Logistics services: a case study of a metal mechanical company

José Martino Neto
Centro Paula Souza, 159 Bandeirantes St, São Paulo 01124-010, Brasil
martinoneto@uol.com.br
Getulio K. Akabane
Centro Paula Souza, 159 Bandeirantes St, São Paulo 01124-010, Brasil
getulio@akabane.adm.br
José Manoel Souza das Neves
Centro Paula Souza, 159 Bandeirantes St, São Paulo 01124-010, Brasil
jmneves-fatec@gmail.com
Neemias Ferreira
Centro Paula Souza, 159 Bandeirantes St, São Paulo 01124-010, Brasil
neemias.ferreira@gmail.com
Caio Lago
Centro Paula Souza, 159 Bandeirantes St, São Paulo 01124-010, Brasil
caio.lago@usp.edu.br

Abstract

This case study research establishes comparison among tangible and intangible logistics in a metal mechanic industry located in Brazil. The results addressed advantages in a different business models in other to understand that some independent or combined actions should be taken to give value added effect to the company results.

Keywords: Logistics service, logistic channel, added value.

INTRODUCTION

According to Porter (1986), companies adopt different business strategies in order to stay competitive in the market as: cost leadership, differentiation and focus on the strategic positioning or usually a combined action among them.

A current view is shared by Kobayashi (2000), which points to other growing strategic differences specially the logistics service that can establish differences between competitors and can support generic strategy of differentiation.

Therefore, the research objective is to verify this assertion by case study in a Brazilian medium-size metal mechanic Industry located in São Paulo state. The manufacturing process focused of metal components. The study compare two model of service delivery in accordance of customer needs by identifying most cost effective option for company's operations.

Indeed, the association of service logistics and costs was described by Kaplan and Cooper (2000) who claims to be essential to analyze and understand about the costs involved in a custom oriented service requires an adequate knowledge and understanding such structure especially in meeting custom requirements through control mechanisms to analyze all the variables involved.

Lovelock (2001) pointed out another important insight concerning services industry who highlights economic factor lays deep changes and service innovation can encompass considerable differentiation into the market players. These innovative elements make it very conducive to growing market, since entry barriers are diminishing nowadays.

Theoretical Framework

The company economic value is sum of its tangible and intangible assets. Intangible assets means brand, innovation and human resources in particular have grown in importance in a value formation (KAYO et al, 2006).

Porter (1986) states a relationship between competitive advantage and value chain where business processes are a set of activities that are performed to design, produce, market, deliver and support their products and services. The differences between competing value chains constitute the basic form of competitive advantage and arises primarily from the value a company can create for its buyers above the manufacturing cost of the company.

This theoretical foundation strengthens the strategy implemented by the metal mechanical industry concerned that visualized the opportunity to offer the market an adequate model to its customers' needs by adding value to their service delivery.

According Porter (1986) value is what the customer perceives. In this way companies requires delivering attractive product and services to the customer's eyes. Quality, user friendly, utility, maintenance and support are too important items to be taken into consideration. Value is the brand perception. The customer is willing to pay more for a product, according to the consideration offered, which can be according to the importance of service, product utility and personal value.

Tangible (goods) and intangible (services) logistics

According to Christopher (1997), customer service is determined by the elements like availability, frequency and reliability of delivery, inventory levels and time spent in the cycle of applications.

The author complements that critical elements of customer service are the order cycle, stock availability, restrictions on the size of the application (flexibility to meet just in time delivery), ease in order placing, frequency and delivery reliability, documentation quality (invoices and other customer communications), procedures for complaints, requests submitted, complete technical support and information about the position of applications. The delivery reliability and fill rate are crucial elements to achieve and keep customer loyalty.

Another view of logistics services can be observed by Lambert (1998) by stating that logistics is the process of planning, implementing and controlling the efficient and economical way, the flow of supplies and products, storage and flow of information corresponding to the entire system, from source to final destination, in order to meet the customer needs.

A variant was developed by Ballou (2001), where states that the logistic services have three basic elements: pre-transaction, transaction and post-transaction. In the pre-transaction elements are responsible for creating an enabling environment to carry out the transaction. In the transaction elements occur during the sale course and are directly related to the customer products delivery. Concerning the post-transaction elements are related to the product monitoring after transfer to the client.

Stank et al (2003) states that the logistics service within the supply chain has become an important tooling for building and maintaining close relationships with customers and suppliers, as it has a positive effect on customer satisfaction and, therefore, on established loyalty in the customer-supplier relationship.

