Telemedicine

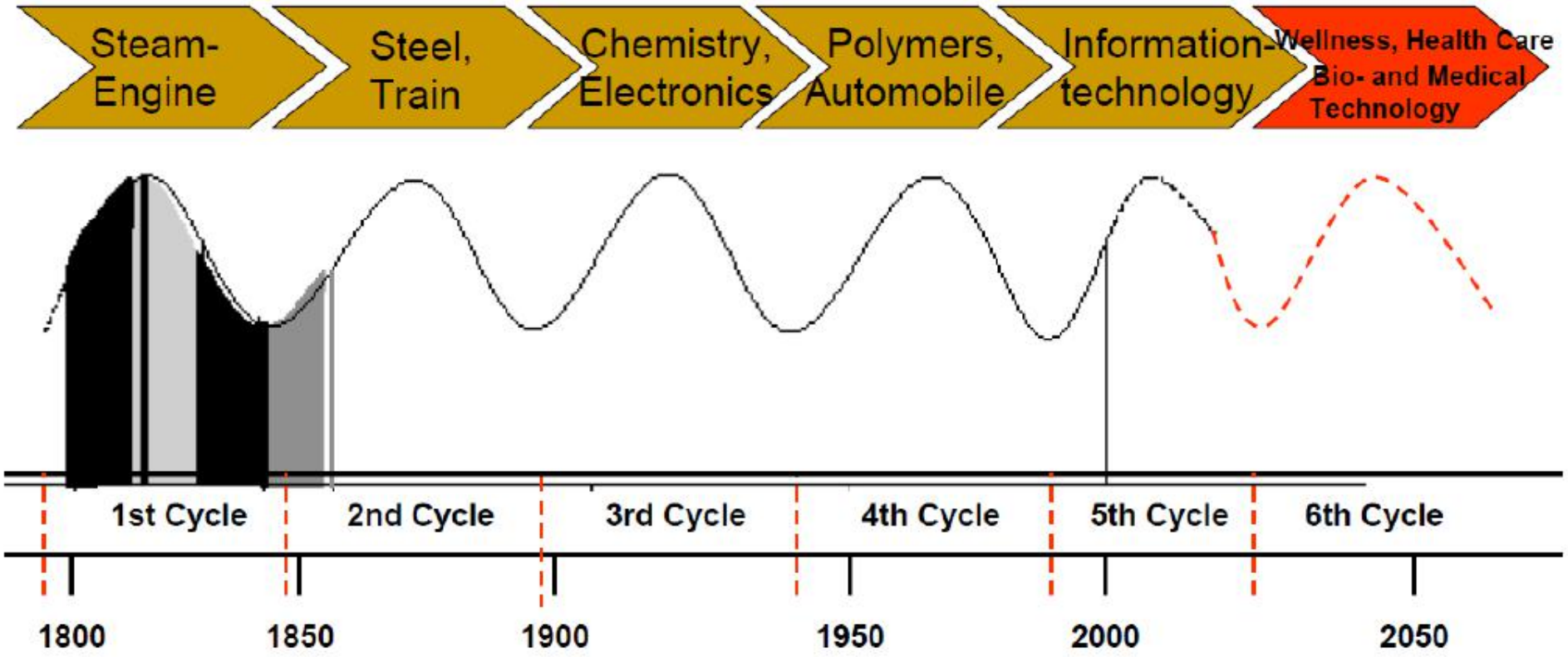
31 Jan 2017

Class 13

Topics for Presentation

- sana.mit.edu (all papers from the webpage and websites itself)
- Technology Innovation in public healthcare
- Global best practices in Healthcare
- Start-ups in Healthcare
- Learning from emerging and developed economies
- How to transform Indian Health Sector

- Virtual Machine
- Haptics/ Gesture Recognition using Kinect
- Reactive Touch, Tactile Feedback
- **IBM Watson in Healthcare**
- Future of Healthcare (GE/ Microsoft/ Intel/ Google/ IBM/ Philips/ Siemens/ Toshiba/ Johnson and Johnson/ Cerner/)
- Products of such Companies.
- StartUp India
- Li-Fi in Healthcare
- Medical Tricorder
- Ambient Intelligence in Healthcare
- Global Health


