

E-Logistic Optimization For MSME's To Prepare the New Normal Era (Conceptual Framework)

Rio Wiranto¹, Ridwan Sanjaya²

^{1,2}Department of Information System, Soegijapranata Catholic University

^{1,2}Jl. Pawiyatan Luhur Sel. IV No.1, Bendan Duwur, Kota Semarang, Jawa Tengah 50234

¹19d30018@student.unika.ac.id,

²ridwan@unika.ac.id

Abstract— The rapid development of technology in Indonesia due to the Covid-19 pandemic for the past two years has triggered a movement to change business models into e-commerce, including MSME units. This will certainly affect the logistics sector where this sector is one of the most important parts of e-commerce. Therefore, this scientific article aims to explain the optimization of e-logistics for MSMEs to prepare for the new normal era. This scientific article uses the literature review method with a conceptual framework that is expected to facilitate the reader and provide managerial and academic benefits. The results of the literature review that have been reviewed by the researcher showed that there is a need for supporting aspects of information and communication technology (ICT) to support the optimization of e-logistics for MSME units. The implementation of these aspects is divided into two categories, specifically for micro and small-medium enterprises.

Keywords— e-logistics, e-commerce, information and communication technology, technopreneurship, micro-small-medium enterprises (MSME's)

I. INTRODUCTION

The use of internet-based information and communication technology in Indonesia has increased significantly in the last two years. This is stated through the website Indonesia.go.id edition of August 11, 2021. In that website, the use of online applications is stated to have experienced a very significant increase reaching 442%, especially to study, work and consulting in the health sector, in addition, the website also states that 16.83% of the people recorded use the internet for

business purposes (e-commerce/digital trading activities). The increase in the use of technology is due to the outbreak of the Covid-19 pandemic in the world, including Indonesia, which has forced people to implement physical distancing but still carries out various activities respectively.

These days, Covid cases in Indonesia have reached 4,280,248 cases (latest updated data on January 22, 2022, via the Covid19.go.id website. In the adaptation process for these two years, Indonesia has prepared a new normal era that will be implemented by the government, especially considering that the achievement of vaccination in Indonesia was recorded as one of many countries with the best achievements and was ranked 5th in the world at the first dose and ranked 6th in the total number of Covid-19 vaccination injections as stated in the official website of the Ministry of Communication and Informatics.

Related to these data, the use of internet-based technology is very important to support various community activities in various sectors, including the economic sector. Various business models in the economic sector have changed towards the e-commerce business to adapt amid a pandemic and prepare for the pace of business in the new normal era. The term e-commerce itself has been widely known by the public. This can be seen from the data related to several e-commerce platforms in Indonesia as follows:

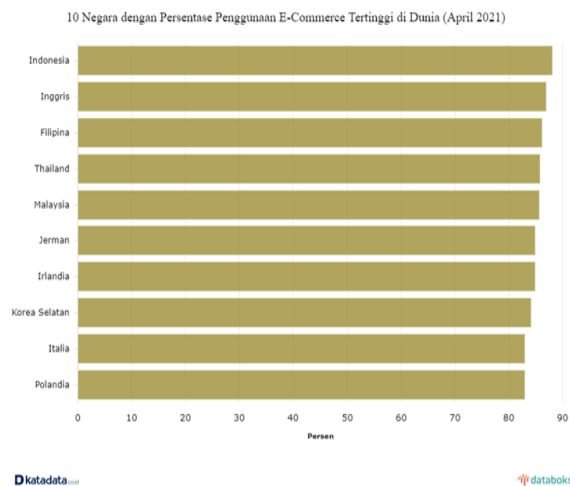


Figure 1. Ten Countries with the Highest Percentage of E-Commerce Usage in the World per April 21, 2021

Source: databoks.katadata.co.id

The data above is related to the highest percentage of e-commerce usage in the world as of April 21, 2021, with Indonesia having the highest percentage of 88.1%. This means that 88.1% of internet users in Indonesia have used e-commerce services to shop for certain products in the last few months. Other data related to e-commerce adoption in Indonesia is also supported by other sources according to Tekno. Kompas where the number of online shopping application installations (marketplaces) on Android-based cellphones was found to have increased amid a pandemic situation by 70% in the period January 2020 - July 2021, with digital trade predictions are expected to increase from 253 trillion rupiahs in 2020 to 330.7 trillion rupiahs in 2021.

