

The phenomenal rise of E-commerce in retail and managing its supply chain logistics.

Shashwat Gautam | sg311@student.london.ac.uk
BSc (Hons) in Banking & Finance, University of London

Abstract

E-commerce retailers (e-tailers) are automating parts of their supply chain logistics as technology is progressing. This automation is happening inside the warehouse at a physical level and at the decision level by use of software for suggestions. The paper discusses the two main models of e-commerce: the inventory-based model and the marketplace model. We also take a look at the third model, which is a mix of inventory and marketplace models. This paper also covers the different types of logistics, the typical organizational structure of E-tailers and how these firms manage their inventory.

Introduction

E-commerce by definition means buying and selling through the internet. E-commerce has been growing rapidly in India and across the world. From just 7.4% of total global retail sales, E-commerce now contributes to more than 19%¹ of global retail sales.

According to a report by *Bain & Company*², the Indian e-commerce

market is \$38 billion in size and is expected to grow over 25-30% each year for the next five years.

India has around 100 million E-commerce shoppers³ and this number is increasing growing with technology penetration. The bulk of these buyers come from tier 2 or below cities. The penetration of E-commerce varies in different markets. Some markets like Electronics and Apparel have high E-commerce sales as a total percentage of retail sales with 48% and 29% respectively.

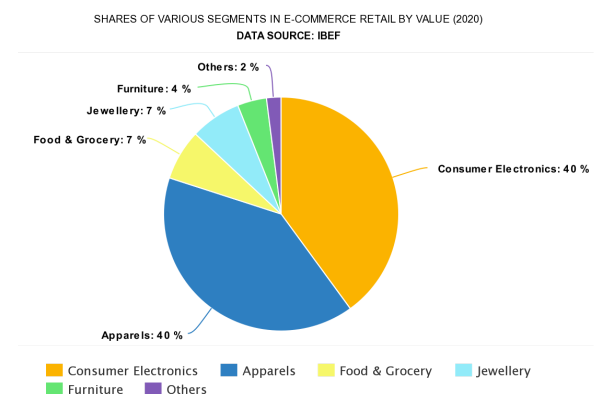


Figure: Share of various segments in E-commerce retail by value (2020)

The reason for the exceptional growth of E-commerce in India has multiple factors. Increasing internet

penetration, smartphones replacing old phones, the introduction of local languages and digital payments are some of these factors that are attributed to this phenomenal rise of E-commerce.

Overview

In India, this market has emerged as a duopoly to a large extent. Flipkart and Amazon, two major players control more than 60% of the market share. Other e-commerce companies are Tata Cliq, Reliance Ajo and Snapdeal exist but don't have a significant market share.

The pharmacy E-commerce segment has Tata 1mg, Reliance Netmeds and PharmEasy as the major players. The grocery segment is dominated by Tata Bigbasket, Grofers, Flipkart and Amazon.

One of the biggest challenges of e-commerce is managing the supply chain. The supply chain refers to the flow of goods from a source to the end customer.

Supply chain management starts right from procurement to warehousing, packaging, shipping and delivering the product. For the business to be efficient, it needs to manage its demand and supply well as wrong estimates would lead to high warehousing costs.

If the supply chain is inefficient and takes longer to deliver the parcel to the end customer, then that E-commerce business risks losing their customers. Over time, with technology, management strategies and better infrastructure, these companies have successfully reduced the time taken to deliver a package.

Supply Chain Logistics for an E-commerce retailer with Inventory Model

Procurement



Warehousing



Packaging



Shipping



Delivering



Return/Exchange

Figure: E-commerce Supply Chain for Inventory based models by Shashwat Gautam.

Models

E-tailers generally use **three models** for the fulfilment of orders.

1. **Marketplace model:** Sellers warehouse, pack and ship the product. The e-tailer has no role in the warehousing and packaging of the product. Due to the lack of quality control by the e-tailer, this model has higher returns and unsatisfied customers.
2. **Inventory model:** In this, the e-tailer buys the product from the manufacturer and keeps the products in a fulfilment centre. It then directly sells to the end customer. This is an expensive model but creates a higher level of customer trust and satisfaction.

The third model is a mix of these two models. In this, the products are bought by the sellers and stored by the e-tailer in their fulfilment centres. This helps the E-tailer to conduct quality checks and maintain their brand.

The biggest e-tailer in the world, Amazon has three categories: first which is fulfilled by the merchant (FBM) sometimes also known as fulfilled by the seller (FBS), the second which is Fulfilled by Amazon

(FBA). FBA are orders dispatched from in-house inventory while FBS are shipped from a third party (seller) fulfilment centres.

In the case of FBA, Amazon takes responsibility for the order, right from warehousing, packaging to shipping. For a seller, this makes the fulfilment process easy. In contrast, the seller directly ships the product to the customer in case it is an FBS order. Although in this case too, the packaging and shipping are standardised. All the customer service is managed by the seller and the customers need to contact the seller in case of any issues.

