

THE SUCCESS OF LOGISTICS MANAGEMENT FOR THAI LOGISTICS PROVIDERS IN THE DIGITAL ERA

Ananya Banyongpisut*, Wissawa Aunyawong

**, ** Suan Sunandha Rajabhat University, 1-U-Thong Nok, Dusit, Bangkok, Thailand,*

*E-Mail: *Ananya.ba@ssru.ac.th, ***Wissawa.au@ssru.ac.th*

ABSTRACT

Abstract—The Changing in technology at the international have inevitably affected Thai logistics service providers. Adaptation of Thai logistics service providers to be ready under the changes in technology in the digital age. Due to the adoption of technology to drive competitiveness of logistics service providers to achieve flexibility, speed, low cost, accuracy, and waste reduction. The research can be found the success of logistics management for Thai logistics service providers in the digital era into 4 dimensions. 1) Thai logistics providers must be able to adapt to survive during changes in the digital age where modern technology has replaced the old technology and led to new service models. 2) Thai logistics service providers must form a group and create a network between Thai logistics service providers based on the sharing economy concept to reduce costs and create added value for the business. 3) The use of technology in sustainable and environmentally friendly logistics management. 4) Encourage Thai logistics service providers to develop management systems equivalent to international standards. To elevate the logistics service business to international standards, ISO 9001 is considered a quality management system standard that is the basis of general business operations.

Keywords—The Success, Logistics Management, Logistics Providers, The Digital Era

INTRODUCTION

Logistics services are the key sectors that support the growth of trade in various sectors and a key engine in driving the Thai economy. During the COVID-19 situation in the logistics service sector is many small entrepreneurs trade in the group of express delivery, which has grown exponentially due to the expansion of e-commerce. The logistics service business is an important infrastructure for all types of businesses. Improving the efficiency of various services as well as the introduction of modern digital tools to help facilitate work. Able to create cost advantages and differentiation over competitors. This will lead to the business to be strong and able to compete in the conditions that must face the challenges of the logistics business in the future world. The development of technology systems has created a condition known as “Digital Disruption” or changes caused by digital technology resulting from emerging business models. Platforms and innovations based on digital technologies are being adopted and many logistics operators are adopting them to improve transport and logistics efficiency to help increase their profits. business creating competitive opportunities and reducing transportation time. Additionally, the speed of transportation will help entrepreneurs in bringing products to the market faster such as Ai, Application creation, Real time tracking, Portable scanners, QR Code, GPS systems, etc., The application of digital technology in the logistics business shows a growing trend. Businesses across every sector are now adopting digital technologies and reshaping their models in line with new digital transformation trends. They come up with new processes or modify the existing ones, build new company cultures, and even introduce brand new customer experiences to satisfy the changing needs of consumers and market demands. Digital transformation in logistics and transportation helps companies from the sector to take advantage of new technologies and stay competitive in a market that is continuously expanding. These include the web, the cloud, sensors, data analytics, machine learning, blockchain technology, and the Internet of Things (IoT), which improve vertical and horizontal alignment around supply chain networks. (Putthiwat S, Kamonchanok S, and Pongsa P. 2021)

Logistics Service Provider (LSP) is a business that is extremely important to the overall economy of the country. Because it is an activity that supports business operations in both the manufacturing and service sectors. By participating from the production process until the products and services arrive at the hands of consumers. The administration and management of logistics is one of the main approaches that are targeted for development in order to increase competitiveness. Businesses are more likely to delegate or opt for logistics services that they have less expertise. Or have higher operating costs to outsource logistics service providers which has lower operating costs and better efficiency than manual operation. (Banomyong, R. and Supatn, N., 2011). However, adapting to enhance the use of logistics technology is quite an investment. Many logistics service providers have unequal investments in logistics providers with large foreign capitals that use digital tools to facilitate businesses such as RFID, digital sensors, smart warehouses, warehouse management systems, drones, delivery robots, or autonomous driving systems, and foreign logistics providers can negotiate bilateral trade directly with the government, or have the privilege of using infrastructure such as owning their own warehouses and having the privilege of opening free zone warehouses in the EEC special economic zones, which creates an advantage and greatly increases the competitiveness gap. As a result, Thai logistics service providers need to make urgent adjustments. The potential development of logistics providers is not only the need to create tools that measure logistics potential to be evaluated. It also cannot avoid providing services in Industry 4.0, which requires an index based on an industry readiness assessment. 4.0 has a significant impact on driving the economy and gross domestic product (GDP) and raises the standard of Thai industry by helping to make industrial plants and entrepreneurs more knowledgeable about improving the organization. (Kamnai A, 2017)

Therefore, the researchers are interested in studying the success of logistics management for Thai logistics providers in the digital era. To find ways to develop indicators that affect the business management potential of Thai logistics service providers in the modern era. The researchers expect the results of this study to benefit Thailand's economy. Promote market share from foreign logistics providers and encourage new service innovations of Thai logistics providers that meet the real needs of customers in the digital age.

