A Study of After-sale Service in Strategic Management

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ABSTRACT

The study adopts a single case study method for Company W and draws two conclusions. One conclusion is determined in that strategic management when Company W adopts logically strategic thinking along with the Vision-Position-Tactic that is clearly developed and deployed at hierarchical levels in top-down order. The vision is to become a total solution provider for customer problems, the position is to engage in repair service and sales of parts for customers, and the tactic is to implement five service contents and seven service models thoroughly. Another conclusion is in that service management field: the theory of Blumberg (1991) is concerned within strategically driven service organization to identify the service function, establishing the operation framework for the delivery of the service function, and placing a service-oriented, experienced manager in charge has been verified. The study finds out a new industrial trend is Company W strategic alliances with upstream supplier. Upstream supplier and customers are combined to create an industry value system. Upstream supplier hereby becomes a major resource in respect of strategic management. Lastly, this study proposes two propositions for future research.

Keywords: After-sale Service, Strategic Management, Service Management, Industry Value System, Strategically Driven Service Organization

INTRODUCTION

Over the years, Taiwanese subcontractors of information technology and electronics have been taking orders from major international brands like Apple, and have established close relationship with the top product developers in this niche market. The distinctive capabilities of Taiwanese subcontractors have been promoted ranging from production, design, to after-sale service of the marketing field through the strategic alliance relationship. This means that Taiwanese subcontractors finally have opportunities to extend the distinctive capabilities to after-sale service. Whether the manufacturer provides after-sale service or not becomes a key issue. When customers purchase a product, the management of major international brands always considers after-sale service as both a costly and necessary task. Therefore, management tends to outsource the after-sale service.

This movement not only offers a huge opportunity for making profit, but also fosters the ability of product repair for Taiwanese subcontractors. Concerning the research about after-sale service, although Molenaar et al. (2002) proposed MIR model with perspective of information processing to explain the quality of feedback in after-sale repair service, the research did not focus on the aspect of strategic thinking. The author of this paper will explore what the strategic thinking of Taiwanese subcontractor’s management is, simply because this strategic thinking will affect the willingness to invest the after-sale service business. If the willingness exists, there will be a possibility to explore after-sale repair capabilities. That is what the author plans to investigate.

So far there are rare researches that explore the management aspect of repair service. Although Blumberg (1991) proposed the theory of setting up a strategically driven service organization, but it has
not yet been substantiated. Therefore this study will engage in single case verification to test the reality of the theory and it will accompany difficulties in practice. The author will follow up with the discussion and suggestion through the verification, and will try to find out the possibility of developing proposition to contribute to the theory.

Customer service is an important business. When a company offers an excellent after-sale service, the customer will have confidence in its product and the company will obtain a good impression of the high quality product. Among the augmented products, after-sale service is not only an effective marketing tool for Taiwanese subcontractors in competitive oversea market, but also an extension of their distinctive capabilities. It is capable to help them avoid any slim profit dilemma especially for the laptop industry. Nowadays the management is eager to look for another source for profit, which after-sale service can fit into. Therefore this study is crucial to future business development.

THEORETICAL BACKGROUND

In the research literature of customer service management and after-sale service, it can be traced back to year 1980. Lele and Karmarkar (1983) proposed after sales can be classified into five categories: (1) the installation and start-up of the purchased product, (2) the provision of spare parts for the product, (3) the provision of the repair service, (4) technical advice regard the product, (5) the provision and support of warranties.

Lovelock (1983) focused on the specific classification of service and proposed five classified schemes: (1) understanding the nature of service activity, (2) relationship with customer, (3) customization and judgment in service delivery, (4) the nature of demand for customer service in terms of supply, (5) as well as method of service delivery. The study declared that if a manager fully understands its service, he would be able to foster insights and make the right decision for the task of market management.

Blumberg (1991) suggested that there are two elements to set up a strategically driven service organization: (1) define the service function to be performed by the strategic service unit, and (2) ensure someone has total responsibility for management and control. Although we all seemed to have a general understanding of what service is, it is difficult to describe the organizational and operational structure to control and deliver the service in the most effective and efficient way. However, the book provided the solution via three steps: (1) identify the service function, (2) establish the operational framework for the delivery of the service function, and (3) place a service-oriented, experienced manager in charge, and pointed out three main tasks to identify the service function: (1) service task or problem identification, scheduling, and assignment, (2) service task performance, (3) service support. The theory is solid and complete, but has not yet been substantiated.

