Technical Services for Customer Relationship Enhancement – A Case of Textiles Dyeing Manufacturer

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Abstract

This study aims to evaluate customer relationship performance from the aspects of technical service capabilities and practices provided for current Taiwan textiles dyeing industry. Industry characteristics, operation scales, manufacturers' new movements and problems, and competition pressures are considered from upstream dyeing raw material suppliers perspectives. In addition, the measures of offering technical services to enhance customer relationships are carefully examined. Probing into literature review and interviews with dyeing manufacturers, case analyses and findings are provided. Consequently, five propositions are stated to provide viewpoints and suggestions that dyestuffs suppliers who offer superior technical services have sound advantage and to safeguard customer relationship performance effectively.

KEYWORDS: technical service, customer relationship management, dyeing and weaving

1. Introduction

In the era of industrial competition and customer orientation, enterprises must come to realize that their unique strength and behaviors may influence customers' perception of related quality, and also have impact on customers' willingness to maintain relationship. In recent years, due to the heavy competition in market and the improvement of information technology (IT), within the framework of customer relationship management (CRM), providing technical services have become the differentiating policy and the key element in management. Technical service (TS) plays an important role in the service chain of manufacturing industries. Recently, many researches have been devoted to investigate the elements for customer relationship maintenance because good customer relationship is the most urgent job for all enterprises. The importance of customer makes us aware that the maintenance of customer relationship is the key element for enterprises' survival and success. The most urgent goal is for enterprises to increase customers' contribution by good maintenance of customer relationship, which plays a significant role in product marketing, CRM, and technical services. So, using CRM and technical services to increase customers' contribution

has become the new goal and policy for enterprises. At the same time, today's industrial operation modes can no longer follow the traditional after sales services, but need to provide all-dimensional added services. Therefore, the main motivation of this study lies in understanding the current situation and future practices of customers' demand for technical services, and its relation with CRM.

To maintain long-term relationship with customers, the best CRM approach is to take customers as partners, which may make the relationship permanent and further appeal to quality relationship. The spirit of CRM is to deeply understand customers' background, movements and needs, and to build up long-term, reciprocal relationship. So, if enterprises can maintain close relations with customers, acquiring the latest information, they excel in management opportunities already. This study takes customers as enterprises' partners, using the framework of CRM, and marketing concepts of differentiation in order to understand the current situation and future practices of customers' demand for technical services, and technical services' influence on customer behavior. Finally, this study also makes suggestions on this new trend of customer relationship maintenance. In summary, our goals include coordinating study on TS and CRM, investigation of customers' expectations and demand for TS in CRM, research of the impact of TS capabilities on customer relationship, and investigation of TS's contribution to customers' contribution, and suggestions of the maintenance of long-term customer relationship.

2. Literature Review

2.1 TS Capabilities

This study divides TS capabilities into four parts, "information technology (IT) capability," "collaboration capability," "process integration capability," and "technology integration capability."

IT capability

Alter (1999) defines IT as the core of enterprises. IT is the central theme for information development; the process also changes with the application of IT. Cortata (1995) proposes that IT can not only promote certain quality of institutional management, but also change the whole direction for competition. Anderson and Segars (2001) and Lee (2001) study IT's influence on enterprises' policy making, defining IT as the hard and software equipment used promote communication and information exchange among departments in a company.

Collaboration capability

Thompson (1967) and Jagdev and Thoben (2001) points out that major collaboration modes are 1. Virtual enterprises mode, 2. Provider chain mode, and 3. expanded enterprise mode. Parker (2000) also points out that collaboration among enterprises have many forms: policy league, RD negotiation, technology exchange, direct investment, usage agreement, relationship between provider and customer, etc.. With respect to designer and producer of products, Sprow (1992) believes that collaboration in producer company include the design process conducted by engineers from different fields under the common management. Internet communication may allow participants form different regions and reduce the shortfalls of geographical distance. Harley (1998) thus thinks that the main goal for collaboration is to make the function of product more suitable, reducing the cost of producing and setting up, and make sure that products are easily served and maintained.

