

Big Data is the pool of information and data. It has large data sets that may be analyzed computationally to reveal patterns, trends, and associations, especially relating it to human behavior, expression, and interactions. It also deals with the large and complex data that is to be dealt with by traditional data-processing application software. Big Data captures, communicates, aggregates, stores, and analyzes the data. Millions of networked sensors are being embedded in the physical world in devices such as mobile phones, smart energy meters, automobiles, and industrial machines that sense, create and communicate data in the age of the Internet of Things. As the technology advances over time, the sizes of the datasets that qualify as big data will also increase. For example, less than \$600 a person can purchase a hard disk that can store all the world's music and other data. There are three characteristics that define big data: volume, variety, and velocity. There are many ways that big data can be used to create value across sectors of the global economy. Research suggests that we are on the cusp of a tremendous wave of innovation, productivity, and growth in the economy as well as government field. There are many examples in which big data is used:

- 1) Stock Exchange: It is an example of big data that generates about one terabyte of new trade data per day.
- 2) Social Media: The statistics show that 500+terabytes of new data gets ingested into the database of social media site Facebook every day. This data is mainly generated in terms of photo and video uploads, message exchanges, comments, etc. There are many challenges associated alongside with their benefits, they are:
  - 1) Managing voluminous data
  - 2) Data security and Integrity
  - 3) Big Data handling cost
  - 4) Data Integration

For now, research yields seven key insights:

- 1) Data have swept into every industry and business function and are now an important factor of production: Several research teams have studied the total amount of data that is generated, stored, and consumed in the world. Some individual companies in the developing regions could be far more advanced in their use of big data, they also can store and process data remotely.
- 2) Big Data creates value in several ways: Have identified five broadly applicable ways to leverage big data that offer the transformational potential to create value and have implications for how organizations must be designed, organized, and managed.
- 3) The use of big data will become a key to competition and growth for individual firms: The use of big data is becoming a keyway of leading companies to outperform their peers.
- 4) The use of big data will underpin new waves of productivity growth and consumer surplus: They have the potential to improve efficiency and effectiveness, enabling organizations both to do more with less and to produce higher-quality outputs
- 5) While the use of big data will matter across sectors, some sectors are poised for greater gains.
- 6) There will be a shortage of talent necessary for organizations to take advantage of big data.
- 7) Several issues will have to be addressed to capture the full potential of big data: The even larger amount of data is digitized and travels across organizational boundaries, there is a set of policy issues that will become increasingly important, including, but not limited to, privacy, security, intellectual property, and liability.

This report also shows that how big data can create value and size of this potential, there are the five domains to study:

- 1) Health care in the United States : Health care is a large and important segment of the US economy that faces tremendous productivity challenges. It has multiple and varied stakeholders, including the pharmaceutical and medical products industries, providers, payors, and patients. US healthcare can tap

multiple big data levers. Levers are divided into five broad categories: clinical operations, payment/pricing, R&D, new business models, and public health.

2) Public sector administration in the European Union: Government has access to large pools of digital data but, in general, has hardly begun to take advantage of powerful ways in which they could use this information to improve performance and transparency. It faces significant performance challenge. To address range of issues is implemented by appropriate technology, recruiting and training talented personnel, and managing change within their organizations. Government will need to use policy to support the capture of value from big data and the sharing of data across agencies.

3) Retail in the United States: Big Data is used for segmenting customers and managing supply chains. Big data can deliver higher margins and productivity. Their main area of application is marketing, merchandising, operations, supply chain, and price transparency.

4) Global Manufacturing: Manufacturing offers a detailed look at a globally traded industry with often complex and widely distributed value chains and a large amount of data available. This domain offers an examination at multiple points in the value chain, from bringing products to market and research and development(R&D) to after-sales services. The manufacturing sector was an early and intensive user of data to drive quality and efficiency, adopting information technology and automation to design, build, and distribute products.

5) Global personal location data: It is a nascent domain that cuts across industry sectors from telecom to media to transportation. Unlike the other domains that we have examined, new pools of personal location data are not confined to a single sector but rather cut across many industries, including telecom, retails, and media. There are three main categories of applications using personal location data they are: 1) Smart Routing. 2) Automotive telematics. 3) Mobile phone location-based services.

In each domain, there are specific levers through which big data can create value, quantified the potential for additional value, and cataloged the enabler necessary for companies, organizations, governments, and individuals to capture that value. They offer different business lessons. They also represent a broad spectrum of key segments of the global economy and capture a range of regional perspectives. They include globally tradable sectors such as manufacturing and non tradable sectors such as public sector administration, as well as a mix of products and services.