

# Big Data - An Innovative Tool for Meeting Business Drivers in the Modern Era



M. Ananda Rao, U. Raghunath, P. Bharath Kumar

**Abstract:** *Having distinguished intellectual insights of the business over rival firms empowers the organizations to make quick, smart and exceptional decision that gives a competitive advantage in the ever-changing complex business world. It is an arduous task to derive the intellectual insights from the abundant information may require investment of great effort, time and money. Undoubtedly, information is wealth. This paper a brief review study that offer vivid definition of big data application which has distinguished features and also analyzed how organizations create and deliver value from big data. We further made an attempt to propose consolidated characterization of big data, examples of business drivers, risk consideration in big data success.*

**Key words:** *Big Data, Business Drivers, Business Intelligence, Data science.*

## I. INTRODUCTION

Discovering new facts by using traditional data process techniques is an outdated concept. In today's context of global competitive business world companies are required to respond and adapt the changes as quick as possible to have competitive outperform over the rivalry firms, for this they need fact finding information seems extremely difficult for any organization to gain such information from the abundant unstructured data, however the latest analytical tools and technique of big data made it easy. To have great insights of business patterns and changes which are significant to take-up optimum decision for business success the business firms and even the government agencies and regulatory bodies across the world widely accepted the emerging technique called data analytics and or data science practices to obtain well-organized information from uncountable amorphous raw data.

### Big Data

"Big data is a term that describes large volumes of high velocity, complex and variable data that require advanced techniques and technologies to enable the capture, storage, distribution, management, and analysis of the information." (Tech America Foundation's Federal Big Data Commission., 2012).

Manuscript received on February 10, 2020.

Revised Manuscript received on February 20, 2020.

Manuscript published on March 30, 2020.

\* Correspondence Author

**Madasala Ananda Rao\***, Associate Professor, PACE Institute of Technology and Sciences (Autonomous) Ongole, Andhra Pradesh, India.

**Udayagiri. Raghunath**, Associate Professor, PACE Institute of Technology and Sciences (Autonomous) Ongole, Andhra Pradesh, India.

**P. Bharath Kumar**, Assistant Professor in PACE Institute of Technology and Sciences (Autonomous) Ongole, Andhra Pradesh, India.

© The Authors. Published by Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP). This is an [open access](http://creativecommons.org/licenses/by-nc-nd/4.0/) article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

Business decision making process mainly depends on the quality information which should be derived from gigantic and lofty diversified information in a cost efficient pioneering method. Gartner IT vocabulary (n.d.). The survey conducted by IBM in 2012 over 1144 respondents has revealed that big data means multiple terabytes of data. (Schroek, et al., 2012).

## II. REVIEW OF LITERATURE

In the minds of trade population big data scientific advancement and its application has gained momentous milestone (Chen et al., 2012). The big data can defined as extensively varied, engendered and stored facts and figures at high speed as such, the deployment of heterogeneous data is an exhausting task without using latest and innovative analytical practices (Constantiou and Kallinikos, 2015). To satisfy customer needs and wants in different way organizations require to offer ingenious and inventive goods and services, for this firms need to adapt sophisticated scientific methods to analyze current state of situation and bring out more relevant pioneer facts from structured less information (Davenport et al., 2012). It is crucial finding new trade opportunities in the era of complex networked business environment, the data science tools helps the firm to discover unforeseen chances that gives an edge and sets apart from competitive firms. (Baensens et al., 2014). The application of modern data processing tools enables the firms to gain more benefits in the diversified fields like: electronic trade, science and technology, health and hospitality etc, (Chen et al., 2015). Many organizations recognized that the robust advanced data processing tools provides value added services in attainment of their strategic objectives and goals (Ghoshal et al., 2014). The organizations must find the factors become hurdle to convert their potential capacities into real time solutions to the market needs (Markus and Topi, 2015). This is an emerging position where the business firms must examine their core strategic plans to create and avail new business opportunities to keep themselves apart from competitive firms.