LITERATURE REVIEWS

1. Logistics Development

At the present time, organizations have a main concern to invest on the information technology like, enterprise resource development to logistics system and track the operations and merchandise, optimization of the inventory level, automatic inventory level and for other supply chain management (SCM) decision making. (Tanasarn P, 2020). The development of Thailand's logistics system is of great importance and urgency to increase the competitiveness of the country and the Thai business sector. Thailand's logistics development is a link between the 20-year National Strategy (2017-2036) and the 12th National Economic and Social Development Plan. This has resulted in a 20-year logistics development framework that can be divided into 3 phases: the first 5 years, the 5-10-year phase, and the 11-20-year phase.

The Office of the National Economic and Social Development Council (2020) discussed the indicators of the country's logistics development strategic plan No. 3 (2017-2021) was prepared within the framework of the 20-year National Strategy and the 12th National Economic and Social Development Plan (2017-2021), which aims to enable Thailand to upgrade the country's logistics system to become a commercial hub. Regional services and investment consist of 3 main strategies: 1) value-added development of supply chain systems, 2) development of infrastructure and facilities, and 3) development of logistics support factors to support the country's competitiveness and implement integrated characteristics between agencies and development partners involved in driving the logistics development strategy to effective practical results. The development of logistics systems involves all departments, both government agencies and businesses, as each part will have a responsibility or role to support or be part of supply chain activities. Pushing for practical implementation of policies/strategies There needs to be a concrete policy management mechanism that serves to drive planning. Monitor, evaluate, and propose solutions to adjust policies or operational guidelines to improve the overall logistics system in accordance with the policy or strategy laid out. There are proposals for a management approach to drive strategy from past studies as following.

Approach 1: Establish a knowledge-driven monitoring system to effectively drive logistics development strategies using knowledge as a guide, i.e., using knowledge as an indicator of what sector performance is at the

level and what weaknesses or shortcomings should be improved by evaluating from the perspective of customer-oriented monitoring, as follows

1) Integrated linked performance scorecards (KPIs) and database systems necessary for performance evaluation to know the productivity and results of operations for scorecards.

2) Annual Performance Report to be presented to the Country's Competitiveness Development Committee (NEDA) and made public to provide information and knowledge to stakeholders who will be audited and directed.

Approach 2: Provides a clear and unified network of organizations responsible for driving logistics work. Driving logistics development strategies requires clear accountability at both the policy and practice levels. Setting up a logistics host agency should be a form of committee pushing for reform. Both the public and private sectors work together and define their authority clearly. Considering the appropriate scope of action between the public and private sectors.

Approach 3: Strategic driving mechanisms initially After the NEC or the Cabinet has approved and approved the implementation of the Master Plan, the National Logistics Development Subcommittee (OLC), a public-private collaboration, will be responsible for pushing the policy/strategy into action. The NCPO, together with private sector agencies, the Thai Logistics Confederation will periodically monitor and evaluate the performance (Monitoring) in order to know the overall development of Thailand's logistics system, as well as to study the limitations of operations and the dynamics of socio-economic changes that will affect the plans/projects in progress in order to make appropriate policy recommendations.

