

Digital Entrepreneurship in Pandemic Covid 19 Era: The Digital Entrepreneurial Ecosystem Framework

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ABSTRACT

This study aims to analyze digital entrepreneurship in the era of the Covid-19 pandemic within the framework of the Digital Entrepreneurial Ecosystem by taking cases on Digital Platform-based SMEs in Indonesia. This research uses qualitative methods with a descriptive analysis approach and contextual techniques. The data collected is secondary data from literature studies and documentation. Based on the analysis of Digital Entrepreneurial Ecosystem elements on digital platform-based SMEs in Indonesia, it is known that the Digital User Citizenship element is still in a fairly weak position due to limited strict policies in regulating the explicit legitimacy and implicit social norms of the digital society in Indonesia. Meanwhile, the elements of Digital Technology Entrepreneurship (DTE) and Digital Multisided Platform (DMP) are in a very promising position to continue to grow along with increasing Digital Platform-based SMEs and the widening of the online market base. Several policies that need to be considered by the government that are still a challenge to accelerate the transition of SMEs to digital platforms, including the availability of fast and equitable internet through the provision of telecommunications infrastructure, development of quality human resources and certainty of network security. A study of the roles and interactions of actors involved in the Digital Entrepreneurial Ecosystem in supporting the dynamics of Digital Entrepreneurship is a suggestion for further research.

Keywords: Digital Entrepreneurship, Digital Entrepreneurial Ecosystem, Platform Digital, Covid 19

1. INTRODUCTION

The Covid-19 pandemic has created a lot of uncertainty, especially economic uncertainty. This includes the speed of recovery, government intervention and policies; changes in consumer spending patterns and their impact on business viability, new business formation, R&D, human capital investment, and other factors that affect productivity in the medium and long term (Baker, Scott R., Bloom, Nicholas., Davis, Steven J., & Stephen J. Terry, 2020). To control the spread of the Covid-19 Pandemic,

several countries have implemented travel restrictions, social distancing and event postponement policies. Southeast Asian countries such as Indonesia, Malaysia, Thailand, Philippines, and Singapore all have taken these measures to various extent. In many countries, quarantine orders to prevent the spread of the coronavirus not only cause psychological impacts such as depression, anxiety and stress (Ghani, 2020; Fabeil, Noor Fzlinda, et al, 2020) but also impact on economic activities such as closing retail places and disruption of product delivery chains (Karabag, 2020; Fabeil, Noor Fzlinda, et al, 2020), the closure of industries such as hospitality and travel, even triggering significant worldwide business closings and further disturbances, including a significant increase in unemployment (Papadopoulos, T., Baltas, K. N., & Balta, M.E., 2020). In Indonesia, for example, airlines, hotels, retail, tourism, maritime, oil and gas and the majority of the manufacturing sector experienced a slowdown due to the influence of social distancing (S&P Capital IQ (Data as of April 9, 2020); EY Analysis, 2020). Transportation, wholesale, and the manufacturing industry are the main contributors to the economic slowdown in 2020 (BPS; Bank Indonesia; Ministry of Finance; EY Analysis, 2020).

In connection with these situations, entrepreneurial action under uncertainty is at the core of entrepreneurship research (Bylund and McCaffrey, 2017), where entrepreneurial action (productive or unproductive) occurs from the difficulties caused to collect and process information about various factors that support a response that is organized and rational (Delmar and Shane, 2004, 2003) and on business performance (Chrisman et al., 2005; Giones, F., Brem, A., Pollack, JM, Michaelis, TL, Klyver, K., & Brinckmann, J., 2020). Literature shows that for entrepreneurs, facing uncertainty and failure is a normal part of business (Ucbasaran et al., 2013; Mandl et al., 2016), even when the uncertainty is caused by a crisis such as the Covid-19 pandemic (Kuckertz, A., Brändle, L., Gaudig, A., Hinderer, S., Morales Reyes, CA, Prochotta, A., Berger, ES C, 2020).

In connection with this entrepreneurial act, over the past two decades or so, a new generation of businesses equipped with digital technology has become an important part of industries, be it finance, communications, advertising, operating systems, and various Internet-based industries from real estate to transportation (Rogers 2016; Stone 2017; Song, AK 2019). The phenomenon of digitization causes various implications through rapid and transformative changes (Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J., 2018). In addition to new businesses created from opportunities arising from digitalization, existing branches and businesses have also changed from offline businesses to online businesses, which form "digital entrepreneurship" as a new form of entrepreneurial activity (Hull et al., 2007; Kraus, S. , Palmer, C., Kailer, N., Kallinger, FL, & Spitzer, J., 2018). Digital entrepreneurship is a phenomenon that arises through technological assets such as the internet and information and communication technology (Le Dinh et al., 2018; Kraus, S., Palmer, C., Kailer, N., Kallinger, FL, & Spitzer, J., 2018). In general, any entrepreneurial activity that transfers assets, services, or the main part of a business to digital can be categorized as digital entrepreneurship (Hull et al., 2007; Kraus, S., Palmer, C., Kailer, N., Kallinger, FL, & Spitzer, J., 2018).

The use of digitization has contributed to the emergence of multi-sided platforms as avenues for value creation, appropriation, and innovation, commonly known as business platformization because it focuses on millions of self-employed workers (Parker 2009), small businesses (Hurst and Pugsley 2011), and fast-growing entrepreneurs (Delmar et al. 2004; Acs et al. 2008; Mason and Brown 2014; Song, AK, 2019). Many multi-side platforms are populated by digital entrepreneurs who generate

millions of applications that power smartphones, Facebook and thousands of other businesses (Haefliger et al, 2010; Sussan, F., & Acs, Z. J., 2017). Digital platforms are digital spaces that provide business opportunities for interconnection between business people and customers (Hsieh and Wu, 2018; Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J, 2018).