Regarding the data on the development of the business model towards e-commerce, it will certainly have an impact on the logistics sector because this sector supports the e-commerce business. This statement is supported by Al Majzoub & Davidaviciene (2018) who state that e-logistics services are an important aspect of daily transactions related to the e-commerce industry in meeting customer needs and meeting company goals. This statement is also supported by information obtained in Erceg & Sekuloska (2019) who explains that e-commerce currently has an impact in accelerating the company's progress in logistics management along the supply chain and is one of the

important megatrends.

Based on the information above, certainly, the development movement of the logistics sector in the form of electronic-based digitalization / e-logistics has begun to experience a significant increase, not least in Indonesia. This can be seen based on data found on Medcom. id website, January 4, 2022 edition, where the logistics industry will experience shipment growth of up to 40% throughout 2021. With this data, it is hoped that it can trigger MSME units in Indonesia to also experience business digitization and flow. supporting logistics (e-logistics) to develop the economy and contribute to Indonesia's gross domestic product (GDP), especially in the new normal era. However, in its implementation, MSME units tend to still not optimize the implementation of e-logistics in their business units / tend to be traditional. This can be seen from the statement according to the investor. id website edition of December 8, 2021, which states that there is a need for a transformation of the pace of business and logistics if you do not want to be eroded by trade developments so that it becomes a must for MSME units and related parties to adapt, especially considering the impact that has been caused by the Covid-19 pandemic and the rapid development of technology in Indonesia (estimated development of digital transaction value in 2025 from 57% to 67% after the pandemic).

Based on the data and information that has been obtained, this scientific article is intended to provide a conceptual overview on forms of optimization in implementing e-logistics for MSME units in the new normal era. The data that will be used in compiling these forms of optimization are obtained from the literature review process on previous studies, which are summarized and translated in the form of a conceptual framework. Thus, it is hoped that this scientific article can provide benefits both technically / practically and academically.

II. LITERATUR REVIEW

According to Cakilci & Ozturkoglu (2020), e-logistics is generally defined as the process

required to transfer goods sold via the internet to customers and is one of the most important parts of e-commerce. Meanwhile, according to Debkowska (2017), e-logistics is defined as the application of the latest technological developments in supporting the company's logistics management practices in manufacturing, warehouse management, handling order processing cycles, and assisting management in their business environment, especially in the supply chain management aspect starting from supply/input to product/output distribution process.

According to Wiczerzycki (2012) in Wiczorek (2017), e-logistics is closely related to e-business and is defined as the use of ICT/Information and Communication Technology in business process management. Moroz et al, (2014) in Erceg and Sekuloska (2019) define e-logistics as a logistics concept that is applied using the internet and requires a process for distributing products online.

Based on the definitions above, it can be concluded that e-logistics is a form of transformation of classic tools that are generally used in logistics activities to become modern, supported by internet-based technology. This is stated by Miscevic et al. (2018).

In its implementation in business units, Pilat (2003) in Imran et al, (2019) states that information and communication technology can have an impact on business growth in various service sectors such as retail, transportation, communication, and finance businesses. Adamczewski (2017) states that information and communication technology (ICT) solutions in the advanced category are a basic competitive factor in open business organizations and can be used in various forms of innovation to improve the efficiency of business unit management. Thus, the adaptation and use of information and communication technology can also have a positive influence on the development of the logistics sector into e-logistics.

