Practical#1

Name: Saurin Anilkumar Prajapati

Roll No.: 19BCE239

Course Code and Name: 2CS702 Big Data Analytics

Batch: D1

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.
For eg:
⬜ Big Data in Retail
⬜ Big Data in Healthcare
⬜ Big Data in Education
⬜ Big Data in E-commerce
⬜ Big Data in Media and Entertainment
⬜ Big Data in Finance
⬜ Big Data in Travel Industry
⬜ Big Data in Telecom
⬜ Big Data in Automobile

What is Big Data?

- Big data is defined as any data that meets the 3Vs criteria, i.e., data with greater variety, arriving in greater volumes, and with greater velocity.

- In simpler terms, big data refers to larger, more complex data sets, particularly from new data sources. These data sets are so large that traditional data processing software simply cannot handle them. However, these massive amounts of data can be used to solve business problems that were previously unsolvable.

→ I have chosen to analyse big data and its application in the field of **Automobiles**.

Big Data in Automobiles

1. Supply Chain Management

Generally, Automobile companies have to deal with massive amounts of components regularly. A large amount of revenue needs to be sanctioned for these departments. Therefore, a powerful company is the one that has the ability to manage its supply chain efficiently.

A robust supply chain management system is needed to obtain the overall efficiency of their organization. And the factors which decide the stability of any supply chain management are:

- taking care of operations to make innovative strategies,
- making optimized manufacturing processes,
- dealing with market competition, healthy conversations, etc.

By integrating Big data and analytics in the supply chain, organizations can compare the products they require to the products available in the market. Comparing is based on different factors like costs, reliability, and quality of the components. Thus, organizations can choose between the best components in the market and the ones that would increase the organization's profitability.

2. Connected Cars

Big Data analytics is now an essential part of the automobile industry. And undoubtedly, apart from mobile phones, cars are the second most embraced technological devices used today. The world is heading towards the era of smart vehicles. Users can experience more supportive or autonomous driving, fuel efficiency, safety alerts, and record the vehicle's condition in real-time.

Connected cars can communicate bidirectionally with other systems that are outside the car LAN (Local Area Network). This feature allows the car to share internet access with devices both inside and outside the vehicle.

" General Motors was the first automaker to bring the first connected car features to market with OnStar in 1996 in Cadillac DeVille, Seville, and Eldorado "

3. Automobile Financing

Auto-Finance companies need to gather a massive amount of customer data. This data helps them to understand their customers in a better way. Auto-finance companies are analyzing this data to gain insights into customer's financial history. This helps the company to judge the preferences of customers.

Companies are now able to provide more personalized financial schemes to customers according to their requirements. This will also help them to lead in business as now they would be able to offer differential services. It also helps them to keep away from fraud and defaulters.

Undoubtedly, Big data analysis gives auto-financing companies an upper hand over the other competitors in the market.

4. Predictive Analysis

One of the most important factors for a successful company is to predict customer problems in advance.

Predictive analysis can help the automobile industry to take the necessary actions and to ensure the better health of vehicles. It also increases customer satisfaction and costs control measures.

Companies can predict the defects that might occur in products that are under the warranty period and can replace them. This also ensures the efficiency of auto parts, which are vital for the particular vehicle. Thus, it helps to maintain the reputation of the company or organization in the market.

5. Design and Production

Data related to the real-world driving experience helps to improve basic parameters like safety, engine efficiency, fuel economy, and battery power in automobiles. These data include user preferences, repair analysis, and customer segments.

With the cohesion of predictive analysis, big data, and manufacturing simulations, enterprises can initiate improvement cycles to enhance the overall efficiency of their operations.

Thus, Big data turns the designing and manufacturing processes more efficient, informed, and aids in the delivery of a better transportation system.

Thank you.