



Print ISSN: 1738-3110 / Online ISSN 2093-7717
 JDS website: <http://www.jds.or.kr/>
<http://dx.doi.org/10.15722/jds.22.04.202404.105>

A Case Study on the Paradigm Shift to Digital Logistics Platform : The Case of Maersk*

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Received: January 14, 2024. Revised: February 10, 2024. Accepted: April 05, 2024.

Abstract

Purpose : Due to the uncertainty of the global trade environment and the trade downturn, the shipping industry continues to face challenges. This study aims to investigate in-depth analysis of crisis overcoming strategies through case study of a company that is leader in the shipping and logistics industry. **Research Design and Methodology** : In order to conduct an in-depth analysis, a single case analysis was selected as a qualitative study. For this purpose, various secondary sources were used, and indirect interview data were also used. In this study, Maersk was selected because it has grown from a traditional shipping logistics company to a digital platform company. **Results**: Maersk has transformed itself into a comprehensive, digital logistics platform with several key strategies to respond to the long-term slump in the shipping industry. First, it leveraged Maersk's diversification and portfolio optimization strategy. Second, Maersk is transforming its logistics and transport processes through digitalization and technological innovation. **Conclusion**: Maersk, which is responding to the long-term recession facing the shipping industry, looked at how it has leveraged its strengths and explored new opportunities through a number of strategies and changes. This study provides insight into a digital logistics platform that will benefit the other companies as well.

Keywords : Maersk, Digital, Logistics, Platform, Shipping Industry

JEL Classification Code : F23, F18, F19, M10, M15

1. Introduction

1.1. Background of the Study

Trade stagnation was a long-term phenomenon caused by a variety of economic, political, and pandemic-related factors (Price, 1879; Dhinakaran & Kesavan, 2020; Vo & Tran, 2021). In particular, the COVID-21 has halted production and trade activities in many countries. Manufacturing has been temporarily suspended, which has restricted trade activities affecting logistics and transportation (Vo & Tran, 2021). The impact of the

pandemic has disrupted and delayed global supply chains (Xu et al., 2020; Yu et al., 2021). The supply of raw materials and components, as well as finished products, has decreased. This has led to significant restrictions on production and export activities (Marwah & Ramanayake, 2024; Yu et al., 2022). Instability and price fluctuations in the crude oil market also had a negative impact. In particular, the sharp decline in crude oil prices has hit countries related to crude oil exporters hard (Bouazizi et al., 2024; Marwah & Ramanayake, 2024). The trade tensions between the United States and China and the resulting tariffs have become one of the biggest obstacles to trade policy. This had

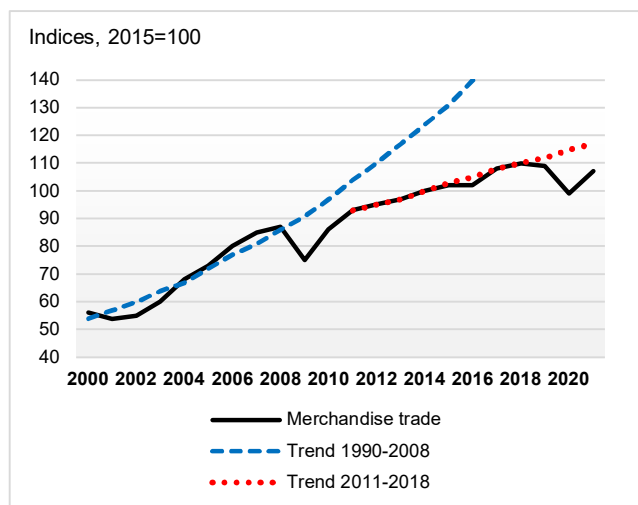
* This study was supported by Research Funds of Kyonggi University.

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a negative impact on global trade. The uncertainty surrounding trade has also made it difficult for companies to invest and plan new strategies (Li & Lin, 2018; Guo et al., 2018; Liu & Woo, 2018). The slowdown in overall economic growth and the impact of economies of scale have led to a prolonged slump in international trade activity. Regarding these factors, the trade environment through 2021 was less predictable and uncertain (Yu et al., 2021). In Figure 1, the blue dotted line for the WTO is a dotted line showing trends from the 1990s to 2008, and the red dotted line is a dotted line showing trends from 2011 to 2018. It was reported that the slope difference was reduced by more than 30%. The WTO also predicted that "trade in electronics and automotive products is likely to decline more sharply in the future.". The Wall Street Journal (WSJ) reported that the U.S. economic growth rate in the second quarter of this year was -25%. Europe is also forecasting the lowest economic growth since World War II, and the global economic trend is not good. The following graph shows the rate of increase or decrease in international trade activity and projections.



