, the government also enhances the postal logistics infrastructure in the 3T areas through the Postal Service Obligation (PSO) program. This program is Indonesian government commitment as a member of the UN body—Universal Postal Union (UPU).

Nevertheless, the supporting programs for a sustainable digital economy remain in question. In 2018, the MCI launched a “1000 digital startup” national movement which mainly was a coaching program for future *technopreneurship* in 10 cities including Jakarta [4]. This coaching program consists of several phases: ignition (seminar to increase knowledge to become a *technopreneur*), workshop, hackathon (aims to develop a prototype or software or apps), and Bootcamp. Unfortunately, this program has missed the participants’ target. Instead of participants who have interest and idea to build digital applications, the participants who registered to the 1000 start-up digital web was regular young people who are “curious” and had less commitment about this program [4]. Immediate improvement is necessary or the idea to create new digital *technopreneurs* would be in peril.

McKinsey, in its 2016 report, states that “Indonesia has a long way to go in the digital age” [5]. There is a paradox that the country might not be able to embrace the benefits of modern technology. Although daily internet usage is considerably high, the level of literacy remains to lag behind compared to some other countries in the Southeast Asia region. The digital technology may drive the national economy in a country, but this should be critically assessed particularly in Indonesia’s case. The growing e-commerce apps usage in Indonesia has a direct impact on imported consumer goods [6]. In the meantime, Indonesia is still far behind in terms of digital competitiveness. According to the IMD World Digital Competitiveness Ranking 2019, Indonesia ranks 56 out of 63 countries (Knowledge ranks 56, Technology ranks 47, and Future Readiness ranks 58) [7].

This paper elaborates the paradox of digital economy development in Indonesia. The mainstream-approach policy analysis method is used in order to describe the problematic situation of Indonesian digital economy governance. This is a qualitative study where the primary data derive from mostly statutes, government official documents, as well as reports. The discussion consists of (1) e-commerce: the main driver of Indonesian Digital Economy; (2) Indonesian Digital Regulatory Framework and Challenges; and (3) The Paradoxes of Indonesian Digital Economy. Due to various sectors of the digital economy, the discussion focuses on the e-commerce sector.

2. Mainstream policy analysis

A policy analysis basically is about defining the issues, formulating and implementing the policies to address those issues. Policy-making is a complex process. It involves a wide range of elements of the State in the formulation process, as well as a wide range of impacts in the implementation. The complexity of the policy-making process may need effective policy analysis techniques. There is a suggestion that there are two primary domains of policy analysis: by looking at the process and the content [8]. The process may involve the network of involved actors at the local, national, and even international levels. The content may specifically depend on the issues, context, problems, scope, as well as regulative products and output. The common sense about policy analysis is that a policy process is a political process. In terms of the policy analysis method, it is decided to start by defining the orientation of the policy analysis. There are at least three policy research orientations: (1) mainstream, (2) traditional, and (3) interpretative [9].

This study is a mainstream policy research orientation that focuses on the policy process and also the interaction within the governmental networks involved in [9]. Nevertheless, there is a sliced section between mainstream and interpretative policy research orientations. It can be seen in the similarity of data sources and even the focus of the study [8]. There are at least 11 major mainstream methods that can be used in mainstream and also interpretative policy studies [8]. One of these methods is “frame reflexive policy analysis” which is rooted in the notion of “framing” which is generally understood as the way to define and understand reality according to own perspective. Framing, in the policy-making sense, is a way to examine the problematic situation and formulate normative actions to address it [10]. The policy controversies are common as it emerges due to multiple frames and perspectives of the government (i.e., the Executive, the Legislative, the Judicative), the general public, the community, or the social groups in viewing a problematic situation. Nevertheless, there is a two standpoint in judging someone’s frame: (1) positivism which argues that policy controversies can be solved by fact and logic and (2) relativism which argues that each of existing frames is equally valid [10].

The focus of frame reflexive policy analysis can be about the policy discourse, action frames, rhetorical frames, institutional frames, and even meta-cultural frames [8]. A policy discourse helps policy analysts to define the power behind the policy formulation process [11]; the emerging problematic situation and multidimensionality policy concerns from a media perspective [12].

