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Data Handling & Business Intelligence

Assessment 1

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Introduction

"Information is the oil of the 21st century, and analytics is the combustion engine."
(Sondergaard, 2011)

In modern day, where market leaders differentiate themselves from followers by their data-driven judgements, the strategic implementation of Business Intelligence plays a crucial role in achieving business success and sustainability. The projected growth of the Business Intelligence market, estimated to reach \$56,200.9 million by the end of 2023, demonstrates the unquestionable importance of Business Intelligence in navigating the complexities of modern company environments (Chitanand, 2023). The expected increase in size emphasises the vital knowledge that business intelligence tools and processes offer, allowing firms to improve plans, optimise operational efficiencies, and stimulate innovation.

Business Intelligence possesses a revolutionary ability that goes beyond the limits of different industries. It presents numerous success stories that emphasise its potential to provide a competitive advantage. McDonald's utilises Business Intelligence techniques in the fast food industry to improve their menu options and streamline their drive-thru operations. This strategic approach greatly improves consumer satisfaction and operational efficiency, as reported by Fast Company in 2023. Verizon use predictive analytics in the telecommunications industry to forecast network congestion and optimise the allocation of bandwidth, hence guaranteeing superior service quality and customer contentment (O'Halloran, 2022).

The utility sector also gains advantages from the capabilities of Business Intelligence, as demonstrated by Duke Energy's implementation of data analytics to forecast and avert power outages, thereby enhancing service dependability and fostering consumer confidence (Aveva, 2023). The NBA employs sophisticated analytics to optimise player recruitment techniques and game tactics, demonstrating the impact of business intelligence on improving team performance and fan involvement (Alumni, 2020).

In the field of online retail, Etsy employs machine learning algorithms to customise shopping experiences, resulting in higher sales and consumer loyalty (Etsy, 2023). Similarly, Spotify has transformed the music streaming market by utilising data analytics to create customised playlists, resulting in a substantial boost in user interaction and membership expansion (Spotify, 2023).

These examples in several sectors demonstrate how Business Intelligence can enable firms to use data for strategic decision-making, operational enhancements, and improved

customer engagement. In order to succeed in the highly competitive retail industry, it is essential for our business to adopt and utilise the latest trends and technologies in business intelligence. This will enable us to gain in-depth insights that are necessary for our growth and success. This report aims to examine the particular Business Intelligence trends that are crucial for our operations. It will provide a detailed analysis of how these trends can be strategically implemented to enhance efficiency, foster creativity, and improve customer happiness. By doing so, our organisation will maintain a leading position in the industry.

Understanding Business Intelligence (BI) Trends, Tools, and Applications

The profound influence of Business Intelligence on the business environment is unquestionable, with Business Intelligence trends, tools, and applications positioned to shape the future of industry operations. This analysis delves into the applications that essential Business Intelligence advances by examining their benefits and potential drawbacks, providing a summary of their advantages and challenges. In this data-driven era, the future of business will be determined by those who can successfully integrate and balance the various Business Intelligence trends, tools, and applications.

MD/DQ Management

Master Data Management (MDM) and Data Quality (DQ) management work together to guarantee the precision, uniformity, and reliability of vital business data throughout an organisation. MDM brings together essential data into one central source, ensuring accuracy and reliability. DQ management ensures the quality of this data by cleansing, validating, and standardising it, leading to well-informed decisions and streamlined operations.

The positive impact of accurate and reliable data is essential for effective business intelligence. Master Data and Data Quality Management are essential for maintaining consistency throughout business activities, which is vital for making strategic decisions. Automotive industries introduced Master Data Management (MDM) to consolidate its worldwide data sources, resulting in notable enhancements in supply chain efficiency and customer relationship management (Kjeldsen, 2023).

