



Original article

The expanding tendency of logistics major in the 4.0 industrial revolution: A case study in Vietnam

Van Tai Pham

College of Foreign Economic Relations (COFER), Ho Chi Minh city, Vietnam, Corresponding Author: phamvantai@gmail.com

Abstract

Currently, the 4.0 industrial revolution has influenced almost sectors entire the world. Chances, and challenges always are created in the fourth industrial revolution that has never faced in the past. Changing and renewing are necessary unless enterprises will come out of “playground” of the fourth industrial revolution. The navigational field which has not been outside the “playground” has suffered from numerous challenges currently. Although the possible advantages of marine industry only include the seaport system and government support, the challenges and barriers are the majority. Labor, database management, digital technologies, infrastructures, investment, and customer’s attractions are the existent trials of the maritime field. It is evaluated as the key major; logistics has followed the trend of expanding. In order to give general views for readers about the prevailing tendency, the author contributes by writing a small article. Although the fourth industrial revolution has originated many barriers, the development stages of the logistics industry in the revolution also are mentioned in the article. In order to write the article, consulting several sources such as books, newspapers, magazines, reports as well as other articles was necessary. Analysis, statistic, prediction, the application is the essential methods which were used to express the topic. The authors used the SWOT analysis method to assess opportunities and challenges for Vietnam's logistics industry in the early stage of the 4.0 revolution. Some recommendations for the sustainable and adaptive development of Vietnam's logistics industry have been proposed from the above analysis. The article consists of four root parts which are: firstly, the development stages of the logistics industry; secondly, the reality of logistics and supply chain management in 4.0 industrial revolution; thirdly, the expanding tendency of the Vietnam logistics industry; eventually, recommendations for Vietnam logistics industry to meet the world trend. Relating to the logistics sector and the fourth industrial revolution, the article will reflect the considerable development and opportunities of the logistics field during the 4.0 industrial revolution approaching period.

Keywords: Logistics major, industry 4.0, Vietnam logistics, logistics orientations development

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1. Introduction

Logistics field has attracted the consideration of many enterprises, management branches, and society. The government's consideration of the logistics major also is expressed through the Decision 200/QĐ-TT of Prime Minister. The decision shows off the competitive capacity improvement and logistics industry development in Vietnam until 2025; this helps Vietnam get the recent period for the logistic major by proposing the concrete and synchronous solutions to upgrade the infrastructures, reinforce the human resource and extend the market. On 22nd October 2018, on behalf of 12th Party Executive Committee, General Secretary signed and issued Resolution 36 MQ/TW about the strategy for unshakeable marine economy developing to 2030 and vision to 2045. The Resolution emphasizes the critical role of completing modern infrastructures, connecting among the between ports and regions, the nation and others (Luu, 2019). According to the Resolution, the logistics enterprises' mission includes reorganization, modern facilities application, service improvement, domestic demand adapting, noticeable supply chain attending and international market share gaining step by step (Nguyen et al., 2016).

The 4th industrial revolution (4.0) relates to the making a sudden attack on technologies which are the Internet connection, cloud computing, 3D printing, sensor technology, virtual reality and so on. These factors will influence on nations, governments, enterprises and international citizens (Ustundag and Cevikcan, 2017).

Entire the world, the human start to take the first step in the 4th industrial revolution, it drives human life to other ways. It is not difficult to witness the changing in lifestyle, working style, and production method. The nature of the industrial revolution 4.0 is based on digital technology and aligns the smartest technologies to optimize processes and production methods (Gilchrist, 2016). Due to the human's creativity, the new century of investment, productivity and living standard upgrading are begun. This will affect the political system, society, and economy profoundly all over the world (Bartodziej, 2016).

The 4.0 industrial revolution which has attended already has established a globe in which the virtual system and physic characteristics of the supply chain can improve collaboration flexibility (Witkowski, 2017). 4.0

not only is purely the machines, connected smart system but also include others in huge scope (Barreto et al., 2017). Moreover, the man will experience further breakthrough among the different industry such as encoding the genes, nanotechnology, recycled energy, quantum calculation. This gives the new expectation that is the positive effects on the global economy in general and Vietnam economy, in particular, will be created (Ngoc, 2017). In terms of energy, in addition to seeking new clean energy sources (Hoang et al., 2018b), countries are continually developing new generation biofuels (Hoang et al., 2019) and combustion engines. Regarding the sources of waste and pollution emissions (Hazar and Aydin, 2010), the strategy of recycling plastic waste has implemented and obtained some positive results in some countries; projects on emissions control by engines (Hoang and Pham, 2019) have been effectively deployed from developed countries to developing countries.

