

# Recent Trends in Retail Industry with respect to Supply Chain Management

Sanket Patel<sup>[1]</sup>, Saurabh Mokal<sup>[2]</sup>, Dr. Meenal Pendse<sup>[3]</sup>

School of Management - PG under Faculty of Management

MIT World Peace University, Kothrud, Pune, Maharashtra 411038.

**Abstract:-** India's retail market is expected to grow double to US\$ 1 trillion by 2020 from US\$ 600 billion in 2015, driven by income growth, urbanization and at changing mindsets of Indian consumers. While the overall retail market is expected to grow at 12% per annum, modern trade would expand twice as fast at 20% per annum and traditional trade at 10%. The researchers have tried to give an overview of the recent trends and developments happening in Indian retail industry in terms of services and technologies with respect to Industry 4.0. Theoretical explanation of newly emerged trends as well as their practical explanation have been discussed.

**Keywords:-** Indian Retail Industry, Recent trends, Recent Developments, IOT.

## I. Introduction:-

Indian retail industry is the fifth largest after U.S, Germany, Hong Kong, Europe in the world. It is the fastest growing industries in India undergoing a transformation from unorganized sector to organized sector. India's retail market is expected to grow double to US\$ 1 trillion by 2020 from US\$ 600 billion in 2015, driven by income growth, urbanization and at changing mindsets of Indian consumers. The paper discusses new trends and developments in this industry and its application in the same. While it may seem at first that changing technology and the growth in online retail is responsible for this transformation, a more careful analysis shows that each of the companies require a combination of an online and a physical channel.

In this paper, the research is done by studying various journals given on supply chain practices by Mohua Banerjee, Manish Mishra (2015), retail developments by Ruby R. Dholakia, Nikhilesh Dholakia, Atish Chattopadhyay (2017), IoT in retail industry by Sachin S. Kamble, Angappa Gunasekaran, Harsh Parekh, Sudhanshu Joshi (2019), relationship between marketing and purchasing by Jagdish N. Sheth, Arun Sharma, Gopalkrishnan R. Iyer (2009), technological inventions by Achit Agarwal, Vinod Kumar Yadav (2015), emerging marketing strategies by Nimish Joseph, Harleen Singh Somal, P Vigneswarallavarasan, Arpan K Kar (2017), omni channel supply chain network by Sunil Chopra (2018), changes in Indian service sector Rachna S. Singh (2014), tools of sales promotion by Manish Dubey, Dr.SiddharthSaini,Dr.SrishtiUmekar (2016) and various other available research papers by Indian authors.

## II. Literature Review :-

**Mohua Banerjee, Manish Mishra (2015)[1]** – The study surveyed executives of a major food chain in India and explored their perspectives on supply chain management practices, competitive advantage and firm performance; to assess the importance accorded to application of Business Intelligence (BI) in their operations. Nine dimensions for SCM practices and four dimensions for competitive advantage are identified which are found strongly to relate to each other.

**Ruby R. Dholakia, Nikhilesh Dholakia, Atish Chattopadhyay (2017)[2]**- The paper presents a multifaceted view of how consumer patronage of small traditional stores provide competitive advantages to these small competitors. The working conclusion is that retail developments in India and other emerging economies would require not just innovations in practice but strong, ongoing efforts for theoretical renewal so that better explanatory frameworks are available for understanding marketing strategies and consumer behaviors in emerging settings.

India's retail sector is in the throes of massive and ongoing transformations, with forces at work from both ends of the store-size spectrum. The small kirana stores are introducing new services, technologies and services – to forestall customer migration to large modern stores. At the other end of the size-spectrum, large and organized sector retail chains – Indian owned as well as multinational are attempting to create a larger presence in the retail sector.

**Sachin S. Kamble, Angappa Gunasekaran, Harsh Parekh, Sudhanshu Joshi (2019)[3]-** The study attempts to identify the various barriers that affect the adoption of Internet of Things (IoT) in the retail supply chain in the Indian context and also investigates the inter-dependences between the factors using a two stage integrated ISM(Interpretive Structural Modeling) and DEMATEL(Decision-making trial and evaluation laboratory) methodology. Internet of things (IoT) is estimated to play a significant role in offering tangible and commercial benefits to the supply chains making the operational processes more efficient and productive. IoT system provides the decision makers with new insights on the value proposition, value creation, helping them to strengthen their bond with the customers and adopt a more effective policy and practices. The literature argues that retailers acceptance plays a vital role in the commercial success of IoT technology providing an understanding on the IoT adoption drivers.