The presence of digital platforms is inseparable from life with Small and Medium Enterprises (SMEs), which are considered to be one of the most important sectors of any developed economy. They are the largest source of employment and represent a major share of the GDP of any country. In many cases, they are also a source of innovation. Therefore, supporting Small and Medium Enterprises has become one of the main economic policies for most international players (Razavi, Krause & Bakhtiar, 2010). With the Covid-19 pandemic situation, encouraging SMEs to practice digital entrepreneurship, by switching to using, among other things, digital technology (DT), for example, mobile and collaborative technologies and the Internet of things with next-generation telecommunication networks, big data analytics, artificial intelligence (AI) and blockchain technology. There is evidence in the literature that the strategic adoption of appropriate digital technology can lead to increased competitiveness, productivity, and performance (Dibrell, Davis, & Craig, 2008; Chan, Teoh, Yeow, & Pan, 2019).

In Indonesia, several years ago, efforts have been made to create digital entrepreneurship SMEs based on digital platforms to face the era of the digital industry. As stated by the Ministry of Communication and Information which launched the 1000 digital startup movement policy (Rudiantara, 2019). The role of the Indonesian government in making regulations is very important to encourage the development of new digital entrepreneurs (Indra Caniago, 2019). The efforts of the Ministry of Communication and Information are also in line with the Ministry of Cooperatives and MSMEs who are optimistic that they can increase the number of SMEs to connect with digital platforms by up to 10 million by the end of 2020. The government expects SMEs to proactively take an important role in improving connectivity on digital platforms, it is crucial to survive a pandemic. This effort demonstrates the government's support in advancing SMEs in Indonesia as one of the backbones of the Indonesian economy. This is added to the fact that the digital platform-based industry is an industry that is proven to continue to grow and is needed in the current era of the Covid-19 pandemic (S&P Capital IQ (Data as of April 9); EY Analysis, 2020).

To ensure the sustainability of SMEs based on digital platforms, a concept of a business environment is needed that supports the dynamic network relationships that exist in the digital platform industry. The concept of a network-rich environment is known as an ecosystem. The platform is closely related to the ecosystem (De Reuver, M., Sørensen, C., & Basole, R. C, 2017). The emergence of this interconnectedness of digital platforms and ecosystems then leads to a new and potentially important context for entrepreneurship (Nambisan, 2017; Nambisan, Wright, & Feldman, 2019; von Briel, Davidsson, & Recker, 2018), which is then known as the digital platform ecosystem, hereinafter referred to as the 'digital ecosystem' (Nambisan, S., & Baron, RA, 2019).

The concept of a digital ecosystem can be defined as a distributed adaptive open socio-technical system, with self-organizing, scalability and sustainability properties, inspired by natural ecosystems (Briscoe 2009; Stanley, Jo & Briscoe, Gerard, 2010). Digital ecosystems consist of several independent entities such as individuals, organizations, services, software and applications that share one or more missions and focus on the interactions and inter-relationships between them. (Li, W., Badr, Y., &

Biennier, F, 2012), which are interrelated by shared interests in digital technology prosperity to realize product or service innovation (Selander, L., Henfridsson, O., & Svahn, F, 2013). Previous research has shown that digital ecosystems offer important benefits to new ventures, for example, access to established markets, a better reputation, and increased IPO opportunities (Ceccagnoli, Forman, Huang, & Wu, 2012; Huang, Ceccagnoli, Forman, & Wu, 2013; Nambisan, S., & Baron, RA, 2019).

Furthermore, the digital ecosystem is at the core of the “Digital Entrepreneurial Ecosystem” framework, which was first introduced by Sussan and Acs (2017). By integrating literature on digital ecosystems and entrepreneurial ecosystems, the concept of the "Digital Entrepreneurial Ecosystem" (DEE), is a new framework to guide understanding of entrepreneurship in the digital era, especially digital entrepreneurship in the context of platforms, users, and broader digital institutions (Sussan, F., & Acs, ZJ 2017; Song, AK 2019). However, given the increasing movement of digital entrepreneurship, entrepreneurship research that has addressed this topic and literature on digital entrepreneurship is still quite rare (Kraus, S., Palmer, C., Kailer, N., Kallinger, FL, & Spitzer, J ., 2018). There are still significant gaps in the understanding of entrepreneurship in the digital era because entrepreneurship research does not have a consolidated way of studying the impact of digitalization and has not yet been contextualized in the digital economy (Sussan, F., & Acs, Z. J., 2017). Likewise with the study of the digital entrepreneurial ecosystem. Song, A. K. (2019) who stated that until now there has been little discussion about the Digital Entrepreneurial Ecosystem so that there are still limitations to the resulting Digital Entrepreneurial Ecosystem framework.

Especially in a crisis situation like today, studies on digital entrepreneurship and digital entrepreneurial ecosystem during the Covid-19 Pandemic and its impact on SMEs are still rare. Whereas according to Papadopoulos et al., (2017), extreme disruption (pandemic) has a devastating effect on business and supply chain performance, and disrupts the efficiency, profitability and survival of SMEs (Hughes et al. , 2019; Senyo, Liu, & Effah, 2019; Papadopoulos, T., Baltas, KN, & Balta, ME, 2020). The level of utilization of digital technology by small and medium enterprises (SMEs) has not yet reached the desired level. SMEs have difficulty adapting to integrated company information systems developed for use by large companies (Miklos Herdon, Laszlo Varallyai and Adam Pentek, 2012).

