

Example of supply chain management research paper

[Business](#), [Company](#)



Introduction

Supply chain management has become a key determinant of success or failure of a business entity in the current competitive environment. Supply chain management can be used to improve customer satisfaction, reduce costs associated with inventory, and improve the efficiency of purchasing material. In overall, therefore, supply chain management can be used to improve the competitiveness of a firm. Supply chain management has moved from a purely operational approach to an integrated approach that is more responsive to consumer needs. This shift can be attributed to rapid changes in tastes and preferences among consumers and cut-throat competition that has characterized the present day business landscape. This paradigm shift has been made possible by advancement in information and communication technologies. There are several companies whose success can be attributed to their supply chain management. Dell is an example of a company that has used Supply Chain Management to create a competitive edge and a successful business. Faced with ever shifting demand patterns, distinctive global requirements, product commoditization, and an increasingly competitive landscape, Dell designed a simple business model based on direct sales, build-to-order and supply management integration. This paper seeks to discuss the supply chain management model of Dell in comparison to HP, the challenges Dell has faced and how it overcame those challenges.

Dell's Background Information

Dell was founded in 1984 by Michael Dell when he was still a student at the University of Texas with only \$ 1, 000. Dell was registered as PCs Ltd by its founder. However, its name was changed to Dell Computers in the year 1988. The Company was developed on the business model of selling directly to consumers. This way, the company was able to understand consumer needs and develop solutions that satisfy those needs. To this end, Dell applied an elaborate supply chain management model that saw the company grow from a modest firm to a largely successful company. Dell supply chain model has been replicated by several companies all over the world due to its tremendous success. In 1985, Dell had gross sales of \$ 75 million and by 1992 it was among the Fortune 500 companies. In the same year, Dell was ranked second in computer sales globally. Currently, Dell has a net worth of approximately \$ 17. 3 billion. Dell operates in almost all countries within the world. Moreover, Dell is listed in the NASDAQ. Dell products range from laptops, desktops, servers, switches, storage and IT peripherals

Dell's Supply Chain Model

One of the key components of Dell's supply chain management is its build-to-order strategy. This strategy aims at responding to consumer needs. Michael Dell sought to manufacture quality personal computers basing on customer requirements at a competitive price and within the shortest duration possible by using its core competencies of information technologies and partnering firms. Therefore, Dell adopted a lean manufacturing model where a computer is only built after receiving an order from a customer.

Lean system, which is also referred to as Just in Time (JIT) system is a system that seeks to produce or purchase products or components when they are required by a manufacturer or by a customer and not for inventory purposes. Lean system is a pull system that responds to internal or consumer demand. Once an order is received, configuration specifications are sent to the manufacturing plant where assembly begins. After a PC has been build and the requested software installed, it is shipped directly to the customer. To make this possible, Dell uses a direct sales strategy in order to obtain the exact consumer specification and assemble a PC based on their specifications. The fact that Dell adopted JIT philosophy implies that its suppliers must understand and adopt a similar strategy so that its operations with that of its suppliers are in sync.

There are several advantages that accrue from a build-to-order system that was adopted by Dell. Firstly, Dell maintains zero or low inventory hence minimizing inventory related costs and the response rate to the ever shifting demand patterns. For example, when a demand patterns favour a newly designed PC processor, Dell can place an order immediately since it will not have any outstanding stock of the out-dated processors to sell first before making a new order. Secondly, the system makes it easier for Dell to manage its working capital hence improving its liquidity. This in turn enhances the reduction of liquidity risks and minimization of financial costs. The standard procedure at Dell is that a customer must pay for an order before Dell pays its suppliers. This enables Dell to operate on a negative cash cycle. Therefore, Dell requires limited external funds to finance its working capital needs. External financing is more costly since it attracts

interest charges hence increasing operational expenses. Lastly, Dell is able to customize each personal computer to a customer's specifications.

Therefore, Dell is not only able to meet the demand made by different market niches, but also identify consumer tastes and preferences more easily.

Traditionally, PC companies were vertically integrated. PC companies internally developed most of the components used in their computers.

However, when Dell was formed in 1984, it did not have the financial muscle to internally produce components for use in the production of personal computers. Therefore, Dell decided to leverage on investments made by other firms and focus on delivery of systems and solutions to customers. Dell has adopted an integrated supply chain system that views suppliers as central to the success of its business model. In 1998, Dell had over 10,000 technicians who service their products. However, only a small fraction is directly employed by Dell. The others are employed by firms that Dell contracted for supply of services or components. Dell views suppliers as partners. They are regarded as though they are part of the company. Dell selects suppliers with the experience, ability and expertise to deliver value.

