CHAPTER 3

“Logistics Strategy in Manufacturing Industry and its Consideration in System Life Cycle”

The chapter explore global logistics strategy in information industry in India. The global logistics strategy is the key issue for information industry. This industry is ranked top for output quantity in the world, there are important to explore the global logistics strategy. This study is conducting the interviews under resource-based view to explore the core resources and logistics operation. Main findings are as following: The global logistics operation is separate assembling and production function. The global logistics operation system will impact notebook industry to five aspects, such as management information system, organization structure, production process model, management concept and suppliers’ relationship. And, the core resource of notebook industry is viewed in three aspects that are tangible assets, intangible assets, and capabilities. Global logistics strategy can be viewed in five aspects which are customer service levels, channels and distribution, inventory, transportation, and information management. And five propositions are constructed for further study.

3.1 INTRODUCTION

In the world economy, all firms are looking to cost-down and provide real-time delivery, especially in the Information industry. For India’s Information industry, the market size is increasing drastically not only in the domestic market but also in the markets abroad. In order to compete globally, what used to be local companies have become now multinational corporations in recent years. Global logistics strategy is the major focus behind this, not only will it attract more business opportunities but also to increase the competitive advantages. In the global market point of view, firms are focusing on how to deliver materials to the best production bases for assembling thus becoming more efficient in production, then focus on how to deliver to the customer through the best path available. Under the above demands, global logistic strategy has become the best operational support and the core competition in India’s information industry to create the
new competitive advantage.

Triggered off the price war by Compaq, in order to succeed in that, it had first required its OEM partners to lower their profits and reduce the delivery lead-time. However, the traditional production process and marketing thoughts couldn’t react on these changes. Later, Compaq wanted to go ahead in cost dimension thus advocated the new idea called “Global Logistics model”. This model enabled the company to consider from simple function aspect to strategy aspect. The idea of Global logistics strategy will enable the manufactures to face the flexible demand from customers. Therefore, how to shorten the delivery time; how to reduce the logistics supporting timing; how to provide the complete after-sales service; how to reduce the inventory loss and how to be competitive in pricing are the major concerns in global logistics strategy.

For India’s notebook industry, it is considering to adapt the global logistics strategy right now. Some of them are even trying to cooperate with OEM partners through this method, reason being right now they are not only facing the cost competition but also better quality, quicker response and changes within the industry. As far as the purpose of this study are concerned, it would like to discuss why or how can notebook industry use global logistics strategy to be the resources for competition. The objectives of this study are as follow: (1) To identify the forming factors and operation of global logistics strategy in India’s notebook firms of information industry. (2)To identify and analyze their sources, capability and competitive advantages of global logistics strategy in India’s notebook firms of information industry from Resource-Based view.

3.2 LITERATURE REVIEW

3.2.1 Resource-based View

Resource-based view is an important element in organization. Wernerfelt (1984) argues that it is possible to find the optimal product-market activities by specifying a resource profile for a firm. He points out that the first mover has the advantages of resource position barriers. Furthermore, Dierickx and Cool (1989) argues that the managerial implication drawn is that firms should focus their analysis mainly on their “unique” skill and resources rather than on the competitive environment. This view shifts attention away from product-market barriers for competition to factor-market barriers impediments for
resource flows. Identifying abnormal returns as rents to unique resource combinations rather than market power, this view emphasizes the importance of specialized, difficult-to-imitate resources (Collis, 1991; Grant, 1991; Mahoney and Pandian, 1992).

3.2.2. Core Resources

Resources in the strategic management are considered “core” if they differentiate a company strategic alliance (Leonard-Barton, 1992). Various authors have called them in different terms, e.g., strategic assets stocks, strategic assets, strategically relevant resources, core competence, core capabilities, core resources, firm-specific competence, invisible assets, and intangible resources (Black and Boal, 1994; Boisot, Lemmon, Griffiths, and Mole; 1996; Chi, 1994; Coates, 1996; Collis and Montgomery, 1995; Porter, 1985). This study adopts “core resources” concept carrying the above meanings. As Prahalad and Hamel (1990) have argued that core competencies are collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies. Barney (1991) argued that strategically relevant resources do enable a firm to conceive of and implement strategies that improve its efficiency and effectiveness and be sources of sustained competitive advantage. Amit and Schoemaker (1993) argued that strategic assets are the set of difficult to trade and imitate scarce, appropriable and specialized resources and capabilities that bestow the firm’s competitive advantage.

