

Logistics and Supply Chain Management on Industry Perspective: The Needs for Vocational High School Curriculum

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Abstract

The purpose of this study is to examine the logistics and supply chain management included in the independent curriculum in phase F for the Office Automation and Management Expertise Program for Vocational High School students with job needs in the industry. This is important because the main goal of the Vocational High School is to create graduates who are ready to work according to industry needs. This research was conducted using the Miles and Hubberman Model qualitative research, where this research was conducted at one of the well-known logistics and supply chain companies in Indonesia, namely J&T. Data collection in this study used observation, documentation, and interview techniques conducted by researchers directly to the objects studied at the J&T company. The results of this study indicate that in general the independent curriculum in phase F for the Office and Business Service Management Expertise Program on logistics and supply chain management is not fully following industry needs, a study on J&T companies. However, there are several job specifications and organizational structures that need to be understood by prospective graduates so that the skills learned at school can fully match the needs of the industry. In addition, teachers and students must learn the special characteristics possessed by logistics and supply chain companies in Indonesia so that specializing in concentration can help students prepare their skills to be fully absorbed by the workforce.

Keywords: Logistics and supply chain management; Industry perspective; Vocational high school; Curriculum

INTRODUCTION

Vocational High School (VHS) is an education that has the goal of producing graduates who are ready to enter the industrial world. Through VHS students will be provided with knowledge and practice to support competencies by industrial developments. The development of current industrial needs that emphasize digital forms of the economy, digital relationships, artificial intelligence, robotic technology, and big data technology need to be scrutinized by vocational schools in Indonesia so they can prepare graduate competencies that are in line with industry needs (Hasanudin et al., 2019). To be in line with industry needs, education in VHS must be able to adapt to industrial developments.

(Clark & Winch, 2007) states that in the learning process, students must be provided with knowledge and experience through practice that is appropriate to the area of expertise they are studying, this is to improve the competencies students have when they graduate later. (Sutirman et al., 2017) explained that vocational learning must be carried out by providing lots of practical activities that are appropriate to the industry so students can master certain competencies well. By increasing the competence and practical ability of students in industrial work, it is the realization of the goals of VHS education.

(Yoto & Widiyanti, 2017) state that vocational education is carried out to prepare students who are ready to work, improve competence, choose careers, and have experience that is useful in the world of work. (Narwoto & Soeharto, 2013) added that through the field of education chosen by students in vocational education, students can have competency in that field and have readiness to work. Therefore, competency adjustment between industry needs and what is taught to students is very important for vocational education because it will affect the expertise of graduates produced, and their acceptability as skilled workers in industry.

(Suranto, 2018) stated that this era of industrial development resulted in many changes to the implementation of work, one of which was in the process of logistics management and supply chain in

the industry. In today's industrial world, changes are influenced by technological developments that produce disruptive innovation in logistics and supply chain management in the industry. Therefore, developments in the field of logistics and supply chain management need to be studied by VHS students so that, in the future, they can be used to support the completion of work in related industries.

According to (Gaol, 2008), logistics management is a process of managing goods that is used to streamline and tidy up the logistics management process. In line with (Suranto, 2018), Management is defined as a process of simplifying the management of goods in an organizational environment, so that the management of goods becomes more precise. Therefore, management competence is needed for the management of an organization towards a more prosperous one (Moekijat, 1993). What's more, currently many companies in the industrial world carry out management processes in managing the company. Where these competencies must be owned by every member and leader in the office organization so that they can help them to complete tasks or work effectively and efficiently. Management at this time has been mostly carried out by almost all offices, both government and private, so prospective graduates of Office Management and Business Service (OMBS) Vocational High Schools who will work in this field need to master it. In line with this, (Eriansyah, 2015) states that a company or organization is currently required to improve the management of its logistics management widely. Current technological developments enable the industry to provide the infrastructure needed by the community so that it can achieve effectiveness and efficiency in carrying out logistics management appropriately and quickly.

