Characteristics of Big Data Explained in Simple Terms

The properties of big data assist us in understanding how big data operates and why big data is so critical. These characteristics are volume, velocity, variety, veracity, and value. These are commonly known as the 5 V's of big data. These characteristics describe the nature of how big data behaves, the velocity with which it flows, sources, value, and reliability. These features also enable us to manage, store, and utilize big data in real life. (Tentacles are used by big companies, banks, hospitals, and schools to make better decisions and help people in smarter ways.

What is Big Data?

Big data is an enormous data pile that continuously rises every moment. It comes from websites, apps, machines, videos, photos, and many other sources. This data is too large for old computers to process. New tools and good ideas are required to build such big data. The amount of this data continues to increase. Not only is it extremely large, it is extremely fast-moving and changes constantly.

- Big data is helpful because it drives people to know everything from data. For instance, large companies use it to learn what people like. Doctors study it to learn about diseases. Farmers use it to make better crops. The government uses it to plan roads and cities. All these usages reflect the significance of big data properties in various domains.

- Data has its distinct qualities. These are known as the characteristics of big data. These types help us to understand how to collect, store, clean, and use data. Big data's characteristics also give us the confidence to rely on the data and gain insights.

Characteristics of Big Data

We can always explain the different components of big data using the 5 V's of big data. They are volume, velocity, variety, veracity, and value. Each tells us something significant about the mechanics of big data.

Let's dive into what each V means specifically. These five elements function together and form big data that is robust and advantageous. We must consider this when studying/using big data in all fields, such as health, business, agriculture, etc.

Volume in Big Data

Volume in big data refers to the size or quantity of data. Data is growing every day. Each click on a website, each photo, and each message generates fresh data. Social media alone generates terabytes of data each second. This is indicative of the size of the volume.

Once upon a time, we had MB or GB of data. Today, we are talking in terabytes, petabytes, and beyond. Hundreds of terabytes of data require robust storage systems. Large data sets are stored in cloud storage and data centers. Hadoop, Spark, etc., are used to process this large volume.

Volume matters because it tells more of a story. The more data, the more you can learn. For instance, if an organization knows what millions of people purchase, it can provide better offers. Therefore, the value of big data is also perpetrated by the size.

But more data is also more problems. Storing large data is costly. It also requires additional time for cleaning and sorting. So, volume is one of the most prominent characteristics of big data, and it needs to be handled.

Velocity in Big Data

In big data, velocity refers to data speed. Data moves very fast. Sensors, cameras, websites, and a host of other sources generate it. Some of the data is real-time, such as during a live match or while traveling in a smart car.

- This high degree of velocity implies the necessity to gather and employ the data promptly. The data eventually loses its value if we drag our feet. For example, if there is a delay, it cannot suggest the right product while online shopping. This results in losing money and customers.

- Fast data needs new tools and software to manage it. Examples include but are not limited to Apache Kafka and Apache Storm. They are also quick to gather and process data. In this manner, you prepare the data for when you need it.

- Velocity is also essential to life-saving. Doctors can make speedy moves if machines can send real-time signals to hospitals. Fast data can help with fraud in banks. Therefore, velocity is an essential factor of big data in many fields.

Variety in Big Data

That leads to what is called |Variety|, meaning the types of data in big data. Data comes in different forms; some are structured like numbers on a table. Some are unstructured — photos, videos, emails. Others are semi-structured, such as web pages or XML files.

- All these types are included in big data. That's one of the reasons why it's difficult to preserve and study. Previously, only structured data was applied. Now, with big data, we use everything. It even provides more wisdom and alternatives for discovery.

- For instance, a company might integrate voice calls, emails, and sales data. This helps them understand what customers believe and aspire to. However, working with varying data types is not a simple task. We must rely on special tools such as NoSQL databases and data lakes.

- Big data also demonstrates how clever we need to manage it — the variety it contains. We have to apply AI, machine learning, and, and coding skills correctly, so, these big data characteristics help in a smart way to manage variety.