Kellogg and Nie (1995) adopted a strategic point of view and have established service process/service package matrix model. The research suggested Prospector, Analyzer, Defender, and Reactor (Mile and Snow, 1978) to discuss how a firm keeps its position in the model of service process/service package matrix. The conclusion is: The upper left corner of the matrix is most suitable to the Prospector. This process requires the Prospector to have the requisite flexibility for business innovation on a customer-by-customer basis. The company located at the middle of the diagonal on the matrix is classified as the Analyzer. The Analyzer usually has some degree of good customer contact or interaction in this process type to get the necessary information and insights from customers to move into new markets. Another reason is that the speed of Analyzer moved into new markets is usually slower than Prospector. Furthermore, the Defender is located at the lower right corner of the matrix, simply because
its technologies were already in place and its organizational structure tended to be quite rigid. Finally, the research pointed out the Reactor drifts for the sake of lacking of specific position, also suggested that the Reactor should develop new competencies in order to survive in the market.

Edvardsson and Olsson (1996) dealt with service development from a quality perspective and proposed the main task of service development is to create the right generic prerequisites for the service. This means an efficient customer process must be adapted to the logic of the customer’s behavior and a good customer feedback (i.e. the service is associated with quality), the research proposed three main types of service development including service concept, service system and service process in order to produce best prerequisites to develop service. It means that quality of the service to be very important. The research explained that service development should be coordinated with service concept, service process, and service system which each aspect requiring special attention.

Asugman et al. (1997) reviewed many literatures and conclusively defined the terms of after-sale service, “After service is those activities in which a firm engages after purpose of its product that minimize potential problems related to product use, and maximize the value of the consumption.” Then they used 340 samples of American durable goods producers to study both internalization and after-sale service. The final conclusion surprisingly was that most of the managers agree that after-sale service is a strategically marketing tool, but it doesn’t consider that installation service at overseas is worthy. Furthermore, the research discovered there are three moderators which significantly affect the effectiveness of after-sale service: (1) competition of oversea market, (2) relative product quality, and (3) market power in the distribution channel.

Evans and Lindsay (1999) emphasized the concept of repairable product for the sake of easy repair. For example, they took a brand new household electronics product from Whirlpool Corporation. The characteristic of this product is easy to repair and replace, and will be overall replaced by thrown away products from the so-called “throwaway society”. This kind of new product was not only owned to attract potential customers, but also to reduce the repair cost. Finally, this product has become very popular. This creative thinking has a significant impact on the development of after-sale service.

Petkova et al. (1999) reviewed the literature concerning development, and production of the reliable product, and found that less attention had been given to the mutual co-operation of the different departments in the Product Creation Process (PCP). Especially within the ongoing improvement loop, the contribution of service department to PCP was not yet well recognized. Therefore, the research demonstrated that if a company management treats after-sale service as a department, it would affect the whole PCP. Once the after-sale service plays an important role in the control loop, it will be helpful to make a connection between Reverse Logistic Management (RLM) at after-sale repair department and Product Data Management System (PDMS).

Francis (2000) proposed that a successful PCP needs nine elements: (1) manufacturing strategy, (2) information technology system, (3) leadership and culture issue, (4) customer satisfaction, (5) quality, (6) operation and measurement, (7) intellectual property, (8) management of research and development, (9) technology. If the management reinforced these elements, then successful products would be created. When the staff of the repair department interacted with customers, and were willing to keep the nine elements in mind, the department would catch the key points during the transmission of information with customer. Especially in the information technology field, the information originated from Enterprise Resources Planning (ERP) and PDMS is very helpful to the department, simply because PDMS is typically originated from material scheduling and process. Therefore the book is helpful for the repair department to connect PDMS with RLM.
Anderson and Vincze (2000) expressed that organization must encourage and implement a service philosophy from top manager to the clerical staff, and suggested that if front-line employees are to perform high-quality service, then the entire organization structure must be designed with a customer-orientation environment. Furthermore, the book explained that management must ensure the organization provides necessary support for the successful implementation of customer service activities, and also indicated four necessary supports: (1) top-management commitment, (2) treating employees as internal customers, (3) viewing service as performance, (4) ensuring service recovery.