Steam-Engine
Steel, Train
Chemistry, Electronics
Polymers, Automobile
Information-technology
Wellness, Health Care
Bio- and Medical Technology
1st Cycle
2nd Cycle
3rd Cycle
4th Cycle
5th Cycle
6th Cycle
1800
1850
1900
1950
2000
2050

WHY STARTUPS SHOULD WORK ON CLOUD

10 000 START-UPS
A NASSCOM initiative

Mix Business and Analytics
Secure your data and check analytics like never before

Pay per use
Unlike traditional platforms, you pay as per your usage

Reduce IT Costs
Allows you to own something in IT infrastructure which is actually cheap

Ecological Balance
Cloud is much greener and better

Mobility
Access data using different devices

When are you shifting to cloud?

Google for Entrepreneurs
Microsoft Ventures
kotak
amazon web services

BIG DATA

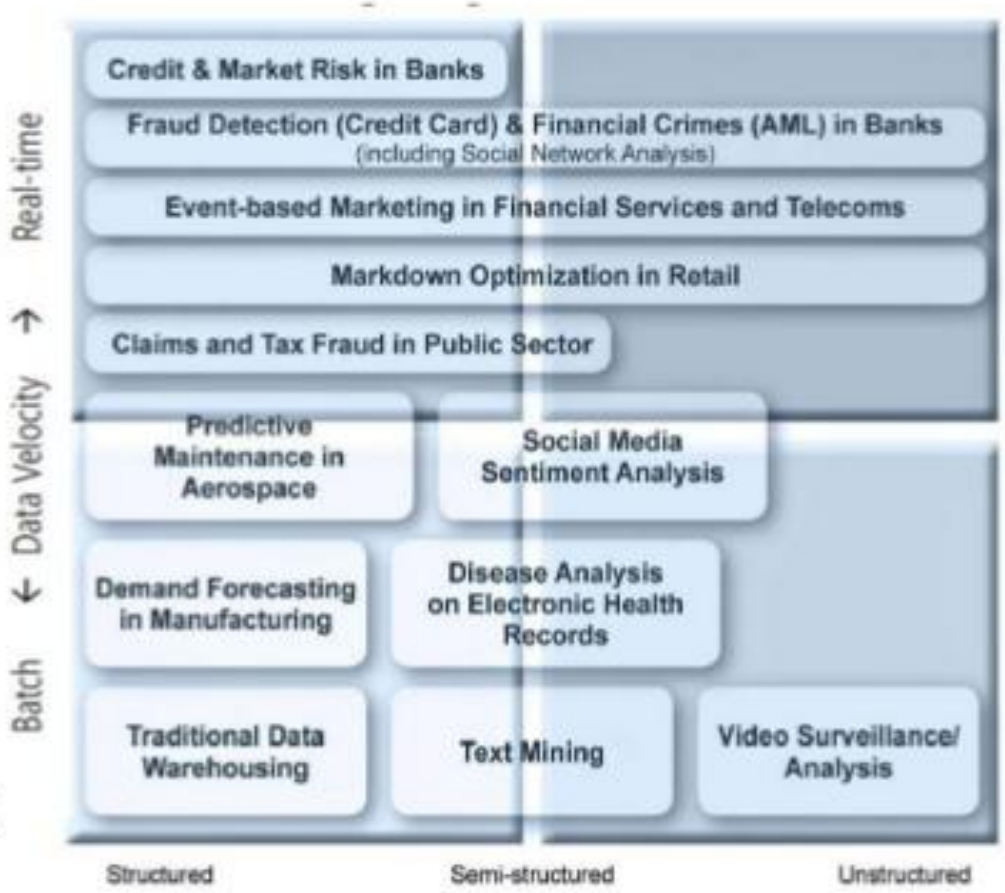

BIG DATA
Semi-structured
Unstructured data
Volume
Useful
Metadata
AMP
Structured
Concept extraction
Text analytics
Semantic Metadata
Smart content
database
Framework
Zettabyte
People driven
Decision making
Data
Unstructured
analysis
content

Big Data in general is defined as high **volume, velocity and variety** information assets that demand **cost-effective, innovative forms of information processing** for **enhanced insight** and **decision making.**

