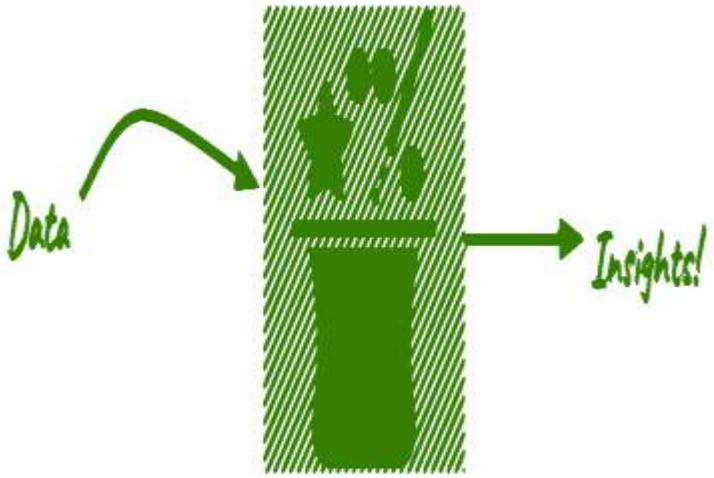
Big data

According to Gartner, the definition of Big Data – “Big data” is high-volume, velocity, and variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making.”

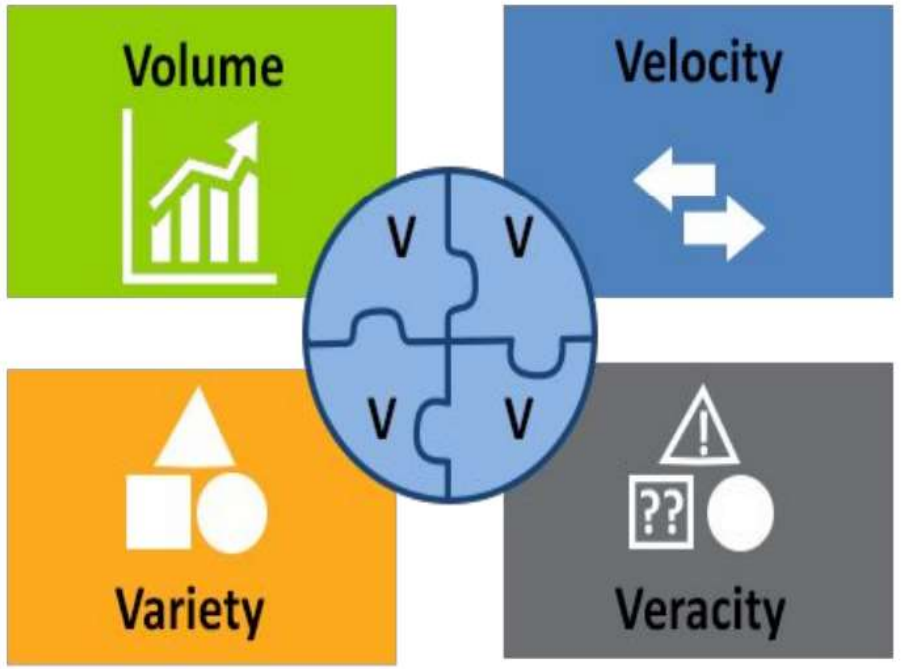
Terms



- WHAT IS BIG DATA:
- VOLUME:MASSIVE AMOUNT OF DATA
- VELOCITY: ARRIVAL/EXPONENTIAL GROWTH
- VARIETY OF DATA: INCLUDES IMAGES,TEXT,VIDEO ETC
- INNOVATIVE INFORMATION PROCESSSING:DATA MINING ,DATA STORAGE,DATASHARING
- INCLUDES THE TOOLS AND TECHNIQUES
- ALSO CONTAIN THE FRAME WORKS

