

Strategizing In-store retail experience with IoT for Gen Z: Retail 4.0

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Abstract— The accelerated development of Internet and communication has led to the emergence of a new era of the IoT in various industries. Amongst all the industries and sectors in India, retail is the most rapidly growing sector. It contributes about 10 percent of India's GDP. In today's business world, one of the major challenges that marketers are witnessing is addressing the needs of new generation consumers. This challenge is also faced by the retailers, since the majority of Gen Z individuals are so comfortable with technology that they only prefer online modes of shopping and are also referred to as E-loyal consumers. In order to attract this generation of consumers to offline retail stores, use of IoT in brick and mortar stores becomes significant. Thus, the current research evaluates the use of IoT in In-store retail and also searches for ways of improving the In-store retail experience and making it suitable to attract the Generation Z consumers. Major findings reveal that a more percentage of Generation Z consumers prefer online mode of shopping. Convenience, Ease of use & Tracking systems are the primary reasons for using online platforms. Thus, in this paper various ways of using IoT to enhance these three areas in In-store retail are explored.

Keywords— Retail 4.0, IoT, Gen Z consumers.

I. INTRODUCTION

The Internet of Things (IoT) has become an integral part of our day to day lives, it has made communication and connecting extremely convenient [1] [2]. The accelerated development of Internet and communication has led to the emergence of a new era of the IoT in various industries [3]. Amongst all the industries and sectors in India, retail is the most rapidly growing sector. It contributes about 10 percent of India's GDP [4] [5].

Retail sector in India is also experiencing a major evolution, as in order to improve the shopping experience of the consumers, retailers are experimenting with various technologies [6]. Retail sector has now entered the era of Retail 4.0. Many theoretical studies are done on the role of IoT in business development, but very few have focused on the operational benefits of IoT in the retail sector. [7] Thus the current study focuses on analysing the role of IoT in the Retail sector.

In today's business world, one of the major challenges that marketers are witnessing is addressing the needs of new generation consumers. [6]. As we are aware that Generation Z, also referred to as Digital Natives, behave very differently as compared to the previous generations. Also it has been found that their buying behaviour is also very unique. [8]. This challenge is also faced by the retailers, since the majority of Gen Z individuals are so comfortable with technology that they only prefer online modes of shopping and are also referred to as E-loyal consumers [9]. In order to attract this generation of consumers to offline retail stores, use of IoT in brick and mortar stores becomes even more significant [10]. Thus the current research evaluates the use of IoT in In store retail and also searches for ways of improving the in store retail experience and making it suitable to attract the Generation Z consumers.

The study will help the policy makers to identify appropriate use of IoT in their retail outlets and will enable them to attract more Generation Z consumers to offline retail stores.

II. LITERATURE REVIEW

1. Retail 4.0 & IOT in business

Retail revolution has made our life more convenient. During pandemic situation, retail 4.0 gave opportunity to the retailers to serve their customers by less physical contact. In developed countries like US, UK, Europe adoption level of retail 4.0 is higher than developing countries. Govt. inattention, High-cost broadband services, a lack of skilled workers, and overreliance on cash are the main barriers to consumers and businesses that they are unable to avail benefits of e-commerce opportunities. Digital entrepreneurship must become a main focus to maximise the value of digital commerce [11].

In order to serve a bigger consumer base, the paper introduces a revolutionary strategy that gives businesses practical tools for utilising modern IoT technologies and some aspects of traditional SCM and logistics. The study gives people, researchers logistics, businesses and supply chain management solutions to ensure optimal efficiency in all elements of the handling of raw materials, components, and finished items as they flow from the manufacturing centre to the final customer. The key advantages of the research study

will be the possibility for organisation to gain a competitive benefit, increased profitability and cost savings [12].

IoT technologies can improve quality and efficiencies by reducing the cost. Mostly the large and medium size businesses are availing the benefits by adopting IoT technologies but the small organizations are still not aware of these technologies and not availing the benefits of IoT technologies. Education level and expertise plays a very important role in creating the awareness and adoption of such type of technologies. According to the study, the major capital expenditure may be the main reason for not adopting the IoT technologies by the small organizations [13].

