THE ROLE OF ARTIFICIAL INTELLIGENCE IN SHAPING CONSUMER DEMAND IN E-COMMERCE

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Abstract:

AI is a multidisciplinary field which aims at automating jobs that currently need human intelligence. It is related to the similar task of using computers to understand human intelligence. The ultimate objective of AI is to create that type of devices that can be helpful in reducing the human labor and manual work. Nowadays, AI has become an inevitable term for applications that perform complex tasks e.g., contacting the customers online or playing chess.We can say that AI is the study of computations that allow for perception, reason and action. This paper examines the features, types and its role in E-Commerce.

Keywords: Natural Language Processing, deep learning, machine learning, robotics.

Introduction:

AI is the ability of a computer or a robot controlled by a computer to do the tasks that are usually done by human beings because it requires human intelligence and judgement. It is a branch of computer science which gives out the idea about intelligence of machines. The principle on which the system of AI works is – knowledge, planning, learning, reasoning, communication and perception and manipulation of objects. It is the science of developing intelligent machines. Some examples of AI are chess playing computers to self-driving cars. They are based on deep learning and natural language processing. AI is used in different fields like transportation, medicines, science, robotics, finance, agriculture, entertainment, customer service, military education and manufacturing.

AI will make the digital transformation possible across different sectors and its long-lasting impact on Indian society and economy. It will bring drastic change in healthcare, education and agriculture. AI helps people to make them free from repetitive tasks as a positive but some people believe that it will result in loss of skills in people.

As very well said by JEFF DEAN, Google Senior Fellow-

"We want to use AI to augment the abilities of people, to enable us to accomplish more and to allow us to spend more time on our creative endeavors."

Objective:

The objective of this research paper is to understand the role of advanced AI in E-Commerce and to provide valuable perceptions. This paper aims to understand how AI influences consumer decision making and how it affects customer loyalty and satisfaction.

Types of AI:

To understand how AI impacts our business, we must have an understanding of the components or types of AI-

1. **Machine learning:**It is the science of getting machines to interpret, process and analyze the data for solving real world problems. It focuses on developing the algorithms and models that help the computers to learn from data and make decision without definite programming.
2. **Deep learning:** It focuses on training artificial networks inspired by human brains. It helps in speech recognition and natural language processing and computer vision.It can make sense of patterns, noise in the data e.g., Siri, Alexa, and so on.
3. **Robotics:** It is another unit of AI which focuses on different branches and application of robots. Robots are agents that operate in the real-world environment to produce results by taking accountable actions. The example of robotics in AI is Sophia, the humanoid.
4. **Fuzzy logic:** It is another branch of AI which is based on the principle of degree of truth. Its main use is in the medical field to solve complex problems. They are used in automatic gearboxes etc.
5. **Expert system :** An expert system is an AI based computer system that learns and interchanges the decision-making power of a human expert. It does not rely on traditional procedural programming. They are used in loan analysis, virus detection, information management and so on.
6. **NLP (National Language Processing) :** It is the ability of a computer program to understand human language as it is spoken and written. It is referred to as a national language. It has been existing for more than 50 years.

AI and E-Commerce:

AI is embedding itself into all the fields of our lives. From the self-checkout cash registers to security checks at the airport, AI is almost everywhere. We can take an example of report published by Gartner that in the past 4-5 years, the number of businesses encouraging AI has been increased by 270%. Now AI has become a prominent tool for promoting the sales and optimizing the operations. Even many small businesses are using the technology with some kind of AI capability.There are some misapprehensions about AI e.g., some people think that AI is a new branch of study and it is in its infant stage but it is actually nearly 70 years old.
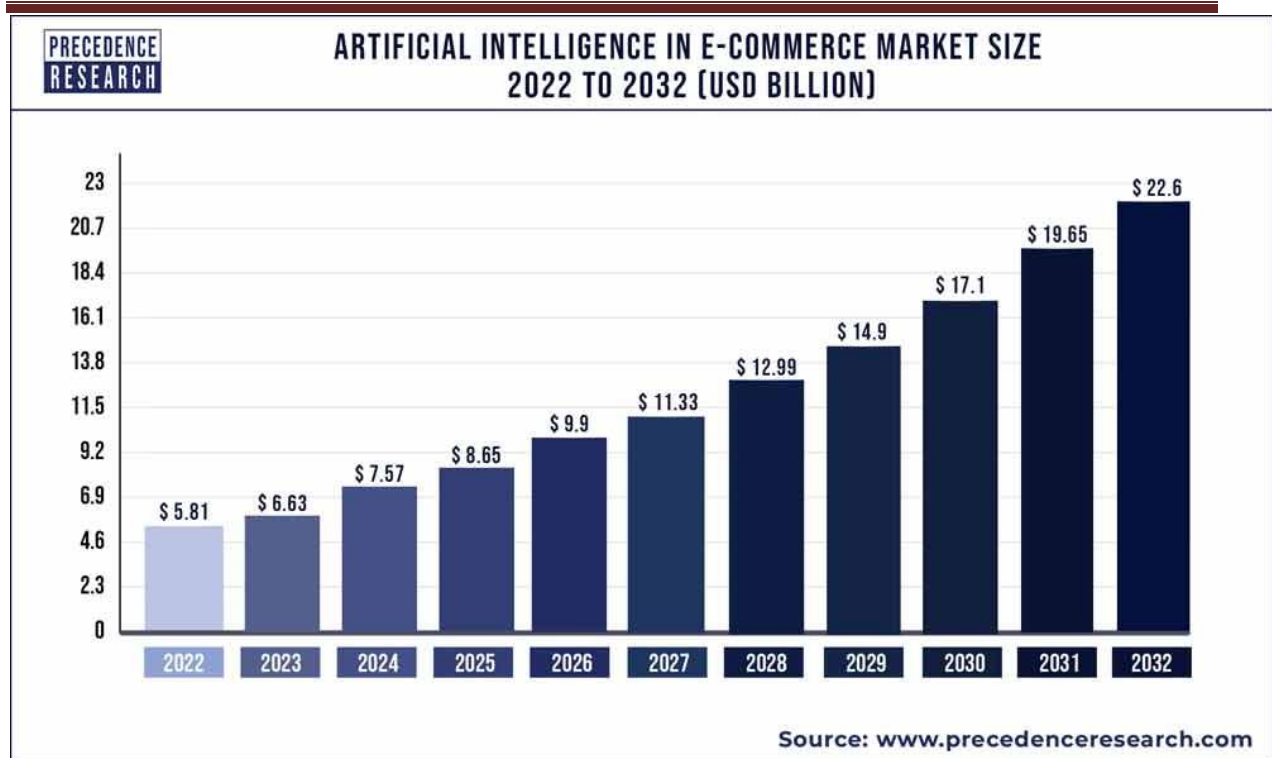
The size of the global artificial intelligence in e-commerce market was estimated to be USD 5.81 billion in 2022 and is expected to grow at a compound annual growth rate (CAGR) of 14.60% from 2023 to 2032, reaching approximately USD 22.60 billion.

The movement of E-Commerce industry to AI technology is a milestone towards corporate growth. AI performs the tasks that are beyond the capacity of human intelligence. AI apps are becoming more and more common in all spheres of life. AI technology has become a great tool for increasing sales and optimizing the operations.

Benefits of AI in E-Commerce:

1. **Virtual assistant:**It is an application program that accepts natural language voice commands and complete the tasks given to it e.g., taking dictations, looking up contact numbers, placing phone calls etc. we all are well versed with google assistant, Apple's Siri and Amazon's Alexa. They all provide us 24/7 services.
2. **More targeting advertising and marketing:** Personalization in E-Commerce is reshaping the customers' buying experience. It helps in providing the product to the customers according to their taste, habits, preferences and needs etc. E-commerce stores have many thousand products and many customers. E-commerce can analyze the big data from purchase history of the customers.
3. **Increased customer retention:**Target marketing and advertising helps in customer retention. AI is being used to offer personalized product recommendations based on past customer behavior. It helps in retaining the customers and building long-term relationship with customers.

4. **Optimizing the prices:** AI uses the pricing strategy which adopts the price of your product based on supply and demand. AI tools help in predicting when and what to discount? It helps in calculating the minimum discount necessary for the sale.

5. **Automation:** Online stores are now available with 24/7 availability. With the help of automation, business can save time, energy and money. AI can be of great help when it comes to automation for e-commerce business.

6. **Sales and demand forecasting:** AI uses machine learning algorithms and data analysis to forecast the future demand for a product or service. AI demand forecasting can help the business to optimize the inventory levels, reduce costs and increase customer satisfaction. It helps in forecasting sales rather than relying on assumptions.

How to implement AI in E-Commerce?
- Develop a strategy
- Build a full-scale solution
- Find some uses that are relevant to the overall corporate strategy
- Leverage third party experience

Conclusion:
If you want to deliver the best shopping experience to your customers, look into various benefits of AI and machine learning. It will definitely help you make best use of your customer and business data to decide a plan for your future that will work. Seeing at the development of AI is that the future world is becoming artificial. So, we can say that natural intelligence is limited and inconsistent, the world may now depend upon the computers for the smooth working. The ultimate goal of AI is to solve the majority of the problems or to achieve the tasks which are not possible with human intelligence. It is for sure that development in the field of AI will change the complete scenario of the world. Now it is the responsibility of creamy layer of engineers to develop this field of AI.

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