Erceg & Sekuloska (2019) stated that the use of information and telecommunications technology (ICT) such as software, web,

cloud, mobile, IoT, blockchain solutions, and Artificial Intelligence (AI) can provide new added value in e-business processes including e-commerce. supply chain management (e-SCM) and e-logistics. This statement is supported by Evangelista and Sweeney (2006) and Wang and Lalwani (2007) in Hameed et al. (2018) who states that most logistics companies are now focusing on information and communication technology where the business unit infrastructure and low investment in information and communication technology can have an impact on the provision of a customized logistics provision. Hameed et al. (2018) also state that information and communication technology can provide better payment technology, traceability, and deeper website design to increase e-logistics customer satisfaction.

Information and communication technology (ICT) is an important key in developing the competitiveness of logistics companies. Logistics companies that are still traditional / not strengthened by the implementation of information and communication technology have the potential to experience difficulties in responding to the needs of the modern market. This was stated by Miscevic et al. (2018). The implementation of e-logistics in e-commerce has become very important due to an increase in the speed of analysis, data processing, transparency, cost-effectiveness, and advancing green orientation

In terms of practical implementation, Vongsingthong & Smanchat (2014) and Wiczerzycki (2012) in Adamczewski (2017) suggest that information and communication technology applied in the logistics sector is a combined solution between hardware, software, and organization in the form of databases, communication technology (both wired, wireless and hybrid), wholesale technology, automatic identification method/bar codes, supply chain management (SCM), enterprise resource planning system (ERP), advanced planning system (APS), consumer relationship management system (CRM), Computer-Aided Manufacturing

(CAM), supplier relationship management system (SRM), product life management system (PLM), warehouse management system (WMS), manufacturing execution system (MES), satellite location system / GPS, Internet of Things (IoT) and Advanced Business Intelligence Systems (BI).

According to the statement contained in the research by Quturbi et al. (2021), the background of the research carried out is because many SMEs / Small and Medium-Sized Enterprises (SMEs) do not yet have access to develop reverse logistics possibilities so that they can be activated. with earlier technology first, namely with the help of information and communication technology (ICT) to optimize the development of the MSME logistics digitalization

The thing that is a concern and one of the aspects behind the writing of this scientific article is that overall, MSME units are generally less strong in dealing with various economic shocks, different from large companies. This means that MSME units will need a longer time to return to their original business pace if it has been eroded by an economic crisis/shock as happened when the global financial crisis in 2008 hit the international economy where MSMEs experienced a decline in demand and experienced severe financial difficulties. pretty bad. Nevertheless, MSMEs are considered more flexible and adaptable than large companies considering the small size of the business unit and the relatively flat hierarchy as stated by Juergensen et al. (2020). Therefore, this scientific article aims to provide a conceptual framework related to optimizing e-logistics so that it is expected to be useful for MSME units and academics, especially in Indonesia.

III. RESEARCH METHODOLOGY

The initial step in the process of searching for literature in this article is through the planning stage and identification of supporting articles aimed at obtaining relevant article criteria. This planning and identification stage is expected to facilitate

and sharpen the search for topics of discussion of scientific articles literature studies. The following is a table of criteria at the planning stage and identification of supporting articles.

Table 1. Criteria for Research Literature Study

Criteria	Description
Population	Indexed articles on Google Scholar
Inclusion	The reference article has the keywords <u>e-logistics, e-commerce, information and communication technology (ICT)</u> Articles can answer the research problem formulation Articles registered in trusted sources / good / accredited journals (example: Sinta)
Exclusion	Articles that are not full text / can be accessed in full Articles before 2017

Based on the information in the table above, several criteria were obtained that were used as references in the process of searching for relevant literature studies. These criteria are intended to filter, narrow, and sharpen the focus of the study so that it becomes more complete, detailed, relevant to the topic of scientific articles, appropriate, and can be used for a literature review of this article. After obtaining the details of some of these criteria, the literature study research method can enter the next stage/library selection stage.

Table 2. Library Selection Stage

Data source	Finding	The year 2017 - 2022	First Stage Screening	Second Stage Screening
Google Scholar	67.600 (e-logistics)	18.200 (e-logistics)	2.240 (using inclusion criteria)	16 (using exclusion criteria)

Data updated on 26 January 2022

Based on table 2 above, it can be concluded that the literature study used in writing this scientific article uses 16 complete, detailed, relevant articles. appropriate and can be used for literature study of scientific articles. The 16 articles will be processed at a later stage to obtain the essence and scientific explanation

related to optimizing the e-logistics process that is effective and efficient.

