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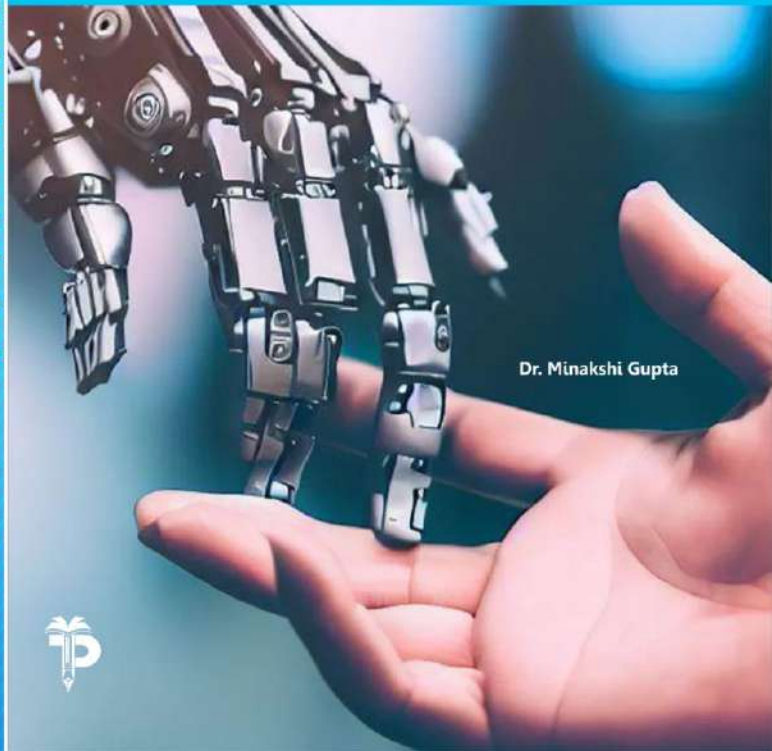
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Revitalising Global Trends in India

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# REVITALISING GLOBAL TRENDS IN INDIA

Editor-Dr. Minakshi Vijayant Gupta

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## CHAPTER-8

# ARTIFICIAL INTELLIGENCE IN E-COMMERCE

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### INTRODUCTION

Artificial intelligence (AI) is changing the e-commerce sector in various ways. Enterprises must embrace innovative strategies in order to compete effectively online, and AI may be a great asset for e-commerce enterprises by enhancing customer service, optimizing processes, and boosting revenues.

I will discuss many aspects of how AI is affecting A number of articles make up e-commerce. This first article explores how AI is used in e-commerce.

E-commerce, a crucial facet of the global economy, has experienced extraordinary expansion made possible by technology developments. AI is one such innovation that has completely changed how this industry does business.

Machines using artificial intelligence (AI) may do activities that would often need a person.

Integrating AI technology in e-commerce has several benefits. It has the capacity to give organizations better understanding of the tastes and behaviors of their consumers, which can be used to develop focused marketing efforts that produce better outcomes. Additionally, it gives businesses the ability to improve their pricing plans and inventory control, which boosts profitability. Additionally, using AI-powered solutions may help organizations increase customer support services and stop fraud, which ultimately raises customer satisfaction levels and encourages brand loyalty.

Although integrating AI into e-commerce provides benefits, there are drawbacks as well. For AI algorithms to be effective, a sizable amount of data is required, necessitating the capacity for organizations to properly obtain and handle this data. Additionally, because AI is dynamic, businesses must continually spend money on upgrading and improving their AI models.

Despite these challenges, AI has the potential to revolutionize the e-commerce industry and help businesses keep a competitive advantage. In next articles, I'll go into more detail about the many ways artificial intelligence is used in business and provide firms looking to take advantage of this breakthrough with practical guidance.

By imitating and enhancing human intellect, artificial intelligence is able to do the automatic action of mental work. The foundation of artificial intelligence is intelligent technology, from which intelligent instruments, such as robots, voices, or image recognition, are created that are akin to human intellectual labor. These gadgets can respond instantly to control commands. Machine learning, decision support systems, and expert systems are other forms of artificial intelligence. Fuzzy logic is another tool that artificial intelligence uses. It is a technology that simulates human behavior by processing, interpreting, and computer-displaying information and knowledge as if it were being done by a person. Better planning, objective professional evaluation and risk assessment, logical decision-making, and management are all made possible by the appropriate application of fuzzy logic in combination with artificial intelligence.