How India's retailing 4.0 environment is affecting current supply chain performance metrics and how it is affecting organisational performance. The study's conclusions offer practitioners in the retail supply chain useful guidance on structuring BDA investments. The governance structure is used as the moderating variable in this study, which is based on a survey of 380 respondents chosen from retail organisations in India. Future research opportunities and implications for managers are also discussed in the study [14]. According to the author, we can easily analyse the consumer buying patterns and consumer behaviour by using IoT model in smart retail 4.0. Strategic marketing of consumer products and retail intelligence will be done by using retail 4.0 IoT consumer model and retailer model and these are the two models proposed by author in this research. We can use IoT in the retail stores by providing Smart Shopping Carts, Automated Beacon Checkout, Real-time Customer Tracking and Analytics, Mobile Engagement, Smart Rack, Dynamic Pricing, Smart Security, Face Gesture Recognition, Smart Mirrors and Smart Screens. Retail 4.0 IoT consumer model contains parts like, Consumer components, Network, The Database, Cloud computing, Data mining, Data visualization, etc [15].

The impact of IoT will bring in coming years in retail industry based on parameters of integration, security, discoverability, interoperability and reliability. For the business profitability, the research also presents latest concepts that can be implemented using different IoT Technologies like the areas of embedded systems, generic sensors and security, cyber physical systems. For Retail Industry, not only the technology paradigm shifted from a certain POV but businesses also change in terms of dynamicity, heterogeneity, scalability and interconnectivity. The research also discusses about latest ideas and their social and business impact on the industry in terms of adaptability and profitability [16].

2. Generation Z

Generation Z born after 1995 are individuals who are born in the era of connectivity and are thus referred to as Digital Natives. They have a habit to get quick access to any information & communication & thus have a very limited span of attention. They like to access several apps and devices at the same time. Their characteristics and behaviours are very dissimilar to the previous generations. Thus their behaviour as consumers is also very unique. [17]

A study conducted by [17] in 2017 on Generation Z reveals that the real world of these new generations is highly dictated by technology. They have their own "technological language". Their entire lives revolve around technology. Due to this they also prefer learning with the help of technology.

This phenomenon makes the use of high-tech devices in colleges and universities. The traditional teaching methods have become obsolete and no longer serve well to the currency tech-savvy generation.

This generation lives in two worlds, one real world and the other is a virtual world. For Gen Z both the worlds are important and are complementary. Their shopping habits thus are also linked to their virtual worlds. [18]

This generation uses various digital platforms in their everyday lives like Facebook, Twitter, Instagram, Pinterest. They also use various shopping websites like Amazon, Myntra etc. This generation uses these platforms to share their feelings, their attitudes, their preferences. They also use them to share their opinions, views, and feedback. This generation is way more open about their point of views as compared to the previous generations. They are major contributors of content on the digital media. [19]

As compared to other generations, Generation Z analyses any situation before reaching a decision. Due to advanced technology, this generation has easy access to all types of information. Thus they prefer scrutinizing every aspect of a situation before coming to a conclusion. [20]

[6] in 2017 conducted a study on Generation Z consumers to study their expectations from retail stores. A qualitative research was done, it was found out that, this generation as consumers, prefer fast and cashless transactions. They like to get real time information and quick access even in offline retail stores. Thus use of technology becomes very important in the retail industry. Also the research reveals that technological training also becomes crucial to make the offline retail stores more relevant.

The offline retail stores need to get ready now itself for the future challenges and will have to identify ways to attract these e-loyal customers.

III. RESEARCH METHODOLOGY

IV. DATA ANALYSIS

A. Tables and Chart:

TABLE I.

Gender		
Male	Female	Total
78	66	144

As depicted in TABLE I, out of 144 respondents, 78 i.e. 54% are Male and 66 i.e. 46% are Female.

TABLE II.

Preferred mode of shopping	
Offline/In-store	Online
25%	75%

As depicted in TABLE II, out of 144 Gen Z consumers, 36 i.e. 25% prefer Offline/ In-store mode of shopping and 108 i.e. 75% customers prefer Online mode of shopping

TABLE III.

Rank Order for Online Purchase		
Parameters	Preferred Mode	
	Offline/Instore	Online
Convenience	100	282
Ease of use	118	316
Tracking System	133	318
History Tracking	138	456
Easy Comparison	134	532
Promotional Offers	158	564
Earn Loyalty Points	189	623
Better Customer support	175	629

As illustrated in the above table, it can be said that consumers rank convenience as the most important parameter for purchasing online and better customer support as the least important. It can also be said that the top three parameter for purchasing online are convenience, Ease of use & Tracking system.

TABLE IV.

