A detailed study on Globalization and the 4th Industrial Revolution: a disruption in India's Retail Markets

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Executive summary

Globalization is a force that is increasingly touching the lives of people living in all countries of the world. Country borders are transitioning from barriers to bridges as a result of trade liberalization, increasing levels of education among women and workers in developing countries, and advancements in technology. Goods, services and talent are now flowing more freely across the globe. The opportunities and the challenges are equally copious. This project report is an effort to understand how in this era of Digitalization and globalization, new trends are emerging and changing the face of the Retail Industry. The technological landscape is changing faster than ever, which implies that new tools, systems, and infrastructures become available as we speak. Industrial revolution 4.0 as we call it has seen an emergence of disruptive technologies and is characterized by Cloud Services, Artificial Intelligence, Robotic Process Automation, Virtual Reality, supply chain management automation etc. Through this there are huge proficiency and efficiency gains are being acknowledged through cost decreases, quality enhancements, customization a quantum leap in performance. Increasing investment in these technologies forcing traditional powerhouses of the twentieth century back to the highest point of compensation. This has brought in a disruption in all sectors of the economy from retail to aviation to hospitality and so on. But the retail industry is observing a shift in the work environment with the help of retail 4.0, giving rise to innovative business models. Digitization in retail is the implementation of a data-driven approach that has given rise to consumer-centric product approaches. But the major disruption is in the retail industry. It discovered the different ways in which the fourth industrial revolution will get faster, presenting game changing technologies, empowering once- impossible business models, and further enabling consumers. Also Fourth industrial revolution is giving rise to 'smart' retail stores that are associated with RFID tags that help in the real-time management of stores. Digitalization has transformed the way that consumers find, assess, purchase and use items and services. As they have become more connected, consumers have also become progressively empowered. With the development of the internet of things, customers will enjoy an increasingly associated or "smart" shopping experience through a network of acquaintances linking the physical and advanced worlds into the network of devices, including vehicles, equipment and software. The internet of things, drones, and delivery robots, 3D-printing and self-driving cars will allow retailers to promote mechanize and improve supply chains as well. Both sides of the condition – demand and supply.

INTRODUCTION

WHAT IS INDUSTIAL REVOLUTION 4.0?

The fourth Industrial Revolution was first spoken at the Hannover Fair in 2011.

The Fourth Industrial Revolution represents a drastic change in the way we live, work and relate to one another. The internet has an opportunity in terms of eliminating the distance and the ability to instantly transfer large data and it will therefore influence many areas of life, and deeply affect industrial production and processes.

The concept of the Industry 4.0 can be described as an increase in the amount of digitization throughout the entire value chain, and a possible structuring of data transfer between people, objects, and systems in real time. The Fourth Industrial Period emerged when the machines used in production started to manage themselves and production processes without the need for human power.

DISTINCTIVE FEATURES OF INDUSTRY REVOLUTION 4.0

The distinguishing innovations brought in by this new era are:

• Global interaction of storage systems andresources.

• The development of unique intelligentproducts.

• The smart factories, adapting to productspecifications.

• Realization of new businessmodels.

• New social infrastructure in the workplace for the employees, businessstructure

being sensitive to individualdifferences.

• Better work/lifebalance.

• Responding to individual consumerdemands.

• Intelligent software developed for immediate response to engineeringand

problems.

HOW RETAIL SECTOR IN TRANSFORMING IN IR 4.0 GIVING BIRTH TO RETAIL4.0

With the gift of modern Technologies, the retail sector is undergoing major changes. It is witnessing a shift in the work culture by giving a rise to innovative business models and customer centric productstrategies.

