Big data analytics in Business Management and Businesss Intelligence: A Lietrature Review Paper

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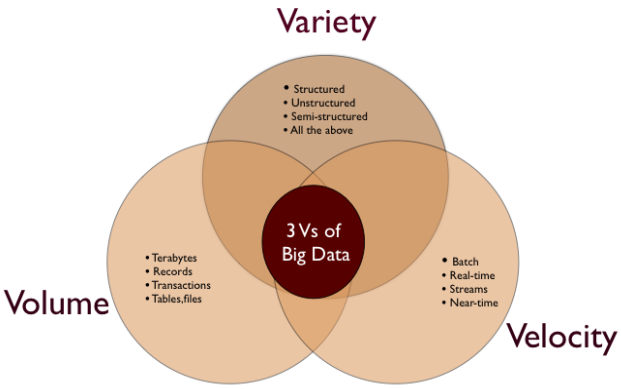
Abstract - Big data analytics employs raw, real-time data to forecast trends. The appropriate management of this data may significantly affect a company's performance and, ultimately, its bottom line. Big data analytics has received widespread praise as a ground-breaking technical advancement in both the academic and corporate worlds. Use of appropriate data/datasets has always been crucial to the success of a firm. The demand for analytics is expanding as data volume rises. By analyzing big data, successful firms are gaining competitive advantages. The purpose of this paper is to show that big data analytics is a useful tool for business management.

Key Words: Big data, Analytics, Business Intelligence, Business analytics

1.INTRODUCTION

Big data and business analytics are now playing an increasingly crucial role in achieving performance gains as firms attempt to acquire a competitive edge over their competitors. The Web, online transactions, emails, videos, audios, photos, click streams, logs, postings, search queries, health records, social media, scientific data, sensors, mobile phones, and their applications all produce these data. Recent studies have begun to demonstrate experimentally appreciate big data and business analytics for organizational-level outcomes, such as agility, innovation, and competitive performance. Experts in big data analytics provided data-centric insights, competitive advantage that organizations have. In particular, big data analytics is considered the "fourth paradigm of science" by some scholars and practitioners. Similar to this, it has been asserted that big data analytics represents a "new paradigm of knowledge assets" and the upcoming frontier in terms of innovation, rivalry, and productivity. Applications of big data analysis are seen as a crucial differentiator and a path to growth by high-performing enterprises. Information overload is one of the most serious problems in big data environments. For more information users looking for what they need in a crowd. However, if the company can recover process, analyze and collect large datasets Information can be very valuable. In the era of exponential growth of business information, accelerating data availability is becoming increasingly important. Nonetheless, what these studies have repeatedly shown is that to leverage big data, organizations must identify areas within their organization where they can benefit from data-driven insights and implement data analytics projects. It means developing the organizational ability to strategically plan, execute, and combine resources. Aggregations needed to turn data into actionable insights. Executives with high qualifications in collecting and using knowledge, also capable of analysis, is Today among the most competitive elements in business. Its basic characteristics are 3vs is volume, velocity and variety (as shown in the figure 1). Here, volume means large amounts of data. Velocity is like social media feeds in that the data goes up on social networks, such as Facebook posts and Twitter tweets. Ultimately, diversity means data in multiple formats such as structured, unstructured, and semi-structured. Every day the world generates 2.5 quintillion bytes of data; 90% of the data in the world today was generated in the last two years alone. Data is growing at an exponential rate and experts in data analytics technology don't have enough knowledge to analyze this huge amount of data. Big Data has three main aspects for any organization to care about, the first is the lack of organization. Second, it creates new opportunities. Third, the technologies used for big data are low cost.

The goal of this article is to demonstrate that Big Data analytics is a powerful support tool in business management. The following sections introduce the Big data and analytics, traditional data analysis versus big data analysis methods, and the role of big data analytics in business management. The results of empirical research on the priority of Big Data application are also presented.



