

Supply Chain Management - why is it vital for modern business?

Dr Richard Ballard, Director



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THE LOGISTICS BUSINESS LTD
Old Court House
The Crescent
Bromsgrove
B60 2DF

Tel: +44 (0)1527 889060
Fax: +44 (0) 1527 559192

*E-Mail:- info@logistics.co.uk
Web:- <http://www.logistics.co.uk/>*

WHAT IS SUPPLY CHAIN MANAGEMENT?

Supply Chain Management, often referred to as “logistics”, is concerned with the integrated process of an enterprise which ensures that goods and services are delivered to the correct place, on time and in full at minimum cost to the enterprise. Viewed another way, it is the sum total of the activities of an enterprise which ensure that its customers are given total satisfaction.

Many organisations, including transport companies, major port authorities and distribution park operators promote their so called “logistics services” when in fact all they are offering is either storage or transport services. Supply Chain Management is enterprise wide and cross functional and it covers every aspect of business organisation. Good logistics practice therefore involves far more than the simply the effective operation of warehouses and transport. It is possible to contract out specific activities within the logistics process but not the process as a whole.

Supply Chain Management is the means by which an enterprise manages its business process from end to end to ensure that it serves its customers and stays ahead of its competition. It is core to strategic planning and as such it is vital for modern business.

THE CHANGING MARKET PLACE

In all industries, customers are becoming ever more demanding. They expect greater choice from a wider variety of products and services and they expect smaller deliveries more frequently. They also expect those deliveries to be made within what are often very narrow time windows. The retail sector, particularly food and particularly in the UK, has been a driving force behind change, and many developments in Supply Chain Management have been pioneered in this area. For example, in some cases, Vendor Managed Inventory (VMI) has been introduced. This places the burden of forecasting and inventory management onto suppliers. Given visibility of customers sales levels and stock holding, suppliers manage their customers’ inventory by delivering as required to maintain stocks at an agreed level. This requires good partnerships, with each party depending on the other for success. It is not as one sided as it seems. Indeed, it can be argued that the visibility of the sales and stock levels allows the supplier to plan more effectively and reduce costs. In order to do this however, it has been necessary to develop effective control of the supply chain.

In manufacturing industries, particularly the car industry, a similar onus is placed on suppliers where Just-in-Time (JIT) deliveries are called for. Typically the supplier would be required to maintain stocks of items to be called off at short notice for delivery direct to the production line. Delivery time windows are often specified to within much less than an hour.

Markets are developing and changing in all sectors. Good Supply Chain management is essential for effective response to these changes.

THE ROLE OF LOGISTICS IN ADDING VALUE

At its simplest level, value is added by carrying out those tasks (and only those tasks) which ensure that the products or services that customers want to buy are available at a price the customer is willing to pay, at the time and place that the customer wants to purchase or take delivery. This is summarised in Figure 1.

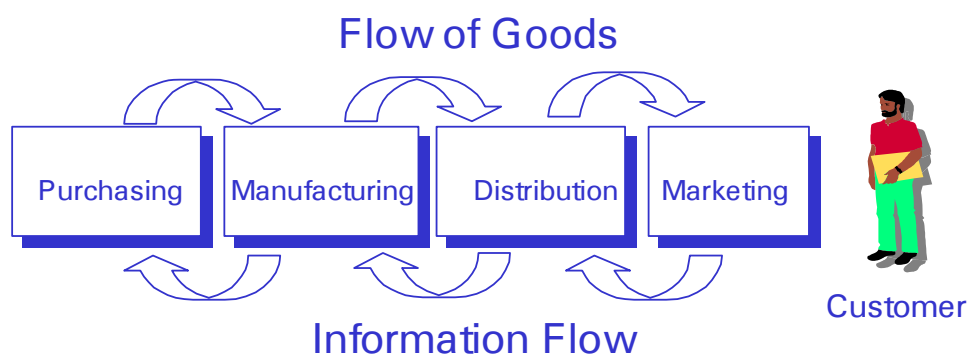


Figure 1 - Key elements of Supply Chain Management

The role of each element of the Supply Chain in adding value is as follows:-

Marketing - increasing the desire of the customer to buy the product or service.

The logistics process enables marketing to fulfil its promises.

Distribution - delivering the product to the right place at the right time.

Distribution is clearly central to the logistics process. Effective warehousing, transport and other freight activities are crucial for meeting the objectives of time and place. The product has no value if it is not available to the customer.

Manufacturing - providing the product in its required form.

Good manufacturing logistics minimises the inventory levels and reduces lead times so that a response to changes in demand can be made quickly. Poor response often means that the product is not available to the customer, thus value is reduced.

Purchasing - providing the materials and services necessary to manufacture the product.