Firstly, the production activity has been impacted by 4.0 that drive the vast transformation in the production method. The appearing of the Internet of Things – IoT alters almost industry such as production, infrastructures, health care and so on (Yaqiong et al., 2018). Figure 1 shows a compelling combination of CPS and IoT in the 4.0 industrial revolution. Thank for the production method changing; the most modern technologies will support the connection between the virtual and reality world in order to produce (Arumugam et al., 2018).

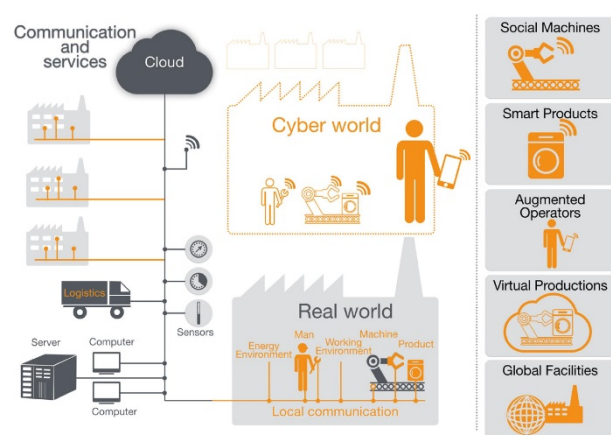


Figure 1: The combination of CPS and IoT in the 4.0 industrial revolution (Bujak, 2018)

Secondly, in term of the commercial field, 4.0 industrial revolution helps save the transfer and delivery cost. In the investment content, technology application will be a common trend which is one of the most likely industry for investors in recent years (Fengzhu et al.,

2018). Digital technology and the Internet are forecasted as the most attractive for investors to pour the capital. However, the industrial revolution may bring unequal factors and risks, which break down the labor market (Schmidtke et al., 2018). While technology innovation usually leads to getting high productivity, the developing speed forms enormous pressure because of the labor resource movement. The workers who live in the 4.0 industrial revolution will have new tasks with a variety of requirements in the other working environment (Kovács and Kot, 2016).

Since the significant demand for seeking the effective production method is innumerable, 4.0 industrial revolution is predicted the sharp progressing. 4.0 will be behalf of the human to deal with several tasks, so this gives many opportunities to develop, and integration through numerous challenges and barriers are waiting for the developing country like Vietnam (Tham and Chiadamrong, 2016). Especially with the manufacturing and mechanical engineering industries will face many difficulties. Generations of old and outdated engines will be challenging to meet the requirements of digitalization and automation. Moreover, emissions from engines will be a significant threat to the environment (Hoang and Pham, 2019).

In the scene of thick, extensive integration into the global economy in completing commercial agreement such as TPP, FTA and so on, Vietnam has kept on approaching the new production achievements to form the powerful instruments which help Vietnam joined in the supply chain effectively, encourage the industrialize and modernize the nation (Yap, 2019, Mercogliano, 2017). Technology innovation may create marvelous elements to support production processes.

Thirdly, Government does not be excepted in the industry 4.0 revolution. Vietnam government has pushed the application the achievements of 4.0 to increase the controlling power, enhance of social system management (Nguyen et al., 2016). Similar to other countries, Vietnam government needs to suffer from the challenges. Instead of following the previous methods, the revolution requires the government to change into the modern approaches that contribute to determine a plan and execute the policies. Importantly, in the process, enhancing the citizen's role is necessary. In Vietnam's new period, it will be significant if the renovation in

thinking, appraising with certainty are executed to industrialize, modernize (Ngoc, 2017).

Fourthly, the enterprises also gain many advantages from the 4.0 industrial revolution. In term of shipping companies, it is necessary to participate and strictly abide by the requirements of the International Maritime Organization (IMO) (Tran et al., 2017) on preventing from accidents and pollution the marine environment from marine engines (Pham and Cao, 2019). These companies need to have a responsibility to prevent oil spills (Hoang et al., 2018a) and marine pollution caused by oil (Sundus et al., 2017).

Also, most industries have experienced the movement in the application the modern facilities which create new methods to meet the new needs and replace the previous supply chain entirely thoroughly. This is easy to recognize that Vietnam enterprises have taken great effort to approach modern technology, raise the standard of quality, speed up and reduce the cost as much as possible. These enterprises also have realized that the supply chain is established from many factors such as quality, quantity, cost, time and so on (Nguyen and Notteboom, 2016). If a factor is not conclusively, the value of the supply chain does not exist.

Moreover, the consumer also is the object of the benefits which are given by the 4.0 industrial revolution. When the elements related to the consumers is fairly and clearly, consumers' consideration and their consumption behaviors are decided by rights to access the mobile network and database (Kovács and Kot, 2016). In our contemporary life, technology and automatic developing have reached a peak of the success, the businessmen suffer from the pressure of improving the quality, enhancing industrial chain, recruiting technical ability labors and facing with the fierce competitive not only domestic but also international market (Magdalena et al., 2017). These statements proved Vietnam weakness in smart technology, human resource, and investment currently (Chin-Shan and Chi-Chang, 2012).