The above figure gives us the information about the basic characteristics of 3v's of big data

(Figure 1)

2. Literature Review

2.1 Big data and analytics

This section gives us the idea of big data and its analytics. Big data refers to large data sets that are so complex and massive that they cannot be explained by humans or traditional data management systems. When correctly analyzed with modern tools, this massive volume of data provides businesses with the information they need to make informed decisions. Big data is a type of data which is a large amount of data and yet growing exponentially. Big data is a collection of technologies created to store, analyze and manage this data in bulk, a macro tool created to identify patterns in the chaos of explosion. This information is intended to design intelligent solutions. These are datasets whose size exceeds the flexibility of commonly used software tools and archiving systems to capture, store, manage, and process information within a timeframe that can be acceptable knowledge in an extremely unique data set. As a result, some of the challenges associated with big data include collection, storage, search, sharing, analysis, and visualization. Today, companies are mining massive volumes of highly detailed data to uncover truths they were previously unaware of. The field of big data analytics has made significant progress on a number of issues and research agendas that integrate design, behavior, and economic direction. Big data analytics refers to a type of large volume of data and technology that is collected from different sources and enables businesses to gain an edge over their competitors through improved business efficiency. Goes defines the concept of big data as huge volumes of observational data used in decision making. Big data analytics has been grouped into five technical areas that make significant contributions to analytics, business intelligence, web analytics, mobile analytics, and network analytics. Several people have used multiple analytics to describe the different platforms used to process huge volumes of data at high speeds and the techniques used to understand patterns, insights, trends to improve trading decisions. Big data analytics is the collection, processing, cleansing, and analysis of large amounts of data to enable enterprises to operationalize big data. Regarding the material in these articles as a whole, it is characterized by some speculation, thinking, and its emphasis on "rational opportunities through big data technology".

2.2 Traditional data analysis vs. Big Data analytics methods

Traditional data analysis versus big data analysis methods Big data is not only data but also IT infrastructure, analytical systems and highly analytically skilled staff. Big data analytics is the process of examining large data sets to uncover hidden patterns, unknown correlations, market trends, customer preferences, and other useful business information. Big data analytics can reveal new relationships between data, reveal never-before-seen trends, and contribute to new insights, which can then be used to increase efficiency and improve business profitability. In the long run, these can offset the costs associated with purchasing specialized software and hiring experts. There are many differences between conventional analytics and Big Data. Although some of them are very vague, figure 2 presents a summary of the differences.

	Traditional Analytics	Big Data Analytics
Analytics Type	Descriptive, Predictive	Predictive, Prescriptive
Analysis methods	Hypothesis-based	Machine learning
Primary objective	Internal decision support and performance management	Business process driver and data-driven Products
Data type	Structured and defined (formatted in rows and columns)	Unstructured and undefined (unstructured formats)
Data age/flow	>24h static pool of data	<min constant flow of data
Data volume	Tens of terabytes or less	100 terabytes to petabytes

Differentiation between Traditional Analytics and Big Data Analytics

(Figure 2)

The evolution of Big Data analytics includes three main area:

• The ability to analyse large amounts of data, while not having to use smaller data sets,

•Readiness to deal with unstructured data, characterised by low accuracy

• Rising importance of correlations, which tend to look for relations between phenomena rather than their causes.

When analyzing big data, the focus should be on finding correlations and patterns that show "something is happening", rather than explaining why "why it is happening". This means that the hypothetical method used before and the search for arguments to verify them is reversed. The discovery of unexpected correlations can only be a stimulus for Assumption. Big Data is constantly processing data that comes from corporate environment and interiors. So big data analytics is based on real-time collected data and that's why analysis results are accurate and generated without delay.

2.3 Organizational performance

An organization's performance is related to its ability to survive in the market while meeting its goals and stakeholder expectations. It can also be defined as the process of analyzing and measuring an organization's results against organizational goals and objectives, including comparing actual and desired results. Organizational performance involves comparing an organization's actual productivity or results to desired results or goals. Teeth emphasized that higher performance depends on an organization's ability to embrace innovation, protect its intangible knowledge assets, and leverage it to the benefit of the organization. In addition, Organizational performance can also be defined as the process of ensuring that organizational resources are being used appropriately, and is conducted by managers at various levels within the organizational hierarchy to measure the extent to which the organization has done this. Contains actions and activities performed by achieved the goal.