-- Gartner

The Structure of Big Data

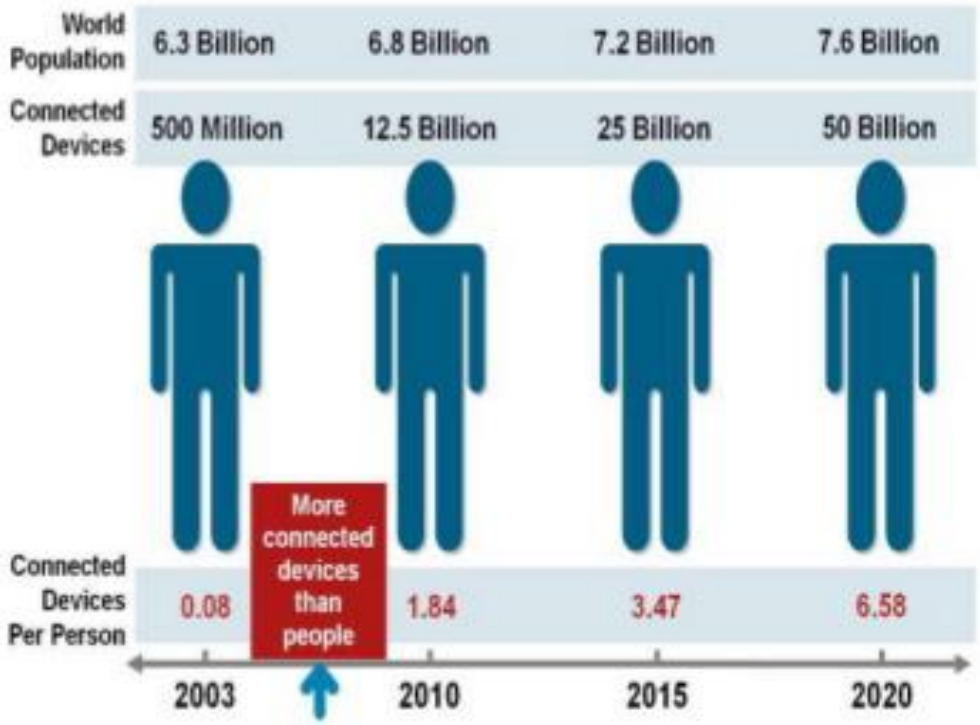
- Structured
  - Most traditional data sources
- Semi-structured
  - Many sources of big data
- Unstructured
  - Video data, audio data



Why Big Data

- FB generates 10TB daily
- Twitter generates 7TB of data Daily
- IBM claims 90% of today's stored data was generated in just the last two years.

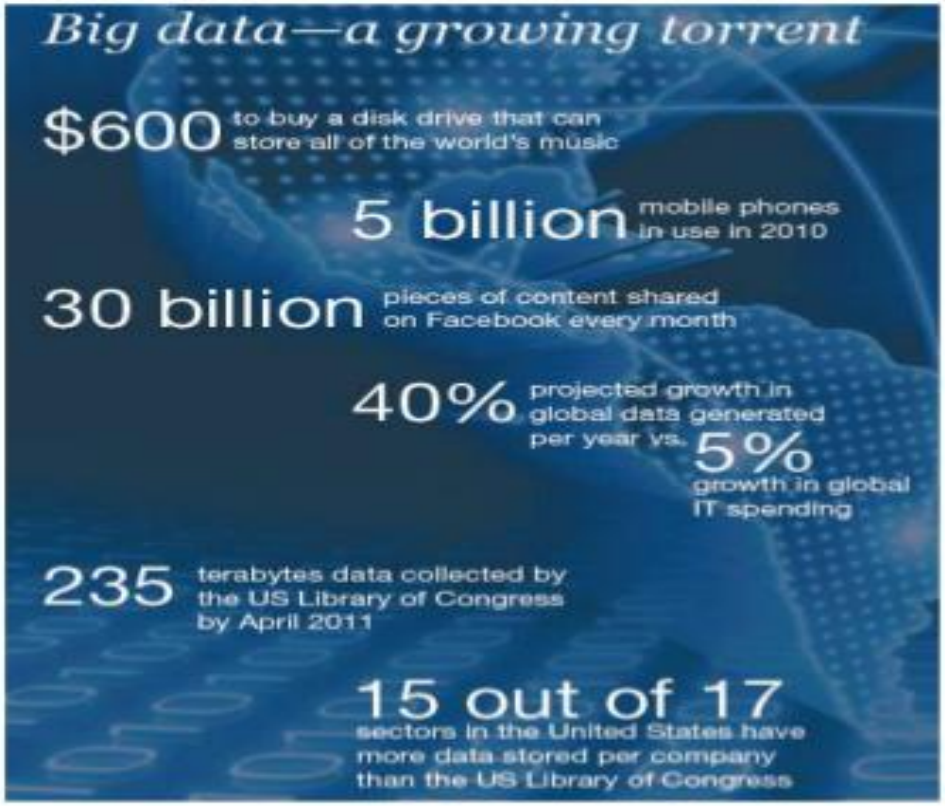
Figure 1. The Internet of Things Was "Born" Between 2008 and 2009