REPRESENTATION

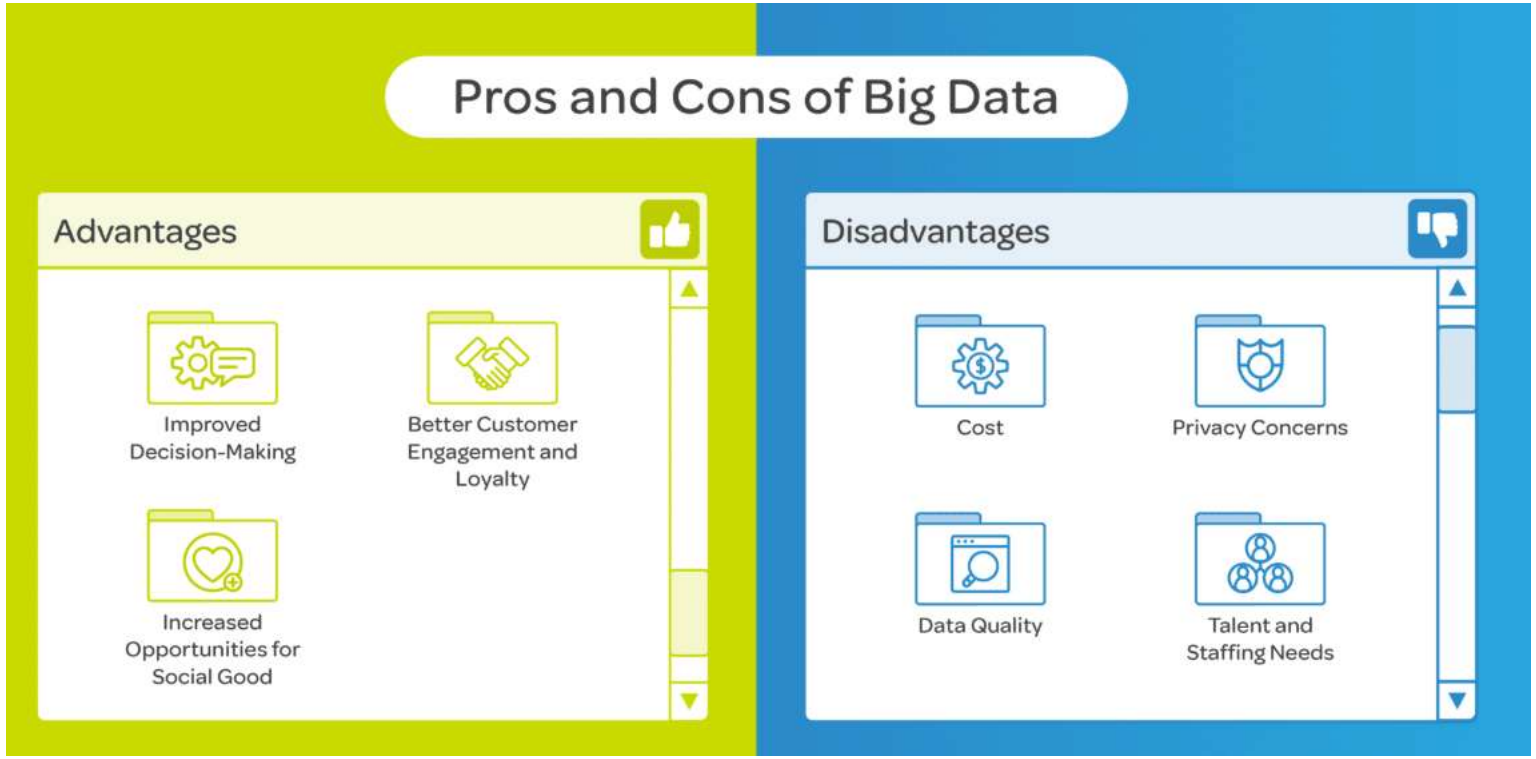
1. large quantity



2. arriving quickly

3. [un]structed, multi-modal

PROS AND CONS



WHY BIG DATA

The importance of big data in today's world

- **Driving business strategies: leveraging big data to gain competitive advantage**
- to make data-driven decisions that drive growth, increase operational efficiency, and enhance customer satisfaction.
- **Enhancing decision making**
- enables proactive decision-making, helping businesses stay ahead of the curve and adapt to changing market dynamics.
- **The benefits of big data**
- **Improved efficiency and productivity**
- By analysing operational data, organisations can identify bottlenecks and inefficiencies in their processes.

Contd…

- **Risk and fraud detection**
- This helps mitigate risks and protect businesses and consumers from financial losses.
- **Personalised customer experience**
- By analysing customer data, organisations can personalise the customer experience, tailor marketing campaigns, and offer relevant product recommendations.

History of Big Data

- 60-70: Data Centers
- 2005:people began to realize just how much data users generated through Facebook, YouTube, and other online services.
- Hadoop (an open-source framework created specifically to store and analyze big data sets) was developed that same year.
- NoSQL also began to gain popularity during this time.
- more recently, Spark :was essential for the growth of big data because they make big data easier to work with and cheaper to store.
- Internet of Things (IoT), more objects and devices are connected to the internet, gathering data on customer usage patterns and product performance. The emergence of machine learning has produced still more data.

Trends

Top big data trends in 2021

Edge computing

Explosive growth in data generated from cloud systems, sensors, smart devices and video streaming is driving adoption of edge computing. Data processing is done on the periphery of the network as close to the originating source as possible.

Cloud and hybrid cloud computing

Cloud computing enables organizations to process nearly limitless amounts of data. Hybrid cloud approaches are being developed to enable companies in regulated industries to take advantage of cloud's economic and technical advantages.

Data lakes

These large repositories store structured and unstructured data in its native format. Data scientists often extract just what's needed for a project, eliminating costly ETL processes required of centralized data warehouses.

Machine learning and AI technologies

Machine learning and other AI technologies are revolutionizing big data analytics. AI's ability to ingest and analyze massive amounts of structured and unstructured data is being used by companies to optimize and improve business operations.

The Convergence of current Trends