2.4 Business management using big data analytics

Businesses are grappling with the question of what big data is, how it will affect their organizations, and what benefits it will bring to them. According to a survey, only 12% of companies have implemented or started to implement a big data strategy, and nearly 70% of companies plan to start the planning stage. Clearly, an organization needs a good knowledge of its customers, products and rules. With the help of big data, organizations can find new ways to compete with others. Organizations around the world are using big data for future decision making. In general, any business function has the potential to leverage big data analytics to make informed decisions. We have identified some businesses to put in this section like Supply Chain, Product Research and Development, Marketing Management, Sales and Productivity, Human resources, Audit. Application of big data analytics is a potential business value creator, and effective implementation of big data analytics requires advanced expertise in processing big data, extracting meaning from data, and developing insights from using data. Is required. Application of big data analytics is considered a tool for fully managing organizational assets and monitoring business processes. Strengthen supply chains, improve industrial automation and manufacturing, and drive business transformation. In a survey conducted earlier, various information technology companies that develop analytical tools pointed out important aspects of processing analytical results. We create fast and intuitive reports, so-called user-friendly reports, aimed at analyzing data, driving decision-making and giving companies a competitive advantage. The availability of easy-to-read reports can improve a company's decision-making capabilities by providing clear and important information that is easy for decision makers to understand. Application of big data analytics is actively involved in successful customer implementations and outstanding quality Organizational performance. The quality of the analytical tools has a significant impact on the authenticity of the data and/or information, the business decision-making process leading to the organizational performance. In addition, Big data analytics is used to distinguish high-performing organizations from low-performing organizations. In recent years, due to its ability to improve efficiency and cost effectiveness by 5 to 6 times, Application of big data analytics has been an important consideration on the corporate agenda . Thus, Big data analytics can benefit any organization by improving its operational efficiency (financial performance, marketing performance, collaborative performance) and its competitive advantage. Therefore, Application of big data analytics can lead to improve organizational performance.

2.5 Business intelligence and analytics

Business intelligence (BI) is the ability for companies to make meaningful use of available data. Business Intelligence includes many areas such as Competitive Intelligence, Customer Intelligence, Market Intelligence, Product Intelligence, Strategic Intelligence, Technical Intelligence, and Business Counter Intelligence.BI can play a key role in improving business performance by identifying new opportunities, highlighting potential threats, discovering new business insights, and improving decision-making processes, among many other benefits. there is. Today, BI solutions are primarily focused on structured internal data. As a result, much of the valuable information embedded in unstructured and external data remains hidden, creating an imperfect reality that can lead to biased business decisions. The advent of computing and Internet technologies facilitated the continuous collection of large amounts of disparate data from multiple sources,

creating new challenges and opportunities for business intelligence. Big data analytics helps businesses make better use of big data to improve customer satisfaction, manage supply chain risk, generate competitive intelligence, deliver more critical real-time business insights in decision making, and, when used properly, can help optimize pricing. Research shows that a retailer that can properly leverage big data can gain more market share than its competitors and increase its operating profit by 60% by leveraging detailed consumer data. One of the most important applications of big data analytics is the creation of knowledge, the development of new management principles, and the economy based on it. The overall business intelligence process can be categorized into 5 phases:-

1. Data collection is the collection of information from various sources, external (market data providers, industry analytics, etc.) or internal (Google Analytics, CRM,ERP,etc.).
2. Data cleansing/standardization means preparing collected data for analysis by validating data quality and ensuring its consistency.
3. Data storage is the process of loading data into a data warehouse and storing it for further use
4. Data analysis is really an automated process of applying various quantitative and qualitative analytical techniques to transform raw data into valuable and actionable information.

5. Reporting includes creating dashboards, graphic images, or other forms of readable visual representations of analytical results that users can interact with and derive actionable insights from.

