ARTIFICIAL INTELLIGENCE REVOLUTION: A STUDY ON CUSTOMER EXPERIENCE TRANSFORMATION IN ONLINE SHOPPING

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ABSTRACT
Nowadays online shopping reaches its peak all around the world. Due to drastic increase in data, companies came under a difficult situation that how to handle with these huge data. Artificial Intelligence came to existence and accomplishes tedious tasks so they can divert their talents and efforts towards more other intelligent jobs. Artificial Intelligence (AI) in ecommerce has changed the entire shopping experience not only for the clients but also for organization. E Commerce giants such as Amazon and Flipkart have already practicing the AI techniques and brought out revolutionary changes with the best results in their businesses. Artificial Intelligence empowered organizations by improving process efficiency in effective way. This research Paper envisages how artificial intelligence transforms the customer experience in online shopping. This study also dealt with advantages and disadvantages of artificial intelligence in online business operations.
Key words: Artificial Intelligence, E Commerce, Customer Experience

I. Introduction

Artificial Intelligence (AI), the emerging technology is trying to embed in our daily life in all aspects. Artificial intelligence is nothing but an artificial creation of human-like intelligence that can learn, plan, reason, perceive, or process natural languageLike AI applications in the area of education, healthcare diagnostics, public safety, entertainment, service robots etc, ecommerce also enjoying the flavor of Artificial Intelligence to better understanding of their customer behavior and trends. Recent years witnessed revolutionary changes in the field of Artificial Intelligence with the help of Big Data and internet of things (IoT). It is expected to have a remarkable growth with the initiatives of giants such as Google and Microsoft those who already investing heavily on AI advancements.Online service providers such as Amazon, Netflix etc., were already used artificial intelligence to personalize customer experience from previous purchases and learn their choices to recommend relevant product or services for their customers. Siri (Apple) and Alexa(Amazon) are the examples of intelligent personal assistant applications used artificial intelligence to optimize speech recognition functions.

Nowadays significant rise in smart phone users forcing to develop more AI based applications and have to ensure the privacy policy at the same time. To identify the challenges and opportunities to relate the ethical dimensions of artificial intelligence, a report on Ethically Aligned Design in artificial intelligence released by the Institute of Electrical and Electronics Engineers (IEEE). Another initiate from private sector "Partnership on AI", established by Google, Amazon, Apple, Microsoft, Facebook and IBM to advance public understanding of artificial intelligence technologies (AI) and formulate best practices on the challenges and opportunities.

II. Literature review

The primary purpose of the literature review is to elaborate the current knowledge theoretical base of Artificial Intelligence and its applications in Online Marketing.
John McCarthy, father of Artificial Intelligence, statesa definition for AI - "Artificial Intelligenceis the science and engineering of making intelligentmachines, especially intelligent computer programs".In computer science, AI defines as the study of "intelligent agents". Artificial Intelligence (AI) is intelligence exhibited bymachines. Machine Learning technique is used inGoogle predictive search bar, Netflix show suggestions, Gmail spam filer, etc. Natural Language Processingused in

Apple's Siri and Amazon's Alexa. Image Processingis used in for facebook facial recognition and in Google self-driving cars.

Timeline of Artificial Intelligence can be given as:

1923: "Rossum's UniversityRobots (RUR)", play by Karel Kapek opens in London, the initial use of the word"robot" in English.

1945: Isaac Asimov the alumni at Columbia Universityinvented the term Robotics.

1950: Alan TuringwasintroducedTuring Test for evaluation of intelligence.

1956: John McCarthy coined the term" ArtificialIntelligence".

1958: John McCarthy brings LISP programminglanguage for Artificial Intelligence.

1964: Danny Bobrow explained at MIT thatcomputers can understand natural language well enough tosolve algebra word problems correctly.

1979: Stanford Cart built the First Computer controlled autonomous vehicle.

1984: Dennett explained the frame problem and how itrelates to the difficulties arising from attempting to giverobots common sense.

1990: Major advances in Artificial Intelligence are Machine Learning demonstrations, planning, reasoning, scheduling, web crawler, data mining, natural language understanding and translation, vision, games and virtual reality.

1997: The Deep Blue Chess Program beats Gerry Kasparov, the WorldChess Champion.

2000: MIT dsplays a robot (Kismet) that expresses emotions. Interactive Robot Pets become commercially available.