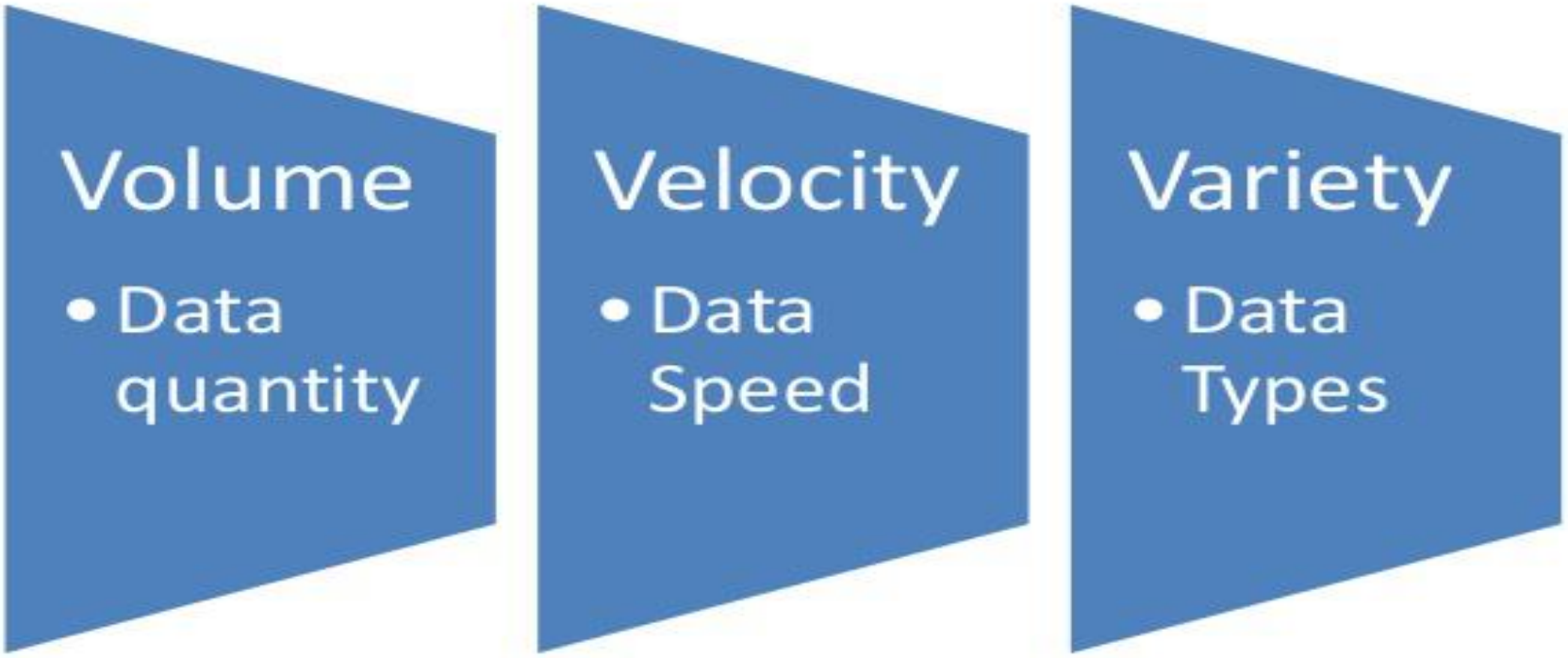
Source: Cisco IBSG, April 2011

Data generation points Examples

- Mobile Devices
- Microphones
- Readers/Scanners
- Science facilities
- Programs/ Software
- Social Media
- Cameras