2.6 The role of Big Data in enhancing business value through business intelligence

Big data analytics can help businesses make better use of big data to improve customer satisfaction, manage supply chain risks, create competitive intelligence, deliver business insights, and more. real-time business to help make critical decisions and optimize pricing if used appropriately. According to a survey, a retailer that can make good use of big data has the potential to increase operating profit margin by 60% by gaining market share over competitors and leveraging granular data. about consumers. In general, big data analytics has five main advantages. First, it increases visibility by making relevant data more accessible. Second, it facilitates performance improvement and changeability by capturing accurate performance data. Third, help better meet the real needs of customers thanks to the residential segment. Fourth, it complements decision-making with automated algorithms by revealing valuable insights. Fifth, it creates new business models, principles, products and services. One of the most important applications of big data analytics is to generate knowledge, cultivate new management principles and the economy on which it is based. Big data analytics can improve supply chain management in various aspects, including supply chain efficiency, supply chain planning, inventory control, risk management, market intelligence and personalized services in real time. Meanwhile, big data can also help the supply chain innovate new product and service ideas, and understand how different subsidiaries can work together to optimize operational processes. in a cost-effective way. Big data analytics can also help with the decision-making process. Effective use of big data depends on a better understanding of different decision contexts and the necessary information processing mechanisms. Companies that intend to implement big data analytics for decision making should place a great deal of emphasis on reducing data ambiguity and diversity.

3. Architecture for Big Data Analysis

The ideal big data architecture patterns for a given organization will depend on factors such as the specific industry, company size, and data requirements. However, some general guidelines can be followed to ensure that the big data reference architecture is valid and efficient. One of the best practices is to use the Big Data Cloud architecture, which involves storing all data in a central repository in raw, unprocessed form. This allows for greater flexibility and easier access to data, as data can be processed and analyzed as needed without going through time-consuming and costly cleaning and transformation. . Another best practice is to use a distributed file system such as the HDFS architecture in Big Data (Hadoop Distributed File System) to store and process data. The Hadoop architecture in big data is designed to work with large amounts of data and is highly scalable, making it the ideal choice for big data architectures. It is also important to fully understand an organization's specific data needs to design an architecture that can effectively meet those needs. For example, let's say there is a need to process a large amount of architectural and flow data models in real-time big data. In this case, a Big Data Hive architecture that includes a streaming data platform like Apache Kafka is required. Volume, veracity and variety are the reasons why Big Data is difficult to process let alone analyze and draw conclusions. To make effective use of Big Data, companies need a new IT architecture i.e. configuration of hardware and software in a way that ensures efficient processing of big data. Cloud computing technology can provide unlimited resources on demand. This could be a solution to the problem of increasing data volume and can enable efficient data management. The most popular architecture for Big Data is Apache Hadoop. Many organizations seek to collect, process and Big Data Analytics has moved into a new type of technology

including Hadoop and related tools like YARN, MapReduce, Spark, Hive and Pig as well as NoSQL databases. Hadoop is essentially a distributed data infrastructure: It distributes large data collections across multiple nodes in the core server cluster, meaning you don't need to buy and maintain expensive custom hardware. It also indexes and tracks this data, allowing for much more efficient processing and analysis of Big Data than before. Hadoop is quickly becoming the foundation of Big Data handle tasks, such as scientific analysis, sales and business planning, and process huge volumes of sensor data, including from IoT sensors. Apache Hadoop is used by major companies such as Yahoo, Facebook, Amazon, eBay, The New York Times, Chevron, and IBM.

