Evolution of Big Data Technology

Dr. Rajesh Wadhwani

Background

Big Data technology is the term used for latest analytical technique which is used on a large amount of data and helps in transforming all areas of business. However, the Big Data Term is still a confusion for people, but its creating miracles for supporting online business generated data by creating meaningful business values. There are lot of companied which have started using big data techniques.

Big Data Technology

Big data is a term for technologies and strategies use to acquire, arrange, process and visualize data and draw insights from that big data for a effective decisions. However, the biggest problem of working with data that exceeds the computing power or storage of a single computer is well known, but the scale, value and pervasiveness of such type of computing has greatly increased in recent years. **Big data** is large datasets which is beyond processing or storage power of traditional systems. During year 2001, Gartner's Doug Laney shown the meaning and power of "3 Vs of Big Data and described the features that made big data unliked from other data processing strategies or technologies.

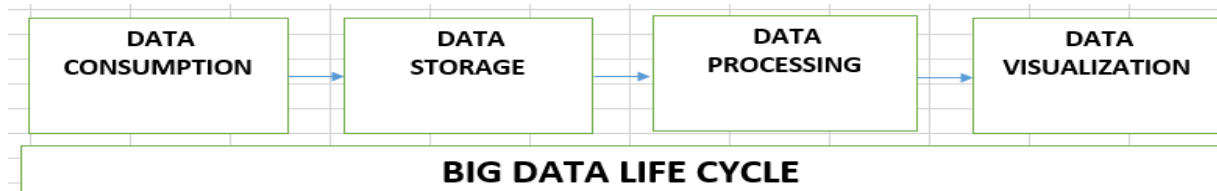| Volume	Velocity	Variety
The Large datasets can be of magnitude larger than traditional datasets, demanding more thoughtful strategies at each stage of the storage and processing life cycle.	Big data is differing from other traditional data systems is the velocity or speed in which the information moves through from one to another. system Data flows from multiple input sources into the system and is expected to be processed in real time so that to gain the maximum insights and to update the understanding of the system.	The types and formats of media can vary significantly as well. Video files, audio recordings and images are induced along with structured and unstructured logs, etc. While traditional data processing systems expect data to enter through the pipeline already formatted, labeled, and organized, big data systems accept and store data in close to its raw state. So, any transformations on raw data will be happening in the memory during the time of processing.
Veracity	Variability	Value
Variety of input sources and the processing complexities leads major challenges in quality evaluation of the data	Data variation leads to quality variation. Additional resources required to find ,identify, filter bad quality data and process to make it more useful.	Big data is something about delivering values. The systems and processes in place are complex enough so that using the data and extracting actual value become more difficult.

Big Data Life Cycle

The activities involved with big data processing are known as Big Data life cycle and comprises of following:

- Consuming data
- Storage of Data
- Analyzing and processing data
- Drawing visualizations from the data

Big Data Technology–The Next Big thing in Data world

The Rapid growth in the amount of biological data signifies that the high-end measures are required for the management of data, its storage, process and curation. For the publishing of biological data, the online databases are the important resources. The activity of organizing and presenting the data to the users and to machines has become the most important ingredient in the research or discovery processes. To enhance this field curators, authors and journals and curators should work together for improving data exchange between databases and journal publications. Also, researchers, curators and administration should develop the structure to improve curation efforts. In case we fail to address the above issues the gap in knowledge will be observed and the usefulness of the data may get impacted.

When all the data produced or published are curated to a high standard and made accessible as soon as they become available, biological research will be conducted in a manner that is quite unlike the way it is done now. Researchers will be able to process massive amounts of complex data much more quickly. They will garner insight about the areas of their interest rapidly with the help of inference programs. Digesting information and generating hypotheses at the computer screen will be so much faster that researchers will get back to the bench quickly for more experiments. Experiments will be designed with more insight; this increased specificity will cause an exponential growth in knowledge, much as we are experiencing exponential growth in data.

Big Data Technology–Remarkable Ventures

Big Data ecosystem is emerging like anything with the time as whole world has accepted the application and benefit in E-commerce resulting in which Europe and U.S lots of billion dollars is invested during last few years almost over than 400+ firms. As entire business firms need or wants to become platform or vendors to deal with the growth of data from Terabytes to Geophytes Firms Big Data companies like Spelunk had a spectacular IPOs, MapR & Cloudera also raised.