Molenaar et al. (2002) explained that prior researches in product quality typically focused on the reliability of product parts, so the research suggested future research should move to the PCP. In particular the major problems are often caused by lack of information deployment, and lack of information propagation at the right time and at the right place. The study sets up MIR model for improvement and took a consumable product manufacturer as an example for verification purpose. The conclusion showed that the existing repair information system’s product information from the repair shop to original manufacturer was rare and the usual transition’s time frame was 1.5 years long.

Dennis and Kambil (2003) found that opportunities for product service grow bigger than before, so the research proposed that successful service management needs coordination among service material, service information, and service labor. The research indicated management needs to develop expertise to create an exceptional service experience and efficient service management supply chain in four fields: (1) anticipate customer service requirement, (2) design and build product for serviceability, (3) leverage new technologies, (4) seamless integrate partners.

Toni and Tonchia (2004) pointed out that after-sale service played a fundamental role in market competition. If management was able to comprehend the importance of this service, they would pay more attention to the measurement of after-sale service. The research proposed a theory model for measuring and managing after-sale service, as well as took a European medical equipment manufacturer as a sample for a case study, and found this model could also be used to measure customer satisfaction. They used 11 dimensions and 8 gapes of service activities to analyze any discrepancy between expected customer service and perceived customer service. Furthermore, the measurement to review the performance of durable goods in after-sale service department has been furnished and contributed to this research.

Amini et al. (2005) expressed that one of the most important activities is repair service, presented reverse logistics operations and discussed the competitive value of service management activities. Specifically, repair service and reverse logistics operations could play an important role on effective and profitable after-sale service activities. The research also explained reverse logistics process of a short cycle time repair service and proposed both the Repair Part Supply Chain (RPSC) and Service Crews Supply Chain (SCSC) models. Both RPSC and SCSC models which described integral design, operation coordination, and optimization methods are helpful in the case study Alpha Company to accomplish an efficient repair service to their customers.

Lin et al. (2005) studied Taiwanese machinery tool industry and adopted a questionnaire survey, a file study, and interview method to realize that the current structure of after-sale service was incomplete. The existing service system always could not satisfy customer’s needs. Ultimately, they suggested that management sets up a web-based information management system, and proposed that management should provide a communication channel between the manufacturer and customer to reinforce the operations and competition in the market.

Kusumastuti et al. (2008) proposed a closed-loop repair network model for electronic products and explained that the repair process begin with a customer delivering a defective product to the Service
Provider (SP). Then, the SP identifies the defective product and provides repair services by replacing new parts as the service. Finally, the defective parts were returned to the Original Equipment Manufacturer (OEM) or the Third-party Repair Vendor (TRV). The research took an example of an American electronic manufacturer’s after-sale service in Asia, and investigated how this manufacturer carried out its after-sale repair network to minimize the total logistic and repair cost. Ultimately, this research concluded that management should establish a new distribution center in China or Taiwan. Therefore the total logistic cost in East Asia would be minimized by consolidating all of parts needed for repair before the parts were sent out to repair store.

Tsai (2009) took MiTAC as an example and explained how the company received its brand name in the market, and described how a company transformed its customer service from a pure OEM into a brand name enterprise. In order to accommodate the internet age nowadays, the company’s management utilized the internet technology and integrated modern information technology. Eventually their customers received huge benefit via rapid repair service. The internet system could monitor the proceedings of after-sale service, and help service department employee when offered the right after-sale service, i.e. the company eventually obtained excellent customer satisfaction and sale growth shot up via the speedy and satisfactory service offering. The finding was that when a company chose to implement the internet after-sale system; it needed significant coordination among the technical enhancement, the customer expectation, and the corporate strategy. The internet monitor system of after-sale service contributed to a solid customer relationship management system. This study also pointed out there was room for improvement in order to offer the best service to its customers.