IOT is believed to have an immense impact on the global economic platform in the next decade. It is indicated that the transformation and optimization of the global economy will solely depend on the adoption scale of IoT devices, affordability, and durability of smart devices and technology acceptance scale for consumers as well as workers. The barriers are as follows:

1. Lack of government regulations
2. Lack of standardization
3. High energy consumption
4. Security and privacy
5. High operating and adoption costs
6. Long payback period
7. Lack of internet infrastructure
8. Lack of human skill availability
9. Seamless integration and compatibility issues
10. Scalability issues
11. Lack of validation and identification
12. Architecture

IoT applications in the food retail business is expected to facilitate the acquisition of new capabilities providing the practitioners with new insights on value proposition and creation, helping them to strengthen their customer relations and provide personalized retail experience for them. This is one of the preliminary studies that identifies and analyse twelve IOT adoption barriers and categorize them based on their dependence and driving power using ISM methodology.

**Achit Agarwak, Vinod Kumar Yadav (2015)[4]-** The paper is an attempt to reveal the technological innovations and improvements in product distributing system in E-retailing domain. It is also aiming to highlight the mal-practices in E-retailing during pre-technological era and mapping their solution in post technological era. The journey of consumer from kirana store shopping to e-portal experience has been enriching. The technology has added additional flavor to this experience with a strategic orientation. The innovation in upcoming technologies will definitely make this experience more spicing. The role of consumer and technology will keep dominating in retail sector and companies will require to re-orient their strategies around these factors.

**Nimish Joseph, Harleen Singh Somal, P Vigneswara Ilavarasan, Arpan K Kar (2017)[5]-**

This study aims to understand the marketing strategies employed by other products in the same domain and also identifies the gaps in the existing software. Shopkeepers using different RMS were interviewed using a questionnaire. The study captured satisfaction level achieved for various attributes of the product and also for the promised benefits. The study identified a few missing modules which were of high demand among the existing users of similar software and recommends solutions to overcome these challenges based on the users experience with other software. eGalla is specifically meant keeping in mind the needs of unorganized retail sector. It is compatible with any kind of laptop and computer and can be supported on a number of operating systems. The basic modules included in the software are Billing, Customer Management, Inventory Management, Order Management, Report Management and Vendor Management.

The product needs to be modified in certain small ways like the VAT calculator, CST calculator can be added to make life easy for the small shopkeepers, The eGalla software needs to be connected to a central server where all the machines be connected using a cloud network.

**Sunil Chopra (2018)[6]-** We discuss how omni-channel supply chain networks can be structured in terms of facilities, inventory, transportation and information to be both cost effective and responsive to costumer needs. This requires exploiting the complementary strengths of the physical and the online channel to create an omni-channel portfolio that can tailor the fulfilment of each customer request based on product and customer characteristics.

An omni-channel portfolio can allow firms to improve their cost position while enhancing the set of customer needs served. The key to success will be a firm's ability to be agile enough to match the strengths of the channel used to fulfil each customer request with the characteristics of the product purchased and the needs of the customer being served.

**Manisha Ketkar, O. S. Vaidya (2012)[7]-** This paper aims at exploring major reasons for supply disruptions and the challenges faced by the Indian manufacturers in retail industry. The companies from various businesses include automobile manufacturers, machinery, service, FMCG, chemicals, etc. The supply disruption is not due to factual issues but surprisingly, due to many social issues.

This study describes the supply risk management related problems faced by Indian firms and the mitigation practices followed by them based on a survey results. This data was analysed to find the root causes for supply disruptions in Indian context. The study further suggests remedial measures that could be used by the Indian industry. This study suggests certain measures to mitigate these causes for reducing supply risk disruptions broadly categorised as technical, social and cultural measures in the areas of better coordination, disciplined approach, increased commitment levels, employee engagement, etc. which can help the Indian firms and suppliers to improve their operations and reduce supply disruptions.

**Arun Sharma, Gopalkrishnan R. Iyer (2012)[8]-** It has been observed that the green products are priced at a premium cost to account for its environmental friendly consumption and use. This paper argues that resource-constrained product development approach that are observed in emerging countries such as China and India have a potential to change the traditional models of green product and its development. In addition to the competitive advantage that resource-constrained product development approaches produce, we suggest that these practices are sustainable and benefits supply chain.