4. Methodology

The methodology of big data analytics in business management encompasses a systematic framework that enables organizations to derive meaningful insights from vast and intricate datasets, thereby fostering more informed and strategic decision-making. It commences with a meticulous articulation of business objectives and scope, ensuring alignment between analytical endeavors and organizational goals. The process advances to data collection and integration, where diverse data sources – ranging from internal databases to external APIs and sensor-generated information – are harmonized and synthesized. Subsequent to this, a robust data storage and management infrastructure is established, allowing for efficient organization and retrieval of data on a scale that aligns with the business's evolving needs. Once the foundation is laid, data preprocessing takes center stage, encompassing data cleansing, transformation, and enrichment to ensure data quality and consistency. Exploratory data analysis follows, enabling the identification of latent patterns, trends, and correlations within the data, often facilitated by advanced visualization techniques. This serves as a precursor to the selection of appropriate analytical techniques, whether they be statistical methods, machine learning algorithms, or other advanced tools. These techniques facilitate the development of predictive and prescriptive models that unveil actionable insights, such as customer behavior predictions, supply chain optimizations, or risk assessments. The developed models are rigorously validated and tested to ascertain their accuracy and reliability, thereby ensuring that the insights derived are both meaningful and impactful. With validated models in hand, the process moves towards insights generation, where the data-driven findings are translated into actionable strategies and recommendations. Collaborative efforts across relevant stakeholders facilitate the integration of these insights into real-world business processes, driving tangible outcomes and transformations. Continual monitoring and optimization are emphasized throughout, recognizing that the business environment is dynamic and constantly evolving. Data models are regularly updated and refined as new information becomes available, ensuring the sustained relevance and efficacy of data-driven strategies. Concurrently, adherence to data security and compliance standards remains paramount, safeguarding sensitive information and preserving the trust of stakeholders.

5. Challenges in this issue

5.1 Big data Challenges :-

Researchers have given many definitions to big data and developed some new features of big data based on their understanding. The researchers discussed the 4V data properties: volume, variety, volume and veracity. There are many notable challenges associated with data properties. Some of the major challenges are discussed below.

Volume challenges: An unprecedented surge of data from internal and external sources has generated a tremendous amount of data. This large amount of data poses challenges for the data itself. Since it is impossible to store data for processing with traditional tools, more innovative methods must be developed to deal with this large amount of data.

Variety Challenge: The challenge of diversity is related to its various forms. Large amounts of data come in structured, semi-structured, and unstructured formats. Research studies show that 95% of data is in unstructured form. So converting it into a format that can be analyzed is a big challenge.

Velocity Challenge: Velocity indicates the speed of data produced by the device. Data can be processed in two ways: batch processing and real-time processing. Batch processing saves data and then processes it, while real-time processing is continuous. Online shopping requires real-time processing to create value for customers.

Veracity Challenge:- Data veracity indicates the quality and accuracy of the data. It concerns data tampering, inaccuracy, clutter and false evidence. Define the reliability of your data when important decisions need to be made. On social networking sites, user opinions can be classified as positive, negative, or neutral challenges are

Some of the Big Data challenges are:

1. *Sharing and Accessing Data*

A.) Perhaps the most common challenge in big data initiatives is the inability to access datasets from external sources.

B.) Sharing data can pose significant challenges.
C.) This includes the need for inter- and intra-organizational legal documentation.
D.) Accessing data from public repositories presents some.

2. Privacy and Security

A.) This is one of the biggest challenges with Big Data. This challenge includes sensitive, conceptual, technical as well as legal implications.
B.) Most organizations cannot maintain regular audits due to the large amount of data generated. However, it is necessary to perform safety checks and real-time observations as this is most beneficial.
C.)Having information about a person when combined with external big data can lead to some facts about a person that may be confidential and the owner may not want to know this information about this person.

D.)The part of an organization that collects information about people to add value to their business. This is done by giving them insight into their lives without their knowledge.

3. Technical challenges

Data quality:

When there is a large collection of data and storing this data, it comes at a cost. Large enterprises, business managers and IT managers always want to store big data. For better results and conclusions, Big Data instead of having irrelevant data, focus on storing quality data. This further raises the question of how to ensure data relevance, how much data is enough for decision making, and whether the data stored is accurate.

Fault tolerance:

Fault tolerance is another technical challenge, and calculating fault tolerance is extremely difficult, involving complex algorithms. Today, some new technologies such as cloud computing, big data always expect that every time an incident occurs, the damage caused is within an acceptable threshold, ie the whole work should not be restarted. from the beginning.

Scalability:

Big Data projects can grow and scale quickly. The scalability problem of Big Data has led to cloud computing. This leads to various challenges, such as how to run and execute different jobs so that the goals of each workload can be achieved in a cost-effective manner.

