

Project Report On  
**“SUPPLY CHAIN MANAGEMENT OF AMAZON”**

Submitted by  
**SONU VIJAYSHANKAR SINGH**

Roll NO:207

Submitted to



**UNIVERSITY OF MUMBAI**  
**MASTER OF COMMERCE**  
**(MANAGEMENT)**

Semester- IV  
(2020–21)

Project Guidance by  
Professor: MR. HIMANSHU LAPASHIA



UTTARI BHARTI SABHA'S  
RAMANAND ARYA D.A.V COLLEGE OF COMMERCE AND SCIENCE  
DATAR COLONY, BHANDUP (EAST)

**Ramanand Arya D.A.V. College**

**Bhandup (East) Mumbai 400042**

***Certificate***

This is to certify that **Mr SONU VIJAYSHANKAR SINGH** has worked and duly completed her Project Work for the degree of Master in Commerce under the Faculty of Commerce in the subject of **SUPPLY CHAIN MANAGEMENT AND LOGISTICS** and her project is entitled, **“SUPPLY CHAIN MANAGEMENT OF AMAZON”** under my supervision.

I further certify that the entire work has been done by the learner under my guidance and that no part of it has been submitted previously for any Degree or Diploma of any University.

It is her own work and facts reported by her personal findings and investigations.

**Co-Ordinator:**

DR. SUSHMA PATIL

**Principal:**

DR. AJAY M. BHAMARE

**Project Guide/Internal Examiner:**

PROF HIMANSHU LAPASHIA

**External Examiner:**

**RamanandArya D.A.V. College**

**Bhandup (East) Mumbai 400042**

***Declaration by learner***

I, the undersigned **Ms PRIYA SUBH** declare that the work embodied in this project work hereby, titled “**SUPPLY CHAIN MANAGEMENT OF AMAZON**”, forms my own contribution to the research work carried out under the guidance of **Prof HIMANSHU LAPASHIA** is a result of my own research work and has not been previously submitted to any other University for any other Degree to this or any other University.

Wherever reference has been made to previous works of others, it has been clearly indicated as such and included in the bibliography.

I, here by further declare that all information of this document has been obtained and presented in accordance with academic rules and ethical conduct.

Name of the learner: **Mr SONU VIJAYSHANKAR SINGH**

Signature:

**Certified by**

Name of the Guiding Teacher: **PROF HIMANSHU LAPASHIA**

Signature:

## *Acknowledgment*

To list who all have helped me is difficult because they are so numerous and the depth is so enormous.

I would like to acknowledge the following as being idealistic channels and fresh dimensions in the completion of this project.

I take this opportunity to thank the **University of Mumbai** for giving me chance to do this project.

I would like to thank my **Principal, Dr. Ajay M. Bhamare** for providing the necessary facilities required for completion of this project.

I take this opportunity to thank our **Coordinator Dr. Sushma Patil**, for her moral support and guidance.

I would also like to express my sincere gratitude towards my project guide **Prof. Himanshu Lapashia** whose guidance and care made the project successful.

I would like to thank my **College Library**, for having provided various reference books and magazines related to my project.

Lastly, I would like to thank each and every person who directly or indirectly helped me in the completion of the project especially **my Parents and Peers** who supported me throughout my project.

**Signature of the Student**

**Mr SONU VIJAYSHANKAR SINGH**

# INDEX

<b>Sr. NO.</b>	<b>Table of Contents</b>	<b>Page No.</b>
1	Introduction	1
2	Literature Review	2
3	Supply Chain: Meaning and Definition	3
4	How to Choose Right supply chain Management	16
5	Ways to improve Supply chain management	18
6	Principles of Supply chain management	20
7	Uses of Internet in Supply chain management	22
8	About Amazon	23
9	How supply chain of amazon works	26
10	How is Amazon changing its SCM	29
11	Behind the scenes of at an Amazon warehouse	33
12	How amazon Receives and stores your inventory	36
13	Return Policy of Amazon	41
14	Data Collection and Analysis	44
15	Observation	53
16	Conclusion	54
17	Recommendations	55
18	References	57
19	Annexure	58

## **Introduction**

Supply Chain Management can be defined as the management of flow of products and services, which begins from the origin of products and ends at the product's consumption. It also comprises movement and storage of raw materials that are involved in work in progress, inventory and fully furnished goods.

The main objective of supply chain management is to monitor and relate production, distribution, and shipment of products and services. This can be done by companies with a very good and tight hold over internal inventories, production, distribution, internal productions and sales.

In the above figure, we can see the flow of goods, services and information from the producer to the consumer. The picture depicts the movement of a product from the producer to the manufacturer, who forwards it to the distributor for shipment. The distributor in turn ships it to the wholesaler or retailer, who further distributes the products to various shops from where the customers can easily get the product.

Supply chain management basically merges the supply and demand management. It uses different strategies and approaches to view the entire chain and work efficiently at each and every step involved in the chain. Every unit that participates in the process must aim to minimize the costs and help the companies to improve their long-term performance, while also creating value for its stakeholders and customers. This process can also minimize the rates by eradicating the unnecessary expenses, movements and handling.

Here we need to note that supply chain management and supply chain event management are two different topics to consider. The Supply Chain Event Management considers the factors that may interrupt the flow of an effective supply chain; possible scenarios are considered and accordingly, solutions are devised for them.

## **Review of Literature:**

Supply Chain Management is a network of facilities that produce raw materials, transform them into intermediate goods and then final products, and deliver the products to customers through a distribution system. It spans procurement, manufacturing and distribution (Lee & Billington 1995) the basic objective of supply chain management is to “optimize performance of the chain to add as much value as possible for the least cost possible”. In other words, it aims to link all the supply chain agents to jointly cooperate within the firm as a way to maximize productivity in the supply chain and deliver the most benefits to all related parties. Adoption of Supply chain management practices in industries has steadily increased since the 1980s. A number of definitions are proposed and the concept is discussed from many perspectives. However, Cousins et al.; Sachan and Datta; Storey et al. provided excellent review on supply chain management literature. These papers define the concept, principals, nature, and development of SCM and indicate that there is an intense research being conducted around the world in this field they critically assessed developments in the theory and practice of supply management.

Gunasekaran and McGaughey extended the scope of SCM beyond material management, partnership, information technology to the Total Quality Management areas like management commitment, organizational structure, training and behavioural issues. As firms' survival lies on integration, a good understanding of the integration process is a key aspect in SCM. Mouritsen et al. discussed that basic hypothesis “the more integration (wider the scope) – the better the management of the chain” is not always true and proved that it depends very much on the “environment” of the supply chain and the power relations between the participants in the supply chain. Authors proposed a set of management techniques and tools to analyse successful SCM strategies. It is also observed that research is not limited to hypothesis testing and data analysis, but more advanced techniques like simulation, Artificial Neural Network, and Fuzzy logic are also used for optimization and decision making in SCM. Koh and Tan used the principles of fuzzy logic for analysing and monitoring performance of suppliers based on the criteria of product quality and delivery time whereas Chiu and Lin showed how the concepts of collaborative agents and artificial neural networks (ANNs) can work together to enable collaborative supply chain planning (SCP). It appears from literature review that researchers have studied supply chain management from a system perspective, or the systemic nature of interactions between the participants of supply chain are observed. Although numerous studies view SCM from different perspectives, this paper gives the better understanding of supply chain activities.

# Supply Chain Management

Meaning and Definition:

## **Meaning:**

Supply Chain Management has been defined as the “design, planning, executing, controlling and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand and measuring performance globally”. Marketing channel plays an important role in supply chain management.

## **Definition:**

**Berry (1995)** defines Supply chain management as, “A system whose constituent parts include material supplies, production facilities, distribution services and customer linked together by feed forward flow of materials and feed back flow of information.”

## **Some other definitions**

**New and Payne (1995):** The chain linking each element of the manufacturing and supply process from the raw materials through to the end user, encompassing several organizational boundaries.

**Johnson (1995):** A process of strategically managing the movement and storage of materials, parts and finished inventory from suppliers through the firm to the customers.

**Ganeshan and Harrison (1995):** A network of facilities and distribution options that performs the functions of procurement of materials, transforms these materials into intermediate and finished products and distributes products to customers.

**Beamom (1999):** An integrated process where raw materials are transformed into a final product then products then delivered to customers.”

**Kalakota (2000):** An integrating process based on flawless delivery of basic and customised services.

## Features

Following are the features of supply chain management:

- **Process:** The supply chain management is a complete process for providing goods and services to final users.
- **Membership:** Membership includes all parties including logistics operations from initial material supplier to final user.
- **Scope:** The scope of Supply chain management includes procurement, production and distribution.
- **Organisational boundaries:** Management extends across organisational boundaries to include planning and control over operations of other organisational units.
- **Co-ordination:** A common information system accessible to all members makes co ordination possible between organisation.
- **Performance:** Member organisation achieve their own individual objectives through the performance of the supply chain management as a whole.

## Importance

Following are the importance of SCM:

- **Boast customer Service:** Customers expect the correct product assortment and quantity to be delivered. Customers expect products to be available at the right.
- **Decreases Production Cost:** Manufactures depends on supply chains to reliably deliver materials to assembly plants to avoid material shortages that would shut down production.
- **Increases Profit Leverage:** Firms value supply chain managers because they help control and reduce supply chain costs. This can result in dramatic increases in firm profits.
- **Decreases Fixed Assets:** Firms value supply chain managers because they decrease the use of large fixed assets such as plants, warehouses and transportation vehicles in the supply chain.
- **Right Delivery Time:** Customers expect products to be delivered on time. Customer satisfaction diminishes if pizza delivery is 2 hours late.

- **Right After Sale Support:** Customers expect products to be serviced quickly. Customer satisfaction diminishes when a home generator stops operating and repairs can't be made for days.

## **Objectives of Supply Chain management:**

A well-designed SC is expected to support the strategic objectives of: -

- Solving supplier's problems and beyond his level.
- Customer service performance improvement.
- Reduction of pre & post production inventory.
- Minimizing variance by means of activities like standardization, variety reduction, etc
- Minimum total cost of operation & procurement.
- Product Quantity control.
- Achieving maximum efficiency in using labour, capital & plant through the company.
- Flexible planning and control procedures.

## **Supply chain management process**

Supply chain management is a process used by companies to ensure that their supply chain is efficient and cost-effective. A supply chain is the collection of steps that a company takes to transform raw materials into a final product. The five basic components of supply chain management are discussed below –

- **Plan:**

The initial stage of the supply chain process is the planning stage. We need to develop a plan or strategy in order to address how the products and services will satisfy the demands and necessities of the customers. In this stage, the planning should mainly focus on designing a strategy that yields maximum profit. For managing all the resources required for designing products and providing services, a strategy has to be designed by the companies. Supply chain management mainly focuses on planning and developing a set of metrics.