2. Theoretical background

2.1. The development stages of the logistics industry

Depending on the service level, the stages of logistics development are determined. However, in this article, the development stages of the logistics industry are reflected by the industrial revolutions.

Therefore, the logistics developing experiences following stages:

Logistics 1.0(Figure 2) (from the 19th century to 20th century): This is the machine period in which vessel and water steam train were used as the crucial means of transport instead of transporting by the human or animals (Buurman, 2002).

However, it is quite interesting that logistics 1.0 was invented and applied for the first time not in commercial activities but in the military field. Logistics is widely applied by countries in the 2nd World Wars to move military forces along with high-volume weapons and to ensure logistics for combat forces. In the history of Vietnam, the first two people who successfully applied logistics in military operations were King Quang Trung during the speedy march to the North to destroy the Qing army (1789).

Logistics 2.0 (Figure 3) (from 20th to 1960): thank for the electrical invention, series production leads to the goods transportation automatically such as warehouses, contribution processes, loading or unloading and so on. Therefore, the logistics field also got the highlight achievements in this period(Christopher and Holweg, 2011).

At major ports in Vietnam such as Saigon Port and Hai Phong Port in the 1970s, the container handling system has been operated by equipment moving along the storage rack by electric motors and controlled by a human.

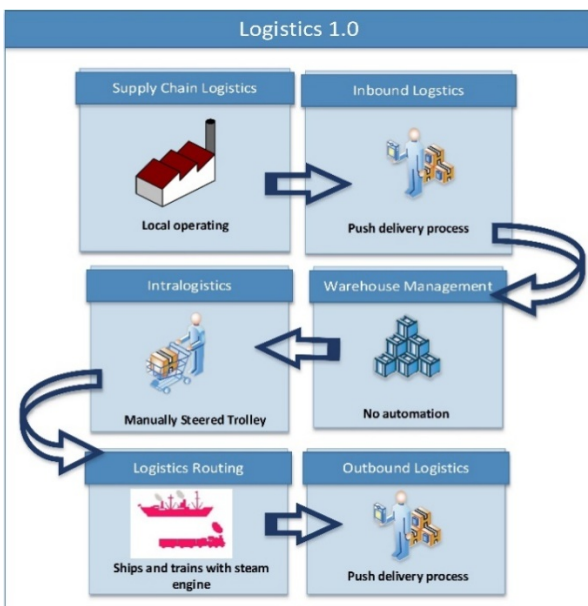


Figure 2: The characteristics of logistics 1.0 period (Buurman, 2002)

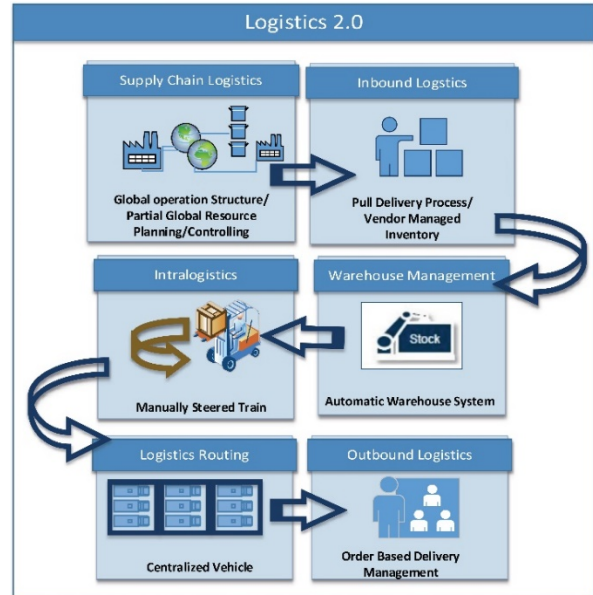


Figure3: The characteristics of logistics 2.0 period(Christopher and Holweg, 2011)

Logistics 3.0 (Figure 4) (from 1960 to 2000): systematize the logistics management is the most attractive factor in this period. This period began with the invention of computers and information technology (IT), which has gained new achievements thanks to information applications. Facts, warehouse management system (WMS), Transportation management system (TMS) also were executed (Wang, 2016).