After passing through the literature search stage, the 16 articles entered the next stage, namely the literature review which was summarized in the annotated bibliography table (Table 3.). The table includes a summary of several reference articles as well as their discussion or analysis results related to the topic of optimizing the implementation of e-logistics for MSME units in preparing for the new normal era.

Annotated Bibliography is one of the steps that can be used in summarizing and discussing some research results in reference articles. This stage is intended to focus and sharpen the results of writing this scientific article so that it can produce a detailed conclusion regarding the literature review that has been carried out in the literature study process. These are the results of the literature review which are summarized in the annotated bibliography as follow:

1. Based on the article "E-Logistics as a Source of Modern Tools Affecting the Competitiveness of Enterprises" by Wiczorek in 2017, his research purpose is to explain the effect of implementing e-logistics in optimizing processes and several other factors using technology assistance. His research data was obtained from a literature study based on books, journals, and internet sites. His research has the result that explains the process of optimization and several factors of e-logistics implementation using technology assistance, including reducing execution time and production costs, improving the quality of human and machine labor, improving the security system, and also improving the quality of customer service. Based on that result, e-logistics can provide and increase optimization in the organization.
2. Based on the article "The Influence Factors of E-Logistics Implementation in China: The Conceptual Framework" by Lisha et al. in 2018, their research purposes are to introduce a framework to reduce various e-logistics problems in

China and examine the factors influencing e-logistics in China. Their research data used literature review techniques and a conceptual framework. The result is distribution level and transit time have a significant positive effect on e-logistics and information and communication technology acts as a mediation between payments and e-logistics. Based on that result, e-logistics can increase optimization in the organization especially through information and communication technology.

3. Based on the article "Multi-Layered Model of E-Logistic" by Al Majzoub & Davidaviciene in 2018, Their research purpose is to analyze and identify the most important research areas based on consumer satisfaction and opinion about the quality of e-commerce in addition to analyzing various e-commerce factors that are directly related to e-logistics to see where the market position of the business is. Their research focus scope is E-commerce types of B2B, C2C, B2G, B2C, in general, and uses literature review, synthesis, and comparison methods to examine it. The result is that E-commerce, especially B2C is considered to have an important role in providing big profits for companies. However, in maintaining e-commerce, the aspect of customer satisfaction is an important and inseparable part of the progress of e-commerce. In conclusion, e-commerce whether B2C or B2B cannot be done without adequate e-logistics to achieve customer satisfaction. Based on that result, e-logistics can increase optimization in B2B, C2C, B2G, and B2C.
4. Based on the article "E-Logistics as an Element of the Business Model Maturity in Enterprises of the TFL Sector" by Debkowska in 2017, her research purpose is to compare the maturity of the business model in the two groups of companies in the TFL (transport forwarding logistics) sector, where the maturity indicator is