➤ **Develop (Source):**

After planning, the next step involves developing or sourcing. In this stage, we mainly concentrate on building a strong relationship with suppliers of the raw materials required for production. This involves not only identifying dependable suppliers but also determining different planning methods for shipping, delivery, and payment of the product. Companies need to select suppliers to deliver the items and services they require to develop their product. So, in this stage, the supply chain managers need to construct a set of pricing, delivery and payment processes with suppliers and also create the metrics for controlling and improving the relationships. Finally, the supply chain managers can combine all these processes for handling their goods and services inventory. This handling comprises receiving and examining shipments, transferring them to the manufacturing facilities and authorizing supplier payments.

➤ **Make:**

The third step in the supply chain management process is the manufacturing or making of products that were demanded by the customer. In this stage, the products are designed, produced, tested, packaged, and synchronized for delivery. Here, the task of the supply chain manager is to schedule all the activities required for manufacturing, testing, packaging and preparation for delivery. This stage is considered as the most metric-intensive unit of the supply chain, where firms can gauge the quality levels, production output and worker productivity.

➤ **Deliver:**

The fourth stage is the delivery stage. Here the products are delivered to the customer at the destined location by the supplier. This stage is basically the logistics phase, where customer orders are accepted and delivery of the goods is planned. The delivery stage is often referred as logistics, where firms collaborate for the receipt of orders from customers, establish a network of warehouses, pick carriers to deliver products to customers and set up an invoicing system to receive payments.

➤ **Return:**

The last and final stage of supply chain management is referred as the return. In the stage, defective or damaged goods are returned to the supplier by the customer. Here, the companies need to deal with customer queries and respond to their complaints etc. This stage often tends to be a problematic section of the supply chain for many companies. The planners of supply chain need to discover a responsive and flexible network for accepting damaged, defective and extra products back from their customers and facilitating the return process for customers who have issues with delivered products.

## **Issues in Supply chain management**

It is found that SCM encompasses planning, manufacturing and operations management necessary to bring a product to the market place, from the sourcing of materials to the delivery of the completed product. This section would provide insights on the aspects and the issues that are to be managed in supply chain. Following are the issues in supply chain management:

### **➤ Customers - Supplier Relationship Issues:**

Customer satisfaction is absolute for staying abreast in competitive environment that can be achieved only by quickly responding to customer needs. Efficient consumer response (ECR) is a supply chain management strategy that attempts to address the inefficiencies in the supply chain. Hoffman and Mehra (2000); Harries et al. (1999); Sparks and Wagner (2003) discussed efficient consumer response (ECR) as a supply chain strategy by analysing the adoption of ECR strategy in some industries. Jonsson and Zineldin (2003) proposed conceptual model including behavioural dimensions of supplier-dealer relationships and presented hypotheses about how to achieve satisfactory inter-organizational relationships. Lambert and Pohlen (2001) provided a framework for developing supply chain metrics that translates performance into shareholder value. The framework emphasized on managing the interface between customer relationship management and supplier relationship management at each link in the supply chain. It is concluded that long-term relationships between customer and supplier can lead to higher satisfaction.

### **➤ Customer relations Issue:**

A company's customer relations practices can affect its success in managing the supply base as well as its performance (Scott and Westbrook, 1991; Ellram, 1991; Turner, 1993). A key element of successful supply base management involves downstream integration of customers as well as the management of upstream suppliers. Each entity in the supply chain is a supplier as well as a customer. When a customer driven corporate vision is implemented simultaneously with effective TQM and supply base management practices, it can produce a competitive edge in a number of different ways. These include increases in productivity, reductions in inventory and cycle time, increased customer satisfaction, market share and profits. However, there is little empirical evidence in the literature linking customer relations practices and performance to support the conceptual foundation of customer driven corporate policy.

➤ **Issue of Supply chain Design:**

Manufacturing firm's supply chain design is based on effective integration. Braganza (2002) and Power (2005) examined different perspectives on integration and suggested that integration of several functions at different organizational levels achieve above average financial and performance results. It is observed that current static approaches and theoretical models are ineffective in considering all variables and constraints for designing supply chain. Manson- Jones et al. (2000) demonstrated how the "lean" and "agile" paradigms might be integrated. They designed a total performance metric and developed a route map for integration of lean production and agile supply in the total chain. Lalwani et al. (2006) suggested that one of the reasons for this might be the difficulty of grasping the full dynamic complexity of the processes and systems encountered. Authors proposed that current developments in systems thinking and continuous system simulation, when applied within the context of an operations management framework, may offer the good design of SC and improve in supply chain performance.

➤ **Global Issues:**

Shortened product life cycles and increasing global competition has tempted traditional manufacturers to contemplate on their competencies, such as product design and development, and a decision to outsource. Jennings (2002) and Zeng (2003) projected strategic benefits and problems relating to the outsourcing decision. These include issues of cost, quality, flexibility, strategic focus, and diversification, the potential loss of critical skills and knowledge, and appropriation of final product value. A model was developed, structuring the contextual factors: capability, cost, technology, supply and product market conditions, to enable a consideration of the outsourcing decision. Buxey (2005) and Svensson (2001) explored the linkage between firms' outsourcing activities and the occurrence of supply chain disruptions. Blowfield (2005) discussed the experience of employing global social and environmental standards, in terms of a global ethic. It was concluded that strategic development of SCM capabilities such as efficient inbound and outbound transportation, warehousing, inventory control, production support, packaging, purchasing, order processing, and information dissemination enables a manufacturing firm to identify key performance measures.

➤ **Partnership Issues:**

As global markets grow increasingly efficient, competition no longer takes place between individual businesses, but between entire value chains. Therefore, executives are developing supply chain partnerships/collaboration in an attempt to reduce costs, improve service and to gain competitive advantage. Horvath (2001) proposed that Collaboration through intelligent e-business networks would provide the competitive edge to all the participants in a value chain to prevail and grow. It is found that collaborative partnerships can be achieved both via trust and through electronically mediated exchange. Frankel et al. (2002) showed that one of the most common usages of partnerships is in the provision of transport and distribution services. Authors recommended that rather than devoting effort and resources to build an in-house supply chain it can often be much more cost-effective to form a partnership with a shipping company, and allow them to perform the job of distribution at a lower cost than the enterprise could manage itself.

➤ **Environmental issues:**

Power (2005) presented a conceptual framework to investigate supplier relations, lean manufacturing, environmental management practices; and their relationship to one another. It is found that efforts to improve a supplier's environmental management practice raise critical issues of transaction costs and efficacy of approach for the buyer. It is recommended that an environmental bias is to be introduced into the decision-making process which would allow more environmentally conscious decisions to be made.

➤ **Trust & Commitment:**

The two fundamental components of improving the relationship are trust & commitment (De Ruyter et al. 2001). The cooperation arises directly from both relationship trust & commitment (Morgan & Hunt 1994). According to past research, trust has two dimensions: "honesty" & "benevolence" (Kumar et al. 1995). There are several dimensions of trust in fresh produce supply chain performance such as confidence in preferred trading partner, always keeps promises, always honest, good reputation, trust in preferred trading partner, believe information provided, close personal friendship, trading partner always consider best interests (Batt 2003). Trust is the belief that the partners will act in ways that will bring positive outcomes for the firms & does not want to take unexpected actions that may bring a negative outcome (Anderson & Narus 1990). Trust (Moorman et al. 1993) is the willingness to rely on an exchange partner in whom one has confidence. Or trust as a belief, a sentiment or an expectation about an exchange partner and results from the partner's expertise, reliability & intentionality. Trust is the extent to which the buyer believes that the supplier has the necessary expertise to perform the activity effectively & reliably (Ganeshan 1994).

➤ **Logistics management:**

Many years practitioners and professionals were confused between "logistics" and "supply chain management", the usage of each term varied according to the industry. Lummus et al. (2001) examined the historical definitions of both terms, and proposed a hierarchy for the relationship between logistics and supply chain management. Srivastava and Srivastava (2006); Meade and Sarkis (2002) presented a framework to manage product returns in reverse logistics by focusing on product ownership data, average life cycle of products, past sales, forecasted demand and likely impact of environmental policy measures. It is

observed that reverse logistics is one of the toughest supply chain challenges. Once the product has been manufactured it is very important that there should be an adequate structure to distribute it to the customers. Neves et al. (2001); Ma and Davidrajuh (2005) proposed distribution channels planning model. Authors explored the use of an iterative approach for designing distribution chain in an agile virtual environment; and proved that quick adaptation to changing market situation and automation of supply chain management processes are essential.

## **Performance Measurements of SCM**

Supply chain performance measure can be defined as an approach to judge the performance of supply chain system. Supply chain performance measures can broadly be classified into two categories –

**Qualitative measures** – For example, customer satisfaction and product quality.

**Quantitative measures** – For example, order-to-delivery lead time, supply chain response time, flexibility, resource utilization, delivery performance.

Here, we will be considering the quantitative performance measures only. The performance of a supply chain can be improvised by using a multi-dimensional strategy, which addresses how the company needs to provide services to diverse customer demands.

### **Quantitative Measures**

Mostly the measures taken for measuring the performance may be somewhat similar to each other, but the objective behind each segment is very different from the other.

Quantitative measures are the assessments used to measure the performance, and compare or track the performance of products. We can further divide the quantitative measures of supply chain performance into two types. They are –

- Non-financial measures
- Financial measures

### **Non - Financials Measures**

The metrics of non-financial measures comprise cycle time, customer service level, inventory levels, resource utilization ability to perform, flexibility, and quality. In this section, we will discuss the first four dimensions of the metrics –

➤ **Cycle Time:**

Cycle time is often called the lead time. It can be simply defined as the end-to-end delay in a business process. For supply chains, cycle time can be defined as the business processes of interest, supply chain process and the order-to-delivery process. In the cycle time, we should learn about two types of lead times.

They are as follows;

- Supply chain lead time
- Order-to-delivery lead time.

The order-to-delivery lead time can be defined as the time of delay in the middle of the placement of order by a customer and the delivery of products to the customer. In case the item is in stock, it would be similar to the distribution lead time and order management time. If the ordered item needs to be produced, it would be the summation of supplier lead time, manufacturing lead time, distribution lead time and order management time.

The supply chain process lead time can be defined as the time taken by the supply chain to transform the raw materials into final products along with the time required to reach the products to the customer's destination address.

Hence it comprises supplier lead time, manufacturing lead time, distribution lead time and the logistics lead time for transport of raw materials from suppliers to plants and for shipment of semi-finished/finished products in and out of intermediate storage points.

Lead time in supply chains is governed by the halts in the interface because of the interfaces between suppliers and manufacturing plants, between plants and warehouses, between distributors and retailers and many more.