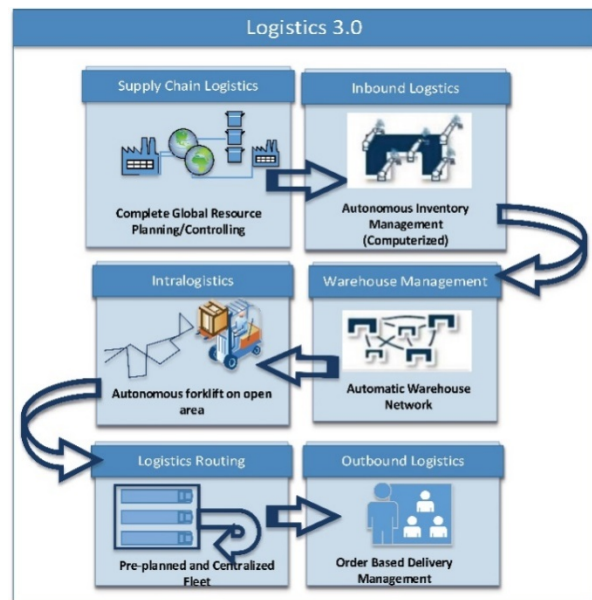


Figure 4: The characteristics of logistics 3.0 period(Wang, 2016)

The Vietnamese logistics industry in the 1990s, the software is used to elaborate a plan with all the orders to the suppliers and when it will be necessary to receive the orders. Therefore, the inbound logistics, as well as warehouse management, are previously planned and

controlled by software.

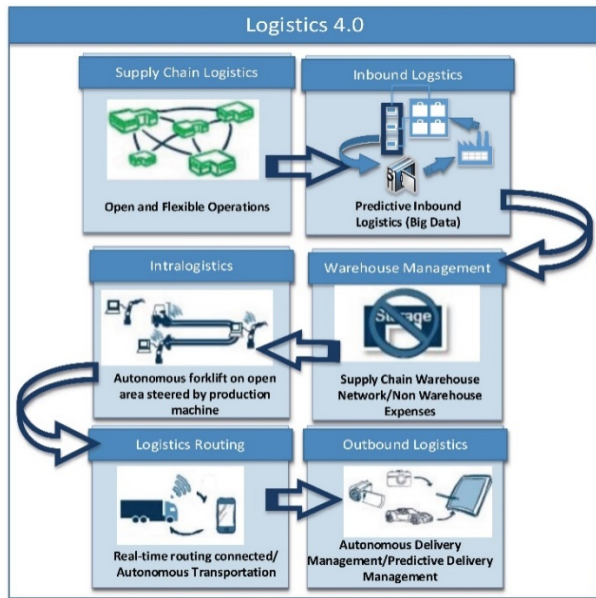


Figure 5: The characteristics of logistics 4.0 period(Wang, 2016)

Logistics 4.0 (Figure 5) (from 2000-2019): This is the newest development in the logistics major, fundamental upgrading relied on the Internet of Things – IoT network and colossal database. According to Wang (Wang, 2016), the primary purposes of logistics 4.0 are cut the number of labors standardize the labor resource in the supply chain network. The modern technologies replaced the out of date machines; for example, people use robots to drive the lifters in the warehouse. This helps logistics optimize efficiency and avoid the dependency on labor.

Logistics equipment as automatic warehouses and automatic sorting in Vietnam in the 2010s was widespread, but its range of spread was limited since it becomes a dedicated system in line with the shape and characteristic of the pack of interest.

2.2. The opportunity to integrate 4.0 and Vietnam logistics

The World Bank (WB) proposed the statistic in 2018; the growth speed of Vietnam logistics accounted for around 16% per year and will keep increasing in the next few years. Due to the great efforts, Vietnam got the long jump in the LPI index (Logistics Performance Index – the index reflects the evaluation of logistics’ results) in recent years (Loureiro et al., 2018).

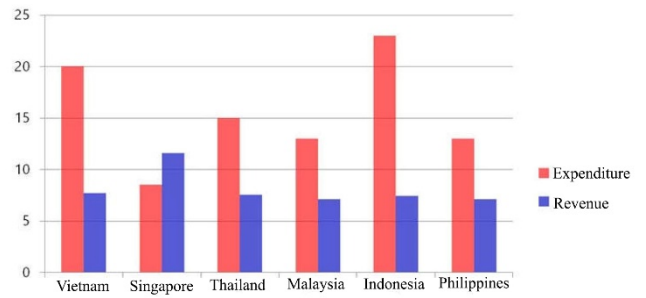


Figure 6: The comparison between the expenditure and revenue of the logistics field and GDP (%) (Nguyen et al., 2016)

The statistics of the Vietnam logistics enterprises association illustrate that there are over 1.300 logistics enterprises which are have run the business. Almost Vietnam logistics companies have the medium or small scope although it is difficult to ignore the big enterprises such as Transimex Saigon, Saigon New port, Gemadept, Viettrans, Vietfracht and so on. In Vietnam, the logistics service includes approximately 20-22 billion USD per year, contributing 20,9% GDP. The logistics industry’s average growth speed reached from 16 to 20% per year (Ngoc, 2017).