- seen from the company's financial condition and value. Her research data was obtained from 53 TFL companies that were included in the company ranking in the 20th edition of the logistics sector (which used and did not utilize e-logistics). The result gave the conclusion that the use of e-logistics in TFL companies has a positive influence on the financial condition (which is used as an indicator of the company's maturity / applied business model). Based on that result, e-logistics can provide and increase optimization in the organization as an indicator of the company's maturity.
5. Based on the article "E-Logistics and e-SCM: How to increase Competitiveness" by Erceg et al. in 2019, their research purpose is to provide evidence that the right logistics service provider in a modern supply chain can help companies to gain and maintain competitiveness, accompanied by the help of digital tools. Their research data was obtained from the DHL case study as well as several kinds of literature related to e-logistics and e-Supply Chain Management (e-SCM) which were reviewed together. The result shows that the use of sophisticated logistics service providers/operators can help companies improve competitiveness. Based on that result, e-logistics can provide and increase optimization in organizations to improve competitiveness.
 6. Based on the article "Logistics and E-Logistics Management: Benefit and Challenges" by Kanagavali & Azeez in 2019, their research purpose is to demonstrate the main functions of logistics, their objectives, tactics, and various components to understand the main benefits and new tasks between logistics and e-logistics. Their data was obtained from a descriptive methodology that involved the collection of secondary data, tables, graphs, charts, and so on. The result shows that utilizing innovations in conventional strategies for business has offered establishments for e-logistics such as the implementation of e-coordinations, mechanization in warehousing, and adequate transportation systems. Based on that result, e-logistics can provide and increase optimization in organizations to increase customer satisfaction.
 7. Based on the article "Emerging trends in e-logistics" by Miscevic et al. in 2018, their research purpose is to show trends arising from e-logistics. Their research data was obtained from the literature review. The result shows that trends arising from e-logistics are included the use of "Cloud" in logistics, use of mobile logistics, use of mobile supply chain management, use of digital twin software, use of autonomous vehicles, use of IoT (internet of things) for logistics innovation, use of start-ups organizational system. Based on that result, e-logistics can provide and increase optimization in organizations.
 8. Based on the article "The Development of Research on E-Logistics" by Qurtubi et al. in 2021, their research purpose is to provide information related to the development of e-logistics research which is expected to be useful for further research. Their research data was obtained from 21 e-logistics research articles that have been written and traced from five sources that can be accessed online. The result shows that some e-logistics studies are not related to several topics of discussion that cause insignificant correlations with each other but can be categorized into four e-logistics concepts, namely the concept of e-logistics, e-logistics model, e-logistics system, and implementation and its implications. Based on that result, e-logistics can provide and increase optimization in organizations.
 9. Based on the article "The Contributing Factors Towards e-Logistic Customer Satisfaction: A mediating role of information technology" by Imran et al. in 2019, their research purpose is to

determine the effect of several factors on e-logistics customer satisfaction, namely the role of cost, low distribution, low transit time, effective payment methods, and the role of information technology. Their research data was obtained from 300 questionnaires distributed to e-logistics customers with 162 returned and usable data. Their result shows that the role of low distribution costs, low transit time, effective payment methods, and the role of information technology has a positive effect on e-logistics customer satisfaction. Second, information technology plays a major role between effective payment methods and e-logistics customer satisfaction. Based on that result, e-logistics can provide and increase optimization in organizations especially through information and communication technology.

10. Based on the article "E-Logistics as the ICT Support in Modern Polish Organization" by Adamczewski in 2017, his research purpose is to provide an overview of the characteristics and implementation of e-logistics as a solution for SMEs in Poland using the SMAC system. His research data was obtained from 120 selected SMEs in the provinces of Mazowieckie and Wielkopolskie. The result shows that sophisticated information and communication technology / ICT solutions can support modern organizational processes to develop based on the SMAC (Social, Mobility, Analytics, Cloud) system and its application using knowledge management. Based on that result, e-logistics can provide and increase optimization in organizations.
11. Based on the article "Determinants of e-logistic customer satisfaction: a mediating role of information and communication technology" by Hameed et al. in 2018, their research purpose is to find out the influence of several factors on e-logistics customer satisfaction, namely e-payment factors, e-traceability, website design, and information and communication technology. Their research data was obtained from 500 questionnaires distributed to e-logistics customers with 450 returned and usable data. The result shows that the role of e-payment, e-traceability, website design, and information and communication technology has a positive influence on e-logistics customer satisfaction. Second, information and communication technology (ICT) has a positive and significant impact on e-logistics customer satisfaction. Based on that result, e-logistics can provide and increase optimization in organizations.
12. Based on the article "Critically assessing the factors contributing toward e-logistics customer satisfaction by considering the mediating role of information technology: A case study of Thailand food sector" by Prianto et al. in 2020, their research purpose is to evaluate the factors that contribute to customer satisfaction in the field of e-logistics with the role of technology as a mediator. Their research data was obtained from 600 questionnaires distributed to participants who are members of the food industry in Thailand with 488 questionnaires that were returned and could be used. The result shows that effective payment methods, business security, faster order fulfillment can significantly influence customer satisfaction in the realm of e-logistics. Second, the role of technology in mediating effective payment methods, business security, faster order fulfillment has a partial, significant, and positive effect on customer satisfaction. Based on that result, e-logistics can provide and increase optimization in the organization specifically to gain customer satisfaction.
13. Based on the article "Analysis of Sustainable E-Logistics Activities with Analytic Hierarchy Process" by Cakilci & Ozturkoglu in 2020, their research purpose is to determine the success factors that are very important to maintain