Colen and Lambrecht (2013) indicated that there is a trend that many OEM’s are willing to provide a total solution for Product Service System (PSS). The basic idea of the PSS is to ensure it from an innovation strategy, shifting the business focus from the design and sales of typical product, to the design and sales on a business setting including product, service supporting network and infrastructures, which are jointly capable of fulfilling specific client demands (Mont, 2002; Baines et al., 2007). In terms of the successful implementation of PSS, OEM should offer after-sale service with a lower cost than customer’s cost on the “do-it-yourself” option, and took a European international air compressor manufacturer as a case study and focused on its operational practices for the further study. Finally the study concluded the five guidelines on service operation and expected it to be successful with PSS implementation. The five guidelines are: (1) limit uncertainty and complexity, (2) benefit from economics of scale and pooling, (3) deploy multi-purpose resources, (4) profit from knowledge about the installed base, (5) surpass functional barrier. The study has not yet been verified.

RESEARCH METHODOLOGY

Subject Selection

This study makes an attempt to study how After-sale Service is implemented in Taiwanese laptop manufacture industry, so case study is chosen as the main methodology. Subjects were surveyed through in-depth interview to find out the current status of After-sale Service implementation. Issues encountered by the case subjects were analyzed based on relevant theories, and finally an attempt to form a proposition was made for conclusions and recommendations.

This case subjects are based on the selection principles put forward by Eisenhardt (1989). Base on the principles, the main body of the subject is set first, which is the high-tech laptop industry in Taiwan. This single case involve only one industry, so the variability is relatively lower, which takes an advantage
of the external validity. This study selects all suitable subjects for the interview based on the principles of theoretical sampling.

Data Collection

This study utilized two major methodologies, both in-depth interview and data collection, in this case study. Collected data included primary and secondary data. In addition to the primary data collected from the in-depth interview, massive amount of secondary data was also collected, including the background and overview of the industry, website information of Company W, annual reports, prospectus, newspaper articles, historical essays of master and PHD. In order to understand the subcontractor business, strategic policies change, key customers management and after-sale service for in-depth investigation. The content of the interview was compiledby verbatim into a transcript, and the essential details were further tracked through email and telephone. A database of the interviewed subject was constructed, expected to maximize data reliability (Yin, 2003). The interview was conducted during the period between February 4th to December 21st 2009, and data collection commenced in January 2008 and ended at end of June 2014.

The completeness of data collection was tested based on the concept of theoretical saturation (Glaser and Strauss, 1967). Repeated and synchronized analysis of the case data and related theories was conducted to accurately accommodate the content of case analysis.

CASE DESCRIPTION

Case Background

The position of the Company W is defined as a D-M-S (Design-Manufacturing-Service) model and is classified as service industry. When the management defines the scope of repair service, they include all kinds of intelligent technology products. Therefore, the repairmen at Company W would also provide service the products made by other companies. During the process of the interview, the management express that they are very concerned about the field of repair service, simply because the repair service is a crucial tool to implement so-called differentiation strategy (Porter, 1980). The top management is eager to use this strategy to differentiate from competitors, so the repair services department is designed to be an independent business unit and is treated as a profit center. It is called “customer service unit” with the purpose of fully engagingin customer service. The formation history of this business position started from year 2001 with focus on technology innovation and finished in year 2005. After that business position was transferred to focus on repair services in 2006, finally business has been positioned to add value on the service industry to expand the related technical service business.

From the above-mentioned positioning history, Company W showed their flexibility on business strategy change in terms of business position. We can see their innovative and practical tactics that support the position change. For instance, in consideration of setting up repair shop and rapid repair, the top executive of the laptop business unit Mr. B expressed that if our key account customers require us to set up a repair shop within certain sales territory to reinforce the customer service, we are willing to set up repair shop as long as it is financial affordable and the territory is within sufficient sales. Compared with most competitors who usually don’t like to set up repair shop with extra cost, most of the customers prefer to buy products from Company W. He also pointed out that for repair service, their salesman actively engaged with customers for repair service. They offer two hours rapid service. The management takes advantage of these resources, and extends their original “design manufacturing subcontract” to “after service subcontract” along with the consumption habit of key account customers. This action not only lets
key account customers reduce their cost for less participation of service activities, but also coordinates between the service capabilities upgrade and the service capabilities extension. At the end, the three goals for Company W of growth, profit, and reduction of business risk have been achieved.