Three Characteristics of Big Data V3s



1st Character of Big Data
Volume

- A typical PC might have had 10 gigabytes of storage in 2000.
- Today, Facebook ingests 500 terabytes of new data every day.
- Boeing 737 will generate 240 terabytes of flight data during a single flight across the US.
- The smart phones, the data they create and consume; sensors embedded into everyday objects will soon result in billions of new, constantly-updated data feeds containing environmental, location, and other information, including video.

2nd Character of Big Data
Velocity

- Clickstreams and ad impressions capture user behavior at millions of events per second
- high-frequency stock trading algorithms reflect market changes within microseconds
- machine to machine processes exchange data between billions of devices
- infrastructure and sensors generate massive log data in real-time
- on-line gaming systems support millions of concurrent users, each producing multiple inputs per second.

3rd Character of Big Data
Variety

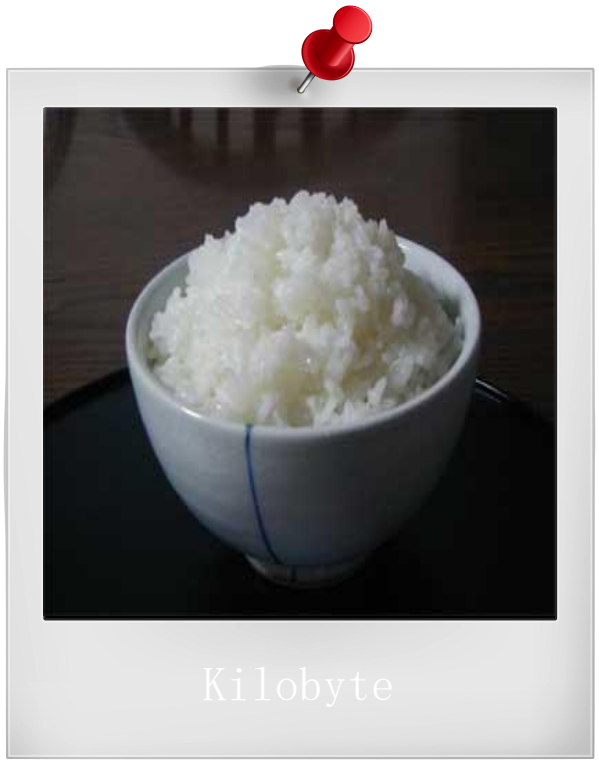
- Big Data isn't just numbers, dates, and strings. Big Data is also geospatial data, 3D data, audio and video, and unstructured text, including log files and social media.

- Traditional database systems were designed to address smaller volumes of structured data, fewer updates or a predictable, consistent data structure.

- Big Data analysis includes different types of data

Byte : one grain of rice

Byte : one grain of rice
Kilobyte : cup of rice



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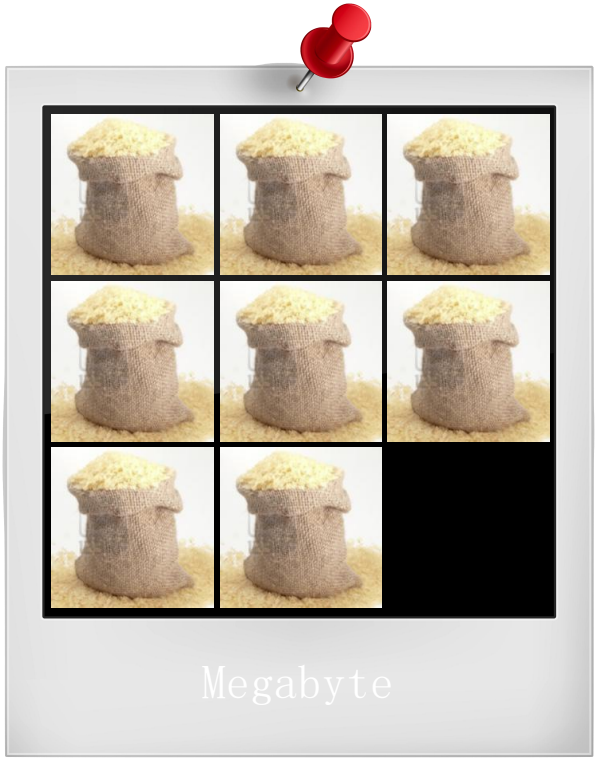

