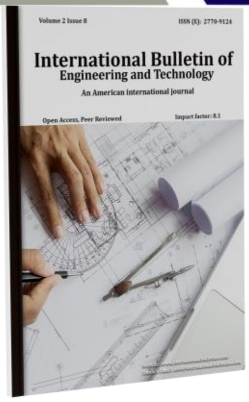

LOGISTICS, THE SUPPLY CHAIN, AND COMPETITIVE STRATEGY.

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Abstract: Logistics and supply chain management are not new ideas. From the building of the pyramids to the relief of hunger in Africa there has been little change to the principles underpinning the effective flow of materials and information to meet the requirements of customers. In this article, I am going to point out the key concept of competitive strategy in the supply chain and give some solutions for problems in the process.

Keywords: Mankind, organization, supply chain management, logistics, value chain, manufactures, strategy, market share, customer, companies, trend, category, order.

Introduction

Throughout the history of mankind, wars have been won and lost through logistics strengths and capabilities – or the lack of them. It has been argued that the defeat of the British in the American War of Independence can largely be attributed to logistics failures. The British Army in America depended almost entirely upon Britain for supplies; at the height of the war there were 12,000 troops overseas and for the most part, they had not only to be equipped but fed from Britain. For the first six years of the war, the administration of these vital supplies was inadequate, affecting the course of operations and the morale of the troops. An organization capable of supplying the army was not developed until 1781 and by then it was too late.

In the Second World War logistics also played a major role. The Allied Forces' invasion of Europe was a highly skilled exercise in logistics, as was the defeat of Rommel in the desert. Rommel himself once said that '... before the fighting proper, the battle is won or lost by quartermasters'.

However, whilst the Generals and Field Marshals from the earliest times have understood the critical role of logistics, strangely it is only in the recent past that business organizations have come to recognize the vital impact that logistics management can have in the achievement of competitive advantage. Partly this lack of recognition springs from the relatively low level of understanding of the benefits of integrated logistics. As early as 1915, Arch Shaw2 pointed out that:

The relations between the activities of demand creation and physical supply ... illustrate the existence of the two principles of interdependence and balance. Failure to co-ordinate any one of these activities with its group fellows and also with those in the other group, or undue emphasis or outlay put upon any one of these activities, is certain to upset the equilibrium of forces which means efficient distribution.

... The physical distribution of the goods is a problem distinct from the creation of demand ... Not a few worthy failures in distribution campaigns have been due to such a lack of coordination between demand creation and physical supply ...

Instead of being a subsequent problem, this question of supply must be met and answered before the work of distribution begins. Paradoxically, it has taken 100 years for these basic principles of logistics management to be widely accepted.

What is logistics management in the sense that it is understood today? There are many ways of defining logistics, but the underlying concept might be defined as follows:

Logistics is the process of strategically managing the procurement, movement, and storage of materials, parts, and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that current and future profitability is maximized through the cost-effective fulfillment of orders.

Ultimately, the mission of logistics management is to serve customers most cost-effectively. A recurring theme throughout this book is that the way we reach and serve customers has become a critical competitive dimension. Hence the need to look at logistics in a wider business context and see it as far more than a set of tools and techniques

Supply chain management is a wider concept than logistics

Logistics is essentially a planning orientation and framework that seeks to create a single plan for the flow of products and information through a business. Supply chain management builds upon this framework and seeks to achieve linkage and coordination between the processes of other entities in the pipeline, i.e. suppliers and customers, and the organization itself. Thus, for example, one goal of supply chain management might be to reduce or eliminate the buffers of inventory that exist between organizations in a chain through the sharing of information regarding demand and current stock levels.

The concept of supply chain management is relatively new. It was first articulated in a white paper produced by a consultancy firm – then called Booz, Allen, and Hamilton – back in 1982. The authors, Keith Oliver and Michael Webber wrote:

Through our study of firms in a variety of industries … we found that the traditional approach of seeking trade-offs among the various conflicting objective of key functions – purchasing, production, distribution, and sales – along the supply chain no longer worked very well. We needed a new perspective and, following from it, a new approach: Supply-chain management.

It will be apparent that supply chain management involves a significant change from the traditional arm's-length, even adversarial, relationships that have so often typified buyer/supplier relationships in the past and still today. The focus of supply chain management is on cooperation and trust and the recognition that, properly managed, the 'whole can be greater than the sum of its parts'.

The definition of supply chain management that is adopted in this book is:

The management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole.

Thus the focus of supply chain management is on the management of relationships to achieve a more profitable outcome for all parties in the chain. This brings with it some significant challenges as there may be occasions when the narrow self-interest of one party has to be subsumed for the benefit of the chain as a whole.