Besides the above-mentioned strategic tactic, this study focused on exploring Company W’s after-sale service operation and found out an efficient, complete after-sale service is based on good information management and coordination of the five key elements: product life cycle planning, repair capabilities, document supporting and training, inventory management, and programs of logistics solution. Concerning the information management of Company W, at the very beginning the repair service department interacts with both sales department and R/D department through Lotus Notes. Later on, the management developed Problem Tracking System (PTS). Finally, the interview with the president’s assistant Mr. M, declared that they have recently developed Universal Tracking System (UTS). UTS can offer information from repair shop and warehouse to other departments rapidly, and it comes with the benefit of global video conference. These actions can fully support the above-mentioned five major services contents. Ultimately, it introduces various benefits. The interview contents are as follows.

Through complete after-sale service system, the repair department can transfer user’s request to the sales department, meanwhile it also transfers the information of defective parts to R/D department for future reference on new product models. Therefore, the service department plays a crucial role in collecting information from user in the front line. The service department can earn the trust from users, and long-term relationship with customer has been established. For instance, during the interview with the R/D department manager Mr. K, he expressed that once they know at some point their customers are not satisfied through their repair systems, the engineers at their R/D department will take action to improve the service. Additionally, the executive Mr. B also said that their repair service staff would transfer the customer’s problems to R/D department for future references in designing new products. The communications between these two departments are very close. The repair department uses two ways to communicate with sales department: One is individual employee at the repair shop knows the reasons caused by the defective parts and knows the suppliers of particular parts; another way of communication is repair department employee can offer information to customers about the product or from other competitor’s action to improve satisfaction. Additionally, the repair department uses two ways to communicate with R/D department: One is repairman to collect the information of defective parts for R/D department to upgrade customer satisfaction. R/D employees know the reason that caused dissatisfaction in their customers (i.e. lower level of heat exhaust) and make necessary improvements accordingly. Another benefit is that R/D employeestake those improvement actions into the principle of “easy to repair”; the future repair will become much easier than before.

In employee training field, there are three important programs have been setup at Company W: (1) the establishment of an online e-learning platform, (2) the continuation of the training courses, (3) scheduled meetings with R/D engineers. For the online e-learning platform, basic job-related scientific knowledge (i.e. electronics) and specific repair technique are posted in the repair management section. The information has been stored in their online database. The information is also shown on the e-learning platform for the repair engineer’s further study. The staff from other departments also learns that knowledge for mutual communication with other department is vital. For the training courses at Company W, both quarterly technical training courses and semi-annually customer service technique training courses would be regularly held. Three major topics of semi-annually training courses are Moments of Truth (MOT), techniques interacted with customer, and innovation with consideration. Every instructor comes from either Company W professional or outside recruiter. The repair department engineers are able...
to maintain a good relationship with the users through MOT; therefore, they can raise customer satisfaction and loyalty. Concerning scheduled meetings with R/D engineers, that is the solution to solving problems they experience and exchanging their opinions. Company W is an ISO certified and public company. The tasks of formalization not only to promote each product line (i.e. each product has its own SOP at any stage of the individual product life cycle), but also to help the deployment of the new product plan. Repair department employees will arrange their own necessary service and repair resources. If there are any changes in SOP, then every department will be informed immediately. Every SOP should be reviewed at the end of year. The management will process any modification if needed, in order to ensure that the repairman follows the SOP procedure.

The top management is concerned about customer value creation at every stage of its decision-making. Therefore they often travel to each sales territory to find out their customer’s recent request. The management also set the information center in Tokyo for brand new intelligent technology products. The executive Mr. B expressed that Tokyo is the leader of world trend, so it is easy to collect the innovation idea over there. The innovation source is for the new generation product. By doing so, Company W creates value for the customer and expands the benefit from after-sale service.

Ultimately, the management clearly indicates that the advantages of setting up repair shops is as follows: (1) by accepting the repair service for product made by their competitors, the management can compare the advantage to design on their competitor’s product and transfer this information to the R/D department, and would also know the differing parts competitors used compared with their own parts, (2) promote exceptional company image, (3) the profit generated from repair shop is much better than the subcontracts profit.

