

Supply Chain Management System of Amazon

Sharanya¹, Dr. Sini V Nair²

¹Student, Trimester 2, Operations management, Master of Business Administration, College of Engineering Trivandrum, School of Management, Affiliated to APJ Abdul Kalam Technological University (KTU)

²Assistant Professor, College Of Engineering Trivandrum, School of Management, Affiliated to APJ Abdul Kalam Technological University (KTU)

Abstract: The purpose of this review paper is to study the position of Amazon in the retail industry which it primarily gained through high-level supply chain and logistics developments. It describes the supply chain practices with Amazon as well as numerous product and service developments such as anticipatory Shipping, Amazon's Chaotic Storage Model and Amazon's Logistics Network Plan. It becomes apparent that constant innovation in a supply chain context has more extensive and significant long-term effects on company success than large profit figures. A comparison of Amazon with Walmart and other relevant companies shows that Amazon's supply chain is more diverse, implying that numerous services that are offered by competitors are combined within Amazon and its supply chain. Amazon's supply chain may be described by an efficient and flexible inventory management, fast delivery fulfillment, effective collaborations with partners, and strategic acquisitions of supporting systems and companies and a high level of customer service. The results of this review paper may direct future studies towards the investigation of further competitive advantages of Amazon as well as how potential threats and weaknesses a company faces may be overcome in a supply chain context.

Keywords: Supply chain management, Amazon effect, e-tailer, logistics

I. INTRODUCTION

Amazon.com, Inc., doing business as Amazon, is an American electronic commerce and cloud computing company based in Seattle, Washington that was founded by Jeff Bezos on July 5, 1994. The tech giant is the largest Internet retailer in the world measured by revenue and market capitalization, and second largest after Alibaba Group in terms of total sales. The amazon.com website started as an online bookstore and later diversified to website started as an online bookstore and later diversified to sell video downloads/streaming, MP3 downloads/streaming, audio book downloads/streaming, software, video games, electronics, apparel, furniture, food, toys, and jewelry. The company also produces consumer electronics—Kindle e-readers, Fire tablets, Fire TV, and Echo—and is the world's largest provider of cloud infrastructure services.

Amazon.com has changed the face of retail through its use of bold supply chain strategies and its deployment of innovative technologies. In 2004, 10 years after Amazon was founded, its annual revenue was just under \$7 billion. According to

Statistics, in 2016, however, revenue reached almost \$136 billion. In fact, Amazon is the fastest company to reach \$100 billion in sales revenue, taking only 20 years. From its inception, Amazon has been growing approximately 20 percent per year. Currently, it enjoys 6.4 percent of gross global e-commerce sales.

One of the major secrets behind Amazon's massive transformation from a simple online bookseller to the most dominant and formidable force in the retail industry is its innovative and highly efficient supply chain. Amazon's continuous efforts to deliver products to the customers in the quickest possible time are causing intense pressure other giant players in the retail industry across the globe and thus changing the way supply chain management works.

II. LITERATURE REVIEW

Laudon (2011) explains that the supply chain conception started in the 1980s and it has evolved into a very important business concept. The supply chain is a network of organizations and business processes to select raw materials to transform them into intermediate and finished products and distribute the finished products to customers. It connects suppliers, industrial plants, distribution centers, means of transportation, retail stores, and information by means of processes such as selection of raw materials, inventory control, distribution and delivery, for the purpose of providing products and services from the source up to the point of consumption.

In the past, the relationship between the customer and the supply chain ran through marketing. The customer talked to marketing and if the information communicated from the customer involved changes to orders, these changes were communicated to supply chain through the sales and operations planning system (S&OP) and the master production schedule (MPS). There was no need for supply chain to talk to or even know anything about the customer. However, this system was not working because the supply chain focused on cost and meeting the schedule but the customer often wanted responsiveness and flexibility. New radical solution was developed where supply chain would get to know the customers up close and in person. Supply chain would focus on those things that customers wanted also

known as the customer-centric supply chain. Like many things that have emerged in supply chain management, the customer-centric supply chain is the result of the convergence of major forces, one of which is the “amazon effect”. The Amazon effect is changing what customers expect from supply chain management (Melnik and Stanton, 2017).

According to Aronow et al (2015), Amazon is a modern retail juggernaut. Since its founding in 1994, it has grown from being simply an on-line bookstore to a one-stop omni-channel retailer for everything from furniture to food to streaming entertainment service. More importantly, it has changed how customers shop and what they expect, regardless of whether the customers are end users or a business. 24/7 customer service, easy to place orders, continuous flow of information about the order, reliable deliveries are some of its features. It continues to innovate in both products and services. Amazon manages its physical supply chain with precision and efficiency, enabling broad adoption of its competitively priced hardware, which acts as a platform for software and media content sold either discretely or through its Prime subscription service. In 2013, Amazon's CEO Jeff Bezos announced that his company is developing a drone-based delivery system called Amazon Prime Air which would be delivering products under five pounds in locations within 10 miles of Amazon's fulfillment centers within just 30 minutes or less. As per Amazon's senior VP of worldwide operations, Jeffrey Wilke, for company's growth they focus primarily on price, selection and availability and all the three depend critically on supply chain. Amazon has one of the most sophisticated supply chains-system in the world. Its homemade applications handle nearly every aspect of its supply chain: warehouse management, transportation management, inbound and outbound shipping, demand forecast, inventory planning and more. Amazon's supply chain system is so well integrated that when a customer places order for different items, the order management system communicates with inventory and warehouse management systems to find the optimal distribution center or centers for fulfilling the order. The customer knows within a minute how long it will take to ship the items and whether they will come in one package or separately (Bacheldor, 2004).