Ebay is an online ecommerce platform which is using Artificial Intelligence for more than ten years. By the use of Artificial Intelligence, EBay personalize, search, insights helps to increase the anticipation and demand of customer and keep them active and optimize their needs.AI Powered tools boost up customer experience without sign in and reduces the step to take buy things and made it simpler (1). Utilizing natural language understanding techniques, Ebay reduce its productlisting time and prompts venders sparing time while showing signs of improvement depictions and insights regarding items (2). Similar voice recognition app is Siri for iPhone users. iPhone users can take the advantage of connecting to Siri at any time to do simple task like google searches, dialling a number (3). Swelly, app used in facebook messenger is share the opinion with the help of polling chatbot and obtain feedback from the people around the world. Marketing through Social Media is another strong way to approach customers through interaction. In recent years fast development happens in the areas of analytic, digital experience and cloud, these are the significant factors in the field of AI advancement. As part of the digital reality, virtual reality (VR), augmented reality (AR), the Internet of Things (IoT), mixed reality (MR) and spatial/ immersive technologies are developed even more and facilitates its benefits in the online marketing areas like other sectors.

Utilization of chatbots improves customer service experience by answering quickly to their queries even if the organization does not having enough employees. Chatbots allow customers to help themselves and attracts more customers. In this type of digital marketing all the job of data analysis and future planning taken care of AI and it brings significant impact in marketing field. Future marketing is trying to turn to digital marketing to improve the important functions of marketing and save more money in the entire processes.By using AI tool like chatbots, one can analyse their customer deeply and it helps to provide suitable services to them in short span of time.The use of chatbots and other AI tools help to improve the customer service experience, which attracts more customers. In the model of digital marketing, all the data analysis and future planning will become the job of AI (4).

III. Objectives of the study

The primary objective of this study is to identify the best practices for using artificial Intelligence in the field of e commerce business and its transformation effect on customer experiences.

a) Artificial Intelligence in Online Business

Artificial Intelligence has proven its role in online business areas like other sectors. In the beginning, people feared that Artificial Intelligence (AI) may take over the entire world and subsequently replace humans.Now Artificial Intelligence (AI) tools and its techniques revealed that it will not going to lose our jobs soon. Rather, AI has changed the processes in a better streamlined and productive manner. As these artificial intelligence tools streamline entire business functions and its processes, most of the leading companies are now promoting AI tools to improve their business efficiency by streamlining all business functions from marketing to customer satisfaction. Let us discuss about the important artificial intelligence tools that improve business efficiency and increase Return of Investment in Online business areas.

b) Autocomplete Search

The main objective of any e commerce website is to increase the number of visitors by providing a simple, fast platform to navigate products and better ecommerce experience to the visitors. One of the best features which allow to meet this requirement is the 'autocomplete search'. This feature enables users to find out their required products that they had not even thought about, offer contextual suggestions and increases the sales revenue. It also allows users avoid typing long, typos and complex queries. Organizations can develop an autocomplete search by themselves or even take subscription from the companies that are already developing this tool.

c) Personalized Recommendation

Online stores have to address the customers with similar product recommendations.Recently marketing observators found out that personalized experience attracts customers and it provides a higher chance of generating repeat customers.Artificial Intelligence tools can offer the personalized experience to customers in an effective manner. Some of the notable tools such as Personali and Choice.ai which help to build personal experiences for the end users by collecting and analyzing customer data. Now the impact and benefits of AI in digital marketing is rapidly increasing by using innovative applications all the time and we are witnessing the changing face of marketing. As Big Data is growing exponentially bigger and inclusion of advanced technology with AItools revalorizing marketing area.

d) Marketing Optimization

For getting better sales turnover maketing optimizations is to be implemented no matter the size of the online store. Major issue which is facing by the new online stores is that complicated processes and subscription of complex management softwares. This leads to huge loss by wastage of money and manpower. Now AI based marketing optimization software enable us to avoid these errors by simplifying the processes.

e) Voice Commands APIs

As smartphone penetration increases, most of the people depends mobile applications for their day to day activities. Now people are using voice commands for searching their required products and ideasbecause voice commands makes searching faster than traditional methods.Researchers observed that a person can speak three time faster than typing. Voice commands identified as simpler and better way of searching products or services online. Online stores are promoting the use ofvoice commands for getting more visitors by proving easier platform to search products.