FBA is no longer the only method to be a part of the Prime program. In 2015, Amazon introduced the third model and a new way to become a Prime certified seller called the Seller Fulfilled Prime (SFP). It enables sellers to be a part of the Prime program and allowing them to fulfil the orders from their own warehouse.

Types of logistics

Michael Porter is a pioneer in developing strategic positioning. According to him, Logistics are broadly of three types. The first one is Inbound logistics - purchasing and coordinating on the supply side. The second one is - Outbound

logistics - sales and coordination on the customer side. The third one Intra logistics is concerned with the effective and efficient movement of goods within the factory or plant.⁴

Automation in E-commerce

E-tailers deploy technology solutions to make the process of logistics efficient. One of these solutions is the **warehouse robots** that pick up the product from storage racks. These robots reduce the chances of human error.

Items are then generally packed according to their size on a **conveyer belt**.

Items are moved through road, rail, air and ship depending upon the product volume, weight and drop location. Another form of automation used by them is **decision software**. This decision software decides the form of transportation to use.

In recent years, development around **UAVs (Unmanned Aerial Vehicles)** or **drones** has gained pace. E-commerce giants like Walmart and Amazon are already doing trials for delivery using UAVs. In India, food delivery companies Zomato, Swiggy and Dunzo have got the approval to test deliveries using drones. Other companies like Spicejet and Asteria Aerospace (a

subsidiary of RIL) have also got approval from DGCA. These firms are working on deliveries beyond visual line of sight (BVLOS). These experiments if successful and put to commercial use will bring down the cost to delivery significantly.

Teams

Different teams are responsible for different set of tasks. A typical E-commerce retailer has Tech, Business Development, Operations and Finance and Accounting division.

The **Product and Technology** team looks after the ordering website, data analysis, Enterprise Resource Planner (ERP) system, and automation software.

The **Business Development** teams manage sellers and discounts.

The **Operations** team looks after the procurement, managing warehouse and order fulfilment, logistics and customer support.

Customer Support is considered as a separate team in some companies whereas many treat it as a sub-part of the Operations team.

The **Finance and Accounting** team looks after taxation, filings and corporate finance activities.

Inventory Management

Flipkart⁵ and Amazon both use **FIFO (First In First Out)** methodology for managing inventory. In this type of system, the oldest item i.e. the item that was purchased first must be disposed off first in case an order is placed.

This enables the e-tailers to measure the **Cost of Goods Sold (COGS)** with accuracy. This method helps the companies to reduce wastage as the oldest item moves out of the inventory first which in turn results into higher profit (lower loss).

Global E-commerce improved because of innovations in transportation. **Containerization** and development of **super freights** are some of the primary reasons why global e-commerce grew.⁶ Today, it takes less time for a product to reach the other end of the world.

Conclusion

The growth of E-commerce has improved the standard of life drastically. The products which were once only available in cities could now be purchased from villages and tier 3 cities. The technology-enabled supply chain gets it delivered.

Within e-commerce retailers, the inventory based model seems to be better suited for customer satisfaction. This model helps brands to maintain consistency.

As technology progressed, transport technology and communication systems became core to improving the supply chain. The growth of the internet and easing government regulations in the digital payments space acted as a catalyst in increasing the users of E-tailers. Many people now prefer to prepay for the order, which was not the case a decade ago.

Another reason for this phenomenal growth can be attributed to the 4G internet speeds which reached every part of India after Reliance Jio (India's largest telecom operator) launched its services in 2016. The market is expected to become manifold in India in the next 10 years.

References

1. “Global E-Commerce Jumps to \$26.7 Trillion, Covid-19 Boosts Online Retail Sales.” *United Nations Conference on Trade and Development*, 3rd May 2021

<https://unctad.org/press-material/global-e-commerce-jump-s-267-trillion-covid-19-boosts-online-retail-sales>.

2. (Arpan Sheth, Shyam Unnikrishnan, Manan Bhasin, Abhishek Raj), “How India Shops Online 2021”, *Bain & Company*, 17th August 2021

<https://www.bain.com/insights/how-india-shops-online-2021/>

3. “E-commerce Retail logistics in India”, *KPMG*, May 2018

<https://assets.kpmg/content/dam/kpmg/in/pdf/2018/05/e-commerce-retail-logistics.pdf>

4. Peng & Meyer, E 2019, *International Business*, Cengage Learning, China

5. Neetu Kapoor, Volume 5 Issue 3, “A case study on Supply Chain Management by Flipkart”, December 2016

http://episteme.net.in/content/73/3834/attachments/10-A_case_study.pdf

6. Willcocks, E 2016, *Global Business Management Foundations*, Steve Brookes Publishing, United Kingdom