

Elena F

by Elena Luminita Frangu

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Elena-Luminita Frangu

Student ID: 2122202

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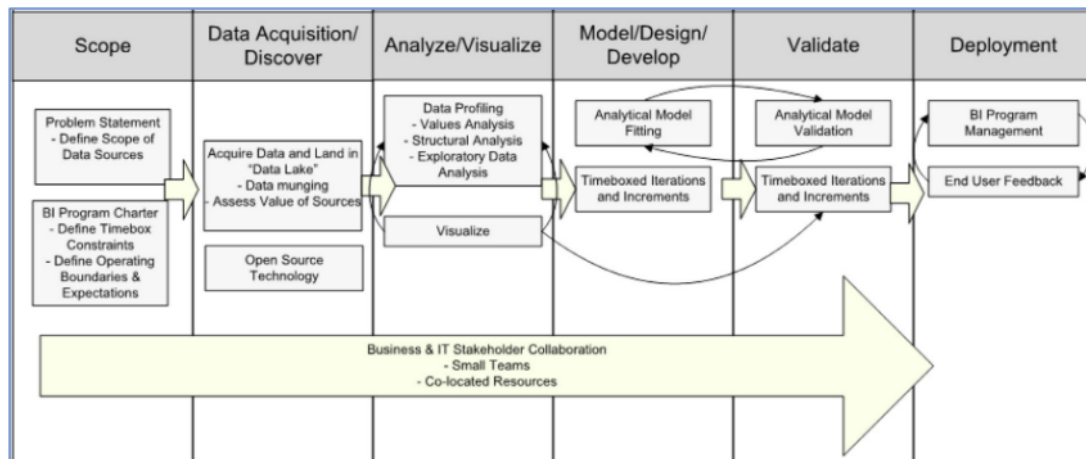
Introduction

This is the age of big data and artificial intelligence as people are using smart devices which provide large volumes of data. The use of such big data is important for business decision making so data handling and business intelligence are critical for business success (Larson, & Chang, V., 2016). This report discusses current trends in business intelligence like data warehousing, data mining, artificial intelligence (AI), information system, etc. Apart from that the concept of data science and fast analytics are also discussed in the article *"A review and future direction of agile, business intelligence, analytics and data science"* by Larson, & Chang, V.

Discussion of current trends in Business Intelligence (BI)

Business Intelligence (BI) is a software driven process that integrates business data and presents the data in a usable format for better decision making of business. With the evaluation of business intelligence and big data, the data analytics landscape has changed significantly (Larson, & Chang, V., 2016). With the emergence of digital technology and smart devices, a large volume of data with a variety of dimensions has emerged as a source of business strategy making which is essential for business success. In recent times some business intelligence trends have been widely used in business decision making processes namely fast analytics and data science (Puklavec et al., 2018). The followings are some current trends in business intelligence-

Firstly, fast analytics is the process of collecting and visualising a large chunk of data into a usable format. With the increase in velocity of data for smart devices and digital technologies fast analytics is becoming essential for transforming data into information (Puklavec et al., 2018). There are some differences between traditional BI analysis and fast analytics with big data namely descriptive versus prescriptive (Eidizadeh et al., 2017). The traditional BI analysis uses as a decision support or performance measurement tool where data are structured and defined whereas fast analytics uses to drive the business where data is unstructured and undefined. In traditional BI analysis data age in more than 24 hours whereas fast analytics required minimum time. The following figure shows the Agile delivery framework of fast analytics or data science-



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Figure: Agile delivery framework of fast analytics or data science; Source: (Larson, & Chang, V., 2016)

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Secondly, data science is the process of extracting data from a variety of sources with modern tools and techniques like statistics and data mining. Data science is widely useful for descriptive, predictive, and prescriptive analysis with the help of machine learning algorithms (Larson, & Chang, V., 2016). In big data and data science data freshness, variety of data, and speed of analysis are important. Data science helps business decision makers in taking speedy decisions by analysing large volumes of data within a very short time. Data science follows the following steps namely scope, data acquisition or discovery, analyse or visualisation, design development, validity, deployment, and support of the system.

Thirdly, data warehousing is an important part of BI analysis and data science as it provides a central BI infrastructure with an integrated data repository for data analysis. The most popular Agile development methodology for data storage is Agile Data Warehousing, Extreme Scoping, and Scrum (Bayer et al., 2017). In recent years cloud based data warehousing solutions becoming popular with companies like Google, Amazon Redshift, and BigQuery offering cloud based solutions for data warehousing. Moreover, increasing integration of data warehousing with the big data ecosystem is seen in recent times as many companies are using big data for business insights. Companies like Hadoop and Spart help companies to analyse and present a large volume of structured and unstructured data (Golfarelli et al., 2014).

Fourthly, data mining and text mining tools and techniques are widely used to generate patterns and trends, relationships among variables which help business managers to solve business problems. Some important trends are going on in the data mining industry namely time series

mining where data is collected based on specific periods like hourly, weekly, daily, monthly, etc. for determining a specific trend (Larson, & Chang, V., 2016). Another trend is mining symbolic sequence where data is collected based on the specific sequence of clicks like consumer behaviours, software installation, biological sequence, clickstream, etc. Finally, an information system is a combination of hardware, software, network, and telecommunication equipment for collecting useful data.

Importance of various analytical software for business decision making

For strategic business decision making analytical or predictive software is used in recent times which process big data into useable format. This software provides flexible tools and techniques for business decision makers (Golfarelli et al., 2014). The followings are the importance of various analytical or predictive software-

Firstly, customer buying patterns and shopping trends are critical for business entities to taking strategic decisions in this competitive business environment. In this case, data analysis tools and techniques analyse customers segment, customers, buying pattern, and product preference and then recommend the next product that best suits them (Bayer et al., 2017). Sales and marketing strategies play a crucial role in maintaining competitiveness in the market. Analytical tools are invaluable in helping managers develop effective campaigns tailored to different customer segments. These tools enable businesses to implement strategies such as upselling, cross-selling, reducing shopping cart abandonment, and offering integrated services that prioritize customer satisfaction. Leveraging big data and digital devices, predictive tools become particularly advantageous in this context (Eidizadeh et al., 2017).

Furthermore, the widespread usage of social media platforms like Facebook, YouTube, Instagram, TikTok, and others among consumers provides an opportunity for managers to gain valuable insights. Browsing data collected from these platforms can offer crucial information for decision-making. Understanding consumer behavior, preferences, and trends on social media becomes essential for modern business management.

In this digital age, big data analytical tools have become indispensable assets for businesses. They empower managers to extract actionable insights from vast amounts of data, enabling them to make informed marketing decisions, optimize sales strategies, and enhance customer

experiences. By harnessing ⁹ the power of data analytics, businesses can stay ahead of the competition and achieve sustainable growth in the dynamic market landscape.

Conclusion

After a comprehensive analysis of the current trend in business intelligence and data science, some important insights were revealed. The use of Agile methodology in business intelligence needs to change concerning the volume of data, timing of data, and useability of data. Apart from that current software based on big data needs to use in decision making. The data science and business intelligence tools like cloud based artificial intelligence, self-service business intelligence, application of data science, augmented analytics and automation, and embeddable data stores are the most commonly used data analytics tools that may help business decision making.

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