## HOW IS ARTIFICIAL INTELLIGENCE CHANGING THE WAY PEOPLE SHOP?

The application of artificial intelligence in online purchasing is revolutionizing the e-commerce sector by forecasting consumer behavior based on the goods and times that they purchase. For instance, if a certain brand of rice is commonly purchased by online customers each week, the store might give these customers a customized offer for this product or even make a recommendation for a complementary item that complements rice recipes.

Artificial intelligence (AI) solutions for e-commerce or AI-enabled digital assistants, like the Google Duplex tool, are gaining the ability to make grocery lists using a customer's natural speech and even place online orders on their behalf.

Our shopping habits are shifting. Businesses are now able to customize the purchasing experience for each consumer and offer suggestions in real-time thanks to the development of artificial intelligence.

In the past, businesses relied on focus groups and consumer surveys to gather feedback on their goods and services. However, in the quick-paced world of today, these techniques are ineffective.

Businesses are now able to receive client feedback in real-time thanks to artificial intelligence. Businesses may learn what customers want and need by studying customer behavior.

Real-time suggestions can be made to clients using this information. For instance, a company may suggest additional products, such as socks or a belt, to a buyer who is browsing a pair of shoes on a website.

## HOW ARTIFICIAL INTELLIGENCE IS CHANGING THE WAY WE SEARCH FOR PRODUCTS

Our method of product research is evolving. Artificial intelligence has made it possible for us to conduct product searches in a more effective and efficient manner.

In the past, if we were seeking for a certain product, we would have to go through several websites and retail establishments. This took a lot of time, and it frequently left us unable to locate what we were seeking for.

Instead of going over everything ourselves, do it this way. It also indicates that we have a better chance of finding the item we're seeking for.

By giving us better search results, artificial intelligence is also altering the way we look for items.

## TYPES OF ARTIFICIAL TECHNOLOGY USED IN E-COMMERCE

AI is a broad field of technology that includes many different models. Four prominent AI technologies are employed in e-commerce:

- **Natural Language Processing:** The goal of natural language processing is to make it possible for computers to comprehend and produce natural human language.
- **Machine Learning:** In order to enable computers to learn from data and make predictions or judgments without being explicitly programmed, machine learning employs statistical approaches, including algorithms. Deep learning models stack algorithms to better interpret data, such as transformers and large language models (LLMs) like Open Ai's Chat GPT.



- **Computer Vision:** Computers can now analyze data from photos and videos thanks to the science of artificial intelligence known as computer vision.
- **Data Mining:** The process of finding data for AI algorithms and systems is known as data mining.

## APPLICATION OF ARTIFICIAL INTELLIGENCE

**1. Personalized Shopping:** Recommendation engines, which help you interact with your consumers more effectively, are made possible by artificial intelligence technology. According on their browsing history, preferences, and interests, these recommendations are given. It assists in enhancing your interaction with clients and their steadfast support of your business.



## 2. Fraud Detection and Prevention

AI may help in preventing and detecting fraud by analyzing data, spotting irregularities, and keeping an eye on transactions in real time. The system may identify anomalous transactions and flag them for further inquiry, such as transfers of large amounts of money, numerous transactions occurring quickly, or transactions coming from strange places.





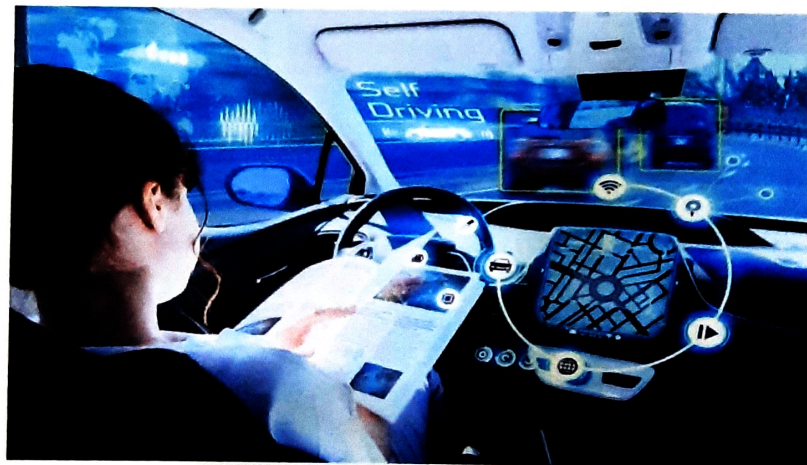
### 3. In Agriculture

To find flaws and nutrient shortages in the soil, artificial intelligence is applied. AI can determine where weeds are growing by employing applications like computer vision, robotics, and machine learning. Compared to human employees, AI bots can harvest crops more quickly and in greater quantities.