Rank Order for In-store Purchase		
Parameters	Preferred Mode	
	Offline/Instore	Online
Less delivery time	80	162
Quick returns	110	286
Assurance of Product quality	117	324
Safe Payment	119	432
Size and Fitting	127	466
Satisfaction of shopping	138	528

As illustrated in the above table, it can be said that consumers rank less delivery time as the most important parameter for purchasing from offline/ In-store retail and satisfaction of shopping as the least important. It can also be said that the top three parameter for purchasing offline/ In-store retail are less delivery time quick returns and assurance of product quality.

CHART I.

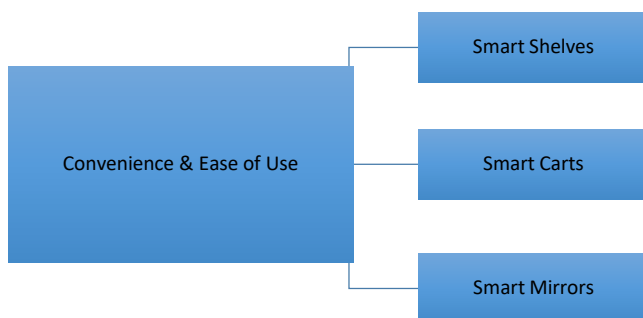


Chart I- IoT Devices to enhance Convenience and Ease of Use in Offline Retail Stores.

CHART II.

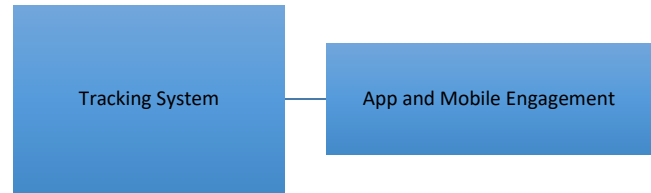


Chart II- IoT Devices to enhance Tracking System in Offline Retail Stores.

V. FINDINGS AND CONCLUSION

As per the analysis, it is found that 75% of the respondents prefer online mode of shopping. The collected data was analyzed using rank order and rank correlation, it revealed that the top three parameters for purchasing online are Convenience, Ease of use and Tracking system. Thus the study suggest that if the offline retailers adopt these parameters in their stores using IoT technology, they can compete better in the dynamic environment. With extensive literature review, this paper has found various ways of strategizing in-store retail experience using IoT.

In order to provide more Convenience and Ease of use in offline retail stores and to incorporate Tracking system in clothing industry, the retailers can use various IoT devices like:

1) *Smart Shelves*: Smart shelves are armed with electronic printed tags, RFID tags, optical, proximity & weight sensors. These RFID tags and sensors improves the consumer experience by providing them real- time information about availability of the products' sizes, colour, related designs and promotional offers and discounts. These shelves also allows the retailers to track and maintain inventory in retail time. It enables them to optimize customer data and maintain CRM.

2) *Smart Carts*: Smart Carts, are shopping trolleys that use Radio frequency identification technology (RFID) to help the consumers in numerous ways like, if the customers feed a list of items they wish to purchase, smart cart enables them to find the exact location of those items in the stores, it also suggest them the related discounted products on near by shelves, they also get to know the shopping total immediately, they can also pay immediately with QR codes, thus it reduces the queuing time making the shopping more comfortable for the customers. It also is beneficial for the retailers since it reduces the number of staff required as most of the tasks are automated. Thereby saving the operational cost.

3) *Smart Mirrors*: In order to mitigate the discomforts experienced by the customers and to eliminate queuing while using the trial rooms, smart mirrors can be used. Smart mirrors assists the customer to virtually try on a apparel and propose fit recommendations. It also helps the retailers to better manage shelves since there is no need to display all the apparel sizes.

4) *App and Mobile Engagement*: The retailers can introduce a personalized app for the customers. Customers can download this app on their smart phones and can track

their current purchase, purchase history and after sale services. App can also be used for making payments and availing discounts.

It was also discovered that while ranking the reasons for purchasing offline, consumer wants more improvements in the parameters size & fitting and satisfaction of shopping. Thus the above explained devices like smart shelves, smart cart & mobile applications can be used by the retailer to improve satisfaction of shopping and device like smart mirror can also enhance the parameter of size & fitting in offline retail stores.

VI. FUTURE SCOPE OF STUDY

The current study focuses on understanding the use of IoT in offline retail stores to attract Generation Z customers. As the study is done taking into consideration the needs of only Generation Z customers thus further studies can be conducted on other generations too. Also the study is restricted to only India thus cannot be generalized further research can be done in other countries, also comparative studies can be administered. The scope of the study is restricted to clothing retail industry. Thus a similar study can be done in other retail industries too.

VII. REFERENCES

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