Whilst the phrase 'supply chain management' is now widely used, it could be argued that 'demand chain management' would be more appropriate, to reflect the fact that the chain should be driven by the market, not by suppliers. Equally, the word 'chain' should be replaced by 'network' as there will normally be multiple suppliers and, indeed, suppliers to suppliers as well as multiple customers and customers' customers to be included in the total system.

Extending this idea, it has been suggested that a supply chain could more accurately be defined as:

A network of connected and interdependent organizations mutually and co-operatively working together to control, manage and improve the flow of materials and information from suppliers to end users.

Competitive advantage

A central theme of this book is that effective logistics and supply chain management can provide a major source of competitive advantage – in other words, a position of enduring superiority over competitors in terms of customer preference may be achieved through better management of logistics and the supply chain.

Seeking a sustainable and defensible competitive advantage has become the concern of every manager who is alert to the realities of the marketplace. It is no longer acceptable to assume that good products will sell themselves, and neither is it advisable to imagine that success today will carry forward into tomorrow.

Let us consider the bases of success in any competitive context. At its most elemental, commercial success derives from either a cost advantage or a value advantage or, ideally, both. It is as simple as that – the most profitable competitor in any industry sector tends to be the lowest-cost producer or the supplier providing a product with the greatest perceived differentiated values.

Put very simply, successful companies either have a cost advantage or they have a value advantage, or – even better – a combination of the two. Cost advantage gives a lower cost profile and the value advantage gives the product or offering a differential 'plus' over competitive offerings.

Let us briefly examine these two vectors of strategic direction.

1 Cost advantage

In many industries, there will typically be one competitor who will be the low-cost producer and often that competitor will have the greatest sales volume in the sector. There is substantial evidence to suggest that 'big is beautiful' when it comes to cost advantage. This is partly due to economies of scale, which enable fixed costs to be spread over a greater volume, but more particularly to the impact of the 'experience curve'.

The experience curve is a phenomenon with its roots in the earlier notion of the 'learning curve'. Researchers in the Second World War discovered that it was possible to identify and predict improvements in the rate of output of workers as they became more skilled in the processes and tasks on which they were working. Subsequent work by Boston Consulting Group extended this concept by demonstrating that all costs, not just production costs, would decline at a given rate as volume increased. To be precise, the relationship that the experience curve describes is between real unit costs and cumulative volume.

Traditionally, it has been suggested that the main route to cost reduction was through the achievement of greater sales volume and in particular by improving market share. However, the blind pursuit of economies of scale through volume increases may not always lead to improved profitability – in today's world much of the cost of a product lies outside the four walls of the business in the wider supply chain. Hence it can be argued that it is increasingly through better logistics and supply chain management that efficiency and productivity can be achieved, leading to significantly reduced unit costs. How this can be achieved will be one of the main themes of this book.

2 Value Advantage

It has long been an axiom in marketing that 'customers don't buy products, they buy benefits. Put another way, the product is purchased not for itself but for the promise of what it will 'deliver'. These benefits may be intangible, i.e. they relate not to specific product features but rather to such things as image or service. In addition, the delivered offering may be seen to outperform its rivals in some functional aspects.

Unless the product or service we offer can be distinguished in some way from its competitors, there is a strong likelihood that the marketplace will view it as a 'commodity' and so the sale will tend to go to the cheapest supplier. Hence the importance of seeking to add additional value to our offering to mark it out from the competition.

What are how much value differentiations may be gained? Essentially, the development of a strategy based upon added values will normally require a more segmented approach to the market. When a company scrutinizes markets closely, it frequently finds that there are distinct 'value segments'. In other words, different groups of customers within the total market attach different importance to different benefits. The importance of such benefit segmentation lies in the fact that often there are substantial opportunities for creating differentiated appeals for specific segments. Take the car industry as an example. Most volume car manufacturers such as Toyota or Ford offer a range of models positioned at different price points in the market. However, it is increasingly the case that each model is offered in a variety of versions. Thus at one end of the spectrum may be the basic version with a small engine and three doors and at the other end a five-door, high-performance version. In between are a whole variety of options, each of which seeks to satisfy the needs of quite different 'benefit segments'. Adding value through differentiation is a powerful means of achieving a defensible advantage in the market.

Equally powerful as a means of adding value is service. Increasingly it is the case that markets are becoming more service-sensitive and this of course poses particular challenges for logistics management. There is a trend in many markets towards a decline in the strength of the 'brand' and a consequent move towards 'commodity' market status. Quite simply, this means that it is becoming progressively more difficult to compete purely based on brand or corporate image. Additionally, there is increasingly a convergence of technology within product categories, which means that it is often no longer possible to compete effectively based on product differences. Thus the need to seek differentiation through means other than technology. Many companies have responded to this by focusing upon service as a way of gaining a competitive edge. In this context, service relates to the process of developing relationships with customers through the provision of an augmented offer. This augmentation can take many forms, including delivery service, after-sales services, financial packages, technical support, and so forth.