More on Volume, Velocity, and Variety in Big Data

What is Big Data: The 3 You will read about the three V's of Big Data below, which are at the core components of Big Data: Volume, Velocity and Variety. They show how big data expands, relocates and mutates." Let us see how they work in harmony and also their significance.

- Volume gives us the size. Velocity provides us with the speed. Variety provides us with the type. These three work together to make big data valuable but complex.

- The three major characteristics of big data are volume, velocity, and variety: When we receive data, we must store it in volume, process it quickly in velocity, and store it in different formats in variety. For example, we receive data in the form of volume (i.e., what people click on) in real-time (i.e., velocity) and in multiple formats such as voice, video, and text (i.e., variety) in online shopping. So, these are the big data properties explained.

- But it is not easy to manage these three. It needs good technology. It also requires intelligent individuals who can work with data." Data scientists and data engineers across large companies manage these V's.

- These three V's help reveal the features of big data. They allow companies to make better decisions, serve people better and save money. So, the first step towards learning big data is understanding these three.

V	Meaning	Importance
Volume	Size of data	Gives more knowledge
Velocity	Speed of data	Helps in real-time actions
Variety	Types of data	Provides deep understanding

The last two V's in the 5 V's of big data are veracity and value. These two allow us to trust the data and results, which are useful. Without them, big data is nothing but a pile of numbers and words.

Veracity in Big Data

Veracity means the truth or accuracy of data in big data. All data is not clean. Some data is incorrect, unorganized or fraudulent. Garbage in, garbage out: When we handle poor data, we process poor data. Therefore, we need to verify the accuracy of the data before utilizing it.

- If a hospital has the wrong data about a patient, it might treat the patient incorrectly, for instance. That is risky. Therefore, we must collect data, validate it, and fix errors. This is a very crucial step in big data work.
- It takes a lot of time to clean and check data. But it improves the learning experience. Clean data builds trust. It also saves time later. Data can be cleaned with tools like Talend, OpenRefine, and Python scripts.
- So, in big data, veracity allows us to use correct, clean, and useful data.

Value of Big Data

The value of big data refers to the benefits we derive from the data. Big data, however, only works if it produces good results. To gain value, we have to put the right data correctly.

Based on all this big data, a company that creates better ads gets more customers. You have better crops if you use big data to monitor weather and soil. Secondly, if students analyze larger data to study learning trends, they will do better in examinations.

- So, the value comes when the data is used to solve problems. Data itself has no value. We must turn it into action.
- The value depends on all other V's. More value comes from clean data (veracity), from different formats (variety), from large size (volume), and fast speed (velocity). The point is the value of big data. We use big data because of this,

Relevance to ACCA Syllabus

These matters are relevant to big data, and this is why big data will appear in ACCA and papers such as SBR (Strategic Business Reporting) and SBL (Strategic Business Leader), and where it is relevant in areas like the usage of digital data, decision-making, and risk assessment. Big data characteristics are essential for ACCA students as they need to use analytical tools in preparing financial statements, audit planning, and management decision-making.

Characteristics of Big Data ACCA Questions

Q1. Which one of the following is not a feature of big data?

A) Volume

B) Variety

C) Value

D) Visibility

Ans: D) Visibility

Q2. Very short answer — What is the Velocity of Big Data?

A) The amount of data

B) The speed of data generation and processing

C) The quality of the data

D) The type of data

Ans: B) The speed at which data is produced and processed

Q3. Which big data characteristic is related to data fed by text, image and video sources?

A) Veracity

B) Volume

C) Variety

D) Velocity

Ans: C) Variety

Q4. Big Data focuses on which of the following aspects in 'Veracity'?

A) Volume of data

D) The veracity and trustworthiness of data

that the complete data collection is not free.

D) The type of storage used

Ans: B) True and reliable data

Q5. Which of the following characteristics of big data ensures all the required data used in audit and assurance is accurate and trustworthy?

A) Volume

B) Variety

C) Veracity

D) Velocity

Ans: C) Veracity

Relevance to US CMA Syllabus

The syllabus of the US CMA (Certified Management Accountant) includes big data under Part 2: Strategic Financial Management. Features of big data assist in forecasting, risk management, decision

analysis, and strategic planning, enabling CMAs to leverage them to create data-driven results for business.

