

Retail Intelligent Automation: An Overview

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Abstract:- Retail industry is one of the most dynamic, evolving and vibrant industry. Retailers today are focusing on low cost, great convenience, enhanced customer experience. Changing demographic profile, changing tastes, preferences of consumers, changes in consumer shopping behavior are some of the key factors due to which the retail shopping experience is constantly evolving. One of the biggest challenges for retail industry is adapting to the world of online and technological advances in the field of marketing and sales. Today retailers are facing tough competition from e-commerce giants like Amazon. Despite of such competition, in-store retailing will survive, however it needs to change and differentiate from that of their competitors with the integration of retail business processes, artificial intelligence and automation to meet the changing customers' expectations which enable them to provide differentiated customer experience. With the help of artificial intelligence and automation differentiated consumer shopping experiences can be given which will match up with the changing expectations of modern customer and also help the retailers to increase their sales and loyal customers. With a proper blend of business and IT alignment retailers can achieve a pervasive automation at all levels and business processes which will enable them to stay strong in the competition by providing enhanced customer service.

Keywords:- Customer Experience, Artificial Intelligence, Automation.

I. INTRODUCTION

Retail is one of the largest industries in the world and technology is transforming the retail industry in a way to enhance business competency of the retailers. There has been a big change in the shopping behavior of today's customer who does not view shopping as an "activity" but more as a complete experience inclusive of joy, entertainment and pleasure from purchases. Retailers today are focusing on low cost, great convenience, enhanced customer experience. Changing demographic profile, changing tastes, preferences of consumers, changes in consumer shopping behavior are some of the key factors due to which the retail shopping experience is constantly evolving. One of the biggest challenges for retail industry is adapting to the world of online and technological advances in the field of marketing and sales. Today retailers are facing tough competition from e-commerce giants like Amazon. Despite of such competition, in-store retailing will survive, however it needs to change and differentiate from that of their competitors with the integration of retail business processes, artificial intelligence and automation to

meet the changing customers' expectations which enable them to provide differentiated customer experience. Retailers today have realized the gaining importance of online stores and hence are focusing more on offering a "unique and differentiated in-store experience.

Retailers need to rethink and strategize their business processes to ensure they remain competitive in today's technologically competitive market place.

II. LITERATURE REVIEW

A. Customer Experience:

Customer Experience is the outcome of customer and company interactions over the duration of their relationship. Customer experience means all that the individuals experience during all points of contact matches the customer expectations. (Thompson, Ed and Kolsky, Estaban 2004-12-27) Gartner asserts the importance of managing the customer's experience.

Customer experience can also be said as customer's perception of their experience with the company. A company delivering Quality customer experience will have more number of loyal customers.

The overall experience reflects how the customer feels about the product, services provided and also about company. Understanding the customer experience is the integral part of customer relationship management. Creating differentiated customer experiences has become one of the most competitive force in the retail industry.

B. Retail Automation and Artificial Intelligence:

With the e-commerce revolution many changes in consumer shopping behavior got initiated and such changes are evolving also due to usage of modern technology in the field of retail. Use of Mobile apps, social media as a medium of marketing communication by businesses is also supporting such changes leading to changes in customer demand patterns. Under such situation competition is getting more and more intense compelling retailers to match with the changing market trends set by changing consumer preferences, shopping behavior.

Retail Automation is the use of technology to automate retail locations. It's a process whereby the retailers are equipped with operational tools infused with latest technologies used to make their business processes and systems more responsive, personalized, and convenient from customer's point of view to create delightful and differentiated customer experiences.

Artificial Intelligence (AI) can be defined as a capability in machines to reason, remember information, learn and identify new insights through data discovery. Intelligent automation is guided by AI tools that need minimal manual routine interventions. This operational shift augments and assists human capabilities, reduces human errors and builds efficiencies, while enabling digital operations and innovations. Four components make up intelligent automation: the first three are fueled by AI, the fourth by automation. 1. Engagement over external touch points where users interact with systems 2. Learning from analytics across different data sources and recognizing semantic references to use as criteria for decisions 3. Reasoning from learning to make autonomous decisions and self-remediate over time 4. Doing or executing to carry out the next best action that systems can execute digitally and/or that people or robots can execute physically.