## III. OBJECTIVES OF THE STUDY

To study what is big data and the evolution process To find out the methods of data process and affect on modern economy To explore how big data applications helps the organizations in meeting their key business drivers

## IV. RESEARCH DESIGN

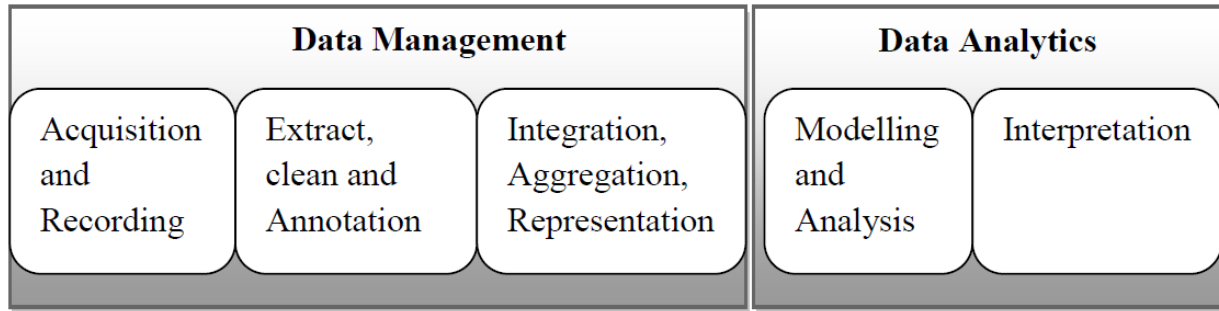
The explanatory research study was adapted to study the research problem, in the process an extensive literature on the given topic has been covered to find out how the big data applications has helping the organization in meeting the business drivers or objectives.



## Big Data - An Innovative Tool for Meeting Business Drivers in the Modern Era

It has been proved from the empirical study of various authors that the big data applications are emerging tools in meeting business drivers.

A. Gandomi, M. Haider / *International Journal of Information Management* 35 (2015) p-137

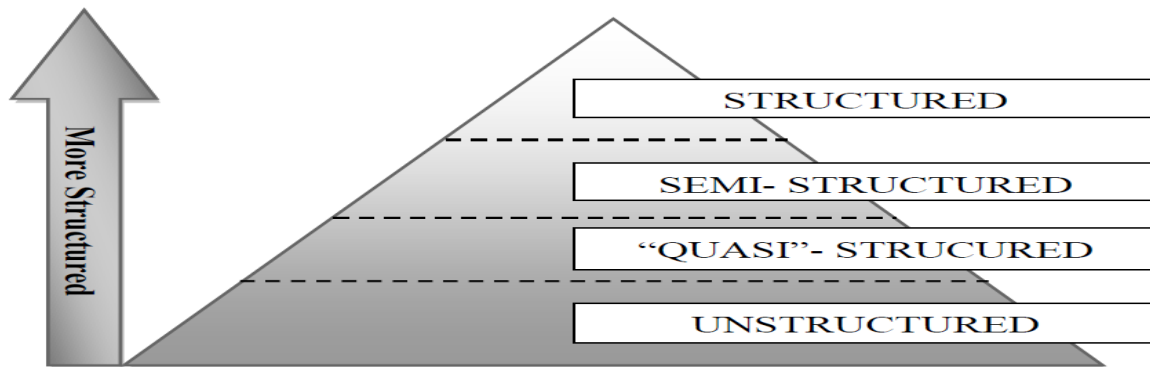


**Fig: 1 Process For Extracting Insights From Big Data**

The figure: 1 show the processes of extracting insights from big data are twofold one is data management and second is data analytics. Under data management the heterogeneous data will be acquired and recorded the same will be

processed to extract key note information which will represent a particular situation or problem. In the second fold, different modelling and analysis tools will be developed to interpret the data for getting key insights.

ICT Academy book “Data science and big data analytics”. November, 2013. P-7



**Fig: 2 Big Data Characteristics**

There four different categories: 1. formless Data: unstructured data has no inherent formation and it is frequently store up in diverse files ex: text documents, images, videos, and PDFs etc. 2. Quasi- Structured Data: this is textual data with erratic data formats, can be formed

with effort, tools, and time ex: web click-stream data. 3. Semi- structured data: documentary files with observable pattern ex: XML data files. 4. Structured: data hold a distinct data type, format, and structure ex: OLAP (online analytical processing).