Retail 4.0 technology trends

1. **BIG DATA:**

   In today's world data is the most valuable asset. It is giving a superpower to organizations all over the world to transform the way it carries its operations. Data is collected from every source possible. Individuals are asked to enter their credentials to sign in at all platforms. It is collected at every stage of supplychain,in every step of the retail industry.This data helps the retailers to understand the needs ,demands and shopping patterns of their consumers. The retailers get to know which products or services have a high demand and which products are not doing well. The data for market sales and performance helps take up investment decisions. The data collected also helps to know the price sensitivity of customers, the price at which consumers are actually willing to buy a product. It gives an overall insight into the latest market trends and finding areas with niche customer demands. As it is the market today is increasingly becoming Customer-centric.With all this information collected over a period of time, collectively called big data helps retailers to formulate business strategies.

2. **INTERNET OFTHINGS:**

   IoT Sensors help in creating an interactive environment and are known for delivering better consumer experiences. These sensors are installed at different levels and provide real time updates and are used to monitor expensive machines used for Inventory Management, Production and Logistics.

   The sensors enable predictive maintenance of equipment and saving the expenses that will be incurred in case of equipment failure. There is a real time track of the inventory levels and notifies when the inventory is running out of stock and restock it. The tags are IoT powered at checkouts, for easy payments by consumers through scanning.

   US based company Amazon has started physical stores Amazon Go where the customers are free to choose the product they like, load them into their baskets, and walk out of the store. The products are electronically tagged and automatically scanned as the customer leaves and the amount is charged to customer's Amazon account.

3. **CLOUDCOMPUTING:**

   Cloud Computing has become the most used, flexible and cost-effective method of storing and accessing data and services across various channels at any time. Its online nature, it proves to be a more secure method of transferring and sharing data as compared to traditional methods. It helps in promoting data driven businesspractices.

In respect of the Retail Sector, it has facilitated the following:

- **Improved Channel Operations** by simplifying the system and delivering customized experience, integrating various verticals (for eg: inventory and order processing to improve the restocking capabilities of the business) therefore increasingefficiency.

- **Higher Supply Chain Visibility** by capturing real time status of consignments and making supply chains capable of handling their business without stock outs or high inventories tomaintain.

- **Better Merchandising Decisions** by providing meaningful insights about customer preferences by analyzing their buying trends and helping to decide what to stock and what not tostock.

- **Personalized Customer Service** by helping retailers to offer more personalized customer offerings andservice.

- All of the solutions combined together Help in cutting costs, increasing flexibility, improving customer experience and making the **overall business process moreefficient**.

4. ROBOTICS:

Robots are assisting humans or replacing humans and providing services such as in-store customer service , warehouse management and delivery services. They guide customers through various sections of the store and help them find the right products.

5. AUGMENTEDREALITY:

Although it is a relatively fresh technology it has been adopted by many online retailers through their mobile applications. They help consumers to "try out" clothes or makeup or virtually place furniture to check whether it suits with their design ornot.

Fig 1 Trends that driveRetail4.0   **Source: 42Gears**

GLOBALIZATION AND RETAIL INDUSTRY

Globalization's tempt is irresistible. Retail industry has gone under major revolutionary changes over the last two decades in domestic as well as international markets. The inherent barriers are no longer a global limitation as the different marketing channels, online and physical stores have greatly changed their way in which they used to operate. Nowadays the globalization has enhanced the retailer's interest, thereby providing retailers with the new scope of functions. The introduction of Internet has shrinked the boundaries of the globe to a small trading environment as a result this globalized change has helped retailers' source abroad. For example, the clothing retailers H&M and Zara has been focusing on growing in Asian markets. Grocery retailers have been succeeding in globalizing by developing strategic plans in home as well as international platforms.

The impact of globalization can be understood in three distinct ways:

- Every country has its own culture, religion, regulations, demands, and customer preferences. Understanding the culture of each foreign country is important for global retailers. And this is necessary in order to realize the customer taste of the country in which the retailer is willing to expand. Knowing the market's image is also important for global retailers before they invest. Understanding of **Hofstede's cultural dimensions** could help any retailer to get the best understanding of his/her audience. Taking the help of local managerial talents would help understand the needs of localcustomers.