Seeking the high ground

In practice what we find is that successful companies will often seek to achieve a position based upon both a cost advantage and a value advantage. A useful way of examining the available options is to present them as a simple matrix. For companies who find themselves in the bottom left-hand corner of our matrix, the world is an uncomfortable place. Their products are indistinguishable from their competitors' offerings and they have no cost advantage. These are typical commodity market situations and ultimately the only strategy is either to move to the right of the matrix, i.e. to cost leadership, or upwards towards service

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leadership. Often the cost leadership route is simply not available. This particularly will be the case in a mature market where substantial market share gains are difficult to achieve. New technology may sometimes provide a window of opportunity for cost reduction, but in such situations, the same technology is often available to competitors.

Cost leadership strategies have traditionally been based on the economies of scale, gained through sales volume. This is why market share is considered to be so important in many industries. However, if volume is to be the basis for cost leadership then that volume should be gained early in the market life cycle. The 'experience curve' concept, briefly described earlier, demonstrates the value of early market share gains – the higher your share relative to your competitors the lower your costs should be. This cost advantage can be used strategically to assume the position of price leader and, if appropriate, to make it impossible for higher-cost competitors to survive. Alternatively, the price may be maintained, enabling above-average profit to be earned, which potentially is available to further develop the position of the product in the market.

However, an increasingly powerful route to achieving a cost advantage comes not necessarily through volume and economies of scale but instead through logistics and supply chain management. In many industries, logistics costs represent such a significant proportion of total costs that it is possible to make major cost reductions through fundamentally re-engineering logistics processes. The means whereby this can be achieved will be returned later in this book.

The other way out of the 'commodity' quadrant of the matrix is to seek a strategy of differentiation through service excellence. We have already commented on the fact that markets have become more 'service-sensitive'. Customers in all industries are seeking greater responsiveness and reliability from suppliers: they are looking for reduced lead times, just-in-time (JIT) delivery, and value-added services that enable them to do a better job of serving their customers.

The supply chain becomes the value chain

Of the many changes that have taken place in management thinking over the last 30 years or so, perhaps the most significant has been the emphasis placed on the search for strategies that will provide superior value in the eyes of the customer. To a large extent, the credit for this must go to Michael Porter, the Harvard Business School professor who, through his research and writing, has alerted managers and strategists to the central importance of competitive relativities in achieving success in the marketplace.

One concept in particular that Michael Porter has brought to a wider audience is the 'value chain':

Competitive advantage cannot be understood by looking at a firm as a whole. It stems from the many discrete activities a firm performs in designing, producing, marketing, delivering, and supporting its product. Each of these activities can contribute to a firm's relative cost position and create a basis for differentiation … The value chain disaggregates a firm into its strategically relevant activities to understand the behavior of costs and the existing and potential sources of differentiation. A firm gains a competitive advantage by performing these strategically important activities more cheaply or better than its competitors.

Value chain activities can be categorized into two types – primary activities (inbound logistics, operations, outbound logistics, marketing and sales, and service) and support activities (infrastructure, human resource management, technology development, and procurement).

These activities are integrating functions that cut across the traditional functions of the firm. Competitive advantage is derived from how firms organize and perform these activities within the value chain. To gain a competitive advantage over its rivals, a firm must deliver value to its customers by performing these activities more efficiently than its competitors or by performing the activities in a unique way that creates greater differentiation.

Michael Porter's thesis implies that organizations should look at each activity in their value chain and assess whether they have a real competitive advantage in the activity. If they do not, the argument goes, then perhaps they should consider outsourcing that activity to a partner who can provide that cost or value advantage. This logic is now widely accepted and has led to the dramatic upsurge in outsourcing activity that can be witnessed in almost every industry.

Whilst there is often a strong economic logic underpinning the decision to outsource activities that may previously have been performed in-house, such decisions may add to the complexity of the supply chain. Because there are, by definition, more interfaces to be managed as a result of outsourcing, the need for a much higher level of relationship management increases.

The effect of outsourcing is to extend the value chain beyond the boundaries of the business. In other words, the supply chain becomes the value chain. Value (and cost) is not just created by the focal firm in a network, but by all the entities that connect. This ‘extended enterprise’, as some have termed it, becomes the vehicle through which competitive advantage is gained – or lost.