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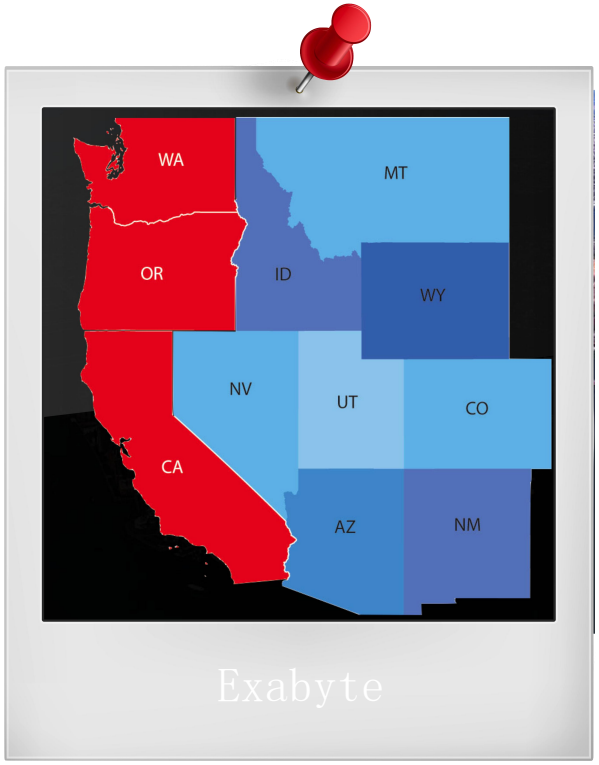
Exabyte : Blankets west coast states



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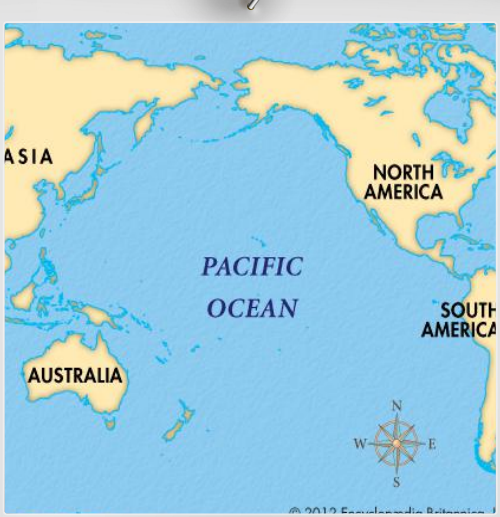
Zettabyte : Fills the Pacific Ocean



Zettabyte

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Petabyte : Blankets Manhattan
Exabyte : Blankets west coast states
Zettabyte : Fills the Pacific Ocean

Yottabyte

Byte : one grain of rice

Kilobyte : cup of rice

Hobbyist

Megabyte : 8 bags of rice

Gigabyte : 3 Semi trucks

Terabyte : 2 Container Ships

Petabyte : Blankets Manhattan

Exabyte : Blankets west coast states

Zettabyte : Fills the Pacific Ocean

Yottabyte : A EARTH SIZE RICE BALL!

Byte : one grain of rice

Kilobyte : cup of rice

Hobbyist

Megabyte : 8 bags of rice

Gigabyte : 3 Semi trucks

Desktop

Terabyte : 2 Container Ships

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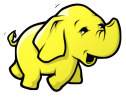

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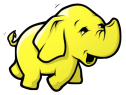
Exabyte : Blankets west coast states Zettabyte : Fills the Pacific Ocean		Big Data

The Future?