- The global retailers should work on competitive advantage and not disregard the globalization. It is very obvious that the global retailers will face the threat of competition not only from other big players but also from local players as even if you have the money, the edge of knowing the customers of that country still lies with the local retailers. Hence the need to constantly upgrade product and services lies on the part of global investor.

- Outsourcing is the new global trend with big companies going for outsourcing cheap labour thereby reducing the manufacturing cost. For example, many developed countries outsource resources from not only China & India but also from Africa, Latin America. This trend has led to compete with low cost local suppliers. Thus, helping global retailers save cost for more & more projects.
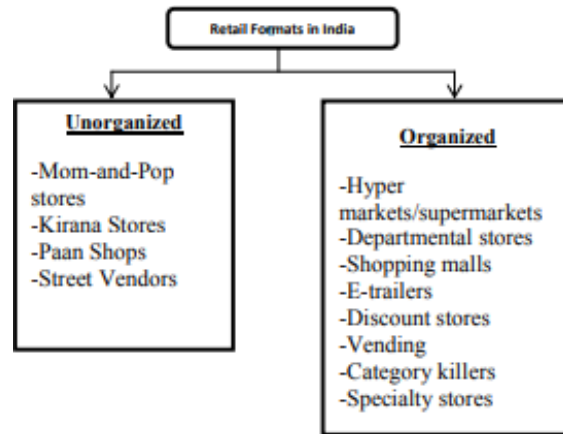
MAJOR RETAIL FORMATS IN INDIA

Figure 1 Retail Formats of India

Source: (Prafulla & Brijesh, 2013)

Retailing in India is one of the pillars of its economy and accounts for about 22 percent of its GDP (McKinsey & Company, 2007; Anand, 2011). India is one of the fastest growing and potential retail markets in the world with over 1.2 billion people. But because of globalisation the unorganised sector is facing a threat as the organised retail sector is congregating into the lives of urban consumers.

Outlets today are focused on customer facilities and attractive tangibles such as prominent merchandising, air conditioning, ambience all contribute to overall image of the store. These changes are a result of trends set in globalized era. The changing income, lifestyle, demographical factors has given a boost to Indian organised retail sector.

The unorganised sector because of lack of better facilities in terms of:

1. Recreationalfacilities
2. Computerised billingsystem
3. Parkingfacilites
4. Better and attractiveenvironment

Has been left behind and as a result are going into losses. Hence, they are required to leave behind their existing methods and adopt new ones irrespective of cost incurred as this is the only way to sustain the competition from bigplayers.

REVIEW OF LITERATURE

A report by Deloitte on "Disruptions in Retail Through Digital Transformation" states that Indian Retail is undergoing a rapid transformation due to several factors like rising household incomes, increase in number of internet users, easy credit availability and favorable demographics. This growth will further be accelerated because of the new technologies and high internet adaptability and usage in India. `The rapid development of digital infrastructure has led to a collapse of boundary between physical and virtual retailers .It has given an insight on how the technology has actually disrupted the retail sector in India. How this digital development will bring equal opportunities andchallenges.

Figure 4: Usage of digital technologies in retail – Global and India examples

Source:
i   IKEA catalog uses augmented reality to give a virtual preview of furniture in a room, 14 August 2013, Newatlas
ii   Traditional retail ups its digital quotient, 26 January 2016, Financial express
iii Amazon Go grocery store replaces cashiers with automation and AI, 5 December 2016, TechRepublic
iv   Capillary Technologies develops AI-based footfall analysis product for offline retailers, 16 October 2017, LiveMint
v   eBay Australia launches 'world's first' VR department store, Virtual Reality News.Net, 16 May 2017
vi   VR, AR, and Giant Touchscreens: Myntra's Vision for Offline Stores Goes Live in Bengaluru, 17 Mar 2017, NDTV

Source: Deloitte Report on "Disruptions in Retail Through Digital Transformation"

Sunil Munshi in his article "Retail 4.0: Revolutionizing the brick and mortar industry through emerging technologies" states that the emerging technologies like IoT, AI, Virtual Reality, etc. will present new opportunities for retail industry and to accelerate performance and growth. These technologies have revolutionized the retail industry and brought in its new avataras Retail4.0.Retail analytics have helped retailers to get deep

insights into purchase patterns, frequency of purchases and to anticipate the demands and what is likely to be purchased by the customer. This has transformed traditional supply chains to digital supply chain and modes of payment have completely moved online. The only way to be competitively ahead is to continuously adapt to the changing environment and upgrading to the latest technologies.

