CHAPTER 1

Logistics Management

Section 1 The Meaning of Logistics Management

Definition—What does Logistics Management mean

Logistics management is a component of supply chain management that meets customer demands through the planning, control and implementation of the effective movement and storage of related information, goods and services from origin to destination. Logistics management helps companies reduce cost and enhance customer service.

Logistics management typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply demand planning, customer service, sourcing and procurement, production scheduling, packaging, and management of third party Logistics services providers. Logistics management is part of planning and execution — strategic, operational and tactical. It is an integrating function, which coordinates all logistics activities, as well as integrates logistics activities with other functions including marketing, sales manufacturing, finance, and information technology.

The logistics management process begins with raw material accumulation, and end at the final stage of delivering goods to the destination, by adhering to customer needs and industry standards, logistics management facilitates process strategy, planning and implementation.

Logistics management involves numerous elements, including

Selecting appropriate vendors with the ability to provide transportation facilities:

- Choosing the most effective routes for transportation.
- Discovering the most competent delivery method.
- Using software and IT resources to proficiently handle related processes.

In logistics management, unwise decisions create multiple issues. For example, deliveries that fail or delay lead to buyer dissatisfaction. Damage of goods, due to careless transportation, is another potential issue. Poor logistics planning gradually increases expenses,

and issues may arise from the implementation of ineffective logistics software. Most of these problems occur due to improper decisions related to outsourcing, such as selecting the wrong vendor or carrying out delivery tasks without sufficient resources.

To resolve these issues, organizations should implement best logistic management practices. Companies should focus on collaboration rather than competition. Good collaboration among transportation providers, buyers and vendors helps reduce expenses, and an efficient and safe transportation provider is vital to business success.

Section 2 Introduction of Supply Chain Management

Supply chain management appears as relatively new terminology, but definitions of what it encompasses are vague at best.

What is supply chain?

The supply chain is the series of links and shared processes that exist between suppliers and customers. These links and processes involve all activities from the acquisition of raw materials to the delivery of goods to the consumers which raw materials enter into a manufacturing organization via a supply system and are transformed into finished goods, and the finished goods are then supplied to consumers through a distribution system. Generally, several companies are linked together in this process, each adding value to the product as it moves through the supply chain.

In fact, the participants of a supply chain include all companies or organizations with which the focal company interacts directly or indirectly through its suppliers or end-users. In any given supply chain there is some combination of companies which perform different functions that are suppliers, manufacturers, distributors or wholesalers, retailers, and companies or individuals named the customers, the final consumers of a product. There will be other companies that are service providers that provide a range of needed services to support these companies. However, the basic participants of a supply chain can be summarized as following:

Suppliers — They are organizations that provide goods and/or services to a purchasing organization (a manufacturer or a distributor).

Manufacturers (producers) — They are companies that are producers of raw materials and companies that are producers of finished goods. Producers can also create products that are intangible items such as music, entertainment, software, or design.

Distributors — They are companies that take inventory in bulk from producers and deliver a bundle of related product lines to customers. Distributors are also known as wholesalers who sell products to other businesses in larger quantities than an individual consumer. A distributor is typically an organization that takes ownership of significant inventories of products that they buy from producers and sell to consumers. In addition to

product promotion and sales, other functions the distributor performs are inventory management, warehouse operations, and product transportation as well as customer support and post-sales service.

Retailers— They are companies that stock inventory and sell in small quantities to the general public. This organization also closely tracks the preferences and demands of the customers. It attracts customers for the products it sells by advertising to its customers and some combination of price, product selection, service, and convenience.

Customers— They are any organizations that purchas and use a product. A customer organization may purchase a product in order to incorporate it into another product that they in turn sell to other customers, or a customer may be the final end user of a product who buys the product in order to consume it.