The mission of logistics management

It will be apparent from the previous comments that the mission of logistics management is to plan and coordinate all those activities necessary to achieve desired levels of delivered service and quality at the lowest possible cost. Logistics must therefore be seen as the link between the marketplace and the supply base. The scope of logistics spans the organization, from the management of raw materials to the delivery of the final product.

Logistics management, from this total systems viewpoint, is the means whereby the needs of customers are satisfied through the coordination of the materials and information flows that extend from the marketplace, through the firm and its operations, and beyond that to suppliers. Achieving this company-wide integration requires a quite different orientation than typically encountered in the conventional organization.

For example, for many years marketing and manufacturing have been seen as largely separate activities within the organization. At best they have co-existed, at worst there has been open warfare. Manufacturing priorities and objectives have typically been focused on operating efficiency, achieved through long production runs, minimized set-ups and change-overs, and product standardization. Conversely, marketing has sought to achieve competitive advantage through variety, high service levels, and frequent product changes.

In today's more turbulent environment, there is no longer any possibility of manufacturing and marketing acting independently of each other. The internecine disputes between the 'barons' of production and marketing are counterproductive to the achievement of overall corporate goals.

It is no coincidence that in recent years both marketing and manufacturing have become the focus of renewed attention. Marketing as a concept and a philosophy of customer orientation now enjoy wider acceptance than ever. It is now generally accepted that the need to understand and meet customer requirements is a prerequisite for survival. At the same time, in the search for improved cost competitiveness, manufacturing management has been the subject of a massive revolution. The last few decades have seen the introduction of flexible manufacturing systems (FMS), new approaches to inventory based on materials requirements planning (MRP) and JIT methods, and, perhaps most important of all, a sustained emphasis on total quality management (TQM).

Equally, there has been a growing recognition of the critical role that procurement plays in creating and sustaining competitive advantage as part of an integrated logistics process. Leading-edge organizations now routinely include supply-side issues in the development of their strategic plans. Not only is the cost of purchased materials and supplies a significant part of total costs in most organizations but there is a major opportunity for leveraging the capabilities and competencies of suppliers through closer integration of the buyers' and suppliers' logistics processes.

In this scheme of things, logistics is therefore essentially an integrative concept that seeks to develop a system-wide view of the firm. It is fundamentally a planning concept that seeks to create a framework through which the needs of the marketplace can be translated into a manufacturing strategy and plan, which in turn links into a strategy and plan for procurement. Ideally, there should be a 'one-plan' mentality within the business that seeks to replace the conventional stand-alone and separate plans for marketing, distribution, production, and procurement. This, quite simply, is the mission of logistics management.

The supply chain and competitive performance

Traditionally most organizations have viewed themselves as entities that not only exist independently from others but need to compete with them to survive. However, such a philosophy can be self-defeating if it leads to an unwillingness to cooperate to compete. Behind this seemingly paradoxical concept is the idea of supply chain integration.

The supply chain is the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate consumer. Thus, for example, a shirt manufacturer is part of a supply chain that extends upstream through the weavers of fabrics to the manufacturers of fibers, and downstream through distributors and retailers to the final consumer. Each of these organizations in the chain is dependent upon each other by definition and yet, paradoxically, by tradition do not closely cooperate.

Supply chain management is not the same as 'vertical integration'. Vertical integration normally implies ownership of upstream suppliers and downstream customers. This was once thought to be a desirable strategy but increasingly organizations are now focusing on their 'core business' – in other words the things they do well and where they have a differential advantage. Everything else is 'outsourced' – procured outside the firm. So, for example, companies that perhaps once made their components now only assemble the finished product, e.g. automobile manufacturers. Other companies may subcontract the manufacturing as well, e.g. Nike in footwear and sportswear. These companies have sometimes been termed 'virtual' or 'network' organizations.

This trend has many implications for supply chain management, not the least being the challenge of integrating and coordinating the flow of materials from a multitude of suppliers, often offshore, and similarly managing the distribution of the finished product by way of multiple intermediaries.

In the past, it was often the case that relationships with suppliers and downstream customers (such as distributors or retailers) were adversarial rather than cooperative. It is still the case

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today that some companies will seek to achieve cost reductions or profit improvement at the expense of their supply chain partners. Companies such as these do not realize that simply transferring costs upstream or downstream does not make them any more competitive. The reason for this is that ultimately all costs will make their way to the final marketplace to be reflected in the price paid by the end user. The leading-edge companies recognize the fallacy of this conventional approach and instead seek to make the supply chain as a whole more competitive through the value it adds and the costs that it reduces overall. They have realized that the real competition is not the company against the company but rather the supply chain against the supply chain.

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