In addition, Dell evaluates the performance of its suppliers through Quarterly Business Reviews. The performance yardstick is based on cost, reliability, continuity of supply, and quality. Dell awards the percentage to be supplied by each supplier based on the performance score. Dell has about 140 suppliers. However, 30 suppliers supply 75 per cent of inventory while the rest is shared among the other suppliers. In addition, Dell rewards suppliers with a high performance score by providing support and training to their

staff. Dell suppliers are expected to achieve certain standards of quality . Unlike Dell, HP is a PC manufacturer. Therefore, it manufactures most of its components internally. Most of HP partners are either distributors or retailers. In addition, HP tends to acquire firms that may offer services or components it needs. For example, HP acquired Compaq Computers in 2002, Mercury Interactive in 2006, Electronic data system in 2008, and 3Com in 2009.

Dell encourages its suppliers to be socially and environmentally responsible. However, it requires that all its suppliers must adhere to laws and regulations that are applicable where the business operates. Dell also expects them to adhere to high ethical standards. Dell has grouped its suppliers in different tiers to encourage them to obtain certification and achieve certain standards. Some of the acknowledged standards and global best practises that Dell encourages its suppliers to achieve include; U. N Declaration for Human Rights, U. N Convention of the Rights of the Child among others. Diversity is also an integral part of Dell's supply chain management. Dell looks for suppliers from diverse backgrounds in order to best serve its global customer base. The process of selecting suppliers is transparent and information is openly shared with its suppliers with an aim of improving consumer satisfaction.

Build-to-order system requires a close relationship with suppliers in order to facilitate speedy response to orders that have been placed. In fact, Dell deliberately reduced the number of suppliers in order to create a closer working relationship with its suppliers. Suppliers are made aware of the daily requirements of Dell. Dell requires its suppliers to provide goods as soon as

an order is placed. Speed is an essential virtue since Dell aims at maintaining zero inventory and only requests for supplies when an order has been received from a customer. On average, Dell has 3-4 days of inventory. Therefore, in order to meet the customer's order in the shortest time, suppliers must deliver inventory in a record time. As such, in order to meet supplies in time, the main suppliers of Dell are required to maintain inventory close to the Dell's Assembly plant or at least have a supplier's logistic centre that is close to Dell's assembly plant. In addition, speedy transmission of information between Dell and its suppliers is critical to the success of build-to-order system. The information system of Dell is integrated with those of its suppliers such that as soon a customer places an order, suppliers are updated. This has been made possible by advancement in information and internet technologies. Dell maintains a website called "ValueChainDell.com" which is used as an extranet platform to link the information system of Dell to those of its suppliers. Through the platform, suppliers of Dell are regularly updated on the inventory level, supply chain, demand and supply data, new part transitions, and quality metrics. Dell has managed to effectively use information technologies to eliminate communication barriers and lags in the value chain between itself and its suppliers. Michael Dell describes this process as a virtual integration. The supply chain management information system adopted by Dell creates a seamless integration of customers, manufacturing/assembly plants and suppliers.

Comparing HP and Dell Supply Chain Strategies

HP is one of the most successful competitors of Dell. HP was started in 1939 is currently ranked as a fortune 11 company. HP operates in more than 178 countries globally. HP had a sales revenue of 120. 34 billion US dollar in 2012. This section will compare and contrast the supply chain of Dell and HP.

Firstly, Dell uses a build-to-order strategy. Therefore, it only orders for components used in assembly from its competitors after an order is confirmed by a client and full or partial payment for the same is received. On the contrary, HP makes orders for large quantities for inventory in order to benefit from quantity discounts prices, hedge against inflation and prevent its competitors from acquiring them. The operational model of HP also allows it to maintain inventory. Unlike Dell which uses a JIT manufacturing system, HP uses an evolving product strategy which relies on product life cycle. HP uses statistical techniques to determine the optimal inventory system. The statistical techniques are based on matching supply-demand predictions. HP uses an automatic system that places a replenishment order when the stock falls below the reorder level. However, HP also employs a Buy/Sell strategy. Under this model, HP purchases an item and immediately sells it to the final consumer in matter of seconds. This way, HP has zero inventories of components purchases and sold under the Buy/Sell strategy. This is because those components are sold as soon as they are purchased. However, Buy/Sell model is only applicable for items that do not need value addition before resale.

Secondly, Dell maintains a very close relationship with its suppliers since it

knows its success is highly contingent on the performance and corporation of its suppliers. Therefore, Dell is highly collaborative with its suppliers.