With regard to dimensions or contents of core resources, the important results in the literatures are as follows. Hall (1992) is concerned about the role of intangible resources in business strategy, develops Coyne’s model of capability differentials – functional differential and cultural differential, positional differential and regulatory differential, by extending it to identify and categorize the intangible resources which act as the feedstock to the capability differentials. One, the functional differential results from the knowledge, skill and experience of employees, and others in the value chain such as suppliers, distributors, stockbrokers, lawyers, advertising agents etc. Two, the cultural differential applies to the organization as a whole. It incorporates the habits, attitudes, beliefs and values, which permeate the individuals and groups that comprise the organization. Three, the positional differential is a consequence of past actions that contribute not only to the
competitive advantage but also to the defensible position. Four, the regulatory differential results from the possession of legal entities. The first two differentials are therefore concerned with ‘doing,’ whilst the second two are concerned with ‘having’ (Coates, 1996; Collis, Cynthia and Montgomery, 1995).

Knott et al. (1996) suggest a new approach to competence analysis. It focuses on value delivered by the competence and the factors constraining or enabling this delivery. Hence, it is based on a representation of competencies as functioning systems within the organization. It shows competence as an attribute of the organization, influenced by the external environment, organizational factors, and individuals, that delivers output of value.

3.2.3. Logistics Management

Kent and Flint (1997) present logistics is the process of planning, implementing, and controlling the efficient, effective flow and storage of goods, services, and related information from point-of-origin to point-of-consumption for the purpose of conforming to requirement. They point out that the evolution of logistics thought fall into six eras, starting from the turn of the century and ending as a projection into the future. These eras and their defining characteristics are as a model of logistics thought evolution. The six eras, based solely on the interviews, are (1) farm to market, (2) segmented functions, (3) integrated functions, (4) customer focus, (5) logistics as a differentiator, and (6) behavior and boundary spanning. Traditional definitions of logistics have focused on functional activities (e.g., transportation and warehousing). This focus is also reflected in the functional structure of most logistics organizations. The functional structure provides for easier accountability in firms. However, when the management of functions becomes the priority, the management of logistics processes (e.g., the order cycle) becomes difficult if not impossible. The systems concept states that it is not the optimization of the individual variables that is important but the optimization of the system as a whole (Dornier, Ernst, Fender, Kouvelis, 1998). This means that some individual variables, or functions, must be sub-optimized so the logistics system and channel system are optimized.

3.2.4. Logistics Strategy

Rao, Stenger, and Wu (1994) claim that functional strategies must be developed within the
framework of corporate strategy where decisions are made about lines of business to pursue and geographic markets to enter, based on core competencies and capabilities, which will meet stakeholders’ expectations and provide the desired pattern of growth. Logistics strategies must not only consider these overarching corporate-level considerations but also take into account relevant functional strategies, particularly in terms of manufacturing capacity available and the product-price-promotion mix (Reed and DeFillippi, 1990). The firms can strategic alliance to increase logistical performance (Bagchi and Virum, 1998; Chandon, Laurent, and Wansink, 2000).

Supply chain as used here denotes the channel of firms and intermediaries through which a product moves from the original sources of its basic raw materials through conversion/manufacture and then distribution in its finished form to the ultimate consumers. Thus it supersedes the logistical operations of any one firm. The concept is closely related to the channel of distribution, but that term typically connotes the chain for finished goods only, with a strong emphasis on marketing, as opposed to logistical issues. Logistics system indicates the specific set of fixed facilities and the transportation and information processing/transmittal choice linking those fixed facilities used to implement the supply chain concept.

Customer Service Level involves determining the appropriate levels of customer service for the appropriate product-market combination. In order to evaluate strategic options, it is necessary to survey and study customers, determine opportunities for differentiation, identify and benchmark the performance of competitors, and define the best network options and associated costs of offering various levels of service.

For channels of supply and Distribution, how many channel members should there be and what should be the working relationships with them? Pursuing total quality management (TQM) and JIT, many firms have moved to reduce the number of suppliers, carriers, and distributors/dealers they do business with and bolster their relationships with those remaining, often entering into long term contractual and partner shipping arrangements.