This study aims to analyze digital entrepreneurship in the era of the Covid-19 pandemic within the framework of the Digital Entrepreneurial Ecosystem by taking cases on Digital Platform-based SMEs in Indonesia. This Study is expected to enrich the literature on digital entrepreneurship and digital entrepreneurial ecosystem, especially in the Covid 19 pandemic era, as well as provide policy direction to the government in supporting the growth of Digital Platform-based SMEs in Indonesia.

2. LITERATURE REVIEW

2.1. Digital Entrepreneurship

Different multidimensional combinations between technology and entrepreneurship for this type of digital entrepreneurship are growing. Digital entrepreneurship is a phenomenon that arises through technological assets such as the internet and information and communication technology (Le Dinh et al., 2018). In general, any entrepreneurial activity that transfers assets, services or major parts of a

business to digital can be categorized as digital entrepreneurship (Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J., 2018).

Some definitions of digital entrepreneurship are as follows (Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J., 2018):

- a. Hull et al. (2007) suggest that digital entrepreneurship is a subcategory of entrepreneurship in which part or all of what has become physical in traditional organizations has been digitized, and thus can be seen "as a reconciliation of traditional entrepreneurship with new ways of creating and running a business in the digital age" (Le Dinh et al., 2018)
- b. Davidson and Vaast (2010) state that digital entrepreneurship pursues new business opportunities presented by new media and internet technology
- c. Guthrie (2014) states that digital entrepreneurship is the creation of businesses to generate and generate income from digital goods across electronic networks
- d. Sussan and Acs (2017) argue that digital entrepreneurship includes all agents involved in all types of business, be it commercial, social, government, or companies that use digital technology.

Davidson and Vaast (2010) state that digital entrepreneurship, compared to traditional entrepreneurship, is no longer a function of the entrepreneur himself. Social interactions in the digital environment and the material context of digital technology have become a focus recently. Digital entrepreneurship is built on the existence or development of the digital ecosystem. Mutual adjustments in the digital ecosystem related to products, services, and locations are factors that shape digital entrepreneurship activities (Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J., 2018). This explanation then leads us to the concept of digital ecosystem.

2. 2. Digital Ecosystem

The term digital ecosystem was coined in connection with socioeconomic development catalyzed by information and communication technology (Li, W., Badr, Y., & Biennier, F, 2012). The digital ecosystem initiative aims to encourage cultural change in corporate networks and business practices (Huaiguo Fu, 2006). Business practices include technological and social components that drive interaction in the digital ecosystem (Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J., 2018).

Digital ecosystem, a terminology that emerged in the early 2000s, is defined as a self-regulating, scalable and sustainable system consisting of heterogeneous digital entities and their interconnections that focus on interactions between entities to increase system utility, gain benefits, and promote information sharing, inner and inter-cooperation and systems innovation (Li, W., Badr, Y., & Biennier, F, 2012). The digital ecosystem can be applied in business, knowledge management, services, social networks, and education (Dini et al. 2011; Li, W., Badr, Y., & Biennier, F, 2012; Sussan, F., & Acs, Z. J, 2017).

Digital ecosystem is a "digital environment" inhabited by "digital species" or "digital components" which can be software components, applications, services, knowledge, business processes and models, training modules, contractual frameworks, laws, etcetra. Digital components are ideas that are useful, expressed in language (formal or natural), digitized and transported in ecosystems, and which can be processed by humans or computers. The digital ecosystem infrastructure supports the description, composition, evolution, integration, division, and distribution of digital components and knowledge (Huaiguo Fu, 2006; Li, W., Badr, Y., & Biennier, F, 2012).

Smith et al. (2017) conceptualize a digital ecosystem as an interaction that provides entrepreneurs with access to resources that will be used to achieve the desired results. Characterization of the effectiveness of digital ecosystems can be done through the concept of bridging and bonding. Bridging refers to the connections of actors in a network, ideally reaching as many diverse connections as possible to gain access to new knowledge. Bonding is referred to as actor behavior in networks (Kraus, S., Palmer, C., Kailer, N., Kallinger, F. L., & Spitzer, J., 2018).

2.3 Entrepreneurial Ecosystems

Entrepreneurial ecosystem is rapidly emerging as a promising area of research in entrepreneurship (Acs et al. 2017; Cavallo et al. 2018; Malecki 2018; Jacobides et al 2018). Moore (1993) and later Iansiti and Levien (2004) adapted the strategy literature framework as business ecosystems. Since then, various other literatures have followed: knowledge ecosystems (Owen-Smith and Powell 2004), innovation ecosystems (Adner 2006; Adner and Kapoor 2010; Autio and Thomas 2014), entrepreneurial ecosystems (Cohen 2006; Isenberg 2010; Feld 2012; Stam 2015), digital ecosystems (Boley and Chang 2007; Weil and Woerner 2015), platform ecosystems (Gawer and Cusumano 2008; Rysman 2009), organizational ecosystems (Mars et al. 2012), and others (Acs et al. 2014; Song, A. K, 2019).