If 2016 saw 2,98 in LPI index and stood at 64/160 in the ranking table of ASEAN with raising five more ranks, 2019 experience the outstanding growth with a 39th position with the LPI index at 3,27. This is the highest position in six times of ranking; the third position belongs to Vietnam that is behind Singapore and Thailand (Figure 6)(Chin-Shan and Chi-Chang, 2012).

Vietnam logistics enterprises association (VLA) proved that Vietnam logistics market scope has continued growing. It is seen that the export turnover attained about 40-42 billion USD per year in which e-commerce has become indispensable elements to develop the logistics industry (Mercogliano, 2017).

Armstrong & Associates company (American)’s statistics predicted that until 2020, e-commerce would account for 7,2 – 7,5% over the total of logistics revenue entire the world (Barreto et al., 2017).

Strategies, policies research institution which supports for trading assessed that the logistics enterprises are of tender age and only get small market share. Facts indicate that the enterprises’

abilities are not similar, lack of professional factors. The activities which relate to logistics are dispersed and unconnected, so it is not easy to persuade the owners of the goods outsourcing the logistics service. Besides, the high logistics service cost is one of the major's weaknesses through the competitive environment has been intense (Witkowski, 2017). The main causes which lead to the drawback are limiting in the logistics enterprises' scope, capital, experiences, manager abilities, modern information technology application abilities and lack of quality human resource.

Vietnam logistics enterprises association (VLA) also denounced that the percentage of logistics expenses over Vietnam GDP making up around 20,9%, this is higher than the neighbor nations such as China, Malaysia, Philippines, Thailand, and Singapore. The number reflects the level of logistics cost which not only is double than the developed nations but also higher than the average of the world about 14%. 59% were the transportation cost rate in the total of the logistics expense in Vietnam. The products contain approximately 30% to 40% the total price of the finished goods while the figure is lower in others about 15%. The weakness makes the competitive ability of Vietnam logistics industry declines significantly.

The expanding of a smartphone, the level of Internet network spare and also the wireless of 3G, 4G leads to increase the demand for online shopping. If 2012 experienced only 5 thousand billion in e-commerce, this number increased five times to 25,7 thousand billion in 2017 (the data from Euromonitor)(Nicoletti, 2018).

With average growth speed about 33% per year, it is predicted that the valued trading in Vietnam will reach 106 thousand billion VND in 2020 corresponding 4,6 thousand billion USD. Due to the technology improvement, in Vietnam e-commerce is on the top of the success and is recognized as one of the countries where have got the high growth rate of e-commerce. The appearance of enormous e-commerce company such as Sendo, Adayroi!, Tiki, Lazada, Shopee and so on creates the intense pressure on the logistics industry, supply chain, distribution channel retailers and warehouse system. While

traditional trading only focuses on the development in the urban areas, e-commerce is only entire favorite nations (Tham and Chiadamrong, 2016). Day by day, e-commerce channel has become the primary way for consumer approach goods quickly and adapt the customers' needs and expectation. However, exchanges of e-commerce executed on the virtual environment, so 90% of orders complete the payment after finishing the delivery or the percentage of returning the order are high around 8-9% (Luu, 2019). Not only the expense of sellers is added, but also the logistics need to burden the unworthiness cost such as storage, labor, solving the return orders.

According to the prediction, the scare of the logistics market will get the average growth of about 6,54 % per year during the period from 2017 to 2020, makeup 15,5 thousand billion USD in 2024. Notably, the chance to become the crucial element of global logistics industry development has opened because of the great extending in the 4.0 industrial revolution. The result can be seen clearly in the Asian region where has gained the highlight achievements in the major. The plan until 2025 also mentioned the aims of logistics industry: proportion of logistics major in GDP at 8%-10%, the speed growth t 15%-20%, the rate of outsourcing at 50%-60%, reducing the logistics cost around 16%-20% GDP and the ranking at least 50th in the Logistics Performance Index (LPI) all over the world (Meudt et al., 2017).

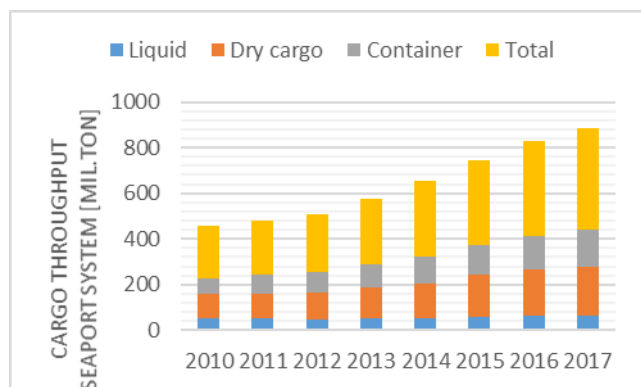


Figure 7: Cargo throughput seaport system in 2017 (Yap, 2019)