For facility location, what raw material supply sources, supply consolidation points, distribution facilities, field service centers should be part of the logistics network and what should be their capabilities? Answering these questions involves close liaison with
manufacturing and marketing departments so that the whole supply chain is working in a satisfactory manner.

For allocations, coupled with facility element above, these strategies involve the best use of the facilities. In other words, how should raw material supplies be best allocated and deployed to meet manufacturing needs and how should plant output be allocated to distribution centers and eventually to customer locations?

For inventories, what should be the inventory management system, how much inventory should be carried, of what products, and where should they be carried? Traditionally, inventories have served a buffer function to smooth seasonal peaks in demand and provide for production economies. As the hidden cost of large inventories has become better known, there has been a move to reduce these assets, requiring a much more coordinated operation to manage product and goods flows. Practices such as postponement, standardization, and speculation can still be useful when viewed in a systems context.

For transportation, what modes of transportation to use, what carriers and shipment sizes and who should make the transportation decision, shippers or receivers? Deregulation has opened this area as a major opportunity for cost saving and quality improvement.

For information management, what planning, operational, and control systems are appropriate, and what type of telecommunication systems are needed to track product flows throughout the logistics pipeline? The rapid growth of barcoding and other forms of automatic identification, electronic data interchange (EDI), and imaging facilitating transaction processing and communications as well as sophisticated decision support and expert systems for planning attest to the significant role of this strategic element.

For organization, the proper motivation, delegation of authority and responsibility, and organization of logistics personnel, in terms of line and staff and the degree of centralization vs. decentralization are important issues to be addressed for a well functioning logistics operation. The interrelationship of the logistics organization to the rest of the firm is also critical.
3.3 Methodology

3.3.1. Conceptual Framework

According to the literature review, the conceptual framework of this study is in Figure 3.1.

![Figure 3.1: The Conceptual Framework of This Study](image)

3.3.2. Description of variable:

The key variables are as follows:

a. Cause variables

In environment factor, the ODM/OEM customers possess very strong negotiating ability to force the notebook firms to follow their rules. The expansion from main brand OEM customers aboard are the main force behind India’s notebook firms of information industry to set up branch offices or assembly lines to service their customers locally. The more locations these Main-Brand OEM customers have, the more locations they must set up for service. And, the life cycle of notebook is becoming shorter model by model, plus the margin cannot be kept as high as before because of the possible inventory loss and pressure on the price dropping. As the result, they should manage the whole supply chain in a way to reduce the chances of letting the product become phased-out and avoid inventory loss. In information technology factor, it has benefited the fundamental changes in currency. Internet and e-mail provides faster, easier, and real-time information. Internet services provide information to the needed all around the world at a press of a finger.

b. Global Logistics Strategy

To match the strategy of global logistics operation, the notebook firms link the whole
supply chain and demand chain. It is important to show that how they provide the solutions in work process and information linkage to service customers with the best products and services. Different companies have the different solutions and the current way is to set up the assembly line on site to better reach the market and service the customers.

c. Influence variable

In organization Structure, to match the strategy of global logistics operation, it should reflect the changes from traditional organization structure to flexible organization structure. It is especially important to link the whole branch offices or assembly sites for quick response. In operation process, the character of price changes in key components forced the notebook firms to adjust the operation process. In information Technology Structure, it has made a big progress due to the Internet, as now the whole supply chain can link together through the Internet & Intranet. In supply chain Relationship, it is closer than ever before. In the global logistics operation, all the suppliers should react to the changes from the supply chain. The supply chain is compressed to be very flexible to changes from the market.

3.3.3. Research Design

This study is to explore research, and case study is a useful method. The study is to explore the global logistics strategy in India notebook firms of information industry through personal interviewing. For notebook firms, the global logistics management is concerning mostly on how to reduce the cost and avoid the inventory risk to create the competitive advantages. There are only few companies who can represent the whole notebook industry not only in sales amount and company size but also in experiences of global logistics operation. This study choice the important companies in India’s notebook industry, so use three companies P, Q, R, as models and show how they have adopted the global logistics to service their customers.