Cooke (2016) argues that emerging research on entrepreneurial ecosystems involves an evolutionary, social interactive, non-linear approach, and the interactive nature of the entrepreneurial process. The entrepreneurial ecosystems framework highlights entrepreneurial opportunities to find, pursue, and scale new ventures by measuring attitudes, aspirations, and abilities (Acs et al. 2014). Entrepreneurship is then a conditional output of the (eco) system, and healthy entrepreneurial ecosystems are characterized by their ability to generate, support, and nurture entrepreneurship to grow high. Along with technological advances in general and digitalization in particular, it raises the question of ‘what is the role of digital technology in entrepreneurship and its environment?’ (Song, A. K, 2019). This question leads us to the next concept, namely digital entrepreneurial ecosystems.

2.4 Digital Entrepreneurial Ecosystems

Digital entrepreneurial ecosystems (DEE) integrate two existing ecosystem literatures, namely entrepreneurial ecosystems with a focus on agency and the role of institutions and digital ecosystems with a focus on infrastructure and digital users (Sussan and Acs, 2017). The digital entrepreneurial ecosystems consist of entrepreneurs creating digital companies and innovative products and services for multiple users and agents in the global economy (Schumpeterian, 1911; Susan & Acs, 2017). Entrepreneurs value the potential of the digital ecosystem not only as a business model, but also as a digital innovation platform that provides an environment for innovators to try out ideas and contribute to digital solutions through collaborative arrangements (Hsieh and Wu, 2018; Kraus, S., Palmer, C., Kailer, N., Kallinger, FL, & Spitzer, J., 2018).

In further research, Song, A. K (2019) developed a digital entrepreneurial ecosystem framework and identified 3 constituent elements, namely:

- a. Digital user citizenship or abbreviated as DUC is an element in the digital entrepreneurial ecosystem that discusses explicit legitimacy and implicit social norms that allow users or internet users to participate in digital society, while

- supporting entrepreneurial activities, either as producers or consumers (Sussan and Acs, 2017; Song, AK 2019).
- b. Digital technology entrepreneurship or abbreviated as DTE is an element in the digital entrepreneurial ecosystem whose discussion includes industry players, application developers and all other agencies that produce goods and services that are connected to the platform. Digital technology entrepreneurship creates entrepreneurial innovation and increases platform efficiency. The bigger the user base, the bigger the market segment and niche. A good platform sponsor provides resources that facilitate the entrepreneurial innovation process and offers a fair profit sharing plan (Song, A. K. 2019).
 - c. Digital multisided platform or abbreviated as DMP is an element in the digital entrepreneurial ecosystem that discusses intermediary transactions for goods and services, as well as a medium for knowledge exchange that enables and facilitates experimentation and value creation (Song, A. K. 2019). Digital multi-sided platforms are demand-side intermediaries whose core competence is in reducing or eliminating transaction costs through timely, accurate, and quality matching (Coase 1937; Rochet and Tirole 2003; Evans and Schmalensee 2016; Song, A. K. 2019).

The main contribution of the digital entrepreneurial ecosystem framework is to open a dialogue on the role of technology in general and digital technology in particular in relation to entrepreneurial ecosystems. One possible impact of digital technology on entrepreneurial ecosystems may be its spatial dimension. In other words, digital entrepreneurial ecosystems can be local, global, or more (Cavallo et al. 2018; Song, A. K. 2019). DEE's size depends on the adoption, absorption and diffusion of digital technology. The result of the digital entrepreneurial ecosystem is a sustainable ecosystem (Sussan and Acs, 2017).

3. RESEARCH METHOD

This study aims to analyze digital entrepreneurship in the era of the Covid-19 pandemic within the framework of the Digital Entrepreneurial Ecosystem by taking cases on Digital Platform-based SMEs in Indonesia. The theory used in this study refers to the concept of the digital entrepreneurial ecosystem developed by Song, A. K (2019), with the consideration that the concept developed is an improvement from what has been there before. In addition, the elements of the digital entrepreneurial ecosystem concept developed by Song, A. K (2019) are more in line with the characteristics of digital platforms in Indonesia.

This research uses qualitative methods with a descriptive analysis approach and contextual techniques. The data collected is secondary data from literature studies and documentation in the form of journals, government documents, books, online news, and websites related to the concept of digital entrepreneurship, digital entrepreneurial ecosystem, data on SMEs and digital platforms in Indonesia as well as other relevant data with the topic being studied.

To ensure the validity of the data, a triangulation process was carried out using data and literature from previous studies (Miles and Huberman, 2007).

4. RESULTS AND DISCUSSION

4.1 Development of Digital Platform-Based SMEs in Indonesia

In Indonesia, the development of the digital world is quite rapid. Many Indonesian digital platforms have started to emerge offering all kinds of innovations that make it easier to carry out activities. Starting from online transportation, travel, to e-commerce companies, they also enliven the digital economy in Indonesia. The emergence of digital platforms helps Indonesia's creative products to compete at national and international levels. Temasek, Google, and Bain & Company (2019) reported that the growth of Indonesia's digital industry at the end of 2019 was the largest in Southeast Asia by touching the figure of USD 40 billion or reaching IDR 566.28 trillion. This achievement beat other ASEAN countries such as the Philippines (USD 7 billion), Malaysia (USD 11 billion), Vietnam (USD 12 billion), Singapore (USD 12 billion), and Thailand (USD 16 billion). This achievement makes Indonesia the largest contributor to the development of the digital industry in Southeast Asia (Alpha JWC Ventures, 2019).