In a report by KPMG on **Global Consumer and Retail,** the effect of disruption has been beautifully explained. It states that the disruptions are not causing the shutdown of brick and mortar stores, it is the boring retail which is on the path of demise. It is therefore interesting to note that a lot of Retail that started from online platforms have eventually opened physical stores, better known as click and mortar stores. The important takeaway from the paper is "Customer Experience will overtake price and product as the key brand differentiator by the year 2020" and this is how business operates today. Big enterprises like Amazon and Apple are not only using AI for their operations but are also selling it in the form of Alexa and Echo.

FIG 1.1: Analytics company Sensor Tower welcomed a move by Apple to enable users viewing products in AR to makedirect purchases

Source: mobileworldlive.com

RESEARCH METHODOLOGY

RESEARCH OBJECTIVE

MAIN OBJECTIVE: To study and analyze the role of Globalization and IR 4.0 in disrupting retail industry.

SUB OBJECTIVES:

- To study the concept of Retail4.0
- To analyze Innovation and Drivers of change inRetailing
- To analyze role of globalization in disrupting retailsector
- To study the disruptions in retail due to digitaltransformation
- Future of Retail industry with respect todigitalization.

RESEARCH METHODOLOGY

DESIGN

The design of the study is undertaken is exploratory in nature. As the research focuses on growing disruption of retail industry due to digital transformation this paper studies in-depth driving technologies that impact retail industry and how the shrinking boundaries due to globalization has led to increasing competition and game theory changes leading to disruptive sectoral changes.

Exploratory research is defined as a research used to investigate a problem which is not clearly defined. It is conducted to have a better understanding of the existing problem, but will not provide conclusive results. For such a research, a researcher starts with a general idea and uses this research as a medium to identify issues, that can be the focus for future research.

DATA COLLECTION

Secondary data has been collected and studied in detail in order to get further insights of the topic from journals, research papers, company reports, blogs, online sites.

Secondary data refers to **data** that is collected by someone other than the user. Common sources of **secondary data** for social science include censuses, information collected by government departments, organizational records and **data** that was originally collected for other research purpose