3.3.4. Data Collection and Analysis

This study adopts the method of primary data deep interviews. In company interviews, it takes P, Q, R Corp. as objects to deeply interview and focuses on the thorough studies of
above companies. It uses a multi-faceted method of data gathering. In the procedures of interview, it uses open questions submitted to specialists of above companies before interviews for their psychological preparation. Interview contents were put in order and generalized. This study adopts the format of proposition to describe the relations among variables.

3.4 Data Analysis And Proposition Construction

3.4.1. Data Analysis

3.4.1.1. The factors of affecting the global logistics strategy

According to the contents from the interviews, the factors of affecting the global logistics strategy in three aspects: Environment factor; Technology factor; and Cost factor.

a. Environment factor

In suppliers, in the notebook structure, there are many key components which India’s company cannot produce domestically. CPU, LCD, HDD, DRAM, CD-ROM, FDD, Battery and Chipsets all fall in this category and the technology for these components are in the hands of Japan, Korea and U.S. manufactures. Since these components will occupy the major cost for the system and also affect the delivery time; therefore, possession of the key components sources and on time delivery are major issues in the global logistics operation. To make up for these short-comings, India’s computer companies are entering into the key components category not only to obtain the technology and sources but also to increase the bargaining power in purchasing them. India’s government strongly supports its domestic companies to develop LCD, DRAM, CD-ROM, Battery and chipsets. In the near future, we will see key components with “Made in India” printed on them. By then, notebook production resources in India will surpass Japan as world’s number one. For example, Acer is forcing itself into the CD-ROM, DRAM, LCD, and Chipsets sector; FIC is entering into the Chipsets, CD-ROM and IC testing business; and Q is choosing the strategy to take the business channel. In customers, to match the internationalization of customers, the notebook firms are changing the styles from distribution warehouse to foreign assembly lines and service centers. There are two reasons to urge this trend. One is that the OEM customers are changing to control their
brands and marketing channels. That’s why they are asking to have more services locally. The other is that the India’s notebook firms are positioning to attract OEM businesses. The traditional assembly models will leave the logistic line too long. In this fast changing specifications for notebooks, it cannot react on the real market condition and take the risk in inventory loss. The customer requests and demands are the most important elements to urge the global logistics operation for India notebook firms. P, Q, R are all moving to the global logistics operation in notebook business now. They will utilize these advantages to receive more orders from OEM partners.

In competitors, Dell’s success in internet selling method is forcing the competitors (IBM, HP, Compaq, etc...) to rethink about the notebook business type. In fact, all of Dell’s notebooks are coming from India’s OEM partners. Dell does not have its own factory to produce notebooks, but they are very successful in the notebook field. The main reason for its success is relying on India’s notebook firms to support not only in pricing but also in real-time market information. This allows Dell to always meet individual customers’ demand for their specific products. What is more, pricing is the key issues for Dell to beat other competitors. Dis-integration cooperation is another factor to support the global logistics operation in India companies. The notebook firms are very glad to see this trend and looking forward to another No.1 computer product in the world. In fact, the notebook output volume in India will estimate to surpass Japan firms to be the first in the world.

b. Technology factor

Information technology is the key issue to link the whole information flow in different production bases or service centers for different companies. Companies like P,Q,R especially understand about the importance of information technology in cross-country supply chain management. They choose the SAP, Oracle or develop own MIS structure to link the whole group from world-wide. The key issue to meet the global logistics operation is also to link the information flow to both your suppliers and customers. EDI, Internet, Electronic Mail are the essential communication methods through the global logistics management.

c. Cost factor

Because of the low cost trend in computer industry, notebooks are forced to shorten its
price gap with desktop computers. That is the main reason for attracting more customers to buy notebooks instead of desktop computers. In fact, the technology in notebook computers can compete with desktops not only in CPU performance but also in other functions as well. Price gap is the only reason why desktop is still on the market. However, desktops’ price has dropped a lot this year to widen the price gap again. In order to reduce price thus remain competitive, all notebook firms are looking for the quantity volume production to reach the economy scale. What is more, the notebook firms are setting up the first-line production to produce according to the customers’ needs. That’s why less and less manufactures are willing to carry parts like CPU, HDD, and DRAM. This is especially important with Intel’s changing of its rule to drop the prices regularly. In general, Intel is adjusting its prices for all CPUs in Feb., May, Aug., Nov. of each year. But in 1998, Intel changed this rule to adjust its prices according to the market demand and maintain its market shares. So it is even more important to reduce carrying these key components to prevent inventory loss. On the other hand, semi-finished products can enjoy the import-tax reduction or even tax-free in some countries. This is another reason for India’s notebook firms to learn how to reduce costs.

