BIG DATA ANALYTICS (2180710)

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Introduction

- Big Data may well be the Next Big Thing in the IT world.
- Big data burst upon the scene in the first decade of the 21st century.
- The first organizations to embrace it were online and startup firms. Firms like Google, eBay, LinkedIn, and Facebook were built around big data from the beginning.
- Like many new information technologies, big data can bring about dramatic cost reductions, substantial improvements in the time required to perform a computing task, or new product and service offerings.

BIG DATA

- 'Big Data' is similar to 'small data', but bigger in size
- Having data bigger it requires different approaches:
  - Techniques, tools and architecture
- an aim to solve new problems or old problems in a better way
- Big Data generates value from the storage and processing of very large quantities of digital information that cannot be analyzed with traditional computing techniques.

BIG DATA


BIG
DATA
INFORMATION
LARGE
STORAGE
SETS
MILLION
SEARCH
ANALYSIS
RESEARCH
PETABYTES
INTERNET
MANAGEMENT
TECHNOLOGIES
VOLUME
SOFTWARE
PROCESS
GOVERNMENT
SAN
NAS
DEVELOPMENT
TECHNOLOGY
SCIENCE
FUTURE
NEW
BILLION
LEARNING
BASED
SIZE

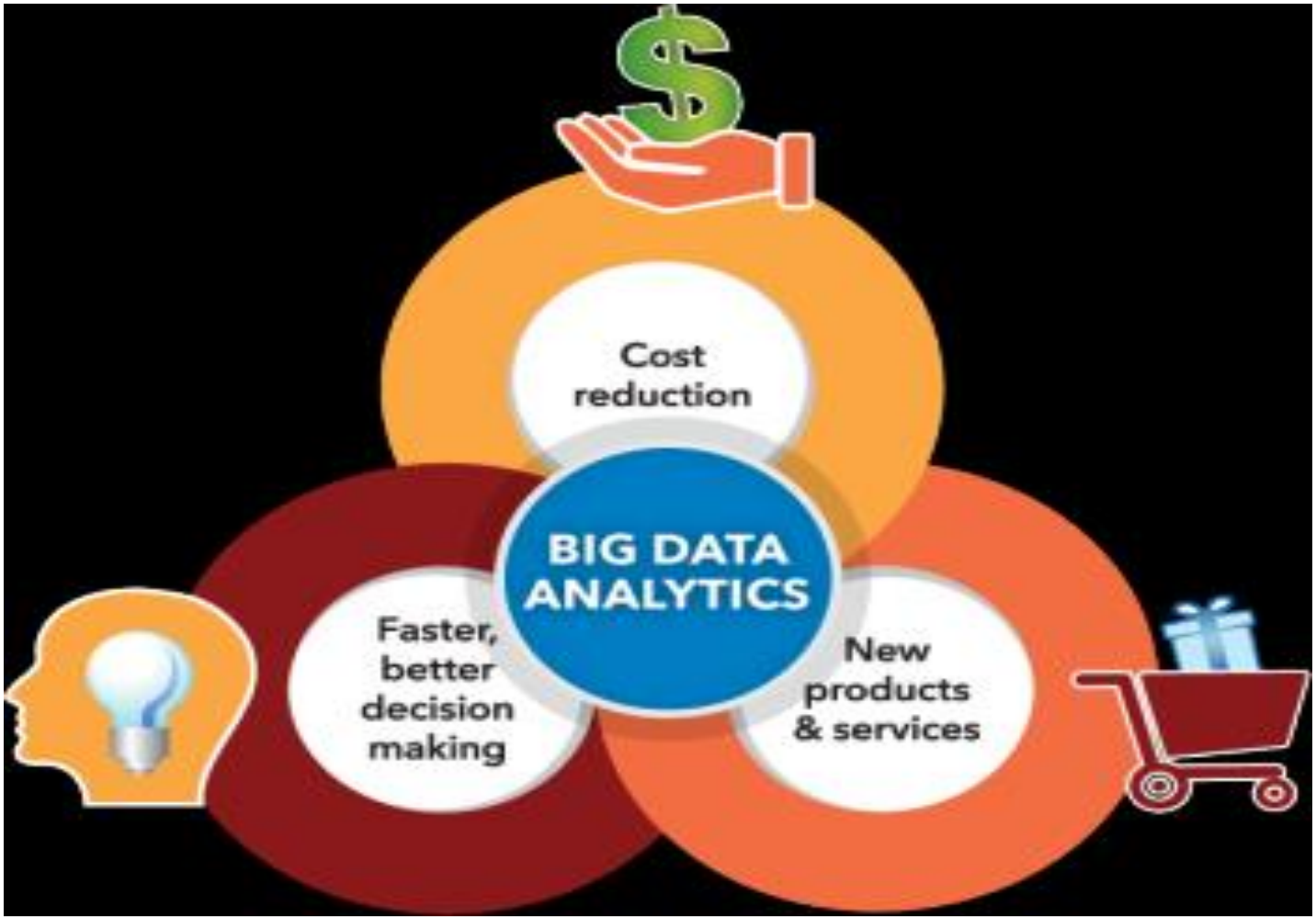
What is BIG DATA

- Walmart handles more than 1 million customer transactions every hour.
- Facebook handles 40 billion photos from its user base.
- Decoding the human genome originally took 10years to process; now it can be achieved in one week.

BIG DATA ANALYTICS

- Examining large amount of data
- Appropriate information
- Identification of hidden patterns, unknown correlations
- Competitive advantage
- Better business decisions: strategic and operational
- Effective marketing, customer satisfaction, increased revenue

BIG DATA ANALYTICS



Why is big data analytics important?

- Big data analytics helps organizations harness their data and use it to identify new opportunities.

- **Cost reduction.** Big data technologies such as Hadoop and cloud-based analytics bring significant cost advantages when it comes to storing large amounts of data – plus they can identify more efficient ways of doing business.

Cont…

- **Faster, better decision making.** With the speed of Hadoop and in memory analytics, combined with the ability to analyze new sources of data, businesses are able to analyze information immediately – and make decisions based on what they've learned.

- **New products and services.** With the ability to gauge customer needs and satisfaction through analytics comes the power to give customers what they want.

Types of tools used in Big-Data

- Where processing is **hosted**?
  - Distributed Servers / Cloud (e.g. Amazon EC2)
- Where data is **stored**?
  - Distributed Storage (e.g. Amazon S3)
- What is the **programming model**?
  - Distributed Processing (e.g. MapReduce)
- How data is **stored & indexed**?
  - High-performance schema-free databases (e.g. MongoDB)
- What operations are performed on data?
  - Analytic / Semantic Processing

Application of Big Data Analytics

Smarter Healthcare

Homeland Security

Traffic Control

Manufacturing

Multi-channel sales

Telecom

Trading Analytics

Search Quality

Where Big Data?

- Lots of data is being collected and warehoused
- Web data, e-commerce
- purchases at department/ grocery stores
- Bank/Credit Card transactions
- Social Network
- Travel and hospitality
- Health care
- Government
- Retail