This focus of policy analysis in this paper is defining the existing discourses about the Indonesian digital economy particularly the e-commerce industry. It aims to understand the complexity of digital economy governance and its impact on creating paradox situations. We conduct a document study as a data-gathering method. The documents mainly are statutes (i.e., the Presidential decree, the Ministerial Regulation, the Government Regulation, and other related regulative documents). This study does not describe the political condition or power that influences policy implementation.

3. E-commerce: the main driver of Indonesian digital economy

3.1 The digital economy in global trend

There are some terminologies to describe today’s new economy: digital economy, attention economy, internet economy, knowledge economy, or network economy, which sometimes are used intertwined. In this paper, we use “the digital economy” terminology. Apparently, the digital economy is industry 4.0’s primary fuel. Industries, governments, and societies are adjusting themselves to this ever-changing business model which disrupts the old fashion one. Many companies have integrated digital technology to provide better products. Meanwhile, the government has integrated digital technology to provide better policies. Nevertheless, the effort to get the best benefit of the digital economy is still challenging.

The cores of the digital economy are the internet and digitization. The better utilization of these cores, the better the product produced and even the more profit gained. This can be seen from big technological companies particularly based in the United States. They are likely to control all of the digital business lines which at the end will inevitably monopolize the global market. The key element of the monopoly denomination is the company growth itself and its ability to make sure its customers continue to use or stick to its products [13]. Google, for example, spent billions of USD to conjure the company not only as of the leader of a search engine in the

world, but also to the leader of “one-stop online activity” kind of apps (email, communication apps, video-sharing, file storage, word-processing service, and so on). In addition, it aggressively reconstructs its position on the internet infrastructure to keep pace with technology.

The Digital Economy, in general meaning, is an economic activity by using digital and computing technologies. The Internet has evolved to provide basic infrastructure for the digital economy. Nevertheless, the impact of this digital economy is not merely just a business or economy, but also social, cultural, politics, and many other facets of human life. Tapscott argues that the digital economy is the economy of “the Age of Networked Intelligence.” He warns the dark side of this era that includes (1) dislocations (many old jobs will have perished); (2) privacy threat (the personal data breaches); (3) polarization of wealth (20% of household worth 80% of country’s wealth); (4) digital gap among society; and also (5) digital slave (technology invades every part of human time and space) [14]. Therefore, government policies should ensure that technology should not create these negative effects, but to serve people.

3.2 Indonesian e-commerce highlights

It is internationally acknowledged that Indonesia has a great digital economy potency. In the 2018 Frost & Sullivan 2018 White Paper, it is mentioned that the digital service industry in Indonesia will increase significantly with a value up to 9528.4 million USD in 2022 [15]. In the region, Indonesia’s internet economy—along with Vietnam—will enjoy 40% growth rate annually which is bigger than Singapore, Malaysia, Thailand and the Philippines [1]. The MCI projects that in 2020, the digital economy in Indonesia can grow 130 billion US dollars or around IDR 1700 trillion, 20% of Indonesia’s total GDP [16].

The growth of digital start-ups in Indonesia can be traced back to 2010. The ride-hailing start-up Gojek was established in 2010. Some of the start-ups in that year have high involvement of foreign investors. Yahoo, for example, acquired Koprol, the Indonesian online social networking service, in May 2010 [17]. Today, some of Indonesia’s digital start-ups show expansion at the global level. Gojek is classified as “Decacorn” which has 10 billion USD valuations [18]. Gojek was the first local start-up that earned this classification along with other 21 companies globally. Following Gojek, the leading Indonesian e-tailing start-up Tokopedia has 7 billion USD valuations. It is predicted that it will get the “Decacorn” title within 2–3 years. These two start-ups have contributed significantly to national economic growth. Tokopedia contributed 58 trillion IDR or 4.1 billion USD to the Indonesian national economy in 2018. The contribution is predicted to grow up to 170 trillion IDR or around 12 billion USD in 2019 [19]. With over 90 million active users, Tokopedia has provided around 3 million new jobs in 2018, while Gojek contributed around 44.2 trillion IDR or 3.13 billion USD to the Indonesian national economy in 2018 [20].