2. Logistics Provider Services

Thai-Nichi Institute of Technology (2020) discussed the opportunities in Thailand's e-Logistics and supply chain market to the on-going demand for consumer goods, the expanding number of internet user base has made Thailand an ideal growth environment for digital technologies and ecommerce businesses. The performance of Thailand's logistics significantly improved in 2018 because of the massive investment in transport infrastructure and relevant legal reforms. To improve efficiency, safety, reliability, and traceability of their operations, and to reduce their operating costs and wastes, and thus enhancement of their competitiveness in Thailand' logistics market, the LSPs currently focus on route optimization while the WIs focus on warehouse and inventory management system. However, the logistics management is one of the main approaches aimed at improving the target. Businesses are more likely to assign or opt for logistics services that are less specialized or have higher operating costs to external logistics service providers (LSPs), which have lower operating costs and better efficiency to operate on their own. Third Party Logistics Provider (3PL) is a logistics-related service provider whose services require skills and a global business network. (Global Network) with technology tools and investments. The nature of the work provided will have a wide scope of responsibility by representing the employer (User) with customers or partners and is connected as an integrated user by the user to be a real user. Providers of this nature require high investment, especially those with a global network. Third Party Logistics (3PL or Forwarding Logistics or Contract Logistics) is an activity carried out by a logistics service provider on behalf of a shipper consisting of at least transportation management and operations services and inventory management. Logistics services integrate multiple fields of service, such as transportation, communications, distribution, and business services. At present, the scope of logistics services is not clearly defined, and under the WTO the exact scope of services has not been defined either, but the Friends of Logistics has proposed a market opening criteria for member states to bind each other by opening the market for logistics services, focusing only on logistics for goods. There are 3 types of logistics-related services as follows:

1) Core Freight Logistics services include cargo lifting service warehousing services, transportation agents, transportation scheduling other services that support transportation such as freight monitoring services. Transportation document preparation service., etc.

2) Related Freight Logistics services are divided into freight transport services consisting of sea freight, domestic waterways, air freight, and aircraft rental services with crew, road, rail, and other related logistics services such as technical testing and analysis of goods, parcel delivery, brokerage agents, wholesale, and retail services.

3) None-Core Freight Logistics services include computer services and computer-related packaging services logistics management consulting services., etc.

Roles and Responsibilities of Logistics Service Provider

Logistics service providers are third-party service providers or external operators. Specializations that have a significant effect on the work and can save money can be divided into (Department of Business Development, 2017).

1) Transportation Services, automobile, truck, rail / pipeline transport, water transport, air freight and MTO (Multimodal Transport Operator), multimodal transport, Terminal to Terminal or Door to Door.

2) Warehousing Services include:

- In-Transit Warehouse
- Free Zone Warehouse
- Bonded Warehouse
- Domestic Warehouse

3) International Freight Forwarder, an international freight forwarder

4) Customs Brokerage Services, the agent of importers and exporters in carrying out customs clearance on behalf of the importer and exporter who owns the goods.

5) Courier and Postal Services, parcel, and postage carriers, is a fast service provider with door-to-door service.

Based on a review of the literature related to logistics service operators. Researcher can conclude that logistics management and management are one of the main approaches aimed at improving competitiveness. Businesses are more likely to assign or opt for logistics services that are less specialized or have higher operating costs to external logistics service providers (LSPs), which have lower operating costs and better efficiency than manual operations.

METHODS

The target population used in this research were key informants who is the best information rich case. The main informant of this study is a Thai logistics services business operator. The tool used for in-depth interviews; researchers select key informants in their research with purposive sampling based on criterion for qualifications that the researchers determine as selection criteria. We defined specific qualifications to be used as inclusion criteria as follows:

1) A group of senior executives of Thai logistics service business operators. A total of 3 companies who have been engaged in logistics services in Thailand for at least 5 years have at least.

2) A group of senior executives in government agencies who play an important role in the development of logistics management systems in Thailand. Two of them used a specific sample selection method based on their knowledge, expertise, and experience in the subject, with at least one of the following criteria for providing key information.

3) A group of academics, logistics experts. To use a specific sample selection method of at least 2 people, with at least one of the following key contributor selection criteria:

This research conducted an in-depth interview using a semi-structured selection interview with a group of key informants including Thai logistics service operators, a group of senior executives in government agencies and a group of academics who are experts in logistics to analyze the content and process it in conjunction with existing theoretical concepts. For the creation of an in-depth interview, the unstructured interview is defined as an open-ended interview, i.e., there is a line of important questions to guide the interview and open to the respondent. For all this, the researcher obtaining the information from the interview. The researcher examined and analyzed the data based on the defined question lines and compared each data to draw conclusions. Data monitoring and analysis can be done as follows.