The opportunity to integrate 4.0 industrial revolution and Vietnam logistics seem as the indispensable element. Appearing kinds of services related to logistics major are the considerable factor in the revolution. These services which support and help the logistics field be active. For example, the expense for transportation and communication will

be reduced, the logistics field and supply chain will be useful, the commercial cost will be saved, and the economy is encouraged to extend (Tham and Chiadamrong, 2016). From 2011 to 2017, the total volume of cargo through seaports in Vietnam increased nearly ten times, as shown in Figure 7 (Yap, 2019)

2.3. Challenges for Vietnam logistics industry

Besides the advantages, the 4.0 industrial revolution also brings several challenges for the developing country as Vietnam including fogeyish economy, advantages loss because of low labor cost, the long distance between knowledge and technology, so the social gap becomes more profoundly (Luu, 2019). The government, enterprises, research centers, and educational institutions should get awareness these weaknesses and willing to change in order to have the confirm strategy that helps upgrade industry, agriculture, service, economy and human resource in the universal Internet timeliness and 4.0 industrial revolution (Kim, 2018). Figure 3 reveals that the leading company's challenges and the integration among the technology and company model are necessary.

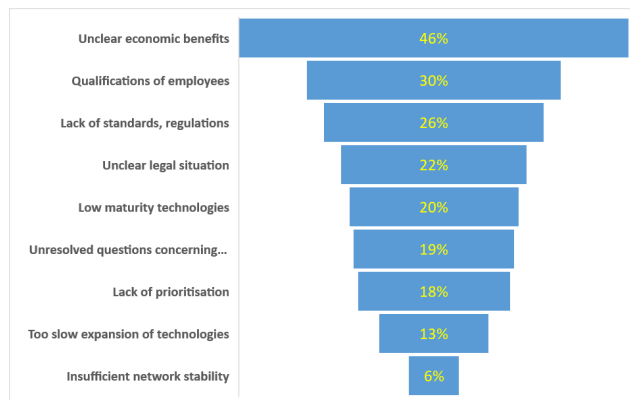


Figure 8: Technology company's challenges in the 4.0 industrial revolution (Bukova et al., 2018)

The fourth industrial revolution has never occurred until the recent period. The situation unfolded of the revolution is expeditious, it witnesses the combination of technology in several majors such as physic, digital and biology to create the new abilities which have a significant effect on the political system, society all over the world. The influence of 4.0 exists on almost industries, factors such as industrial structures, supply – demand of the labor market, manufacturing management system. Logistics and supply chain management is no exception. The article will provide basic knowledge

about logistics in the 4.0 industrial revolution and the development tendency of this field in the next few years (Witkowski, 2017). Some opportunities and challenges of Vietnam logistics field also are mentioned and recommendations to improve the industry also are touched.

3. Methodology

Surveys collected the data of this article according to the questionnaires and compiled based on the data provided by Vietnam logistics enterprises (VLA). The research method is surveys combined with SWOT analysis. SWOT is a popular method of analysis, used as a useful tool for strategic planning and planning for an organization, an industry or an economic sector. In this article, we use this method as a way to assess the overall opportunities and challenges of Vietnam's logistics industry in the trend of the industrial revolution 4.0. Strengths and weaknesses are the interior and internal characteristics of the industry, related to human resources, technology, finance. Opportunities and challenges are factors from outside the industry, creating advantages or obstacles for the development of the industry. They can be macroscopic like the whole economy, government policies, international trade liberalization or micro-clients such as customers, credit mechanisms, competition.

4. Results and discussion

4.1. The expanding tendency of the Vietnam logistics industry

It is irrefutable that the inherent propensities in the logistics field will be available when the 4.0 industrial revolution become more popular.

Smart Logistics

Smart logistics can be defined as the automatic computer system to control the whole working process of the major. The modern web technology allows related parties to interact directly. Therefore the storage, contribution, delivery goods will be changed. The new model business and distribution channels have broken the traditional ones because of the forming of service management through information technology and the Internet network (Figure 9).



Figure 9: Operation model of SMARTLOG company

Smart Manufacture

The modern technology help establishes smart manufactures which contain the highlight functions; for example, independent modules can communicate with each other through the information system. Supporting to control the manufacture processes is the leading role of the human. Smarty in the manufactures is reflected through 3 stages: suppliers, manufacturing process and customers. While suppliers require the providing network clearly, the factory needs to spare no effort to adopt customers' needs. Numerous factors need to be included in a production process, and an automatic production system is necessary to not only storage and solve data on the cloudy telegraph but also ensure the network security. So the factory outline will be shifted that also intervened to the product design method, marketing strategies and entire the distribution system (Figure 10).