E-commerce remains the star of the digital economy in Indonesia. The Morgan Stanley study finds that Indonesia’s e-commerce market size reaches 13 billion USD in 2018 or has grown 50% each year for the last 2 years [21]. This increasing market size may be driven by the increase in internet access and usage. According to APJII’s 2019 report, there are at least 171.17 million internet users or around 64.8% of total populations [22]. According to We are Social January 2019 report, the average of Indonesian internet users’ daily time spent online is 8 hours and 36 minutes while time spent on social media is 3 hours and 26 minutes. The same report shows there are at least 107 million people (40% of the total population) purchase consumer goods through e-commerce platforms. This number is predicted to grow

continuously due to the speed race of mobile gadget penetration. The annual sales revenue of consumer goods on e-commerce reaches 9.5 billion USD or 41 USD per capita [23]. These data show how lucrative the e-commerce market in Indonesia. There are some factors that influence the growth of e-commerce volume in Indonesia, such as (1) the increasing income per capita; (2) the increasing of various companies in e-commerce industry; (3) the expansion of telecommunication infrastructure and internet access particularly in rural areas; and (4) the changing of consumers' behavior from "offline" to online shops. Indonesia's economy tends to endure amid the uncertain global economic turbulence. The economic growth in 2018 reached 5.17% or increased from 5.07% from 2017 with GDP per capita reaches 3927 USD or 56 million IDR [24]. Even so, Indonesia is still considered as a "middle-income trap" country since the GDP per capita less than 4250 USD.

The variance of existing e-commerce business model in Indonesia is as follows: (1) Classified Ads/listing (e.g., olx.co.id, Berniaga, FJB-Kaskus); (2) Marketplace (e.g., Tokopedia, Bukalapak, Lamido); (3) Shopping mall (e.g., Matahari Mall); (4) B2C online shop (e.g., Berrybenka, Zalora, Lazada, Sociolla); and (5) Online shops on social media (e.g., Facebook, Instagram) [25]. These business models connect three sectors, which are the government, business, and costumers, indirect and interactive ways. But, to build e-commerce platforms requires exhaustive resources. It needs high-performance infrastructures, a huge amount of capital and investment, and even high skilled human resources. The availability of these resources is relatively rare in developing countries such as Indonesia and so this country is still dependent on developed countries. In addition, the advancement of the digital economy may lead to job replacement which requires more technology than human resources. The existing policies and regulations should not only ensure the growth of the digital economy industry but also to address these critical issues.

4. Indonesian digital regulatory framework and challenges

4.1 The Indonesian digital governance

Although Indonesia's digital economy is likely to grow in the future, there is no grand design or roadmap of digital economy development yet. Currently, however, the Indonesian government is drafting the national digital economy strategy [26]. This draft aims to address the upcoming challenges of the digital economy which has not been covered by the existing roadmap of e-commerce 2017–2019 through the enactment of the Presidential decree number 74 year 2017. The existing e-commerce roadmap determines the admission of e-commerce steering committee which consists of inter-sectoral government collaboration to implement at least eight primary programs, which are:

1. Funding which includes: Crowdfunding, SMEs business credits for the digital platform, Angel capital, Seed Capital, and Grants for start-ups.
2. Tax incentive for local investors as well as e-commerce start-ups especially with a turnover of IDR 4.8 billion per year. Also, the availability of equal tax regulation applied both domestic and foreign e-commerce entrepreneurs.
3. Consumer protection includes the development of national payment gateways as well as harmonization in regulatory level for electronic certification, accreditation process, payment mechanism policies, protection of consumers and e-commerce industry, and dispute resolution schemes.

4. Education and Human Resource that includes an incubator program, e-commerce awareness campaigns, and education.
5. Logistics includes the development of a national logistics system, revitalization of the state owned Post enterprise as well as the development of outsourcing of e-commerce logistics facilities.
6. The development of broadband networks throughout Indonesia regions.
7. Conducting a national supervision system model in e-commerce transactions.
8. The Establishment of collaborative and systematic management to accelerate the implementation of e-commerce roadmap [27].

The primary law of internet regulation in Indonesia is Law number 16 year 2019 (amendment of the law number 11 year 2008) on the electronic information and transactions (*Undang-Undang Informasi dan Transaksi Elektronik* or the ITE Law). The President will issue the Government Regulation (*Peraturan Pemerintah* or PP) to implement the Law. The PP to implement the UU ITE is the PP number 71 year 2019 (amendment of PP number 82 year 2012) on the Electronic System and Transaction Management. This PP regulates the global and local Electronic System and Transactions providers which operate in Indonesia, to:

1. Register their service to the Minister of Communication and Informatics.
2. Place the data center and data recovery center in Indonesian territory.