To Parolini (1999), it can sort these elements into four components: tangibles, intangibles, services and economic elements. Tangible elements are intrinsic to the product, such as: the quality of the material used, durability, functional characteristics, appearance and finishing among others. The intangible elements are associated with the product brand.

Kayo et al (2006) classifies the logistics of goods (tangible) and services (intangible). Tangible assets are machines, equipment and the conventional factories. However the author highlights how the brand of a company is being valued, the proper management of intangible assets pass to play a key role in sustainable performance and training of the economic value of a company. Therefore, the importance of the intangible aspect of an organization or service is what defines how the customer wants to pay for the product or service.

Thus, the provision of logistics services can be regarded as decisive in customer satisfaction, the pursuit of loyalty. Logistics processes undergo profound changes in function not only of globalization but also due to technological developments. The customer perception becomes a difference in order to achieve satisfaction and loyalty.

According to Martins et al (2010), the pursuit of logistics processes efficiency made that other aspects of service provided were incorporated and evaluated by customers as decision making factors for contracting transport service, such as meeting deadlines, transparency of costs and the development of appropriate and integrated with suppliers and customer services.

The role of today logistics, according to various literatures is based on the attendance of the seven "R's" (seven right conditions for logistics services):

1. Have available the right product: It is important that our suppliers have to provide the ideal raw material for the production of products or the provision of services. This principle also applies in the logistics standpoint of marketing. It means to deliver the right product suitable for the market niche.
2. In the correct amount: Keep inventories with the right amounts ensure better use of resources and minimize deterioration of materials, raw materials and products.
3. In the right conditions: Be careful with transport and storage. It must ensure that the products and packaging materials are in appropriate conditions to its final destination.
4. In the right place: Correct storage in the most appropriate place possible in order to meet the need to produce or provide service.
5. In the right time: To ensure that materials, products or services are allocated at the right time and in the place where they should be.
6. For the correct client: Every effort will be in vain if it is not addressed the right target. It is ideal for a business model that can put the product in the customer's hands at the time and in the right place as planning.
7. In the correct cost: Cost efficiency is a determining factor. You should choose solutions that offer greater cost advantages without sacrificing the quality and the final product.

As highlighted by Porter (1986), among the competitive positioning strategies, besides differentiation, cost management plays a key role in maintaining your business, and in the case of this specific study will address the main concepts on logistics costs.

Logistic costs

In the scenario of the 2010's observed that the supply of goods and services up demand, is intensifying thus competition where efficient cost management is also a differential that should be explored.

A vision of logistics costs can be extracted from the Institute of Management Accountants - IMA (1992) that states " logistics costs are the costs to plan, deploy and manage all incoming inventory (inbound) in checkout process (outbound) from the point of origin to point of consumption. "

Lambert (1998) states that logistics activities are connected to the supply activities related to the plant and distribution organization. In the author's point of view there is a trade-off between Marketing, Logistics and Supply to correlate the marketing mix (product,

price, promotion and customer location / service level) with logistics costs (transportation cost, inventory, order batch, warehousing, order processing and information) and distribution (localization of the product / service level, price, location and supplier of materials / purchased component).

According to Ballou (2001), logistics costs within the total costs of an organization, assume an important position in monetary value´s term and loses only to the cost of goods sold. It also states that most companies allocate all costs to products, and there isn´t separation, prior to this allocation, in terms of activities that were part of the process. In this way, identify these costs and measure them accurately becomes vital to the survival of businesses.

There are three others concepts within the logistics costs: compensation costs, total cost and overall system. The compensation cost is the relationship between inventory costs (warehousing) on the one hand and the cost of shipping and order processing from another hand, being inversely proportional. The total cost is the sum of all costs involved, individual or collective. The total system considers all affected factors including inter-organizational case of frontier expansion across organizational boundaries.

In this case study, the costs involved can be classified as cost of storage, cost inventories, packaging costs and shipping cost. And through the provision of the proposed service model, the cost breakdown can be full or partial.

METHODOLOGY

According to Yin (2005), a case study is used in situations where appears questions such as "how" and "why" and when the researcher has little control over events and when the focus is in embedded contemporary phenomena at some real-life context.

There are six sources of evidence that can be used in case study: interviews, archival records, documentary research, direct observation and participant. In this sense, considering what says Yin (2005), this research fits perfectly into a case study classified as research action that intends to analyze the company hereinafter referred to as Company A or Supplier, and determine as the logistics service concepts are being used.

