

What is Big Data

Big Data is a massive collection of data that continues to increase dramatically over time. It is a data set that is so huge and complicated that no typical data management technologies can effectively store or process it. Big data is similar to regular data, except it is much larger. Big data analytics is the use of advanced analytic techniques to very large, heterogeneous data sets, which can contain structured, semi-structured, and unstructured data, as well as data from many sources and sizes ranging from terabytes to zettabytes.



Big data is a term that defines the massive amount of organized and unstructured data that a company encounters on a daily basis.

Note

- It may be studied for insights that lead to improved business choices and strategic movements.
- It is a collection of organized, semi-structured, and unstructured data that may be mined for information and utilized in machine learning, predictive modelling, and other advanced analytics initiatives.

Examples of Big Data

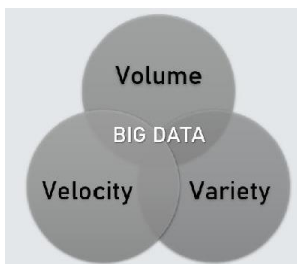
Figure 2 shows an example of big data. Every day, 500+ terabytes of fresh data are absorbed into the Facebook systems. This information is mostly gathered through photo and video uploads, message exchanges, and the posting of comments, among other things. In 30 minutes of flying time, a single Jet engine may create 10+ gigabytes of data. With thousands of flights every day, the amount of data generated can amount to several



Petabytes. Every day, the Fresh York Stock Exchange creates around a terabyte of new trading data.

Figure 2: Example of Big Data

1.2 Characteristics of Big Data



Big data can be described by following characteristics as shown in Figure 3.

Volume

The term 'Big Data' refers to a massive amount of information. The term "volume" refers to a large amount of data. The magnitude of data plays a critical role in determining its worth. When the amount of data is extremely vast, it is referred to as 'Big Data.'



This means that the volume of data determines whether or not a set of data may be classified as Big Data. As a result, while dealing with Big Data, it is vital to consider a certain 'Volume.'

Example:

In 2016, worldwide mobile traffic was predicted to be 6.2 Exabytes (6.2 billion GB) per month. Furthermore, by 2020, we will have about 40000 ExaBytes of data.

Velocity

The term "velocity" refers to the rapid collection of data. Data comes in at a high rate from machines, networks, social media, mobile phones, and other sources in Big Data velocity. A large and constant influx of data exists. This influences the data's potential, or how quickly data is created and processed in order to satisfy needs. Data sampling can assist in dealing with issues such as 'velocity.' For instance, Google receives more than 3.5 billion queries every day. In addition, the number of Facebook users is growing at a rate of around 22% every year.

Variety

Structured data is just data that has been arranged. It usually refers to data that has been specified in terms of length and format.

Semi-structured data is a type of data that is semi-organized. It's a type of data that doesn't follow the traditional data structure. This sort of data is represented by log files.

Unstructured data is just data that has not been arranged. It usually refers to data that doesn't fit cleanly into a relational database's standard row and column structure. Texts, pictures, videos etc. are the examples of unstructured data which can't be stored in the form of rows and columns.

Benefits of Big Data Processing

Ability to process Big Data brings in multiple benefits, such as-

Businesses can utilize outside intelligence while taking decisions.

Access to social data from search engines and sites like facebook, twitter are enabling organizations to fine tune their business strategies. Improved customer service (Traditional customer feedback systems are getting replaced by new systems designed with Big Data technologies.

Improved customer service (In these new systems, Big Data and natural language processing technologies are being used to read and evaluate consumer responses.

Early identification of risk to the product/services, if any
Better operational efficiency

Big Data technologies can be used for creating a staging area or landing zone for new data before identifying what data should be moved to the data warehouse. In addition, such integration of Big Data technologies and data warehouse helps an organization to offload infrequently accessed data.

Why is Big Data Important?

Cost Savings

Big data helps in providing business intelligence that can reduce **costs** and improve the efficiency of operations. Processes like quality assurance and testing can involve many complications particularly in industries like biopharmaceuticals and nanotechnologies

Time Reductions

Companies may collect data from a variety of sources using real-time in-memory analytics. Tools like Hadoop enable businesses to evaluate data quickly, allowing them to make swift decisions based on their findings.

Understand the market conditions

Businesses can benefit from big data analysis by gaining a better grasp of market conditions.

Analysing client purchase behaviour, for example, enables businesses to discover the most popular items and develop them appropriately. This allows businesses to stay ahead of the competition.

Social Media Listening's

Companies can perform sentiment analysis using Big Data tools. These enable them to get feedback about their company, that is, who is saying what about the company. Companies can use Big data tools to improve their

online presence

Using Big Data Analytics to Boost Customer Acquisition and Retention.

Customers are a crucial asset that each company relies on. Without a strong consumer base, no company can be successful. However, even with a strong consumer base, businesses cannot ignore market rivalry. It will be difficult for businesses to succeed if they do not understand what their consumers desire. It will be difficult for businesses to succeed if they do not understand what their consumers desire. It will result in a loss of customers, which will have a negative impact on business growth. Businesses may use big data analytics to detect customer-related trends and patterns. Customer behaviour analysis is the key to a successful business.

Using Big Data Analytics to Solve Advertisers Problem and Offer Marketing Insights

All company activities are shaped by big data analytics. It allows businesses to meet client expectations. Big data analytics aids in the modification of a company's product range. It guarantees that marketing initiatives are effective.