The big data is the most floating concept in the technology, cloud and internet world today. however, the biggest confusion is still to know how to best use this for effective business results. are still confused about using this buzz into your business. Whatever it may be, today Big Data is another name for profits to a maximum number of E-commerce companies in business world. The Article is meant to understand the concepts of Big Data and its applications and benefits for E-commerce and business world.

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Big data analytics is the latest term in the technology world and is related to maximizing profits for the businesses online all over the world. Big Data Analytics is gaining importance in the world of E-commerce and online business. Big Data Analytics is the technique to evaluate the business generated data and to make analysis on different behavior of customers in different circumstances and to present a effective decision support system and in other areas as well in all sized businesses whether small medium or large. The Big Data analytics technique is not only about customer's behavior about a product or business, but it also includes a large number of patterns generated during the web visit of any client or user on internet.

Big Data Technology–Benefits to E-commerce businesses

Today entire world is data driven and so as E-commerce & businesses with the crux to get the proper clients and customers, offer them the relevant promotions on products at the right time when they require thru proper channels with best service and reasonable charges. All sized companies can be benefited from the Big data technology. Big data technology is the way best approach for business data to analyze and draw conclusion to support the management information and decision system. E-commerce companies can boost their revenue and sales by using the best of big data technology available today.

Big Data Technology helps in above objective and crux as follows:

- **Big Data Technology helps in identifying the behavior of buyers**
- **Big Data Technology helps in Offering Promotional products to clients in time**
- **Big Data Technology helps in supply chain maintenance**
- **Big Data Technology helps in Data-driven decisions**
- **Big Data Technology helps any E-commerce company irrespective of size**
- **How can E-commerce merchants use big data**

Big Data Technology–Key Considerations

- Big Data Technology is huge and will be driven by big data application providers, internet technology, cloud computing and other integrated hardware and software systems.
- With the growth of data and interaction channels in current era, the business groups will fall behind in case if they are not in recommendation favor of big data technology and tools.
- Big Data technology will not only improve business market but will also improve economies and helps in reducing unemployment and poverty globally.
- Mobile computing has generated huge data and cloud computing has opened the advanced ways with the help of Big data technology to examine the data generated and provide revenue generated ideas.
- According to a research Mobile data was likely to grow during 2010 till 2017 with 90% of cumulative annualized rate thus increasing the market for big data technology and tools requirements.

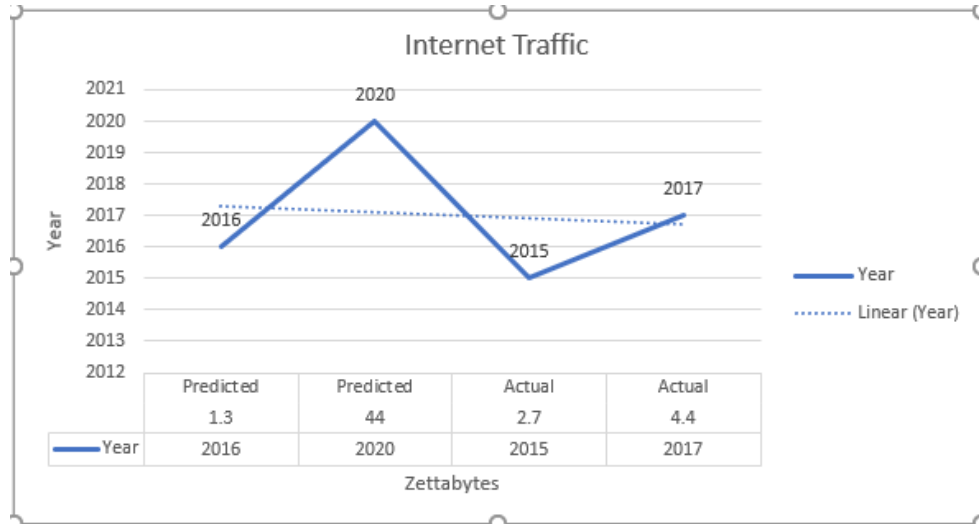**Big Data Technology Statistics–Fact Sheet**

'Big data' also means the large amount of structured or unstructured data in simple or complex formats and is beyond the way from being processed in traditional ways and can only be handled by the sophisticated technology meant and developed for specific purpose of predictive analytics. During 2017, Big Data market annual revenue was predicted above 30 billion U.S. dollars and more predictions for next 4 years as to be doubled, where major contributors be the global biggies like SAP, HP, Oracle or IBM.