Service providers— They are organizations that provide services to producers, distributors, retailers, and customers. Service providers have developed special expertise and skills that focus on a particular activity needed by a supply chain. Some common service providers in any supply chain are providers of transportation services and warehousing services. Financial service providers deliver services such as making loans, doing credit analysis, and collecting on past due invoices. Some provide product design, market research and advertising. Still other service providers offer information technology and data collection services.

Most supply chains exhibit these basic characteristics

(1) The supply chain includes all activities and processes to supply a product or service to a final customer.

(2) Any number of companies can be linked in the supply chain.

(3) A customer can be a supplier to another customer that the total chain can have a number of supplier-customer relationships.

(4) While the distribution system can be direct from supplier to customer, depending on the products and markets, it can contain a number of distributors such as wholesalers, warehouses, and retailers.

(5) Products or services usually flow from supplier to customer. Likewise, design and demand information usually flows from customer to supplier. (Physical products move "downstream", while demand information flows "upstream".)

A supply chain has three key parts

Supply focuses on the raw materials supplied to manufacturing, including how, when, and from where.

Manufacture focuses on converting these raw materials into finished products.

Distribution focuses on ensuring these products to the consumers through an organized network of distributors, warehouses, and retailers.

What is supply chain management?

In simple words, supply chain management refers to operate effectively and efficiently the whole supply chain process. Supply chain management is one of the most important strategic aspects of any business enterprise. Decisions must be made about how to coordinate the production of goods and services, how and where to store inventory, whom to buy materials from, and how to distribute them in the most cost-effective, timely manner.

As we known, companies that do business together links up closely. They coordinate better their actions and drive costs out of their business operations. There is a difference between the concept of supply chain management and the traditional concept of logistics. Logistics typically refers to activities that occur within the boundaries of a single organization and supply chains management of networks companies that work together and coordinate their actions to deliver a product to market. Also traditional logistics focuses its attention on activities such as procurement, distribution, maintenance, and inventory management. Supply chain management acknowledges all of traditional logistics also including activities such as marketing, new product development, finance, and customer service.

To be more competitive, companies are building up their expertise and efficiencies in the process of designing of new products and delivering and servicing existing products. Companies that develop higher supply chain management skills levels are clearly able to gain more profits from the market they serve.

The processes involved in the designing, building, and delivering of products to the customers that referred to as supply chain management. No one company can develop high skill levels in all areas of supply chain management, so companies are focusing on developing and building their particular strengths, their core competencies. Companies define the roles they want to play in the market they serve and link up with other companies that have complementary skill sets. This is the major drive of the modern supply chains.

Supply chains encompass the companies and the business activities as design, make, deliver, and use a product or service. Businesses depend on their supply chains to provide them with what they need to survive and thrive that each business fits into one or more supply chains and play a role in. The change and the uncertainty about how markets evolved has made it increasingly important for companies to be aware of the supply chains which they participate in and to understand the roles that they play. Those companies that learn how to build and participate in strong supply chains will have a substantial competitive advantage in their markets.

The term "Supply Chain Management" arose in the late 1980s and came into widespread use in the 1990s. Prior to that time, businesses used terms such as "Logistics"

and "Operations Management" instead. If we acknowledge that supply chain management is something we do to influence the behavior of the supply chain and get the results we want then we can make this definition: "Supply chain management is the coordination of production, inventory, location, and transportation among the participants in a supply chain to achieve the efficiency for the market being served".

Therefore, Supply Chain Management is the methodology to improve the business efficiency in finding raw components for your business product or service and delivering it to the customer. It contains five basic components:

Plan—Strategies for managing resources toward meeting customer demand for goods and services.

Source—Selection of suppliers to deliver materials or services for the making of goods and services.

Produce—Making of goods and services, which may include production, testing and packaging.

Deliver—Coordinate orders from clients, carriers sending products and receiving payments.

Return—Network for receiving defective or excessive products from client.

The goal of supply chain management is to increase sales of goods and services to the final, end use customer while at the same time reducing both inventory and operating expenses.