Drawback: The implementation of MD/DQ systems can be expensive in terms of resources, necessitating significant investment and potentially causing disruptions to current workflows. This could result in slower rates of acceptance and opposition from users (Cai & Zhu, 2015)

Data Warehousing Modernization

Data Warehousing Modernization involves enhancing and upgrading current data warehousing technologies and strategies to leverage advanced analytics, increase scalability, improve efficiency, and support real-time data processing. This involves implementing new storage solutions, incorporating cloud services, and ensuring that the architecture is capable of fulfilling the changing requirements of large-scale information and statistical analysis.

Emphasising the Importance: Upgrading data warehouses is crucial for effectively managing the growing scale and complexity of data. Through the implementation of innovative strategies, FedEx revolutionised its data warehouse, resulting in significant improvements to its logistics and tracking systems. As a result, customers now have access to valuable real-time information about their shipments (Tatomir & Kvasnii, 2023).

Downside: Embracing modernization comes with its fair share of expenses and technical hurdles. These may include problems with transferring data and the requirement of retraining employees, which could result in temporary inefficiencies during the transition period (Saxena et al., 2022).

Augmented Analytics

Augmented Analytics involves leveraging advanced technologies like artificial intelligence (AI) and machine learning (ML) to streamline data analysis, enabling users throughout an organisation to easily access valuable insights. It improves data analytics by streamlining the process of exploring data and generating insights, allowing for quicker and more informed decision-making.

Positive Impact: Augmented analytics leverage the power of AI and machine learning to simplify the analysis process, enabling individuals without expertise to easily access valuable insights from complex data. Spotify utilises augmented analytics to enhance user experiences by accurately predicting music preferences, resulting in increased engagement and subscription growth (Spotify, 2023).

Drawback: Relying too heavily on automated insights may overshadow the valuable understanding and intuition that human analysts contribute to data interpretation, potentially resulting in missed strategic opportunities (de Véricourt & Perakis, 2020).

Self-service Analytics

Self-service Analytics is a user-friendly approach that enables individuals to easily access, analyse, and visualise data, even without expertise in data science or IT. Empowering users across an organisation to make data-driven decisions based on their analyses fosters a culture of insight and agility, similar to a systems analyst.

Empowering end-users to conduct their own analyses fosters a culture of data-driven decision-making, resulting in a positive impact. Airbnb's implementation of self-service Business Intelligence tools has revolutionised data access, empowering employees to swiftly generate valuable insights and shape business strategy (Patel & Jacob, 2023).

Downside: Insufficient governance can lead to the spread of self-service analytics, causing data silos and inconsistent analyses, which can harm the reliability of business data (Weissman, 2018).

Cloud for Data and Analytics

Cloud for Data and Analytics involves the use of cloud computing platforms and services to handle and analyse extensive datasets. This approach provides the ability to scale, adapt, and save costs, allowing businesses to leverage advanced analytics capabilities and insights without requiring a large on-premise infrastructure.

Driving Innovation: Cloud computing empowers businesses with the ability to scale and adapt their infrastructure to meet their data storage and analysis needs. Amazon Web Services (AWS) has enabled Netflix to effectively manage large datasets for content recommendations, greatly improving user satisfaction and retention (Netflix, 2023).

Downside: Relying on cloud services can raise worries about data security and compliance, particularly for sensitive information. This calls for strong security measures and may add complexity to regulatory compliance (Balaban, 2023).

Conclusion

To summarise, this report evaluated the changing environment of Business Intelligence, emphasising crucial technologies and trends that influence the future of making business decisions. Each of these components constitutes a vital element of the contemporary business intelligence toolkit, offering distinct capabilities to enhance operational effectiveness, strategic flexibility, and competitive edge in an environment that relies on data.

Incorporating these elements is a crucial necessity for firms to prosper in the current intricate and information-abundant environment. Although they provide significant advantages in terms of enhancing decision accuracy and operational flexibility, they also present difficulties such as elaborate deployment, financial investment requirements, and issues concerning data security. To effectively address these difficulties, it is crucial to adopt an integrated strategy that prioritises technology progress, strategic management, and the cultivation of human knowledge alongside with technology advancements.

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