

Big data concept, storage and management

What is Big Data?

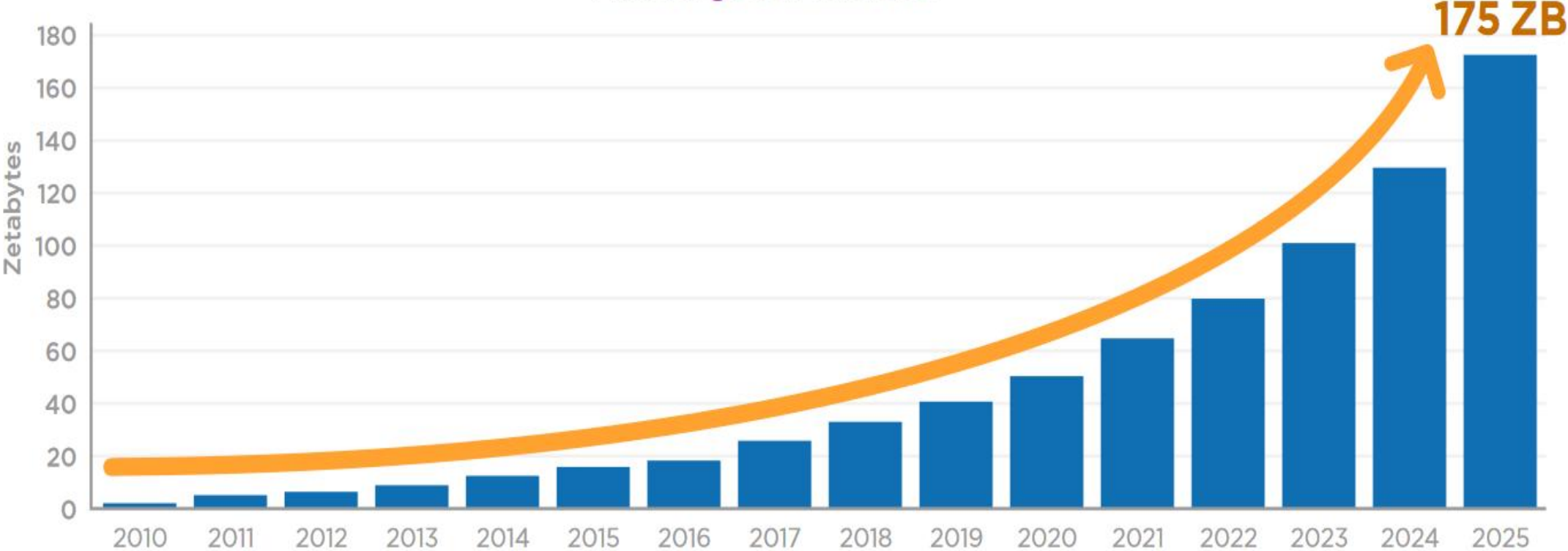
structured, semi-structured, and unstructured data to extract insight meaning, from which one pattern can be designed that will be useful to take a decision for grabbing the new business opportunity, the betterment of product/service, and ultimately business growth. Data science process to make sense of Big data/huge amount of data that is used in business.

Data Mining: It is a process of extracting insight meaning, hidden patterns from collected data that is useful to take a business decision for the purpose of decreasing expenditure and increasing revenue.

Big Data: This is a term related to extracting meaningful data by analyzing the huge amount of complex, variously formatted data generated at high speed, that cannot be handled, or processed by the traditional system.

Data Expansion Day by Day: Day by day amount of data increasing exponentially because of today's various data production sources like a smart electronic devices.