Source: WTO Report (2021)

Figure 1: World Trade and Economic Growth

1.2. Crisis of the Shipping Industry

Along with the global trade downturn, the shipping industry also faced a recession. The shipping industry is highly influenced by the global economy and domestic and foreign trade policies. As explained earlier, since 2018, U.S. protectionist stances have increased global trade tensions (Bown, 2019; Steinbock, 2018). The impact has led to a reduction in the volume of trade between various nations and a shrinking of trade networks. The shipping industry has experienced a decline in shipments, rate pressures, and high tariff burden in the aftermath of the trade war between countries (Steinbock, 2018). The European Union (EU) was

still facing economic difficulties due to the aftermath of the 2016-2018 financial crisis, which was the most severe since the 2008 financial crisis (Archick, 2015). In particular, in 2016 and beyond, problems related to the fiscal crisis emerged in several member states (Gutiérrez & Abad, 2020). As exports and imports declined within the EU, shipping companies faced a more difficult business environment (Bisciari, 2021; Notteboom et al., 2021). China was also a major player in global trade and had significant economic influence, but by 2018, trade with China had declined as China's economic growth slowed (Grosse et al., 2021). Countries and industries with China as their main trading partner have been affected by the decline in shipping volumes and sluggish trade. In the financial markets, central banks around the world have maintained a policy of low interest rates, keeping funds liquid, which has been a source of instability in the financial markets (Papaioannou, 2020). The decline in oil prices has had a negative impact on the shipping industry, which is linked to energy exporters (Balashova & Serletis, 2020). In addition, the COVID-19 pandemic that broke out in 2019 had a strong impact on the shipping industry. Disruptions or restrictions on trade and production activities have led to a decline in transportation volumes and sluggish volumes, while logistics delays and supply chain instability due to the continuation of the pandemic have created additional difficulties for the shipping industry (Yazir et al., 2020; Gavalas et al., 2022; Kamal et al., 2022). According to the Shanghai Containerized Freight Index (SCFI), the shipping industry's flagship freight index, rose from 649 points in 2016 to 833 points in 2018 before declining to 803 points. This means that shipping rates have declined across the board. Specifically, the Shanghai-Europe route dropped by nearly \$80 from \$822 per TEU (one TEU is one 20-foot container) in 2018 to \$746. The Shanghai-US West route fell from \$1,736 per FEU in 2018 to \$1,535. Fares on offshore routes, which are mainly used by Korean shipping companies, are also in a bad situation. This decline in freight rates is due to the fact that the actual volume of goods cannot keep up with the increase in shipping volume. The Shipowners' association reported in 2021 that the global container shipping volume increased by about 3.7%. However, the volume of goods transported increased by only about 2.1 percent. This is due to the increase in price competition among shipping companies due to oversupply, which leads to a decrease in freight rates. According to the shipowners' association, in 2021, the global container shipping volume increased by about 3.7%. The situation of introducing large ships with increased shipments overlapped, and the phenomenon of overcrowding intensified. Moreover, uncertainties in the external environment, such as the trade dispute between the United States and China, have also adversely affected the shipping industry, and it is judged that

it will be difficult to continue to recover. The International Maritime Organization's (IMO) regulation of 'IMO2020' sulfur oxide emissions, which began on January 1, 2020, also has a negative impact on the shipping industry. According to IMO Sulfur Cap 2020, it refers to regulations that lower the sulfur oxide content standard for marine oil from 3.5% to 0.5%. To do this, it is necessary to use low-sulfur oil with low sulfur content, but the problem is that the price of low-sulfur oil fluctuates wildly. According to the oil refining industry, the current price of low-sulfur oil is more than \$200 to \$300 per ton higher than the previously used high-sulfur oil. These external environmental factors have put shipping companies under pressure from freight rates and increased competition, and the decline in shipping volumes and reduced imports has had a negative impact on their profitability. This has led to the need for restructuring and cost reduction within the industry.