Based on some of the facts and opinions mentioned above, supply chain logistics management competencies are important in the world of work because office work related to logistics has developed and evolved in line with technological developments in the current industrial era. (Hermanto et al., 2019)h states that currently there are jobs or new competencies in the industry that cannot be fully learned in schools, where these competencies develop due to technological developments that support the completion of office work to be more effective and efficient. In line with the thoughts above, (Widiyanto, 2010) stated that VHS need to carefully identify the need for certain competencies in the industry, and these competencies are used as references to provide appropriate learning to students. Supported by (Jatmoko, 2013), vocational high schools need to integrate theoretical material or vocational practice with existing competencies in industry. For this reason, vocational education must be able to teach competencies that meet the future needs of graduates by looking at the realities of the workplace and developing technology. In addition, this is also useful for supporting the creation of worker skills that are in line with current industry needs. (Spencer & Spencer, 1993; Widiyanto, 2010), if a graduate enters the world of work, the competencies expected are competencies that can improve company performance, in this case, company performance in the era of globalization refers to productivity to win the competition. Thus, the world of work requires input in the form of people who have technical professional skills so that they can maintain the continuity of their production wheel amidst free competition.

According to (Judisseno, 2008), the obstacle that has been experienced so far is that schools often do not want to pay close attention and are unable to adapt to industrial developments so the learning provided cannot describe and provide the right knowledge and experience related to the competencies needed in the industry. The need to adjust the curriculum with new competencies in the field of office communication so that it can be used by teachers and students in learning and training competencies appropriately so that they can become the provision of skills that students have to carry out, and complete jobs in the industry.

This research was conducted to examine the logistics and supply chain management included in the independent curriculum in phase F for the OMBS Program for Vocational High School students with job needs in the industry. This is to adapt the curriculum to new competencies in the industry in the field of logistics and supply chain management so that students can learn to practice their skills so that they can be used to enter the world of work. In addition, these adjustments are needed periodically to prepare a workforce of VHS graduates that are in line with industry needs. In addition, this study aims to dig up information related to logistics and supply chain management competencies needed by industry in the industrial revolution era, and what can be learned by VHS students of the Office Management and Business Services Expertise Program (OMBS) in preparing themselves before

entering the world of work. This research can also be used as a reference for schools or SMK education implementers to provide office management competency learning that is in line with industry needs in the current era. Therefore, this research needs to be carried out so that it can be used as a reference by teachers and educational institutions to provide learning that is in line with industry needs. This study intends to explore information related to industry perceptions of logistics and supply chain management with the needs of the vocational high school curriculum in the OMBS expertise program in Surabaya. The subject of this research was conducted at one of the well-known logistics and supply chain companies in Indonesia, namely J&T.

LITERATURE REVIEW

Logistics and Supply Chain Management

According to Larson and Halldorsson (2004), Supply Chain Management is “the integration of key business processes from end users through original suppliers that provide products, services, and information that add value to customers and other stakeholders.” As Li (2014) reveals in his book, in the early 1960s, studied the two-way relationship between suppliers and customers and found that inventory in the supply pipeline tended to oscillate more when they were further away from customers, and this situation led to incomplete orders or too much inventory. Another professor, Michael Porter, from Harvard Business School, suggested that organizations could be more competitive if they were better able to manage all the activities on which the current supply chain structure is built, namely the value chain and refers to all the interrelationships between inbound logistics, outbound logistics, operations, sales, marketing, and customer service.

According to the same Li (2014), Supply Chain Management is a “set of synchronized decisions and activities” used to integrate in more efficient manner suppliers, factories, warehouses, all involved transporters, retailers, and end customers, all of these helping the right product or service to be available and distributed in the right quantity, at the right price, to the right location, in the right condition, and at the right time, to minimize costs throughout the system while trying to meet customer requirements. And because of that, he mentioned that the purpose of Supply Chain Management is to achieve sustainable competitive advantage.

Waters (2009) simply describes Supply Chain Management as “the series of activities and organizations through which materials pass on their way from the initial supplier to the final customer”. In his view, each product has a unique supply chain, and these can be short or long, simple or complex. It can be many connected entities that come together to offer the end customer the product or service he claims and is waiting for. The supply chain can also be presented as a map that depicts the total journey of materials as they move from one part to another. Along this journey, “materials may move through raw material suppliers, manufacturers, finishing operations, logistics centers, warehouses, third-party operators, transportation companies, wholesalers, retailers, and a wide variety of other operations” (Waters, 2009).