As per the studies of Kargar (2004) published in the Journal of the International Academy for Case Studies, Amazon's market strategy was designed to strengthen and broaden the Amazon brand name, increase customer traffic to its website, build customer loyalty and encourage repeat purchases. The principle competitive factors in Amazon's market segments included price, selection, availability, convenience, information, discovery, brand recognition, personalized services accessibility, customer service, reliability, speed of delivery, ease of use and ability to adapt to changing conditions. Amazon has also invested significant resources in the development and maintenance of its technology base. Also, Amazon has its own warehouse and distribution centers

in order to have better control over its inventory and shipping activities.

Allen (2017) explained that efficient transportation management with end-to-end visibility is becoming more and more vital to a company's supply chain and its overall success. Transportation managers are faced with a growing number of challenges: shorter lead times, tighter delivery windows, driver shortages, the need to make more frequent and smaller shipments, rising freight costs, and globalization. Amazon's one-hour or same day shipping is possible due to its dependence on its own logistics. Amazon understands well that depending on third-party logistics would just lengthen the product delivery time. With a limited inventory of in-store merchandise, fewer retail stores and the ability to find just about anything you could possibly need on Amazon, consumers are less inclined to get in their cars and head to the store for something. Amazon's investment in logistics in India is paying off. But the online retail giant is trying some new methods tailored to India's patchy logistics and financial infrastructures, including a greater reliance on motorcycle delivery men and allowing customers to pay in cash. Amazon is allowing Prime-eligible merchants to ship items from their own facilities to free up space at company-owned warehouses, own truck trailers, hiring on demand delivery workers.

Amazon provides a range of services known as “Fulfillment by Amazon” for sellers who go through Amazon.com -storing their goods in warehouses and shipping them out once ordered. The fees range from \$2 for a small package to more than \$100 for heavy or oversized items. Amazon Seller Services launched two new capabilities ‘Self Service Registration’ (SSR) and ‘Amazon Easy Ship’, for sellers in India. SSR will serve as an accelerated and friction-free channel to sell on Amazon and with Amazon Easy Ship; sellers can make use of Amazon's investments in logistics to have their orders on Amazon shipped from their own warehouses. Hook (2017) says that this will help improve delivery experience and enable sellers to scale and grow their online business profitably and at cheaper cost.

According to Chopra and Sodhi (2014) Amazon.com Inc. has expanded its number of U.S. distribution centers to be closer to consumers. Amazon maintains inventory of its most popular items in the distribution centers and tends to hold slow-moving items more centrally. Amazon's own warehouses are strategically placed, moving closer and closer to main metropolitan areas and city centers. As a result, it uses a pure push strategy for the products it stores in its warehouses. On the other hand, it uses a pure pull strategy when it sells the products from the third party sellers.

These new technologies are changing how firms design, build and deliver products, and how they interact with their customers. Melnyk (2017) explains that in 2012, Amazon acquired a provider of automated and robotic warehouse

solutions called Kiva Systems. And in 2015, that company was rebranded as Amazon Robotics. The robots of Amazon Robotics can pick and pack without needing any human assistance, enabling Amazon to complete warehouse activities super-fast. As of January 2017, Amazon had more than 45,000 warehouse robots, and the robot invasion continues. Also, Amazon is experimenting with 3D printing on trucks so that goods can be built as they are being delivered to customers.

According to Hook and Wright (2015), the technology inside Amazon's distribution centers has long been a key advantage for the group, which has built more than 120 giant warehouses worldwide. They give a competitive edge to Amazon over the others. To power the delivery service, Amazon has opened more than two dozen Prime Now delivery hubs within the cities, and could one day use drones for rapid delivery if regulatory approval is obtained. Amazon has been building a new network of mid-sized distribution centers, or "sortation centers", that act as a staging ground between the mega-warehouses and local post offices.

Amazon successfully launched a new supply chain services in 2015, such as same-day delivery, which is now available in many U.S. metro areas. Hofman et al (2016) reports that in another spectacular move Amazon ran pilots with automakers Audi and Volvo to deliver packages directly to the trunks of customers' automobiles. In 2015, Amazon released a series of instant ordering devices under the brand Amazon Dash, which enable consumers to push a button on a small, product-branded fob when they need to reorder common household items like laundry detergent, instant coffee cups, and diapers.