Shipping and logistics companies have faced unforeseen challenges, and overcoming the impact of a long-term recession and adopting new strategies has become an essential survival strategy. However, despite the shipping logistics industry being in crisis, there are not many companies that have overcome it. In addition, due to the lack of such case studies, there is a severe lack of in-depth qualitative research that can provide implications for other companies. Fortunately, despite the challenges posed by global economic instability and trade slowdowns, some companies are responding creatively and proactively to market changes. Therefore, this paper presents a brief introduction to the current difficult situation of the shipping industry and changes in the trade environment, and analyzes the strategies that companies are implementing in response to this.

This paper examines how firms understand and respond to challenges posed by uncertainties in the trade environment, and how these responses affect their long-term growth. In order to look at in-depth cases, the single case study method is suitable (Gustafsson, 2017; Gaya, & Smith, 2016; Donmoyer, 2000). In this in-depth case study by Maersk, I analyzed at how companies are overcoming uncertainty and building new business models in response to changes in global trade.

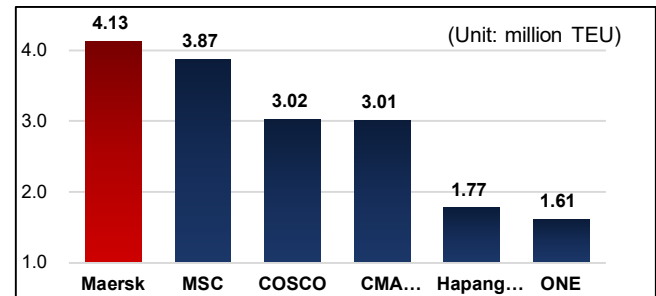
2. Introduction of Company

2.1. The History of Maersk

The company was founded by Arnold Peter Moller in 1904 in Svendborg, Denmark. Initially, it started as a steamship company. Moller's goal was to establish a reliable shipping company to serve Denmark's growing trade interests. In 1912, Maersk made its first foray into

international shipping by establishing a regular service between Denmark and the United States. The company continued to expand its fleet and routes, navigating through the challenges of World War I and the economic downturn during the interwar years. By the end of World War II, Maersk had become a significant player in the shipping industry.

Maersk became a leader in container shipping during the 1970s and 1980s. The company invested heavily in containerization, which revolutionized the shipping industry by enabling efficient and standardized cargo transport. Maersk's commitment to innovation and its large fleet of container vessels contributed to its dominance in this sector. In the 1990s and 2000s, Maersk continued to diversify its operations. It expanded into logistics, terminal operations, and the oil and gas sector. The acquisition of companies such as Sea-Land Services Inc. in 1999 further strengthened its position in the container shipping industry. Maersk embraced digital transformation in the 2010s, introducing online booking platforms, real-time tracking systems, and other digital solutions to enhance customer experience and operational efficiency. The company also focused on sustainability, setting ambitious targets for reducing its environmental impact. Maersk remains a global leader in shipping and logistics, providing a range of services across various industries. The company has a continued focus on innovation, sustainability, and global reach. And it is positioning itself as a key player in the evolving international trade and transportation (Alphaliner, 2021).



Source: Alphaliner (2021)

Figure 2: The World's Largest Container Capacity

2.2. Pioneered the World's First Super-sized Vessel, Triple-E

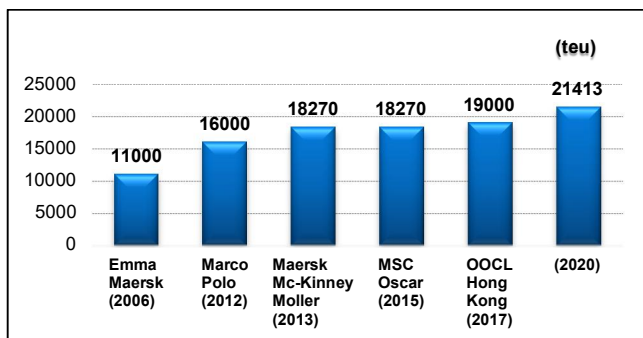
Maersk has the world's largest carrying capacity vessel, the Triple-E. Triple-E takes its name from the three E's: "Economy of scale", "Energy efficient" and "Environmentally improved". They represent design principles for transporting cargo efficiently while minimizing environmental impact.

Maersk's ultra-large Triple-E vessels have remarkable

features compared to conventional container ships. First, Triple-E can bring about an increase in scale. Each Triple-E vessel has a capacity of approximately 18,000 TEUs (based on a 20-foot cargo container), which is a significant increase over previous vessels. The second important feature of the Triple-E is its energy efficiency. The vessel is designed to use energy more effectively, and several technologies and systems have been introduced to reduce fuel consumption, in particular. This has resulted in a reduction in operating costs while minimizing the impact on the environment. The Triple-E vessel is larger than a Panamax-sized vessel, which allows it to carry more cargo effectively, making Maersk a global leader in innovation in the shipping industry and pioneering the large vessel market.