Another definition found to explain Supply Chain Management is given by Maia and Cerra (2009), as ‘the integration of key processes that manage the flow of materials and information’ in both directions, within companies and between companies taking part in the supply chain to the end consumers. The main aim of Supply Chain Management, according to them, is to collect value for stakeholders and clients along this process.

According to another author, Martin (2011), Logistics can be defined as ‘the strategic process that manages the procurement, movement, and storage of materials, parts and finished inventory (and related information flows) through the organization and its marketing channels “in a way that profitably refers to current and future actions and this through cost-effective fulfillment of orders. From this total systems viewpoint, logistics management means concerned with meeting customer needs “through the coordination of materials and information flows that extend from the market, through the company and its operations and beyond to suppliers”. To achieve this broad enterprise integration, it is clear that a very different orientation is needed which is usually found in conventional

companies. In addition, to achieve this enterprise integration, collaborative action from all departments is required as a synergistic process.

Nilsson (2006) thinks that controlling and coordinating logistics activities within and between companies is not easy and difficulties are expected to increase, as the interdependence between interacting companies intensifies and expects that “systems exhibit increasingly complex dynamics when changes intensify. interactions between elements. Thus, “managing logistics within a supply chain will create new demands on logistics management” (Nilsson, 2006).

At the end of the paper, we can say that Supply Chain Management is a bigger concept than Logistics. Logistics is primarily a planning orientation and a framework that seeks to create a single route for the flow of products and information within a business. In this framework, Supply Chain Management builds and seeks to create relationships and coordination between the processes of all companies involved in the chain, such as suppliers and customers, and the company itself. The focus of Supply Chain Management is on building cooperation and gaining trust between entities, and also on recognizing the synergistic effect, namely: “the whole can be greater than the sum of its parts”. I agree with the definition of Supply Chain Management put forward by Martin (2011), namely: "management of upstream and downstream relationships with suppliers and customers to provide superior customer value at a lower cost for the supply chain as a whole". In other words, he describes the focus of Supply Chain Management as "relationship management to achieve more profitable results for all parties in the chain". This is not always easy, as the personal interests of the parties must always be put in place for the interests of the chain as a whole. “The whole objective of supply chain management and logistics is to provide customers with the level and quality of service they require and do so at the lowest cost to the total supply chain” (Martin, 2011).

Industry Needs

VHS education is always synonymous with industrial needs. This is in line with the goals of VHS education as stipulated in the National Education System Law No. 20 of 2003 Article 15 which states that vocational education is education that prepares students to be able to enter a particular field. Therefore, SMK education must consider several aspects of industrial needs that will support students in achieving certain competencies in the areas of expertise they are interested in.

VHS education must have relevance between the needs of jobs in the industry and what is taught to students, both at school and in the field. (Ito, 2014) states that to understand industry needs, cooperation or partnership is an important point that must be made between schools and industry. In addition, (Ito & Kawazoe, 2015) added that industry needs are always in line with industrial development plans that will occur, so educational institutions need to prepare graduates who are adaptive according to needs.

The problems that occur in Indonesia related to VHS graduates are 1) the information and skills obtained are not sufficient to support them in getting a job while in general, the industry is looking for experienced workers, and 2) most vocational graduates do not fully have the qualifications needed by the industry (Hanafi, 2012). The qualifications required by the industry have not been achieved, it lies in the preparation of the curriculum, because it does not fully involve the industry. As a result, several challenges cannot be met by schools in creating graduates who meet industry needs.