This of course cannot be separated from the high level of internet usage in Indonesia. Based on data from Statista (2019), from 2009 to 2019 Asia experienced a very significant increase in Internet users every year compared to other continents, starting from 764.4 million to 2.3 billion people, where Indonesia is number 3 with as many as 171,260,000 people, after China (854,000,000 people) and India (560,000,000 people) (IWS 2019; Decky Hendarsyah 2019). From this data, it can be seen that Indonesia is the largest Internet user in Southeast Asia and is likely to increase every year. This is an opportunity as well as a challenge for the Indonesian business world, especially the digital industry.

The transformation of businesses into the digital industry must also be carried out by Indonesian SMEs. The number of SME entrepreneurs in Indonesia continues to grow every year. Based on data from the Central Statistics Agency (2017), the number of SMEs in Indonesia has reached 56.5 million. Of the total workers in Indonesia which reached 110 million people, 107 million of them are included in the structure of SMEs. The development and empowerment of SMEs is a strategic step in facing the ASEAN Economic Community, especially this sector has a role in increasing employment and improving the Indonesian economy (diskumkm.jabarprov.go.id, 2017).

However, with the Covid-19 pandemic that has hit the world, including Indonesia, it forces people to immediately adapt to new conditions and behavior (new normal). Digital activities then become people's daily lives, and encourage Small and Medium Enterprises (UKM) to carry out business transformation more quickly (republika.co.id, 2020). In the current era of the Covid-19 pandemic, digital platforms can be the right solution to help SMEs maintain their business. This was revealed by the Director General of Information and Public Communication (IKP) of the Ministry of Communication and Informatics (Kominfo) Widodo Muktiyo (2020) that the Government is fully on the side of SMEs to survive the negative impact of the spread of Coronavirus Disease 2019 (Covid-19) in the economic sector through digital platform. Widodo (2020) explains that the products of SMEs who use digital media platforms have a high opportunity to be purchased by people who are browsing the internet. In addition, Member of Commission I DPR RI, Hillary Brigitta Lasut (2020) revealed that SMEs are the largest economic players in Indonesia with at least 60% contributing to Gross Domestic Product (PDB), which will improve Indonesia's digital industry if the potential of SMEs can be lifted through digital platform and electronic commerce (kominfo.go.id, 2020).

However, based on data from the Ministry of Communication and Informatics (Kemkominfo, 2020), to date only eight million SMEs have been digitized. In fact,

changes in consumer behavior by limiting physical interactions and reducing activities outside the home can provide greater opportunities for SMEs connected to digital ecosystems to survive or thrive amid the Covid-19 pandemic. Unfortunately, this opportunity has not been optimally utilized by SMEs. Out of the approximately 64 million SME population in Indonesia, only 13 percent are connected to the digital ecosystem. Digital Marketing Expert Adreas Agung Bawono (2020) added that online consumer behavior through various social media facilities in meeting their daily needs to be quickly adapted by SMEs by digitizing business (republika.co.id, 2020). In addition, the Ministry of Cooperatives and SMEs through the Deputy for Business Restructuring, Plt. Deputy for Business Restructuring, Ministry of Cooperatives and SMEs Herustiati (2020) said that increasing the competitiveness of SMEs is very important in the midst of increasingly high global competition. SMEs must be able to face this global challenge by continuing to improve their capacity and business competence by utilizing technology and making product innovations. Herustiati (2020) said the government also hopes that SMEs will not only become local players, but also global players by utilizing various digital platforms to reach a wider target market (money.kompas.com, 2020).

To support the acceleration of the transformation of SMEs into digital platforms, the Indonesian government is still facing several challenges. Thus, it needs well-planned strategies to address these challenges, as follows:

1. Availability of high-speed and widespread Internet through the provision of telecommunications infrastructure
2. Development of quality human resources
3. Network Security

From this explanation, the digital entrepreneurial ecosystem in supporting digital entrepreneurship, in this case SMEs based on digital platforms in Indonesia, is interesting to study. The following section will explain the analysis of the digital entrepreneurial ecosystem in supporting digital entrepreneurship (SMEs based on digital platforms) in Indonesia based on digital entrepreneurial ecosystem elements which refer to Song, A. K (2019).

4.2. Analysis of Digital Entrepreneurship-based SMEs in The Era of The Covid-19 Pandemic Within The Digital Entrepreneurial Ecosystems Framework

4.2.1 Digital User Citizenship (DUC)

Digital user citizenship or abbreviated as DUC is an element in the digital entrepreneurial ecosystem that discusses explicit legitimacy and implicit social norms that allow users or internet users to participate in digital society, while supporting entrepreneurial activities, either as producers or consumers (Sussan and Acs, 2017; Song, AK 2019). Explicit legitimacy and implicit social norms mean that users participate in a digital society by paying attention to open rules and social norms in society (Lindblom, 1994; Ponny Harsanti, 2011). Explicit legitimacy and implicit social norms are very important to achieve a balance of information amid current information disclosure. All social institutions, including digital platforms, operate in society through social contracts, both explicitly and implicitly, where the viability of growth is based on the end result that can be socially provided to the wider community, especially in this case, economic benefits, as well as providing natural public education both for the empowerment of the digital community and the digital platform industry itself (https://mediakonsumen.com, 2018). In using digital platforms, users' behavior is often

goal-oriented when they choose media and enjoy what the mass media presents (media content). Their choice of media is also largely determined by the information and satisfaction they have anticipated beforehand (Morissan, 2014).

