



ROHINI

COLLEGE OF ENGINEERING AND TECHNOLOGY
Approved by AICTE and affiliated to Anna University, (An ISO Certified Institution)
Accredited by NAAC with A+ Grade

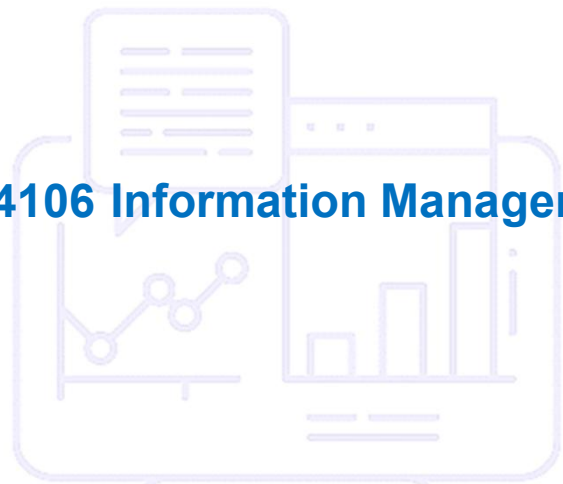


Recognized Under Section 2(f) of
University Grants Commission, UGC
Act 1956

Department of Management Studies

MBA – I Semester

BA4106 Information Management



Dr. Jackson Daniel
Professor/ECE Department

UNIT –V

New IT Initiatives

1. Introduction to Deep Learning
2. Big Data
3. Pervasive Computing
4. Cloud Computing
5. Advancements in AI
6. IoT
7. Block Chain
8. Crypto Currency
9. Quantum Computing



What is Big Data?

- ❑ Big Data is a collection of data that is huge in volume, yet growing exponentially with time.
- ❑ It is a data with so large size and complexity that none of traditional data management tools can store it or process it efficiently.
- ❑ Big data is also a data but with huge size.

What is Big Data?

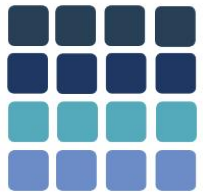
- ❑ The term 'big data' is self-explanatory – a collection of huge data sets that normal computing techniques cannot process.
- ❑ The term not only refers to the data, but also to the various frameworks, tools, and techniques involved.
- ❑ Big data, typically measured in petabytes or terabytes, materializes from three major sources— transactional data, machine data, and social data
- ❑ Data from nuclear plants, X-ray, and scanning devices, plane engines

Types of Big Data

Big Data is generally categorized into three different varieties. They are as shown below

- Structured Data
- Semi-Structured Data
- Unstructured Data

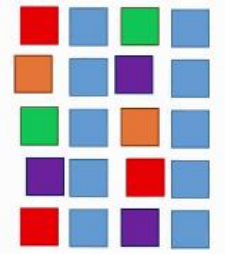




Structured Data

- ❑ Structured Data owns a dedicated data model, It also has a **well-defined structure**, it follows a consistent order.
- ❑ It is typically **tabular** with rows and columns that clearly define data attributes.
- ❑ It is designed in such a way that it can be **easily accessed** and used by a person or a computer.
- ❑ Structured data is usually stored in well-defined columns and also **Databases**.

Example: Database Management Systems(DBMS)



Semi-Structured Data

- ❑ Semi-Structured Data can be considered as another form of Structured Data.
- ❑ It inherits a few properties of Structured Data, but the major part of this kind of data fails to have a definite structure.
- ❑ It does not obey the formal structure of data models such as an RDBMS.

Example: Comma Separated Values(CSV) File.



Un structured Data

- ❑ Unstructured Data is completely a different type of which neither has a structure nor obeys to follow the formal structural rules of data models.
- ❑ It does not even have a consistent format and it found to be varying all the time.
- ❑ But, rarely it may have information related to data and time.