2.3. Economies of Scale and the Size of Ships

The Triple-E vessel is designed to maximize the maximum volume of containers. As a result, Maersk has achieved the maximum floor capacity, reducing logistics costs and enabling economically efficient transportation. The chart below shows the annual cost reduction per TEU that Maersk has achieved (Drewry, 2021). In addition, large vessels are designed to minimize energy consumption through new engine technology and efficient design. This improves fuel efficiency and enables eco-friendly operation. In addition, the Triple-E vessel has attempted to minimize the environmental burden by emphasizing eco-friendly operation, and these environmental improvement technologies have contributed to reducing greenhouse gases and other environmental pollutants generated during the operation of the vessel. Some Triple-E vessels have introduced automation technology, which has contributed to increasing the efficiency of the vessel operation and transportation process and reducing the workload on the crew. These largest container ships are suitable for large-scale international trade, and Maersk's strategy was to strengthen its competitiveness in global trade and minimize logistics costs.

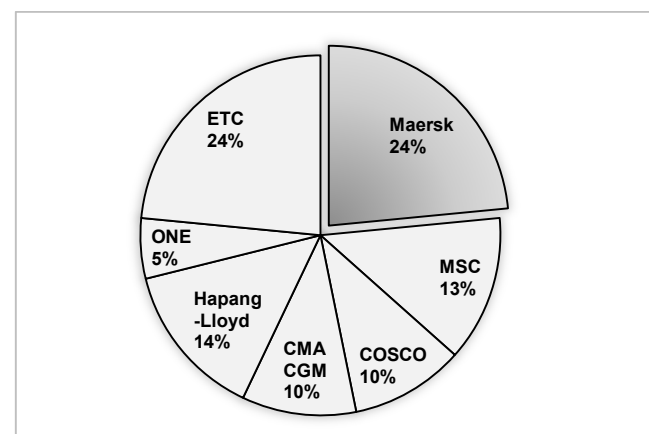


Source : Maritime Cyprus, Marine Insight(2020)

Figure 3: The World Container Ship Growth

2.4. Maersk's Business Performance by Business

Maersk's business was divided into navigation business, ship and ship S&P, port terminals, manufacturing and sales of containers and shipping and port equipment, and port service businesses. First division is container shipping and liner business. Maersk is providing international shipping services primarily by container ships. Maersk plays an essential role in international trade, carrying out container transportation on a variety of routes. Second division is ship and purchase. This business refers to ship and ship sales and purchase (S&P) activities. This includes activities such as buying and selling ships or buying new ones. Elections and S&P activities are an important part of the management and coordination of vessel assets. Theirs businesses is terminal operations. Maersk is responsible for the operation of ports and terminals directly. This includes ensuring that the vessel arrives at the port, handles cargo quickly, and operates the port facilities effectively. Terminal operations are one of the critical sectors that affect port infrastructure and efficiency. The other business is manufacture and sale of containers and shipping and port equipment. Maersk manufactures and sells containers and a wide range of shipping and port equipment. This means manufacturing containers, cranes, port equipment, and supplying them to the shipping and port industries. The las business is port service business. Port services mainly provide various services needed in ports and ports. This includes a wide range of activities such as port management, storage, maintenance and security, and Maersk is improving port efficiency and expanding its business scope through port services. Through these various business segments, Maersk has grown into a global shipping and logistics company and plays a key role in global trade activities. Maersk's business performance by business is shown in the following table.



Source: Alphaliner Report(2021)

Figure 4: The Global Market Share

Table 1: Maersk's Business Performance

Year	Department	Operations Business	Vessels and Ships	Port Terminal	Manufacturing & Selling Container & Port Equipment	Port Service
2010	Sales	26,038 (76.3%)	2,851	4,251	582	425
	EBITDA	4,602	-112	793	31	88
2015	Sales	20,054 (67.6%)	2,049	6,177	799	589
	EBITDA	1,303	11	1,251	48	139
2017	Sales	29,209 (77.5%)	2,668	4,138	1,016	659
	EBITDA	3,185	-4	705	87	197
2020	Sales	29,175 (73.4%)	6,963	3,807	1,254	-1,459
	EBITDA	6,545	454	1,205	165	-143