Nevertheless, the revised PP is relenting particularly on the global providers' requirement to place their data center and data recovery center in Indonesian territory [28].

The PP mandates that e-commerce is considered as "strategic electronic system which has a serious impact on public interest and service." Henceforth, the regulation on e-commerce should be carefully taken since this industry is open to global competition. Recently the Indonesian government has enacted PP number 80 year 2019 on electronic-based commerce (*Perdagangan Melalui Sistem Elektronik/PP PMSE*) after long-standing public debate and discussion. However, the PP has no significant difference with existing PP 71 year 2019 which obliges both local and foreign e-commerce business doers (B2B, B2C, C2C, G2B) to meet these requirements such as:

1. Using Indonesian ".id" Top Level Domain address for the website.
2. Using Internet Protocol Address according to the law.
3. Placing data center according to the law.
4. Registering the services to the authority according to the law.
5. Meeting the technical standard as well as having certificate of reliability that has been issued by the authority.
6. Complying other sectoral regulations that relate to the electronic based commerce [29].

In addition, the PP number 80 year 2019 mandates the local and global e-commerce platforms to have an Electronic based Reliability Certificate which issued by the Electronic Certification Provider (*Penyelenggara Sertifikat Elektronik* which commonly known as Certification Authority/CA). The CA is a legal subject that functions as a trustworthy third party that facilitates online transaction security systems with Digital Signature and Public Key Encryption, and also issues a quite range of digital certificate services that includes:

1. Examination of prospective Electronic Certificate holders.
2. Issuance of Electronic Certificates.
3. Validation and Extended Validation of Electronic Certificates.
4. Digital Certificate Revocation.

Based on the Ministerial of Communication and Informatics Regulation number 11 year 2018, this CA should get acknowledgment from the MCI based on three levels: registered, certified, and rooted [30]. By this digital certificate, the identity and legal status of the owner of the signature are cleared and ensured so that it may guarantee the online transactions. Nevertheless, whether this PP would be able to force global internet-based application and content services providers to comply with the Indonesian law remains unclear.

Some existing regulations are obsolete and seem unable to regulate the digital economy sector. Hence, the regulation to protect e-commerce customers remains unclear. The law number 8 year 1999 on Consumer Protection is insufficient to protect consumers in doing e-commerce transactions. For instance, the law mandates the consumers' rights to obtain comfort, security, and safety in using or consuming the goods and/or services [31]. In e-commerce, the provision of the right to obtain comfort may be impeded due to the absence of a physical place where consumers can see, touch, feel and even taste the products before buying. The provision of the right to obtain security on e-commerce transactions is another issue. Hence, the existence of security standards on e-commerce in Indonesia is also questionable.

4.2 The challenges of the Indonesian digital governance

The Research and Human Resource Development department of the Ministry Communication and Informatics (the MCI) proposes the digital platform based regulatory framework particularly in online transportation (including ride-hailing start-up). In **Figure 1**, the digital business platform industry involves several facets: technology, economic, social and politics. Hence, the legal aspect of this industry should embrace what extends the impact on these facets [32].

Nevertheless, the legal issue that emerged, regarding of digital business platform industry, is the inter-ministerial regulation that causes partial legal implementation and authoritarian. In the online transportation case, the MCI is authorized to regulate the digital platform including the company registration, while the Ministry of Transportation is authorized to regulate the safety and service aspects of public transportation. Therefore, it is suggested that the MCI should be the initiator in issuing comprehensive digital platform business regulations.

A similar issue also occurs in e-commerce industry. The practice of inter-ministerial regulation may be challenging particularly in the dynamic environment such as the digital economy. Some regulations concerning e-commerce: the Law number 7 year 2014 on Trade (authorization in the Ministry of Trade), the law number 10