Example: Audio Files, Images etc

Characteristics of Big Data

- ❑ **Volume** – Size of data
- ❑ **Variety** – Photograph, PDFs, Sound, messages, recordings
- ❑ **Velocity** – speed of generation of data, how quick data is created,

The progression of data is huge and non stop

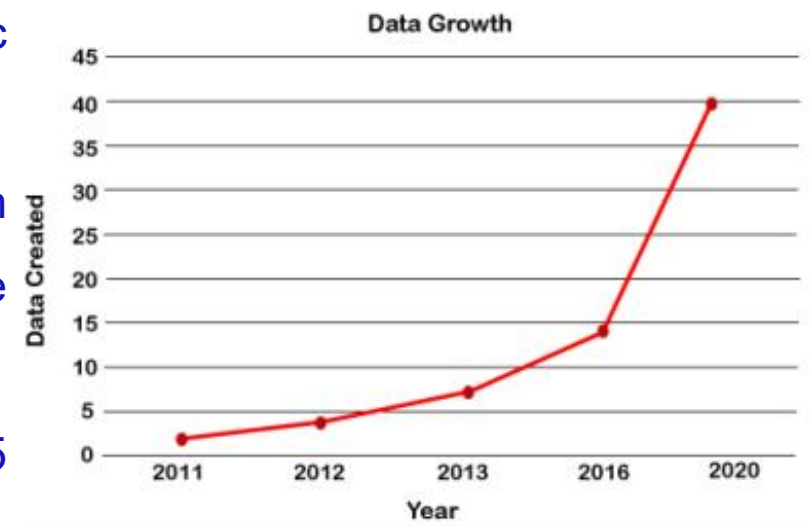
- ❑ **Variability** – irregularity by the data now and again

Characteristics of Big Data



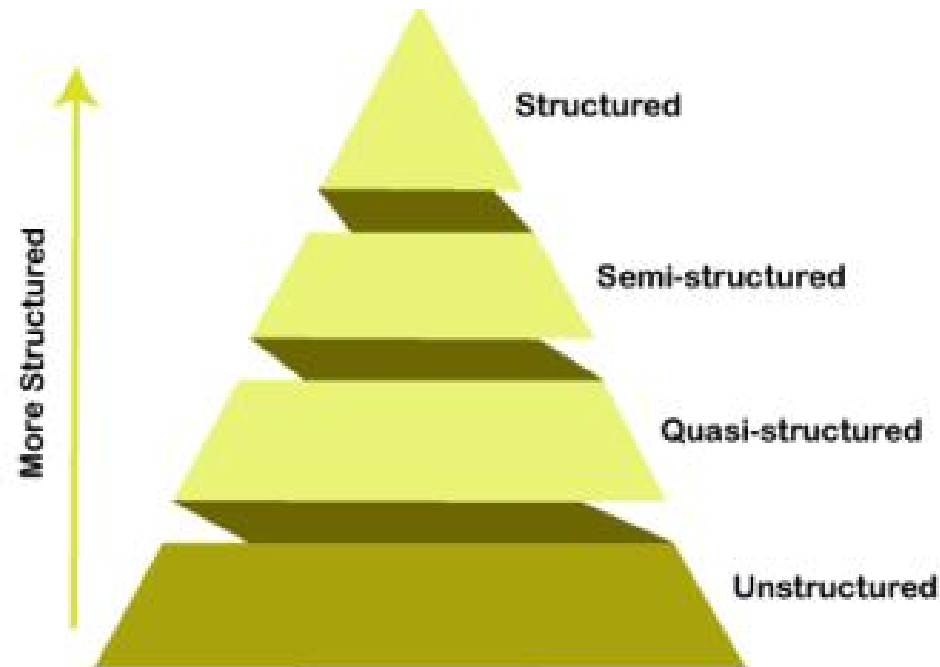
Volume

- ❑ Volume refers to the unimaginable amounts of information generated every second from social media, cell phones, cars, credit cards, M2M sensors, images, video, etc ...
- ❑ We are currently using distributed systems, to store data in several locations and brought together by a software Framework.
- ❑ Facebook alone can generate about billion messages, 4.5 billion times that the “like” button is recorded, and
- ❑ over 350 million new posts are uploaded each day.
- ❑ Such a huge amount of data can only be handled by BigData Technologies



