**CHAPTER 17 :BIG DATA**

**Definition**

Big data is humongous amount of information that is expanding incrementally. Ordinary data management systems cannot effectively hold or process this vast amount of data due to its stupendous volume and complexity. Big data therefor is the set of structured, semi-structured and unstructured information gathered by businesses that can be learned and applied in machine learning, analytics and predictive modeling.

**Importance of Big Data**

Big data analytics help organizations leverage data and use it to discover new opportunities. This conversely leads to smarter business moves, more efficient operations, higher profits margins and more satisfied customers.

Companies using big data along with advanced analytics can gain a number of benefits, including: cut down the production cost. Big data technologies such as cloud analytics can significantly reduce costs when storing large amounts of data, such as in data resonating on climate, weather, ocean waves and climate.

Big data analytics help organizations find better ways to do business,make better and faster decisions. The speed of in-memory analytics combined with the ability to analyze new data sources, such as streaming IoT data, helps businesses analyze information instantly and make informed decisions.

Development and promotion of new products and services. The ability to measure customer needs and satisfaction through analytics enables businesses to deliver what they want, when they want. Big data analytics enable more companies to develop innovative new products to meet changing customer needs.

**The 3 V’s in Big Data**

**Volume**

Big data is based on volume. The amount of data that can actually reach unprecedented heights. It is estimated that 250 quadrillion bytes of data are created every day, and 60 zettabytes of data will be created in 2023. Businesses will have terabytes and even petabytes of data on storage devices and servers. This data helps shape the company's future and behavior by tracking its progress.

**Velocity**

The growth and importance of data has changed the way we view it. We once didn't see the importance of data in the corporate world, but as the way we collect data changes, our dependency on it mutates every day. Velocity basically measures how fast data arrives. Some data is available in real time, while others are available in bulk and sent in batches. And not all platforms process incoming data at the same rate, so it's important not to generalize, discount, or jump to conclusions without having all the facts and figures in place.

**Variety**

Generations ago, data was collected in a central region and delivered in one format. What used to take the form of database files like excel, csv, and access is now available in non-traditional formats like video, text, PDF, social media graphics, and through technologies like wearable devices. . This data is very useful to us, but we need more analytical skills to generate more work and decipher this incoming data, make it manageable and make it work. Big data is more than just “lots of data”. It's a way to make a real difference to business operators and make them more agile by empowering new and existing data and opening up new ways to collect future data.