**Service Content**

Company W’s management provided the repair service to all kinds of electronics and intelligent technology product within the business operation. The after-sale repair service is not just confined to self-made laptops only. Due to huge diversification of the existing electronics and intelligent technology products, Company W acknowledges that different products would result in different repair requirements by communicating with customers and long-term accumulated unique experience. Company W finally has already carried out five main service plans for repair service.

<table>
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<th>Table 1: Service Content</th>
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<td><strong>Item</strong></td>
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| Product Life Cycle Planning | 1. spare parts replacement plan  
2. spare parts inventory plan  
3. test and approval on spare parts  
4. spare parts purchasing management  
5. inventory and delivery handling  
6. spare parts recycling |
| Repair Capabilities | 1. upgrade test, inspection  
2. system maintenance  
3. exchange of system in advance  
4. system renewal  
5. spare parts returned  
6. spare parts upgrade, maintenance and replacement |
| Document Supporting and Training | 1. service manual  
2. manual for customer service training and engineering maintenance  
3. manual for sales channel training and maintenance |
Service Model

Findings from the interview and file shown that repair capabilities of Company W gradually become stronger as customers relied on the repair service and customer’s requirements also become demanding. This historical development of repair service can be divided into three agendas: (1) Key account customers operate their own repair service via repair service center (or distribution center). Company W is only responsible for the supply of spare parts or Field Replaceable Unit (FRU), (2) Key account customers outsource their repair service to an Authorized Service Provider (ASP) or a Third Party Logistics (TPL). ASP is the service provider authorized by the customers and regulated by outsource contract. Company W is still in the same position to be responsible for the supply of spare parts or FRU, (3) Key account customers release all kinds of repair services to Company W. Generally speaking, there are seven models of repair service activity in Company W and the detailed procedure for each model is as follows:

**User versus Repair Service Center Replaceable Repair Parts Service**
1. User calls the key account’s call center, and delivers the whole set of defective product to repair service center (or distribution center). The repair service center (or distribution center) then takes apart of the defective parts and replaces them with the good ones. After the test is run completely successful, the product will be returned to the user.
2. The repair service center (or distribution center) exchanges defective parts with Company W for good ones by batch processing.
3. The repair service center (or distribution center) provides records with columns of descriptions of defective parts, quantity, and the reason behind returning the parts.
4. Company W receives defective parts, counts, and returns the same amount of new parts to the repair service center (or distribution center).
5. Company W area repair center (or distribution warehouse) sorts the defective parts, then returnsthem to the global repair center of Company W or original manufacturer

**User versus Repair Service Center Complete Set Return Service**
1. User calls the key account’s call center, and sends the complete set of defective product to repair service center (or distribution center).
2. The repair service center (or distribution center) tests and classifies it as the defective product, then replaces with new ones to user immediately or returns to the user after repair.
3. The repair service center (or distribution center) exchanges defective complete set with Company W area repair center (or distribution warehouse) for good ones by batch processing.
4. The repair service center (or distribution center) provides records with columns of descriptions of defective product, quantity, and the reason behind returning the complete set of product.
5. Company W receives defective products, counts and then replaces with good ones and delivers them to repair service center (or distribution center).
6. Company W area repair center (or distribution warehouse) sorts the defective sets, then returns to the global repair center of Company W or original manufacturer.

**User versus ASP (or TPL) Replaceable Parts Service**
1. User sends the defective complete set to key account’s ASP (or TPL), that takes apart the defective parts and replaces them with the good ones. After the test run is completely successful, the product will be returned to the user.
2. The ASP (or TPL) exchanges defective parts for good ones by batch basis with Company W area repair center (or distribution warehouse).
3. The ASP (or TPL) provides data shown on description, quantity, and defective cause column of the return requisition form.
4. Company W receives defective parts and counts, and then sends the same quantities of new parts to the ASP (or TPL).
5. Company W area repair center (or distribution warehouse) sorts the defective parts, and then returns to global repair center of Company W or original manufacturer.