Variety

- ❑ Variety As Discussed before, Big Data is generated in multiple varieties.
- ❑ Compared to the traditional data like phone numbers and addresses, the latest trend of data is in the form of photos, videos, and audios and many more, making about 80% of the data to be completely unstructured

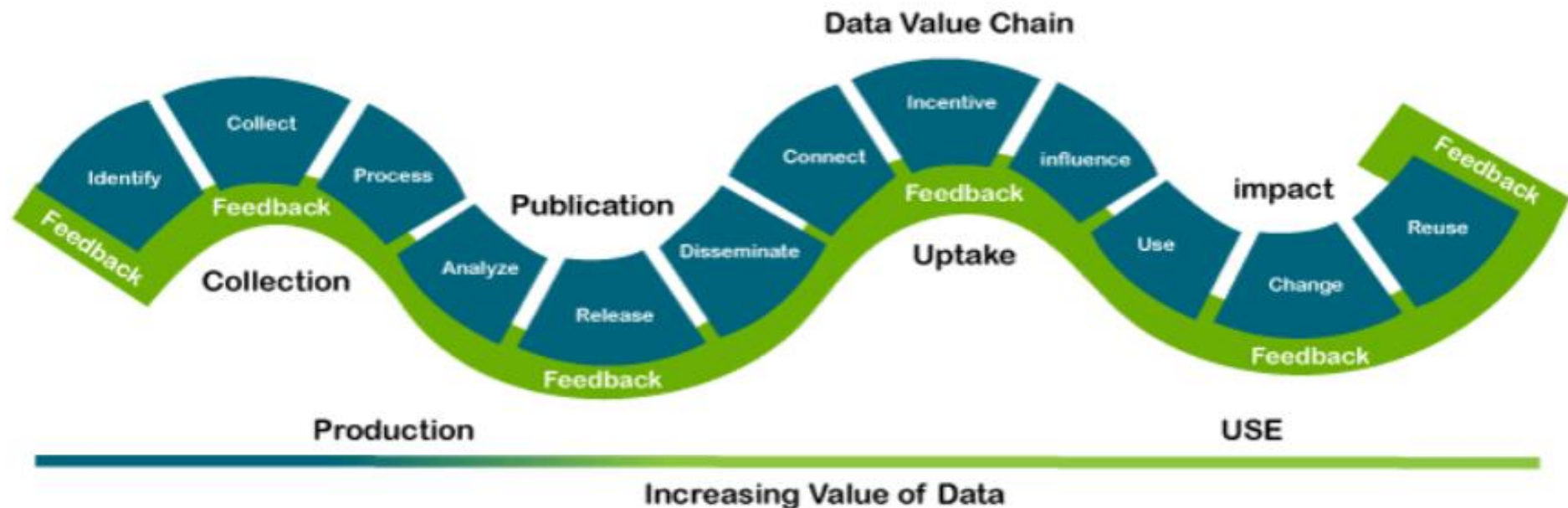


Veracity

- ❑ Veracity basically means the degree of **reliability** that the data has to offer.
- ❑ Since a major part of the data is **unstructured and irrelevant**, Big Data needs to find an alternate way to **filter** them or to translate them out as the data is crucial in business developments.
- ❑ Quality of data that is to be analyzed
- ❑ Data can sometimes become messy and difficult to use.