Annual global data size



Source of Big Data:

Social Media:

A sensor placed in various places:

Customer Satisfaction Feedback:

IoT Appliance:

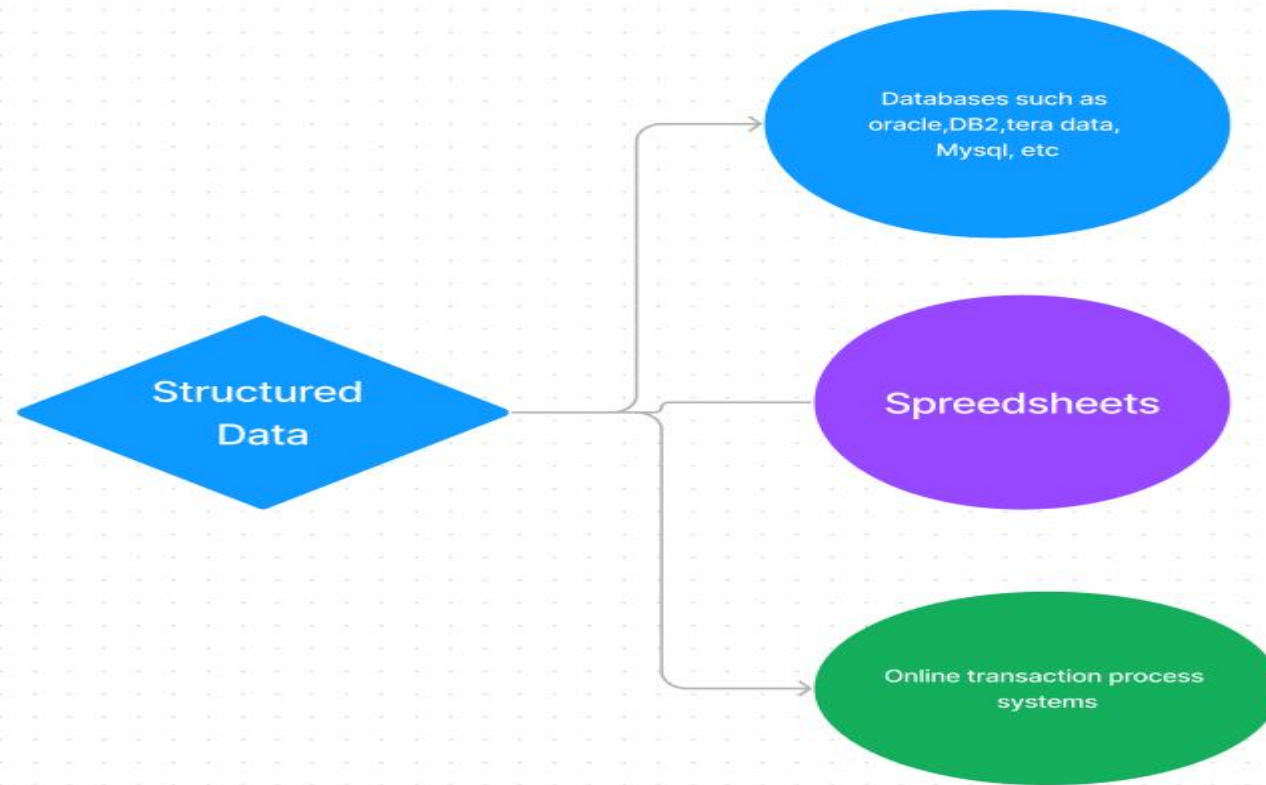
E-commerce:

Global Positioning System (GPS):