<u>Process integration capability and technology integration</u> <u>capability</u>

Zahra et al (1994) suggest IT innovative policy include six elements: enterprises' innovative situation and capability, defining dominating goals for enterprises, technology source, the nature of technology investment, the institutional function of technical resource. Maidique and Patch (1998) define IT innovative policy as set of plans a company uses to respond the outside technology threat and chance. From the viewpoint of resource, Luo (2001) mentions that to grasp the opportunity in the market and to reduce the competitive threat, a company must offer resource promise for local management, and maintain good relationship with customers, providers, distributors, and competitors. Bernard (1938) is the first one to say that enterprises should have "unique capability," and then Selznick (1957) proposes that institutions would have different capabilities and companies have different resources.

2.2 Evaluation of customer relationship

Customer Value

Babin and Griffin (1998) point out that customer satisfaction is an important index for evaluating success. Kelley (1992) and Woodruff (1993) think customer satisfaction means customers' expectation and perception of the real happenings and the values of products. Although customer satisfaction is quite important, it is only one part in CRM. Donavan & Samler (1994) think that the increase of loyalty, repetitive purchase, positive verbal response all indicates customer satisfaction. They also believe that customer satisfaction and loyalty are closely related, and loyalty can promote profit, marketing occupation rate. Berry (1983) believes enterprises should build up loyal customer relationship with the following three qualities: 1) thorough service: improving the overall service process to provide complete service. 2) Setting up friendship: setting up good enterprise culture, conveying the ideas of customer service and friendship to the customers. 3) Continual learning: continuing observing customers' need to improve the service quality in order to prevent the loss of customers. Bowen and Shoemaker (1998), and Singh & Sirdeshmuckh (2000) believe that customer loyalty determines customers' repetitive consumption, which is an index for customer satisfaction.

Corporate Value: Knowledge and Learning

Drucker (1993) points out that knowledge will replace land, labor, investment, and equipment and become the most important factor in production. Knowledge requires accumulation and effective institution for further growth. An important factor lies in employees' creativity because institutional learning and policy will greatly influence employees' attitudes, beliefs, and values and form the corporate culture and value (Marshell et al. 1996). With regard to the interaction between internal and external knowledge, Nonaka and Takeuchi (1995) propose four knowledge transferring modes, including socialization, which means the process from the internal to the internal through experience share; externalization, which means the process from the external to the external through systemization; internalization, which means the process from the external to the internal, the communication of knowledge through language, story, or manual. Gilbert (1996) and Gordey-Hayes divides knowledge transference into five steps: 1) acquisition, 2) communication, 3) application, 4) acceptance, and 5) assimilation. In learning, Senge defines institutional learning as a group of people's continual increase of their creativity and creation. Cohen and Levinthal (1990) describe institutional learning (or absorption ability) as the capability to evaluate, adopt, and use external knowledge, or to ensure the value of the new information to apply to commercial goals.

3. Research Methodology

This study uses case analysis, including corporate interview and sub information analysis. In methodology, Yin (1984) defines case analysis methodology as an attempt to handle social unit of certain sect in society of larger scale. Therefore, this method is "to understand some practical phenomenon, which are not clearly defined yet through multiple means for empirical investigation." Smith (1990) discusses case analysis from the viewpoint of business, saying that as an important means for quality analysis case analysis emphasizes "interpretation capability" rather than "representative" as in the quantitative analysis. Our current research follows this spirit. Our data come from professional periodicals, scholarly titles, and researchers' practical experiences. The study also includes interviews with management in related business, and analysis of these interviews. We analyze our interview data through TS capability, customer relationship evaluation, and influence factors. Finally, we integrate elementary and advanced information from interviews for comparative studies to understand the current condition of TS and CRM in dyeing industry.

Following, we'd like to analyze TS capability of the "R" case company, its responses to the competition, and the impact of CRM. Beginning with the developing stages of product, running through the upstream to downstream clothing products, company R integrates the whole process of distribution and marketing and offer one-stop shopping service to meet the demand from customers. It redesigns the framework, introducing "enterprise resource program ERP" system, to promote its competitive capability in the global market.

3.1 Technology service capability

Information technology capability

With its core superiority in ODM, company R sets up R&D service center, interacting directly with customers through ERP system, providing sample design, product analysis and new product process analysis for customers and internal engineers and business people. This also makes the customers able to provide product demand and opinions of correction to Company R. Besides, with the help of material supplier through the system, the computer data in R&D may offer information about dying material combination for producing department for references.