Source : Annual Report, Maersk (2021)

3. Maersk's Limitations and Crises

3.1. Maersk's Wrong Investment Strategy

Since the container revolution changed the trade paradigm, Maersk has become the world's largest shipping company. However, the long-term recession in the shipping industry before and after the COVID-19 pandemic and the usurpation of MSC, which was the number two in the world, overtook Maersk and reversed the industry leadership for the first time in 29 years in 2023. In 2020, as the volume of goods soared due to the impact of the pandemic, shipping companies came out of the slump and made money. However, for each competitor, the strategy was different. Over the course of about two years, MSC has purchased more than 100 vessels, including second-hand vessels, and placed orders worth 900,000 TEUs. However, Maersk only increased the fleet by 40,000 TEU. Instead, they poured money into logistics. The aim was to vertically integrate the entire supply chain, not only shipping but also land and air. Maersk invested in U.S. customs clearance company Vandegrift in 2019 and has since bought a string of U.S. fulfillment companies such as Visible SCM and Portuguese logistics startup HUUB. In 2023, it acquired Martin Bencher Group and Grindrod Logistics, which also specialize in logistics. As a result, the logistics sector's share of annual sales rose to around 21% in 2023, but while it was gaining ground as a logistics company, its share of shipping took a hit. Maersk's strategic decision was a departure to a comprehensive platform.

3.2. Chasing the Competitors

MSC (Mediterranean Shipping Company) is known as the second largest container shipping company in the world. Headquartered in Switzerland, the company offers a wide range of logistics services internationally. MSC's large fleet of container ships and vessels and a global port network give

it a strong presence in the international logistics market. CMA CGM is a French shipping company and the third largest container shipping company in the world. CMA CGM provides a wide range of logistics services and has a strong position in international trade routes. It is also expanding its scale and influence through mergers and acquisitions. COSCO Shipping is one of China's leading shipping and logistics groups, a large-scale enterprise owned by the Chinese government. COSCO Shipping is expanding globally and providing services in a variety of areas, including container transportation, shipping, port operations, and logistics. In particular, in the case of CMA CGM, it entered the Spanish rail transport business in 2021 and established its air freight subsidiary, CMA CGM Air Cargo, in the same year. MSC has been a bit late, but it has thrown up a very threatening challenge to Maersk. In April 2023, it acquired Bollore Logistics' Africa division (BAL) for \$6.2 billion and recently rebranded as Africa Global Logistics (AGL). AGL has a workforce of 21,000 people in 49 countries and manages 250 logistics and maritime institutions.

4. Transforming into an Integrated Logistics Digital Platform Company

4.1. Maersk's Change of Direction to the 'Shipping Company'

Maersk, which continued to expand capacity, pivoted its strategy in 2016 when the group was at a crossroads. Until this time, Maersk was in the form of a conglomerate that ran the oil and gas business along with shipping. As the main business, shipping, slumped, it was made up for by the energy business, and the shipping industry benefited from the low oil prices. In 2016, however, these portfolios no longer worked. This is because oil prices have bottomed out, and even the shipping industry has fallen into a record

recession. Neither shipping nor energy succeeded, and profits plummeted and stock prices plummeted. Executives realized that past decisions were wrong. A transition was necessary, and there were two forks in the road. Transportation and logistics, and oil and gas, had to go all-in. The choice was easy. The oil industry was nearing its peak, and it was imminent that it would soon be going downhill. Trade, on the other hand, has been deeply ingrained in Maersk's DNA since his birth. The decision to transform from a shipping conglomerate into a comprehensive logistics company was made at this time. Maersk sold Maersk Tankers, an oil tanker family, in 2017 and Maersk Oil a year later. In 2019, it sold Maersk Drilling, and it merged its logistics subsidiary Damco with Maersk Logistics. Investment trends have also changed. In order to provide a lucrative 'factory-to-warehouse solution', the company has been keen to secure logistics bases outside of the port and has significantly increased its spending on digital platforms to diversify shippers.

