

To what extent does the concept of power contribute to our understanding of supply chain dynamics?

Every product and service is a product of a series of complex buyer-seller relationships that go from the bottom of the supply chain, at the raw material stage, right through to the end consumer at the top of the chain. These supply chains extend to an entire network of dynamic exchange relationships. In order to explain how and why these relationships interact I shall be looking at the two schools of thought that relate to supply chain dynamics. These are the power regimes perspective and the efficiency perspective. Supply chains in different industries will be drawn upon, as examples, and the extent to which power and efficiency explain the dynamics within them will be discussed.

Let us consider first, the efficiency perspective. Here, the emphasis is based on increased efficiency within the supply chain and the underlying presumption of this is that power is not present and does not effect supply chain dynamics. The other presumption is that supply chains are integrated and co-operative, working in an environment of perfect competition in which the aim is to develop a lean supply chain that passes on the maximum value to the customer.

This lean approach to supply chain management was taken by the Japanese automotive industry. Toyota, for example worked hard in developing long-term, collaborative relationships within its supply chains, in which the eradication of waste and inefficiencies and innovation were the highest priority, so that better value products could be passed onto the customer. It adopted the keiretsu structure, in which Toyota's main suppliers were located in close proximity to the factories. This lean enterprise approach meant that Toyota was more concerned with the extended supply chain, rather than just its first tier suppliers. This resulted in a highly efficient, streamlined supply chain, which was extremely successful. However, I would argue that the lean school underestimates the role of inter-organisational power in facilitating lean supply in the Japanese automotive industry. The supply chain may well have been well integrated, but the truth is that it was a hierarchy of structural dominance over its extended network of suppliers. If this power had not existed within the chain, the level of efficiency would almost certainly have been less.

The same level of control over the supply chain network can be seen in the UK food retail industry. In terms of keeping costs down at the bottom of the supply chain, retailers are very efficient. However, power is central to this supply chain as supermarkets are in a position of dominance over their suppliers, farmers, so that they are forced to price almost at the cost of production.

It is generally accepted in this school that the way to gain a competitive advantage is through collaboration with suppliers rather than political manoeuvring. Often buyers enter into extended contracts with suppliers in order to increase efficiency through collaboration. In a similar vein, horizontal mergers and take-overs that take place between firms are carried out to improve efficiency.

A recent example is Morrisons' £3.6 billion take-over of Sainsbury's. Morrisons is a supermarket chain, based mainly in the north and Sainsbury's is based mainly in the south. Morrisons have decided to take Sainsbury's over in order to improve efficiency and therefore profits. One of the first changes will be to close one of their head offices, resulting in the loss of 1000 jobs. It is clear that efficiency plays a large part in understanding the changes within Morrisons' supply chain, however this move will increase Morrisons' share of the market, resulting in increased power and leverage over its supply chain.

Similarly, horizontal mergers that take place between companies can be explained both in terms of efficiency and power. When two manufacturers of helicopters, Augusta and Westlands merged, it meant that they could harness the different strengths and technical expertise of the two companies as well as increase their power within the market. "A merger driven by the strategic aim to create a global leader in the helicopter industry and to increase value for shareholders", (Richard I. Case, Managing Director).

Sometimes companies look to increase efficiency within their own supply chains by 'rationalising' their supply network. For example, a company may try to reduce the number of suppliers it has in order to reduce overheads, for example by reducing administration costs.

The concepts of power and efficiency can also explain why buyers enter into long-term deals with their suppliers. It is not unusual for a buyer to enter into a ten-year contract with a particular supplier. Taking the efficiency perspective, the reason for doing this would be to create a collaborative, interdependent relationship, which over the years would benefit both the buyer and supplier. By working together, the buyer and supplier can work together to streamline the supply chain in order to appropriate the maximum value to the end customer.

Where long-term deals like this are made, the supplier is encouraged to innovate in its particular field rather than simply provide the necessary goods and services for the buyer. I would argue, however, that innovation that takes place within supply chains is due mainly to the relative power regimes within it, rather than the need for efficiency. If the ideal supply chain were true, in which a situation of buyer-supplier collaboration existed, I do not think that the supplier would have a huge incentive to innovate. Many firms have found that long-term partnerships with suppliers have failed to deliver the expected benefits in terms of cost reduction, quality improvement and innovation. I would suggest that in order for a buyer to ensure constant innovation by its supplier, then it must exert some sort of control over its supplier so that the supplier has an incentive to innovate. I believe the need for power over your immediate suppliers is more important to understanding supply chain dynamics than the concept of efficiency.

The concept of creating an efficient supply chain certainly helps in understanding the dynamics within the chain, however, I would argue that in essence the supply chain is a network of power relationships and understanding power explains how and why the supply chain interacts.

All buyer and supplier relationships are based on the relative power between the two parties. Therefore, firms are constantly trying to reposition themselves in the supply chain in order to augment their relative power resources over their suppliers and customers.

The relative power of buyers and suppliers is shown in Porter's Power Matrix. It shows how the relative buyer and supplier power attributes can lead to a situation of *buyer dominance, supplier dominance, independence or interdependence*. If for example, the buyer has high power attributes relative to the supplier and the supplier has low power attributes relative to the buyer then a situation of buyer dominance will result.