Lead time compression is a crucial topic to discuss due to the time-based competition and the collaboration of lead time with inventory levels, costs, and customer service levels.

- **Customer Service Level:** The customer service level in a supply chain is marked as an operation of multiple unique performance indices. Here we have three measures to gauge performance. They are as follows –
- **Order fill rate** – The order fill rate is the portion of customer demands that can be easily satisfied from the stock available. For this portion of customer demands, there is no need to consider the supplier lead time and the manufacturing lead time. The order fill rate could be with respect to a central warehouse or a field warehouse or stock at any level in the system.
  - **Stockout rate** – It is the reverse of order fill rate and marks the portion of orders lost because of a stockout.
  - **Backorder level** – This is yet another measure, which is the gauge of total number of orders waiting to be filled.
  - **Probability of on-time delivery** – It is the portion of customer orders that are completed on-time, i.e., within the agreed-upon due date.

In order to maximize the customer service level, it is important to maximize order fill rate, minimize stockout rate, and minimize backorder levels.

➤ **Inventory Levels:**

As the inventory-carrying costs increase the total costs significantly, it is essential to carry sufficient inventory to meet the customer demands. In a supply chain system, inventories can be further divided into four categories.

- **Raw materials**
- **Work-in-process, i.e., unfinished and semi-finished sections**
- **Finished goods inventory**
- **Spare parts.**

Every inventory is held for a different reason. It's a must to maintain optimal levels of each type of inventory. Hence gauging the actual inventory levels will supply a better scenario of system efficiency.

➤ **Resource Utilization**

In a supply chain network, huge variety of resources is used. These different types of resources available for different applications are mentioned below.

- Manufacturing resources – Include the machines, material handlers, tools, etc.
- Storage resources – Comprise warehouses, automated storage and retrieval systems.
- Logistics resources – Engage trucks, rail transport, air-cargo carriers, etc.
- Human resources – Consist of labour, scientific and technical personnel.
- Financial resources – Include working capital, stocks, etc.

In the resource utilization paradigm, the main motto is to utilize all the assets or resources efficiently in order to maximize customer service levels, reduce lead times and optimize inventory levels.

### ➤ **Financial Measures**

The measures taken for gauging different fixed and operational costs related to a supply chain are considered the financial measures. Finally, the key objective to be achieved is to maximize the revenue by maintaining low supply chain costs.

There is a hike in prices because of the inventories, transportation, facilities, operations, technology, materials, and labour. Generally, the financial performance of a supply chain is assessed by considering the following items –

- Cost of raw materials.
- Revenue from goods sold.
- Activity-based costs like the material handling, manufacturing, assembling rates etc.
- Inventory holding costs.
- Transportation costs.
- Cost of expired perishable goods.
- Penalties for incorrectly filled or late orders delivered to customers.
- Credits for incorrectly filled or late deliveries from suppliers.
- Cost of goods returned by customers.
- Credits for goods returned to suppliers.

In short, we can say that the financial performance indices can be merged as one by using key modules such as activity-based costing, inventory costing, transportation costing, and inter-company financial transactions.

## How to choose right Supply chain management?

In an intensely competitive, highly volatile marketplace driven by digitally-empowered consumers, your supply chain is squeezed from all sides in order to maintain customer satisfaction, adapt to changing volumes all while operating at maximum efficiency. Responding to these intense pressures requires the ability to act quickly when fluctuations in customer demand and supply network issues occur without negatively impacting service. With the right systems and strategies in place, your organization can fulfil every order from any source at any time of the year. Start by choosing the right solution and partner and make the process less complex with these important strategies.

- **Define your business problems and goals.** Get a clear picture of your supply chain challenges and match them to your business goals to identify gaps that will inform requirements and aid in your selection process.
- **Organize your selection process and set search criteria.** Allow for extra time early in the process to consider an independent third-party consultancy to assess your business needs and recommend their most critical areas for improvement in your supply chain.
- **Assemble a cross-functional team.** Include team members beyond the IT department to evaluate solutions and partners. They can include internal experts from distribution, logistics, customer service and your executive management.
- **Review prospective partners' customer portfolio.** Which industries do they serve and how likely will they understand the unique needs of your business? Leverage a supply chain partner with a wide breadth of experience that knows your industry to save time and money.
- **Evaluate the solution providers' vision—if there is one!** Does the company have a long-term strategic plan and product strategy? Choose a partner that has an eye on the future, that's innovative and routinely invests in research and development. A provider who doesn't carry debt is a plus.
- **Understand the true costs involved.** Support, service, upgrades and custom modifications can all impact purchase decisions. Knowing these details can help you influence support costs and identify solutions with built-in features that scale as your business grows.

- **Leverage current IT investments and standardized processes.** Find out how partners can build on your previous technology investments, and help to create uniform business processes across your enterprise with systems you may have acquired through mergers and acquisitions.
- **Make sure the solution aligns with the business.** Modifications can be costly. Find a partner that offers solutions to match your business processes, who delivers the functionality you need, and requires few, if any, changes later.

The difference between selecting a good supply chain solution and partner versus an excellent solution and partner means doing the right work upfront. The pressures on supply chains will continue to intensify, giving only those organizations that treat their supply chain as a flexible business component an advantage. Careful alignment of systems processes and partners will ensure your supply chain is ready for anything.

## **Ways to improve Supply chain management**

- **Automatic Purchasing:**

Continually monitoring inventory levels takes up too much time. Newer ERP systems with Supply Chain Management (SCM) functionality feature automated purchasing. This means that the ERP software can be programmed to automatically place orders with vendors when inventory levels drop below a certain level. A critical part of any supply chain strategy is being able to pre-emptively maintain inventory levels. Automatic purchasing will free up employees to concentrate on other important duties.

➤ **Standardize:**

Process standardization is central to the success of any supply chain strategy. Having a standardized ERP system will increase efficiency while saving time and money. Another benefit is that employees will share a standardized system of tools, which will increase accuracy, encourage teamwork and reduce miscommunication.

➤ **Increase Transparency:**

Waste, mistakes and even fraud are permanent supply chain strategy problems that can be fixed with the right ERP system. One of the biggest problems of inventory management is reconciling the software numbers with a physical inventory count. There are always products or units that are forgotten about or simply disappear. Increasing internal SCM transparency is critical to reducing unexplained inventory and financial losses.

➤ **Gain Data Insight:**

Decision making for your supply chain strategy depends on accurate and timely data and information. Having real-time reports available at all times will provide valuable insight into the supply chain health of your manufacturing business. ERP software allows both users and management to be able to instantly access inventory, purchasing and production data for critical decision-making purposes.

➤ **Real-Time Inventory Management:**

Traditional inventory management involves the overuse of spreadsheets and hand checked lists. However, modern ERP software offers inventory features that provide real-time visibility of exact inventory levels. In addition to this, traditional inventory management software has limited scalability, while modern ERP software has unlimited flexibility that will match your businesses' growth and unique needs.

➤ **Monitor Vendor Performance:**

A smoothly running supply chain system depends on outstanding vendor performance. Therefore, vendor performance needs to be monitored and rated through robust metrics available through ERP systems. With a few clicks of a mouse, management can review vendor cycle times and error rates. This data is invaluable during vendor re-negotiations.

➤ **Raise Cost Awareness:**

There are many uncontrollable factors and variables with supply chain management. As a result, different managers along the supply chain often are unaware of each other's expenses. Having centralized financial data pinpoints exactly when and where the organization spends money. This will encourage cost related communication and strategies for consolidating expenses and streamlining processes.

➤ **Improve Returns Management:**

Every solid supply chain strategy needs an efficient returns management system. Manufacturers must be able to effectively handle returns so they can quickly re-process or re-manufacture returned products or units. Many manufactures understandably focus on continually moving new products out the door and therefore, returns often fail to get the attention they deserve. Being able to better manage returns will reduce waste and identify consistent product problem factors.

➤ **Just-in-time (JIT):**

ERP systems naturally work well with both just-in-time manufacturing and JIT Inventory Management to decrease inventory costs and increase inventory turn around. As a result, there will be fewer overhead costs and order fulfilment communication mistakes. Operate at the optimal inventory levels and reduce warehouse costs.

➤ **Streamline Accounting:**

ERP systems are often integrated with different business areas, such as HR, management and finances. An ERP system will reduce excessive paperwork and invoice mix-ups. In addition to this, ERP systems are integrated with Electronic Data Interchange (EDI) and Electronic Funds Transfers (EFT), which will drastically reduce payment processing administration and associated wait times.

## **Principles of Supply chain management**

Following are the principles of supply chain management:

- **Know your customer:** Without a clear understanding and definition of customer requirements, a supply chain cannot be effectively constructed. To gain this understanding requires the market research technique, the construction of an information infrastructure to capture customer transaction data and the storage and analysis of these data from an operational perspective. A supply chain's requirements vary by customer, product and location.
- **Adopt lean philosophies:** During the past two decades, operationally excellent companies have focused on creating lean organizations. As a consequence, these companies have shortened internal lead times and made them more predictable and repeatable, reduced work in progress inventories from months of supply to days, implemented just in time delivery strategy for their most expensive material, and worked to dramatically reduce setup times.
- **Create a supply chain information infrastructure:** The client is significantly invested in information technologies and a team of highly talented IT professionals. A commercial ERP system is not used; internally developed systems are tightly integrated instead. Planning information pertaining to booked orders, finished goods inventory levels, planned shipments and raw material replenishment is readily accessible.
- **Integrate business processes:** Business processes must be established lean and responsive physical environment as part of a supply chain improvement strategy. Without aggressive improvements in the physical operating environment, the impact of other supply chain improvements will be minimal.
- **Create a supply chain information infrastructure:** An effective information infrastructure is necessary for a supply chain to achieve competitive advantage. Today, B2B collaboration via the internet makes it much easier for supply chain partners to share timely demand information, inventory status. This process coupled with the information infrastructure support the efficient flow of material through the supply chain.
- **Integrate business processes:** Many of the client's customers control their inventories using standard order point and order quantity logic. When their inventory position falls to or below a reorder point, they place a replenishment order. Similarly, orders are placed to raw material suppliers when the inventory position for the raw materials falls to its reorder point.

- **Unite decision support system:** Academics and software providers have designed and built Decision Support System (DSS) environment for individual companies and supply chains. These environments are based on different philosophical models. Also, they differ in how they forecast demand, and how they drive production and allocation decisions. Their goal is to generate plans that simultaneously consider all elements of the supply chain.

## **Uses of internet in supply chain management**

Due to cost-related factors, most business organizations are using the internet as part of their supply chain management systems. The most important factor concerning the use of the internet is the reduced cost giving fast transactions and increased transparency. Logistics and Supply chain management professionals find it easy to access the information quickly and avail services whenever they want.