With the vision of creating a differential in the provision of logistics services in the market of a particular family of components, Company A offers two options to commercialize their products through the provision of services (considered intangible services) or through sale goods (tangible services), option that comes from the self-interest of the buyer.

The goal is to analyze with base in the Company A´s perspective, how it´s possible adds value in each one of these operations, assuming that the main premise is to meet the customer according to your needs, even aware that this easing market can bring some reduction in the operating margin as a whole.

Company B uses the option to purchase the industrialized product of Company A and Company C adopts the strategy of paying for service delivery of manufactured product by Company A as shown below . The incidence of the tax burden is different from the options, but will not be discussed this topic in this research.

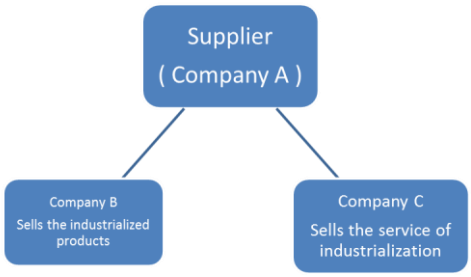

Figure 1 – prepared by author.

Data collection will be made through desk research, log files, and how is considered a research action, will also be included comments and information generated by the researcher. The literature came from the analysis of previously published articles on the subject, in specialized magazines in the sector.

To identify and interpret the collected data was used the technique of content analysis, which, according to Bardin (1997), is the most appropriate technique for communication analysis, whether oral or written.

It is also proposed analyzing how this diversification of supply models options held by Company A, can be considered as a differential of competitiveness, discussing the costs and the risks involved in each model, and which option is more profitable.

RESULTS AND DISCUSSION

Company A)

According to Moura (2004), companies have three ways in which they can compete. Be a low cost provider in product differentiation or the offering of a differentiated customer service, expertise of Company A.

Your "core business" is manufacturing metal components made from aluminum profiles. The variables are the shape, thickness and size. The manufacturing of the components has the following stages: cutting, machining, surface finishing, drying, weighing and packing.

The Company A offers its customers two options of supplying products, in conditions and different prices: Sale of the industrial metal (considered tangible) or provide the industrialization of service of this same component (considered intangible).

The Company B prefers to buy the manufactured component and in the other hand, the Company C prefers to buy the industrialization of service of this same component.

In this way will be analyzed the advantages and disadvantages of each model according to the Company A´s needs, emphasizing that the strategic decision comes from the preferred model that Companies B and C prefer adopt according to their purchasing needs.

Company B)

The Company A uses of the concept make to order to supply the company B. In this scenario, the lead time is around 30 days, according the following steps: purchase of raw materials, manufacture, finishing and packing. To ensure this lead time is necessary to send a preliminary schedule for the subsequent month.

It´s possible to observe strengths and weaknesses in this model:

The management of raw materials, purchase and storage is the Company A´s responsibility. The cost per unit is higher, because are included the cost of raw materials, indirect materials costs and inputs, processing cost (direct labor costs, as well as indirect labor and processes), cost of packing and shipping cost.

The risk in this operating model is referred purchasing raw material. It´s possible identify this risk in case of not reconcile the quantity purchased of raw materials according the purchasing order from Company B on the basis of minimum lots, generating the need to include financing costs in this operation. Another important point is regarding the lead time (30 days) demanding a financial analysis of receivables versus payables generating a portion of embedded value also in providing service.

Company C)

Company C is responsible to buy the raw materials and manage your inventory. According your necessity, Company C, sends to Company A, the raw material to carry out industrialization. The "lead time" is 10 days however you must also submit a preliminary schedule for the following month. In this scenario the Company A, after receiving the programming and the raw material, starts industrialization to complete the application when is then billed and delivered.

It is also possible to observe positive and negative aspects in this service delivery model. As the main feature of this model stands out:

It´s not need to have inventories of raw materials and manage the entire process involved. The cost per part is lower, and depending on the lead time, maximizes up the financial aspect related to the receivables. The focus is on efficiency of industrialization via service, main generator operating margin.

Comparative analyze between models according Company A´s vision.

It is possible to measure the results through the collected data, in order to assist in judging between the studied models and define important bullets to be analyzed.
Focusing on business model´s profitability, there are differences between the amounts charged for the services.

Regarding the logistics of goods, considered tangible, the elements that make up costs are defined as: raw material, storage costs, manufacturing costs, financial costs, packing and shipping cost for delivery. In the case of services (intangible model), the process is simplified and the risks are lower.

However the point is, regardless of the model, after all costs defined and controlled within the price for the service or the charged product ensuring profitability for the maintenance and support of the business, it is understood that the enterprise in question can meet the needs of their customers finding this service logistics model a strategic differentiator.