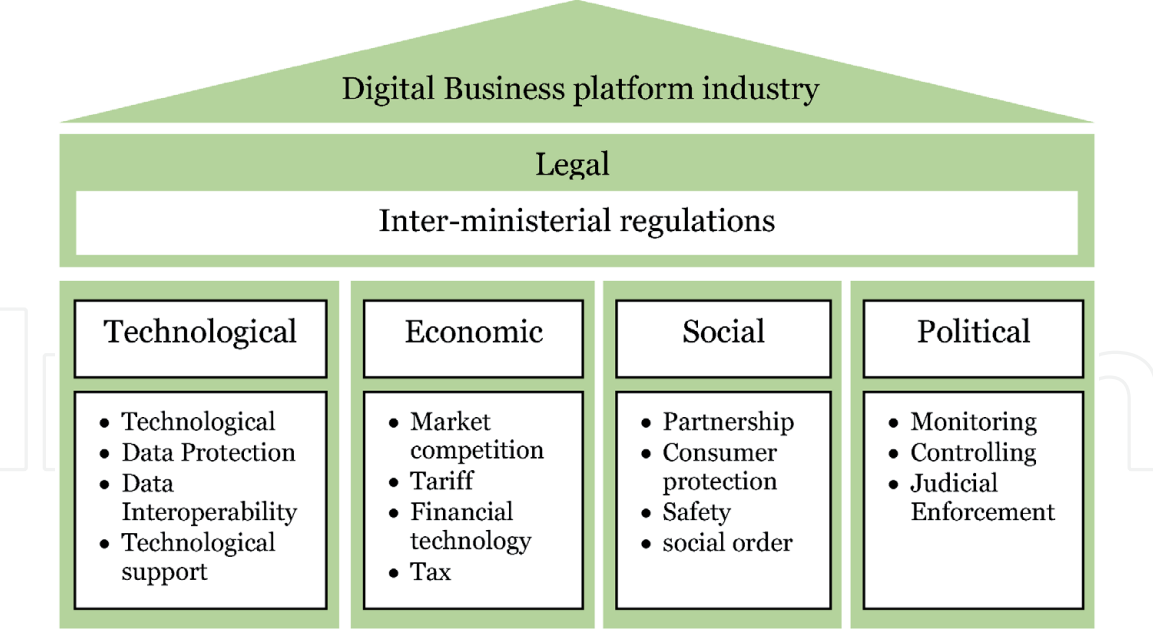


Figure 1.
Digital business platform regulatory framework.

year 1998 on Banking (authorization in the Central Bank), the Law number 25 year 2007 on Capital Investment (authorization in the Capital Investment Boarding Body), the Law number 20 year 2008 on Micro, Small and Medium Enterprises (authorization in the Ministry of Micro, Small and Medium Enterprises), the Minister of Finance Regulation number 112 year 2018 (authorization in the Ministry of Finance), the Law number 38 year 2009 on Postal and the Law number 16 year 2019 on ITE (authorization in the MCI). These laws have a different legal scope so that they might not be enforced comprehensively in the collision sector as digital economy. Currently, there is no single law on the digital economy. However, the President's new proposal on Omnibus Law for several activities a few months ago might be used to set up a single and more supportive law on e-commerce. It should be noted that laws can be initiated either by the Executive and/or the Legislative. Even so, the process to enact a law would take some time if there is a fierce debate between the Executive, Legislative as well as industry. The feasibility of one Omnibus Law on digital economy law needs further study.

Another challenge of digital economy regulation is absent in current regulations of upcoming digital economy issues such as personal data protection and cross border e-commerce transactions. The bill of personal data protection is still an ongoing discussion between the Legislative and the MCI. In the meantime, the regulation for cross border e-commerce transactions is quite challenging. The Central Bank (Bank Indonesia/BI) and The Ministry of Finance are developing the data integration system to monitor cross border e-commerce in Indonesia [33]. The question remains whether this system is sufficient to address cross border issues and needs further study.

The formulation of taxation particularly for global e-commerce providers is conflicting among the authorities. The MCI may loosen the obligation to place a data center in Indonesia territory while the Ministry of Finance will pursue the legal status of the global company as Indonesian taxpayers. This is one of the paradoxes that will be discussed more in the next subchapter.

Whether the Digital economy should or should not be regulated, the regulation policy of the digital economy remains challenging for regulators all over the world. The government may be facing a dilemma situation. The MCI explicitly will less

regulate the digital economy sector in order to create a business-friendly environment [34]. In order to do this, the Ministry has simplified 36 permitting regulations into five regulations for the industry. But the ultimate goal of regulation is to create a conducive environment for local e-commerce platform providers to grow and be able to compete at the global level which at the end will contribute more to the national economy.