Many of the industries have automated their business processes and have changed beyond recognition. In retail industry retailers doesn't have to work on and automate each and every business process or function, but they need to work on the areas of improvising customer experience and automate their execution.

Automation by improving the quality of various retail systems help the retailers to improve their touch points whereby they can provide better customer service and create more satisfied and loyal customers.

While making use of automation, retailers need to know about their brand's perspective, brand expectations from their customers and with such understanding they should try to communicate and connect with their target customers. Automation facilitates monitoring of such changes and guides the retail brands to select and implement best course of action in order to enhance sales. and generate recommendations, and to make autonomous decisions and self-remediate over time.

Intelligent automation was initially used for some of the processes and systems to work on increasing efficiency and reducing cost by retailers. But with the advent of technology, the scope of automation got widened which has introduced new ways of automation which can increase operational agility, improve the quality and speed of decision making process, improve the customer service quality and enhance the overall customer experience. With these advancement in automation certain issues also got introduced like ethical issues in conducting processes, issues of machine responsibility, etc.

When thought of processes, in retail world a product passes through various stages- planning, sourcing, producing, marketing, distributing, and selling. During this journey of product lot of data has been generated at each stage. The artificial intelligence (AI) driven automation in retail can find many answers to enhance the efficiencies at operational levels, service levels and quality of customer experience with the smart use of valuable data generated at various stages.

Intelligent automation does not only mean technological transformation of retail business processes & Systems but it also has potential to increase the business competency whereby retailers can become leader in today's highly competitive and dynamic retail marketplace.

III. NEED OF RETAIL INTELLIGENT AUTOMATION

With the use of latest and next-gen technology retailers today can create a platform for customers to enjoy a completely new experience of shopping both online and in-store.

- Implementing AI enabled automation help in transforming retail industry by becoming technologically more competitive, increasing sales and gaining customer loyalty. Intelligent retail automation will have a crucial impact on their survival and success.
- Intelligent retail automation helps in revolutionizing the way retailers interact with their customers, the way they are integrating advanced digital technologies for creating retail experiences.
- Retail automation will yield significant returns for both employers and employees. Automation helps in improving scalability, minimizing errors and increasing efficiency.
- With the help of artificial intelligence and automation differentiated consumer shopping experiences can be given which will match up with the changing expectations of modern customer.
- With a proper blend of business and IT alignment retailers can achieve a pervasive automation at all levels and business processes which will enable them to stay strong in the competition by providing enhanced customer service.
- With the use of various tools and techniques of automation retailers can strongly compete with the e-commerce giants like Amazon.
- Retailer's key areas of concern for survival and growth like reduced cost, benefits of business optimization, rising demand for automated retail products, improvement in customer service quality and customer convenience, increasing competition from e-commerce giants have created need for intelligent automation in retail.

IV. AUTOMATION IN RETAIL: WAYS AND TOOLS

Retail in 21st century is under tremendous pressure. Higher costs to on supply chain, higher investments in operational areas, rising customer expectations, competitive pressure from online giants are some of the key areas of concern for retailers. Many of the industries have automated their business processes and have changed beyond recognition. With the use of latest and next-gen technology retailers today can create a platform for customers to enjoy a completely new experience of shopping both online and in-store. Implementing AI

enabled automation help in transforming retail industry by becoming technologically more competitive, increasing sales and gaining customer loyalty.

Inman and Nikolova (2017) draw attention to how technologies can benefit both consumers and businesses, which ultimately enhance the businesses' profitability. They highlight mobile apps, scan-and-go technologies, self-check-outs, QueVision, and smart shelf technology.

A comprehensive Retail Automation would include:

A. Supply Chain Process Automation:

Supply chain is concerned with managing various elements like people, technology, resources, raw materials to finished goods, various processes like distribution, delivery in order to ensure optimum utilization and outcome from such resources and processes. Automation in supply chain function will help in achieving the optimum efficiency and effectiveness from such various elements involved in supply chain process.

Automation will help the companies to direct the flow of various activities to automatically update and adjust the plans, avoiding the problems of under stock or overstock situations, ensuring smooth flow of products which will further help them in enhancing the inventory productivity.