e-logistics activities due to the increasing intensity of shopping on the internet (using economic, environmental, and social dimensions). Their research data was obtained from the literature review method which was further investigated using the Analytic Hierarchy Process (AHP). The result shows that carbon emissions have the greatest influence on aspects of sustainability. Second, physical location is the second most important factor. Third, land use has a lower weight but still has an impact, and the last shows that electronic waste is the factor that gives the least influence among other factors. Based on that result, e-logistics can provide and increase optimization in organizations.

14. Based on the article “Leveraging Open E-Logistic Standards to Achieve Ambidexterity in Supply Chain” by Pu et al. in 2018, their research purpose is to discuss how open e-logistics standards (OELS) affect company performance through the development of supply chain ambidexterity. Their research data was obtained from distributing questionnaires to manufacturing companies in China with the code category Chinese Industrial Classification 1311-4290 (the final sample amounted to 281 used in the analysis of research data). The result shows that OELS, balancing contradictory integration and flexibility requirements can lead to ambidexterity in the supply chain. Second, empirically confirmed that OELS is an effective boundary-spanning mechanism to increase organizational ambidexterity. Based on that result, e-logistics can provide and increase optimization in organizations specifically to gain effective and efficient performance.
15. Based on the article “Factors Affecting E-Logistics in Malaysia: The Mediating Role of Trust” by Miraz et al. in 2020, their research purpose is to analyze the factors that influence blockchain users to utilize blockchain in e-logistics and identify the relationship between supply

chain capabilities, e-traceability, and integration of e-payments with blockchain and cryptocurrencies. Their research data was obtained from a cross-sectional approach with 478 questionnaires distributed through simple random sampling to blockchain users in Malaysia from the age of 25 – 44 years. Data analysis using PLS. The result shows that the relationship between e-logistics, blockchain, cryptocurrency, and trust has a positive and significant relationship. Second, expected average returns, motivational interest, price value, and trust are positively correlated with the use of currency in e-logistics. Based on that result, e-logistics can provide and increase optimization in organizations.

16. Based on the article “Impact of E-Logistics on Warehousing Management Performance at English Biscuit Manufacturing” by Shah & Asim in 2019, their research purpose is to determine the impact of e-logistics on the performance of warehousing management in a British biscuit manufacturing company. Their research data was obtained from a quantitative research design with the number of respondents as many as 233 people including 85 women and 148 men. The result shows that visibility and information sharing in e-logistics, real-time communication, cost-saving, and forecasting have a significant effect on the performance of warehousing management. Based on that result, e-logistics can provide and increase optimization in organizations.

Based on the results of the literature review listed above, there are criticisms and suggestions for several studies in related reference articles on the focus of studies that can optimize the performance of MSMEs in developing countries that are still difficult to get internet access. Suggestions related to further research are on the development of data and e-logistics systems that can be applied in developing countries that are still difficult to access the internet or do not yet have adequate technology.

IV. RESULT AND DISCUSSION

Based on the data analysis above, it can be seen that the use of information and communication technology (ICT) to support the implementation of e-logistics is proven to increase the effectiveness and efficiency of operational performance and provide optimal results. This is supported by previous research according to Prianto et al. (2020). Moreover, it is more realistic to implement considering that there has been rapid technological development in Indonesia in response to and adapting to the Covid-19 pandemic conditions for the past two years. Thus, the preparation of the Indonesian state in preparing for the new normal era is increasingly felt, including MSME units who have begun to develop their business models into e-commerce which have links with logistics services to support their business units. Therefore, by optimizing the

implementation of the development of the sector into e-logistics, it is hoped that it can have a positive impact in preparing MSME units to face the new normal era.