5. The paradoxes of Indonesian digital economy

The regulation on the digital economy may be influenced by both domestic and international regulatory frameworks. In e-commerce case, the existing regulations both national and international level would potentially create the paradox which furtherly discussed below.

5.1 The regulative paradox

A good regulation is the one that focuses on the goal which may be addressing certain issues or problems. The paradox of regulation emerges when it does not have an appropriate level of enforcement by the government itself or other relevant stakeholders [35]. The law enforcement does not solely depend on the government, but more to the governance with the involvement of various actors outside of the state to exercise a certain level of control. By this governance paradigm, well-defined and focused goals regulation is needed. To achieve this kind of regulation is not simple since it involves many parties with different interests. The law enforcement remains the biggest challenge to regulate the application and content product providers, particularly to create an equal level of playing field between local and global electronic transaction and system providers especially in the e-commerce industry [36]. The local e-commerce business companies have to comply with domestic regulations, whereas these domestic digital laws seem to do not applicable to global e-commerce companies. Permanent Status registration is the salience issue.

Regulating the digital industry is challenging for the regulators in particular by defining who and how the regulation should be. There are three strategies to regulate the data-driven digital platform according to the European Commission: (1) command-and-control regulation; (2) self-regulation, and (3) co-regulation [37]. A first strategy is a top-down approach where regulation is legal legislation with sanction backup. This strategy, however, may not fit the digital platform industry due to three reasons: (1) it may potentially obstruct innovation and harm the platform provider; (2) the enforcement of the rules may not easily be borne; and (3) the regulation may add more drawbacks for the existing complex issues. Hence, the top-down approach legislation relies on well-informed, well-educated, specially trained regulatory officials. The second strategy is self-regulation which means that regulation lies in the hand of industry. The regulations are defined and enforced collaboratively among the players within the industry.

This strategy may be fit too since the digital platform providers need to be independent with less and relatively no bureaucratic interference for technological adoption and innovation. Nevertheless, the self-regulation mechanism can be mandated by the public authorities to set up a specific standard in the industry. The last strategy is co-regulation which collaboration between government and non-government (private) sectors with distinctive role and task to achieve public policy objectives. The last strategy is considered as the best regulatory approach to regulate the digital platform industry. The public authority set up the objectives, while the

mechanism to achieve these objectives lies on the hand of the private sectors [37]. Thus, co-regulation is also considered as “regulated self-regulation” which acquires reciprocal actions between the regulators and the regulated ones.

The Indonesian government seems to adopt co-regulation strategy to regulate the digital economy. The Indonesian e-commerce platform providers are committed to support the government’s digital economy sectors programs. *Tokopedia*, for instance, expands its services for tax payment gateway, e-government, as well as e-passport and e-ID by collaborating with several city governments in Indonesia [38]. In addition, *Tokopedia* drives local small medium enterprises to do business globally. The average of seller growth on *Tokopedia* reaches 150.4% annually where 86.5% of it is new sellers [19]. Even so, to what extent that the industry determines the formal regulation on digital economy is questionable. In other words, the co-regulation scheme between the government and the private sector in order to face the global competitive challenges remains unclear. In some sector, the co-regulation is clearer. PANDI, for example, as non-government organization is authorized by the government to regulate the Indonesian top level Domain (.id) except second level military (.mil) and governmental domain (.gov). The fact that the government tries to increase internet access as well as logistic infrastructures to support national digital economy, the growing of e-commerce marketplace in Indonesia, however, may potentially harm domestic industries particularly small and medium enterprises. The Ministry of trade at that time claimed that 90% of goods traded on e-commerce marketplace are imported goods [39]. This is contrary to the what is mandated in the PP number 80 year 2019 article 12 that both global and local to prioritize domestic products exchanged on the platform as well as to increase the competition level of domestic products [29]. The government has urged the marketplace providers such as *Tokopedia*, *Shopee*, *Bukalapak*, *Blibli.com* and *Blanja.com* to increase the local products proportion but without clearer regulation [39]. This poses potential threat and should be addressed in further study.

The diminishing of physical space, as the impact of e-commerce, has threatened the sustainability of physical shop, both in modern and traditional market, in the future. The regulations for physical shop are tighter than e-commerce shops. The Minister of Trade regulation number 70/M-DAG/PER/12/2013 on the traditional markets, shopping centers and modern shop guidance, mandates the physical shops to sell 80% of domestic products in their shops. However, the implementation of this regulation may be ineffective since the capabilities of stock management varies among retailers and also the absence of clear mechanism that determine the fulfillment of 80% domestic products [40].