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As also predicted the internet traffic to reach upto 44 Zettabytes in 2020 as compared to 4.4 Zettabytes in 2015 actual.
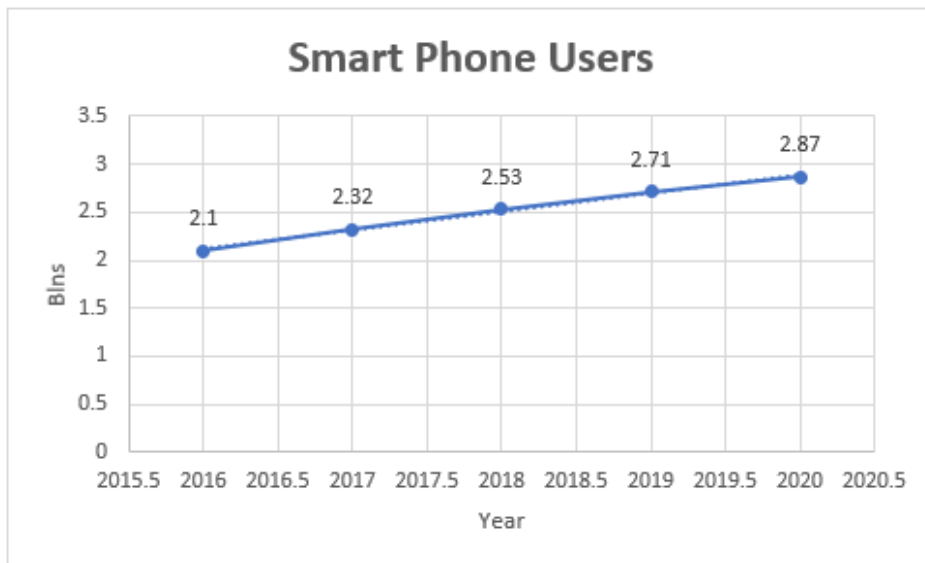

Internet Traffic

	Predicted	Predicted	Actual	Actual
	1.3	44	2.7	4.4
Year	2016	2020	2015	2017

Table 1
Source of data:
https://blog.capterra.com/10-surprising-big-data-statistics/
(Compiled, visualized and charted by Author himself)

On the other hand, mobile phone users are expected to take a up curve from 2.1 billion users in 2015 to 3.87 billion users in 2020

Table2
Source of data:
https://blog.capterra.com/10-surprising-big-data-statistics/
Compiled, visualized and charted by Author himself

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Conclusion

Among other important big data facts according to the various research and finding, it is also expected that global IP traffic will increase from 96054 petabytes per month to 278108 petabytes from 2016 till 2021 out of which a major share will be of consumers. A major research also says that Big Data Market size will take a high curve from 7.6 million us$ in 2011 till 92.2 us$ in 2026 expectedly based on its revenue. Among that Big data market of MEA region in terms of revenue is expected to reach 3.2 billion us$ in 2020 from 2 billion us$ in 2016 and for Australia region it is expected to jump from 244 million us$ in 2015 to 585 million us$ in 2019. A report by Gartner also says that overall Big Data market in analytics is expected to reach 18 billion us$ by the beginning of 2018. Also predicted that b y2020 1.7 MB of data will be generated per sec per user on the globe. Although almost 90% of the companies are getting to be data driven where only 40% gets successful.

Big data technology is the way best approach for business data to analyze and draw conclusion to support the management information and decision system. E-commerce companies can boost their revenue and sales by using the best of big data technology available today. However, the transition is not that easy as reorganizing to be data-driven as it takes a major global paradigm shift in overall everyday routines as well as in decision making system.

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