ICT Academy, text book “Data science and big data analytics” November, 2013. P-14

**Table: 1 Business Drivers For Analytics**

| S.NO | BUSINESS DRIVER                       | EXAMPLE                                    |
|------|---------------------------------------|--|
| 1    | Desire to maximize business operation | Sales, pricing, profitability, efficiency  |
| 2    | Find the trouble makers of business   | client mix, scam,                          |
| 3    | Predict new business opportunities    | Anti money launder, fair lending, BASEL II |

The table 1 shows four different patterns of general big business troubles threats one way the other way they provide more opportunities if they can be tackled inventively . The problems listed in the above table may not be new problems but ever challenging problems like reduce customer churn,

increase profitability, improve efficiency of the organization, which need to be handled in creative and innovative manner, for that the organizations can make use of latest big data analytical tools to drive their business in more successful manner.

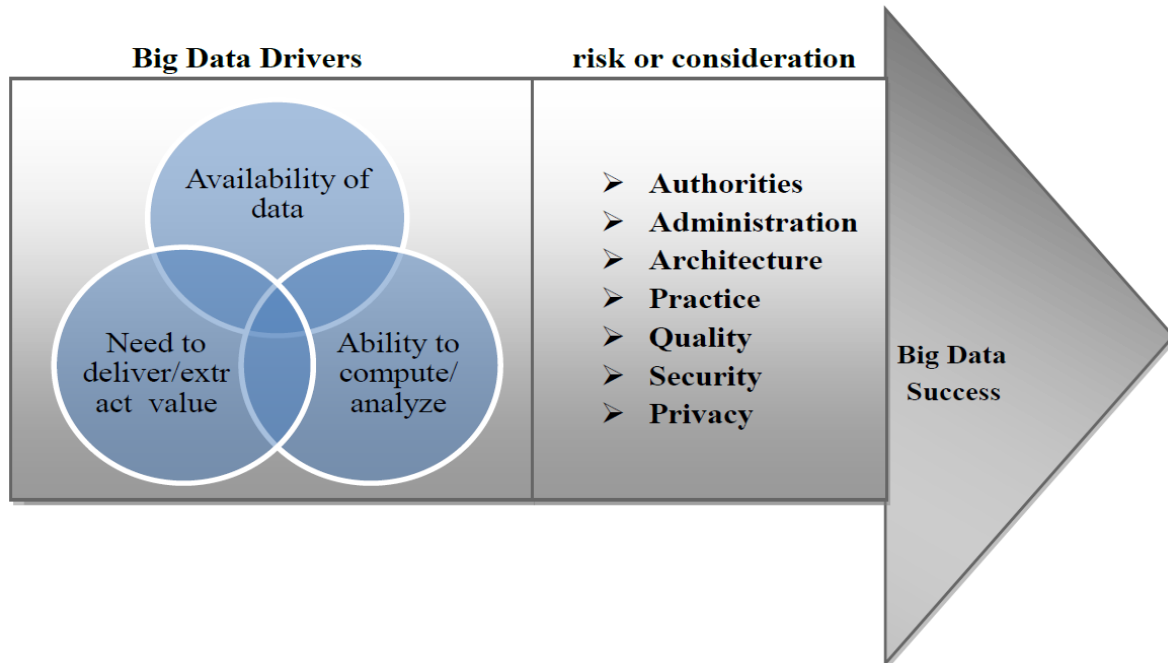


FIG: 3 BIG DATA DRIVERS FOR SUCCESS

The above figure adapted from the report on “big data changing the way businesses compete and operate”, 2014 April. All rights reserved EYGM ltd. The figure clearly *ICT Academy book “Data science and big data analytics”*. November, 2013. Pg 15

reveals that the big data success in the business organizations depends on two factors one is big data drivers and second is risk associated with these business drivers.