Figure 10: Automatic assembly system is at VinFast cars and Vsmart smartphone

Linking of the database and logistics transportation

The influence of both 4.0 industrial revolution and IoT leads the means of transport to be smarter in the available infrastructures. Also, the information data is connected on the cloudy network about the delivery ability, weather, transportations which create the flow of material and finished goods effectively. Not only manufacturing line and factory but database system also and prediction analyzing are applied in the whole

process flexible. This gives a significant burden on the organization to be able to use the data optimally and effectively.

Database automation and transparent: data always is the center of the industries in general and logistics field in particular. Collecting and analyzing data are essential steps to get the chance in order to achieve the purposes easily. The main can be seen clearly which are: collecting information system, data processing, logistics controlling, artificial intellect.

Running a business on the digital foundation such as tracking devices, located devices, observation devices and so on are working on the internet, blue-tooth. Besides, scanning barcode in warehouse management contributes to optimizing the undesired inventory amount base on cloud computing.

Smart movement system in the warehouse

The warehouse system is controlled by automatic lift trucks which will get the around environment dependently in laser, a sensor to direct the desired position. The systems do not have any controlling central; the devices deal with the orders to the corresponding warehouse by adjusting directions, data sharing themselves.

The new delivery method (automatic transportation method): uncrewed vehicles, robots have applied in the process; this brings substantial financial advantages. In some logistics enterprises, they have invested in robots to classify goods

Minimizing storage is also an advantage, because of 3D printing, the out of stock goods' parameter can be kept and printed if any. In the warehouse, lifting trucks, robots and other devices integrate to pack, distribute, deliver automatically.

The high quality of the labor resource

The increase in the number of smart factories in the future direction to the enormous quality labor demand. The requirement has enhanced the skills and ability of labor. This is easy to explain that the factories only need the people who can control the modern technology, the handwork surplus.

To deal with the changing, the supply managers should reevaluate the capacity using to enhance the whole supply chain. The customers' expectation has increased

in the recent; numerous data application drives the demand forecasting to become more meticulous. In the content, the supply chain plays a crucial role in making customer satisfaction and keeping them to become loyal customers. In order to execute the strategy, logistics department need to co-operate with others in the whole process to link among the stages: productions, warehouse management, marketing, selling, payment, distribution, and return goods management to optimize the model of the supply chain, using capital effectively and meeting the customers' expectation. The huge database is the obvious result of the 4.0 industrial revolution, the data amount is invaluable if the users can apply effectively but unless the information system will be confused. It is true that IoT is both an opportunity and a challenge for the logistics major that must be overcome. The manager should form the business network thoroughly to help customers accost the manufacturer through the network system. The customers can order the goods and adjust them independently. Also, the warehouse system is automatically optimized in goods management and storage. Moreover, to warrant the abundant, quality labor resource, the enterprises should collaborate with the educational centers in order to adopt labor amount needs.

4.2. Recommendations for Vietnam logistics industry to meet the world trend

Vietnam logistics industry will be able to keep up with the trend of the world; the Government of Vietnam needs support solutions such as:

First and foremost, enhancing the competitive capacity of the logistics enterprises

Quality and price are important elements to decide the competitive capacity of companies in general and logistics enterprises in particular. If the service contains good quality and reasonable price, the domestic enterprises will get more advantages than foreign ones. Two elements are a prerequisite condition to customers choose logistics suppliers. The enterprises need to upgrade their capacity in adapting the goods owners' needs about time, quality and price.

The goal of Vietnam's logistics industry is to participate more deeply in the global logistics system. In particular, enterprises providing logistics in

general and especially in the maritime sector, in particular, can provide logistics in the right way when ensuring that: (1) Understand and adequately understand the process of providing logistics services, especially during transportation; (2) Training has an experienced human resource system and is fully equipped with professional knowledge and knowledge of domestic and international laws. Until 2020, Vietnam import-export turnover is predicted accounting for around 300 billion USD; the container shipping will make up about 67.7 million TEU, so the potential development of the logistics industry is irrefutable. Forecasting, 15% will be the proportion contribution to the GDP and logistics field will become the dominated industry.

Moreover, logistics service also affects the competitive capacity for goods, companies and the economy in Vietnam. Besides, signing the CPTPP agreement and joining the ASEAN Economic Community also establish the Vietnam logistics enterprises the fair market to get the opportunities and confront the challenges. It is true that supporting from government and other related industry and taking great effort is necessary for the logistics field in Vietnam.

Secondly, applying the information technology and e-commerce in the enterprises' running business

The enterprises which supply the logistics services have motivated the information technology application into the business activity process. The principal logistics activities such as information transfer, customs declaration and so on are applied the modern technologies in order to create efficiency, reduce the cost, and avoid detrimental status cheating commerce. Enterprises need to apply the achievements of information technology, exchange data with computer systems with the support of communication networks and information processing technology. That link plays a vital role in managing the logistics process, especially managing the movement of goods and documents.

