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GoEkopz: An E-*Koperasi* and Marketplace Synergy of *Koperasi* MSMEs Model Platform - Case Study: *Koperasi* Giat, eKopz Startup, PPKM Community

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Abstract— Indonesia's people economy is crucial with 273.5 million people in 2020. The populist economic paradigm, known as “*Koperasi*” in Indonesia, has long existed. Nonetheless, *Koperasi* was unable to keep up with information and technology in the 4.0 industrial era. When other industrial models use information technology on a large scale, *Koperasi* appears to have difficulty abandoning the conventional paradigm. Slowly but surely, *Koperasi* is losing popularity, particularly among Generation Z, who considers digital technology an integral part of their daily lives. The breadth of *Koperasi*'s business contracts and becomes constrained, as does the company's cash. In contrast, information technology offers chances to small and medium-sized businesses. The data indicates that this sector generates 60.5% of the national GDP, employs 96.9% of the entire labor force, and accounts for 99.9% of total employment. Unfortunately, a large number of Micro, Small, and Medium-Sized Enterprises (MSME) have limited money, and therefore tend to favor fintech services that provide quick accessibility over *Koperasi*. This article aims to offer an E-*Koperasi* model platform and the synergy between *Koperasi* and MSMEs, specifically the digital marketplace platform. The platform requirements are designed using the Software Requirements Specification and User Acceptance Test. As a result, an application is created to serve as a model platform for *Koperasi* and MSMEs. It is proposed that the platform will support the government's effort to digitalize *Koperasi* and MSMEs, as well as boost their Industrial 4.0 competitiveness.

Keywords— *Koperasi*; MSME; synergy; platform; empower.

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I. INTRODUCTION

The end of the 2010s was a golden age for *Koperasi* and MSME. However, at the beginning of 2020, the Covid-19 pandemic swept across the world, causing the wheels of the economy to stall, including for MSME and *Koperasi*. However, the contribution of *Koperasi* to the people's economy is still enormous. At the end of 2020, there were 127,124 active *Koperasi* with more than 25 million active members, managing businesses worth more than 174 trillion Rupiah [1]. The main problems faced by *Koperasi* during the Covid-19 pandemic were limited capital (47%), sales (35%), and hampered production (8%). The digitization of *Koperasi* is very important, not only because of the limitations of mobility and physical interactions during the pandemic but also because the world is now in the Industry 4.0 era.

The Indonesian Internet Service Providers Association (APJII) survey reveals that during the 2019-2020 period, 73.7% of Indonesian are using the internet [2].



Fig. 1 Indonesia Digital Transaction [3]

As many as 93% of internet users who access the marketplace declare that they are searching for products/services to buy, and of the 197 million internet users in Indonesia, 56.8% have made online transactions [2]. The value of digital market transactions also increases every year, as shown in Figure 1.

Digitizing *Koperasi* is one of the government's focuses, to achieve efficiency and effectiveness of *Koperasi* services without having to change the basic values and principles of *Koperasi* [4]. The ability to access information in real-time anywhere and anytime is one of the considerations, not only for potential customers but also for potential investors. The current business model of *Koperasi* is traditional, and brings a weak position in the competition, especially compared to foreign products [5], [6]. Trust and interoperability between *Koperasi* itself and from *Koperasi* to other business actors are very low. In addition, the basic thing has not been using digital technology optimally [7]. The 'digitalization' of the mindset and operations of *Koperasi* does not stop with the use of digital devices but requires training and assistance in transforming *Koperasi*, as well as changing the behavior of members to use and utilize the technology that has been built [8], [9].

Currently, the world has entered the era of the industrial revolution which presents challenges and opportunities for the future development of the Indonesian economy. Digitization, automation, and the use of artificial intelligence in business activities will increase productivity and production efficiency and bring convenience to consumers, while helping the development process in various fields, including government. through e-government, financial inclusion through financial technology, the growth of small and medium enterprises, and the growth of e-commerce [10].

The Industrial Era 4.0 has created great opportunities and challenges for MSMEs. One of the challenges is that MSMEs do not have the resources to choose the appropriate technology or develop the right strategy, and they do not have adequate facilities [11]. Since 2011, micro, small, and medium-sized enterprises (MSMEs) have been confronted with remarkable difficulties as a result of the Fourth Industrial Revolution in the form of the creation of technology known as Industry 4.0 and its application to the industrial sector [12]. A review of the literature in recent years suggests that MSMEs should be considered separately from large firms concerning the implementation of Industry 4.0, as they are less able to survive with financial, technological, and HR challenges than large firms [13].

