2CS702 - Big Data Analytics

Practical 1

Aim: Study and explore various applications of big data in different domains. Choose one of it and study in detail, Also write down the report on different types of digital data generated in selected application.

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AIM: Study and explore various applications of big data in different domains.
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Big data refers to the large, diverse sets of information that grow at ever-increasing rates. It encompasses the volume of information, the velocity or speed at which it is created and collected, and the variety or scope of the data points being covered (known as the "three v's" of big data). Big data often comes from data mining and arrives in multiple formats.

Big Data in E-Commerce

Ecommerce platforms like BigCommerce track and give merchants access to consumer behavior data, which business owners can use to make informed decisions.

The Benefits of Using Big Data in Ecommerce

- Making better strategic decisions
- Improved control of operational processes
- Better understanding of customers
- Cost reductions

This is crucial for ecommerce businesses. As you scale, “getting geeky” about your data becomes more and more important. Data-driven ecommerce businesses regularly measure and improve on the following:

1. Improve shopper analysis.
2. Improve customer service.
3. Personalize customer experience.
4. Provide more secure online payment processing.
5. Better target advertising.

How to Use Big Data for Ecommerce Business

1. Shopper Analysis

Big data is helpful in developing buyer personas or shopper profiles. This helps you to determine customer preferences, such as which products they like best or what times they usually shop.

You can use the information about peak shopping times to get rid of excess stock at sale prices or run social ads during these timeframes.

2. Customer Service

Customer service plays a huge role in ecommerce.

It costs 5x less to retain customers than acquire new ones and loyal customers spend up to 67% more than new customers.

If customers are not satisfied, 13% of them will tell 15 or more people they are unhappy. Conversely, if they had a positive experience, 72% said they would share this with 6 or more people.

Online retailers can use big data to track **customer service experiences**, like showing how fast your response times are — which plays a huge factor in customer service.

Big data can also be used to track **delivery times and customer satisfaction levels**, and help companies identify potential problems—then resolve them before a customer gets involved.

3. Personalized Experience

Big data can help by giving insights on customer behavior and demographics, which is useful in creating personalized experiences.

We can use ecommerce big data to:

- Send emails with customized discounts and special offers to re-engage users.
- Give personalized shopping recommendations.

- Develop flexible or dynamic pricing, which relies on external factors such as consumer demand and competitors' pricing. A 1% increase in price translates to an 8.7% increase in profits. Walmart uses online shopping big data to determine patterns that point to higher profits. For example, a product sold on its own may not make as much profit compared to pairing it with something else.
- Present targeted ads, as different customers want different/relevant messaging. You may already be using some form of big data by presenting targeted ads on your social media networks.

4. Supply management and logistics.

Stocking the right inventory can be a challenge for online retailers.

Order too little and you have missed an opportunity for selling, and too much means taking on the extra cost to store products and a risk of not being able to sell it all.

Predictive analysis through the use of ecommerce big data can help with these supply chain issues in terms of:

- Trend forecasting: Using social listening to determine which items are causing a buzz, or your On the Rise product data.
- Determining the shortest routes: Amazon uses big data to help in their expedited shipping process. They find a vendor closest to the buyer to reduce shipping cost.