Collaboration capability

As supplier for an internationally famous brand, company R participates the developing design of new clothes product, collaborating to develop new material for the brand, also finding for the brand qualified clothing manufactures, setting up the whole out-sourcing line of the upstream, the midstream and the downstream. With regard to order, the supplier is asked to offer process capability report and demand for product scales. With regard to collaboration platform, it need the collaboration from the upstream dying material supplier to evaluate the process capability to offer the customized demand of dying material to meet the requirement from the international brand buyers. On the collaboration platform, the cooperation of the three parties may promote efficiency, and also offer collaboration at possible points in technology service. The sources of order for company R mainly come from OEM and ODM. Owing to the fast development of environment and IT, the lead time was around 40 days in the past, but now it is cut to 21 days.

<u>Process integration capability and technology integration</u> <u>capability</u>

Company R adopts ISO 9001 quality control system and ISO 14001 environment management system. In the plan for process and quality improvement, it adopts PDCA (Plan, do, Check, Action) model, to monitor and correct the working process. Also with ERP, it integrates the TS capability of upstream companies, and further designs working process standard. In the case of company R, it sets up "process development unit" to solve the problems encountered during the stages of development, customization, to analyze, innovate the ways of solution. It integrates the technology capabilities of the internal senior persons and to interact with upstream dying material suppliers in terms of technology integration.

The R&D center of company R is able to offer 1000 sample textures per month to the customers all over the world. It is also able to do in time correction over internet, offering 3D process environment for its customers to examine the textual samples. Company R further satisfies the different demands about scales and colors of its customers. With the collaboration of "R & D center" and "process development unit," it offers more accurate quality control figures and more exact customization to avoid deviation from the process standard. Company R requires quality people for unit like "process development unit" and realizes the huge cost and task of training can not come merely from internal sources and need outside training resources. Under such circumstances, its dependence on its dying material supplier for technology service has been increasing. With the difficulty in training dying experts, company R is clearly aware that the cost of training technology must be transferred to capable dying material supplier, and use technology integration process to promote internal strength and value.

3.2 Customer relationship evaluation

With ERP system, company R further analyzes the contribution of each customer. With the application of ERP into IT, this company further uses it to evaluate dying material source supplier's contribution. They have conclusions listed as follows:

customer satisfaction and customer loyalty

Dyeing source supplier's ability to provide technical service is an important added value to the company. It may help to coordinate and renovate the internal technical capabilities and knowledge resources. These IT services may continuously update critical techniques, improving technical quality and process capability in order to keep customers and add buying willingness. Moreover, with the proper connection with suppliers, the company creates "cognitive effect of the suppliers and enhance "cross-selling effect." At the same time, the gap between time limit and expectation of technical communication is reduced; the effect of technical communication is further In terms of selling conduct, "selling strengthened. purchase type" is transformed into "relationship purchase type," which may effectively minimize the time spent on searching for new suppliers. It shows that the offering of TS indirectly promotes the keeping and acquiring rates of customer consumption behavior, enhancing customer relationship and loyalty.

enterprises values

By offering the process of TS, the company may

efficiently create more valued information and technology capabilities. With the cooperation with the dying material suppliers, the upper stream's broad application of knowledge may quickly grasp the demand of product and goods from the brand buyers, offering specific service to specific expectation, which may render every purchase positive. This may also train employees for better grasp of technologies, their flexibility and scope. It may therefore further enhance the institutions' competitive ability, which may create quality executive culture.

3.3 Factors of influence: Environment and Strategy

With the ERP system, the company R may promote the global competitive ability, customer service and collaboration with international brand of clothing. Company R participates in the common development of texture material and clothes distribution, successfully integrating upstream, middle stream and down stream chain of the industry, providing other brand customers with one-stop shopping service. It also believes that only by way of strengthening management capability and side effects, it can win more customers and more orders. To maintain leading role in textual industry, "differentiation" can not be avoided. Company R uses its early superiority to excel other companies, successfully in IT distinguishing its product value and superiority. ERP offers customer sales service, R & D service, independent QA management system, automatic service system, process integration, and cooperation with dying material and technique integration and platform integration. Company R successfully integrates inner resource system, enhancing market accessibility through process collaboration with dying material suppliers, promoting more intense cooperation with brand channels, and at the same time, promotes product integration ability, leading to relative superiority in market occupation and faster development of new products. With the effective management of internal and outer resources, this company therefore becomes the leading enterprise and brand of the industry. On the other hand, the investment of ERP has become the model for the application of IT in textual industry. The inner process executive ability and response to the industrial environment have made company R superior than its other opponents.