II. MATERIALS AND METHOD

A. *Koperasi* in the Pandemic Era

At the end of 2020, there were 127,124 active *Koperasi* with more than 25 million members, managing businesses worth more than 174 trillion Rupiah [1]. During the Covid-19 pandemic, the main problem faced by *Koperasi* were capital (47%), declining sales (35%), and hampered production (8%). The digitization of *Koperasi* is very important, not only because of the limitations of mobility and physical contact during the pandemic but also because the world has now entered the Industry 4.0 era.

Ironically, the majority of *Koperasi* have not yet adopted this digital ecosystem. Minister of Cooperatives and SMEs the Republic Indonesia, Teten Masduki said that as of October 2020, only 0.73% of active *Koperasi* were using the digital system. *Koperasi* is confronted with a number of obstacles, including those relating to the limitations of its infrastructure and the facilities that are now available, as well as a dearth of information and inadequate human resource capabilities in digital utilization[14].

B. Development of MSMEs in Indonesia

MSMEs are described as small enterprises that are owned and managed by an individual or owned by a small group of persons, and their total assets range from IDR 50 million to IDR 10 billion, while their income ranges from IDR 300 million to IDR 50 billion [15]. MSMEs as a supporter of the Indonesian economy and a very large workforce absorber in Indonesia.

Regulation of the Minister of Cooperatives and SMEs the Republic of Indonesia Number 5 of 2021 declares that small and medium-sized businesses are essential to the expansion of the Indonesian economy. Figure 2 shows the growth of the Gross Domestic Product (GDP), expansion of employment opportunities and employment, the provision of a safety net especially for low-income people to carry out productive economic activities, as well as its contribution to exports and the creation of fixed capital/investment [10].

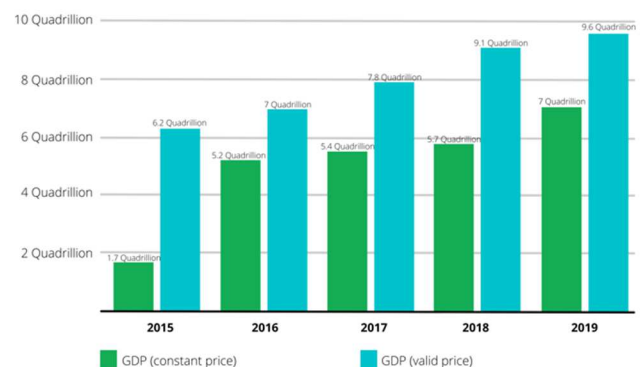


Fig. 2 Contribution of SMEs to Indonesia's GDP (2015-2019) [10]

In 2019, the number of MSMEs in Indonesia has reached 65.46 million units, a significant increase from 2016 which only amounted to 61.65 million units [10].

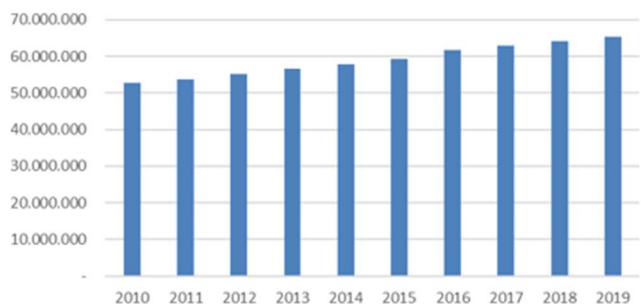


Fig. 3 The development of MSMEs in Indonesia based on BPS data [10]

C. Industry 4.0

Industry 4.0 is a great way for MSMEs to stay ahead in the digitalization race. When it comes to using disruptive Industry

4.0 technologies, MSMEs are a long way behind large companies. MSMEs are still having trouble making the first decisions about digital transformation under Industry 4.0 [16]. The deployment of Industry 4.0 solutions in small- and medium-sized businesses is extremely difficult due to a lack of resources [17]–[24].

As technology keeps getting better and better at a fast pace, MSMEs must get ready to adapt to new technologies in a world where the economy is uncertain [25]. How widespread Industry 4.0 is in a company depends on how big it is. Large companies have more organized resources and processes, so it is likely that they will be able to use 4.0 technologies more quickly than MSMEs. To keep these MSMEs from falling victim to this industrial revolution, it is important to fully understand the organizational, human, and technological challenges of Industry 4.0 [26]. Before adopting technologies associated with Industry 4.0, MSMEs must get an understanding of their potential applications [27]. The major benefits of adopting Industry 4.0 in MSMEs are determined to be flexibility, cost savings, efficiency, quality, and a competitive advantage [28].

The Industrial Revolution 4.0 does not only have extraordinary potential in overhauling industries, but also changes various aspects of human life. The Fourth Industrial Revolution presents an opportunity for Indonesia to rejuvenate its manufacturing sector. This is one approach to speed Indonesia's attainment of its aim to become the 10th largest economy in the world. For Indonesia, this is an important step toward realizing its vision (Figure 4). As of 2016, the manufacturing industry contributed 20% of Indonesia's GDP and created more than 14 million jobs. Making Indonesia 4.0 is an effort that has been developed by the Ministry of Industry to implement the strategy and Roadmap for the Industrial Revolution 4.0 in Indonesia. [29].