### 4. In Automobile

Self-driving cars are made using artificial intelligence. AI may be used to drive the car in conjunction with the radar, camera, cloud services, GPS, and control signals. By adding new technologies like emergency braking, blind-spot detection, and driver-assist steering, AI may enhance the in-car experience.

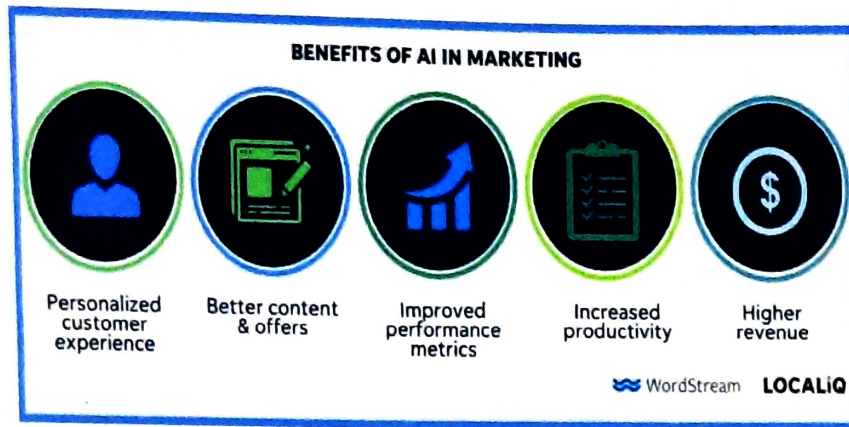


### 5. In Marketing

With the use of behavioral analysis, pattern identification in ML, etc., marketers may use AI to create highly targeted and personalized advertisements. Additionally, it aids in retargeting viewers at the appropriate moment to assure greater outcomes and lessen sentiments of irritation and mistrust.



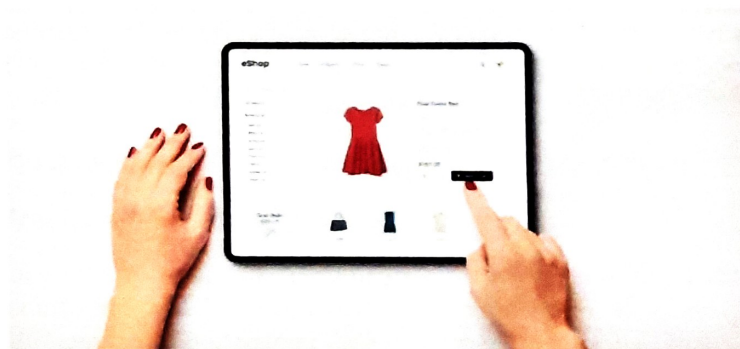




## 6. Generation of Product Descriptions

Customers can learn more about a product and its benefits by reading the product description. For your business, a well-written one is essential because it can serve as your consumers' personal shopper. It can verify that the features of the item they want to buy match their requirements.

For company owners, AI has made this process straightforward. With the aid of such a system, e-Commerce companies may rapidly and automatically create distinctive and dynamic product descriptions. Contrary to the traditional method of creating an engaging product description, which might take some time, this is quicker and more effective.



## 7. Smart Logistics and Warehouse Management

Warehouse management is an essential part of any commerce business. When inventory is low, sales suffer. When inventory is high, storage costs increase. One of the greatest advantages of AI in the commerce industry is that it can prevent you from having to deal with both situations. AI-powered commerce inventory management software such as Webgility can track inventory levels and optimize them automatically by automatically ordering stock whenever it is needed. Such software can provide you with the data you need to make critical supply chain decisions and troubleshoot logistical issues quickly and easily. AI in commerce can help small-scale and large-scale companies that manage inventory and logistics.