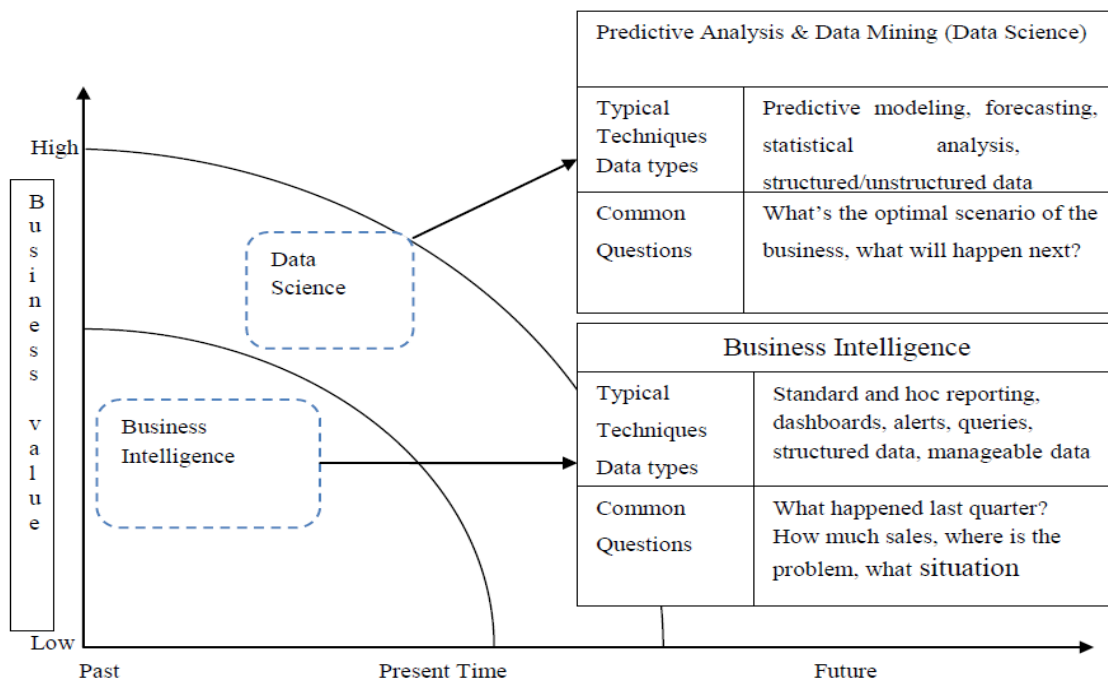


FIG: 4 ANALYTICAL APPROACH FOR MEETING BUSINESS DRIVERS

From the above figure four, it can be interpreted that both business intelligence and data mining are required for institutes to address the rising business problems productively. Business astuteness focal point is to use a reliable set of facts to assess the current need of the business. Hence the process mainly focuses trace out performance indicators that are essential to compute the

businesses. Predictive analysis and data mining highlights a combination of logical and machine learning programs deployed for depiction of valuable insights from data repository.

## V. RESEARCH GAP AND SCOPE FOR FUTURE STUDY

Even though the big data application has laid down great platform for the invention of new solutions to the emerging issues, it can be noticed from the studies of various researchers work on the same field that there are some sorts of short falls in extreme deployment of the most data base applications and also the small and medium size organizations cannot afford the maximum expenditure incurred with it. Hence it is important to conduct empirical based studies to predict and understand the problems of different sectors in implementation of advanced technologies and the impact in the future ahead.

## VI. RESULT OF THE STUDY

In order to expand business operations in the large scale, to explore emerging global business opportunities and to meet customers' needs and wants innovatively, corporate organizations are nowadays using the latest big data applications in place traditional data processing tools. The big data platform serves the business firms in multifold way to address various complex business problems like operational efficiency, customer segmentation, maximizing profits and expansion of business activities across the world. In the era of modernization the use of big data application provides great ease to avail different business opportunities.