During the procurement stage supply chain management professionals find it easy to quickly access information regarding the availability of raw material and products and the price of items. However, the supply chain management professionals should make the information available on the internet in order to be accessible. Security also should be a concern and the data should be visible only to the supply chain partners through the internet. The more information supply chain management professionals have from procurement sources the more efficiently and economically they can manage it.

Through the availability of information through internet supply chain management professionals find an increase in market size to be accessed. Selling products all over the globe is possible with the use of the internet in a supply chain management system. One of the adverse effects that may affect supply chain managers is the transparency in pricing system which makes competition top leverage over the products. Products that are having higher margins can be utilized for compensating such scenarios in particular countries.

The possibility of intermediate agencies and professionals are reduced due to the penetration of internet in supply chain management. The possibility of purchasing directly from manufacturers and selling directly to customers has increased due to internet selling activities. Due to this real-time data can be obtained through internet by the level of engagement and data related to selling products. The use of internet in supply chain management is still in the early stages and further scope is still in the research stage.

## **Amazon**

### **About Amazon**

Amazon.com, Inc., doing business as Amazon, is a multinational technology company focusing in e-commerce, cloud computing, and artificial intelligence in Seattle, Washington. Amazon is the largest e-commerce marketplace and cloud computing platform in the world as measured by revenue and market capitalization. Amazon.com was founded by Jeff Bezos on July 5, 1994, and started as an online bookstore but later diversified to sell video downloads/streaming, MP3 downloads/streaming, audiobook downloads/streaming, software, video games, electronics, apparel, furniture, food, toys, and jewellery. The company also owns a publishing arm, Amazon Publishing, a film and television studio, Amazon Studios, produces consumer electronics lines including Kindle e-readers, Fire tablets, Fire TV, and Echo devices, and is the world's largest provider of cloud infrastructure services (IaaS and PaaS) through its AWS subsidiary. Amazon has separate retail websites for some countries and also offers international shipping of some of its products to certain other countries. 100 million people subscribe to Amazon Prime.

Amazon is the largest Internet company by revenue in the world and the second largest employer in the United States. In 2015, Amazon surpassed Walmart as the most valuable retailer in the United States by market capitalization. [13] In 2017, Amazon acquired Whole Foods Market for \$13.4 billion, which vastly increased Amazon's presence as a brick-and-mortar retailer.[14] The acquisition was interpreted by some [by whom?] as a direct attempt to challenge Walmart's traditional retail stores.

## **History**

In 1994, Jeff Bezos incorporated Amazon. In May 1997, the organization went public. The company began selling music and videos in 1998, at which time it began operations internationally by acquiring online sellers of books in United Kingdom and Germany. The following year, the organization also sold video games, consumer electronics, home-improvement items, software, games, and toys in addition to other items.

In 2002, the corporation started Amazon Web Services (AWS), which provided data on Web site popularity, Internet traffic patterns and other statistics for marketers and developers. In 2006, the organization grew its AWS portfolio when Elastic Compute Cloud (EC2), which rents computer processing power as well as Simple Storage Service (S3), that rents data storage via the Internet, were made available. That same year, the company started Fulfilment by Amazon which managed the inventory of individuals and small companies selling their belongings through the company internet site. In 2012, Amazon bought Kiva Systems to

automate its inventory-management business, purchasing Whole Foods Market supermarket chain five years later in 2017.

## **Amazon India**

The company took its first steps into the Indian market in February 2012 when it launched Junglee.com, a site which allowed customers to compare prices online but not purchase items directly. It will initially only sell books, films and TV shows but plans to offer mobile phones and cameras within weeks. India has over 50 million active internet users, about 40% of whom have previously made purchases online.

Third party retailers will sell their goods through Amazon's site using a "marketplace" model, a familiar retail concept in India. Sellers send their goods to Amazon's warehouse near Mumbai. When an order is placed, Amazon packs and sends the order to the customer. "Our vision is to become a trusted and meaningful sales channel for retailers of all sizes across India," said Amazon's Amit Agarwal, country manager in India. "We will do the heavy lifting for the sellers so that they can focus on core business functions like sourcing and pricing their products."

## **Warehouses in India**

Online retailer Amazon on Thursday announced the opening of five new fulfilment centres in India, taking the count of its warehouses to 67 across 13 states and augmenting storage capacity to 20 million cubic feet. "The five new fulfilment centres will be for all categories and will be functional before the festive season," said Akhil Saxena, vice-president for customer fulfilment at Amazon India.

The five new centres have come up in Bengaluru, Mumbai, Gurgaon, Vijayawada and Kolkata. Together, the warehouses added this year have boosted the company's storage capacity 1.5 times from a year ago.

Amazon had recently announced assigning of 15 fulfilment centres to its grocery platform, Amazon Now, and six for large appliances and furniture.

Saxena said the year-on-year growth of Amazon's infrastructure has helped the company scale up its 'Prime' selection and improve delivery speed. At present, the Prime selection in India

stands at 40 million products. Overall, the company offers 170 million products across categories.

Amazon's warehouses now cover a carpet area of more than 5 million square feet. Rival Flipkart, which has about 21 fulfilment centres, last month announced plans to set up a 4.5-million sq. ft logistics park in Karnataka. Both companies are pushing to strengthen their infrastructure in a bid to reach beyond tier-I and -II cities.

Amazon has 350 service partner delivery stations in tier-III and -IV areas, where it has tied up with local delivery partners.

Apart from the fulfilment centres, Amazon also has 150 delivery stations across different pin codes to support last-mile delivery in those areas. In addition to this, Amazon has 60 delivery stations exclusively to manage the deliveries of products from the large appliances and furniture category.

## **Levels**

**Pre-structural level:** Amazon is one of the pioneers of online consumer sales. They sell books, music and many other items over the internet.

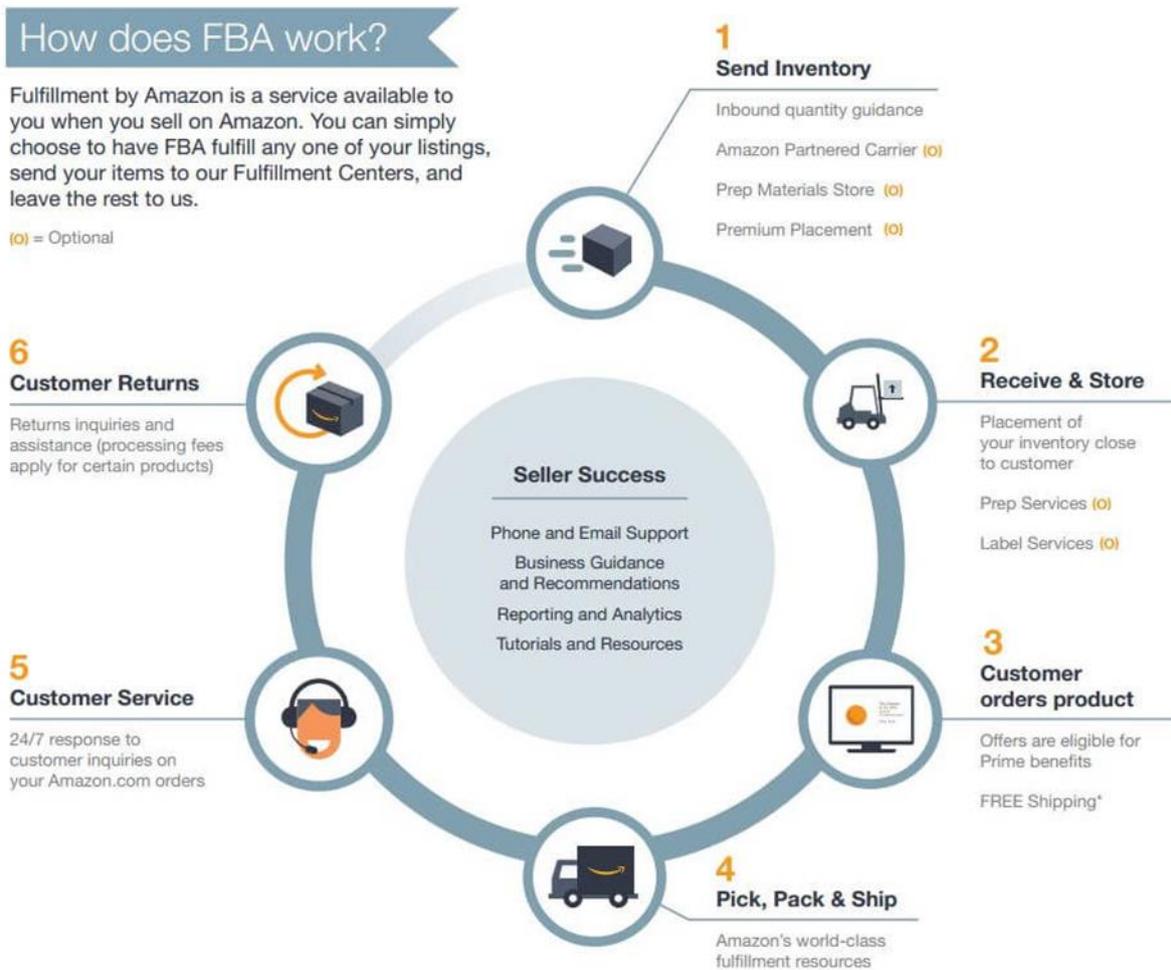
**Uni-structural level:** Amazon's supply chain management has an edge over other companies because of the shopping experience the company offers. It has supply chain and fulfilment capabilities and popular pricing strategies.

**Multi-structural level:** Amazon was one of the first companies who introduced the rating system. The rating system is a way for customers to rate the service that they received from the vendor. Amazon manages and ships its own inventory and the inventory of other companies like Eddie Bauer and Target.

**Relational level:** Amazon's supply chain is so great that major brick-and-mortar retailers like Target Corp, Borders and Toys "R" uses Amazon's website for their e-commerce efforts. They are effectively managing their inventory and became competitive by satisfying all type of customers.

**Critical level:** Amazon conducts its business on an international scale. The company ships to almost 200 countries. Right now, Amazon firmly has the e-commerce market at the palm of its hand. They have to expand their DCs to other countries to reduce transportation cost.

## How supply chain of amazon works?



They've even added drones, robots and other high-tech strategies into the mix.

The result? It's made Amazon one of the most popular – and most profitable – retailers in all the world.

**The Amazon supply chain strategy including:**

## **Warehousing**

A big part of Amazon's success lies in its expert warehousing strategy, which ensures products are easily accessible from pretty much everywhere in the world. All the company's warehouses are strategically placed near big metros and population hubs, and inventory is spread amongst them to ensure supply can meet demand. There are even mini-warehouses in smaller areas to ensure orders can be sent and delivered fast, no matter what is being purchased. Warehouses are also optimized internally. Each with five unique storage areas, the organization strategy allows team members and pick-and-pack robots to pull products almost instantly and move them toward delivery.