4. Discussion

4.1 Information technology

Information exchange has become faster than ever. Textile dyeing industry is structurally transformed due to widely use of IT applications. In addition to structural adjustment to the competition in environment, it requires TS capability and integration through the support of technology capability, especially e-business. Textile products have come to the demand of small quantity and diversity. It needs not only institutional reform, but also more knowledge and application integration in order to survive in the industry. The application of IT is the basic resource for textile dyeing industry in the future knowledge-oriented enterprise competition.

This study uncovers that with ERP, Company R acquires the help from dyeing material suppliers to set up R&D department, and data base for digital formula. At early stage, it can follow the demand of function and regulation to get correct dyeing material application figures. Besides, in terms of TS and digital formula, these three companies, regardless of its model for accepting products (ODM or OEM), can all use TS and early digital formula, the best condition, and standard demand in production process. It can also solve side problems effectively.

In regard to IT application, Company R is the only company uses ERP system. Through IT platform integration and interaction, its employees' interaction with dyeing material can procure the best effect and dealing efficiency. With technology integration and proper application of information, company R has "cognition effect" with the suppliers, enhancing "cross selling effect."

4.2 Collaboration Process

In order to solve problems in applied technology and the qualification question, textile dyeing company and dyeing material suppliers resort to collaboration process of IT integration. The aim of collaboration process lies in the evaluation of all the TS resource and solution capability involved in the entire process from accepting order to production process system in order to meet the demand to solve problems with efficiency. In face of competition, process needs to improvement, especially in the evaluation to seek shorter terms. Therefore, in the supplying chain of dyeing industry, the collaboration model between dyeing company and dyeing material supplier is a common situation, a reciprocal combination.

Company R is a one-stop process company, successfully integration upstream, midstream, and downstream resources. Due to its insufficiency in technology at the dyeing stage, it uses technology capability of the suppliers to work with its own process capability, and hence promote R &D capability and manufacturing quality. On the other hand, through collaboration process with the suppliers, R company can quickly get solution plans and service for making specific product to meet the demand of international brands. With respect to the two companies, in the process of developing product or customization product, it saves the long time and big cost for searching dyeing application goods. It only uses collaboration process with dyeing material suppliers to make good use of the technology support by the suppliers to meet the product demand.

4.3 Process integration

Textile industry must advance development in intense technology in order to promote global competitive ability and get rid of competition from the third world. The over distribution of technology capability in Taiwan makes the overall competitive ability relatively weaker, and render the differentiation lesser. It also needs to compete prices with the third world. Also due to the over distribution of technology capabilities and reduced investment, the internal technology growth is blocked. Due to the cut of research investment and market competition, employees have to change the conservative attitude in the past, adopt open attitude to acquire useful information from outside. It must also cooperate with the suppliers in terms of research cases and technology integration in order to meet the demand of critical technology resource, enhancing response ability in structural changes of the environment.

Companies R passed ISO09000 quality control system, regulating related operation procedures (P) and operation standard (W/I). The regulation and execution of the above mentioned standard operation procedures (SOP) are not difficult work for the enterprises. It also becomes aware that to adopt PDCA model operation can not immediately improve quality and operation process. It also needs to have resource integration with the dyeing material suppliers. Through TS support they can solve these questions faster. And then they may further regulate new operation standard. This greatest interest basis can not only promote production efficiency, decreasing cost due to mistakes, establishing problem solving system, and promoting competitive ability.

4.4 Technology integration

In the process of technology integration, interaction is adopted to achieve the technology goals and function after integration. Due to the insufficient investment into research development in dyeing industry, they are weaker in terms of critical technology capability. In this respect, the dyeing material suppliers relatively invest more. In this domain, the suppliers provide TS to mend the technology lack of dyeing company. Through TS support and technology resource integration, reciprocity is built between both parties.

Though the R&D center of company R can meet customers' demand for outer design, it can not satisfy the standardization demand. With the help of the suppliers, it can now provide customers with more accurate quality regulation, and exact process demand. In terms of collaboration process, based on mutual trust, technology resource integration is successful carried out, which enhances Company R's trust in the suppliers' offering of technology resource.

4.5 Influence Factors

In order to survive and get to rid of the competition from Mainland China, in addition to marketing strategy planning, the industry must establish thorough technology application chain and add side effect to product to keep its status in the market. Under such circumstances, to promote process management capability or technology capability, the companies should cooperate with the suppliers in other related fields in terms of technology collaboration, even building up technology transfer platform to meet the demand of related technology information and technology capability promotion.