As previously explained, in Indonesia, digital platforms are becoming a trading model that is increasingly popular in society along with the increasing growth of the internet (Dedi Purwana, Rahmi & Shandy Aditya, 2017). The government as policy maker is also responsible for designing explicit legitimacy and implicit social norms in the digital platform industry in Indonesia. The Government's efforts are coordinated by the Coordinating Ministry for Economic Affairs trying to make Indonesia the largest Digital Economy Country in Southeast Asia by 2020, manifested in the form of a guide in digital platform trading called the National e-Commerce Roadmap. One of the supporting policies is the e-Marketplace (Safe Harbor) Protection Rules Policy. Then from the Indonesian e-Commerce industry players suggested to the government the importance of protection for e-Commerce Platform providers so that they can encourage innovation. E-Commerce platform providers who are legal subjects of the ITE Law, namely as Electronic System Administrators, are responsible for the operation of their electronic systems, namely by organizing Electronic Systems reliably and safely. However, e-Commerce platform providers are also vulnerable to abuse by account owners from prohibited activities carried out by merchants or account users so that the Platform Provider can be perceived as being involved in these illegal acts (kominfo.go.id, 2016).

Therefore, the Ministry of Communications and Information Technology issued a policy in the form of a Circular of the Minister of Communication and Information Technology of the Republic of Indonesia Number 5 of 2016 concerning Limits and Responsibilities of Trading Platform Providers and Merchants Through Electronic Systems (Electronic Commerce) in the form of User Generated Content. The purpose of this policy is to provide guidelines for Platform Providers or Electronic System Operators and Merchants in terms of their limits and responsibilities in Electronic Transactions in the form of electronic commerce in the form of user generated content. The aim of this policy is to implement a safe, reliable and responsible electronic system so as to grow the trading ecosystem through electronic systems. Legal protection for Platform providers and traders (merchants), and Platform Users by ensuring the limits and responsibilities of each in conducting trading activities through electronic systems.

In addition to the rights and obligations of platform providers and traders (merchants), the content delivered on the platform is also regulated. Content that is prohibited from being uploaded on digital platforms includes:

1. Goods and/or services that contain negative content (pornography, gambling, violence, and content for goods and services that violate laws and regulations)
2. Goods and/or services that do not have a license to be traded in accordance with statutory provisions

Obligations and responsibilities of digital platform providers include (kominfo.go.id, 2016):

1. Provide terms and conditions for Digital platform users and reporting tools
2. The mechanism for removing and blocking prohibited content
3. Obligations and responsibilities of merchants (merchants)

Although the government has formulated policies regulating Platform Providers and Merchants Trading Through Electronic Systems (Electronic Commerce), however, in its implementation, Maya Rachmawaty, a specialist in IT, considers that Indonesia does not have enough specific laws regulating content in the digital world which may conflict with specific social norms. In regulating digital media, the government implements a 'deregulation' or 'self-regulation' strategy where the main rules only impose limits, then the detailed rules are returned to the respective platforms. But the government should at least increase control or surveillance of digital media by "cooperating" with individual social media companies. This is important because unlike conventional media, digital media is an unlimited source of information, involving many parties, countries and cultures, so managing it in detail requires many parties. Every time there is a violation of content on the internet, not only the individual who violates needs to take full responsibility and receive punishment, investigation on the responsibility of the platform or social media company is also needed to inquire for the possibility of neglect in monitoring and letting the content circulate at will. In Indonesia, the government has been using blocking threats to force social media companies to be more responsible for the content on their platforms (www.kompas.com, 2020).

The importance of a series of explicit legitimacy and implicit social norms in digital user citizenship is to support digital societies to participate in the digital world congruently. As the Indonesian people have become an integral part of the development of the world of digitalization, of course they will participate in the digital world. Data from the Indonesian Internet Service Providers Association (APJII) in 2017 shows that Indonesian people's penetration of the internet reaches 143.26 million people. Of this number, 87.13 to 89.35 percent of them used social media FaceBook, WhatsApp, and Instagram with 130 million, 99.2 million and 53 million people respectively. As many as 75 percent of these internet users are Indonesian residents aged between 13 and 18 years (Nur Hidayat Sardini, 2018). This data shows the size of the users who participate in the digital society in Indonesia.

Not only paying attention to the explicit legitimacy and implicit social norms that govern digital society in participating in the digital world, digital user citizenship elements also examine how the role of digital society in supporting entrepreneurial activities, especially in this case is a digital platform. In the context of entrepreneurship, the sophistication of digital platforms can accelerate the ability of entrepreneurs to make changes that are needed by society, but on the other hand it can weaken the ability of passive individuals (average person) to respond to environmental demands, seize opportunities, and initiate and make meaningful changes (Caughil, 2017 ; Nia Juliwati, 2018). Related to the government's efforts to accelerate SMEs to digitize, the digital community can support the efforts of the Ministry of Cooperatives and SMEs together with the Ministry of Communication and Information Technology and all stakeholders to jointly support SMEs in promoting their products with digital platforms, by consuming and creating an interesting content from SME products. One example of the participation of the initiative was carried out by Nurbaya Initiatives in collaboration with the Ministry of Cooperatives and SMEs together with the Ministry of Communication and Information Technology by creating the 100.000 SMEs Go Online Movement. The 100,000 SMEs Go online movement aims to help realize the Government's commitment in optimizing the sales of SME products through a digital platform which also commemorates National Online SMEs Day. The 100,000 SMEs Go online movement is expected to be able to accelerate Indonesia's vision to become "The

Digital Energy of Asia” with an emphasis on the strength of national SMEs that can become players in it (kominfo.go.id, 2017).

