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A New Competitive Opportunities in Various Sectors: Arising from Big Data

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Abstract: *Big data has increased the demand of information management specialists. Some software firms have spent more than \$15 billion data management and analytics. What counts as "big data" varies depending on the capabilities of the users and their tools, and expanding capabilities make big data a moving target. For some organizations, facing hundreds of gigabytes of data for the first time may trigger a need to reconsider data management options. For others, it may take tens or hundreds of terabytes before data size becomes a significant consideration. This paper is a study on the use of Big Data in various fields like Agriculture, Education, Social media etc. In these fields every field has their concept & represent the usage related to Big Data. Various papers based on these fields have been studied so far & detailed explanation of these is presented in this paper.*

Keywords: *Big Data, Big Data applications, open Data in education field, Big Data Analytics, Data value chain*

I. INTRODUCTION

A. ABOUT BIG DATA

Big data is a term that describes the large volume of data – both structured and unstructured – that inundates a business on a day-to-day basis. Big data challenges include capturing data, data storage, data analysis, search sharing, transfer, visualization, querying, updating and information privacy.

B. Importance of Big Data

The importance of big data doesn't depend on how much data you have, but what you do with it. You can take data from any source and analyze it based on 1) cost reductions, 2) time reductions, 3) new product development and optimized offerings, and 4) smart decision making. Data are now woven into every sector and function in the global economy, the use of Big Data – a large pools of data that can be brought together and analyzed to different patterns will become the basis of competition and growth for individual firms.

II. BENEFITS OF BIG DATA ANALYTICS

Big data analytics is the process of examining large and varied data sets i.e., big data to uncover hidden patterns, unknown correlations, market trends, customer preferences and other useful information that can help organizations make more-informed business decisions. In most organizations, Big Data analysis is a challenge.

The sheer volume of data and the different formats of the data i.e. both structured and unstructured data, collected across the entire organization can be combined, contrasted and analyzed to find patterns and other useful business information. To analyze such a large volume of data, Big Data analytics is typically performed using specialized software tools and applications for predictive analytics, data mining, text mining, and forecasting and data optimization. Collectively these processes are separate but highly integrated functions of high-performance analytics. Enterprises are increasingly looking to find actionable insights into their data. With the right big data analytics platforms in place, an enterprise can boost sales, increase efficiency, and improve operations, customer service and risk management.

III. DATA VALUE CHAIN AS BIG DATA ANALYTICAL TOOL

This analytics framework decomposes big data in to sequential modules, namely data generation, data acquisition, data storage, and data analytics. Within the field of Business Management, Value Chains have been used as a decision support tool to model the chain of activities that an organization performs in order to deliver a valuable product or service to the market. Through better investigation of the substantial volumes of data that are getting to be accessible, there is the potential for making speedier advances in a several disciplines and enhancing the gainfulness and accomplishment of numerous enterprises.

IV. ROLE OF BIG DATA IN VARIOUS FIELDS

A. Social media

There are several ways to apply big data in social media to achieve success. The use of big data in social media can be a game changer and has the ability to design consumer preferences that will attract clients and lead to sales. The 5 applications of big data in social media marketing are

- 1) *Vision Recognition*: here big data can be used in social media to recognize images in the pictures and gives assistance with generating custom classifiers. This method will help the marketer to detect customers that are posting on their social pages and prompt them to engage.
- 2) *Personality Insights*: Using big data in social media can help analyze personality attributes from posts like emails and social posts so that we can obtain the right insights about people.
- 3) *Promotion*: data can be leveraged to predict and test the likely reactions to specific consumer messages. Targeting customers that are most likely to purchase the product can be another useful outcome through the use of big data.
- 4) *Placement*: Another use of big data is to find right channel for the products. There is a decline in the number of ads in the newspapers, and many of them are either going online or erecting a paywall to incorporate a free or paid online campaign.
- 5) *Product*: By using big data in social media one will conduct a qualitative and quantitative online market research about the product. There is an increase in the consumers that are interacting with the brand locally via social channels.

B. Education

Online education has a very big development at recent years and has a very increasing impact of the education sector. Digital learning is actually a collection of data and analytics which can contribute to teaching and learning. In this way many students participate in online or mobile learning, where are crated new data [13]. These new data, also with the help of social networks, are helping the students with the different background to correlate between them and help them to understand core course Concepts.

Except from making education more personal and executive, also new types of data help researchers' ability to learn about learning. In this case Big Data can provide more opportunities for new learning experience for children and young adults. Hence students can share information with educational institutions in this way they can expand their knowledge and skills. Furthermore, Educational institutes and Universities are able to help and prepare their future students.

C. Health care

Big data in healthcare is used for reducing cost overhead, curing diseases, improving profits, predicting epidemics and enhancing the quality of human life by preventing deaths. Scientific research labs, hospitals and other medical institutions are leveraging big data analytics to reduce healthcare costs by changing the models of treatment delivery.

Big Data in healthcare originates from the large electronic health datasets – these datasets are very difficult to manage with the conventional hardware and software. The use of legacy data management methods and tools also makes it impossible to usefully leverage all this data. Big Data in healthcare is an overpowering concept not just because of the volume of data but also due to the different data types and the pace at which healthcare data management needs to be managed. The sum total of data related to the patient and their well-being constitutes the “Big Data” problem in the healthcare industry. Big Data Analytics has actually become an on the rise and crucial problem in healthcare informatics as well.

With 80% of the healthcare data being unstructured, it is a challenge for the healthcare industry to make sense of all this data and leverage it effectively for Clinical operations, Medical research, and Treatment courses. The volume of Big data in healthcare is anticipated to grow over the coming years and the healthcare industry is anticipated to grow with changing healthcare reimbursement models thus posing critical challenges to the healthcare environment.

D. Agriculture

Big data is moving into agriculture in a big way. . Inefficiencies in planting, harvesting, water use and trucking, as well as uncertainty about weather, pests, consumer demand and other intangibles contribute to the loss. On the consumer end, inadequate packaging and labeling can lead to waste and potentially life-threatening illness due to food-borne pathogens.

These are problems desperately in need of solutions and many of those solutions can be found in emerging technologies. Sensors on fields and crops are starting to provide literally granular data points on soil conditions, as well as detailed info on wind, fertilizer requirements, water availability and pest infestations. GPS units on tractors, combines and trucks can help determine optimal usage

of heavy equipment. Data analytics can help prevent spoilage by moving products faster and more efficiently. Unmanned aerial vehicles, or drones, can patrol fields and alert farmers to crop ripeness or potential problems.

V. CONCLUSION

The main aim of this paper is to explore the role of Big Data in various fields. There is most likely Big Data is the hot outskirts of today's data innovation advancement. Through better investigation of the substantial volumes of data that are getting to be accessible, there is the potential for making speedier advances in a several disciplines and enhancing the gainfulness and accomplishment in various fields. etc...An overview is presented especially to project the idea of Big Data.

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