(Jatmoko, 2013) stated that the curriculum in VHS should be revised according to industry needs. Improvements made by the government through the Decree of the Director General of Elementary and Secondary Education of the Ministry of Education and Culture of the Republic of Indonesia Number 4678/D/KEP/MK/2016 concerning the revision of new expertise competencies, and the Decree of the Director General of Basic and Secondary Education of the Ministry of Education and Culture of the Republic of Indonesia Number 300/D.D5/KEP/KR/2017 concerning Core Competencies and Basic Competencies in National Content Subjects, Regional Content, Basic Areas of Expertise, Basic Competency Expertise, and Competency Competence expertise has not fully had a positive impact on VHS education, even though the preparation has been adjusted to the progress of industry 4.0. One of them is where teachers still have difficulties in providing learning that suits industry needs, moreover, the laboratory facilities provided are sometimes lacking so graduates are

not adaptive to the world of work (Widiyanto, 2010). Besides, (Judisseno, 2008) states is that sometimes schools cannot pay close attention to industrial developments so learning seems to just flow without having the same goal as industrial development. Therefore, this research was conducted to answer the challenge of providing practical learning that is in line with industry needs.

Vocational High School Curriculum

Vocational education is education that has the goal of preparing students to enter the world of work. This statement is in line with (Clark & Winch, 2007) where vocational education is deliberately designed to prepare students to enter the world of work. Article 2 of the 2003 National Education System Law states the same thing that vocational education is carried out to prepare VHS students so they can work according to their chosen field of expertise.

(Thomson, 1972) stated that vocational education places more emphasis on work experience or psychomotor abilities, and awareness of work, and does not rule out the possibility that students can build their work. (Finch & Crunilton, 1999) added that the results of vocational education are not only measured using grades, especially on the results of their work. Therefore, vocational education is intended to prepare its graduates to become experts in the areas of expertise they have studied.

Experts in this case can be said to be reliable capacity or capable of doing certain jobs. According to Suzane and Stone (Baiti & Munadi, 2014) people who are capable or reliable usually have confidence in their ability to take appropriate and effective action, can explain what they are doing for their success, can live and work effectively with others, and can continue to learn from their experiences both individually and in groups. Thus, an expert is a person who is capable or reliable and has the confidence to apply his knowledge and abilities by innovating in various social situations, besides that he wants to develop his specialization in knowledge and skills continuously.

In achieving the capacity as an expert or reliable, we must look at what competency skills or specialties a person wants to master. To see what competency skills or specializations will be produced by vocational education in Indonesia, see the Vocational Secondary Education Expertise Spectrum in the Decree of the Director General of Elementary and Secondary Education, Ministry of Education and Culture Number 4687/D/KEP/MK/2016. According to (Sutirman et al., 2017), This Vocational Competency Skills Automation and Office Management places more emphasis on learning that prepares students to be ready to work in the field of office work. To prepare VHS students to enter the office work field, this research focuses on examining more deeply related to how to improve student competence so that it can match the needs of jobs in industries that are in line with the competency skills offered.

METHOD

This research is qualitative research by looking at cases that occur in one object studied (Sugiyono, 2017), and (Cresswel, 2012) adds that this research model is qualitative research with a case study approach. The data taken can be in the form of field notes, interview results, photos, or documents that are used to strengthen one data with another data (Arikunto, 2013). Apart from that, this qualitative research can be used to dig deeper into the phenomenon in certain cases with the depth of data mining and drawing appropriate conclusions based on similar phenomena or cases (Hermanto et al., 2019; Widianingrum et al., 2020).

This research was conducted at one of the largest logistics and supply chain management companies in Indonesia, J&T. This research was conducted from May 2022 to April 2023, where this research was conducted using observation, documentation, and interview techniques conducted by researchers directly to the object under study, at the J&T Indonesia company, East Java area. In addition, sampling of the subjects interviewed used purposive sampling, where (Herdiansyah, 2012) states that purposive sampling or non-probability sampling here is based on the characteristics possessed by the subjects studied which have been adapted to the purpose of this research.

Data analysis used descriptive qualitative with an interactive model from (Miles & Hubberman, 1994) consisting of stages (1) reduction, (2) display, and (3) conclusion. Furthermore, the data analysis

technique in this study uses the triangulation technique, which (Moleong, 2007) states that the triangulation technique is a data collection technique that is a combination of various data collection techniques and existing data sources. This study uses source triangulation and data collection technique triangulation, where (Sugiyono, 2017) states that source triangulation is a method used to test the credibility of data by checking data that has been obtained through several sources, and technical triangulation is a method used to check data with some data from certain data collection techniques.