ANALYSIS & FINDINGS

The technological advances and changing customer profiles have forced the retail industry to rethink its processes from store formats and payment methods, to harnessing the power of data to transform retail operations. The new retail landscape requires retailers to become nimbler and more adaptive to consumer trends, along with delivering a seamless omnichannel customer experience.
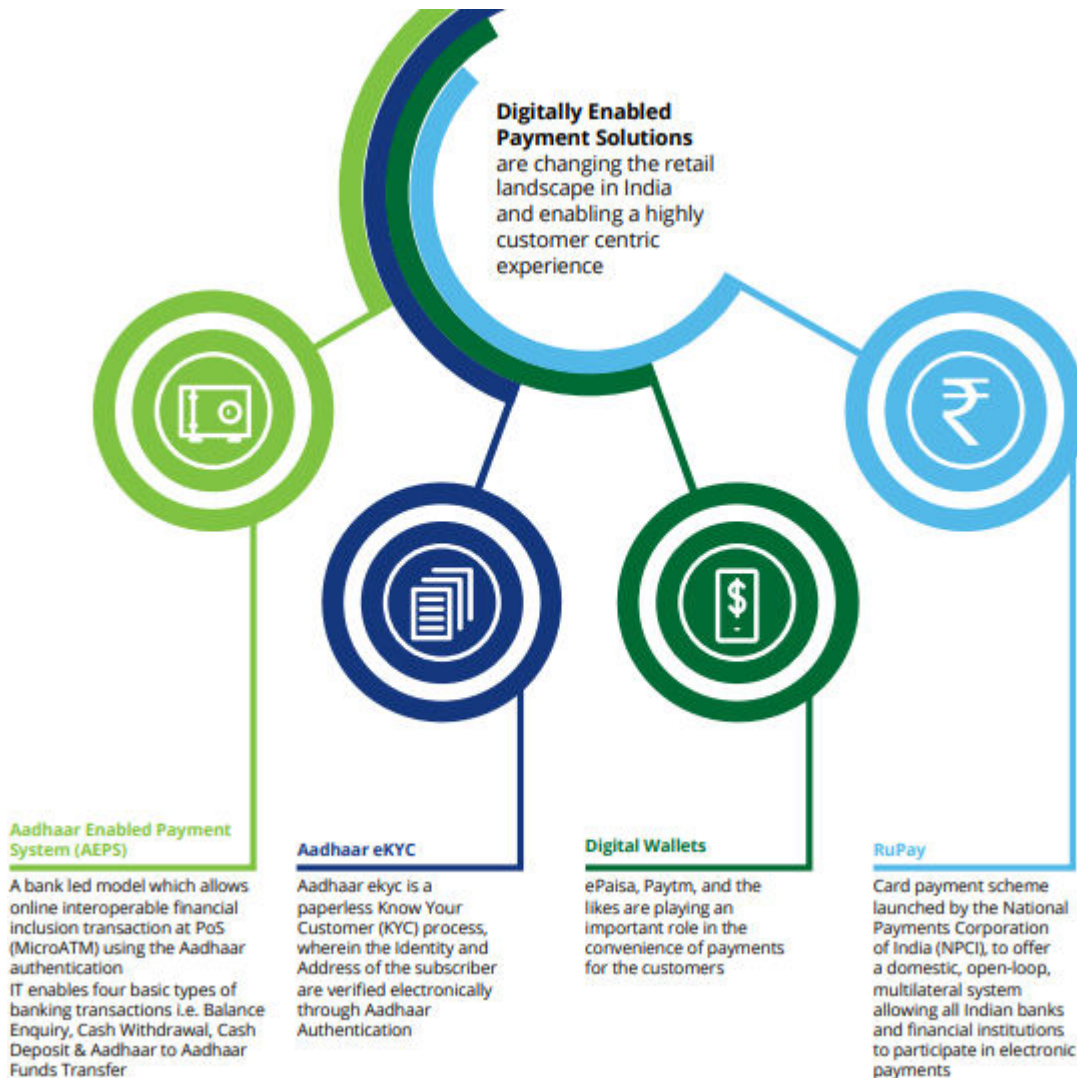
Various Researches have proved that going global is more than liberalization or westernization.

Various challenges have been identified to be roadblocks for retailers contemplating international expansion.

- Risk assessment : the retailers who wish to enter global market will have to undertake risks assessment of the organizations appetite of risk and the risks posed by strong localcompetitors.

- Strategic Localization: firms will have to make strategies to localize the available goods& services as per the tastes and preferences of the localpeople.

- Check market attractiveness: one will have to check the suitability and attractiveness of the market they wish to enter in order to grow andsustain.

- Feasibility: Globalization has led to a surge in the retail real estate prices, making it difficult to find a place in primelocations.

- Security and Privacy: The biggest threat that globalization has brought along with it is breach of data privacy. The data available with retailers for knowing customer preferences can be used for illegal purposes and can hinder the overall reputation of the country in terms of datasecurity.

- Despite rapid growth and development, there are still areas in many countries that do have access to internet and also with the countries that are fully developed like Canada it might be very difficult for Indian players to deliver services and products on time due too very longdistances.

