

# **BIG DATA HISTORY AND CHARACTERISTICS**

## **The History of Big Data**

The value of any data – whether stored on-premises or in the cloud – lies in the underlying applications, how they can be processed, and actioned into an organization. The history of Big Data analytics can be traced back to the 1960s when IBM introduced the first computer system capable of processing large amounts of data. The development of databases and data-processing software in the 1970s and 1980s followed this. The advent of the Cloud has changed the adoption scenario of Big Data significantly, and it has slowly but rapidly become a part of all organizations, big and small. It is driving a huge value impact for organizations that are implementing it to support their decision-making process.

## **The Importance of Big Data Analytics**

By uncovering patterns that would be impossible to detect manually, Big Data analytics can help businesses make better decisions, improve operations, and increase revenue. For example, Big Data analytics can identify patients at elevated risk of developing certain conditions, allowing for early intervention. Big Data analytics can analyze customer purchasing patterns and optimize inventory in the retail industry.

Big Data analytics is far more advanced than the basic BI algorithms and can provide immediate data analysis that helps companies make faster yet more accurate decisions. It uncovers the trends and patterns from the data set of any given source, size, and structure.

Big Data Analytics is becoming more critical for companies with the coming of the plethora of sensors and gadgets, social media platforms, IoT, and Artificial Intelligence. Big Data analytics is all about working with large data sets, but what exactly constitutes "big" data?

## **The Characteristics of Big Data**

The infamous - Volume, Velocity, Variety, Veracity, and Value of Data

Volume refers to the sheer amount of data that is being collected and analyzed. Velocity refers to the speed at which data is generated and processed. With that, organizations must be able to process data to make timely decisions quickly. Variety refers to the diverse types of data being collected, such as structured, semi-structured, and unstructured data. Veracity refers to the uncertainty and complexity of data and the need to ensure data quality and integrity. Finally, Value refers to insights and knowledge derived from the data.

## **Understanding How Big Data Works and Transforms**

So, how does Big Data work? The key to working with large data sets is using distributed computing and storage systems, such as Hadoop and Spark. These systems allow for the storage and processing of data, making it possible to handle even the

most extensive data sets. One of the critical ways Big Data can transform business is by providing insights that companies can use to make better decisions. For example, companies can identify patterns and trends by analyzing customer data to help them understand the most effective products and marketing strategies.

This information can then be used to optimize business operations, improve customer engagement, and increase revenue. Another way Big Data can transform business is by automating processes and reducing human error. Companies can use machine learning algorithms to analyze data in real-time and make predictions or take actions based on that data. This can help companies to automate repetitive tasks.

But just how big is Big Data? The numbers speak for themselves. Here are some mind-blowing facts and statistics that highlight the sheer power of Big Data.

### **Big Data in Numbers**

According to a study conducted by IBM, 90% of all data in the world was generated just in the last two years.

Recent surveys by Gartner found that 89% of companies are investing in Big Data to gain a competitive edge.

The National Small Business Association found that 63% of small businesses use Big Data to improve operations.

Big Data also includes unstructured datasets 80% of all data is unstructured and still requires analysis.

McKinsey Co. found that Big Data can lead to a 2-3% increase in productivity and a 20-25% reduction in costs.

### **Unlocking The Potential of Data**

In conclusion, Big Data has come a long way since its inception and continues to evolve. Its characteristics, such as volume, variety, velocity, and veracity, make it a powerful tool for businesses. The different types of Big Data, including structured, unstructured, and semi-structured, provide various opportunities for analysis and insight. The market and growth of Big Data are staggering, and its potential is immense. As the volume of data continues to grow, the importance of learning and utilizing Big Data analytics will only continue to increase.

In the next blog in the Big Data series, we will talk about the top five Big Data technologies that direct the world and support millions of businesses. Stay tuned!