Benefits of effective supply chain management

Effective supply chain management is the key to a competitive business advantage.

The eight major benefits to effective supply chain management can be summarized as follows:

(1) Improved customer service: available for delivery of the right products when requested, at a good price.

(2) Reduction of costs across the supply chain and more efficient management of working capital.

(3) More efficient management of raw materials, work-in-process, and finished goods inventory.

(4) Increased efficiency in the transactions between supply chain partners.

(5) Better manufacturing resource management.

(6) Optimized manufacturing schedules.

(7) Optimal distribution of existing inventory across the supply chain.

(8) Enhanced customer value, often in the form of lower prices.

SCM applications fall into two main categories: planning applications and execution applications. Planning applications determine the best way to route materials and the quantities of goods at specific points, when such applications work well, they make the

"just-in-time" delivery of goods possible. Execution applications track financial data, the physical status and flow of goods, ordering and delivery of materials.

A relatively new SCM option involves Web-based software with a browser interface. Several major Web sites now offer auctions and other electronic marketplaces for buying and selling goods and materials. Also, Web-based application service providers are now promising to provide part or all of the SCM services for companies that rent their services.

SCM is so big that it is difficult to plan the deployment of such a system. A chain connects one link to the next, and an SCM implementation can proceed similarly. Each added link brings more efficiency. When all of the links are in place, and when the information, goods and finances are flowing properly, the benefits are enormous. This is truly a case in which the whole is greater than the sum of its parts.

Case: Why Did Hitler Fail?

In the 20th century, Germany Nazism rose internal ethnic chauvinism. United Kingdom Lord of the Admiralty Winston Churchill was against the Governors of appeasement policy, which showed Anglo-German war was inevitable and was approaching. Within his own prepared powers against Germany, one of the most important and effective was a United Kingdom local air defense preparations. In 1935, the United Kingdom scientist, Robert Watson-Watt, invented the radar. Churchill was acutely aware of its significance and ordered United Kingdom Bawdsey① to establish a secret radar stations on the East Coast. At that time, Germany had a strong air force, and it only needed 17 minutes to reach the United Kingdom. In such a short period of time, how alert and ready to intercept, even outside or maritime interdiction of machine became a big problem. Radar technology helped United Kingdom, even if at the time of the exercise, had able to detect aircraft 160 kilometers away, but there were still many loopholes in the air. In 1939, United Kingdom fighter commanded science adviser, P. M. S. Blachett②, Nobel prize after the war led, organized a group code-named "Blackett circus③" composed of physicists at the University of Manchester to devote to conducting research on improving air defense systems.

The group includes three psychologists, two mathematicians, one astrophysicist, an ordinary physicist, a naval officer, an army officer and one measurement. The problem of research is: design of radar information transfer to command system and the weapons system of best way; radar and air defense weapons of best configuration; on detection, and information passed, and combat command, and fighter and air defense fire of coordination,

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① 第二次世界大战期间的雷达站。

② 曼彻斯特大学物理学家、英国战斗机司令部科学顾问、第二次世界大战后获诺贝尔奖奖金的 P. M. S. Blachett。

③ 改进空防研究系统小组名为"Blackett 马戏团"。

for having system of research, and getting success, to improve United Kingdom local air defense capacity greatly. As soon it against Germany on British Isles of bombarded, which played great of role. Experts commented that the history of World War Ⅱ, without the technology and research, United Kingdom could not win the war, and was defeated in the first place.

"Blackett circus" was the world's first operational research team. They wrote a secret report on the study, used the term "Operational Research", which refers to operations research. Bawdsegs operations research originated with a model of radar station. Project of immense practical value, clear objectives, integrated ideas, quantitative analysis and multidisciplinary collaboration, optimized results, as well as concise and simple presentation, demonstrates the qualities and characteristics of operations research haunting.