Transitions

1. There has been a paradigm shift from traditional methods of payment to online modes for fulfilling payments for various transactions. This has only been possible because of various lessons taken from our global counterparts and eventual development of technologies. It has been a gift of globalizationcombined.

Digitally Enabled Payment Solutions are changing the retail landscape in India and enabling a highly customer centric experience

Aadhaar Enabled Payment System (AEPS)

A bank led model which allows online interoperable financial inclusion transaction at PoS (MicroATM) using the Aadhaar authentication
IT enables four basic types of banking transactions i.e. Balance Enquiry, Cash Withdrawal, Cash Deposit & Aadhaar to Aadhaar Funds Transfer

Aadhaar eKYC

Aadhaar ekyc is a paperless Know Your Customer (KYC) process, wherein the Identity and Address of the subscriber are verified electronically through Aadhaar Authentication

Digital Wallets

ePaisa, Paytm, and the likes are playing an important role in the convenience of payments for the customers

RuPay

Card payment scheme launched by the National Payments Corporation of India (NPCI), to offer a domestic, open-loop, multilateral system allowing all Indian banks and financial institutions to participate in electronic payments

source: Deloitte

2. Traditional supply chain to digital supply networks: There used to be interdependency among various steps of a traditional supply chain. There was a lack of transparency and customers were less informed as to where the ordered deliverables have reached and there were no means to track it. However, in the digital supply chains all the nodes are closely connected and dynamic. There is an end to end transparency, connected community and intelligent optimization.

3. There is a high level of collaboration among retailers at different levels to create increased value

proposition. It helps in creation of new ecosystems(Apple's tie up with Reliance retail to give special offers and plans), extended networks and new channels(Paytm's tie up with small electronic stores to list them on their online stores), cost reduction and many morebenefits.

4. Customized products and services

With the help of Emerging technologies like IoT and AI retailers have been able to deliver highly customized products and services. The good are promoted as per individuals. It is AI that is Providing these capabilities to the retailers be in the shopping segment or the banking segment. AI technology is helping banks to keep a track of their profitable customers and ratings to decide Loan disbursements.

