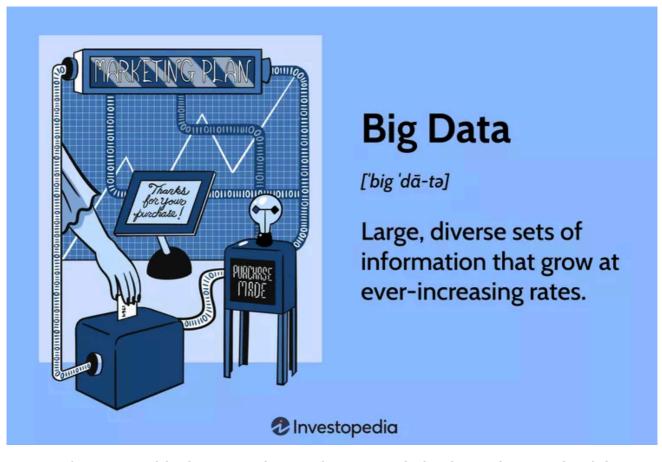LIVE

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How Companies Use Big Data

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Big Data

['big 'dā-tə]

Large, diverse sets of information that grow at ever-increasing rates.

Investopedia

Companies can use big data to understand customer behavior and target the right audience.
Credit: Investopedia / Ellen Lindner

DEFINITION:

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What Is Big Data?

The term "big data" encompasses the volume of information, the speed at which it is created and collected, and the scope of the data to provide the raw material used in [data mining](). Technology companies like Alphabet and Meta use big data for tasks, such as generating advertising revenue through targeted ads on social media platforms and websites.

KEY TAKEAWAYS

- Big data can be either structured, often numeric and easily stored, or unstructured, which is free-form and less quantifiable.

- Data collection comes with the potential vulnerability to cyberattacks and data breaches.

Big Data Collection and Storage

Big data is structured or unstructured. Structured data is commonly numeric information easily accessed from databases and spreadsheets. Unstructured data can be more qualitative and unorganized. According to IBM, examples of unstructured data may include "text, mobile activity, social media posts, and Internet of Things (IoT) sensor data."[1] Semi-structured data has characteristics of both structured and unstructured data.

Big data is collected through questionnaires, product purchases on websites or at point-of-sale (POS) terminals, electronic check-ins, personal devices, and apps. While beneficial for multiple uses, big data collection raises privacy concerns and the potential vulnerability to cyber attacks and data breaches.

Big data is typically stored electronically in what are sometimes referred to as data warehouses or data lakes. It is analyzed using software that handles large data sets.

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☰ **FAST FACT**

Data mining is a process that analyzes relevant trends and patterns, transforming big data into useful information.

How Is Big Data Used?

The "V's of Big Data" help define how this type of information differs from other data. Big data is a large *volume* of information collected quickly with high *velocity*. It consists of a *variety* of reliable information with proven *veracity* and provides *value* to corporate entities. [3] Common uses include:

- Data analysts find relationships in consumer data, such as demographics or purchase history, to determine whether a correlation exists.
- Companies rely on big data assessments to implement strategies in human resources, production, marketing, or sales.

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- Big data helps target the right audiences and ensures customers come back.
- It allows companies to tailor products to deliver what customers want.

> ⚡ **IMPORTANT**
>
> The "cloud" refers to networks of data servers where organizations or individuals can rent space to store large volumes of data. Cloud services such as Amazon Web Services, Microsoft's Azure, and Alphabet's Google Cloud are common choices.

What Is Predictive Analytics?

Predictive analytics refers to the collection and analysis of current and historical data to develop and refine models for forecasting future outcomes. Predictive analytics is widely used in business and finance as well as in fields such as weather forecasting, and it relies heavily on big data.

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warehouse can reside in the owner's in-house servers, with an outside specialist company, or in the [cloud](#), and is most commonly associated with structured data. A data lake is a term for repositories that accommodate structured, unstructured, and semi-structured data.

What Is the Role of Artificial Intelligence in Big Data?

Artificial intelligence can analyze big data. Big data can also be used to train [artificial intelligence](#) to make it more effective.

The Bottom Line

Big data is the vast, complex data sets that traditional data

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management systems cannot handle. Big data can help organizations create new strategies and make better corporate decisions when big data is collected and

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