

A Case Study on Integrating Logistics Information Systems with the Corporate Resources

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Abstract Efficient use of information can sharply reduce the cost of production as well as required capital. Information quality can differentiate one firm from others. Quality is influenced by the organization's resources and it can also influence the organization. In the competitive world all things are going to get strategic and knowledge based view. Logistics information system (LIS) is not exception of that. This paper deals with these issues regarding a case study in a developing country, Bangladesh. However, case has studied critically to find out the causal relationship of success through logistics Information systems.

Key words Quality information; Strategy; Resources based view (RBV); QFD (Quality Function Deployment); Opportunity costs

1 Introduction

In the age of globalization customers are surrounded by full of options. Moreover, due to technological diffusion, the functionalities and technological features of products tend to be the same^[1].

With the evolution of advanced technologies, firms are becoming more integrated. Demand of integrated and effective supply chain practice with effective information systems are raising day by day as customers have become more and more exacting about logistics performance^[2]. In the competitive scenario, the breath of logistics services related to products may play a critical role^[3]. However, integration of logistic service depends on good information systems. Firm's logistics information systems capabilities hence are playing a critical role in the pull system environment. Information systems focuses on information flow^[4], however current situation make it more complex than only focuses on the simple flow of information.

2 Methodology

This paper involved with the case study critically. Data and information are mainly collected from the primary sources through interview, group discussion, and observation. To augment with the authenticity of data and information, the factors inside and outside the business have been taken into account, especially the issues those are exclusively inherent to a developing country. However, case has analyzed critically, especially have synthesized with the previous research to interpret the fact that Rahimafrooz used. Moreover, continuous awareness was about to find out any unique things that are practicing by Rahimafrooz.

3 Logistics Information Systems

Information system is involved with the gathering, processing, storing, distributing and use of information. In the current pulling system business environment, the difference between mediocre and excellent logistics is often the firm's logistics information technologies capabilities^[5].

In general Logistic Information systems is involved with the entire order processing. Logistics information system is involved with the order preparation, order transmittal, order entry, order filling and order status reporting. Now a days, these works are integrating with the advanced Information Technologies like; Internet, EDI (Electronic Data Interchange), etc. Moreover, at different stages technologies like bar code reader, optical scanners, laser-beam bar coding, etc are plying critical role to provide expedite and excellent services.

Over the years, the cost of providing information throughout supply chain is reducing but competition is increasing regarding the quality and strategic perspective. Business is dominated by the consumer group. Moreover, in short terms firm have limited capacity to use to serve^[6]. As Globalization has broadens the opportunity for the consumers, failure of a firm to provide the product or services at a right time will increase the opportunity costs.

The influence of dynamic environment and rapid information technology advances during the

1990s led that knowledge is the only resource that has longevity in achieving a sustainable competitive advantage^[7]. We also think that existing resources of organization can work with logistics information systems together to build a good logistics Information system.

4 Rahimafrooz: An Optimum Integrator of LIS with the Firm Resources

Rohimafrooz Ltd. is one of the largest business groups in Bangladesh. It established at 1954 by Abdur Rahim as a trading company. However, with time it extends business in other sectors. Now it is operating three broad segments – automotive after market, power and energy, and retail. Headquarter of Rahimafrooz is situated at the Gulshan commercial area, the capital of Bangladesh. All group activities of Rahimafrooz are coordinated from the Rahimafrooz Corporate Office (RACO) through eight Strategic Business Units (SBUs), three other business ventures, and a not-for-profit social enterprise.

Beside, the trading, Rohimafrooz Ltd. is now manufacturing different battery products. Rohimafrooz is a member of Independent Battery Manufacturer Association, Inc. (IBMA) USA. Their customers are mainly end user like consumer, some industry seeking for energy solution and some intermediary also.

4.1 Involve with the manufacturing

After the establishment as a trading company, it won the distributorship of the Locus Battery (a product of Lucas Industries plc, UK) at 1959. At 1978, Rahimafrooz obtained the distributorship of Dunlop tyres (a company of UK) also. Rahimafrooz acquired the operation of Lucas in Bangladesh at 1980. The firm was interested to produce battery by his own technology with own brand. At 1985 Rahimafrooz become successful in producing Industrial battery. At this year it teamed up with the BP (a Global energy company of UK) in Bangladesh to familiar with the new technology in solar energy. From 1992 to 1994, this firm made some big decision regarding the investment. At 1992 it started to export battery at Singapore. Rahimafrooz lunched Instant Power System (IPS) in 1993. It acquires another firm, Yuasa Batteries Bangladesh at 1994. However, the growth of the firm regarding sales became static after that period. Rahimafrooz failed to utilize its full capacity.

4.2 Realization and strategy

After 1994, Rahimafrooz was applying several marketing promotion to increase its sales. However, these initiatives were failed. At that stage, they concentrate on the information about the customer choice and demand. They attempted to hear the voice of customer from all of their distribution centers. Primarily, they work on the customized quality product that required by customer. Because of this successful attempted, the won ISO 9002 certification for (Rahimafrooz Batteries Ltd) RBL operations in 1997. However, their analyst revealed that this was not enough to use the full production capacity and increase the market share sharply. Ultimately, increased quality compelled Rahimafrooz to increase the price.