Fig. 4 Indonesia's Vision to Become the Top-10 Largest Economy in the World

Various parties are involved in this Roadmap, including government agencies, industry associations, commercial actors, technology providers, and research and educational institutions. The Making Indonesia 4.0 Roadmap lays out clear directions and tactics for the future development of Indonesian industry, encompassing five key sectors and ten national priorities for strengthening the country's industrial structure. It is hoped that the Making Indonesia 4.0 blueprint can be carried out successfully with the help of many people, including ministries and other government institutions, the private sector, investors, educational institutions, and research institutions [29].

D. Digital Platform

Different perspectives have been used to define and conceptualize digital platforms in previous studies. Some definitions are based on a technical perspective that emphasizes the technical aspects and processes that come together to build a digital platform. Studies that take this approach concentrate on the technical and functional advancements that serve as the foundation for the development of supplementary products and services. Other studies have described digital platforms in a non-technical way, presenting the platform as a network or commercial marketplace that allows business-to-business (B2B), business-to-customer (B2C), and even customer-to-customer (B2C) interactions. The interaction between diverse groups who join a platform as users or providers of products and services is the emphasis of this viewpoint [30]. The various definition of the digital platform can be seen in Table I

TABLE I
DIGITAL PLATFORM DEFINITION

Conceptual Review	Digital Platform Definition	Reference
Technical (e.g., software development & production)	“a component that can be used to build other products, technologies, or services on top of it since it performs key functions for a technological system and acts as a foundation for doing so.”	[31]
	“a group of components that are used in a wide range of different goods and whose functionality can be expanded through the use of apps.”	[32]
	“a collection of independent technologies and user interfaces that come together to produce a standardized framework for the creation and distribution of software programs.”	[33]
Non-technical (e.g., B2B & B2C transactions)	“a commercial network of suppliers, manufacturers, intermediaries, customers, and producers of complementary products and services linked through formal contracts and/or reciprocity”	[34]
	“two sides of a network that facilitates interaction between different but interdependent groups of users, such as buyers and suppliers”	[35]

Digital platforms have become the mainstream for various human activities, including economic, social, and political interactions [34]. Businesses that have benefited from the affordability of digital platforms have grown significantly in size and scope. For example, the market value of digital platform providers in the e-commerce and software development sectors has surpassed \$700 billion [36]. As a result, digital platforms have developed into appealing business models and strategies, as well as prospective engines of economic growth for a wide variety of industries [30].



Fig. 5 Main Information by Bibliometric on Research with Topic “Digital Platform and SMEs”

Research that related use of digital platforms in MSMEs has been carried out in many previous studies from 2000 – 2022. By using search ((TITLE-ABS-KEY (digital AND platform) AND TITLE-ABS-KEY (MSMEs)) in the Scopus database, 312 documents were obtained from 220 sources (journals, conferences, book chapters, etc.) with a total authors 913 (Figure 5).

Both the business model innovation and capability reconfiguration of MSMEs benefit from the presence of digital platforms. [37], positively affect on innovation culture (IC) and innovation performance (IP) [38]. Other research related to digital platforms in cooperatives is found in several articles such as [39]–[42].

III. RESULT AND DISCUSSION

The digital platform model was proposed based on the needs and problems of *Koperasi* GIAT and *Perkumpulan Pengusaha Karsa Mandiri* – PPKM (Figure 6). The platform is called GoEkoz. Based on the results of interviews and observations from the *Koperasi* GIAT, the current administration and operations both in terms of savings and loans and business units are still using manual recording, so that the data search, recapitulation, and other administrative processes require painstaking effort and considerably long

time. The activities of the business unit of *Koperasi* are also still limited both in terms of marketing and sales area coverage.

Currently, *Koperasi* GIAT members are dominated by millennials who actively use gadgets, the internet, and information technology. For this particular reason, the *Koperasi* GIAT urges to adjust the information services provided to close the gap between the services provided by the *Koperasi* GIAT and members' needs. The first obstacle is the users' culture and habits in *Koperasi*, both management and members during the transformation to a digital service system so that further research is needed on User Experience.

The next step is the synergy between *Koperasi* and MSMEs, both in the fields of marketing and sales, supply chain, and capital. Based on the results of a survey conducted on several *Koperasi* and MSMEs, *Koperasi* needs product variants in business units and loan distribution in the productive sector, while MSMEs need assistance in marketing and product sales. Another obstacle is the challenges to distributing products to retailers. In addition, MSMEs need access to capital for business development. Therefore, PPKM as an MSME community that manages hundreds of MSMEs in Bandung is considered appropriate to be a research partner to try out the MSME synergy digital platform for *Koperasi*.