## VII. CONCLUSION

In the era of abundant information available everywhere business world fall in dilemma to believe in which information is right to take the best decision in this context big data helps the firms to understand the existing phenomena ingeniously and to take the optimum decision for attainment of business objectives. In other words the most recent developed big data application enables the firms to predict unknown future by getting more valid and fact information from unstructured information and also bog data empower the firms to confront with any kind of complex situation in dynamic manner. In this paper, mainly we covered the different facets big data technological applications and intensely confer the process of meeting business drivers through big data applications.

## REFERENCES

1. Baesens, B., Bapna, R., Marsden, J.R., Vanthienen, J., Zhao, J.L., 2014. Transformational issues of big data and analytics in networked business. *MIS Quart.* 38 (2), pp 629–632.
2. Chen, D.Q., Preston, D.S., Swink, M., 2015. How the use of big data analytics affects value creation in supply chain management. *J. Manage. Inform. Syst.* 32 (4), pp 4–39.
3. Chen, H., Chiang, R.H.L., Storey, V.C., 2012. Business intelligence and analytics: from big data to big impact. *MIS Quarterly* 36 (4), pp 1165–1188.
4. Constantiou, I.D., Kallinikos, J., 2015. New games, new rules: big data and the changing context of strategy. *J. Inform. Technol.* 30 (1), pp 44–57.
5. Davenport, T.H., Barth, P., Bean, R., 2012. How 'big data' is different. *MIT Sloan Manage. Rev.* 54 (1), pp 43–46.
6. Gartner IT Glossary. (n.d.). <https://blogs.gartner.com/>. Retrieved 11 04, 2019, from Gartner IT Glossary: <https://blogs.gartner.com/it-glossary/big-data/>
7. Ghoshal, A., Larson, E.C., Subramanyam, R., Shaw, M.J., 2014. The impact of business analytics strategy on social, mobile, and cloud computing adoption. In: *Proceedings of the Thirty Fifth International Conferences on Information Systems, Auckland, New Zealand, and December 14–17.*

8. ICT Academy text book data science and big data analytics Nov, 2013. Published in USA.
9. Markus, M. L., Topi, H., 2015. Big data, big decisions for science, society, and business: report on a research agenda setting workshop. *ACM Technical Report.* <http://dl.acm.org/citation.cfm?id=2849516> (accessed 01.12.2019).
10. Schroeck, M., Shockley, R., Smart, J., Romero-Morales, D., & Tufano, P. (2012). Analytics: The real-world use of big data. How innovative enterprises extract value from uncertain data. IBM Institute for Business Value. Retrieved from [http://www-03.ibm.com/systems/hu/resources/the\\_real\\_world\\_use\\_of\\_big\\_data.pdf](http://www-03.ibm.com/systems/hu/resources/the_real_world_use_of_big_data.pdf)
11. TechAmerica Foundation's Federal Big Data Commission. (2012). Demystifying bigdata: A practical guide to transforming the business of Government. Retrieved 2019, from <http://www.techamerica.org/Docs/fileManager.cfm?f=techamerica-bigdatereport-final.pdf>.

## AUTHORS PROFILE



**Madasala Ananda Rao**, obtained his B.com Degree from Acharya Nagarjuna University in 2003. He obtained his MBA Degree from Acharya Nagarjuna University, Guntur, India in 2006. He obtained M.Phil Degree from Sri Venkateswara University, Tirupathi and did his Ph.D from Acharya Nagarjuna University. He also qualified UGC-NET (Management) in 2010. He is presentl working as Associate Professor in PACE Institute of Technology and Sciences (Autonomous) Ongole, Andhra Pradesh, India.



India.

**Udayagiri. Raghunath**, obtained his B.com Degree from Osmania University in 1998. He obtained MBA degree from Osmania University in 2006 and got his P.h.D from Sunrise University in 2018. He is presently working as Associate Professor in PACE Institute of Technology and Sciences (Autonomous) Ongole, Andhra Pradesh,



**P. Bharath Kumar**, obtained his Bsc (Computers) degree From Acharya Nagarjuna University in 2008. He obtained MBA (HR) Degree from JNTU Kakinada, in 2010. He is presently working as Assistant Professor in PACE Institute of Technology and Sciences (Autonomous) Ongole, Andhra Pradesh, India