However, the entities remain independent from Dell. That way, Dell is able to replace a supplier in case of lapse in performance as determined by the Quarterly Business Reviews. On the contrary, HP is only keen to integrate with partners that it has merged with. HP is well known for acquiring firms that are its partner in business. Some of the companies that HP has acquired include; Compaq Computers in 2002, Mercury Interactive in 2006, Electronic data system in 2008, and 3Com in 2009. It is also important to note that while Dell outsources the manufacture of almost all of its key elements, HP manufactures its own components from its more than 30 manufacturing factories that are distributed across the world. Some of the suppliers of HP include suppliers of vending services and distribution services. This is because HP uses both a direct and indirect sales platform to market and sell its products. Dell maintains few suppliers with only 30 suppliers supply 75 per cent of inventory. On the contrary, HP has a huge number of suppliers. It has more than one thousand production suppliers and several thousands of non-production suppliers.

Thirdly, HP has an elaborate supply chain responsibility framework that incorporates suppliers. HP seeks to empower its partners through a sustainable supply chain so that they can prioritize the people's well-being, the environment and communities around them. HP has outlined a supplier social and environmental responsibility (SER) requirements for its partners. Suppliers that intend to do business with HP must sign a contract to the effect that they will adhere to HP SER requirements for suppliers. On the

contrary, Dell only expects its suppliers to abide by all legal and regulations that are applicable to where they conduct business and that they maintain high ethical standards. However, Dell does not have an elaborate SER framework for its suppliers. It only encourages them to observe social and environmental responsibility. Dell encourages its suppliers to adhere to globally accepted SER framework by grouping suppliers to different tiers. Lastly, both Dell and HP use a web-enabled supply chain management system. The information system of Dell is integrated with those of its suppliers such that as soon a customer places an order, suppliers are immediately updated thus facilitating B2B sourcing process. However, the supply chain management information system of HP is more advanced. Besides, allowing interaction between suppliers and HP; it provides negotiation management platform that includes eRFP, eRFL, bid optimization and auctions. The HP supply chain management information system reduces negotiation costs and inventory costs.

Challenges

The greatest challenge that Dell faces is the shifted attention from the quantity of inventory to velocity of inventory that was necessitated by adaptation of a lean system. Dell had to educate its employees and suppliers on the new system and inventory velocity as a performance metric. Dell organizes Quarterly Business Reviews with suppliers to discuss past performance. Through such forum, Dell also informs its suppliers on recent developments. The second challenge is the risk that a supplier may not deliver supplies on time. In addition, there is a risk that a supplier may

deliver substandard goods. Delivery of substandard goods will delay the delivery of the finished product to the customer hence negatively affecting the Dell's reputation. Dell screens all potential suppliers and only selects those with the experience, ability, and expertise to deliver value. For example, Dell has contracted Sony to supply them with monitors because Sony is known for producing good and reliable monitors.

An integrated information system requires sophisticated data exchanges at multiple levels. This can only be supported by complex software and hardware. Dell has invested heavily in acquiring advanced information systems to support its extranet platform. In 2005, the proprietary servers that were used run the supply chain management system of Dell reached their limit. Dell developed new server known as the standards-based Dell Power Edge. The new server was cost effective and was able to handle a larger load of data at the same time. Lastly, an integrated information system with suppliers, who are outsiders, creates a risk of leaking confidential information. Moreover, there is a real risk that suppliers may leak confidential information to Dell's competitors. Such information can be used against Dell hence creating issues of mistrust. To this end, Dell regularly meets with its suppliers to discuss any issues that may create mistrust between them. Besides, Dell makes deliberate efforts to select suppliers that are reputable and have integrity based on their past business undertakings.

Conclusion

The success of Dell is largely attributable to its business model and its supply chain management. There are several advantages that accrue from the build-to-order system. Dell outsources the materials required to manufacture its core components. Further, Dell maintains a close and cordial relationship with suppliers and constantly reviews their performance. Given that Dell outsources the materials required to manufacture its key components, it needs fast and reliable communication with its suppliers to successfully implement the build-to-order system. Dell uses an extranet platform to integrate its information system with that of suppliers so that they have up-to-date information to facilitate speedy execution of orders. Dell has extended its supply chain management practices to its other product market segments. Other than personal computers, Dell has made inroads in the storage systems, workstations, and servers markets.

Recommendations

Moving to the 21st Century forward, businesses need to create a supply chain management that is responsive to consumer needs. Today, the world is dynamic and the business environment is increasingly becoming competitive due to globalization and entry of more firms into the market. In addition, we are living in the information era meaning that consumers have become more sophisticated due to information overload. Therefore, businesses that are able to identify and quickly respond to the ever shifting consumer needs in different segments will remain relevant. A direct-sales model, build-on-order system and an integrated information system with

suppliers will ensure that a business is able to quickly respond to consumer needs. However, it is significant to develop policies to mitigate the potential negative consequences of the proposed supply chain management. There is a need to invest in an advanced information-sharing platform that will be able to support large volume of data and will be accessible in different countries. It is also essential to ensure that the system has adequate security controls to prevent unauthorised access and hacking over the internet. Lastly, it is essential to cultivate trust between suppliers and the entity at large.

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