RESULT AND DISCUSSION

Results

Logistics and Supply Chain Management on J&T Express

J&T Express is the first express delivery expedition company in Indonesia that applies technology in all business sectors. The services offered by J&T Express include delivery within cities, between cities, and between provinces throughout Indonesia. J&T was founded in Indonesia on August 20, 2015. One of its achievements is that J&T won the Top Brand Award in 2018. In a short time, for exactly 3 years this company has shown outstanding performance in the Indonesian market.

The scope of J&T Express' business includes cargo and express delivery as well as supply chain and warehousing. The J&T Express service is the delivery of packages between cities, provinces, and internationally. During 2020, the volume of J&T Express shipments increased by 40%, namely an average of 2.5 million package shipments per day. This good performance was realized apart from the development of online shopping trends that required package delivery, as well as the expanded range of J&T Express delivery. Currently, the J&T Express network is available in 13 countries, namely Indonesia, Vietnam, Malaysia, the Philippines, Thailand, Cambodia, Singapore, China, Saudi Arabia, UAE, Mexico, Brazil, and Egypt. Since the company started operating, they have had 1,025 branches, 10,000 couriers called Sprinters, and 1,000 units of car transportation modes throughout Indonesia. The areas that will still be the focus of J&T Express development for now are Southeast Asia, the Middle East, China, and Latin America.

Featured J&T shipping services 1) Has Strong Relations in Infrastructure Development In building its infrastructure, J&T has collaborated with several parties; 2) Centralized Distribution System that Covers All Indonesian Territories. Unlike the distribution system of other delivery services, namely with the existence of a franchise. J&T focuses more on a centralized system in the process of distributing and receiving packages, which is called a drop point. In one district, one counter or drop point will be available. Its function is to act as a liaison between the sender and receiver of the packet. With this system, the delivery process is more controlled and able to reach all consumer areas in Indonesia without intermediaries; 3) Real-Time Tracking System. Through a tracking system that is directly integrated with the database, it can make it easier for consumers to monitor real-time shipping conditions. In addition, more detailed delivery information can also provide clear and accurate information from each point of movement of the courier in the process of sending the package; 4) Fast Estimated Delivery. Another thing that makes this delivery service superior is the estimated fast delivery time. Not only for special services such as J&T Super, but also for regular services it still provides a fast time for packages to arrive at their destination.

J&T Express won the top position in the Top Brand Index with a significant increase from the previous year, which was 33.3% compared to 23.1%. This achievement marks J&T Express as a courier service that is top of mind in Indonesia. In its journey, J&T Express proactively provides support and introduces innovations to introduce a warm courier service brand to the public. This includes supporting creative works in the international music industry through activation and creating a brand experience for the public, including delivery services. Various services are available to meet the diverse needs of customers, ranging from domestic shipping to international shipping through the J&T International Standard Express service for Singapore, Malaysia, Thailand, and China destinations.

Organizational Structure for J&T Express

Overall, the organizational structure at J&T Express East Java consists of a supervisor, assistant manager, manager, regional manager, executive regional manager, and executive manager. these positions are positions that have a close working relationship with the general manager. This organizational structure has undergone several changes because it is felt to be less effective and on target. There are 3 parts in the organizational structure at J&T Express East Java, namely the Executive Manager Gateway which oversees all gateways in the region, the Executive Manager Network Management which oversees all Drop Points / Branches in the region and the last is the Division Manager.

With the executive manager position, it is hoped that it will be more organized and responsive when there are problems or cases in the field that need to be solved as quickly as possible. As has happened in the past related to several problems in the area with the presence of an executive manager from both the gateway and network management positions, it is tidier and has fewer errors and complaints.