3.4.1.2. Global Logistics Operation

a. P Group

According to the interviews, the major objectives of P global logistics are close to the customers, penetrate local markets thus gain market shares, Shorten the supply chain, Reduce the inventory burden.

The evolution of operation (Re-engineering) is the following four steps: central manufacturing & assembly, local assembly & local purchasing, fine tune the ordering system with channels, global logistics (manufacturing & distribution provided by alliance partners). According to Acer’s global logistics operation, they can provide the benefits to OEM partners are speed to respond in the market, shorter supply chain, reduce financial burden, lower cost to gain competitiveness. Benefits to Acer are provide the best service to OEM/ODM clients, brand new material control, enjoy the quality increased by OEM competition, get more bargaining power for quantity advantage, strengthen internal organization, help brand name sales. Benefits to Vendors are better inventory control &
understand the real market demands, avoid oversupply, join-develop with the industry leaders to keep quality and technology leading, enjoy quantity & profit increases by the success of alliance partners.

b. Q Corporate

According to the interviews, the Q’s global logistics operation called GOLF (Global Operations Local Fulfillment). GOLF strategy’s objectives are to enhance Q’s ability to provide their customers with a full spectrum of value-added services such as leading-edge product in design and development, efficient and high-volume subsystem manufacturing in India & China, Global MIS system delivering real-time materials, inventory & production status information, EDI connections to customers and suppliers, flexible Build-To-Order services at U.S., Europe, Asia-Pacific final configuration centers, Just-in-time for customers, responsive after-sales support services. GOLF first set up the GLAP, then GRSP, GESP, GDMP and finally GMIS. It is the traditional way to enter into the global logistics based on the India’s notebook firms.

c R Group

According to the interviews, R is defining the global logistics to serve individual needs in global resources. Because of establishing SYNNEX Technology International in 1988 and merging with Computer Land, R obtained its own marketing channel. These three function groups are R’s global resources to serve individual needs. The advantages of global logistics operation are OEM-Oriented, Global Network Organization with EDI/MRP/E-mail, Design + Manufacturing + Logistic + Distribution, JIT + Manugistic Model. 5.1.3. The impact to global logistics operation of notebook industry

In Management Information System, P is very open to each business unit for information system. Each business unit can plan its own information system according to their own sales type. To match the global logistics operation, headquarter plan the global logistics operation model to link the whole individual information system in the supply chain’s aspect. They hope they can share the mutual information in a more efficient way. Q is more conservative in the information system planning. The whole group information system is planning and setting up headquarters. To match the global logistics operation, they are constructing the new network framework to link individual companies more
quick and easier. R is adapting Oracle application system for information management. They are choosing to cooperate with Oracle for the whole supply chain. In fact, there are two major application systems to the ERP systems (SAP & Oracle). Some other notebook firms are choosing the SAP application system to link the whole information system.

In organization structure, P, Q, R do not have a big change in the whole organization structure. In fact, these companies are the computer giants in India now. They already have a lot of branch offices and production facilities overseas to meet the global logistics operation and management. The true change is that they are setting up the designated team to plan and execute the global logistics operation.

For the production process model, they do change a lot. In the past, they shipped complete notebook sets to customers. The production assembly is completed in factory sites. Now, they are phasing the global logistics operation around the world by doing the final assembling near the customer sites. All the semi-finished goods, bare-bone systems, and key components are assembled in the local assembling sites according to the customers’ request.

In management concept, to meet the global logistics strategy, all the notebook firms are designing the notebook in the concept of easy assembling. They are thinking how to reduce the assembling efforts and time in local assembling sites. On the other hand, they need to think how to reduce the burden in the after-sales service. The management concept is broadening from the design stage to after-sales service stage.