In the face of IT impact, it further stimulates fast changes of new material and new technology in dyeing industry. As mentioned above, due to the weaker ability of its employees and the enterprises' lower intention for investment, there is technology lack, which makes obstacles for quality and production technology promotion in the industry. Therefore, dyeing companies try to collaborate material suppliers through technology integration and process integration support to acquire related information and technology demand. This demand becomes more apparent when the competition becomes more fierce, which contributes to the mutual will for collaboration between both parties.

Company R, in order to surpass other opponents, tries to avoid the low cost trap by developing R&D center, offering the product show room of 3D over internet, and the service of quick sampling design. At the stage of sample design at R&D center, in order to meet the one-time success requirement about product standard, it uses the IT offered by the suppliers, collaborating with its own process platform to offer customers with better service, and therefore enhance competitive capability in the global market and customer service function.

When facing market competition and industrial demand, Company R can not maintain its leading role of core product independently. Instead, it has to collaborate with related industry in terms of resource integration and technology connection. Only through common research and developing collaboration can they maintain the leading role of core capability. The common consent of the dyeing companies is to strengthen the business with upstream and downstream companies, especially in terms of technology resource collaboration, which can help to enhance internal executive capability and response to the environment. Only through TS with the suppliers and further technology collaboration and intense cooperation can the core capabilities of the dyeing companies be effectively maintained, and left their opponents behind.

5. Conclusion and Implications

This study discusses TS offered by the upstream dyeing material suppliers, and evaluates CRM development. It also discusses the impact of TS by the suppliers on the entire dyeing industry. Observing the TS process and customer relationship strategy, we find that in order to offer a set of TS process to satisfy the customers and keep positive CRM, important issues have to be addressed. These include effective supply of IT resource, reliable technology integration and collaboration process, effective integration of knowledge and technology process capability, creation of the superior value of the dyeing companies, and fast and clear response capability.

TS has positively changed and promotes customer

relationship. In terms of industrial product, CRM can be taken as an integrated sale. Enterprises combine process and technology to find out real customer need, trying to improve continuously in order to meet customer and strengthen customer loyalty.

TS promotes core capability in the dyeing industry, enhancing market competition, creating a win- win situation. Short -term competition in textile dyeing industry comes from product price/effect. But the survival in global competition comes from product standardization, cost and quality maintenance to reduce competitive obstacles. However, it still lacks source for fast differentiation. In the long run, enterprises' competitive capability comes from establishing core capability with more efficiency than its opponents. Hence, competitive capability comes actually from keeping efficient vertical integration and horizontal connection in technology, having application capability of knowledge and technology, and adjust to the environmental changes quickly.

Fast changes in environment and competition pressure change the management strategy and indirectly the connection between dyeing industry and dyeing material suppliers. Through the accumulation of learning and knowledge, thinking model in the institution and executive culture are transformed to create enterprise values.

Textile industry in Taiwan today focuses on "manufacturing" in the value chain. As for "R&D" value, such as the development of new material and new technology, the technology level is limited. The so-called new products actually stay at the stage of improvement and renovation and further differentiation. In terms of vertical chain for marketing with high added values, the degree of development is relatively good. However, horizontal integration still needs to be improved.

6. Suggestions for future research

Textile industry in Taiwan is export oriented. In recent years, due to the transference overseas, and the rise of the textile industry in Mainland China, India, and Turkey, the dyeing industry in Taiwan has increased overseas investment and exploration. Taiwan companies face fierce competition from Asia, such as Mainland China and India, and the high images of European and Japanese companies. Under such circumstances, dyeing material company with TS still has surviving basis and competition capability. Just as pointed out in this study, after technology interdependence and collaboration, the grasp of technology and knowledge would become closer and closer, the common use of core capability can no longer be called core capability. Therefore, what's the impact of the dyeing material suppliers put on the textile industry in the future? What is the difference among the dyeing material suppliers can become? These are new questions left to be investigated.

