

# **THE STUDY OF THE QUICK RESPONSE TOWARD THE SUPPLY CHAIN RELATIONSHIP**

Sheng- Hsiang Li

Associate Professor in the Department of Logistics Management, National Kaohsiung  
Institute of Marine Technology

## **ABSTRACT**

This study tried to find how these components of quick response, including the goods delivery efficiency, information technology, efficient customer response, order processing, and information sharing affect the degree of cooperation, satisfaction, and cooperation intention. The results show that the supplier's quick response ability has significant positive influence on the channel performance.

## **INTRODUCTION**

Many enterprises are facing the competitive environment of value and speed. Both the sensitivity of the market and quick response ability are important characteristics help the enterprises to exit and succeed. The decisive factors for the enterprise's future value depends on the ability of new product introduced, new market developed, and response to the market demand. The quick response system can shorten the cycle of manufacturing, distribution and sale to lower inventory investment, faster inventory turn, fewer stock-outs. Quick response is to cooperate with their suppliers. The enterprises can response quickly to the market demand by the implementation of information technology and logistic system. The key factors of quick response to succeed are the supplier selection and the right measurement reports. Because of the supplier selection is a decisive factor of supply chain management and the quick response ability is a decisive factor that helps the enterprises to get commercial information and strengthen time- based competition.

This study focused on the ability of quick response and built up a specific measurement index for the supplier selection. The result could be used to measure the supplier's quick response ability. The results of the quick response depend on the channel relationship. Many empirical studies of channel relationships have focused on prediction several interesting constructs such as power used, conflict, satisfaction, and trust- commitment. This study is different from the previous studies and also builds up a model to discuss the influence of the supplier's quick response ability on the channel performance.

## **LITERATURE REVIEW AND RESEARCH HYPOTHESES**

This study tried to find how these components of quick response, including the goods delivery

efficiency, information technology, efficient customer response, order processing, and information sharing affect the degree of cooperation, satisfaction, and cooperation intention.

#### Goods Delivery Efficiency

Several researchers have addressed the importance of considering multiple factors in buying decisions. Dickson (1966) presented over 20 supplier attributes that managers consider in the supplier evaluation process and analyzed the data from 170 purchasing managers before concluding that delivery performance is one of the most important criteria in assessing suppliers. Christopher et al. (1979) discussed the importance of both tangible and intangible measures for supplier evaluation. The tangible measures included defect-free materials and products, timely service, and accurate order processing. The intangible measures consisted of responsiveness and communication of the supplier, and the credibility of the supplier in offering terms and due dates. A comprehensive review of supplier selection methods by Weber et al. (1991) reported that 47 of the 76 articles in the review utilized more than one criterion. With the advent of manufacturing strategies such as just-in-time (JIT), there is increased attention on multiple criteria such as delivery et al. (Chapman and Carter 1990). A comprehensive list of factors for supplier evaluation can be found in Barbarosoglu and Yazgac (1997). The following relationship is expected:

H1: Higher goods delivery efficiency is associated with higher degree of cooperation, satisfaction, and cooperation intention.

#### Information Technology

Information technology is often touted as a vehicle for capturing, tracking, sorting, and providing information to advance knowledge, thus leading to improvements in service-delivery efforts. Information is employed as a stabilizing or adaptive mechanism to gain leverage or control over a turbulent environment. Information often is employed in a symbolic manner, that is, to gain legitimacy for a predetermined or self-serving decision alternative (Argyris 1977; Feldman and March 1981). With the computer revolution came the resurgence of the old desire to rely on information to steer problem-solving activities. Now that computer technology can collect, process, and disseminate vast amounts of data, advocates once again have begun to promote a signal approach to organizational problem solving. Relying on themes such as the learning organization, continuous learning, or double-loop learning, proponents look to information and its associated technology as a vehicle for promoting greater problem-solving capabilities in organizations (Drucker 1999). The management literature is replete with advice on using technology to create knowledge workers, to establish intellectual assets, and to instill information literacy (Choo 1998). Thus:

H2: The degree of cooperation, satisfaction, and cooperation intention is high as the information technology is good.