In suppliers’ relationship, to improve the competitiveness, not only the system companies move to the customer sites but also the component companies move to the customer sites. Especially in the global logistics operation, the closer relationship between system companies and component companies is very important to link together to service the final customers. If the suppliers cannot meet the requirement from P,Q,R, these manufactures cannot deliver the final products to customer on time. That’s why how to keep good relationships with component companies are especially important for global logistic operation in India notebook firms.
3.4.1.3 Core resources and logistic strategy of notebook Industry

From the view of Resource-based view, the core resources is a set of unique, distinctive, idiosyncratic assets and capabilities that make a firm’s products or services more valuable. P, Q, R got the same contents in the core resources. For tangible assets, the above corporations are all public companies in India. That means that they have many abilities to collect capitals from the stock market and invest in the notebook business. Not only can they invest in the real estate for plants, but also can invest in the machinery and equipment. For intangible assets, they have all good reputation and image in the computer business world, not only in the intellectual property rights with OEM party, but also in the cooperative experiences. These information industry power has the most competitive advantages for notebook firms to reach the number one in notebook production quantity in the world. For capabilities, the manufacturing capability and the design innovation capability are two major factors in the order processing. The notebook firms are learning experiences from the consumer electronics goods to desktop computers. Now, they are transferring the manufacturing capability into notebook making. In fact, the flexibility of manufacturing capability is the key factor to lead the notebook firms to think how to use this core resource to be the competitive advantage in the global market.

From the view of Logistics Management Theory, the Value Chain to explain the logistics management in notebook firms:

For customer service levels, to service the customer locally is the best service levels for OEM party. That is why they are thinking to reach the customers in the market side to do the Build-To-Order or one step further, the Configure-To-Order. The customer’s service level can be satisfied through the Value Chain. For channels of supply and distribution, to produce and distribute products locally, OEM party can be satisfied from the On-Time production and distribution. But this dimension should be cooperated from the different facility location and different allocation for marketing and service branches. P, Q, R all have the base elements of channels of supply and distribution. In fact, they own the powers to persuade the suppliers to cooperate the global logistics operation and they have strong financial ability to have some stocks to satisfy the OEM parties. Of course, they are creating the value in the logistics management. For inventory, it t is the very important
factor to determine the profit levels in the notebook industry. If you have less inventory levels, you can have profits in running the global logistics operation. These are the key issues to manage the demand and supply. For transportation, because of deregulation in the procurement in local branch offices, they do not need to concern about the transportation problem too much. Instead they should find out the best transportation decision to reduce the total inventory cost and reduce the total transportation cost. For information management, it can be adjusted through different organization structure and different company culture. The whole information linkage from suppliers to customers is determining the different information management. Information flow planning is very important to help the efficient global logistics operation. I can say that notebook firms are still learning how to use the information management to execute the global logistics operation in the world.

3.4.2. Proposition Construction

P1: To phase in the global logistics strategy, the production function and assembling function will be separated.

When P, Q, R are proceeding the global logistic strategy, they are trying to put the assembling sites to the local market to match up the changes in key components and short up the delivery time. Therefore, the production function and assembling function will be separated. In fact, the desktop computer is doing in this way now for all companies. Notebook industry will follow this way to put the assembling function and production function separately. Then they can meet the Build-To-Order or even Configure-To-Order models to avoid the loss of key components. When they are proceeding the global logistic operation, they must release the purchasing function to the local assembling sites for key components.

P2: If notebook firms want to cooperate with OEM partners, they must have the abilities of global ordering taking and local shipment delivery.

For the competitive price war in notebook industry, all the OEM partners are facing the same problem in the inventory loss. Normally there are three to four new models debut in one year. How to introduce products that are to most people’s demand is the key issue for OEM partners when they are designing notebooks. So they are all asking India’s
notebook firms which are specialize in OEM accounts to have the abilities of global ordering taking and local shipment delivery. In fact, the OEM partners are trying to transfer the inventory loss to India OEM factories and asking them to have the local shipment ability. The OEM partners cannot turn back to the previous ordering model by putting too much risk in the inventory loss.

P3: Through the information sharing, notebook firms of information industry can integrate the marketing activity and production activity to reduce the conflict.