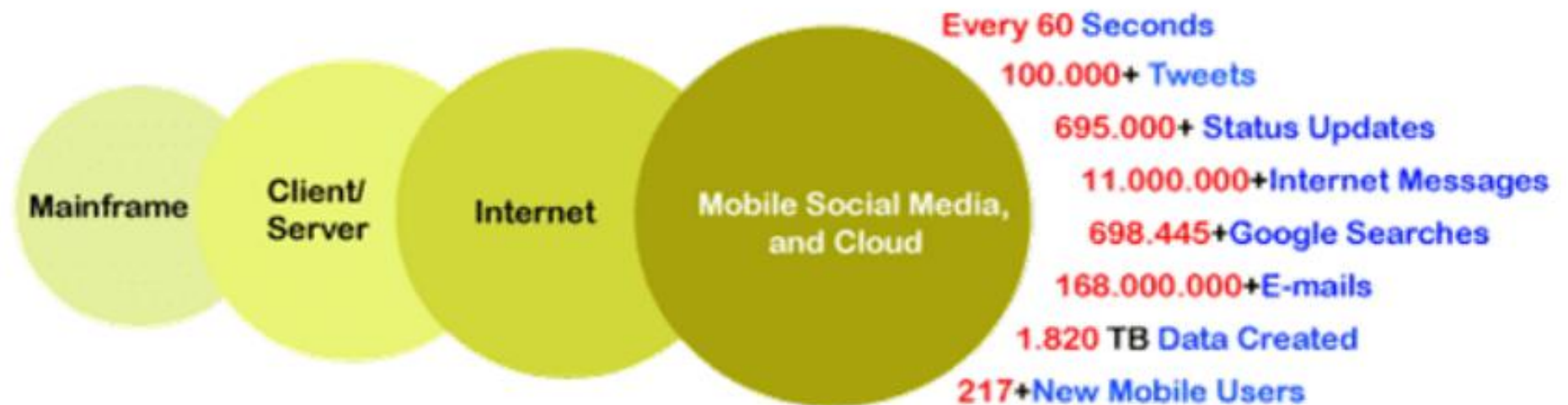
Value

- ❑ Value is the major issue that we need to concentrate on.
- ❑ It is not just the amount of data that we store or process.
- ❑ It is actually the amount of valuable, reliable and trustworthy data that needs to be stored, processed, analyzed to find insights.



Velocity

- ❑ Velocity Last but never least, Velocity plays a major role compared to the others. There is no point in investing so much to end up waiting for the data.
- ❑ So, the major aspect of Big Data is to provide data on demand and at a faster pace.



Examples of Big Data



Weather Data

- ❑ Several governmental, semi-governmental, and private organizations, world meteorological organization.
- ❑ Temperature, atmospheric pressure, humidity, wind speed, weather satellite, rain cloud movement, tidal pattern.



Contract Data

- ❑ Contract data is the information that is contained within a company's contracts.
- ❑ This data can be used to track the performance of the entire organization or specific departments within the company.

Examples of Big Data



Labour Data

- ❑ These Data are needed for the development and evaluation of policies towards this goal and for assessing progress towards decent work.
- ❑ Elasticity of Demand for Labour .(measures the proportional change in labour demand when there is a proportional change in the wage rate.)



Maintenance Data

- ❑ Records from support of services, machines, non-computer related frameworks and more.
- ❑ Predictive Maintenance
- ❑ Longer Life of assets
- ❑ Spare part inventories are often managed by use date

Examples of Big Data



Financial Reporting Data

- ❑ Financial reporting is the comprehensive review of monthly, quarterly, or yearly financial data to drive better business performance and results.
- ❑ Profit and Loss Statement
- ❑ Cash Flow Statement



❑ Compliance Data

- ❑ Data compliance is the formal governance structure in place to ensure an organization complies with laws, regulations, and standards around its data.
- ❑ Financial, medical services, emergency clinics

Examples of Big Data



Clinical Trials Data

- ☐ Trial participants, researchers regulators, and others acting in the best interest of patients to have access to clinical trial data
- ☐ Results Data, Summary of study, resources available

Processing Doctor's Notes

- ☐ Date you saw the doctor, that you had a valid reason for missing work
- ☐ Any limitations they recommend and if a period of absence from work is needed. Details such as limitations and any recovery time needed are especially necessary if you have a disability, as it will help your organization know how to best accommodate you.

Advantages of Big Data

- ❑ Unlimited storage of Large volume of Data
- ❑ Improved decision making
- ❑ More accurate and in-depth analysis
- ❑ Increased productivity & efficiency
- ❑ Increased customer satisfaction
- ❑ Identify potential risks

Disadvantages of Big Data

- ☐ Need for Skilled Personnel
- ☐ Privacy and Security Concerns
- ☐ Privacy and Security Concerns
- ☐ Legal and Regulatory Issues
- ☐ Hardware Needs
- ☐ Costs

Applications of Big Data

Applications of Big Data Analytics



THANK YOU