This structure is implemented so that each position under the executive manager can directly communicate and the executive manager can go directly to the General Manager for decision-making. Executive manager gateway in East Java oversees 7 gateways spread across the region. Gateway is a packet sorting center that has the function of separating the various destinations in the package. Then the network management executive manager oversees around 500 more Drop Points/Branches spread from Banyuwangi to Ngawi, East Java. Inside the Drop Point, there is a small structure consisting of a Supervisor, Drop Point Coordinator, Admin, Sprinter, and courier. Where the position in Drop Point is responsible for operating the Branch with the aim of customer satisfaction.

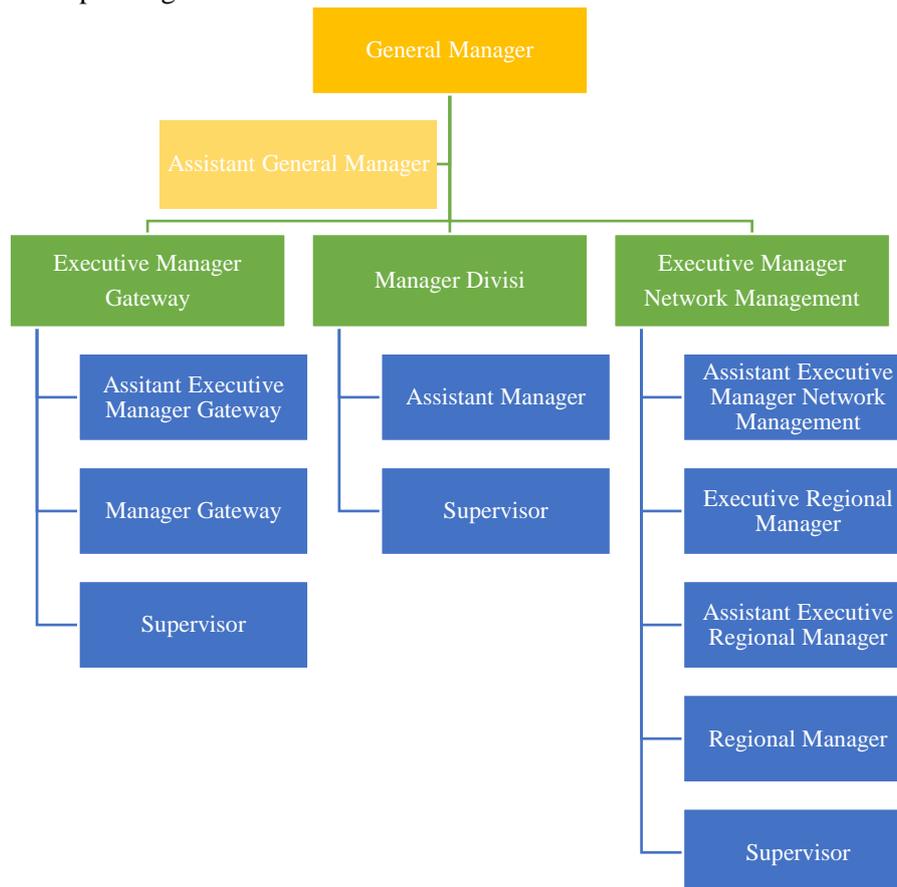


Figure 1. Organizational Structure of PT. Karya Niaga Abadi (J&T Express East Java)
 Sources: PT. Karya Niaga Abadi (J&T Express Jawa Timur)

J&T Perspective for Vocational High School Curriculum in Logistics and Supply Chain Management

The J&T industry point of view and the independent curriculum point of view is based on the elements that exist in subjects in VHS. The data obtained in the study are presented in table form as follows.