5.2 Data Analytics Challenges :-

Some of the major challenges facing big data analytics programs today are:

A.)Uncertain data management landscape: Because big data is constantly expanding, new companies and technologies are evolving every day. A big challenge for businesses is knowing which technology works best for them without introducing new risks and problems.

B.)Talent shortage in Big Data: As Big Data grew, there were very few experts. Indeed, Big Data is a complex field and those who understand the complex and complex nature of the field are not in the middle. Another major challenge in this field is the lack of talent that exists in the industry

C.)Import data into Big Data Platform: Data is increasing every day. This means that companies have to process an unlimited amount of data on a regular basis. The scale and variety of data available can overwhelm any data professional, which is why it is important to make data accessibility simple and convenient for users. management and brand owners.

D.) Synchronization needs between data sources: As datasets become more diverse, they need to be integrated into one analytics platform. This can create gaps and lead to false ideas and messages if ignored.

E.) Gain key insights through the use of big data analytics: It's important for businesses to get the right insights from big data analytics, and it's important that the right department has access to that information. A major challenge in big data analytics is bridging this gap effectively.

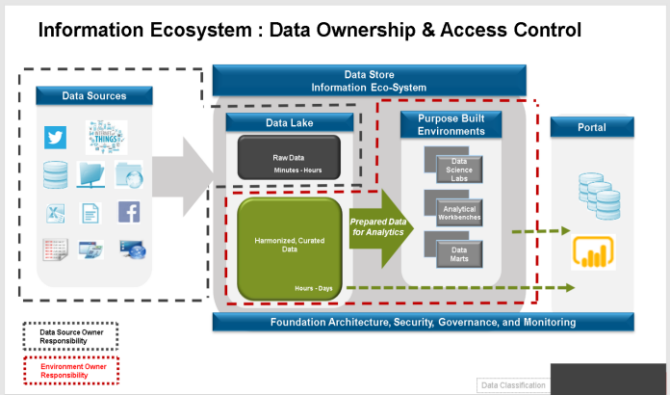
5.3 Challenges of big data analytics in the context of business-intelligence :-

While big data can help companies gain a competitive edge over their competitors through many aspects, big data analytics still faces many challenges. Major challenges of big data analytics include lack of intelligent big data sources, lack of scalable real-time analytics capabilities, ability to provision enough network resources to run applications, scalability needs need for peer-to-peer networking, privacy and data information concerns, security regulations, data integration issues and fragmented data, and the lack of a high-performance storage subsystem . In addition, the requirements for expensive software and huge computational infrastructure to perform analytics lead to problems in implementing big data analytics for BI. In particular, since Big Data involves

storing large volumes of heterogeneous data aggregated from various sources, it remains a target for hackers. Compliance with regulatory requirements, especially data protection laws, is becoming an important issue. Furthermore, since big data analytics is still in its infancy, there are no clear regulations to protect and preserve privacy, which could damage public confidence in the use of data. Big data storage and its analytics. The challenge is to establish protocols to establish contractual restrictions on disclosure of data to unauthorized persons and to disclose data, restrict data duplication, establish background checks personnel who can access the data and establish contractual restrictions on specific uses of project data. The implementation of privacy regulations is the most important area for big data growth in the next 5 years. In addition to big data privacy and security concerns, there are challenges with the hardware technology that supports big data analytics (computing, networking, and storage technologies). First, the technology canno provide a single compute profile to apply to both real-time and scalable analytics. Second, network technology creates an increasing gap between bandwidths, which limits the network's ability to support real-time applications. Third, there are no well-established rules for predicting the growth of magnetic disk storage capacity.