**User versus ASP (or TPL) Complete Set Return Service**
1. Key account’s ASP (or TPL) dispatch to user’s location and move down the defective parts, then inset the good ones. After the complete set run smoothly and returns to the user.
2. The ASP (or TPL) makes incident exchange immediately with Company W area repair center (or distribution warehouse).
3. Company W area repair center (or distribution warehouse) sorts the defective set, and then returns to the global repair center of Company W or original manufacturer.

**User Replaceable Parts Service**
1. User sends user replaceable unit (URU) to Company W area repair center (or distribution warehouse).
2. Company W area repair center (or distribution warehouse) takes apart the defective parts and replaces with the good ones.

**Complete Set Repair Service**
1. User sends complete set to Company W area repair center (or distribution warehouse).
2. Company W area repair center (or distribution warehouse) takes apart the defective parts and replaces with the good ones. After the test run is completely successful, the product will be returned to the user.
3. Once Company W area repair center (or distribution warehouse) sorts the defective parts, and then return them to global repair center of Company W or original manufacturer.

**Complete Set Replacement Service**
1. User sends complete set to Company W area repair center (or distribution warehouse).
2. Once Company W area repair center (or distribution warehouse) classifies the complete set as the defective product, then the new ones will be sent to the user.
3. Once Company W area repair center (or distribution warehouse) classifies the complete set into defective product, and then returns them to global repair center of Company W or original manufacturer.
RESULTS AND DISCUSSION

Strategic Management

As the previous section stated, Company W is positioned as a D-M-S model. Their repair service department is classified as an independent business unit and is treated as a profit center. The company business is covered as the technical service provider, besides product maintenance and parts trade since 2008. This means that Company W offers technical support and provides after-sale solutions for its customer. Its service is not solely confined by repair service. The vision of Company W is to become a total solution provider like IBM. IBM is a successful business model for the transforming focus on after-sale service. The top management's strategic thinking is under the concept of creating business value for their customers. Also, it finds out the origin of differentiation from the service area of the value chain (Porter, 1985). This study finds out that Company W switches their focus on after-sale repair service and sales of parts. The unique after-sale repair services Company W could provide is two hours rapid service. For buying and selling parts, the company emphasizes good quality, reasonable price, and rapid delivery. This after-sale service becomes an extension of product manufacture. The manager Mr. K indicated that there are about 30 new product development projects every year when promoting a brand new laptop. This result complies with “variety-based positioning” which means management positions focus on variety-based products or service. When a company adopted variety-based positioning, this company can best produce particular products or services using distinctive sets of activities to make economic sense (Porter, 1996). From this point of view of top management at Company W, this study empirically finds out there are many particular activities conducted in the five major service contents and the seven service models in Company W. These activities can optimally offer after-sale repair service and sales of spare parts. The total sales revenue of Company W was from USD 6.9 millions in 2002 shot up to USD 15 millions in 2007. The company revenue grew 2.17 times within 5 years time frame. Net profit ratio ranges from 25% to 30% high. The executive Mr. B explained that Company W has been ranked first in the supplier review in 3 consecutive years. According to the above-mentioned evidence, the following proposition is supported.

Proposition 1: If a company can make good use of a group of unique activities to offer its after-sale service, the company will make economic sense.

Another important finding is the management does their best to offer extra services when customer’s request, therefore Company W establishes long-term partnership with its customers. For instance, the interview with the executive Mr. B, he expressed that their competitor started to engage in a strategic alliances with upstream suppliers 5 years ago. The way of strategic alliances with their suppliers was to adopt a joint venture model. Although Company W started to be allied with its upstream parts supplier within 1 year, the management actively deploys strategic alliances in their best benefit. The management does their best to make good use of the supplier’s data. For example, Company W’s upstream suppliers offer parts information to customers for the right parts. The management extends the repair service to the relationship built-up service. This change satisfied most of the customers and maintains long-term partnership with customer. The trend of the above-mentioned strategic alliances is an important finding in this study. The study uses ground theory to meet the requirement of the theoretical saturation. Therefore the study tries to find out the trend in the value chain research and comprehends that the trend nowadays had been associated with industry value system (Fleisher and Bensoussan, 2003). The fact that the top management uses strategic alliances with upstream supplier can be beneficial to industry value.
system. This demonstrated that industry value system is definitely helpful to create the customer value. Therefore this study concludes that upstream suppliers are also a strategic resource contributed to Company W.