## **Delivery:**

One of the biggest differentiators between the Amazon supply chain strategy and other online retailers' is the plethora of delivery options offered. Sure, those options include the free, two-day Prime deliveries and even the Prime Now option, which gets products from point A to point B in two hours or less. But what's the bigger game-changer?

There are drones that land in your backyard or on your roof, there are Amazon-branded trucks and delivery vans and there are even deliveries by bike in certain areas.

The retailer also leverages existing delivery routes via FedEx and UPS, too.

These wide-ranging strategies allow the company to get orders out faster, easier and more efficiently to basically everywhere in the world – even remote and rural areas not served by traditional options.

## **Technology:**

The Amazon supply chain management approach is to embrace technology. The company utilizes countless automation and robotic solutions, both to pick and pack orders as well as stacking and storing inventory. These tools not only up the company's efficiency and delivery speeds, but they also cut down on warehouse and staffing costs – freeing up funds for other logistics or supply chain needs. The company has also embraced drones as well, launching Amazon Prime Air. Though the program's not fully operational just yet, the drones will eventually allow for 30-minute deliveries in some of the nation's biggest markets. All customers need is an Amazon-branded landing mat (and to live within 15 miles of the nearest drone-enabled warehouse), and the instant air-side deliveries are within reach.

**Manufacturing:**

Amazon still allows third-party sellers, but the company seems to have learned that many of those third-party products can be made for much cheaper – and more profitably. The retailer has taken to manufacturing its own lower-cost products, as well as white-labelling products from other sellers. Amazon offers branded lines in everything from household products to pets to babies, and the list of labels just keeps growing. This allows Amazon to own the whole lifecycle of its products – from creation to marketing to storage to shipment.

**How is Amazon changing its Supply Chain Management?**

Amazon.com has changed the face of retail through its use of bold supply chain strategies and its deployment of innovative technologies. In this article, we explore some of the ways that Amazon has shaped its supply chain, leaving competitors scrambling to catch up.

➤ **Rapid Growth:**

In 2004, ten years after Amazon was founded, its annual revenue was just under \$7 billion. According to Statista, 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. Many believe Amazon is working with the \$1 trillion yearly revenue goal in mind. If you take Amazon's 20 percent yearly growth rate into the calculation, it should reach the \$1 trillion yearly revenue goal by 2027.

No matter how attainable that goal is, 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.

➤ **Game Changing Delivery Strategy:**

Back in 2005, Amazon launched its Amazon Prime service. Customers, paying an annual membership fee, received a guaranteed two-day shipping on hundreds of thousands of products. In fact, the introduction of two-day delivery was the game changer and established the dominance of Amazon in the online retail industry. When many other retailers started to catch up with that strategy by offering their own free two-day shipping, Amazon tipped the playing surface by offering a one-hour delivery with its Amazon Prime Now service. Although Amazon has recently made it a free two-hour delivery for Amazon Prime Now, it has always made life difficult for its major competitors as a result of its innovative strategies.

➤ **Amazing Supply Chain Management Practices:**

Amazon enjoys a cult following. It is a favourite choice for customers due to one crucial reason: quick and efficient supply chain management. The combination of sophisticated information technology, an extensive network of warehouses, multi-tier inventory management and excellent transportation makes Amazon's supply chain the most efficient among all the major companies in the world.

➤ **Outsourcing Inventory Management and Insourcing Logistics:**

Amazon's supply chain heavily depends on outsourcing of its inventory management. Especially the products that are not frequently purchased or ordered are not stored in regular Amazon warehouses. It may come as a surprise to you that nearly 82 percent of Amazon's sales comprise of third-party sellers. That amounted to \$22.9 billion in 2016. Amazon's one-hour or same day shipping is possible due to its dependence on its own logistics. Just because it sells third-party products does not mean it uses third-party logistics to deliver the products customers order on Amazon. Amazon understands too well that depending on third-party logistics would just lengthen the product delivery time. That's why Amazon mostly uses its own delivery vehicles for same day delivery or one-hour delivery options.

➤ **Delivery Options to Customers:**

Amazon has different warehouses for different kinds of products and customer preferences for delivery options. Prime customers delivery, one-day delivery, first class delivery, and free super saver delivery are some of the common delivery options available to Amazon customers. Amazon's continuous efforts to make product delivery in the fastest possible time make it a logistics giant and not just the leader in the retail industry.

➤ **Push/Pull Strategy for Supply Chain Success:**

Amazon's own warehouses are strategically placed, moving closer and closer to main metropolitan areas and city centres. 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.

➤ **Classes and Zones:**

Amazon boasts over 70 fulfilment centres in the U.S. and greater than 90,000 full-time employees. To make good on increasingly fast delivery promises, the company has

positioned many new warehouses in proximity to local urban markets. (Wal-Mart's online strategy in China now similarly makes use of a closer to the customer fulfilment model, operating a network of mini-warehouses.) The location, size, and the number of warehouses is important factors in Amazon's supply chain success.

Its warehouses are divided into five storage areas. Its library prime storage stores books and magazines. Next, its pallet prime storage stores full case products that have very high demand. Next, case flow prime storage stores high demand products picked in less-than-case quantities. Its reverse storage accommodates irregularly shaped and low demand products. Finally, its random storage area stores modern demand, smaller items.

➤ **Automation:**

Back 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. Over the years, Amazon has significantly increased its army of warehouse robots. Its warehouse robots, in fact, have grown at the rate of 15,000 per year from 2015. As of January 2017, Amazon had more than 45,000 warehouse robots, and the robot invasion continues.

It had amounts of 15,000 and 30,000 respectively in 2015 and 2016. To date, Amazon's robotics have been aimed at bringing goods to people for the picking of orders. The next generation of robots will see them picking the orders on their own to reduce the need for human order pickers.

While Amazon has been increasing its army of robots in its warehouses, other online retailers were initially slow to follow. Now, however, robots are catching on both domestically and abroad, for both large facilities, as well as for smaller islands of automation within existing facilities. Auto store is an example of a robotic automation provider that can accommodate such islands of automation.

➤ **Supply Chain Cost:**

Due to the huge economies of scale and a bundle of industry-leading supply chain strategies, Amazon has been able to keep its overall per unit supply cost to a bare minimum.

As a result, it has been difficult for other companies with far lower sales volumes and only their own warehouses to compete.

➤ **Drones: One of Amazon's Futuristic Supply Chain Strategies**

Back 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 fulfilment centres within just 30 minutes or less. While that was more of a publicity stunt, Amazon is actually investing in a drone-based delivery system that will do a similar service to what they publicized. Research continues. As of November 2017, it announced the development of a drone that would self-destruct during flight, if required, to keep people safe.

In fact, 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.

➤ **Manufacturing Sector:**

Amazon is not just a retail giant anymore as it produces a wide variety of products including batteries, backpacks, Bluetooth speakers, iPhone chargers, dog poop bags and more. In fact, in the near future Amazon would include more and more product categories in its manufacturing product arsenal.

Amazon somehow understood that many of the third-party products it is selling to customers could be produced at much lower prices. With the massive volume in which Amazon operates deals, it is dealing with high volume situations which lend themselves to low-cost production. As a result, the manufacturing sector of Amazon is making it financially stronger while grabbing market share from many manufacturing companies. This combination of manufacturing to support its retail operations provides Amazon with an important revenue growth opportunity.

➤ **The Bottom Line:**

The rate of Amazon's innovations in supply chain management has been mesmerizing. The rate of change has been incredible, making it difficult for lower volume competitors to keep up. Amazon is forcing its major competitors to invest more in supply chain automation,

lessen the overall product delivery time, increase the number of warehouses, and even engage in product manufacturing. Amazon is already out of reach for most online e-commerce competitors. At the same time, its acquisition of Whole Foods is another bold declaration of its move into bricks and mortar, further emphasizing the convergence of traditional retail and e-commerce strategies. Most importantly, Amazon's unique supply chain strategies and continuous technological innovations have already changed the way supply chain management works. With impending advances in robotics, drones and other autonomous vehicles, one can only guess what the future holds for Amazon.

### **Behind the scenes at an Amazon warehouse, zero margin for errors:**

Humans follow processes, algorithms make decisions. This is the logic underpinning an Amazon Fulfilment Centre, the high-tech warehouses that are primed to ship parcels with zero error and lightning speed, to impatient customers all over the country. Amazon says it reaches all of the 20,500 pin codes in India.

The American retail giant now has 50 such warehouses across India. It recently opened DEL 5, a facility near Manesar in Haryana, its sixth such warehouse in the state. "These fulfilment centres help us serve sellers on our platform as well as the buyers. When an FC opens in an area, a lot of small businesses in that region get a big boost," says Akhil Saxena, VP for customer fulfilment at Amazon, during a recent tour of the facility.

DEL 5 sprawls across 300,000 sq. ft, an area that can fit 55 basketball courts. In the US, Amazon's largest FC has a floor area of 1 million square feet. There is a lot of focus on safety. In the event of a fire alarm, the entire facility is evacuated in 90 seconds.

This network of FCs is the infrastructure backbone of any ecommerce operation. And Amazon, known for ruthless efficiency, elevates warehousing into something of an art, with tech deployment every step of the way.

The robotic warehouses whose footage recently went viral on social media are not here yet, but all Amazon warehouses follow the same processes and algorithmic logic as in Manesar. In the case of robotic warehouses, instead of a human walking up to a shelf, the shelf comes to a human.

Once an item enters the FC, its journey inside is determined by algorithm. Humans follow the instructions and perform a task repeatedly, be it scanning, picking or packaging. Humans are also expected to work with great efficiency. Every step and misstep are measured and evaluated. No mirrors could be spotted in the building, including in the washrooms. A few extra seconds spent adjusting your collar becomes wasted hours, at scale. That is the kind of prioritisation that goes into shipping a parcel in two business days.

## **Journey of an item inside an FC**

Goods arrive by trucks to a loading dock at a designated time. Merchants send packages with barcodes generated using an Amazon dashboard. Each item has a unique ASIN (Amazon Standard Identification Number). A receiving clerk at the FC scans the barcode. Amazon also knows the dimensions of each item. An item that is entering the Amazon system for the first time goes through a scan that determines its dimensions. This is used to determine where the item will be stored and also the size of the packaging it will eventually end up in.

### **Barcode Pairing**

A principle at the heart of an FC is the pairing of an item and its container, using barcodes. All items and all containers, including carts used to move an item from one area to another, have unique barcodes. When an item is moved from, say, a cart to a shelf, a clerk scans the item and the shelf using a handheld device. This way, Amazon knows where an item is, at all times.