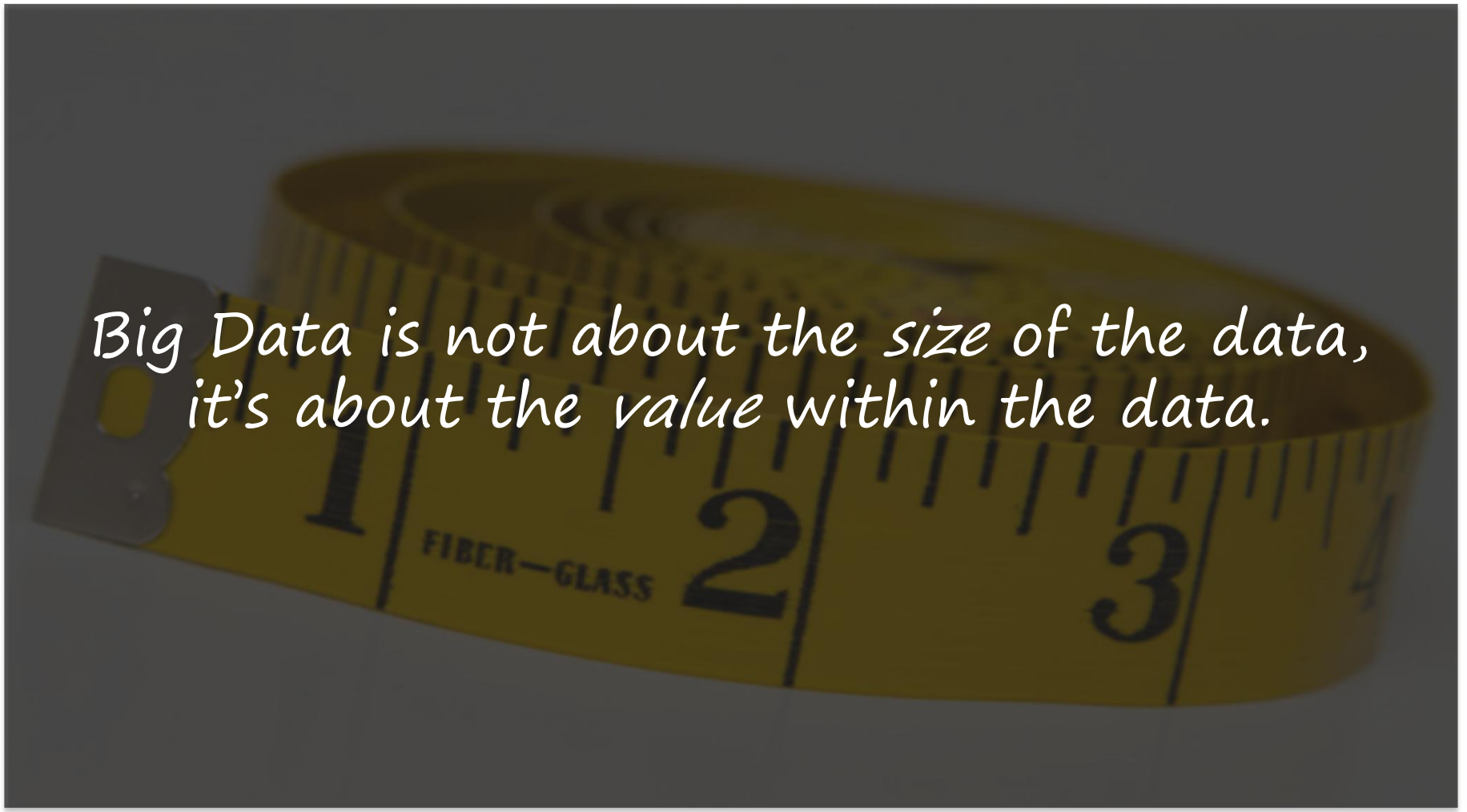
How Big data impacts on IT

- Big data is a troublesome force presenting opportunities with challenges to IT organizations.

- By 2015 4.4 million IT jobs in Big Data ; 1.9 million is in US itself
- India will require a minimum of 1 lakh data scientists in the next couple of years in addition to data analysts and data managers to support the Big Data space.

India – Big Data

- Gaining attraction
- Huge market opportunities for IT services (82.9% of revenues) and analytics firms (17.1 %)
- Current market size is $200 million. By 2015 $1 billion
- The opportunity for Indian service providers lies in offering services around Big Data implementation and analytics for global multinationals


Big Data is not about the size of the data,
it's about the value within the data.
FIBER—GLASS
1
2
3


Most people don't know
what to do with all the data
that they already have...


Big Data isn't big,
if you know how to
use it.