1) Reviewing the data after the researcher obtained the data from each in-depth interview of the informant. Researcher will sort the data and classify it according to the questions studied and use the obtained data to verify the accuracy of the data. Triangulation is used for data fidelity and reliability, as resentment of researcher bias can occur. When mingle with Prague rules and informants, which can be checked in 3 methods:

Method 1: Data Triangle checks the source of the data in time. To determine whether the data is collected at different times, different locations and data providers will still get the same information.

Method 2: Investigator triangular data validation verifies that if the data collector is changed to at least 3 assistants, the data should match.

Method 3 Data Audit triangulation method Is a data check obtained from 3 different data collection methods and still has the same effect, such as using observation methods. Use queries and document usage.

2) This qualitative research for in-depth analysis of the data obtained from the interview. The data obtained is used to analyze and process the data in conjunction with the collection of data from research studies from academic papers. Related research methods are carried out in accordance with qualitative research approaches, i.e., Depiction of phenomenal data and analysis of data in order to seek the findings from the research study, which is the guideline that leads to the appropriate approach according to the objectives of the researcher.

The data in this study are qualitative research, using secondary data analysis with content analysis, describing, and displaying results in tabular form from the data studied from the concept. Theory, documentation, evidence, and related research. The company verified the accuracy of the data and collected primary data through in-depth interviews with key informants and used all types of collected data, including documentary studies in conjunction with in-depth interviews, analysis, and synthesis to provide meaning and draw conclusions from the research received in order to achieve the objectives of this research.

RESULTS

The research can be found the success of logistics management for Thai logistics service providers in the digital era into 4 dimensions in qualitative and conceptual research approach consisting of the following steps.

1) Thai logistics providers must be able to adapt to survive during changes in the digital age where modern technology has replaced the old technology and led to new service models. This is actual the world's most prolific internet users. Thailand's digital future, pervasive internet use is not the same as widespread digital innovation. The elaborated framework is applied to the 3PL industry through an analysis of practical examples of new digitally based logistics technologies and business models. Information on the examples was obtained from the internet and the effects of these examples on 3PL were discussed in team sessions.

2) Thai logistics service providers must form a group and create a network between Thai logistics service providers based on the sharing economy concept to reduce costs and create added value for the business. Thai economic model has the avowed goal of transforming Thais into "more competent human beings" by reforming the education system, as well as changing curriculums and teaching methods to foster a better learning ecosystem. The nation has a long way to go to achieve this objective.

3) The use of technology in sustainable and environmentally friendly logistics management. The Logistics System Development Strategy Division recognizes the importance of the rapidly changing technology. This will benefit the adaptation of logistics operators as well as agencies related to the development of the country's logistics system to keep up with modern technologies such as internet of things (IoT) technology, data analysis with Big Data Analytics, and development to be friendly to the environment.

4) Encourage Thai logistics service providers to develop management systems equivalent to international standards. To elevate the logistics service business to international standards, ISO 9001 is considered a quality management system standard that is the basis of general business operations. The government will also set up skills development programs to prepare people for the jobs of the digital age. Skill development will be essential to the success of Thailand 4.0, and many challenges must be overcome. One of the key components of Thailand 4.0, the Eastern Economic Corridor (EEC), has already seen the success of its projects threatened due to skilled labor shortages.

CONCLUSION AND FUTURE WORK

In the midst of digital disruption where modern technology has replaced old technology and led to new business models, the government has planned to develop the country to Thailand 4.0 by defining 10 target industries (S-Curve) to the future economic driving industry. Thailand has placed a great importance on the development of logistics systems, especially the development of Thailand to be a logistics center. Therefore, Thailand must accelerate the development of logistics systems to be able to link both locally and internationally

and to increase competitiveness. The logistics system development strategy is consistent with the current National Economic and Social Development Plan and the 20-year national strategic plan. There are many discussions on the development of infrastructure in Thailand's development and strategic plans, such as water transport development, road transport, air transport or rail transportation for increasing the capacity and safety of cargo by developing a dual rail system which is a project that has been continuously discussed. In the future, more advanced e-logistic and supply chain technologies are expected to be implemented by LSPs. Machine Learning or Artificial intelligence (AI) system for better and more adaptive route optimization. Big data for risk management. The data itself can also be sold to other third-party companies. To improve efficiency, safety, reliability, and traceability of their operations, and to reduce their operating costs and wastes, and thus enhancement of their competitiveness in Thailand's logistics market, the LSPs currently focus on route optimization. The government must also initiate a human resource development plan for supporting the e-logistics and supply chain technologies.

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