The regulations should be made to make the industry grow properly and can compete optimally with foreign competitors. On the other hand, the existing regulations may hinder it by enforcing the law unequally between the local and global e-commerce players which operate in Indonesia. As an example, Facebook’s status in Indonesia will be discussed further. So far, its status is a service company instead of permanent establishment status (*Badan Usaha Tetap* or BUT) [41]. The Facebook’s status in Indonesia is highly questionable whether it is in accordance or not with PP 71/2019, and also three others regulations on Tax which are: the Directorate General of Tax circular letter number 62/PJ/2013 on e-commerce taxation provisions; the Directorate General of Tax circular letter number 04/PJ/2017 on the establishment of BUT for foreign over application and content services providers in Indonesia; as well as the Ministry of Finance Regulation number 210 year 2018 on the e-commerce taxation. It is worth to be noted that the number of Facebook users in Indonesia reach 64.6 million users in 2018 [42]. It means that Indonesia is a lucrative market for Facebook. In addition, Facebook is more than just a social network platform. It has expanded to marketplace platform where its website uses

Indonesian language. Other similar cases with other platforms and social media must also be taken into account. This is a forthcoming challenge for Indonesian e-commerce industry.

Unlike global companies, the local companies should face tight regulations in order to open its business that includes digital economy sector. There are two important legal aspects for local company to enter the digital sector business namely: the subject and the associated impacts. For legal subject, the regulations may include: the Law Number 40 year 2007 on Limited Liability Companies, the Law Number 17 year 2013 on Social Organizations, the Law Number 17 year 2012 on Cooperatives, and the Law number 28 year 2008 on Foundations.

5.2 The paradox of IT market growth

Despite the debate between utopian and dystopian, the global discourse on ICT and its great impacts on national ICT governance and development should be critically assessed. Some studies found the contrast between global vision and the facts in the country [43].

As briefly mentioned above, the nature of e-commerce regulation in Indonesia is also influenced by international agreements, mainly regulations issued by global institutions such as the World Trade Organization (WTO). The negotiation on e-commerce has been initiated by the WTO E-commerce Working Party in 1998. At the beginning of 2019, there were 76 members of WTO, including Indonesia, which represents over 90% of global trade, urged WTO to update the existing rules particularly to address the changing technologies and issues related to e-commerce. Those existing rules such as the General Agreement on Trade in Services (GATS) and the Central Product Classification (CPC) system have not included internet-based services [44]. In the joint statement of 76 partners involved in 2019 talks on e-commerce, the new rules on e-commerce should reflect:

1. "Improve consumers' trust in the on-line environment and combat spam
2. Tackle barriers that prevent cross-border sales
3. Guarantee validity of e-contracts and e-signatures
4. Permanently ban customs duties on electronic transmissions
5. Address forced data localization requirements and forced disclosure of source code" [45].

The free custom duties on electronic transmissions may be one of the critical topics of discussion at the international forums. The expansion of digital content beyond software and become an integral part of a wide array of distinctive products, goods, and services (game, movie, songs, and others) which then pose challenges particularly for developing countries such as Indonesia. In the 2017 WTO Ministerial agreement, it states that any digital product purchased and transmitted online should be free from custom duties, with no exception. This agreement may be advantageous for foreign producers and local importers. Although it seems to be rather unethical, although it might be legal, the foreign producers may even have the possibility to cut its hardware's selling price and add it to the software's selling price. Since the software can be transmitted through the internet, it can be exempted from customs duty [46]. It is to be noted that the Ministry of Finance has revised its regulation through the Minister of Finance

Regulation number 112/PMK.04/2018 on the Import Shipment Goods Provision. Through this revision, the government made adjustments to the minimum value of import duties and taxes in the context of import on shipments from the US \$ 100 to the US \$ 75 per person per day [47].

The 2017 WTO Ministerial agreement added the long-standing effort to liberalize ICT trade among countries. It may be initiated through the Information Technology Agreement (ITA) in late 1996 and entered in to force in April 1997. Indonesia was one of 29 original signatories as well as the only lower-middle-income country which agreed to this agreement and gradually reduced tariff import on IT ever since. The ITA membership expanded and in the 2015 Nairobi Ministerial Declaration of Trade in IT Products, there were 54 countries (EU counted as one country) agreed for ITA expansion with an additional of 201 IT products that should have zero custom duties [48].