5. Data is the most precious asset for todays era. And cloud computing has provided facilities like easy availability of data, easy transferability and easy storage. Cloud facilities have provided flexibility and cost competitiveness to theorganizations.
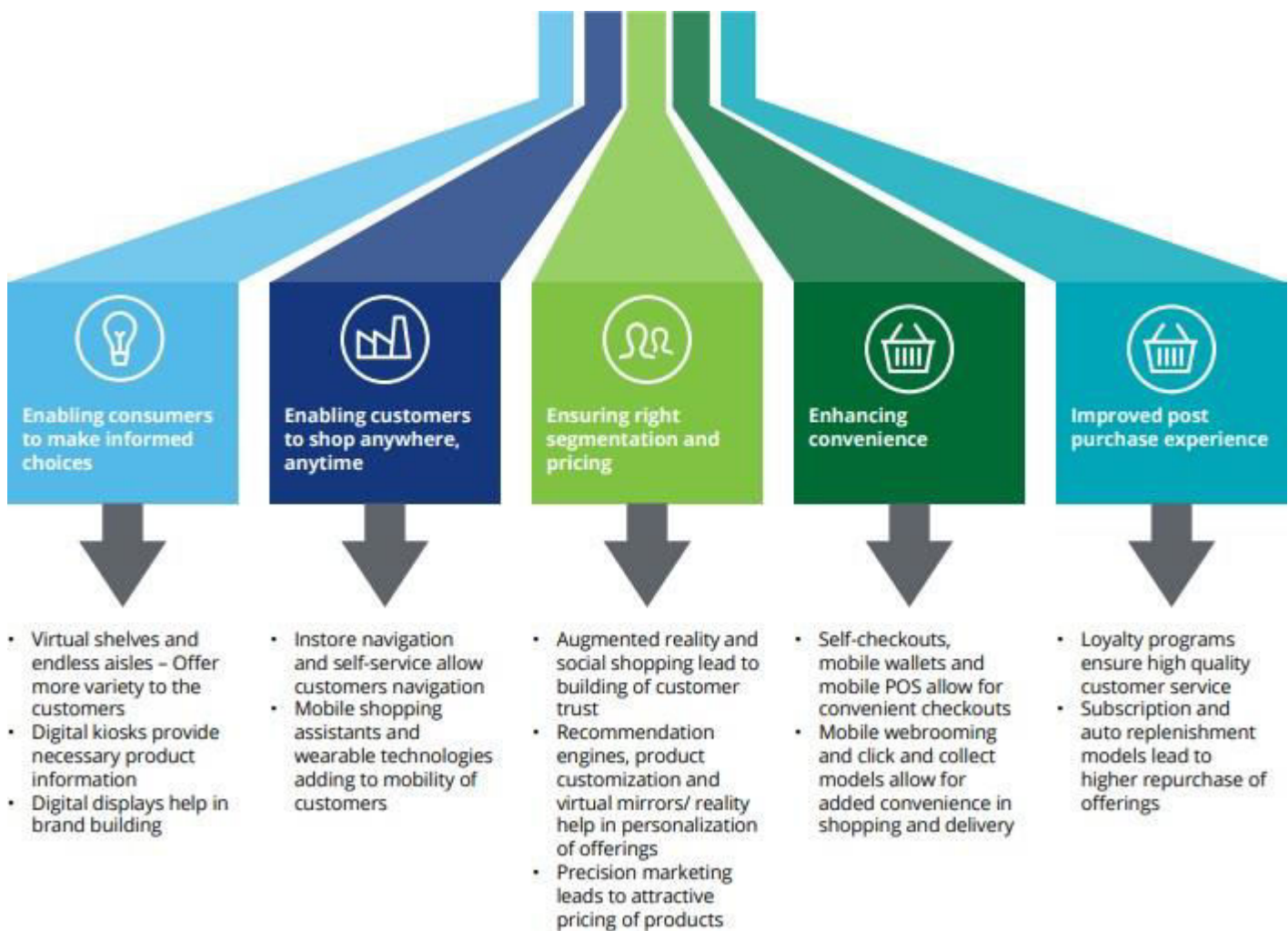
6. Companies can create exponential value by going digital to develop new revenue streams and expand their markets. for example, a brick-and-mortar retailer can partner with e-tailors to offer its stores as pick-up points for fulfillment of online shopping orders, thereby increasing footfall at its physical locations and hence increasing its visibility andrevenue.

7. All the industrial revolutions have been known to create and destroy jobs and will IR 4.0. This era requires more Technical skills for individuals to be employed. The staff working for the online retail sector also have to be updated with the latest mobile technologies and applications in order to fulfill the orders and createvalue.

REAL EXAMPLES OF INDIA

☐ Online eyewear brand Lenskart has enabled its users to try glasses on realistic 3D models of themselves by clicking a selfie using their webcams. This gives a more customized efforts and customersare able to make better purchasedecisions.

☐ Online shopping Site Nykaa also allows its customers to try on shades of lipsticks and foundations beforepurchasing.

☐ Burberry does digital Merchandising by using RFID e tags to provide cutomers access to additional information as to how the product was crafted and other suggestions as to the suitability of the item on individuals,etc.

GLOBALIZATION & RETAIL 4.0 IN A SNAPSHOT

Source: Deloitte report(https://www2.deloitte.com/content/dam/Deloitte/in/Documents/CIP/in-cip-disruptions-in-retail-noexp.pdf)

CONCLUSION

The impact of digital disruption is such that, it either may let the firms play catch up or else open doors to unprecedented opportunities but if looked closely the benefits will be seen overpowering the challenges which are few in number.