The strategic Business Unit of Rahimafrooz then concentrate on information that will help them to predict the customer demand regarding the time and product quality. The developed a integrated scheme, including three-faceted intention to increase the custome:

- 1) Offer highly customized product regarding the demand of customer.
- 2) Use the opinion of employee regarding the different region both within the country and out of county.
- 3) Provide satisfactory services like on-time delivery, door-to-door services, quick replacement of faulty items, high degree of communication etc.

5 Program and Infrastructure for New Strategy

5.1 Information technology

At the end of 1997, Rohimafrooz used two types of information systems for order processing and maintain communication with the local dealer as well as the consumer. At it was the entry stage of internet of Bangladesh, Rohimafrooz used internet only to communicate with Singapore, UK and other countries regarding the purpose of Supply chain management. Within the country, they used Fax, telephone, urgent mail etc.

5.2 Dimension of information

To use the information efficiently, Rahimafrooz set several criteria for information. They also ranked on the basis of their importance. Some of them were as follows

- 1) Order status information

- 2) Planned order information
- 3) Engineering and design specification in pull environment
- 4) Delivery Schedule information and frequency of change
- 5) Changes in purchase order information
- 6) Accuracy, reliability, external-internal connectivity and so on

Especially in case of 2 & 1, it was required to use the organic resources of organization.

5.3 Use the knowledge of employee

To obtain the quality information regarding the logistics management, Rahimafrooz tempted to use the knowledge of human resources of organization. Finally, Rahimafrooz integrate LIS with the organic resources. Apart of these, Rahimafrooz opened its retail chain at 2001, to stay more closely with the customer to obtain quality information. It was the first retail chain in Bangladesh.

5.4 Cross disciplinary team

Integrating employee with the logistics information systems and collection of knowledge from them was a daunting task. To do that Rahimafrooz built a team. Primarily their responsibility was to set a team leader at every region to collect the opinion of employees regarding the dimension of information that they settled and provide the information to the respective manager to take decision regarding the nature of consumer.

5.5 The outcomes

Rahimafrooz was begun to success from 2002 at a miracle rate. Obviously success is a result of good performance of all the department of the organization. However, in case of Rahimafrooz, there is some clear evidence that indicates that its logistics service was unique than its competitor which was a result of their initiatives. For example; it has been accredited as the best distributor of Castrol Lubricant for the year 2009 in Castrol South Asian Sub Region Partner's Conference 2010 which was held in Kuala Lumpur on Malaysia. In lubricant distribution its growth rate is about 45%. It's the result of Rahimafrooz hybrid logistics information systems.

Hybrid LIS enables Rahimafrooz to serve on-time delivery, reduce cycle time, product design specification, ensure perfect order fulfillment rate. These procedures also reduce their production cost Form 2002, their growth rate was about 20%. This scenario tempted them to use advanced technologies with the organic resources. To do that they lunched Metronet Bangladesh, a joint venture with Flora Telecom. Metronet Bangladesh is a fiber optic based digital solution provider for data communication. Now Rahimafrooz is enjoying more then 25% growth per year for the last 5 years.

6 Analysis and Interpretation of the Facts

It would be better to focus on several critical factors to analyze the case to get the gull grasp. Strategic management and logistic management (or logistic Information Systems) are different subjects. So, debate may raise whether it's logical to combine them together or what are the things that Rahimafrooz has done.

Logistic Information systems involve with the collecting information especially regarding consumer or distribution using the advanced technologies. In contrast, strategic management itself a multidisciplinary field, draws heavily on marketing, behavioral sciences and economics, among others. Mayer describes it as a "pluralistic arena" where all are welcome to participate in the knowledge development process^[8].

For the development of effective supply chain/logistic management, it is required to integrate supply chain/logistic practice with the quality information. Information quality measures the degree to which the information exchanged between organizations meets the needs of the organizations^[9]. In reality, some companies are emphasizing on the development of efficient practice of supply chain or logistics management. Some companies also are working on the obtaining of information on a commonality basis with partners. As logistics management is involved with the end consumer and logistics management & information systems are not independent, it would better to work simultaneously for Rahimafrooz. Basically, Rahimafrooz did that successfully.

There are so many opinions regarding the characteristics of quality information. McCormack measured information by accuracy, frequency, credibility, and availability of forecast^[10]. Petersen emphasized on currency, accuracy and completeness^[9]. Some researchers also have mentioned that data accuracy is critical in affecting operating efficiency and customer services^[11]. Some researchers also mentioned that to be useful, information have to be readily accessible accurate and relevant^[12]. If we look at the dimension of information required by the Rafimafrooz, we will see that they were

concentrating on quality information.

Information becomes quality when some sort of direction are involved with it. Many managers mistakenly concentrate on only hardware and software for information^[13]. But, it's not the enough. As an example, we can say about EDI. Many high performing firms are using EDI for instantaneous communication with the customer and supplier. This proves that not only advanced technology but also appropriate sharing of information makes a firm effective regarding performance. This information sharing can also occur within an organization focusing on the consumer. Basically, Resources Based View (RVB) keeps a scope to do that.