6.Data Lakes

To overcome the challenge of extracting useful information from big data as it's very unstructured in nature, most businesses use the technology of Data Lakes. Here people often makes mistake of considering that data lakes and Big Data are the same thing but there is significant difference between both. Big Data is a technological concept, where Data Lakes is a business technology which is used to make it easier to extract useful information from Big Data in real life applications of Big Data. Let's take a real life example to understand the concept of Data Lakes. We interviewed a supply chain analytic of a renowned manufacturing company to understand the concept of Data Lakes. In that certain manufacturing company lot of unstructured data is being generated exponentially on the daily basis. But extracting useful information for future forecasting and analysis from this largely created unstructured data is still a challenge. Also the meaning of "useful information" is different for every stages of manufacturing hierarchy or often referred as Supply Chain Management eg. Resourcing (raw material), manufacturing, Supply management, Demand management, Quality Assurance, Delivery etc. meaning of "useful information" is different for all these stages as all these stages functions individually and plan their strategies according to their future forecasts based on the "useful information" extracted from the Big Data. Here comes the Data Lakes to make this forecasts easy. Data Lakes are basically a subset of Big Data which are sorted on the basis of basic data attributes. But even though Data Lakes is sorted from Big Data it is still in unstructured or semi structured format but it gets easier to extract useful information if given smaller subset of data. Suppose Resourcing stage wants to forecast their future purchases, to do so they only want data of resourcing, previous purchases, manufacturing, warehouse inventory etc. all the other data like data about delivery, quality assurance and other data will not be necessary. So here Resourcing stage will be provided with a Data Lake which consist only the necessary attributes for them and which are extracted from Big Data itself. Now given the Data Lake it gets easier for resourcing to forecast future purchases. This is how Data lakes are being used to overcome the challenge of extracting useful information from big data. Because the meaning of "useful information" changes for every stage therefore data lakes are very useful as it's a subset of only necessary but still unstructured or semi structured data for that particular stage.



Data Ownership and Access control Model

(Figure 3)

7. BUSINESS INTELLIGENCE REAL LIFE EXAMPLES

To give you a pinch of inspiration and end on a positive note, we'll take a brief look at some real-world examples of successful BI implementation. Starbucks, a global coffeehouse company, benefits from BI and data analytics in a number of ways. It collects massive amounts of sales and customer behavior data to improve its marketing campaigns, create personalized offers (e.g., offering unsweetened drinks to those who skip the sugar), develop new products, choose locations for new shops (by monitoring population density, traffic, etc.), and much more. Lufthansa, one of the biggest European airlines, partnered with Tableau to standardize and automate its reporting processes. As a result, data preparation time was reduced by 30 percent. Actionable analytics results became available not only to decision-makers but also to business users due to self-service BI.One of the leading US

fast-food companies, Chick-fil-A, implemented a BI solution after discovering that it loses 100,000 hours of productivity per year because of data searches. The new tool made it easy for all business users to search the required data and quickly uncover the insights themselves, freeing up data analysts for higher-value add tasks. Today, self-service BI has become a standard for average business tasks, allowing entrepreneurs to conduct analytics more cost-effectively. Business intelligence is no longer an executive privilege. It's a collaborative tool for your whole organization. Make sure you pick the right vendor and include all the necessary features to help your employees access those insights.

8. CONCLUSIONS

The practical utility of big data analytics is evident in many areas of business management, especially in strategic management and stakeholder management. Big data analytics can lead to more effective marketing, new revenue opportunities, improved operational efficiency, competitive advantage over competing organizations, and other business benefits. Big data must be integrated into the architecture of the organization, even if the organization has large well-established companies. Countries around the world, IT companies and related departments have started working with big data. Organizations that have been built around big data include Google, eBay, LinkedIn, and Facebook. Large organizations are joining the data economy and combining big data analytics with traditional analytics. This will have an impact on the skills, leadership, structure and technology of the organization. 63% of organizations report that using big data is beneficial to their business and organization. More than 70% of an organization's product and customer data is used to make business decisions. The main challenges that arise are designing big data sampling and building predictive models from big data streams. The challenges, including the potential for misuse of big data, are also there, because information is power. The types of data people will generate in the future are still unknown. In the age of Big Data and new, more advanced analytics capabilities, businesses can gain a competitive advantage in the marketplace by competing on analytics. The Analytics is part of the growing body of research on data-driven decision making.

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