## **8. Image Tagging/recognition**

As a result of image recognition, computers are able to quickly identify the elements on an image. From there, the computer is able to apply the product information to the image, creating a tag. With the help of image recognition, artificial intelligence, and algorithms, the computer will classify and label your images according to their information. Image tagging is a must-have in your online store if you want your catalogs to remain clean and your entire commerce store to remain organized.

## **9. After Sales Support**

In addition to selling high-quality products and streamlining the purchasing process, AI has also enabled e-Commerce companies to offer effective after-sales services. After a customer has made a purchase, he or she can:

1. Use an automated form to provide feedback and comments
2. Request instructions on how to use the product
3. Ask for a replacement if the item they purchased has defects, and receive goods delivered to their door.

## **10. Handling fake reviews**

Astroturfing is a practice where a customer's buying decision is affected by the online reviews they read. There are many instances on every e-Commerce platform where there are bad reviews about a product. However, what if those bad reviews are telling your customers not to buy that product? Astroturfing is an activity where people read other people's reviews online. Many e-Commerce players use artificial intelligence (AI) to fight against fake reviews to help your customers make an informed decision.

## **ADVANTAGES OF ARTIFICIAL INTELLIGENCE IN E-COMMERCE**

### **1. Focus On Predictive Marketing**

If your business isn't doing well, then it's time to consider some positive changes. Customers love to shop on Instagram and Facebook because both these social media platforms are AI-powered and help them better understand their customers' decisions. That's where predictive marketing and recommendation comes in.

With the aid of AI, you could implement predictive marketing in your business. This will improve your online shopping experience. Customers would like to see their preferred products at the top of the page. This indirectly increases your sales increase. These numbers are calculated on the basis of the data. This data is delivered through social media and emails. Pay attention to make it better.

### **2. Increased Sales**

AI can help you streamline your sales funnel by collecting and analyzing customer information to personalize your customer journey. With more information, you can engage the right people at the right time with the right message. Chronopost, a French delivery service, saw an 85% boost in sales revenue after implementing AI-powered campaigns during the 2022 holiday season.





### **3. Concentrate on Dynamic Pricing**

No matter how many products you have in your business, whether it's 1000 or 10000, manually adjusting the prices can be very stressful and time-consuming. That's where AI comes in, and with dynamic pricing, you can easily adjust the prices of your inventory on the basis of the data points such as inventory, capacity, and market conditions, as well as customer behaviour and their needs. The demands can also help your business to set the prices whenever the customers are on your website.

### **4. Smart Logistics and warehouse Management**

Warehouse management is one of the most important aspects of your ecommerce business. If you don't have enough inventory, your sales will suffer. If you have too much inventory, your storage costs will increase. One of the greatest advantages of AI in the ecommerce industry is that it can prevent you from having to deal with both issues. AI-powered warehouse management software such as Webgility can keep track of inventory levels and optimize them automatically by automatically ordering stock whenever it is needed. These software's can provide you with the data you need to make critical decisions regarding your supply chain and troubleshoot logistical issues quickly and easily. AI in ecommerce can help small-scale and large-scale businesses dealing with inventory and logistics.

### **5. Automated Customer Journey**

Every customer is unique, and because every customer wants a one-of-a-kind experience that's tailored to their specific needs and wants, e-commerce brands face a challenge. AI, on the other hand, leverages all the information you have about your customers or your target audience to predict what they'll do next, whether it's add something to their cart, reach out to support, or share a review.

As AI learns more about each customer, it can better anticipate what they need and when they need it. As a result, it can automate every action or touchpoint to better match the shopper's needs. For example, it could send an email that explains product use cases to someone who has viewed the same product multiple times but hasn't added it to their shopping cart, or it could send a timely replenishment SMS to someone who regularly purchases the same product.

### **6. Demand Forecasting and Price Optimization**

Artificial intelligence tools in ecommerce can even predict future demands in real time to help you adjust your offerings better. Even if you have many products, AI tools will automatically optimize their individual prices based on customer demand. They can also adjust prices based on data points such as weather, season, time of day and day of week. This is called dynamic pricing. It is now more feasible and effective than ever before thanks to smarter AI tools in ecommerce. This is why airlines, hotels, bookings portals and other industries are using dynamic pricing tools to increase their revenue.