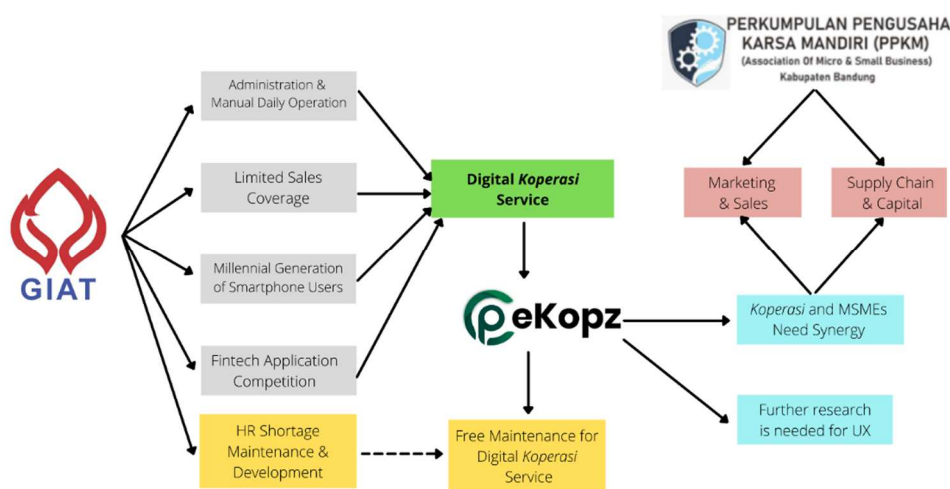


Fig. 6 Problem Map of *Koperasi* GIAT, eKopz, and PPKM community

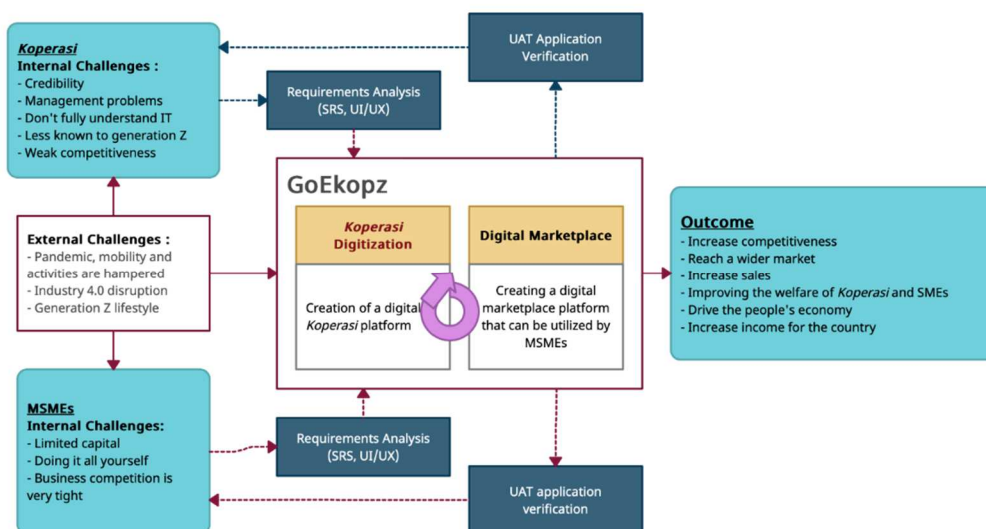


Fig. 7 E-Koperasi and Marketplace Synergy of *Koperasi* MSMEs Model Platform

Based on these problems, the digital *Koperasi* platform model and the MSMEs synergy are proposed (Figure 7). Internal and external problems from *Koperasi* and MSMEs were identified as the initial part of the analysis of needs for the creation of the digital platform, according to their needs, as well as for long-term synergy between the *Koperasi* and MSMEs.

IV. CONCLUSIONS

The proposed digital *Koperasi* platform and the MSME marketplace is available as a synergy solution for both the *Koperasi* and the MSME, which brings benefit to both sides. The automatization increases the work productivity of the *koperasi*. The synergy between MSMEs and *koperasi* increases business results, in terms of capacity, better distribution, and innovation for the *koperasi* and all the stakeholders. The platform provides better marketing value and increases the sales of the MSMEs (especially PPKM members).

In addition, the developed model will also be one of the ways to have a social impact as follows. The digitalization of *koperasi* is expected to bring better image, especially from the millennial generation, and potentially increase the membership. As an MSME facilitator in improving marketing, sales, and access to capital and supply chain, thereby increasing transactions and income for small companies such as startups. The digital platform increases the competitive value so *koperasi* can compete better with the fintech platform.

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