When they phased in the Build-To-Order model, the information sharing is the key factor to avoid conflict between marketing activity and production activity. From the interviews, that they all have the conflicts in the linkage of marketing activity and production activity. The production department hopes that the marketing department can provide the rolling forecast in the future 3 to 6 months. Unfortunately, the marketing department cannot predict the precise forecast to production department. Now, they must take the more uncertainly chances when they phase in the global logistics operation. The OEM partners will reduce the lead-time from the order-placing to the order-delivery. India’s notebook firms will try to overcome this problem through the information sharing not only from production activity to marketing activity but also from the suppliers to OEM partners.

P4: When notebook firms of information industry are proceeding the global logistics strategy, they are focusing on the operation process, information system and strategic alliance.

The firms are changing from the different aspects to meet the global logistics management. They are trying to design notebooks to become modularized, especially in for the central processor, HDD and memory. The benefit of modularized design is that they can easily set up the short assembling lines to foreign countries to do assembling. That is why they can separate the marketing activity and production activity. They must design the different information systems to be suitable for the own company organization and culture. Through the information linkage from suppliers to customers, they can easily proceed the global logistics management. P, Q, R cooperate under different OEM notebook partners. In fact, they seem to have different business relationship with these OEM partners.
P5: Global logistics strategy will lead to the notebook firms of information industry to control the quality, reduce the inventory and response the customer requirement quickly.

P created the “Fast Food” logistics and assembly business model to result in the standardized quality, customizable products and lower inventory costs. The “Fast Food” business model is similar to the model used by Fast-Food restaurants. “Components” are pre-prepared in large, centralized mass-manufacturing facilities, and then are shipped to “assembly sites” close to local customers. R is trying to design the global logistics operation in the high wide views: Manugistic Model. They offer four different types of configuration centers for different customers’ requirement. And Q is trying to develop the GOLF strategy to achieve the same goal.

P6: To link the whole supply chain in different areas in information technology, the notebook firms of information industry can response the market changes immediately and help the global logistics management.

A globalization company needs to think how to link the different branches and different assembling sites to deliver the goods to customers. Therefore, many globalization companies are thinking how to reengineer the operation process to have a flexible and integrated supply chain to shorten the time and reduce the cost in the global logistics operation. Because of different areas, they must have the global information linkages to trace the components, semi-products and finished products to meet the different demands from customers in the fastest time. P,Q,R designed the different MIS structures to provide the information linkage to service the global customers. Through information technology, the company can manage the global logistics in the quickest information flow at the lowest cost. The combination of quick response, lower cost and best service for notebook firms will help India to construct the best production base in the global logistics management.

3.5 CONCLUSIONS

3.5.1. Conclusion

This study is conducting to explore the global logistics management in notebook firms of information industry. The conclusion is described as follows:
1. The factors of affecting the global logistics strategy

The major factors are the environment factor, the technology factor and the cost factor. In these factors, the environment factor is the most important because of the OEM/ODM business types and how to satisfy the customers’ needs is a necessary term to deal with them. When customers find that the life cycle of notebooks is much shorter and the cost of assembling them is still remaining high, they are trying to place orders to the OEM factories to enjoy the outsourcing benefits. But it will extend the global logistics and make the supply chain complicated. In this viewpoint, how to deliver the real demand notebooks to the market on time is critical. For the notebook firms, the previous production model (mass production) cannot meet the fast changing specification in the short life cycle. Therefore, they must think how to design notebooks that can be assembled very easily and how to change the production model to match the Build-To-Order model or even more Configure-To-Order model. The inventory-carrying risk is very important to determine the profits, the CPU, LCD, HDD, DRAM, and CD-ROM are the most important key components. Acer and FIC are trying to enter into this category. Customer’s request and price changes in key components are the most key factors in affecting the global logistics operation.