This power matrix is essential in understanding the exchange relationship between buyers and suppliers. Clearly, the ideal situation for buyers is to force all of their suppliers into the buyer dominance box. However, if a buyer was in a position of supplier dependence, then they would seek to eradicate any "isolating mechanisms", that augment the power of the supplier over the buyer. Similarly, suppliers are also working to reposition themselves as close to the supplier dominance quadrant as they can. Therefore, the way in which buyers and suppliers interact is governed by the aim of increasing their relative power and is not necessarily about creating the most efficient supply chain as possible.

The relative power within a supply network also determines the structure it takes. If there is significant power at the top of the supply chain then there is more chance of creating an integrated supply chain, as in the case of Toyota. Similarly if there is interdependence with the extended network of suppliers then integration is possible. However if the power had been with the suppliers, then this approach would not have worked as the focal organisation could be levered. If there was a situation of independence then it is likely that the supply chain would become fragmented.

The relative power of the parties involved will also determine whether an adversarial or non-adversarial exchange takes place. In a situation of supplier dependence, for example, a buyer is more likely to be levered into entering into a long-term contract, where the supplier is able to dictate to the buyer.

The flow of value and the way in which value is appropriated in an exchange is also an area of supply chain dynamics that is important. Taking the efficiency approach, the supply chain is a value-adding process in which value is added to the product or service at each stage of the chain and the maximum amount of value is appropriated to the end consumer. Organisations are constantly looking for new ways of developing their supply chain that enable them to increase efficiency and maximise value for money. However, this approach assumes that there is no opportunistic behaviour and people do not pursue self-interests.

I would argue that much more political manoeuvring takes place than this approach suggests and in fact the power regimes perspective provides a better explanation of who gets what and why in the supply chain. It is worth remembering that people do not go into business primarily to provide value to customers but to make money for themselves and maximise profit.

Contrary to the ideal efficiency perspective I would suggest that the supply chain is characterised by power regimes that are hostile to an uninterrupted flow of value from raw material providers to end customers and instead buyers and suppliers contest the share of the value that each side gets from the deal. In each dyadic exchange relationship one actor accumulates more value than the other, determined by the relative power of the two parties. If the buyer has more power, then he will try to move the price nearer to the cost of production, thus reducing the producer's surplus. If this buyer then sells on this product to a dependent buyer then he will try to push up the price in order to create a producer surplus. Research carried out by Cox et al 2002, found that there is a direct relationship between the buyer-seller power relation and the value for money achieved by the buyer (). It may be the case that the supplier has the greater power, in which case the price will be set above the cost of production. Depending on whether it is a situation of soft or hard supplier power will determine at what level the price is set. Power, therefore, has a large effect in the supply chain in terms of the prices suppliers charge and where surplus value goes.

The reason power regimes are created in supply chains is dependent on the relative power resources of the two parties involved. These power resources are utility, scarcity and information. It is through the relative possession of these resources that creates either a situation of buyer dominance, interdependence, independence or supplier dominance.

All buyer and supplier relationships are based on the relative utility and scarcity of the resources that are exchanged (Cox, Sanderson, Watson, 2000). A supplier that manufactures a product that has a high perceived utility has a certain amount of power over its buyer. However, if this product is easily available and found in a highly contested market, then the buyer still has the power over the supplier. When these two power resources are combined though the supplier has a great amount of leverage over its buyers. The oil supply chain is a good example of this. As oil is a scarce resource and one that offers high utility, oil supplying countries have significant leverage over their buyers and can change the price of oil as they wish.

Buyers must also be aware of the dangers of over-specification. If buyers are too specific of what they want then a supplier can gain leverage over its buyer if there are few suppliers that can meet the specific criteria.

Information is the other power resource that can be used to gain leverage over a buyer or supplier. If one party in an exchange has access to more information than the other then a situation of information asymmetry results. This occurs in opaque supply markets, which are highly contested markets in which the buyer lacks the information or resources to successfully leverage any supplier that may be selected. A supplier, for example, that deals in a highly technical product may use the relative ignorance of the buyer to create a situation of lock-in. This can lead to moral hazard, in which the buyer has difficulty to get the supplier to deliver on their promises.

Asset specificity is also a risk involved in supply chain management. This occurs when investments are made in a relationship that are specific to the buyer and the buyer becomes dependent on a particular supplier. A good example of this occurred in the PC industry between IBM and Intel, manufacturers of microprocessors. Over the years one of the most critical features of the products is the logo on the machine

denoting *Intel Inside*. As a result the relative power and leverage in the supply chain shifted along the supply chain, away from IBM onto its suppliers, meaning the suppliers could appropriate a greater share of value.

A shift in power from the manufacturers to the suppliers can also be seen in the automotive industry. The technological aspect of design is now seen as integral to the organisation, resulting in dependence on electronic component suppliers. (Power diffusion in automotive supply chains, 1997)

When any of these aspects of power are found, the party 'holding the cards' is likely to behave opportunistically. That is, to take advantage of their relative power position and lever the other party involved, gaining a more advantageous position in the supply chain. The relative power within the chain is very important in terms of conflict resolution. Often disagreements occur in relationships and the player with the greater relative power will be able to lever the decision in their favour. I would therefore argue that an understanding of which resources give power is central to our understanding of supply chain dynamics.