Sometimes referred to as inbound logistics this is much more than obtaining lowest prices. Best practice organisations work in partnership with suppliers to ensure that inventory levels are minimised and deliveries are made on time and in full.

The business process of adding value is sometimes referred to as the Value Chain. The Value Chain is all those activities in an organisation which contribute to adding value for the customer. Clearly Marketing, Distribution, Manufacturing and Purchasing all contribute to the process of adding value, provided they are acting together as an integrated system. The objective is to identify any aspects of these activities which do not add value and ensure that these are eliminated.

Another view of the logistics process is the Demand Chain. Figure 1 shows that it is the information flow that drives the process as demands come through the system in the opposite direction to the flow of goods or services. This view is very customer focused and is complementary to the view of adding value for the customer.

This demand driven or value added view of the Supply Chain is quite contrary to the way in which many organisations function. In particular many traditional manufacturing organisations are so manufacturing focused that the emphasis is on manufacturing efficiency, rather than Supply Chain effectiveness.

HOW SUPPLY CHAIN MANAGEMENT AFFECTS THE ORGANISATION

Managing the supply chain requires cross functional management. This is illustrated in Figure 2 .

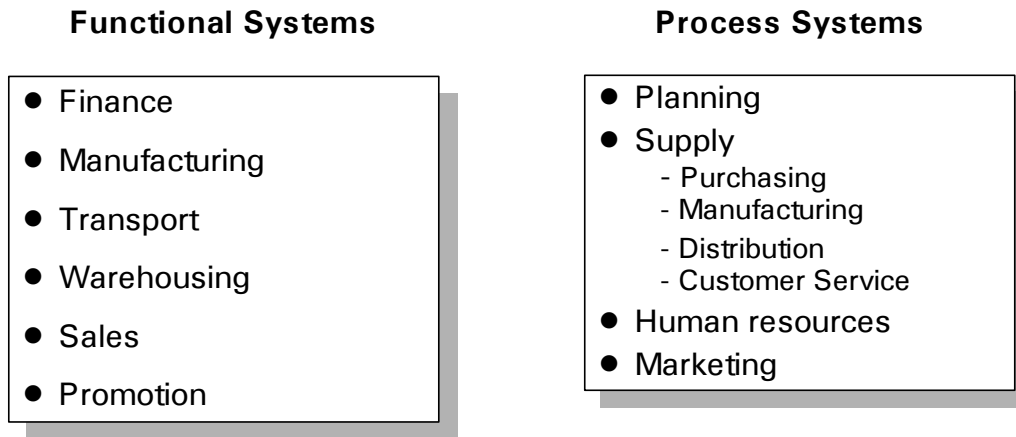


Figure 2 - Two views of an organisation

Most companies are organised on functional lines which more often than not introduces departmental “walls” and takes the focus off the end customer’s requirements. Effective Supply Chain management requires a process orientated organisation which is driven by customer demands and in which functional activities are integrated to ensure that objectives are met.

This is more easily said than done and few organisations have achieved this “holy grail” of Supply Chain management. In practice, a half hearted attempt at integrated process management with poorly performing functional activities will never outperform an organisation that has little process management but achieves all round functional excellence. The ideal is to achieve both. Nevertheless, the important point to note is that a Supply Chain view of a modern enterprise does have a big impact on thinking about the organisational structure.

USING TIME TO COMPETE

One of the most striking features of modern business is the way in which lead times have reduced. This is true not only in terms of customer delivery requirements but also in terms of new product development, forecasting horizons and almost every aspect where the organisation is required to react to change. Time has become a key feature of competition and shortening reaction times has become a way of gaining competitive

advantage. Consider Figure 3 which shows some of the factors which affect lead time, or put another way, the “length” of the Supply Chain.