#### Efficient Customer Response

These buyer- supplier long- term relationships are distinguished by their repeated interactions that enable the sellers to garner knowledge about the customers' specific needs over time, and thereby create a more- efficient process of interacting to deliver a more- effective, customized service. Some researchers propose that connecting and building relationships with clients is essential (Noddings 1984). On the other hand, others suggest that remaining (emotionally) detached from the client and even conveying arrogance is critical to delivering professional work (Pierce 1995; 1996). Previous research implies that service professionals' actions fall along a continuum in their service- delivery strategies. There are those who adopt an expertise- based strategy, by controlling the delivery process and expecting clients to adapt to their needs and style. In contrast, there are those who essentially become partners with their clients and collaborate in solving the client's complex problems. From this discussion, this study predicts the following relationship:

H3: The relationship between the efficient customer response and the degree of cooperation, satisfaction, and cooperation intention is positive.

#### Order Processing

Examples of industries that have adopted and incorporated these concepts as vehicles for improvement are numerous. Kurt Salmon Associates (1993) report the adoption of efficient consumer response by the grocery industry, which requires information sharing between suppliers and the stores. Stalk et al. (1992) discuss how the distribution centers at Wal- Mart, a discount retailer, obtain information on the inventory status of various products stocked at their stores and use such information in making replenishment or delivery decisions. A recent article in Forbes (1997) reports that the distributors for Heineken, a Dutch beer manufacturer, can increase or decrease their orders via Heineken's Web page, and Heineken can quickly reroute shipments or adjust production. Another example that is somewhat related to the model studied here is Campbell Soup and its continuous replenishment program. Campbell Soup establishes electronic data interchange links with retailers. Every morning, retailers electronically inform the company of their demand for all Campbell products and of the level of inventories in their distribution centers. Campbell uses that information to forecast demand and to determine which products require replenishment based on upper and lower inventory limits previously established with each retailer (Fisher 1997). In recent years, the field of supply- chain management has gone through drastic changes. Numerous companies in various industries have undertaken major initiatives such as re- engineering efforts and investment in information technology to better manage their channels and reduce inefficiencies in their supply system. Re-engineering efforts have resulted in more coordination and cooperation between parties in the supply chain in the form of alliances and partnerships, emphasis on logistical issues when designing a product (e.g., delayed differentiation and postponement), modular product and process design, agile supply networks (Feitzinger and Lee 1997), among others. Investment in IT however, has resulted in the availability of more information on

channel activities to decision makers, who, in turn, must find ways of incorporating them in their day-to-day decisions to achieve better material flow and on-time deliveries. Therefore:

H4: When the order processing is good, the degree of cooperation, satisfaction, and cooperation intention will be high.

#### Information Sharing

An important characteristic of any buyer- supplier relationship is the amount and type of information that is exchanged between the contracting parties. Buyer- supplier networks are characterized by greater information exchange than arm's - length transactions. This enhanced information exchange allows for greater production efficiency. An important decision made by a potential buyer and supplier is the manner in which they choose to organize their exchange. As Williamson (1975; 1986) notes, different types of buyer-supplier relationships can be viewed as different points on a continuum between markets and hierarchies. As a result, there is no bright line clearly distinguishing one exchange relationship from another. However, there are certain characteristics that one relationship may have more of than another. For example, relative to an arm's - length relationship, firms that are part of a buyer- supplier network exchange more information (e.g., about product design, production process, and demand forecasts). Further, the information is often proprietary and tends to be exchanged earlier in the design and production phases. This information exchange enhances efficiency by allowing more innovations to be incorporated earlier into the product design and production process, thereby enabling the firms to more rapidly respond to market and technology changes. The computer and electronics industries have become intensive users of buyer-supplier networks. A more recent example is e- commerce firms, which, because of their perceived need to bring their products and services to the market quickly, often outsource their back-office, production, order- fulfillment and other activities to their network partners (Clemons and Hit 2000). Thus, this study predicts the following relationship:

H5: When the degree of information sharing is high, the degree of cooperation, satisfaction, and cooperation intention will be high.