CONCLUDING REMARKS

Assuming that production volumes are the same between the two models of service delivery, is evident that the most profitable model for Company A is to commercialize its products to Company B (tangible logistics) in function of a higher gross margin resulted of a sum of activities that make up the operating margin .

Thus, I believe that the proposed aim of studying the Metal Mechanic Company in question has been reached with their supply options according to the needs of those who purchase the product strategy that is considered a trend in terms of service and logistics based on value set which model is most advantageous.

However, beyond economic gain is important to highlight other actions that value the Company understand that you can make more effective the provision of logistics services offered to the market and be a strategic advantage:

The first: should be in relation to the delivery time. Deliver quickly and with extremely high quality according to customer's needs. The second action is related to offer a price compatible with market reality in order to ensure their profitability and also be pleased your customer, with the awareness that the product offered worth what is charged. The third action is to enhance your brand, in order to your work aggregate some differentiation to your customer and to the market itself to enhance its efforts to better care and their ability to adapt to emerging needs.

All Companies must continuously invest in improvements, improving its processes, products and services, creating the differential via an implanted culture in order to always be ahead of its competitors and close to its customers, who are the real partners in process.

This study is expected to have further fostered discussions on the subject, not only the service logistics activity, but of all the other activities that are part of a strategic differentiation of business in relation to service delivery, close the your customer's needs, innovation, costs involved and profitability analysis.

Finally, it´ll stimulate new research in the others companies that can do similar activity and compare results in order to be a greater breadth in a subject that tends to be increasingly strategic in the pursuit of market differentiation.

REFERENCES

Ballou, R. H. 2001. *Gerenciamento da Cadeia de Suprimentos: Planejamento, Organização e Logística Empresarial*. 4. ed. Bookman, Porto Alegre.

Bardin, L. 1997. *Análise de conteúdo*. Edições 70, Lisboa.

Christopher, M. 1997. *Logística e Gerenciamento da Cadeia de Suprimentos: estratégias para a redução de custos e melhoria dos serviços*. Pioneira, São Paulo.

Conselho dos Profissionais de Gestão da Cadeia de Suprimentos (Council of Supply Chain Management Professionals- CSCMP). *Supply chain management and logistics management definitions*. Disponível em:< http://cscmp.org/AboutCSCMP/Definitions/Definitions.asp> Acesso em 12 de outubro,2015

Fleury, P. F.; Wanke, P.; Figueiredo, K. F. 2000. *Logística Empresarial: a perspectiva brasileira*. Ed. Atlas, São Paulo.

Instituto dos Contadores Gerencias (IMA). 1992. *Cost Management for Logistics.* National Association Of Accountants. Statements on Management Accounting. 4-P, june 1992

Kaplan, R. S.; Cooper, R. 2000. *Custo e Desempenho: administre seus custos para ser mais competitivo*. Ed. Futura, São Paulo

Kayo, E. K.; Kimura, H.; Martins, D. M. L.; Nakamura, W. T. 2006. Ativos intangíveis, ciclo de vida e criação. *Revista de Administração Contemporânea On-line*, v. 10, n. 3, 2006. Disponível em: http://www.scielo.br/scielo.php?pid=S1415-65552006000300005&script=sci_arttext&tlng=en. Acesso em: 29 set 2015.

Kobayashi, S.2000. *Renovação da logística: como definir estratégias de distribuição física global*. Atlas, São Paulo.

Lambert, D.M. 1998. *Administração estratégica da logística.* Vantine Consultoria, São Paulo.

Lovelock,C . 2001. *Serviços: Marketing e Gestão* . Ed Saraiva, São Paulo.

Martins, E. 2010. *Contabilidade de Custos*. Ed Atlas, São Paulo.

Moura, R. 2004. *Atualidades da Logística*. Instituto IMAM, São Paulo.

Parolini, C. 1999. *The value net: a tool for competitive strategy*. John Wiley & Sons Books.

Porter, M. 1986. *Competitive Advantage - creating and sustaining superior performance*, Bookman, Porto Alegre.

Rafele, C. 2004. Logistic service measurement: a reference framework. *Journal of Manufacturing Technology Management*. Vol. 24, N. 3, p. 280-290.

Stank, T. et al. 2003. Logistics service performance: estimating its influence on market share. *Journal of Business Logistics*, v.24, n.1, p.27-55.

Yin, R.K. 2005. *Estudo de Caso: Planejamento e Métodos*. Bookman, Porto Alegre.