**Service Management**

Service needs to be arranged and controlled efficiently. This study uses data of Company W to verify the Blumberg’s theory of strategically driven service organization. There are two key issues as mentioned in theoretical background. The first key issue is to define the service function which can be subdivided into identification of service function and delivery of service function. The results are shown on Table 2 as follows.

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<tr>
<th>Service function</th>
<th>Empirical results</th>
<th>Explanation</th>
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<tr>
<td>1. Identify the service function</td>
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<td></td>
</tr>
<tr>
<td>(1) service task or problem identification, scheduling, and assignment</td>
<td>Identify and arrange the suitable way of customer service via area repair center, such as single service can be solved by “question and answer manual”; otherwise, repairman should handle the problem, but user should follow the proper SOP.</td>
<td>This is to identify the resources invested that can be satisfied with the user’s requirement. These are the resources that user contact first.</td>
</tr>
<tr>
<td>(2) service task performance</td>
<td>Repairman and repair parts</td>
<td>Both repairman and repair parts are field resources needed to deploy and manage</td>
</tr>
<tr>
<td>(3) service support</td>
<td>1. product life cycle planning 2. repair capabilities 3. document supporting and training 4. inventory management 5. programs of logistics solution</td>
<td>This is the infrastructures needed to support both repairman and repair parts.</td>
</tr>
<tr>
<td>2. deliver service function</td>
<td>Both 5 main service contents for repair service and 7 service models are complied with updated SOP, various regulations, and organizational chart.</td>
<td>This is the organizational chart which supports the service on item 1. Identify the service function. This chart depends on both system and structure to control the operation of service organization.</td>
</tr>
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</table>

The second key issue is to make sure someone has total responsibility for management and control. Concerning the verification of the second key issue, the study finds out this key person is customer service unit head Mr. N whose responsibility scope includes customer service, promotion quality in customer service, and support of related techniques. From the interview with Company W’s, one purchaser who was in charge of the global purchasing for one key account customer expressed that although Company W’s service charges and parts quotation are higher than its competitors, but the service speed is faster and repair quality is better. This service function lets this purchaser to avoid many troubles. It is far better than other competitors who let customers wait for parts longer than half year. In the end, more and more customers place these purchase orders from Company W. This change can be proven by Company W’s big growth of service revenue. All of these achievements attributed to Company W have done an excellent performance on service management.

In service management, the study finds out Company W has set up three main goals: (1) Improving turn-over cycle of product repair. (2) Managing short-term and long-term spare parts planning. (3)
Establishing efficient and easily managing information system at each stage of service repair chain. The management depends on technique, experience and practice in order to accomplish their three goals. Both integrative information systems, that support global employee’s needs and related departments coordinated in each step of service supply chain, are used to achieve the service goals. In the integrative information system, database is used to link up with the following four departments: (1) Service center of returned material administration. (2) Operation of parts returned to its original supplier. (3) Inventory management and repair center, (4) Related supporting team. The important daily information of after-sale services includes current repair status, user information for repair, and final test results. Those are a key portion of the integrative and comprehensively controlling process. That information supports what Tsai (2009) expressed that if management makes good use of website techniques and integrates new information technology, the company will ensure rapid and accurate after-sale service. The study summarizes the above-mentioned empirical results and suggests the following proposition should be supported.

**Proposition 2:** If a company can identify and deliver service function well, and having authority managing and controlling information system, the company will make economic sense.

**CONCLUSION AND SUGGESTION**

**Conclusion**

This study illustrated details of the after-sale service capabilities in strategic management that it is developed and deployed in Company W, and also offers a successful paradigm. The Blumberg (1991) theory of strategically driven service organization has been supported with the verification of this case.

**Suggestion for Future Study**

This study provides a successful evidence of after-sale repair service in the laptop industry. The after-sale service Company W provided was a good reference for the same industry as well as other industries. The study uses a single case to do an empirical research, but it is not convincing in samplings. Finally, the study suggests that future research can adopt multiple case studies to support this conclusion.

**REFERENCES**