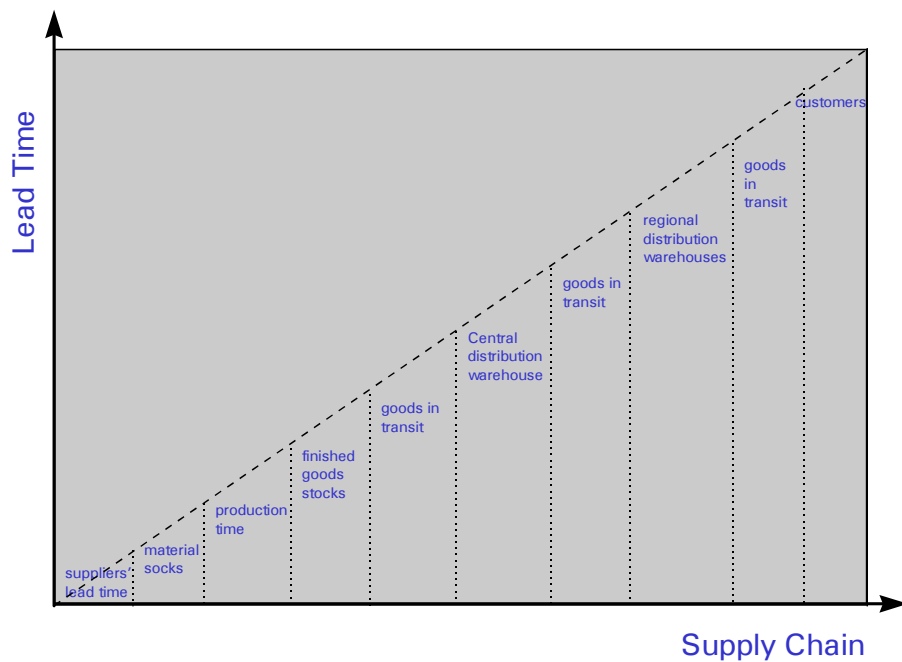


Figure 3 - Long Supply Chains create long lead times

Each element of the Supply Chain adds to the time it takes to respond to changes in the market and the longer the overall response the higher the stocks of finished goods required to respond to customer demand.

A better analogy than a “chain” for considering this problem is to think of the process as a pipeline. The pipeline is filled with goods (or possibly services) and the overall lead time is determined by the time it takes to move goods through that pipeline.

Lead times are not only important from the point of view of customer service, they also affect the cash flow of the organisation. If the time taken to convert materials to customer sales is greater than the credit taken from suppliers, then capital will be tied up. Every day that can be taken out of the Supply Chain lead times releases cash for other purposes; surely an important consideration for any business.

Development of the Supply Chain is the way in which lead times can be reduced and "time compression", as it is sometimes called, can be achieved.

SUPPLIER-CUSTOMER RELATIONSHIPS

In thinking about the Supply Chain and the process managed organisation, there are many customer-supplier relationships. The obvious ones are those between the organisation and its external suppliers and those between the organisation and its end customers. But what about the internal relationships?

For effective Supply Chain management, employees at each activity in the process must recognise that they have at least one supplier and one customer, and possibly more. For example, the distribution warehouse may have manufacturing as a supplier, it is thus a customer of manufacturing. It will perhaps have a transport operation as a customer and will be a supplier to that operation. An interesting paradox can arise here in the situation where, for example, the transport is contracted out to a third party operator. Clearly, as far as purchasing is concerned, the contractor is a supplier, but as far as the logistics organisation is concerned the contractor should be treated as a customer of the warehouse. This is where the benefits of genuine partnerships with external suppliers can really bear fruit, if they are Supply Chain driven.

INFORMATION SYSTEMS ARE DRIVING CHANGE

Much of the development of Supply Chain management has been made possible by developments in information technology. It was shown above in Figure 1 that information flow is complementary to material flow and rapid access to accurate information is essential for competitive performance. Many developments in IT have driven , and are continuing to drive change in logistics.

Figure 4 shows how IT is applied to various levels of control within a business.

Level 1 is concerned with overall management of the business, controlling finance and providing the key performance indicators. Ultimately this is where the performance of the business is measured and the benefits of low inventory levels and good customer service are seen. It does not control the supply chain but it shows how it is performing.