7. References:

- 1. Alter, S. (1999), Information systems—A Management Perspective, Third Edition, Addison-Wesley.
- 2. Anderson, T. J., and Segars, A. H. (2001), "The Impact of IT on Decision Structure and Firm Performance: Evidence from the Textile and Apparel Industry," *Information & Management*, Vol.39, 85-100.
- 3. Babin, B.J. and Griffin, M. (1998), "The Nature of Satisfaction: an Updated Examination and Analysis," *Journal of Business Research*, Vol. 41, 127-136.
- Bernard, C.L. (1938), *The Function of the Executive, Cambridge*, Mass : Harvard University Press.
- Berry, L.L. (1983), "Relationship Marketing", *Emerging Perspectives on Services Marketing.*, IL: American Marketing Association.
- Bowen, John T. and Shoemaker, S. (1998), "Loyalty: A Strategic Commitment," *Cornell Hotel and Restaurant Administration Quarterly*, 39 (1), 12-25.
- Cohen, W.M. and Levinthal, D.A. (1990), "Absorptive Capability: A New Perspective on Learning and Innovation," *Administrative Science Quarterly*, Vol.35 (March), 128-152.
- 8. Cortada, J.W. (1995), *TQM for Information* Systems Management, N.Y.: McGraw-Hill.
- 9. Donavan, P. and Samler, T. (1994), *Delighting Customer*, New York: Chapman and Hall.
- 10. Drucker, P.F. (1993), *Post-Capitalist Society*, NY: Harper Business.
- 11. Gilbert, M. and Gordey-Hayes, Martyn (1996), "Understanding The Process of Knowledge Transfer to Achieve Successful Technological Innovation", *Technovation*, Vol.16, No.6, 301-312.
- 12. Hartley, J.R. (1998), *Concurrent Engineering: Shorting Lead Times, Raising Quality, and Lowering Costs*, Portland: Productivity Press.
- 13. Jagdev, H.S. and Thoben, K.D. (2001), "Anatomy of Enterprise Collaborations," *Production Planning and Control*, Vol.12 (5), 437-451.
- 14. Kelley, S.W. (1992), "Discretion and the Service Employee," *Journal of Retailing*, Vol. 69, 104-126.
- 15. Lee, C. S. (2001), "Modeling the Business Value of Information Technology" *Information & Management*, Vol. 39, 191-210.

- Luo, Y. (2001), "Determinants of Local Responsiveness: Perspectives from Foreign Subsidiaries in an Emerging Market," *Journal of Management*, Vol. 27 (4), 451-477.
- 17. Maidique, M. A. and Patch, P. (1988), "Corporate Strategy and Technology Policy," in *Reading on the Management of Innovation*, Mass.: Pitman publishing.
- Marshall, C., Prusak, L., and Spielberg, D. (1996), "Financial Risk and the Need for Superior Knowledge Management," *California Management Review*, 38(3), 77-101.
- 19. Nonaka, I. and Takeuchi, H. (1995), *The Knowledge-creating Company*, Oxford University Press.
- Parker, H. (2000), "Inter-firm Collaboration and New Product Development Process", *Industrial Management & Data System*, Vol: 100: (6), 255-260.
- 21. Selznick, P. (1957), *Leadership in Administration*, A Sociological Interpretation, Row, Peterson and Company. New York : Free Press.
- 22. Senge, P.M. (1990), *The Fifth Discipline: The Art and Practice of the Learning Organization*, New York: Double/Currency.
- 23. Singh, J. and Sirdeshmukh, D. (2000), "Agency and Trust Mechanisms in Consumer Satisfaction

and Loyalty Judgments," *Journal of the Academy of Marketing Science*, 28 (1), 150-167.

- 24. Smith, N.C. (1990), "The Case Study: A Useful Research Method for Information Management," *Journal of Information Technology*, Vol. 5, 123-133.
- 25. Sprow, E. (1992), "Chrysler's Concurrent Engineering Challenge," *Manufacturing Engineering*, Vol. 108, 35-42.
- 26. Thompson J.D. (1967), Organizations in Action : Social Science Bases of Administration, New York : McGraw-Hill.
- 27. Woodruff, R.B. (1993), "Understanding Value and Satisfaction from Customer's Point of View," *Survey of Business*, Vol. 29(1), 33-40.
- 28. Yin, R.K. (1984), Case Study Research: Design and Methods, Beverly Hills: Sage.
- Zahra, S.A., Sisdia, R.S., and Das, S.R. (1994), "Technology Choices within Competitive Strategy Types: A Conceptual Integration," *International Journal of Technology Management*, Vol. 9, No.2, 172-195.