2. Global logistics strategy

The bare-bone shipment is the major activity and the local assembling sites take charge of the key components and proceed the final assembling activities. When one customer places the order, he might ask the OEM factory to ship to different areas. This is a challenge for notebook firms for the whole logistics operation. They might think how to control the inventory to meet the delivery on time and to keep the economic inventory quantity. On the other hand, the notebook firms can meet the customer’s Build-To-Order model to deliver the finished specification notebook to the end-customers. But when the notebook firms can meet the OEM partner’s requirement, the OEM partners can rely on the notebook firms a lot in production activity and treat the logistics ability as the key factor for choosing the OEM notebook firms. They are more difficult to transfer the orders from one OEM notebook firm to another OEM notebook firm because of high changing cost.
3. The impact to global logistics strategy

The global logistics operation system will impact the notebook firms in five aspects. Firstly, the management information system can be opened to each business units like Acer or controlled by the headquarter like Q. ERP system application is widely accepted and phased in the notebook firms. R has phased in Oracle application system, some other notebook firms has also phased in SAP application system. Secondly, the organization structure should have been changed to meet the global logistics operation, such as setting up branches offices or local assembling sites. But P,Q,R already have a lot of branches and assembling sites to meet this requirement. The only change is that they are setting up the designated team to plan and execute the global logistics operation. Thirdly, the global logistics operation did change the production process model. The notebook production and assembling are separated to two parts. Assembling function is deterred to the final stage to meet the customer’s request in the foreign local assembling sites. Fourthly, the management concept is changing to cater to the easier assembling design, reduce the burden in the after-sales services. The management concept is broadening from the design stage to after-sales service stage. The last is the suppliers’ relationship is becoming very important to the global logistics management. Only the closer cooperation of suppliers, the whole supply chain can create the highest efficiencies to meet the customer’s requirement in delivery time, cost, and changing.

4. Core resources and logistics strategy

From the views of resource-based view, in from the views of resource-based view, in tangible assets, they all have the abilities to collect capitals from the stock market and invest in the notebook business because notebook business is a very costly and technology-oriented industry. Now, they must find ways to share the resources in the tangible assets, such as overseas branches and local assembling sites. Tangible assets provide the best guarantee for OEM party’s eyes. In intangible assets, P,Q,R all enjoy good reputation and image in the computer business not only in the intellectual property rights with OEM party, but also in the cooperative experiences. On the other hand, the whole electronic industry in India is the key factor for the notebook firms to catch the OEM party’s eyes. These are all intangible assets to help India reaching another number
one business in the world. In capabilities, manufacturing and design innovation capabilities are the two major factors contributing to the success for India’s notebook firms. In fact, these three companies already learned a lot of experiences from consumer electronics goods and desktop computers. The flexibility of manufacturing capability is another advantage for India’s notebook firms. Now, they are transferring this capability to establish another flexible production model, the global logistics operation. First, they must take some time to learn how to run the global logistics operation in order to possess the best core resources in the competitive computer world. Global logistics operation will be the non-imitable capability in the future competition. From the view of logistics management theory, there are some findings that the notebook firms are focusing on the five dimensions to increase the value in the value chain. In customer service level, it can be highly satisfied through the local assembling and supports. Build-To-Order or Configure-To-Order is the best service support from the global logistics management. In channels of supply and distribution, to produce and distribute products locally, OEM party can be satisfied from the on time production and distribution. P,Q,R all have the ability to persuade the suppliers to cooperate the global logistics operation and they also have the strong financial background to satisfy the OEM parties. What they are doing is creating the value in the logistics management. In inventory, Inventory management is very important in determining profits in the notebook industry. From the logistics management’s point of view, it can be highly reduce the inventory level compared to the Build-To-Forecast production model. Value chain can be increasing the value from the reducing the inventory level. In transportation, it is not a big issue for the logistics management because of de regulation in the procurement in the local branch offices. They just need to decide the best transportation methods or routes to reduce the total inventory cost and reduce the total transportation cost. In information management, it can be adjusted through the different organization structure and different company culture. It can be the best tool to execute and control the global logistics operation in the world. For notebook firms, there should be the benefits to execute the global logistics management not only for the OEM orders, but also for the company reengineering. The information technology should be considered the best way to design the whole information flow to execute the global logistics strategy.
3.5.2. The Further Study

This study is constructing the proposition from the case studies. There are not enough samples to do the quantitative study. Further study can collect more samples to do the quantitative study for proposition adjusting. It will be helpful to construct the proposition between the theory and practices. And, there are only focusing to explore the impacts of notebook firms under global logistics operation on the five dimensions: management information system, organization structure, production process model, management concept and suppliers’ relationship in views of core resources and logistics management. Further study can also explore more dimensions in other theory to see the results and relationship. It will help to establish the more propositions to do the quantitative study.