United States investment after World War Ⅱ, has absorbed a large number of scientists to assist the combat command. In 1942, the United States Atlantic fleet anti-submarine warfare officer Captain W. D. Baker requested the establishment of anti-submarine warfare operations research group. Technology physicist of Massachusetts Institute, P. W. Morse was asked to serve as planning and monitoring.

One of Morse's excellent work is to assist the United Kingdom to break Germany's naval blockade of English Channel. In 1941 and 1942, the Germany submarine strict blockade across the English Channel in an attempt to cut off the United Kingdom's "lifeline". Several anti-blockade of the navy, were unsuccessful. United Kingdom required United States send Morse leading a team to help. After much investigation of the Morse group, finally made two key recommendations:

(1) Throw the anti-submarine attack by anti-submarine vessels mine and threw depth bombs to aircraft. Detonation depth up to 100 meters or so, to 25 meters when the German submarine dive attack works best.

(2) Delivery fleets and escort ships, from small scale batches, to increase scale and reduce batch, so that the loss rate will be reduced.

Churchill accepted Morse's recommendations, and finally succeeded in breaking Germany's blockade and hitting the Germany submarine fleet. As a result of this work, Morse won the United Kingdom and the United States highest wartime medal. Shortly after the start of the second world war, Germany army broke France's Maginot line, the French retreated. United Kingdom sent more than 10 fighter squadrons against Germany. Due to combat losses, France's Prime Minister called for reinforcement of 10 squadrons. United Kingdom Prime Minister Winston Churchill decided to agree on the request. United Kingdom logistics staff noted that this matter, and had a quick study. These operational research of concise charts and clear analysis was done to convince Winston Churchill. Churchill's final decision: no longer increases, not only for the new fighter squadron, but also in the law of United Kingdom fighters withdraw. Most United Kingdom fighters using home as a base, and continue to fight against Germany. There is

a big difference. As can be seen from the above few examples of military operations during this period features: real actual data, the multidisciplinary work closely solution saturated with ideas of physics.

What the operation word means?

The word "Operation" means: "operations plan army tent, winning in miles". Operational Research the word first appeared in English in 1938, meaning "battle studies". In the United States it is known as Operations Research, English abbreviation OR. With expanding application of operations research in the military field, to further promote the development of the military operations research. Object of military operational research is to optimize problems in military activities. It uses methods such as mathematical models, computer and quantitative analysis, revealing the structure and function of various military systems and operating principles, military practice for scientific and rational use of resources, improving military benefits. Military science as a whole, military operational research is required to put military theory into practice technical support.

United Kingdom as the birthplace of modern operations research, which is the leader in this field. Patrick Blackett (1897—1974), the 1948 Nobel Prize winner in physics, of the United Kingdom, professor at the University of Manchester is also commonly known as the father of modern operations research. At the time of World War Ⅱ, Blackett led his team to a series of analysis and research. Fundamentally, with warships escort merchant ships was accepted by the whole, but the problem was the use of large frigates or small ones then Convoy speed is limited by size. Small convoy speed is faster. It is also argued: "the small frigate was more difficult for Germany's submarine to detect." But on the other hand, people said the large frigate warships can withstand sudden attacks. Blackett's team analyzed the large frigate and said comparative effectiveness from a statistical point of view, the frigate was found likely slower frigate and vessels having a greater risk (after all, still should choose large frigates), an analytical report on the United Kingdom's Royal Air Force bombers by Blackett team. According to the survey, bomber command checks all from a bombing raid over time Germany returning bombers. Record all Germany the destruction caused by the air force, and proposals to increase the armor most damage in the area. They also recommended reducing the bomber pilots to reduce the casualties caused by the plane shot down, but the proposal was rejected by the Royal Air Force Commander. Blackett's team continued to surprise the RAF, for they returned to intuitively on the recommended records has not compromised position (completely untouched by damage) for increasing armor. They believed that report was biased. They only investigate returning bombers. However, no record was attacked site it not received fatal plane, so it is necessary to increase the armor. When the Germans knew their air force based inside the Kammhuber line, bomber of the Royal Air Force to realize they will

not be heard in the solo flight of night fighters. Night fighters target is provided by ground radar. Blackett's team used computational statistics on the crashed bomber shot down by fighter losses the amount between the distance to cut RAF losses. Blackett's team with the help of the Royal Air Force achieved unprecedented success. Meanwhile, his contributions made to the United Kingdom is complimented by Hitler as "heavy British island".