Characteristics of Big Data CMA Questions

Q1. Which big data characteristics are the most effective for real-time business for you?

A) Velocity

B) Veracity

C) Volume

D) Value

Ans: A) Velocity

Q2. What does the 'Value' property of big data highlight?

A) How fast data moves

The significance and utility of the data

C) The size of the dataset

D) The format of data

Ans: B) Usage and significance of the data

Q3. Which aspect of big data is primarily being addressed by a company using large datasets from customer feedback?

A) Velocity

B) Volume

C) Variety

D) Veracity

Ans: C) Variety

Q4. Which one of the big data property closely relates to risk involved in decision making?

A) Veracity

B) Volume

C) Velocity

D) Value

Ans: A) Veracity

Q5. Big Data is a big challenge scenario in front of management accountants and one of the crucial challenges emanates from the `Volume'

A) It influences the rate of decision making

B) It Requires Large Storage and Power Tools

C) It reduces data quality

D) It slows business growth

Answer : B) It requires large storage and strong tools

Relevance to CFA syllabus

With the exception of financial technology (FinTech) and approaches for big data in effective portfolio management and equity analysis–areas you can't get into unless you pass the CFA program (the most relevant ones are taught in Level II and III)–there won't be much cross-over for your career. Understanding the characteristics of big data helps CFA candidates use machine learning, AI models and risk applications for investment or to act as an adviser to clients.

Characteristics of Big Data CFA Questions

Q1. Which among the following refers to ' volume' in big data?

A) The usefulness of data

B) How fast data is processed

C) Quantity of size and data

D) The accuracy of data

Ans: C) To the size as well as the amount of data

Q2. Which is the most important attribute to consider when dealing with data like social media, financial reports and emails?

A) Veracity

B) Variety

C) Velocity

D) Value

Ans: B) Variety

Q3. Which attribute of big data gets impacted most for instance, a hedge fund observing trends of stocks in meats?

A) Volume

B) Velocity

C) Veracity

D) Variety

Ans: B) Velocity

Q4. If a CFA analyst is concerned that incorrect data could skew his investment models, which characteristic of big data is applicable?

A) Volume

B) Veracity

C) Velocity

D) Value

Ans: B) Veracity

Q5. What factor has value to be extracted from big-data analytics in the context of portfolio management?

A) Volume

B) Value

C) Veracity

D) Variety

Ans: B) Value

Relevance to US CPA Syllabus

Big data is as much of a hot topic for the AUD and BEC sections of the US CPA exam. In use abstracts, big data concepts are applied in the foundation of analytics based auditing, risk analysis and fraud detection. This is especially important to CPAs to enhance audit quality and client reporting.

Characteristics of Big Data CPA Questions

Q1. What property of big data allows for real-time auditing and continuous monitoring?

A) Variety

B) Veracity

C) Velocity

D) Volume

Ans: C) Velocity

Q2. Data auditing quality model: What is its contribution to the credibility of the audited data?

A) Velocity

B) Variety

C) Veracity

D) Volume

Ans: C) Veracity

Q3. Which big data characteristic is an auditor handling various documents like spreadsheets, emails, and contracts?

A) Variety

B) Velocity

C) Volume

D) Value

Ans: A) Variety

Q4. Which of the big data characteristics is most associated with respect to the activity of large scale data used for detection of fraud in accounting?
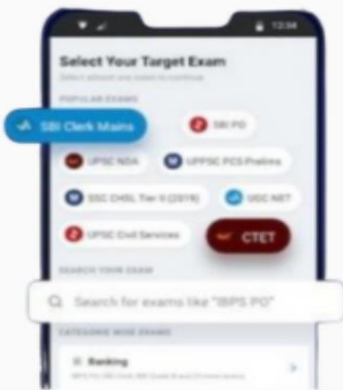
A) Volume

B) Value

C) Veracity

D) Velocity

Ans: A) Volume

Q5. What big data characteristic is descriptive of the ability to poach raw data into useful audit findings?

A) Veracity

B) Variety

C) Value

D) Velocity

Ans: C) Value