f) Visual Search

Visual search is one of the most benefitful AI tool use to search images for getting similar or identical images. This visual search solves the issue with incomplete or inaccurate search queries. When a customer is planning to purchase a product through online shopping method, he or she should have gone through search process.Most of the cases this searches end up without purchase because of the mismatch of the required product and search results. AI-enabled visual search resolves this issues – customers can search out the product simply by using snaps

g) AI Chatbots

Most common AI tool in eCommerce is Chatbot. Chatbot is nothing but the system that can interact with clients either through text or voice interfaces. By the use of this AI chatbots in ecommerce, users can speak to a device rather than typing on a keyboard. These chatbots can able to decode any language and its response should be accordance with the region of the consumer. International

requests can easily cater through thsese AI chatbots. The chatbots understand the dialect and languages including past behavior of a user and customer chat statistics to provide the best possible solution. Now most of the leading eCommerce websites hae adopted and implemented AI chatbot applications to serve better and giving satisfied customer experience to their users.

h) Smart Advertising Tools

Advertisement has a significant role to boost up any business no matter if it is brick and mortar or online stores. Every product, service and brand has to be advertised to become more popular and attract more customers. Through these advertisements the companies can share the stuff with customers easily in reliable way. While constructing an ad, we should ensure its attractiveness in such a way that it should catch the customers' attention from the first sight. Interesting images or videos with charming colours in advertisementswill allow to bring desired results for marketing efforts.Smart advertisements with artificial intelligence allow online stores enhancement with minimum marketing budget. Earlier Google and Facebook were the only advertisement platforms that online stores could use to market their products. Now more platforms came into force with te introduction of advanced technology.

i) Virtual Shopping Apps

Virtual Reality (VR) technology comes up with vast opportunities for businesses can attract customers. VR can offer 3D models, virtual tours for the better understanding of products andthat completely transform the shopping experience of the customer. The virtual store allows users to choose appropriate products quicker than ever before. Mobile app - Sephora contains a Virtual Artist which uses facial recognition technology to allow users totry products virtually online. Users to be scan their face using the app and can try on different products say for example different shades of makeup sets. Whenever the user satisfied with a particular product, can buy the product using the app easily.

j) Brand Mentioning Tools

Brand monitoring is a powerful marketing tool.Marketing people can add vital data to their business by tracking reputation, campaign engagement monitoring and future campaign planning. Though this data analysis they can deliver critical competitor analysis. The problem that is facing is that most of these data is purely visual and most of them do not contain text.AI powered brand mentioning softwares can analyse visuals and reduce the impact of negative reviews by continuous monitoring the brand mentions across the Internet. Online platform can severely using these artificial intelligence tools to manage their reputation and takeappropriate mitigation techniques whenever necessary.

k) Influencer Intelligence

Influencer Intelligence is a powerful online resource that helps to assist with influencer and celebrity engagement. It also provides demographics and psychographics from Demographics Pro associated with other influencer data and this will help clients to find targeted audience easily. Ecommerce sectors will get benefitfrom these influencer intelligence tools with lesser

IV.Challenges with Ecommerce

Artificial Intelligence (AI) brings revolutionized changes in E commerce industry through improved productivity, good ROI and better customer experience. However artificial intelligenceoffers many benefits to ecommerce industry, there are also having some barriers or disadvantages. Organization have to keep in mind those points while implementing AI tools into business.

Most important barrieris the availability of data. Available data is sometimes inconsistent, inadequate or poor quality. Companies are struggling to clear out those issues and should have a strategy for sourcing data to implement artificial intelligent tools. Another challenge is the shortage of skilled staffs for coordinating the AI solutions. For implementing AI solutions effectively, organizations needed to have experienced data scientists and experienced professionals in machine learning, training good models, etc.Shortage of such professionals adversely affects the AI implementation. Due to its complex nature, cost for AI implementation and its maintenance become higher. Like other software applications, these tools also need regular upgradation to adapt with transforming

business environment and data protective measures, restoration of data whenever necessary is quite time-consuming and costly.

Before adopting AI driven technology in e Commerce platform, one should consider a) customer privacy, b) potential lack of transparency and c) technological complexity. In addition to these some of the ethical points should be keep in mind with. Some of them are;

Automation reduces jobs

Redeployment or retrain employees to keep them in the field

Effect of machine interaction on human behaviour and attention

Algorithmic bias created by biased thoughts of humans.