Case study conducted on Volvo few years ago, enhance the strength of this claim. The finding was that “suppliers are not homogenous group but should be treated according to their cultural dimensions^[14]. Consisting with that it can be said that as consumers are not homogenous they should be treated according to their cultural dimensions. But, totally mechanized logistics information is not enough to get the nature of culture. Hence organic resources and other resources may integrate with the mechanized logistics information systems to reveals the fact. Rahimafrooz has done that efficiently regarding the consumers. It seems to us that Rahimafrooz followed a Quality Function Deployment (QFD) approach in that case to cluster the consumers and provided the product and service needed to different group of customers. They have used their hybrid logistics information systems not only for the current year (X_t) but also for the next year (X_{t+1}) efficiently. It appears to us that what Rahimafrooz has done, can be represents by the figure 1.

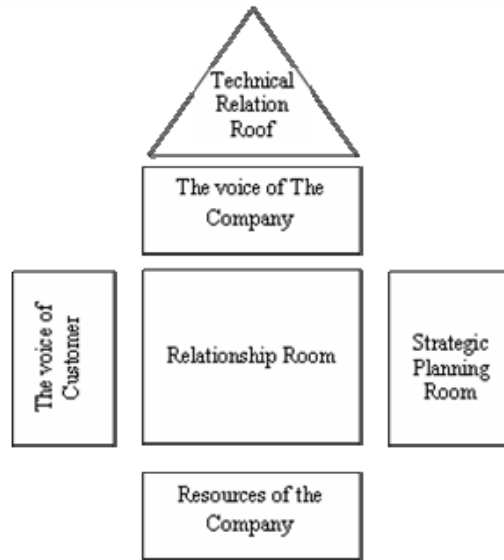


Figure 1 Integration of LIS with the Corporate Resources of Rahimafrooz

The QFD starts with the capturing the voice of the customers. However, the voices of consumers have integrated with the organization’s resources (Mechanistic and organic) to get some hidden information to serve the consumers optimally with the limited resources. With the combination of these two houses strategic planning room have developed consisting with the voice of the company.

The challenging task is to combine the different resources with the LIS. Different members of the organization have different bodies of knowledge. It indicates that combination with the organic and other factors of the organization and transmission and assimilation of that information is costly and complex in a big firm. However, after observation of different evidence, we developed the figure 2 to explain the task of Rahimafrooz.

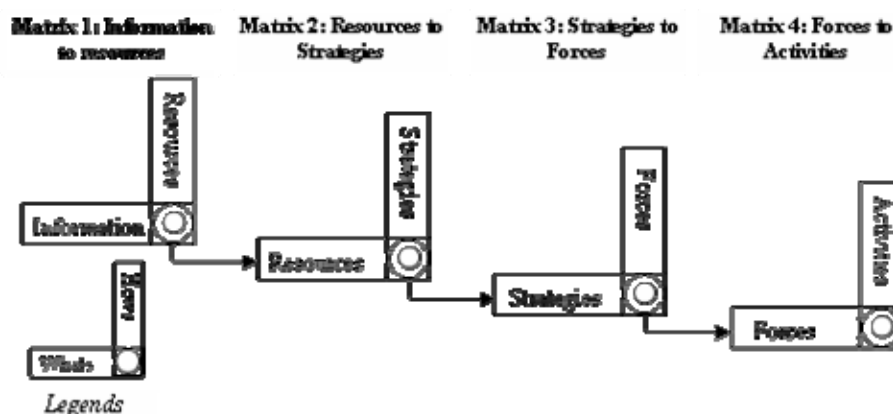


Figure 2 Integration Matrices to Integrate Resources with the Logistics Information Systems

To implement the Hybrid LIS, they divided the total task in four stages. At first, they have determined which resources to be employed to collect the information. At second stage, they have determined the strategy to use the resource. At third stage, they have recognized the forces to find out the way of implementation of strategy and at last activities have combined with the forces to implement the strategy to collect the quality information.

The output of this logistics Information System helps Rahimafrooz to know about the perceived volume of goods scheduled to be delivered in a specific time, perceived volume of goods to be delivered to a given customer, compatibility among the goods scheduled to be delivered to a given customer, the geographical vicinity associated with a given customer, temporal proximity in terms of delivery deadline, time etc with the advanced technologies.

7 Future Research

Small organizations tend to be more flexible and can therefore cope with change more readily. Their way of success of Rahimafrooz may not be effective for big one. There is a scope to reveal that. One has to understand organizational structure to explore the phenomena and nature of organizational resources. For different types of organizational structure, combination of logistics information systems with the organizational resources may be different to get optimum result. Future research may conduct on that area also.

8 Conclusions

The findings of the case study on Rahimafrooz show that quality logistics information is required to survive in the competitive world. To make the information quality, it's required to combine logistics information mechanics with the human resources, knowledge and other resources of the organization. To do that there have to consider so many things that has to theoretically synthesize and empirically test. This paper only reveals the fact of integration with a case study and shows a simple way to deal with that.

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