4.2. Starting with Inland Transportation and Digital Transformation

Maersk emphasized inland transportation and digital transformation, and put forward a strategy to move beyond the "3PL" to the "4PL." This means that Maersk, who is in crisis, is pursuing innovative changes in logistics and transportation services. The strategy of inland transportation and digital transformation has the following implications. First, Maersk emphasized inland transport. Inland transportation plays an important role in efficiently transporting goods from ports to logistics points. Maersk's focus on inland transportation means it wants to provide customers with more efficient and comprehensive logistics solutions. Second, emphasis was placed on digital transformation. Digital transformation represents Maersk's efforts to optimize logistics and transportation processes through modern technology and data. Digitalization can contribute to improving customer service through real-time information sharing, tracking, predictive analytics, and more. Third, it aimed to evolve from '3PL' to '4PL'. '3PL' is an abbreviation for Third-Party Logistics, which means outsourcing logistics activities to an external company. On the other hand, '4PL' is a concept that provides a comprehensive and optimized logistics solution through the connection between various providers related to logistics. This means evolving beyond simply providing logistics services to becoming a strategic logistics partner.

4.3. Integration with Damco

Damco's integration with Maersk is one of Maersk's strategic decisions, with the aim of strengthening its

logistics division and centralizing logistics services to provide more efficient solutions to its customers. This decision by management included a variety of reasons and benefits. The integration of Damco was Maersk's commitment to providing comprehensive and integrated services to its customers in the logistics sector. Damco was offering a wide range of services related to logistics and transportation, and by integrating them with Maersk's various logistics and shipping services, it was able to provide a one-stop solution to its customers. By minimizing collaboration and interconnection between different companies, it is possible to streamline logistics processes and reduce costs. This is due to the integration of resources and technology between Damco and Maersk. The integration with Damco aims to provide customers with an enhanced service experience. By providing a variety of logistics services under a single company, customers can experience seamless service from a single point of contact. The synergy between Damco's international logistics network and Maersk's shipping and logistics industry strengthens global logistics connectivity, helping Maersk to establish a stronger position as a global logistics integrator. This integration is a strategic choice for Maersk to strengthen its competitiveness in logistics and transportation and to provide a high level of service to its customers.

4.4. One stop Logistics Solutions

Maersk's "One-Stop Logistics Service" is a strategy that provides customers with a wide range of logistics services in an integrated manner. This means a comprehensive solution that can handle and manage customers' logistics and transportation needs from a single point of contact. Maersk's One-Stop Logistics Service integrates multiple services to streamline customers' logistics chains and maximize efficiency. Maersk provided international container shipping services with vessels of various sizes and types, and provided comprehensive transportation solutions, including inland transportation services from ports to customers' warehouses or production facilities.

In logistics services, the company provided a variety of services necessary for customers' logistics management through logistics services such as storage, tracking, pick-up and delivery, and order processing, and provided consulting and services for customs and customs issues arising from international trade. Technology and digital services: Modern technologies have been leveraged to optimize logistics processes through digital services such as booking, tracking, information sharing, and efficient transportation management. Maersk's One-Stop Logistics service reflects Maersk's strategic efforts to efficiently manage the logistics chain by allowing customers to use integrated services without the need for multi-party cooperation.

Table 2 : The Case of Maersk's Investment in Integrated Logistics System

Date	Company	Contents
2018.10	Lord Smart	\$19 million invested in U.S. digital forwarding startup
2019.02	Vandergrift	Acquisition of a North American customs clearance company
2019.08	Blackbuck	Invested in a digital forwarding startup in India that provides trucking brokerage and electronic payment system
2019.11	Zigzag	Investing in UK return logistics start-ups
2019.12	Bac Ninh(Vietnam, Singapore Industrial Park)	Opened a new logistics center in Bac Nin, northern Vietnam.
2020.02	Performance Team	Acquisition of an e-commerce logistics company in the United States
2020.07	KGH Customers Services	Acquired a customs service company in Sweden

Source : Each year's IR Report of Maersk

5. Integrated Digital Logistics Platform Company

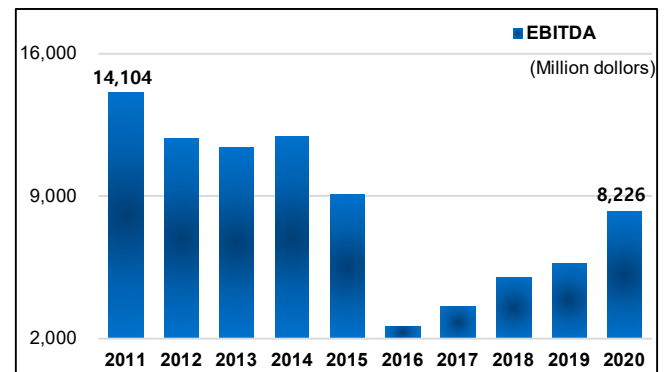
5.1. Introduction of Remote Container Management and Digital Technology