Currently, the development of e-logistics has experienced developments in various countries, including Indonesia. The logistics sector, ranging from logistics services under the JNE brand to heavy goods distribution logistics by land, sea, and air, has experienced a drastic increase and is predicted to continue to increase. In response to this, this scientific article is expected to provide an overview of optimizing e-logistics for MSME units. The form of optimization is none other than using Information and Communication Technology (ICT) as an aid in optimizing performance. The conceptual framework from the literature review method is as follow:

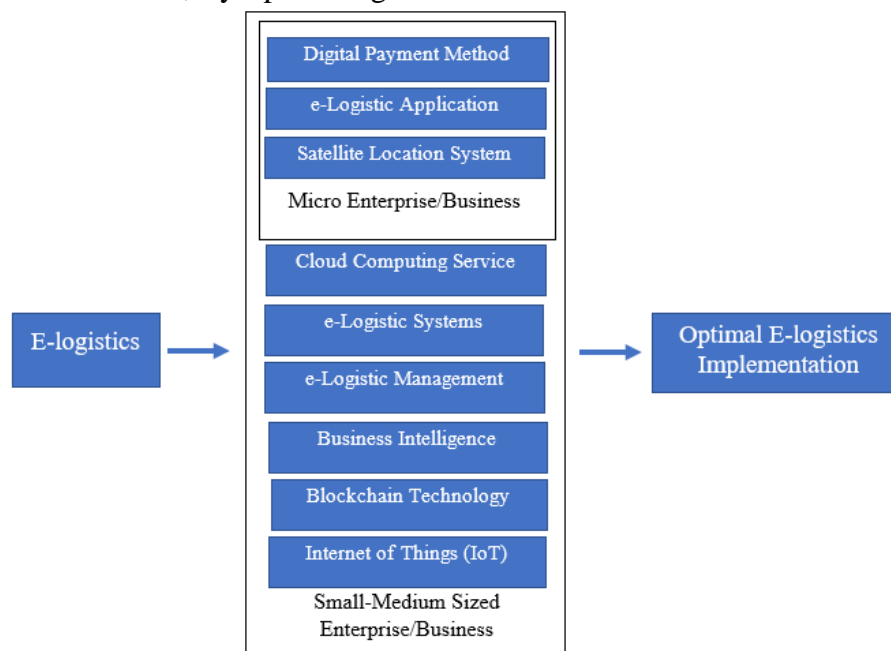


Figure 2. Conceptual Framework of Research Literature Study Results

For micro business units, optimization of e-logistics can be done by using effective and efficient payment methods such as QRIS / digital payment methods in the form of barcodes, marketing on marketplace platforms, using e-logistics applications for coordination with logistics services (facilitating communication between parties. business units with logistics services), and can use applications such as Gojek, Grab, and

Shopee which have adopted and optimized the function of satellite location systems such as Google Maps in distribution activities. This is supported by previous research according to Prianto et al. (2020) who explains the role of information and communication technology for food business units in Thailand and according to Adamczewski (2017) who explains aspects of information and communication technology applied by

organizations in Poland in supporting the optimization of e-logistics implementation.

Meanwhile, in small and medium-sized business units, optimization of e-logistics performance can be implemented more fully, such as the use of Cloud Computing Services, adoption of e-Supply Chain Management (e-SCM) in the form of Mobile Supply Chain Management (MSCM), Product Life Management (PLM), Customer Relationship Management (CRM) Supplier Relationship Management (SRM), Warehouse Management System (WMS), Computer-Aided Manufacturing System (CAM), Manufacturing Execution System (MES), Advanced Business Intelligence (BI), Enterprise Resource Planning System (ERP), E-Traceability System, and Internet of Things (IoT). Regarding its standardization, small to medium business unit units can use the Open E-Logistic Standard (OELS) as proposed by Pu et al. (2018). Meanwhile, in the payment process, apart from using QRIS / digital payment methods, in the future, MSMEs, especially medium-sized businesses, can adopt the use of cryptocurrencies on blockchain technology. This is supported by research according to Hameed et al. (2018), Adamczewski (2017), and Miraz et al. (2020) related to the implementation of advanced technology.