Table 1. Viewpoints on the Vocational High School Curriculum in Logistics and Supply Chain Management

Element	Viewpoints of Merdeka Curriculum	Viewpoints of Industry
Business and general administration	Including an understanding of economics, economic activity actors, types of markets, forms of business entities, plans for small and medium enterprises, e-commerce, basics of marketing, and understanding of administration and management functions.	Including an understanding of economics, economic activity actors, types of markets, forms of business entities, small and medium business plans, e-commerce, marketing basics, understanding of administration and management functions.
Fundamentals of supply chain management (supply chain management)	Including an understanding of the types of supply chain systems and logistics management.	Understanding the difference between logistics and expeditions. Understand the difference between goods sent between logistics and expeditions.
Application of procurement (procurement)	Including procurement planning, negotiations, contract documents, selection of goods/services providers, procurement of goods/services.	Including procurement planning, negotiations, contract documents, selection of goods/services providers, procurement of goods/services.
Warehousing management	Covering the flow of goods movement, warehouse storage, warehouse equipment and facilities, goods handling, goods inventory, packaging, storage locations and warehouse information systems.	Covering the flow of goods movement, warehouse storage, warehouse equipment and facilities, goods handling, goods inventory, packaging, storage locations and warehouse information systems.
Customer service	Including knowledge, skills, and work attitudes required in serving customer needs, handling customer complaints, and measuring customer satisfaction.	Including handling claims with a targeted time (eg insurance claims 1x24 hours), Including handling of complaints with the specified classification and target of handling (hard complaints, middle complaints, soft complaints, complan info)
Logistics information system	Including knowledge, skills, and work attitudes needed in identifying Logistics Information Systems and operating applications.	Including knowledge, skills, and work attitudes needed in identifying Logistics Information Systems and operating applications.
Distribution and transportation management	Including knowledge, skills, and work attitudes needed in identifying Logistics Information Systems and operating applications.	Including knowledge, skills, and work attitudes needed in identifying Logistics Information Systems and operating applications.

International trade	Including international trade documents, parties related to international trade, freight forwarding services and the role of freight forwarders in international trade.	Including international trade documents, parties related to international trade, freight forwarding services and the role of freight forwarders in international trade.
Quality Control	-	Including case handling and shipping trouble then recapitulating in the form of one day reports, weekly reports and monthly reports (all files are in the form of Google spreadsheets so that all divisions can easily access them)
General Affair	-	Including recording, inventory, categorizing, disposal to the procurement of new assets both owned by the company both at Headquarters and at branch offices spread throughout the region

Based on the results of the research that has been carried out and presented in the table above, the data produced in the table conveys that several different perceptions arise from the independent curriculum and perceptions from the industry.

Discussions

Based on the results of interviews, observations, and documentation described above, it can be seen that logistics and supply chain management competencies for VHS taught in schools with an independent curriculum still have dissimilarities from the implementation of practices that take place in industrial companies. Thus, in dealing with technological developments in the current era of the industrial revolution, it is necessary to change or add to the competencies provided by educational institutions, and education practitioners in the educational curriculum to prepare vocational students to see the opportunities and challenges of working in logistics industry companies in the current industrial revolution era.

(Hasanudin et al., 2019; Margunani & Nila, 2012; Widiyanto, 2010) states that a workforce of VHS graduates who have competencies according to company needs will be very much needed by companies. This is because competence is an important element in the workforce. After all, there is an assumption that a person's basic characteristics have a causal relationship with extraordinary work performance or with work effectiveness (Spencer & Spencer, 1993). In line with (Prahald & Hamel, 2009), competence for business organizations has an interest in facing business competition known as core competence. Thus, the industry's need for skilled workers makes a huge opportunity for VHS to prepare a workforce that will fill these needs. Prospective vocational graduates can prepare the skills they must have from the start because they already know exactly the needs of the workforce expected by the industry.

On the other hand, the main problem in VHS is the mismatch between the competencies taught to students (curriculum) and industry needs (Ambiyar et al., 2018; Slamet, 2013; Suroto & Hung, 2018). Therefore, the adjustment of logistics and supply chain management competencies that are developed and which will be learned by these students will also be able to improve their performance as office employees if they are already working in the office (Ardilla & Pramusinto, 2015) so competency adjustments also provide benefits to companies that are participating in developing and that will use a workforce of VHS graduates.