Remote Container Management (RCM) is a technology that remotely monitors and manages information such as the status and location of containers in real-time remotely in the logistics industry. With RCM, Maersk can track a container's location, temperature, humidity, shock, and other data in real time. This ensured customers and logistics partners the transparency and stability of goods within the logistics chain, and allowed them to respond quickly if problems arose. Reefer Container means a container used to transport goods that require refrigeration or refrigeration. Maersk uses digital technology to precisely control and monitor the temperature of refrigerated containers, ensuring the stability and reliability required for refrigerated transport. Refrigerated containers are critical for transporting goods such as food and medicine, and digital technology enables real-time temperature monitoring, alarm, and rapid response.

5.2. Digital Logistics Platform

Maersk implemented a digital logistics platform that integrates and manages data across the entire logistics chain. Once established, this platform will create opportunities to identify and improve inefficiencies in the logistics process through data analysis on the digital logistics platform. It is predicted that this will allow for more efficient transportation and logistics management, reducing costs and

enabling more economical operations. In addition, digital logistics platforms can help identify and predict risks that may occur in the logistics chain based on data. This will improve predictability and allow them to respond to problems before they occur, which will greatly benefit companies and spread risk. These digital logistics platforms leverage automation technology to optimize logistics processes, spread risk, improve workforce efficiency, reduce errors, and increase process efficiency overall. The digital logistics platform provided the flexibility to respond to rapidly changing market conditions. By incorporating new data sources or technologies, logistics processes can be continuously optimized. The results of these efforts can be seen in the following graph. The transformation into an integrated digital logistics company and the increase or decrease rate of operating profit are as follows.



Source : Annual Report, A. P. Moller-Maersk(2021)

Figure 5: Maersk's Operating Profit and Growth Rate

5.3. Maersk's New Investment

Maersk was investing in a variety of companies. Maersk's diversified investments are part of Maersk's strategy to increase efficiency in logistics and transportation in a variety of areas through modern technology and innovation. The analysis of each investment case and investment purpose is summarized in the following table.

Table 3 : Maersk's Investment Case

Investment Company	Investment Objectives
Invest in Onomondo (IoT company)	Based on IoT (Internet of Things) technology To increase efficiency by leveraging IoT technology in logistics and transportation IoT can be applied in logistics to real-time tracking, sensor technology, data collection.
Strengthening cooperation with Syngenta	Company active in the field of agriculture and agricultural products. To strengthen cooperation in the field of agricultural products and transport of agricultural products. Stable and efficient international transportation of agricultural products is now possible

Investment Company	Investment Objectives
Invest in Fleet (a fresh food digital platform company)	A digital platform company for fresh food management and logistics Integrate digital technologies into the distribution and transportation of fresh food to build an efficient supply chain
Invest in Ripe.io (Blockchain Food Traceability Company)	A company that uses blockchain technology to track and manage the history of food Leveraging blockchain to increase food safety and transparency Through blockchain, all stages from production to distribution of products can be managed transparently
Investing in Modifi	Fintech companies in Italy. Providing solutions for trade finance and financing. With the aim of increasing the efficiency of money flows and financial services in global trade. Optimize financial processes and enhance liquidity among trading partners
Investing Incotecs	Companies that provide document digitization services. Streamline and streamline logistics and international trade processes through electronic document and paperwork processing. Digitize paperwork and administrative processes to minimize delays and maximize efficiency in the logistics chain

Source : Organized by Author

Maersk's reasons for investing in a variety of platform companies are attributed to a number of factors.

First, it can be analyzed as an investment in digital transformation and efficiency increase. Maersk is embracing innovations in digital technologies in logistics and transportation, where platform companies can leverage them to efficiently manage logistics processes and increase transparency. This is in line with Maersk's aim to increase efficiency and visibility within its logistics chain. Maersk has also invested in agricultural management to increase its competitiveness in the agricultural and fresh food sectors. This is because cooperation with platform companies can strengthen the safety, distribution efficiency, and traceability of agricultural and fresh foods. In addition, the company is promoting cooperation with various platform companies to strengthen its global logistics network. Maersk has also invested in platform companies that use blockchain technology to increase product traceability and transparency, and to address consumer concerns about food safety. This is believed to be Maersk's commitment to providing safe and reliable services to customers. In addition to this, Maersk is investing in companies in various sectors to respond to changes within the industry and play a leading role in the market of the future. These investments align with Maersk's vision and strategy to maintain its leading position in the logistics and transportation industry of the future.