Management officials need to encourage the enterprises to apply and develop the supply chain managing system connecting in ASEAN in order to form the link solutions. Thank for using the information technology, especially, e-commerce, the

logistics process will be saved the cost, the information flow is smooth.

Thirdly, encouraging associating and privatize

The domestic logistics enterprises will be upgraded as the foreign ones if the enterprises integrate and share the resource to build the chain of the whole services process. This helps them create competitive capacity and can invest in logistics in both the human and information systems that are the advantages of the foreign companies.

Privatize tendency in the public company have formed the impetus for the link and integration abilities, so the strategy execution becomes realizable. Linked integration activity is the process in which advantages are brought into play and drawbacks are rejected. The process requires the enterprise reforming the business processes, and the professional consultant specialist is necessary to ensure the integration be successful.

Fourthly, forming the trademark and marketing strategy

The enterprises should affirm their position clearly and build their reputation in the buyers and consumers to attract them in the competitive century. The distinctive trademark needs to include a unique marketing strategy to create the advantages for expanding the enterprises not only in the domestic but also over the world. Marketing strategy and trademark are built quickly when the enterprises focus on the following ideas.

- Determining the market segments: each kind of product will have different designs of the supply chain and logistics model to optimize the process, save time and cost.

- Service diversifying

- Extending the relationship with the representative offices, international economic association in Vietnam in order to spread the trademark and reputation to the foreign partners.

- Logistics enterprises' marketing policies need to be reinforced and established the prestige trademark. Crossing over the customers' desire (not only adapting customers' needs) is a meaningful way to be close with loyal customers.

Fifthly, strengthening the role and cooperating among the related industries

The industries related to the logistics include Vietnam logistics association, Vietnam ship owner association, marine agency association, port association and so on. These associations should be brought into play in establishing the network and close collaboration among the enterprises to upgrade the quality of the logistics.

Vietnam port association and Vietnam logistics association should integrate tightly to share the information and support in completing the logistics stages such as loading – unloading, procedures, shipping, transportation, ETA, ETD and so on. This helps avoid congestion in the port.

Furthermore, the security for the goods also is indispensable. Each stage in the logistics process should make sure the quantity and quality of the goods can be kept in the standard.

The collaboration among the members in the association is essential because they can teach others to accumulate the logistics knowledge and improve their experiences. This is the short-cut way to attend global logistics systems.

Sixthly, renovation the educational program, quality human resource improvement in the logistics industry

Currently, the traditional syllabus about logistics cannot meet the current requirements of the field. Nowadays, the lack of educational renovation system is the issue that needs to deal with immediately because quality labor is an essential element of the major. Universities and educational centers should give the exact introduction for the learners about the method to get full knowledge, for example, the students should combine the theory studying and reality application or research the reality cases study. Besides, awareness of students about 4.0 industrial revolution also is of excellent importance; they should learn how to adapt and up to date the modern technologies changing to ensure that they can control all devices.

Also, the labor should be arranged to improve the foreign language level to adapt to the global integration of the logistics enterprises. The infrastructures also need to be enhanced and

expanded the warehouses, loading – unloading facilities and other supported services. The domestic enterprises should link the foreign ones through particular channels to extend into Vietnam and all over the world.

5. Conclusion

During the integration period, the active developing of the logistics industry has adopted the enormous demand of the current market and international trading. Despite evaluated as the most potential market of logistics development, Vietnam market contains several barriers. The percentage that logistics contribute to GDP is low from 3% to 4% while the enterprises' logistics expenses are too high which contract with the world's trend.

4.0 logistics have brought many opportunities to develop modern technology and the advantages of running a business. The main challenges of applying 4.0 in the logistics industry are not perfect logistics system which needs to be reorganized, flexible and intelligent. The new itinerary for Vietnam logistics industry is urgent following the global tendency. Vietnam should not base on an advantageous location, cheap labor only, making a sudden attack on creative thinking to apply the technologies and improve the logistics industry connection. Vietnam has applied the growth economy model in order to develop that depends on creativity, modern technologies, high efficiency and timing of the fourth industrial revolution. To continue promoting trade growth and logistics costs requires that we focus on the following: (1) Administrative reform; (2) Transparent regulations; (3) Strengthen interdisciplinary coordination to facilitate trade through reducing barriers, simplifying customs regulations and specialized management among ASEAN countries. Also, relying on its directions and strategies, the logistics enterprise should take considerable effort to change continuously step by step and then adapt to the 4.0 industrial revolution. Finally, the quality human resource in the logistics field can be ensured by collaborating between the enterprises and government or educational centers.

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