The digital era has bought opportunities for retailers in terms of customer centricity, co-creation, continuous learning, convergence. The extent of competition is not among the individual retailers only but among the wide alliances formed by them within the network. Such Digital Supply networks also help companies stay connected with their key stakeholders i.e. vendors, employees and customers and also get feedback from the network sharers to work on day to day basis. Advanced Technologies such as IoT, 3D Printing, Cloud, Expert systems all are expected to automate the front end and back end processes. This creates a need for retailers to invest in such technologies in order to sustain in disruptive environment.

Hence it is advent that business model and performance of firms is determined by the ability of the firms to embed the new digital technology to enhance agility, responsiveness and cohesion in the network.

The negative aspect which is a concern is the misuse of data as accessing to data these days have been very easier for anyone especially the hackers. And this is the biggest threat to any nation, as a result Government of India has come up with a 'Data Protection bill' in order to increase data security and avoid zero leakages in order to gain consumer trust.

Retail 4.0 has led to the empowering of retailers and personalizing customer experience thereby increasing the efficiency and increasing profitability of the business. Giant players are already working with technological innovations. Businesses are now creating and adopting seamlessly integrated and data-driven business models. Such business models which involve data sharing provide transparency and communication to suppliers and fulfil consumer demands and manage inventories. But, planning and implementation of such business practices along with the embedding of the necessary technologies is a complex task. Hence, organizations need a roadmap or path to approach retail 4.0 in the most effective way possible. The roadmap to industrial revolution 4.0 involves the following steps:

- hiring experienced professionals with niche skills to work with latesttechnologies.
- Strategizing and budgetary allocation to infrastructurebuilding.

- ☐ Updating existing systems to integrate new technologies using various managementsystems.
- ☐ Generating analytics to understand the progressions prevailing in industry.

- ☐ Training and preparing employees with respect to new technologies & help them understand how thework culture will beaffected.
- ☐ Promoting the development of applications that help in improving user interface and enhanceexperience.

In the near future, blockchain will be a part of the global retail market where payrolls, supply chain management, investments, and purchases will be handled with the help of a transparent ledger. Therefore, the possibilities for retail 4.0 are endless. Hence, retail organizations need to stay updated about new technologies and business practices and adopt a holistic approach for retail 4.0.

PERSPECTIVE ON GLOBAL RETAIL EXPANSION

Globalization has become crucial for retailers to have long term growth and for that two key points are investing adequate amount of resources and understanding that achieving it is not as easy as we think. Understanding the maze of globalization and having strong risk management is what a retailer needs to have. Although the cost of risk management is high but retailers need to bear that otherwise they will be out of the league. Gone are the days of traditional marketing styles and shops, new ones are being found by the retailers. They are doing it by defending their positions in the market. Competition from domestic players is intense as they have the advantage of knowledge about customer choices. And thinking that postponing global expansion might be a solution then the retailers are very much wrong on their part. And also, one bitter truth is that growth is not that easy and there is no looking back. Hence the time to plan, decide, check and act is now.

RECOMMENDATIONS		
DIGITAL IMPACT ON RETAIL	**SUB AREAS**	**RECOMMENDATIONS TO RETAILERS**
STRATEGY	**Business Models**	Increasing customer centricityand increasing customer lifetimevalue
	Operating Formats	Understanding Omni-channel strategies from retail point of view
	Segmentation and Positioning	Identifying and targeting micro segments and positioning through digital aided stores
FRONT END	**Customer experience**	Making user interface more interactive with expert systems
	Payment solutions	Collaborating with payment providers like Paytm, Digital transfers, plastic cards
	Merchandizing and promotions	Using data analytics to track customer activities and target them using Facebook, Instagram etc. for choosing the right platform to promote.
BACK END	**Supply Chain, logistics and warehousing**	Using big data, cloud servers, to reduce intermediaries in supply chain and make supply chain management economical. Also, a shift from traditional to DNS can improve the day to day operations.
	Vendor Management	Reformulating the relationship with suppliers through data sharing

	Support Functions	Using BI to study KPIs

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