### **7. Robust Research Experiences**

One of the biggest reasons why customers are leaving e-commerce is because they can't find what they're looking for. Most online businesses have a huge product catalog and it's difficult for a customer to find what they want. That's why it's important to create a robust and accurate search experience. Artificial intelligence (AI) is a powerful tool that can help you do just that. You can create an AI-powered search engine that acts like a sales rep by





showing customers exactly what they need. Alternatively, you can integrate AI-powered search software, such as Doofinder or SearchUnify, into your e-commerce store.

### **8. Get a Virtual Persona Assistant**

We are all familiar with chatbots, which have revolutionized the way people interact with a company. With chatbots, you can ask your question 24 hours a day, 7 days a week, and get a right and immediate response. The VPA is a Chatbot in the form of an assistant, but in this case, the assistant is more intelligent. It's like having an assistant that never goes to sleep.

We are all familiar with chatbots, which have revolutionized the way people interact with businesses. With a Chatbot, you can ask your question 24 hours a day, 7 days a week, and get a right and immediate response. The VPA is a Chatbot in the form of a person, but in this case, the VPA is more intelligent than a Chatbot. It's like having a never-ending companion.

### **9. 24\*7 Availability**

Many studies have shown that humans are only productive for 3 to 4 hours per day. Humans also require breaks and time off to maintain a healthy balance between work and personal life. However, AI can work for an indefinite period of time without any breaks. AI can think more quickly than humans and carry out multiple tasks at once with precise results. AI algorithms can also easily handle repetitive tasks.

## **DISADVANTAGE OF ARTIFICIAL INTELLIGENCE IN E-COMMERCE**

### **1. Security**

As mentioned earlier, programs can have vulnerabilities. These vulnerabilities can affect the security of the data that is given to the AI. Therefore, the security of software needs to be closely monitored.

### **2. Unemployment**

Artificial intelligence can be used in a variety of ways, but one of its main uses is as a robot. As a result, robots are replacing jobs and, in some cases, increasing unemployment. Therefore, some argue that there is always the possibility that chatbots and robots will replace people.

### **3. AI Technologies are expensive**

AI-powered machines can perform tasks of varying levels of complexity. Therefore, it is concluded that AI-powered robots are a threat to the company's bottom line. Developing a machine capable of replicating human reasoning and thinking requires a large amount of resources and labour, which makes the technology expensive.

### **4. Emotionless**

We have been taught since we were kids that computers and other machines do not have emotions. Humans work as a team. Team management is crucial for success. While there is no doubt that robots are better than humans when it comes to working efficiently, there is also no doubt that human relationships, which are the foundation of teams, can't be replaced by machines.



## 5. Dependency

Once you add AI to your workflow, you become addicted to the program and start to build your business around it. If it fails, you'll have a hard time dealing with the fallout.

## 6. Privacy Concerns

Artificial intelligence (AI) requires access to massive amounts of customer data in order to work efficiently. This can lead to privacy issues, as customers may not be comfortable with large amounts of personal data being collected and analysed. E-commerce companies that rely on AI must be open about their data collection methods and make sure that customer data is safeguarded.

## 7. Bias

Artificial intelligence (AI) algorithms are based on partial data, which means they can be trained to discriminate against specific groups of users. This type of discrimination can have a negative impact on an e-commerce business's reputation, so it's important for e-commerce businesses to be cognizant of the possibility of bias in AI algorithms and to take steps to reduce it.

Deciding whether or not to use artificial intelligence (AI) in e-commerce can be a tricky decision. There are numerous benefits to using AI in e-commerce, but businesses must also weigh the pros and cons. Costs associated with implementation and upkeep, privacy issues, lack of human involvement, biases, and potential security risks all need to be considered.

Despite the drawbacks, there are many advantages that AI can bring to e-commerce businesses. These advantages include personalization and better search results, more efficient operations, better fraud detection, and better inventory management. AI can help e-commerce businesses stay ahead of their competitors and provide better customer experiences.

All in all, it's clear that e-commerce companies need to take their needs and objectives into account, along with the advantages and disadvantages of using AI. That way, they can make smart decisions and use AI to differentiate themselves.

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