4.2.2 Digital Technology Entrepreneurship (DTE)

Digital technology entrepreneurship or abbreviated as DTE is an element in the digital entrepreneurial ecosystem whose discussion includes industry players, application developers and all other agencies that produce goods and services connected to the platform. Digital Technology Entrepreneurship creates entrepreneurial innovation and increases platform efficiency. The bigger the user base, the bigger the market segment and niche. A good platform sponsor provides resources that facilitate the entrepreneurial innovation process and offers a fair profit sharing plan (Song, A. K. 2019).

Digital entrepreneurship with its ecosystem plays a significant role as an accelerator for digital-based start-ups. In the digital industry, technology has become an integral part of organizations. Digital technology, which is practically manifested in the growth of the functions and roles of information and communication technology (ICT), is driving business growth and enabling the development of startup businesses. Local business actors can immediately reach a wider market through personalization of applications and services and ease of connectivity (Nia Juliwati, 2018). Players in the digital platform industry in Indonesia can be divided into 2 categories, namely (Tedy Ardiansyah, 2020):

1. A digital platform that supports SMEs by empowering micro-entrepreneurs, having a community, selling digital training products, increasing income and field teams, and a business model, namely profit sharing, application of features and bonuses for partners.
2. Digital platforms that generate new business models, namely not only supporting SMEs, but also business models that can support one another.

The use of digital platforms is considered to be the key for business actors to continue to innovate and expand. CTO of IBM Indonesia Panji Wasmana (2020) said the digital platform can continue to be developed along with the growing ecosystem of each company in running a business. When companies shift their focus from product to platform, they can take advantage of that ecosystem and turn competitors into partners and complement the resources of other companies. With digital platform technology, each company can provide maximum business results, because companies can use technology to create a faster, more dynamic, and personal user experience (teknologi.bisnis.com, 2020).

Not only business actors, application developers are also increasingly motivated to develop their products more perfectly in the world of digital platforms. One of the Digital Platform application developers in Indonesia who has an important role in helping SMEs survive the Covid-19 pandemic is Youtap Indonesia. Youtap Indonesia introduced the Trade application to bring Small and Medium Enterprises (SMEs) to adapt to the era of new habits during the Covid-19 pandemic. Youtap itself was only established in February 2020, but currently has 50 thousand merchant partners and has processed more than 1 million transactions. Youtap Indonesia's CEO, Herman Suharto (2020) revealed that Youtap is always consistent with the vision to be present at every level of business in helping and empowering business actors to get the best achievements. The Youtap Trade Application will enable merchant partners, especially SMEs, to have the capability to digitize their businesses, where this capability is crucial

to be more progressive and more productive in developing their business (www.indotelko.com, 2020).

The activities of business actors and application developers and other agents involved in digital platforms cannot be separated from entrepreneurial innovation. As the elements of digital technology entrepreneurship explain that business actors, application developers and agents play a major role in creating entrepreneurial innovation and increasing platform efficiency (Song, A. K. 2019). This is because an entrepreneur has special characteristics in the form of the ability to capture and create opportunities and come up with new things to fill and create market needs (Parviainen, et.al, 2017; Nia Juliwati, 2018). The positive impact of digital platforms on entrepreneurship occurs in the form of promoting innovation, creating job opportunities, increasing productivity both socially and economically so that it is a priority for governments in various countries (Indra Caniago, 2019), including Indonesia.

In Indonesia, there are several forms of digital platform businesses that have succeeded in achieving high investment value both as decacorn and unicorns, including Gojek, Grab, Tokopedia, Bukalapak, Halodoc, and Ruangguru (Technologue.id, 2020). Seeing this potential, the Economist of the Institute for Development of Economics and Finance (Indef) Bhima Yudhistira (2020) proposed that local governments collaborate with this successful digital platform to help the recovery of SMEs in their respective regions. According to him, strengthening the digital entrepreneurial ecosystem plays an important role in encouraging the penetration of SMEs in marketing products. The government, especially local governments need to improve the competitiveness of SMEs in various ways through mentoring, clustering to improving the quality of the SME workforce. In addition, local governments are expected to provide data package subsidies to affected SMEs to ease the burden on SMEs when they want to switch to digital platforms, for a minimum of 6 months to help SMEs go-digital faster (bandung.bisnis.com, 2020).

Opportunities for SMEs in Indonesia to be able to generate maximum benefits on digital platforms, of course, must be supported by a broad user base available. As stated in digital technology entrepreneurship, the wider the user base, the bigger the market segment and niche. This is of course inseparable from the existence of the internet and social media as a form of digital platform which has now become an inseparable part of most people's lives, social media is a bridge in socializing and fulfilling strategic goals digitally (Wang & Hyun 2017 ; Sahai et al. 2018; Sokolova and Hajer 2019; Arora et al. 2019; Jacobsona et al. 2019; Kawafa and Doga 2019; Decky Hendarsyah, 2020). Based on data produced by We are Social, a digital marketing agency in America, the most used social media platforms in Indonesia as of January 2017 are Youtube (49%) and Facebook (48%). The next position is occupied by Instagram (39%), Twitter (38%), Whatsapp (38%), and Google (36%). The rest are occupied sequentially by FB Messenger, Line, LinkedIn, BBM, Pinterest, and Wechat (Kemp, 2017). As many as 45% of internet users in Indonesia prefer to shop online. This figure is expected to continue to increase in line with the growth of internet users in Indonesia. This reflects the behavior of Indonesian society which increasingly leads to a digital lifestyle (Dedi Purwana, Rahmi & Shandy Aditya, 2017).