6. Findings and Conclusion

6.1. Maersk's Strategy Analysis and Findings

As Maersk responds to the long-term recession facing the shipping industry, we looked at how it has leveraged its strengths and explored new opportunities through a series of strategies and changes. Summarizing the analysis, This study can identify several key strategies for Maersk to respond to the long-term slump in the shipping industry. First, Maersk's diversification and portfolio optimization strategy. Maersk has entered not only shipping, but also logistics, terminal operations, container manufacturing, and more. It was diversifying its revenues through activities in various business sectors and optimizing its portfolio so that even if there was a recession in one sector, it could generate stable returns in other sectors. Second, Maersk has been an active user of digitalization and technology. Maersk was transforming its logistics and transportation processes through digitalization and technological innovation. For example, the company has seen efforts to introduce artificial intelligence, big data, and IoT technologies to increase the efficiency of the logistics chain and reduce costs. At the same time, Maersk was investing in clean energy and environmentally friendly technologies for a sustainable future. Maersk's goal of "making container ships carbon neutral by 2050" focuses on building an environmentally friendly transport system. Third, it is a strategy for controlling fares and managing costs efficiently. To remain competitive in a challenging environment for the shipping industry, Maersk maintains economic stability by controlling freight rates, efficiently managing operating costs and improving the efficiency of its fleet. Fourth, Maersk leveraged its strengths in global competition. Maersk's extensive service network around the world gives it a competitive advantage in global trade. In preparation for the increase in international trade volume, the company utilized its global network to provide logistics and transportation services. Fifth, it explored a new business model. In addition to its traditional business model, Maersk was exploring new business models. For example, it is investing in logistics platforms and digital forwarding companies, so it has made efforts to respond to the digital age. Through these various strategies and efforts, Maersk has built a strategy that is stable and future-proof, even in the challenging conditions of the shipping industry. This can be summarized as Maersk's transformation into a digital comprehensive platform company.

6.2. Implication and Conclusion

By transforming into a digital logistics platform company, Maersk can be summarized as having the

following three effects. First, there is an emphasis on integration and efficiency. It was clear that Maersk recognizes digitalization and the adoption of integrated platforms as essential strategies. This emphasizes integration and efficiency in logistics and transportation processes, thereby demonstrating a commitment to delivering high value to customers and partners. Second, it quickly realized its response to the digital transformation of the logistics industry.

In logistics industry, the introduction of digital technology is one of the important factors that determine competitiveness. Maersk was able to emerge from the crisis after deciding that it would be difficult to succeed in sustained competition without responding to digital transformation in the current logistics environment. Third, Maersk has made efforts to strengthen customer-centered service delivery. The active adoption of digital logistics platforms was part of Maersk's efforts to strengthen its customer-centric service offerings. With digital platforms, customers can experience greater visibility and convenience, and manage logistics processes in real-time. Lastly, Maersk has innovated its business model by transforming into a digital logistics platform company. If digital and multidisciplinary platforms are not an option, it indicates Maersk's willingness to create new value through innovation in its business model. The comprehensive digital platform suggests an intention to explore new business opportunities beyond traditional logistics and transportation services.

Overall, digital and comprehensive platforms are no longer an option. It is examined that Maersk recognizes innovation through digitalization as an essential competitive factor and is a necessary decision for future success in the logistics industry. In the future, based on the case of Maersk, it is expected that meaningful growth will be possible if a free-based sharing-based platform model is created and competition is created by a coalition of domestic companies beyond the barriers between companies such as shipbuilding, customer transactions, and cargo information. With this Maersk's case, it is predicted the future changes in the shipping and logistics industry. First, digital platforms in the shipping and logistics industry offer a wide range of functions to optimize logistics processes and increase efficiency. With a comprehensive digital logistics platform from the case of Maersk, if the entire process can be digitized and managed, including the entire logistics chain, a very efficient system will be built. This is because digital platforms can automate the processing of transactions and related documents and deliver them in an electronic form, reducing manpower and time costs and increasing efficiency. Second, within the platform, data analytics and predictive models can be used to predict and optimize future trends in logistics processes. Information related to the logistics process will be tracked and monitored in real time,

providing transparency and enabling rapid response in the event of a problem. As a result, if such a comprehensive platform is built, the platform will be flexible and adaptable to different business needs in order to respond to changing market conditions.

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