### **Random Storing**

There are broadly two strategies in warehousing — category-based storing and random storing. In the former, all shoes would be in one designated area, for instance. Amazon follows random storage, which is more efficient. This means shoes are randomly spread all over the shelves. So, when an item is ordered, the probability of an item being close to a picker is maximised, and time is thus saved. When a customer places an order, the algorithm decides in an instant which picker is the closest to the items in the order and sends the “pick” instruction to that person.

### **Sorting and Packaging**

Containers are diverted into two kinds of packing bays — one for single-item orders and another for multiple-item orders. The single-item bays are relatively uncomplicated. Associates scan the barcode of the item and the system tells them which packaging to pick. At the bay

where containers with multiple orders arrive, another level of sorting, also algorithm driven, is involved. The algorithm decides the picking in such a way that all the items ordered by, say, five customers will arrive in four or five boxes. An associate then scans each item and puts them in different slots and each slot then becomes a complete package for one customer.

## **How Amazon Receives and Stores Your Inventory?**

When you ship your inventory to Amazon for fulfilment, you can be assured that it will be stored in a secure environment.

When you send your inbound shipments to Amazon Fulfilment Centres, it is important to follow our Prep, Packaging and Labelling requirements so your shipments will be received quickly and accurately.

- Packaging and Prep Requirements
- Labelling Requirements
- Shipment Packaging Requirements

## **How Amazon Stores Your Inventory**

We store inventory either in bulk or in individual "pickable" locations. Media products are stored on library-type shelving in vertical, spine out positions with loose stacking to avoid "shelf wear." Specialty items like food or high-value goods may be placed in specific secure or climate-controlled areas of the fulfilment centre as appropriate.

If inventory is damaged or misplaced while in Amazon's control (in the fulfilment centre, during delivery to or from a customer or inbound to Amazon if using an Amazon Partnered Carrier), we will purchase the inventory from you.

Your inventory is generally scanned and made available for sale within three business days of being received at a fulfilment centre. You can track the status of your shipment in the Shipping Queue with the status cycling through In Transit, Delivered, Checked-In, Receiving and finally Closed. During the Receiving process, your item barcodes are individually scanned and entered into the tracking system, the dimensions (to the nearest 1/10') and weight (to the nearest 1/10 lb) are captured for storage and fulfilment purposes.

## **Flow Components:**

After understanding the basic flows involved in the supply chain management, we need to consider the different elements present in this flow. Thus, the different components of the flow of supply chain are described below:

### **➤ Transportation:**

Transportation or shipment is necessary for an uninterrupted and seamless supply. The factors that have an impact on shipment are economic uncertainty and instability, varying fuel prices, customers' expectations, globalization, improvised technologies, changing transportation industry and labour laws.

The major elements that influence transportation should be considered, as it is completely dependent on these factors for order completion as well as for ensuring that all the flows work properly. The major factors are –

### **➤ Long-term Decisions:**

Transportation managers should acknowledge the supply freight flow and accordingly design the network layout. Now, when we say long term decision, we mean that the transportation manager has to select what should be the primary mode of transportation. The manager has to understand the product flows, volume, frequency, seasonality, physical features of products and special handlings necessities, if any. In addition to

this, the manager has to make decisions as to the extent of outsourcing to be done for each and every product. While considering all these factors, he should carefully consider the fact that the networks need not be constant. For example, in order to transport stock to regional cross dock facilities for sorting, packaging and brokering small loads to individual customers, stock destinations can be assembled through contract transportation providers.

- **Lane Operation Decisions:** These functional decisions stress on daily freight operations. Here, the transportation managers work on real time information on products' requirements at different system nodes and must collaborate every move of the product that is both inbound and outbound shipping lanes so as to satisfy their services demands at the minimal possible cost.

Managers who make good decisions easily handle information and utilize the opportunities for their own profit and assure that the product is moved to them immediately, whenever it is demanded, that too in the right quantity. At the same time, they are saving cost on transportation also.

For example, a shipment has landed from a supplier who is based in New Jersey and in the same week, a product needs to be dispatched to New York as it becomes available for movement. If the manager is aware of this information in advance, he would prepare everything as per the demand and the products could be shipped out immediately.

- **Choice and Mode of Carrier:** A very important decision to be made is to choose the mode of transportation. With the improvement in the means of transportation, modes of transport that were not available in the traditional transportation modes in the past can be now be a preferred choice.

For example, rail container service may offer a package that is cost-efficient and effective as compared to a motor transport. While making a decision, the manager has to consider the service criteria that need to be met, like the delivery time, date special handling requirements, while also taking into consideration the element of cost, which would be an important factor.

- **Dock Level Operations:** This involves the last level of decision-making. This comprises planning, routing and scheduling. For example, if a carriage is being loaded with different customers' orders, the function of the dock-level managers is to assure that the driver is informed of the most efficient route and that loads are placed in the order of the planned stops.

- **Warehousing:** Warehousing plays a vital role in the supply chain process. In today's industry, the demands and expectations of the customers are undergoing a tremendous change. We want everything at our door step – that too with efficient price. We can say that the management of warehousing functions demands a distinct merging of engineering, IT, human resources and supply chain skills.

To neutralize the efficiency of inbound functions, it is ideal to accept materials in an immediately storable conveyance, like a pallet, case or box. For labelling the structure, tool selection and business process demand the types and quantities of orders that are processed. Further, the number of stock-keeping units (SKU's) in the distribution centres is a crucial consideration.

The Warehouse Management Systems (WMS) leads the products to their storage location where they should be stored. The required functionality for the completion and optimization of receiving, storing and shipping functions is then supplied.

- **Sourcing and Procurement:** Sourcing and procurement are a vital part of the supply chain management. The company decides if it wants to perform all the exercises internally or if it desires to get it done by any other independent firm. This is commonly referred as the make vs buy decision, which we will be discussing in brief in another chapter.
- **Returns Management:** Returns management can be defined as the management that invites the merger of challenges and opportunities for inbound logistics. A cost-effective reverse logistics program links the available supply of returns with the product information and demand for repairable items or re-captured materials. We have three pillars that support returns management processes. These are as follows –

- **Speed** – It is a must to have quick and easy returns management and automate decisions regarding whether to produce return material authorizations (RMAs) and if so, how to process them. Basically, the tools of speed return processing include automated workflows, labels & attachments and user profiles.
- **Visibility** – For improving the visibility and predictability, information needs to be captured initially in the process, ideally prior to delivering the return to the receiving dock. Most effective and easily implementable approaches for obtaining visibility are web-based portals, carrier integration and bar-coded identifiers.

- **Control** – In case of returns management, synchronizing material movements is a common issue that needs to be handled. The producers need to be very cautious and pay close attention to receipts and reconciliation and update the stakeholders of impending quality issues. In this case, reconciliation activates visibility and control all over the enterprise. The key control points in this process are regulatory compliance, reconciliation and final disposition and quality assurance.

Software solutions can assist in speeding up the returns management by supporting user profiles and workflows that state supply chain partners and processes, by labelling and documentation that tracks the material along with the web-based portals and by exception-based reporting to deliver information for timely reconciliation. These characteristics, when executed with the three pillars mentioned above, support a reliable and predictable returns process to count value across the company.

### **Post - Sales Service**

Now that the ordered shipment is over, what is the next step? The post sales service in supply chain tends to be an increasingly essential factor as businesses offer solution instead of products.

The post sales services comprise selling spare parts, installing upgrades, performing inspection, maintenance and repairs, offering training & education and consulting.

Presently, with the growing demands of the clients, a high volume of after sales service proves to be a profitable business. Here, the services are basically heterogeneous and the value-added services are different from those provided prior to sales service.

## **RETURN POLICY OF AMAZON**

There's been a lot of confusion recently on how Amazon's return policy actually works. Are all returns free? How often can you return something? Do you have to be a Prime member to get free return shipping? All questions that aren't clearly answered by Amazon. So, I figured it was time to do the research and find the answers to these questions. After several phone calls and live chat sessions, here's how Amazon's return policy currently works.



### **What Exactly is the Amazon Return Policy?**

Here are the details of the Amazon return policy and how exactly does it work:

- You have 30 days from date of delivery to return items for free for a full refund if the item is defective, damaged, or the incorrect product.
- Items must be sold and/or fulfilled by Amazon directly, otherwise customer has to pay for return shipping, MAYBE.
- 3rd party sellers now fall under the same return policy as items fulfilled directly by Amazon. You can actually print a prepaid return shipping label via the Online Return Centre instantly.

Return policy does NOT apply to international shipping.

### **Do I Have to Pay Return Shipping Charges?**

If items are fulfilled by Amazon, you typically won't have to pay return shipping charges.

If items are sold by a 3rd party and you try and initiate the return through the Amazon return page, you'll probably have to pay return shipping fees.

But...if you start a live chat and initiate the return that way, you stand a great chance of NOT having to paying return shipping fees.

Your chances of success rise greatly if you're a Prime member and order quite a bit every month.

To prove it, here's a screenshot of this exact scenario. I was going to be charged return shipping until I started a live chat and then the operator gave it to me for free.

### **What if the Item is Opened or Used?**

Doesn't matter. If the item had been opened or used, they'll take it back within 30 days. Plus, they'll pay for the return shipping charges.

Keep in mind that the item must be sold and shipped directly by Amazon and not a 3rd party.

### **Can You Abuse the Amazon Return Policy?**

Absolutely, YES.

If you tend to return the majority of the stuff you buy, Amazon will take notice and could flag your account and not let you make any more returns.

Also, if you ask for a return, but never actually return the item, Amazon will take action against you.

The action they'll take is to check the "concessions limit" of the seller.

For example, it could be a US\$1000 limit, or it could be US\$500. Amazon actually has a team that researches your returns and comes up with the specific dollar amount for policy "abusers".

If you cross this limit, Amazon will mark your account as "concession abuse".

That means that you typically only contact Amazon for a refund or discount and abuse their policy frequently.

Once your account is marked "Concession Abuse", no returns will be accepted on any orders made by you in the future.

Worried about getting banned? Amazon will send you a warning notice via email first, keep abusing their policy and you'll get your account banned permanently.

### **Is the Return Policy Different for Prime Members?**

No, it is not.

Amazon Prime and non-Prime members get to enjoy the same liberal Amazon return policy.

### **Do You Need a Reason to Return an Item?**

Yes, you need to state a reason. It could be you just don't need or want the item and that's perfectly acceptable.

You'll be asked if it's broken or the wrong item, but you're under no obligation to answer.

### **How Many Returns Can You Make Before Raising a Red Flag?**

As long as your issue is genuine, there is NO limit for the number of Amazon returns you can make.