Given the large share of the digital consumer market in Indonesia, business players playing on digital platforms must strive to produce entrepreneurial innovations and improve the efficiency of their platforms. A digital platform must have resources that facilitate the innovation process. The power of data science, cognitive technology and processing power is the combination that opens up the possibility of operating

digital platforms. Utilization of smart machines and software intelligence enables companies to achieve higher levels of operational efficiency and innovation. The growth of the digital industry basically depends on the use of digital technology by individuals, companies and governments. In order for hardware, software and connectivity to play a role in value creation and increased productivity, digital technology must be utilized effectively (Nia Juliwati, 2018). Not only that, human resource capacity is also an important resource that can accelerate entrepreneurial innovation, value creation, market penetration and digital platform efficiency. It is hoped that from all of that, besides being able to facilitate the process of entrepreneurial innovation as described in digital technology entrepreneurship, if business actors are included in the category of digital platforms that support MSMEs, they will be able to offer a fair profit sharing plan (Song, A. K. 2019). A good digital platform sponsor will empower micro-entrepreneurs, have a community, sell digital products, provide training, increase income and have a field team that helps with business models that can provide profit sharing, in-app features and fair bonuses for partners (Tedy Ardiansyah, 2020).

4.2.3 Digital Multisided Platform (DMP)

The digital multisided platform or abbreviated as DMP is an element in the digital entrepreneurial ecosystem that discusses intermediary transactions for goods and services, as well as a medium for knowledge exchange that enables and facilitates experimentation and value creation (Song, A. K. 2019). Apart from intermediation, digital platforms also govern the process of value creation and taking (Evans and Schmalensee 2007; Teece 2018; Song, A. K. 2019). Interactions and relationships within platform entities are important channels of knowledge abundance for entrepreneurs (Nambisan and Zahra 2016; Song, A. K. 2019). This is made possible by the openness of technology (architectural interface specifications) and organizational openness (governance) facilitated and mediated by platform owners (Nambisan et al. 2018; Song, A.K. 2019).

Based on this explanation, for goods and services transactions, starting from January 2017, as many as 48% of internet users in Indonesia search for goods or services online, 46% of users visit online stores, 34% of users make online transactions via computers or laptops, and 33% of users make online transactions via mobile devices such as smartphones. This implies that online transactions have developed sufficiently in Indonesia (Dedi Purwana, Rahmi & Shandy Aditya, 2017).

Digital platforms with the power of the Internet have changed the way goods and services are transacted and marketing activities by creating a new paradigm in connecting producers and consumers (Decky Hendarsyah, 2020). Various forms of goods or services can be transacted digitally, or it can be said that physical transactions are no longer needed and are replaced by digital transfers that are happening so fast around the world in a short time (Andika Muharam, 2017). As stated by Stokes (2013), digital platforms are interactive media that allow the exchange of values (Decky Hendarsyah, 2020). Information on the internet encourages companies to conduct product analysis. In Indonesia, there are many companies that really use internet media to run their business, such as tokobagus.com, tokopedia.com and so on. This, of course, is an information medium that is very useful for analyzing what needs are widely used by the community so that companies can develop their production so that it is useful to meet community needs. Thus the company will be able to find new customers more easily on the platform. In addition, the internet can also be used for communication media which is very important for business people. With business processes in the form

of management and business transactions using an internet network system, so that digital platforms do not require many employees and also do not take up a lot of time and space, this can reduce business costs and be more efficient (www.kompasiana.com, 2016).

The digital platform on the digital multisided platform can help make it easier for business people to monitor and provide all the needs and desires of potential consumers, on the other hand, potential consumers can also search for and get product information simply by browsing the virtual world, where in the process of searching for these products, they will provide a certain experience for consumers. Digital platforms in the form of social media applications provide everything from instant messages to social networking sites that offer users to interact, connect and communicate with one another. These applications intend to initiate and circulate online information about the user's experience in consuming a product or brand, with the main goal of engaging society. In a business context, people engagement can lead to profit creation. If the digital platform is able to provide easy and attractive services, it will provide special satisfaction for consumers (Dedi Purwana, Rahmi & Shandy Aditya, 2017).

5. CONCLUSION & RECOMMENDATIONS

Indonesia's digital industry is growing rapidly, marked by the emergence of various digital platforms that offer all kinds of innovations and are able to compete at the national and international levels. The transformation of business into the digital industry must also be carried out by Indonesian SMEs which continue to grow every year and have an important role in improving the Indonesian economy. Therefore, the Government of Indonesia encourages SMEs to proactively connect with digital platforms, especially to survive the Covid-19 pandemic. Based on the analysis of Digital Entrepreneurial Ecosystem elements on digital platform-based SMEs in Indonesia, it is known that the Digital User Citizenship element is still in a fairly weak position due to limited strict policies in regulating the explicit legitimacy and implicit social norms of the digital society in Indonesia. Meanwhile, the elements of Digital Technology Entrepreneurship (DTE) and Digital Multisided Platform (DMP) are in a very promising position to continue to grow along with increasing Digital Platform-based SMEs and the widening of the online market base. Several policies that need to be considered by the government that are still a challenge to accelerate the transition of SMEs to digital platforms, including the availability of fast and equitable internet through the provision of telecommunications infrastructure, development of quality human resources and certainty of network security. A study of the roles and interactions of actors involved in the Digital Entrepreneurial Ecosystem in supporting the dynamics of Digital Entrepreneurship is a suggestion for further research.

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