## RESULTS AND CONCLUSION

The results show the chi-square goodness-of-fit measure and other fit indicators are good enough to suggest that the model fit the data acceptably. The results show that the supplier's quick response ability has significant positive influence on the channel performance. If the cooperating partners could not build trust between each other, they would not share information. If the supplier can coordinate voluntarily, induce loyalty, provide compelling value to the other, obtain operating in coordination from the other, and share selling information each other. Then the quick response strategy will be successive. The total satisfaction and individual satisfaction has significant positive influence on the cooperation intention, but the degree of cooperation has no significant influence on the cooperation

intention. These results showed that the supplier who value long- term partnership should not only concern the partner's profit, but also pay attention to the quick response ability. The partner may look for another supplier who is better in the quick response ability. The main contribution for this study includes the following aspects. First, this study built up a model of the supplier's quick response ability, which could provide a way to measure the partner's quick response ability, the supplier's selection, and the supply chain management. Second, these results could be used to weight the supplier's score to compare the supplier's quick response ability with the others. The enterprises could understand the main components and integral score of quick response ability for their suppliers. Third, the enterprises could provide their suggestion for the suppliers to improve their response ability. In addition, they could improve their cooperating relationship with the suppliers by implementing point of sales and economic ordering system equipment, and sharing the management and selling information. Last, this study discussed the effects of the quick response ability to the channel performance. These results can help the executive to implement supply chain management, and also provide an empirical investigation support when they try to implement quick response system with their partners.

## REFERENCES

- Argyris, Chris (1977), "Double Loop Learning in Organizations," *Harvard Business Review*, 55(5), pp. 115-124.
- Barbarosoglu, G. and T. Yazgac (1997), "An Application of the Analytic Hierarchy Process to the Vendor Selection Problem," *Production and Inventory Management Journal*, 38(1), pp. 14-21.
- Chapman, S. N. and P. L. Carter (1990), "Vendor/Customer Inventory Relationships under Just-In-Time," *Decision Sciences*, (21), pp. 35-51.
- Choo, Chun Wei, *The Knowing Organization*, Oxford University Press, New York, NY, 1998.
- Christopher, M., P.B. Schary, and T. Skjott-Larsen, *Customer Service and Distribution Strategy*, Wiley-Halstead, New York, NY, 1979.
- Clemons, E., and L. Hit, *Poaching and the Misappropriation of Information: An Increasingly Important Form of Opportunism*, Working paper, The Wharton School, The University of Pennsylvania, 2000.
- Dickson, G. (1966), "An Analysis of Vendor Selection Systems and Decisions," *Journal of Purchasing*, (2), pp. 28-41.
- Drucker, Peter (1999), "Knowledge-Worker Productivity: The Biggest Challenge," *California Management Review*, 41(2), p.7994.
- Feitzinger, E., H. L. Lee (1997), "Mass Customization at Hewlett Packard: The Power of Postponement," *Harvard Business Review*, 75(1), pp. 116-121.
- Feldman, Martha, and James March (1981), "Information in Organizations as Signal and

- Symbol," *Administrative Science Quarterly*, 26(2), pp. 171-186.
- Fisher, M. (1997)," What is the Right Supply Chain for Your Product," *Harvard Business Review*, 75(2), pp. 105-116.
- Forbes (1997), Heineken on the Internet, March 24, p.58.
- Kurt Salmon Associates, Inc., *Efficient Consumer Response: Enhancing Consumer Value in the Grocery Industry*, Food Marketing Institute, Washington, DC, 1993.
- Noddings, N., *Caring: A Feminist Approach to Ethics and Moral Education*, University of California Press, Berkeley, CA, 1984.
- Pierce, J. (1996),"Rambo Litigators: Emotional Labor in a Male- dominated Occupation," in *Masculinities in Organizations*, ed. C. Cheng, Thousand Oaks, Sage Publication, CA, pp. 1-28;
- \_\_\_\_\_, *Gender Trails: Emotional Lives in Contemporary Law Firms*, University of California Press, Berkeley, CA, 1995.
- Stalk, G., P. Evans, and L. E. Shulman (1992),"Competing on capabilities: The New Rules of Corporate Strategy," *Harvard Business Review*, 70(2), pp. 57-69.
- Weber, C.A., J.R. Current, and W.C. Benton (1991), "Vendor Selection Criteria and Methods," *European Journal of Operational Research*, (50), pp. 2-18.
- Williamson, O., *Markets and Hierarchies: Analysis and Antitrust Implications*, New York: Free Press, 1975.
- \_\_\_\_\_, *The Economic Institutions of Capitalism*, New York: The Free Press, 1986.