B. Customer Service Automation:

Customer Service Automation includes the customer support system of the retailer which is provided and supported by an automated system, like customer care center, self-service mechanism and Artificial Intelligence Systems. An automated customer support system facilitates smooth flow of customer service activities performed by the retailer and reduced cost of human support. (Ref. wwwZendesk.com)

C. Customer Experience and Customer Engagement Automation:

Retailers are taking lot of efforts in improving their customer service thereby trying to give delightful experiences to customers. They also conduct various customer engagement programs like contests for customers, campaigns. With intelligent automation these programs can be better implemented. Retailers make use of social media, various mobile apps, visual digital displays, real time messaging.

Roggeveen and Grewal (2016) suggest that five effects drive consumers to engage with social media: connected, network, information, dynamic, and timeliness effects. Automation in Customer Experience and engagement programs will help the retailers to conduct more meaningful, effective and cost effective programs so as to achieve the objectives of improved customer experience and better customer involvement.

D. Other Tools:

An automation can also be implemented by Responsive POS, UGC Automation, Chatbots, Internet of things Automated Inventory Management and many other automated processes.

- Responsive Point-of-sale (POS) System: Speed, convenience, transparency are some of the key factors which are putting pressure on retailers to upgrade and automate their POS System. With such upgraded POS system retailers can better manage their inventory as well as their customers profile. Mobile POS Apps is one such example .
- UGC Automation: User Generated Content (UGC) is one of the highly successful marketing tool adopted by companies which brings actionable insights in order to win customer attention. It helps retailers in engaging customers on consistent basis. UGC encompasses various latest business solutions ratings and reviews, questions and answers, etc.
- Reviews & Ratings: This platform helps retailers to identify the satisfied and dissatisfied customers through their positive or negative reviews, feedbacks. Further helping the retailers to work on negative feedbacks generated from dissatisfied customers in order to enhance customer satisfaction.
- Questions and Answers: This platform is also a very powerful tool under UGC system which helps retailers to identify potential and prospective buyers for their product categories.
- Chatbot: Chatbot is a complete program which conducts a conversation via auditory or textual methods. It is typically used in dialogue system for various practical purposes including customer service or information acquisition. Today most chatbots are accessed via virtual assistants such as Google assistant, Amazon Alexa via messaging apps such as Facebook Messenger or Wechat, individual organisation's websites. One good Example of retail brand innovating with chatbot: Pizza Hut- It has tapped into their customer base by using chatbots to make the customer purchase easier.
- Internet of Things (IOT): The eRetail industry welcomes Internet of Things. IOT is a system of computing devices , digital machines, objects, or people which are interrelated that are provided with Unique Identification Numbers which enables transfer of data through network without need of man-to man or man to machine interaction.

V. RETAIL AUTOMATION IN PRACTICE:

- Nike automates process for customer-designed sneakers:

Nike Inc., an athletic footwear, apparel and equipment company, has developed a system which makes use of augmented reality, object tracking and projection systems. Through this system their customers as per their choice, requirement can design their own shoes and leave the store wearing them. With this system they can make these customized shoes (by customers) available to the customers in under two hours.

- Avenue Stores LLC, a retail apparel chain, integrates data across multiple touch points:

Avenue Stores LLC, a retail apparel chain, collects data through their system at various touch points and make use of such data for customization of their offerings. With the data collected they can better learn about their customer's likes, dislikes, market trends and fashions which enable them to offer best suited products to their customers' requirement. They also run the system of real time messaging.

- Scan Go technology :Amazon Go

Amazon Go uses the "scan-go- technology" to facilitate ease in shopping and faster purchases to their customers. For this customer requires a smart phone and the Amazon Go App. Amazon Go allows customers to scan their smart-phone as they enter the store, pick up the products they want, and leave. Computer vision, sensor fusion, and deep learning technologies automatically detect when products are taken from or returned to shelves and keep track of items in a virtual cart. After consumers leave the store, they are charged and sent an automatic receipt. (Amazon 2016).

- Self-Check-Out Technology:

self-check-out technology helps shoppers scan, bag, and pay for products without any need to interact with a cashier.