The problem in applying IT, namely the occurrence of productivity paradoxes, occurs because IT investment still has not succeeded in providing the benefits expected by organizations [49–51]. So, the productivity paradox can arise when a company or organization has issued a large budget or investment for IT implementation but it is not followed by the increasing level of productivity. A similar way of thinking can be applied at the country level. If the government failed to balance the IT investment spending with productivity, then it may create a deficit. Today, Indonesia is perhaps one of the biggest net exporters of IT products. The import value of telecommunication equipment in 2017 was 7.426 billion USD increased twofold from the previous year [52]. China is the biggest exporter of telecommunication products in Indonesia lately. In 2017, the MCI issued at least 4053 certificates (out of 7308 certificates) imported telecommunication tools and devices from China [53].

The international agreements, particularly ITA and WTO Ministerial meetings, potentially hinder Indonesian local ICT industry [46]. The domestic IT production shows a deficit of 4.85 billion USD within 1996–2011 [54]. The local ICT producers could not be able to produce IT products competitively since ITA accommodates ICT products but not electronic components needed to produce ICT Products such as Passive and Active components such as Semiconductor, Printed Circuit Board, and many others. PT. INTI, for example, a state owned enterprise that used to produce telecommunication switching, telephone as well as other Telecommunication products, has changed its business core to the system-based solution which includes network management system and subscriber line maintenance system [55].

Nevertheless, these kinds of business models may slowly reduce the role of intermediary businesses such as physical shops and related logistics. The product exchange can be done directly from the seller (producers) to the consumers. Unfortunately, this potentially creates tax losses. The government's supervision over individual e-commerce business and transactions seems to be lag behind. The growing personal shopper of entrusted goods service exists, particularly on social media. This business is quite lucrative for frequent travelers, but the tax losses due to this emerging trend would damage the state's tax income. In 2019, for example, there were at least 422 cases that violate the free custom duty of 500 USD goods brought from abroad up until 25 September 2019 [56].

6. Conclusions

To sum up, Indonesia has great potential for its digital economy in the future. E-commerce sector is the main star of its digital economy which is also lucrative for the global market. This sector is an open market and may still be dominated by

global players. There are two paradoxes of the Indonesian digital economy development: the paradox of regulation and the paradox of productivity.

The main contribution of these paradoxes is law enforcement by the Indonesian regulators that may create an uneven level of playing field between the local and global platform providers. The permanent establishment status of global digital platform service providers, as mandated by Indonesia's ITE law, remains the issue. As a result, this global digital platform service provider should not pay value-added tax. In contrary, it is different from local digital service providers where they should face highly tight regulation just to enter the market.

Also, the government's involvement in global governance particularly relating to e-commerce should be reviewed. The international agreements, particularly ITA and WTO, may cause more import ICT products both hardware and software. As a result, this may weaken the local ICT market and productivity. The government should initiate some programs that may increase local IT-driven productivity so that they can compete with import products. There should be a future study regarding this. These agreements may give an impact on the Indonesian e-commerce industry too.

Also, Indonesia is an active member of global institutions namely WSIS and UPU. As a member of WSIS, Indonesia should develop ICT infrastructure to delineate the digital gap within the regions. As a member of UPU, Indonesia should develop logistic infrastructure. These two infrastructure developments are e-commerce activities enablers. Instead of increasing the local product to be traded on e-commerce platform, the level of import goods is extremely higher which reaching 90%. To address this, the Indonesian government should take fierce action by forcing global e-commerce platform providers should obey the Indonesian regulations and have Permanent Establishment status in accordance with the Law. Another way is by regulating cyber shops or e-commerce platforms to have an obligation to sell local products by 80% as similar to physical shops.

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Conflict of interest

The authors whose names are listed certify that they have no financial interest with the subject matter or material discussed in this book chapter.

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Author details

Vience Mutiara Rumata^{1*} and Ashwin Sasongko Sastrosubroto²

1 The Ministry of Communication and Informatics of the Republic of Indonesia, Indonesia

2 Telkom University, Indonesia

*Address all correspondence to: vien001@kominfo.go.id

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