

Lean agile and leagile supply chain



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Companies have been trying to gain competitive edge by reducing every form of inefficiency from supply chains. Two most popular paradigms that the companies are considering in achieving this are: lean thinking and agile supply chain. Lean focuses on doing more with less. Lean approach works best where demand is stable, variety is low and hence can be accurately forecasted. By eliminating waste in every form, the lean systems compete on the basis of cost as well as quality. Agility is a much wider concept that requires involvement of entire organization, information systems and logistics processes (Agarwal et al. 2006, p. 212). In case where customers demand variety and have fluctuating demand, the ability to respond to such volatile market conditions of agile supply chain makes the organization robust. Not only individually, companies are leveraging the benefits of both by combining them in their supply chain known as leagile supply chain. Leagile supply chains are capable of delivering to a dynamic marketplace and include a decoupling point along the chain where product becomes unique (Mason-Jones 2000, p. 54). Before the decoupling point, lean approach is applied and products are built according to the forecast. After the point, supply chains are agile serving according to the customer orders. Flexibility in supply chains is the ability to reconfigure the system quickly and inexpensively thus satisfying the demands of a volatile market. Koste and Malhotra (1999b) emphasized that presence or absence of flexibility in supply chain depends on the competitive priorities (Wadhwa et al. 2003, p. 2). The efficient or lean supply chain emphasize flexibility in terms of volume, as in this supply chain flexibility of product changeover is low, so they have to be high on volume flexibility to push the product in the market

and achieve cost efficiencies. This is triggered by the internal flexibility type, namely capacity flexibility. The lean supply chain has the capacity flexibility because their system of manufacturing products is based on the forecasted data, so the capacity is varied according to the forecasted demands. Though volume and delivery flexibility is present in both the supply chain types, but lean supply chains are created to support high degree of fluctuations in volume by reducing waste and lead time. In agile supply chains, a level of extra stock is maintained in order to deal with volume fluctuations but this stock is limited due to cost considerations.

On the other hand, responsive or agile supply chains are flexible in providing varieties i. e., mix flexibility as these base the supply on customer demand. Thus, they also support new product flexibility by providing opportunity to accommodate the production of large variety of new products. The flexibility of agile supply chains in accommodating new product changeover and mix flexibility (external flexibility) are based on the machine and operation internal flexibility(Naim et al. 2006, p. 299). The machine flexibility utilizes the ability of the machines to produce different variety of product based on customer orders. The operation flexibility provide the ability to sequence production in certain ways, thus making the agile supply chain capable of providing customized products to the customers.

Transport flexibility (including Node, Link and Temporal flexibility) is an integral part of agile supply chains that aim at maintaining a closer relationship with the customer by satisfying their changing needs quickly (Naim et al. 2006, p. 301). This also involves working in strong collaboration with the logistics carriers as well as the competitors and complementors.

This relationship helps in reducing infrastructure and operation cost.

Flexibility in transport thus supports mix flexibility and access flexibility. The company achieves the ability to choose from various transportation modes while covering maximum distribution area.

High degree of communication flexibility is the key to the success of the agile supply chains. This involves getting the market information as faster as possible as well as communicating the need to the entire organization through to the suppliers (Naim. et al. 2006, pp. 307). The lean supply chains have low degree of communication flexibility as they plan the production based on the forecast and do not make changes in the schedule.

Leagile Supply Chain

In a vast portfolio of products and markets, there are some products whose demand is stable and predictable and some products whose demand is volatile. For such companies, leagile supply chain provides the opportunity to leverage the benefits of both lean and agile systems. Prior the decoupling point the system has flexibility of lean supply chain whereas after the point flexibility of agile systems is present. Though the hybrid systems are not completely cost effective and responsive like lean and agile systems respectively but provide the customers with maximum value(Christopher 2000, pp. 40).

Zara, the Spanish apparel retailer, is an excellent example of leagile supply chain strategy (Christopher 2000, pp. 40). It has established an agile supply chain which still incorporates 'lean' characteristics. It operates with the objective of reacting swiftly to the changing needs of the customers. The

decoupling point lies with the assembler. The so-called ‘ commercial managers’ conceptualize the type of garments and fabric which are ordered based on the forecast. The designs are prepared based on the real-time information captured on the shop floor from the customers, from visits to international fashion shows, competitor’s stores, university campuses, clubs, etc. Thus, the final design is ‘ assembled’ on the basis of current customer demand. It tries to eliminate waste by not producing in large volume. Zara has outsourced all non-strategic activities while all product development and final production facilities are kept in-house. The system is flexible enough in order to cope with sudden changes in demand, though the stock is maintained a little less than the demand keeping in line with the lean approach.

Conclusion

Whether to implement lean, agile or leagile supply chain depends on the demand and market conditions (the need that company aims to satisfy). In doing so, companies achieve certain flexibility types, among which some are common to both and others are achieved in higher degree in one system than other as explained above.