This paper suggests that resource-constrained product development can enhance competitive advantage, as well as enhance green and supply chain initiatives. Firms need to adopt RCPD as an explicit green marketing strategy. RCPD(Resource Constrained Product Development) also creates bundles of benefits that are not available from traditional product development. Analysis of extant literature suggests that to adopt RCPD, firms will have to undergo drastic changes in their conventional association of "green" with "higher prices." The research also suggests that firms should seek greater customer inputs in the product-development process.

**Manish Dubey, Dr. Siddharth Saini, Dr. Srishti Umekar (2016)[9]** - The aim of this study is to determine the impact of the mostly used tools of sales & promotion in retail sector such as coupons, discount and buy one get two free on consumer buying behavior from two aspects which are good switching and customer loyalty. Consumer promotions should enhance purchases, sustain recognition, and improve audience participation. Media should be selected. In this way we include direct mail, newspapers, magazines, television, the personal, and group meetings. The duration of a sales promotion is set. The feasibility of shared sales promotions is weighed.

**Rahul Arjun Jadhav, Dr. Sarita Karangutar(2017)[10]**-This paper was intended to study retail management strategies of small retail stores & mall retailers. Small retailers started providing value added services like free home delivery of products & credits on purchases to their regular customers. Small retailers are able to increase the sales volume again and also able to maintain loyalty of their regular customers. Retail management strategies adapted by small retailers are somewhat similar to the retail management strategies already carried out by mall retailers, but the scale of these strategies by the small retailers are less than the mall retailers. This paper was intended to study retail management strategies of small retail stores & mall retailers & the significance of retail management strategies for the small retailers.

**Ashish Pandey, Dr. Avjeet Kaur (2018)[11]**-After going through this comprehensive research paper, one can make a valid conclusion that retail marketing offers numerous privileges to the retailer operating in the rural markets and these privileges have been utilized in the best manner possible by the multinationals and small retailers operating in the rural markets of India. Rural retail marketing not only offers several advantages in the Indian markets but also in the markets of developing nations such as China, Mexico, Brazil and Russia. Major rural retail marketing privileges in India and similar nations are low cost of promotion, advertising, print media, electronic media, outdoors, stagnant consumer tastes and preferences, inexpensive channels of distribution, physical handling and logistics, inexpensive store management and in-store retail branding, low cost for value added services, easy customer retention, supportive government policies and increase in the levels of rural income.

**B. Menaga Gandhi, K.M. Chinnadorai (2017)[12]**-The retail industry in India has emerged as one of the most dynamic industries with several players in the market. The Indian retail industry is the largest in all the industries, accounting for about 10% of the country's GDP and around 8% of the employment. The Indian retail industry had grown 10.6% between 2010 and 2012 and is expected to increase about 750 to 850 billion USD till 2015. Unorganized retail sector have been through some tough challenges exist such as inefficiency in supply chain management, adoption of new technologies and E-commerce. Some of the major concerns of the unorganized retail sector were special offers, home delivery, ambience, etc. So we can say that there is growth for retail sector though some tough challenges exist. Retail can overcome these challenges by grabbing the opportunities available.

### III. Research Methodology:-

#### IV. Objective-

1. To study the recent trends and developments in Retail Industry.
2. To study the chain management upgradations adopted by the Retail industry in India.
3. To study the technological changes in providing various services in Retail Industry.

## Methodology-

This study is purely based on secondary source of data and the data belongs to various selected research papers. Our attempt in the present study is to do a systematic analysis of new technological developments in Indian retail industry over the last few years. This analysis is useful to understand the future developments in the Indian retail industry and its implications adopted by Government of India. Collecting and compiling various type of data from various available sources have been lined appropriately.

## V. Findings:-

### Industrial Internet of Things (IOT):

IoT, if chiefly used in industry, can be enormously used in retail as a means of enriching customer experiences. IoT sensors can provide inventory updates to managers, reducing the chance that customers will be disappointed by in-store shortages. “Smart shelves” can weigh the products they support, monitor items being removed and added to the shelf, and alert management to potential theft. Moreover, customers can even use their own phones to scan IoT powered tags when checking out, making the checkout experience faster and more intuitive. IoT sensors can be used to facilitate interactions between field device, updating stake-holders in real-time. Machinery malfunctions can also be detected quickly using IoT sensors, and IoT retailers may even go further to practice predictive maintenance.

### Robotics:

Robots can be used to manage warehouses, provide in-store customer service, and deliver products to retailers, and customers. In-store customer service using robots, for instance, allows the customer to easily input a query via touch screen; at that point, the robot can help customers quickly find the products they need without the need for human assistance.