.Supply chain pioneer Walmart which is the biggest brick-and-mortar retailer in the world has continued its push into e-commerce and has expanded investment in multichannel drive-thru pick-up centers and a "click-and-collect" grocery service offered at some of its stores. According to Kumar et al (2012), Walmart has perhaps the best physical distribution and retail network in the world, while Amazon is the clear leader in the online space. Walmart is also leveraging its expertise in supply network design and optimization in a drive to recapture the low-cost crown from its competition. Walmart also uses its online channel to offer a greater range of products compared to its stores. In addition, the web site also serves as a tool to evaluate the introduction of new offerings of its offline partner. In addition, Walmart.com has been able to take advantage of the existing services infrastructure of its offline parent company to improve trust in its online channel and increase visits to its outlets. Two of these services are the returns policy and the site-to-store service of Walmart.com. Amazon is well-known for its algorithmic approach to presenting particular products to its customers, as well as using real-time data to fuel dynamic pricing. Walmart, on the other hand, has lagged behind significantly when it comes to building a robust online platform that can even come

close to Amazon's. The absence of an online platform that can collect the volume and quality of consumer data needed for stronger decision-making has set Walmart back. Even though retail might be transforming offline retail is absolutely not dead. Offline retail is just going to look different in the future.

III. FINDINGS AND SUGGESTIONS

From the above review it is clear that it is not possible for a company to establish a fixed model of supply chain. E-commerce companies that adopt differentiated supply chain strategies for each product may possibly acquire advantages over those companies that do not operate in this manner. Amazon.com has changed the face of retail through its use of bold supply chain strategies and its deployment of innovative technologies. It is constantly trying to minimize human intervention in its supply chain process. Adapting to changes like new business models, changes in the customer base, new technologies and changes in the supply chain require the company to implement strategic moves, customer-centric supply chains, new technologies and changes in the supply chain. Also to enable this transformation, Amazon must first identify their key customers, and then structure their organization so that there is no conflict between the supply chain team and other departments like sales and marketing. Pure internet retailers' supply chains could arguably be considered more flexible than their clicks-and-mortars counterparts. Amazon is efficient and effective for consumers because they have the ability to maximize options for customers and the capacity to accommodate customer segments differently based on advances in technology. Amazon's own logistics network is one of its greatest achievements of which it is aiming at the reduction of dependence on third parties. As Amazon is known for large investments into Research & Development, the company has numerous possibilities to expand and to serve a larger number of markets and thereby become more unique and relevant. As currently Amazon's supply chain is not especially sustainable nor environmental-friendly so it may focus on Green Retailing in the future. This may be achieved by implementing recyclable packaging as well as energy-saving standards in company owned facilities.

IV. CONCLUSION

Supply chains can and should evolve over time in response to product life cycles or experience with a new market. Amazon follows a customer-centric flywheel-business model which is especially characterized by putting special emphasis on choice, convenience and price. Developing the drone-based delivery system is a major indicator that Amazon is well ahead of other players in the retail industry and it is doing everything possible to leverage all of the latest supply chain technologies to maintain their supply chain the clear market leader. In order to make good on increasingly fast delivery promises, the company has positioned many new

warehouses in proximity to local urban markets. The new world of the customer-centric supply chain will require supply chain managers to embrace the change, drive it in their organizations and learn to manage with their customers in mind rather than focusing strictly on costs.

REFERENCES

- [1]. Allen, Gary, 2017, Transportation Network Optimization in the Amazon Effect Era, Material Handling & Logistics
- [2]. Aronow, Stan; Hofman, Debra.; Burkett, Mike; Romano, Jim ; Nilles, Kimberly, 2014, The 2014 Supply Chain Top 25: Leading the Decade
- [3]. Aronow, Stan; Hofman, Debra.; Burkett, Mike; Romano, Jim ; Nilles, Kimberly, 2016, 2015 Supply Chain Top 25: The Art and Science
- [4]. Bachelder, Beth, 2004, FROM SCRATCH: Amazon keeps supply chain close to home, Information Week
- [5]. Chopra, Sunil ; Sodhi, Manmohan, 2014, Reducing the Risk of Supply Chain Disruptions (MIT Sloan Management Review, VOL. 55 NO. 3)
- [6]. Hook, Leslie, 2017, Amazon unveils key logistics arm sales surge, The Financial Times Limited
- [7]. Hook, Leslie; Wright, Robert, 2015, Amazon aims to go it alone with deliveries, Financial Times ; London (UK) [London (UK)] 12 Dec 2015: 12
- [8]. Kargar, Javad, AMAZON.COM IN 2003, Journal of the International Academy for Case Studies; 2004; 10, 2;
- [9]. Kumar, Sameer; Eidem, Jessica; Perdomo, Diana, 2012, Clash of the e-commerce titans: A new paradigm for consumer purchase process improvement
- [10]. Laudon, J.P., 2011, Supply chain strategies in the context of an e-commerce chain (e-chain) (Independent Journal of Management & Production (IJM&P) (ISSN: 2236-269X v.5, n.2))
- [11]. Melnyk, Steven; Stanton, Daniel, 2017, The customer-centric supply chain leader (The strategic supply chain series)
- [12]. Melnyk, Steven, 2017, The emergence of the strategic leader (The strategic supply chain series)