Security threat of AI systems

To getting better results with AI, organization should plan with a right vision to its implementation. Organizations can implement an "ethics-by-design" approach for AI to develop and improve consumers' trust and loyalty.

V.Findings of the study

Artificial intelligence brings better customer experience with E Commerce includes simple, quick process for successful checkout. With the help of AI tools, eCommerce industry can predict shopping behaviour based on 'what' and 'when' of a product. For example, if someone buys a particular brand of rice every week, online suppliers could send a personalized offer of the product to that particular consumer. Apart from this, online shoppers can also be able to suggest product that goes well with the rice with the help of machine learning techniques. Some of the core findings associated with artificial intelligence as follows.

a) Customer Demand Forecasting

From the bigger volume of data such as weather forecast, seasonal patterns, previous transactions, social media trends, etc., AI can be able to forecast customer demands and this leads toautomate decision making of shoppers in real-time. By using machine learning techniques, companies can anticipate consumer expectations and this improved forecasting accuracyuse to optimize and automate the best offers.

b) Smart prediction with personalization

Artificial intelligence develops better shopping experiences that integrated with our day to day lives. Each and every person is having separate personalized demands and AI tools can able to predict their needs, offers customized product that make users feel better. These personalized customizations leads to quicker check outs within one or two clicks.

c) Discovery of High-Impact Customer Insights using Analytics

For getting optimal customer experience, every businessshould remember their customers' need and cater it properly throughout their shopping journey. Artificial intelligence analytics have the power to sort out appropriate details from huge datasets. AIanalytics search for minute and meaningful data that exists to predict the likelihood of future behaviours with high-accuracy. For that AI has to mine in vast amount of data for getting actionable insights.

d) Experience Automation

Artificial intelligence tools can also be used to offer prices dynamically based on the personalized products so that it reduces the cost and subsequently bring more sales. Nowadays industries are using Intelligent AI-algorithms for improving optimal sales and revenue. Amazon introduced checkout-free physical stores with AI-enabled sensors and cameras. Using this technology, customers can pick out the items from the respective shelves and it will automatically charge them as they come out of the store.

e) Better Inventory Management

Inventory management is another key area in every e Commerce platform. For managing inventory efficiently, business have to maintain the optimal stock that can cater market demand by neither adding SKU wastage nor going under stock. AIenabled predictive analytics allow us to getbetter control based on data related to historical data for over consumption, supply related issues with

logistics, projected or anticipated changes in product demands, etc. With the help of robots, AI has also enabled automated warehouse management system.

f) Customer Service Improvement

Artificial intelligence plays a significant role to automate customer service part, quick and hassle-free manner. With the help of AI enabled systems, companies are able to predict customer expectations by analyzing past behaviours and providing quicker resolutions to enhance the overall customer service experience. Customer interactions has improved and automated some extent with human-like interactions and give immediate responses 24/7. AI enabled virtual assistants are collecting queries from users and respond with suitable answers.

VI.Suggestions

Artificial Intelligence emerges and gives out fruitful outcomes in the field of e Commerce through improved customer experience, smartadvertising, warehouse management, website and app optimization, etc. As Artificial Intelligence is transforming the e-commerce world, it is recommended to go for implementing AI techniques to business no matter the size of the organization. AI initiatives should have a specific goal, well defined opportunities, problems and issues. Some of the important points to be remembered while planning AI automation are – (a) Problem identification and define the place where AI to be implemented improve efficiency, (b) Identification of data source and concentrate on collecting relevant data, (c) Design and develop an AI enabled solution and (d) Implementation with adequate training.

While implementing AI enabled system, companies should ensure data security by using latest technology and sufficient skilled manpower resources. For getting better results, organizations have to adopt latest and advanced technology for their business automation.

VII.Conclusion

Recent days AI powered and making revolutionary changes in e Commerce field. With the help of AI based solutions e Commerce platform has emerged to its peak. Accessing simply in a complex data by the use of AI tools and it changes the traditionl way of shopping experience of the customer to the new superior era. Even if there are lot many advantages, AI is having some negative impacts also. People have a perception that AI will reduce the jobs in near future. Losing of jobs are the facts at some extent and at the same time new job roles are opened to get filled. As this AI technology evolving with its superior technology and innovations in the marketing strategies and sales promotion ideas, companies are forced to follow AI tools for their survival. By that way it produces new job roles like developers, data analyst etc.

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