### **Can Any Sized Item be Returned?**

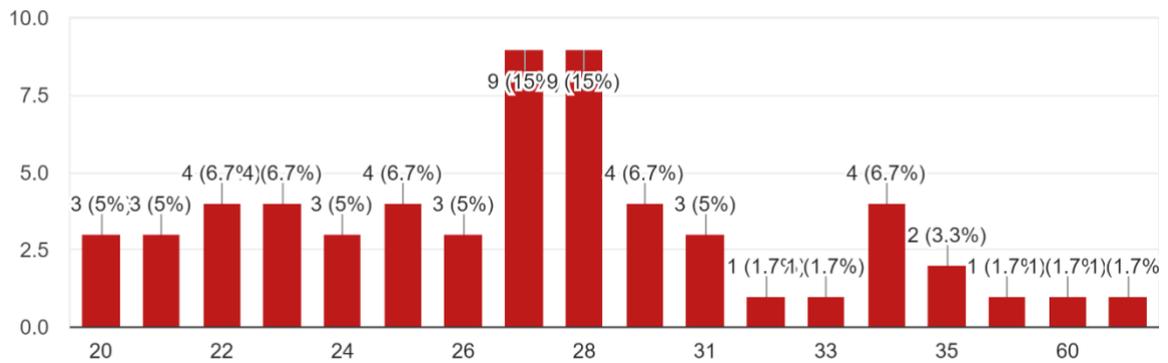
Yes, any product can be returned. No matter what size or weight, it can be returned within 30 days.

## **Data Collection and Analysis**

A survey was conducted on Supply chain Management of Amazon and respondents were asked to give their views. Below is the brief study of the survey:

### Age:

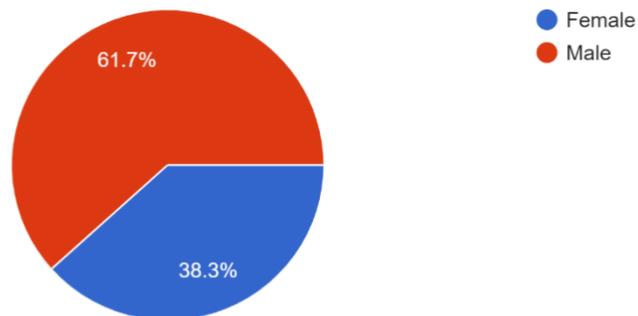
60 responses



**Ans:**The survey was taken from the people aged between 20 years to 60 years, the maximum people who did online shopping from Amazon were aged 27 years and 28 years old.

### Sex:

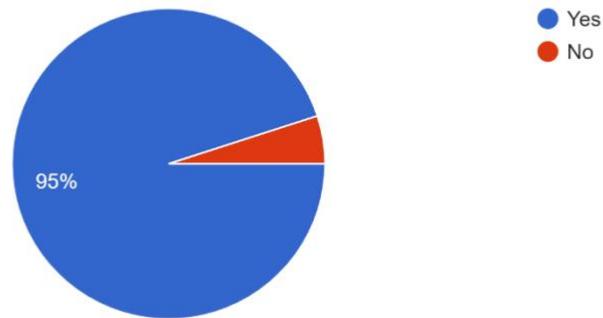
60 responses



**Ans:**The highest number of respondents were males which are 61.7% and females were 38.3%.

### 1) Was it easy to navigate our website?

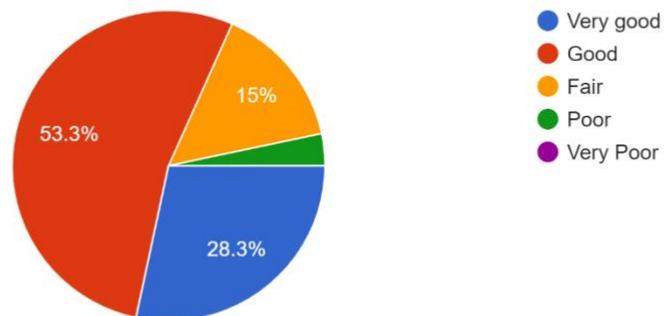
60 responses



**Ans:** 95% respondents found it easy to navigate the website.

### 2) How would you rate our prices?

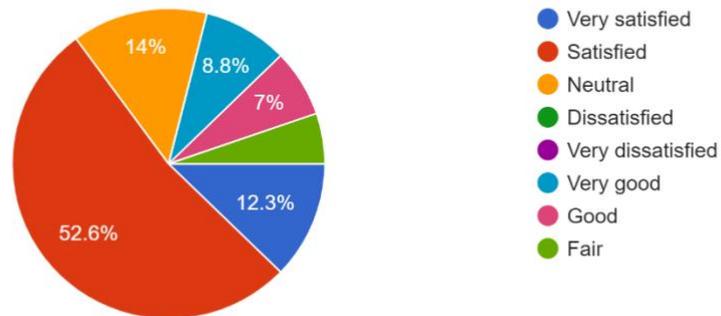
60 responses



**Ans:** 53.3% respondents found the prices to be good, 28.3% found it very good, 15% found it fair and the rest found it poor.

### 3) How satisfied are you with the comprehensiveness of our offer?

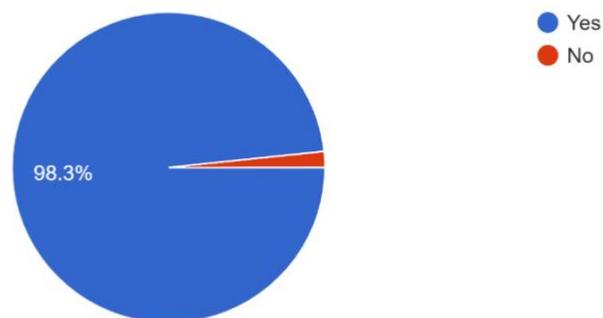
57 responses



**Ans:** 52.6% people found the offer satisfying, 14% were neutral about it and 12.3% were very satisfied.

### 4) Was the product delivered on time?

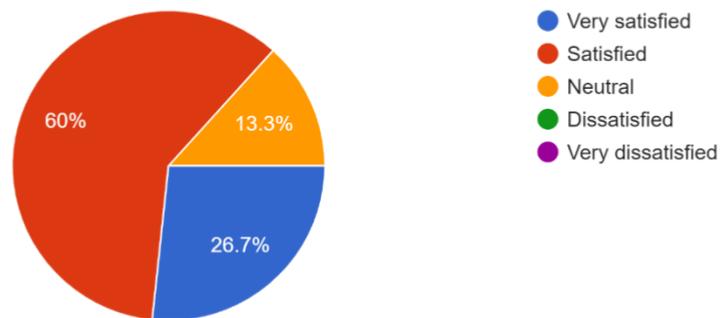
60 responses



**Ans:** 98.3% respondents got their products on time.

### 5) How satisfied are you with the timeliness of order delivery?

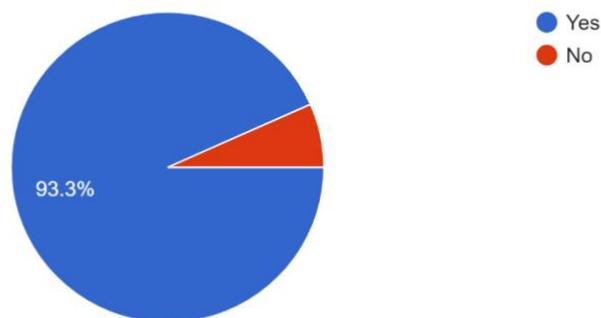
60 responses



**Ans:** 60% respondents were satisfied with timeliness of delivery, 26.7% were very satisfied and rest were neutral.

### 6) Whether received what ordered?

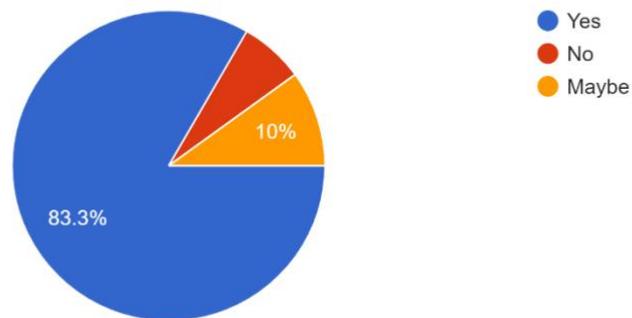
60 responses



**Ans:** 93.3% received what they ordered and rest did not.

### 7) Was the packaging as per the order requirement?

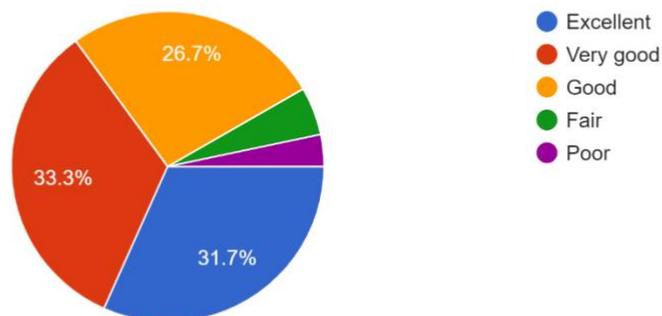
60 responses



**Ans:** 83.3% found their packaging as per the order requirement, 10% weren't sure.

### 8) How did you find the behaviour of our delivery staff?

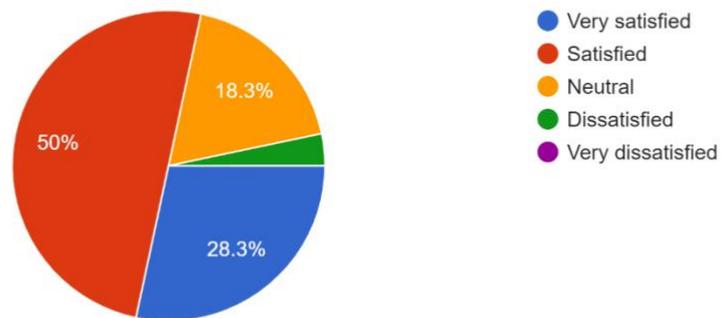
60 responses



**Ans:** 33.3% found the behaviour of delivery staff very good, 31.7% found it excellent and 26.7% found it good.

### 9) How satisfied are you with the customer support?

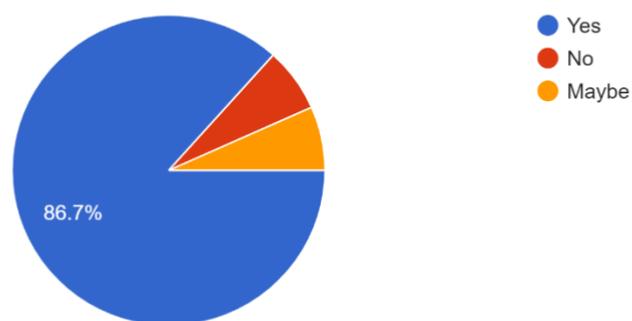
60 responses



**Ans:** 50% were satisfied with the customer support, 28.3% were very satisfied, 18.3% were neutral and rest were dissatisfied.