Based on the results of the research above which also shows that there are several different points of view on the elements of the subject from the standpoint of the independent curriculum in Vocational

High Schools and the industrial point of view. The first is on the basic elements of supply chain management, which from an industrial point of view can understand the difference between logistics and forwarding. As well as understanding the differences in goods sent between logistics and expeditions. Meanwhile, from the point of view of the independent curriculum, it only includes an understanding of the types of supply chain systems and logistics management. The second is on the customer service element, from the standpoint of the independent curriculum emphasizing work skills in customer service. Meanwhile, from an industrial point of view, it can include handling complaints from customers. And on the elements of quality control and general affairs that are not found in the independent curriculum. Whereas in the industry quality control includes case handling and trouble in shipping which is recorded in the form of reports on technology to be accessible by all divisions. And the general affairs include recording, inventorying, categorizing, disposal to procuring new assets for the company.

Therefore, it is necessary to re-plan the vocational education curriculum following industry needs. And these competencies must be mastered by prospective VHS graduates so that they can be useful in the work they do in the industry, and can provide added value to prospective MPLB VHS graduates because they can manage logistics and supply chain management.

(Triwidisari et al., 2017) states that logistics and supply chain management have a positive impact on logistics management for industrial companies engaged in logistics and expeditions. This makes management more structured and efficient, so it is necessary for VHS graduates in related fields or prospective company employees in these fields to understand and master logistics and supply chain management according to what is needed. And MPLB Vocational High Schools can teach curriculum on logistics and supply chain management competencies using technological media.

The use of technology in logistics and supply chain management needs to be studied in depth because the use of technology for office work requires special skills in management so that the management can be properly and accurately accepted by customers or the public. If it is not studied in depth, then the use of technology cannot be used optimally for the benefit of the office in providing services to customers or the intended public. Therefore, logistics and supply chain management competencies by utilizing technology in this industrial revolution era need to be studied in depth for MPLB Vocational High School students to support their competency in logistics and supply chain management skills effectively to support office work.

In addition, both official and private offices also use databases to provide information and communicate in distributing logistics availability in each company. This competency has not been fully mastered by students or graduates of the MPLB Vocational Schools because it has not been fully taught until they fully master it. Even though this is already in the basic competencies of the independent curriculum, students still cannot manage logistics management following current industrial needs. This was obtained through the results of observations made to SMK students who were carrying out industrial work practice activities.

Some of the things above are opportunities that can be utilized by vocational education practitioners in providing learning that is in line with industry needs. As stated by (Gunadi et al., 2014; Suroto & Hung, 2018; Wibowo, 2016) that Vocational Schools should make the industry a partner in providing learning following the needs of the labor market in the industry. In addition, students can also practice their skills either in the school laboratory or in the industry so that they can directly learn so that they can prepare their abilities so that they are in line with the jobs needed in the industry.

The need for managing logistics and supply chain management is a competency that needs to be given to students to support their abilities (skills) to enter the industry. Thus, Vocational High Schools can provide logistics management learning in a learning curriculum that is following industrial needs in the current industrial revolution era which will be useful for students when entering the workforce.

CONCLUSION

This research shows that in general the independent curriculum in phase F for the Office Automation and Management Expertise Program on logistics and supply chain management is not fully in line with industry needs, a study of J&T companies. This is seen in the results of studies on the competencies studied, the elements contained and studied, the learning outcomes to be achieved, and the organizational structure of J&T companies. The difference in point of view between the curriculum and the needs of jobs in this industry occurs because the curriculum is limited and jobs in the industry are very broad and continue to grow. Thus, teachers and students must be willing to learn about the special characteristics possessed by logistics and supply chain companies in Indonesia so that specializing in concentration can help students prepare their skills to be fully absorbed by the workforce, where this is in line with one of the values espoused in the independent curriculum, namely: lifelong learning. Because this education is continuous, teachers or students must continue to learn by looking at the situation and conditions so that they can fully capture the needs of future VHS education.

This research is limited to one perspective of large companies regarding logistics and supply chain in Indonesia, so it needs to be reviewed further by many companies so that the curriculum analysis carried out can become a benchmark for logistics and supply chain management which should be given to students. Therefore, there is a need for further research on the analysis of the logistics and supply chain management curriculum in vocational high schools on several companies that have been focused on logistics and supply chain management so that the input provided can reflect the need for careful curriculum updating.

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