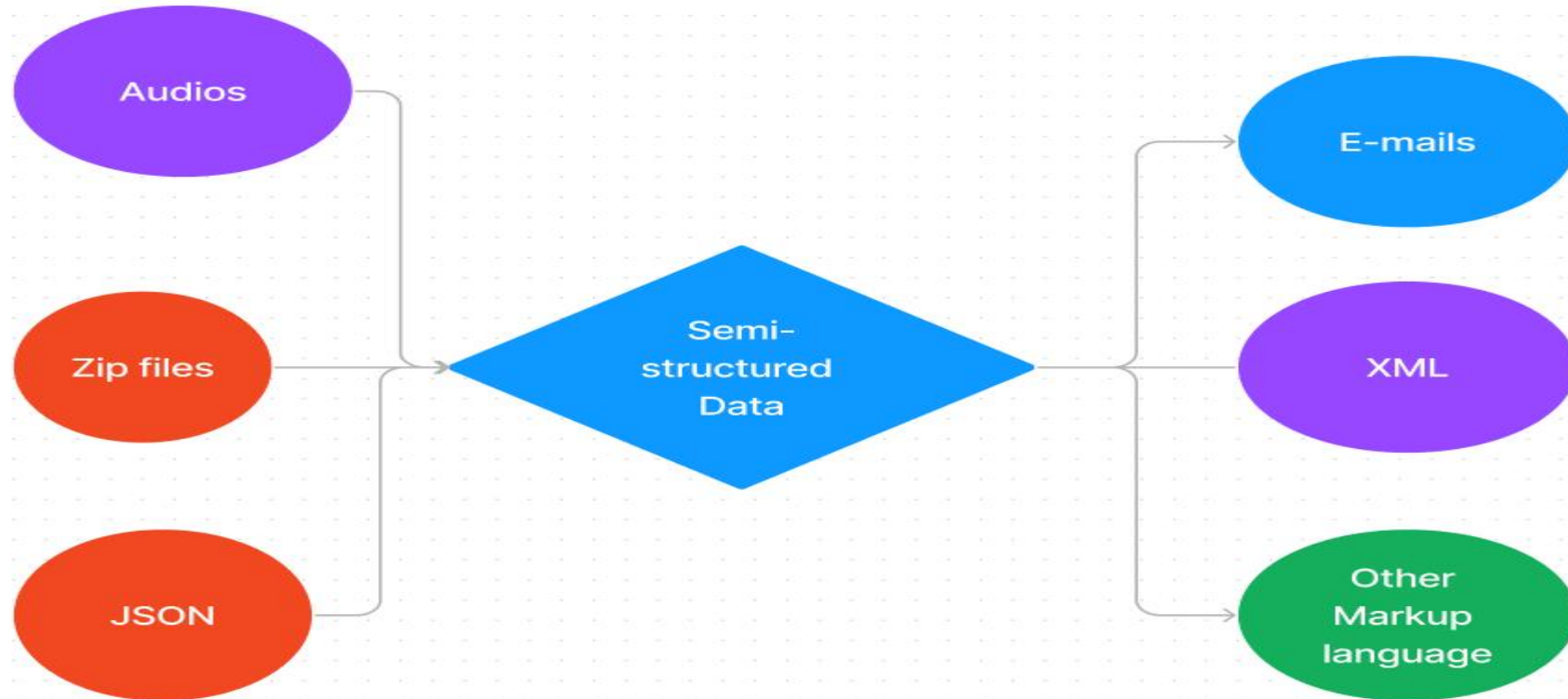
Transactional Data:

Types of Big Data

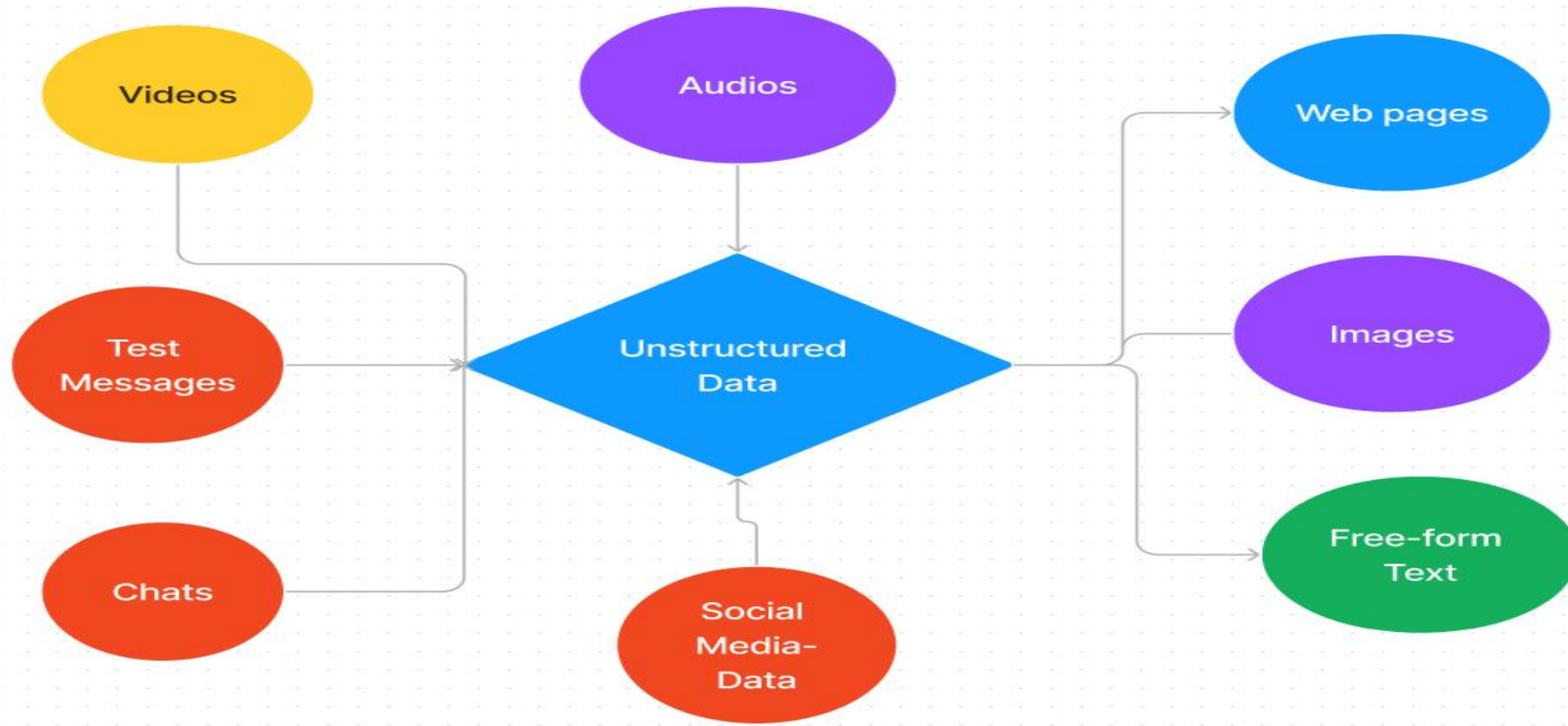
structure:



Semi-Structure



Unstructured Data:



Big Data Storage

- What is Big Data Storage?

storing massive amounts of data that they could not keep on their servers.

The problem was that traditional storage methods couldn't handle storing all this data.

Big Data Storage Challenges

- The first challenge is how much storage you'll need for your extensive data system.
- Another challenge with big data is how quickly it grows

Big Data Storage Key Considerations

- **Data velocity:** Your data must be able to move quickly between processing centers and databases for it to be helpful in real-time applications.
- **Scalability:** The system should be able to expand as your business does and accommodate new projects as needed without disrupting existing workflows or causing any downtime.
- **Cost efficiency:** Because big data projects can be so expensive, choosing a system that reduces costs without sacrificing the quality of service or functionality is essential.

Big Data Storage Solutions

- **Distributed File Systems**
- **NoSQL Databases:** NoSQL databases, designed to handle unstructured and semi-structured data, provide flexibility and scalability beyond traditional relational databases.
- **Columnar Databases:** Columnar databases organize data by columns rather than rows, optimizing data retrieval for analytical queries.
- **Cloud-Based Storage Solutions:** Cloud platforms provide scalable and cost-effective storage options for Big Data.

Top challenges in managing big data

- Dealing with large amounts of data:
- Fixing data quality problems
- Integrating different data sets
- Preparing data for analytics applications
- Governing large data sets

Benefits of big data management

- Cost savings.
- Improved accuracy
- Personalized marketing

Best practices for big data management

- Develop a detailed strategy and roadmap upfront.
- Design and implement a solid architecture.
- Stay focused on business goals and needs.
- Eliminate disconnected data

The future of big data management

- Artificial intelligence (AI) and machine learning.
- Cloud storage
- Improved analytics
- Data governance and security.