- QueVision Technology :

QueVision gives retailers insights into how many registers are needed and the expected wait times, using data garnered from infrared sensors over store doors and cash registers, predictive analytics, and real-time data feeds from point-of-sale systems. Using this technology, grocery retailers have been able to reduced wait times from more than 4 minutes to less than 30 seconds.

- Introduction of smartphones, changes in mobile technology have revolutionized shopping. It has opened many ways to retailers' to reach effectively, connect with their target customers. Mobiles have become one of the strong marketing communication tool for retailers.

- Integrating channels and the power of big data are not distinctive factors anymore but rather are prerequisites of competitiveness. Where the field goes will depend on even newer emerging forces: The Internet of things, virtual or augmented reality, artificial intelligence, and robots/drones/driverless vehicles (Deloitte2016).

- Virtual and augmented reality has offered vast promise for a long time; those promises are just beginning to be realized. The new forms of technology-based reality and applications enhance sensory perceptions (Poncin and Mimoun 2014). For example, fashion retailers use new technology to help customers engage in virtual fashion shows (Deloitte 2016). a car, or games such as Pokémon GO that combine a hunt for virtual creatures (Pokémon) with the real-world locations of the players. A mobile device's GPS capability makes this possible.

VI. BENEFITS OF INTELLIGENT RETAIL AUTOMATION:

A. Enhanced Business competency:

Intelligent automation was initially used for some of the processes and systems to work on increasing efficiency and reducing cost by retailers. With various intelligent automation tools retailers are now enabling themselves in enhancing their business competency.

B. Reduced cost:

Cost will be needed for implementing automation in business processes and systems but once implemented it will benefit the retailer in reducing the operational costs.

C. Improved customer experience:

Retail automation can help in increasing footfalls. Parking without needing a ticket, having new gadget to interact with, or check-out free stores like Amazon go makes customer happier by providing them with a unique experience.

D. More Consistency:

As most of the retail business processes will be automated it will yield more consistency in terms of increasing sales, providing better customer service and giving delightful customer experience. Customers believe in brands with consistent performance. Retail automation helps in performing consistently to ensure maximum customer satisfaction.

E. Helps in strategizing the store operations:

Automation in various Store operations and in-store operations, systems helps retailers to perform more efficiently and cost effectively. As lot of data has been generated at various stages, under automation such data is utilized to understand the customer product requirements and expectations, it also helps in assortment selection for a particular store. AI technology further helps retailers in customizing their offerings suiting to their customers needs.

F. Helps in improved efficiency and gaining agility:

Every retailer today use automation in some or the other form. At the planning stages intelligent automation to help their organizations do a better job of what they do now – to improve operational efficiency, extend and expand capabilities, increase revenue growth. At the operational level retailers have to raise efficiencies at service levels, improvise service quality and quality of customer experience. Businesses using intelligent automation experiencing the benefits they are getting by the change in the ways they do business – increase in operational agility, improvement in quality and speed of decision making, enhanced customer experience.

G. Better Customer Service:

Automation processes helps businesses with accurate data creation and helps provide context around customers shopping behavior and expectations. By getting access to such accurate data and using it across personalization, retailers are enable to deliver more customized and

meaningful customer service which further enhances the quality of customer experience.

VII. CONCLUSION

Many forces Changing demographic profile, changing tastes, preferences of consumers, changes in consumer shopping behavior, changing expectations of customers about customer experiences not only this but also the rising competition from e-commerce giants are putting tremendous pressure on retailers. Retailers need to understand how the next-gen technologies will impact their business. Retailers need to adapt the emerging trends & technologies to make their customers more delighted and make them enjoy a differentiated retail experience with ease. Retail Intelligent Automation is emerging as a strategic tool for survival and growth in technologically competitive Marketplace. Retail Automation is the use of technology to automate retail locations. It's a process whereby the retailers are equipped with operational tools infused with latest technologies used to make their business processes and systems more responsive, personalized, and convenient from customer's point of view. Intelligent automation has a tremendous potential to enhance the business competency of retailers which can make the retailers a leader in the ever changing retail scenario.

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