With the implementation of these e-logistics systems, it is hoped that they can develop the economy/business pace of MSME units and provide education in optimizing the use of e-logistics to provide optimal results.

IV. CONCLUSION

Based on the analysis of the data obtained from the literature review on the writing of this scientific article, it can be concluded that several steps can be used in optimizing the performance of e-logistics to support the pace of business model development of MSME units into e-commerce in preparing for the new normal era in Indonesia. These steps are divided into two categories, specifically for micro-business units and small-medium business units.

The steps needed to optimize e-logistics performance for micro-business units in Indonesia are based on literature reviews that have been carried out by researchers, especially by adopting the use of digital payment methods such as QRIS codes or other digital payment methods. Based on the reference articles reviewed by the researcher, effective digital payment methods can improve the performance of related business units, so it is necessary to change payment methods from traditional to digital to prepare micro business units in the new normal era. The second step is to install the e-logistics application on the gadgets of each micro-business actor. The e-logistics application is expected to assist micro business unit units in planning, supervising, and ensuring logistics activities can run according to the expected time. Regarding the e-logistics process, micro-business units can use logistics services such as JNE or other logistics service providers, to heavy equipment logistics services using land routes (trains). Based on reference articles that have been reviewed by researchers, the use of e-logistics applications can make it easier for users to plan, organize, and supervise product logistics flows. The third step is to understand and master satellite location system technology. In its implementation, satellite location systems such as Google Maps are important in e-logistics activities for various purposes such as time estimation considerations, finding a supplier and consumer addresses, as well as consideration of the costs required if the distribution process is carried out personally / without using the available logistics services. in Indonesia.

While the steps needed to optimize e-logistics performance for small to medium business unit units in Indonesia are based on the literature review that has been carried out by researchers, namely by taking the first step for micro-business units and adding other steps such as the use of cloud computing services aimed at data storage and computer analysis power that can be accessed and distributed to various locations. Thus, data related to products and all aspects of the e-

logistics process can be stored in the cloud, making it easier for the database administration process and e-logistics flow analysis. The next step is to adopt e-logistic systems such as the E-Traceability System, Warehouse Management System (WMS), Computer-Aided Manufacturing (CAM), Manufacturing Execution System (MES), and Enterprise Resource Planning System. With the installation of this system, it is hoped that it will make it easier for small to medium business units to plan, manage and supervise e-logistics technical flows more effectively and efficiently. Another step is to implement e-logistics management such as e-Supply Chain Management (e-SCM) in the form of Mobile Supply Chain Management (MSCM), Product Life Management (PLM), Customer Relationship Management (CRM), and Supplier Relationship Management (SRM). With the implementation of e-logistics management, it is expected to have a positive impact on small to medium-sized business units in carrying out management processes related to e-logistics. Regarding the standardization required in optimizing the implementation of each aspect, it is possible to use the Open E-Logistic Standard (OELS) which is expected to function as a counterbalance to contradictory integration and flexibility to cause ambidexterity in the supply chain. As for more advanced processes, small to medium business units can install Advanced Business Intelligence (BI), Internet of Things (IoT), and Blockchain Technology (one of which is by utilizing cryptocurrency digital currency transactions in blockchain technology).

Regarding further research, the researcher suggests that there is a presentation and analysis of data from the results of the implementation of information and communication technology carried out by MSME units and companies in Indonesia, both by the explanations described in this scientific article and other technologies that support the e-logistics process. The researcher also suggests related to data analysis and scientific explanations that are more than

scientific articles considering that the analysis and explanations are still incomplete in the process of writing scientific articles carried out by researchers. If possible, the researcher also expects criticism and suggestions in the process of further research to improve or update the scientific explanations contained in this scientific article.

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