### Cloud Computing:

Cloud Computing can facilitate easy and secure information-sharing, retailers can integrate vertically and horizontally, more easily than ever before. By tracking digital documentation, consignment, inventories, and more, businesses that take advantage of Cloud Computing can attain new levels of precision and transparency.

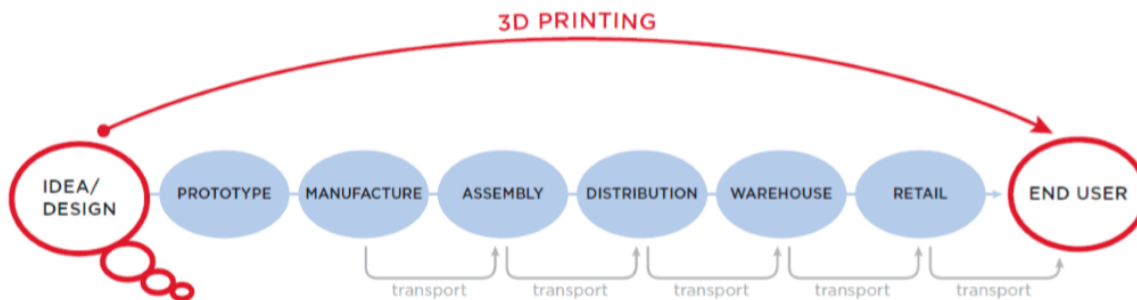
### Big Data:

The term “Big Data” refers to digital analysis of huge amounts of this data in order to understand trends and patterns better than would otherwise be possible. By using “Big Data” processing, firms worldwide achieve a richer understanding of their consumers needs, behaviours, and preferences. This processing also allows companies to make more informed decision making when investing in new assets and technologies.



### Additive Manufacturing:

This technology enables small quantities of customized goods to be produced at relatively low costs. 3D printers are used in many sectors such as automobile replacing parts, dental prototypes, artificial limb parts, aviation industry prototypes, clothing and even in food industries. The method is seen as a technology for supply chain management because of its various properties. The process for 3D printing is shown below:



This method can be implemented in various industries for creating the prototype of a particular product as this method diminishes potential use of tools and resources which will partially save the cost for production and will also reduce the steps for production.

Educating the general public about AM will enable them to make what they want. Formal AM education has already been integrated into curricula at different levels. Educational materials on speedy prototyping have long been a part of manufacturing engineering courses.

### Robotic Process Automation (RPA):

Robotic Process Automation (RPA) in Supply Chain serves to automate processes that are carried on manually, hence limiting the level for errors and mistakes. RPA tools are basically software solutions residing on virtual servers that can be applied and shut down at the desired time. Automation through various types of robots will allow organizations to recruit and train employees for problem-solving and simplifying work, instead of repetition of robotic tasks. This process would massively benefit organizations looking to effectively manage their complex supply chains. At the higher level, RPA in Supply Chain can be used to predict outcomes and support complex decision making, thereby, helping employees with more than just relying on robotic tasks. The areas in the supply chain domain which can be uplifted with the help of RPA are as follows:

Order Processing and Payments

E-mail Automation process

Inventory Managing and its Automation

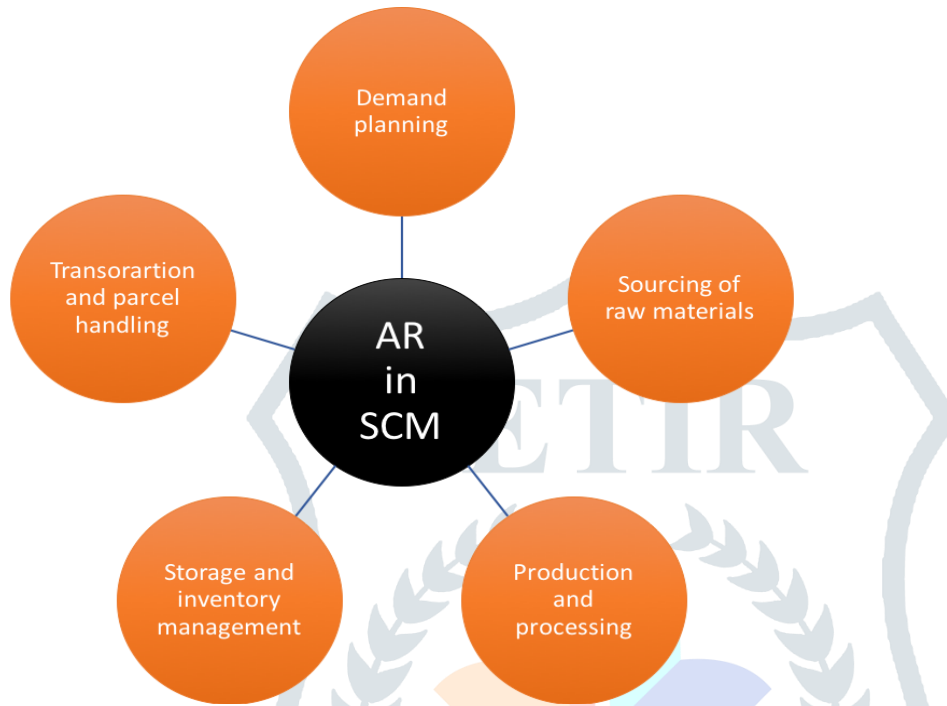
Vendor Selection process

Shipment Status Communication

Supply & Demand Planning

## Augmented Reality:

Augmented Reality (AR) is a type of interactive, reality based display method that takes the capabilities of computer generating display, sound, text and effects to enhance the user's real life experience. AR in supply chain management can help to speed up production, reducing the downtime of machines, minimizing in-plant costs, and achieving shorter sales processes, thus fastening worker engagement and boosting the overall productivity.



AR can be included in following areas:

**Warehouse Operations:** Employees equipped with AR devices can obtain information on the positioning of the required products along with real-time inventory and storage details. Planning of warehouse plants, and the arrangement to build them not just as storage necessity but also as value adding service stations for efficient storing, repackaging, and repairing is possible with AR technology method.

**Transport Optimization:** AR software can lower down the need for physical cargo lists and manual trackable systems. The AR software will instruct workers for step-by-step container loading and track time procedures. AR-enabled wear able can also simplify dynamic traffic support and last-minute delivery for parcel handling, loading, unloading and distribution.

**Assembly & Repair:** AR glasses with enhanced image recognition techniques enable fault detection and correctness in heavy machines, used in assembling and repackaging of the goods. These glasses allow the user to inspect machines for identifying any mechanical or dimensional faults in them. This enables timely maintenance of systems, avoiding any major malfunctioning or time delay in the supply chain.

**Customer Services:** AR-enabled parcel service applications will allow customers to track their shipment from the warehouses to their doors. The applications will also give the user other details of the consignment, such as weight, size, price, and volume. The applications will also offer various price enabled and insurance options. Customers will be able to keep tracking the products out for a delivery or replacement, and can get real-time insights on the refund status, if any.

**VI. Limitations:-**

Due to scarcity of time, the research for this paper was limited to secondary data through desk research due to which the data that will be obtained through primary source of data may vary.

**VII. Conclusion:-**

In recent years the growth of Indian retail industry is on the rate of increase at a greater extent as compared to previous years. The purpose of this paper was to enlist and study various newly emerging technological trends in retail industry in India. Explanation of these trends with suitable process charts are been shown. Outcomes of the discussed trends after applying them practically in the industry are also mentioned in this paper. Also, how will the application of these trends will bring out changes in an organisation are been discussed

**References:-**

- Achit Agarwal, V. K. (2015). Impact of Technology in E-Retailing Operations: A Consumer. 252-258.
- Arun Sharma, G. R. (2012). Resource-constrained Product Development: Implications for Green Marketing . 599-608.
- Ashish Pandey, D. A. (2018). Advantages of Retail Marketing in Rural Regions: A Thorough Analysis. 16600-16605.
- B. Menaga Gandhi, K. C. (2017). Retail in India.
- Chopra, S. (2018). The Evolution of Omni-Channel Retailing and its Impact on Supply. 4-13.
- Manish Dubey, D. S. (2016). Study and Analysis Of Consumer Buying Behavior In Retail Market.
- Manisha Ketkar, O. S. (2012). Study of Emerging Issues in Supply Risk Management in India. 57-66.
- Mohua Banerjee, M. M. (2015). Retail supply chain management practices in India:A business.
- Nimish Joseph, H. S. (2017). Non-uptake of a Low Cost Retail Management Solution by Small. 1001-1008.
- Rahul Arjun Jadhav, D. S. (2017). Mall versus Small: A Comparative Study of Effectiveness Retail Management Strategies Adopted by Small Retailers and Mall Retailers in Pimpri Chinchwad. 21-28.
- Ruby R. Dholakia, N. D. (2017). Indigenous Marketing Practices and theories in Emerging Economies:. 1-10.
- Sachin S. Kamble, A. G. (2019). Modeling the Internet of Things Adoption Barriers in Food Retail Supply Chains. 154-168.