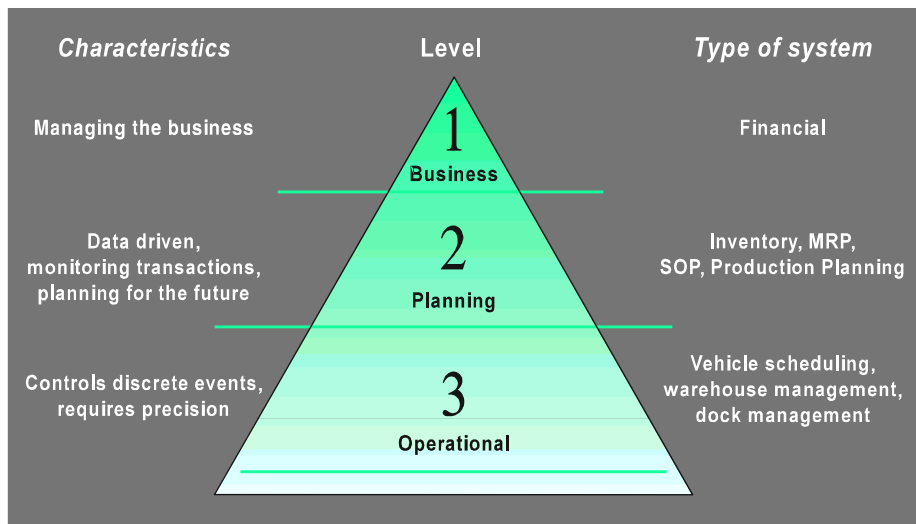


Figure 4 - Levels of control in IT systems

Level 2 is about planning. Again, it does not control the Supply Chain but the effectiveness of the planning process is significantly influenced by supply chain performance. If the logistics process can respond quickly then planning can be much shorter term and is much more likely to be accurate. It is at this level that Sales and Purchase Order Processing takes place and where the developments in Electronic Data Interchange (EDI) are having such a significant impact. The ability to place orders easily and quickly, with minimum paperwork leads to the expectation that deliveries should be made easily and quickly with minimum paperwork. It therefore encourages more frequent and smaller deliveries and a trend towards the requirement for Vendor Managed Inventory, referred to earlier, where suppliers can have computer links to interrogate their customers' systems for stock levels and demand patterns.

Level 3 is about process control and is where the day to day management of the logistics processes take place. It is only in recent years that computers have been applied to logistics process control in the way that they have been applied to industrial process control for many years. There have been rapid developments in this area and this will continue as the cost for a given computing power continues to fall and networking becomes ever easier. This trend is illustrated in Figure 5.

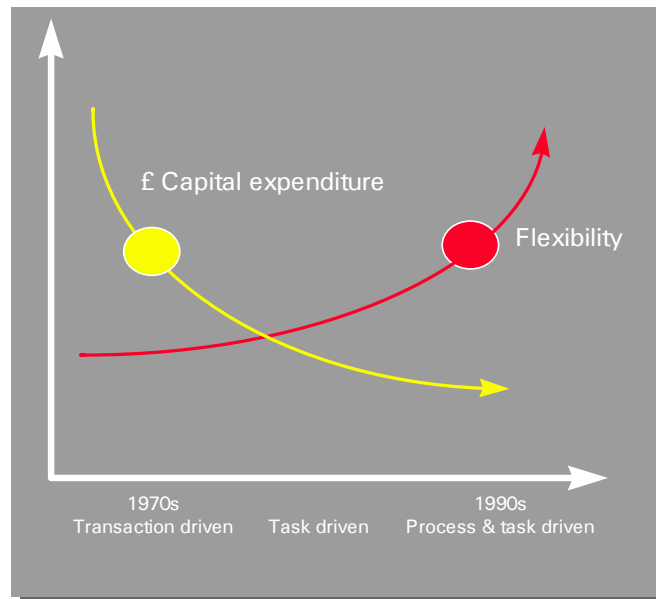


Figure 5 - Trends in logistics process control

Examples of process driven activities include radio frequency communications in warehouses which provide instant stock update and very high levels of picking accuracy, both essential for delivering high levels of customer service. Also, vehicle tracking using satellite navigation systems allows vehicles to be rescheduled whilst they are on the road, enabling traffic problems to be overcome and unexpected demands to be met. Wider use of satellite tracking will enable goods to be tracked, and perhaps re-routed, wherever they are in the World, again offering the possibilities for ever increasing service performance with the lowest possible inventory levels.

And we must not forget the Internet. This is opening up whole new fields of both opportunity and difficulty. The predicted growth in home shopping via the Internet, although relevant mainly to the retail sector, will create enormous challenges for Supply Chain management. Small orders delivered to millions of locations is the extreme of small more frequent deliveries and apart from other considerations it raises enormous questions about the numbers of delivery vehicles that could appear on the roads in residential areas. Use of the Internet will certainly spread to all other sectors in one form or another and although it is difficult to predict its use in any detail, it is certain that it will have great significance for the way in which goods are marketed, manufactured and distributed. Supply Chain processes will have to respond to this.

THE FUTURE

There is no sign that the pace of change will slow. Indeed, there is every reason to believe that competitive pressures will grow as World markets increase and distribution channels spread farther and wider. Customers will expect even greater choice and will expect ever increasing value for money. Supply Chain management, or Logistics, will therefore continue to grow in significance as the basis for re-engineering business processes in order for businesses to remain both competitive and profitable.

Transport growth will undoubtedly have a major impact on thinking. It is clear that growth in European road transport cannot continue at the current rate and environmental pressures will certainly force change. Perhaps this will lead to smaller more localised sourcing, manufacturing and distribution operations; a trend quite at variance with the trends of the latter part of the 20th century.

Many companies, in all parts of the World, have barely begun to meet the challenge of Supply Chain development, and still work with high stocks, long lead times and high levels of service failure. Unless these companies adapt they will not be able to compete against the World class companies who can respond quickly to changing demand, bring new products to market in minimum time and deliver to their customers with service levels at or near 100%. This is true to a greater or lesser extent in all market places from consumer goods retail through engineering products to raw material distribution. The detailed issues may differ but the fundamental business principles are the same. Supply Chain Management is vital for modern business.