New Words and Phrases

implementation	*n.* [计] 实现;履行;安装启用
fulfillment	*n.* 履行;实行
inventory	*n.* 存货,存货清单;详细目录;财产清册
procurement	*n.* 采购;获得,取得
strategy	*n.* 战略,策略
tactical	*adj.* 战术的;策略的;善于策略的
integrate	*adj.* 整合的;完全的
accumulation	*n.* 积聚,累积;堆积物
stage	*vt.* 举行;上演;筹划
adhering	*adj.* 附着,黏附性的;[物]黏附的
facilitate	*v.* 促进;帮助;使……容易
vital	adj. 至关重要的;生死攸关;有活力的
distribution processing	流通加工
modern logistics	现代物流
containerization techniques	集装技术
Bar-code	条形码
POS (Point of Sale)	销售时点系统
EDI (Electronic Data Interchange)	电子数据交换
GPS (Global Positioning System)	全球定位系统

Exercises

Ⅰ. *Pair work: discuss the following questions.*

1. What is logistics management?
2. What are the areas involved in logistics management?
3. What is the important role of Logistics management?
4. What is the importance of operational research?

Ⅱ. *Translate the following sentences into Chinese.*

1. Logistics management is the governance of supply chain functions.
2. To varying degrees, the logistics function also includes customer service, sourcing and procurement, production planning and scheduling, packaging and assembly.
3. The logistics management process begins with raw material accumulation to the final

stage of delivering goods to the destination.

4. To resolve these issues, organizations should implement best logistic management practices.
5. The supply chain is the series of links and shared processes that exist between suppliers and customers.
6. Supply chains encompass the companies and the business activities needed to design, make, deliver, and use a product or service.

Ⅲ. *Fill the blanks with right word or phrase.*

1. Logistics management is a supply chain management component that is used to meet _____ through the planning, control and implementation of the movement and storage of related information, _____ and _____ from origin to destination.
2. Logistics management helps companies reduce _____ and _____ service.
3. _____ is the governance of supply chain functions.
4. Logistics management activities typically include _____ and management, fleet management, _____, _____, order fulfillment, logistics network design, inventory management, supply demand planning, and management of third party logistics services providers.
5. To varying degrees, the logistics function also includes _____, _____, and production planning and scheduling, packaging and assembly.
6. Logistics management is part of all levels of planning and execution _____, operational and _____.
7. It is an integrating function, which _____ all logistics activities, as well as integrates logistics activities with other functions including _____, sales manufacturing, finance, and _____.
8. The logistics management _____ begins with raw material _____ the final stage of delivering goods to the destination.
9. By _____ customer needs and _____ standards, logistics management facilitates process strategy, _____ and _____.
10. In logistics management, _____ decisions create multiple issues.
11. For example, _____ that fail or are delayed lead to _____ dissatisfaction.
12. Damage of goods, due to careless transportation, is another _____ issue.
13. Poor logistics planning gradually increases expenses, and issues may arise from the _____ of ineffective logistics _____.
14. Most of these problems occur due to _____ decisions related to outsourcing, such as selecting the wrong _____ or carrying out delivery tasks without resources.
15. To resolve these issues, _____ should implement best logistic management practices.
16. Companies should focus on _____ rather than competition.
17. Good _____ among transportation providers, _____ and _____ helps reduce