### 10) Were you able to find the information related to the products?

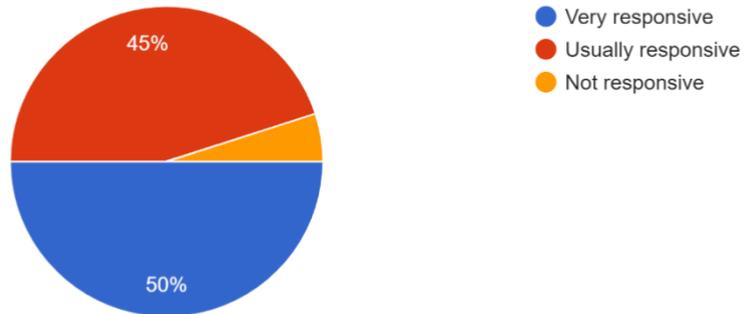
60 responses



**Ans:** 86.7% were able to find the information related to the products.

11) How responsive have we been to your questions or concern related to our products?

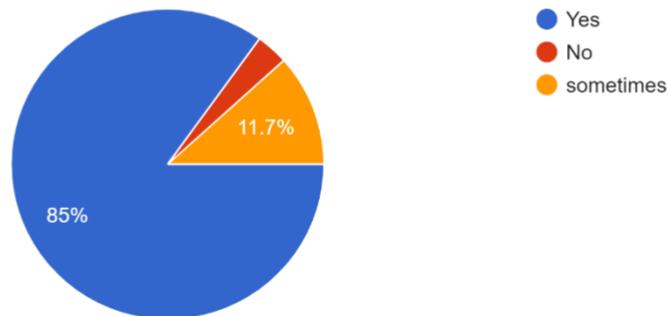
60 responses



**Ans:** 50% said the site was very responsive about the concern, 45% said they were usually responsive and 5% said they were not responsive.

12) Was collection for product replacement done timely(in case of return)?

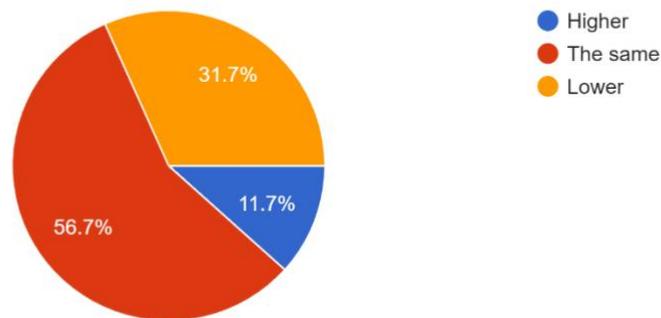
60 responses



**Ans:** 85% said that the product replacement was done timely, 11.7% said they were on time sometimes and rest said no.

### 13) Compared to our competitors our prices are

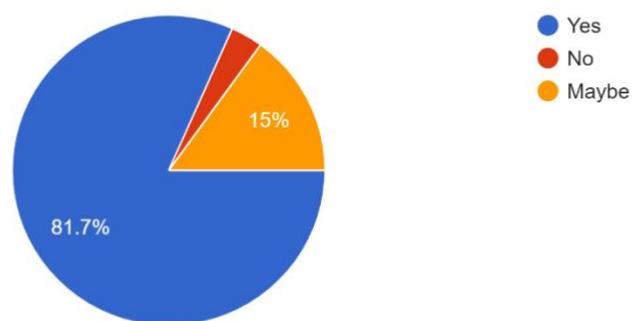
60 responses



**Ans:** 56.7% said that compared to competitors our prices were same, 31.7% said it was lower and 11.7% said it was higher.

### 14) Would you recommend our site to other people?

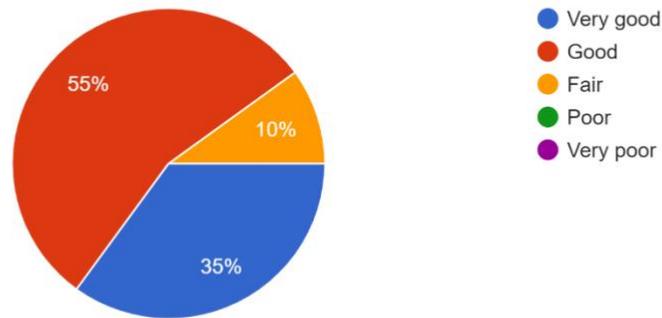
60 responses



**Ans:** 81.7% respondent said they would recommend our site to other people, 15% said maybe and rest said no.

### 15) How would you rate your overall experience with our services?

60 responses



**Ans:** 55% respondents rated our services as good, 35% rated very good and rest said it was fair.

## **OBSERVATION**

As we can infer from the charts of responses majority of our responders were male who ordered online on Amazon. Of these almost all of them found navigating on the website very easy. Prices were however found to be good by only a satisfactory range of 53%.

Delivery services looks like a hit as 98.3% of our respondents have rated it has received on time. 17% of our respondents still faced issued in correctness of order received as per their requirement.

Amazon however needs to upgrade its customer support services as only a 50% of our respondents seem satisfied with it.

Product replacement stands at a remarkable 85% votes but people did cite situation where they have faced problems in getting their items replaced.

57% of our respondents found prices same as other e commerce websites. Nevertheless, it stands a good chance at 82 % for being recommended as good shopping website to others.

## CONCLUSION

Supply Chain Management (SCM) involves joint collaboration between outsourcing partners, suppliers, and customers. It comprises the transformation of goods from raw materials through to the delivery of the finished product; it also includes the management of key information flows. SCM involves the integration of these activities and aims to improve relationships between the various parties, while achieving a sustainable competitive advantage through high quality and lower cost products. SCM is closely linked with enterprise resource planning (ERP) and electronic commerce systems.

Future supply chains are likely to be more dynamic in nature, and consist of collaborative value networks in which productivity and efficiency are constantly maximised. Purchasing firms need to ensure that costs and risks are equitably shared across the supply chain. Risk management has become a strategic imperative – particularly for manufacturers operating global supply chains. Risk categories include:

- Natural disasters
- Market risks
- Commodity risks, and
- Transportation risks.

Increased security and improved resilience are required to mitigate these risks. Regular testing of infrastructures using simulated disruptions can provide a better understanding of potential issues and possible deficiencies. Organisations that are dependent upon SCM must develop appropriate criteria for the appraisal of supply chain performance, and continuously measure this performance.

## Recommendations

The previous section has analysed, Amazon's SCM in a detailed and comprehensive manner. By focusing on the five themes in which the analysis proceeded, we were able to identify the areas that Amazon does well in its SCM. However, there are components and aspects of the SCM of Amazon where improvements can be made. This section identifies those areas and proposes some recommendations that Amazon can follow and implement to make its SCM world class and be a source of sustainable competitive advantage.

- First, Amazon relies to a great extent on courier companies such as FedEx and UPS. In recent years, Amazon's brand image has taken a hit because of the unreliability of the last mile connectivity or the last part of the SCM that is visible to the end consumer. In other words, while the other components of the SCM seem to be efficient and complementing and supplementing each other, the part of the SCM where the customer interacts has been found to be deficient. Therefore, Amazon can setup its own transportation and actualize superior last mile delivery by creating its own fleet of delivery vehicles and personnel.
- The second recommendation has to do with the aspect of "bullwhip". This means that Amazon can integrate its SCM better and move from a cooperation model with its suppliers to a coordination mode. This would entail a sharing of information between all its partners and suppliers using the latest technology. Further, this recommendation also entails creation of a unified IT system that can involve all the suppliers and the stakeholders in its SCM and not Amazon alone. This would call for substantial investment as well as a new business model where Amazon does not operate in isolation but instead brings together all the elements and the components of the supply chain under one umbrella.
- The third and final recommendation has to do with unifying its supply chain less than one gigantic IT system so that there is greater visibility on each component of the supply chain as well as more accountability and transparency in the process. As mentioned elsewhere, Amazon outsources some functions and this leads to accountability issues. Therefore, in line with the central theme of this article, Amazon should integrate its entire supply chain from end to end in one single IT system so that bottlenecks can be identified and suitably acted upon.

As it expands its global footprint, it needs a single source of truth (to use the industry jargon) wherein it can have visibility right from procurement to end customer delivery. This would also ensure that its problems with last mile delivery are sorted out and customers as well as suppliers along with the employees are linked together in a real time system.

## **References**

- 1) Supply Chain Management and Logistics Text book. (M. Com Part – 2, Sem - 4)
- 2) Bixby Cooper, M (2006), “Supply Chain Logistics Management”
- 3) Christopher, M.G (1998), “Logistics and Supply Chain Management: Strategies for Reducing Costs and Improving Services”
- 4) [www.amazon.com](http://www.amazon.com)
- 5) [www.amazon.in](http://www.amazon.in)

## **Annexure**

## Feedback form for Amazon shopping experience.

Data are collected for research work and no other purpose.

\* Required

Name: \*

Your answer

Age: \*

Your answer

Sex: \*

- Female
- Male

1) Was it easy to navigate our website? \*

- Yes
- No

2) How would you rate our prices? \*

- Very good
- Good
- Fair
- Poor
- Very Poor

3) How satisfied are you with the comprehensiveness of our offer? \*

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very dissatisfied

4) Was the product delivered on time? \*

- Yes
- No

5) How satisfied are you with the timeliness of order delivery? \*

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied
- Very dissatisfied

6) Whether received what ordered? \*

- Yes
- No

7) Was the packaging as per the order requirement? \*

- Yes
- No
- Maybe

8) How did you find the behaviour of our delivery staff? \*

- Excellent
- Very good
- Good
- Fair
- Poor

9) How satisfied are you with the customer support? \*

- Very satisfied
- Satisfied
- Neutral
- Dissatisfied

- Very dissatisfied

10) Were you able to find the information related to the products? \*

- Yes
- No
- Maybe

11) How responsive have we been to your questions or concern related to our products? \*

- Very responsive
- Usually responsive
- Not responsive

12) Was collection for product replacement done timely (in case of return)? \*

- Yes
- No
- sometimes

13) Compared to our competitors our prices are \*

- Higher
- The same
- Lower

14) Would you recommend our site to other people? \*

- Yes
- No
- Maybe

15) How would you rate your overall experience with our services? \*

- Very good
- Good
- Fair
- Poor
- Very poor