



REPORT

Data Handling and Business Intelligence (LCBB5000)
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1. Introduction

Business intelligence plays a pivotal role in enabling businesses to make informed decisions by analysing and interpreting amounts of data. Organisations can gain valuable insights into market trends, customer behaviour and operational efficiency thanks to the BI. According to Davenport, T.H., BI and analytics are critical for driving business growth and innovation (Davenport, T.H. et al, 2010). Therefore, implementing robust BI systems is essential for business aiming to thrive in today's data-driven landscape.

2. Why BI trends, tools and applications are the future for the business?

The future of enterprises across industries is being progressively shaped by business intelligence (BI) trends, tools, and applications. Using advanced analytics methods to get deeper insights from data, such machine learning and artificial intelligence (AI), is one important development. Businesses may make more informed decisions and more accurate forecasts by using these technologies to find hidden patterns and connections (Petter et al., 2013). AI algorithms, for instance, are used by businesses like Amazon and Netflix to assess consumer behaviour and offer tailored recommendations that increase customer satisfaction and boost profit. The emergence of self-service BI solutions, which enable non-technical people to freely access and analyse data, is another noteworthy trend. Without the help of IT departments, consumers can produce interactive reports and visualisations using tools like Tableau and Power BI, which have user-friendly interfaces and drag-and-drop capability (Crescenzi & Fraternali, 2013). Employees are better able to produce insights and adapt to shifting market conditions as a result of the democratisation of data access, which fosters agility and creativity within businesses. Furthermore, the broad embrace of big data technologies has revolutionised the way in which companies handle and utilise enormous volumes of data. Organisations can process, store, and analyse various types of data at scale with the help of platforms like Hadoop and Spark (Chen et al., 2014). Retailers, for example, employ big data analytics to examine social media interactions, consumer transactions, and weather patterns in order to improve marketing and inventory plans. Furthermore, the integration of BI with other emerging technologies such as Internet of Things (IoT) and blockchain offers new opportunities for businesses to gain competitive advantage. IoT devices generate large volumes of real-time data, which BI systems can analyse to optimize operations and enhance customer experiences (Mukherjee et al., 2017). Additionally, blockchain technology provides transparent and immutable data records, improving trust and security in BI applications such as supply chain management and financial reporting. BI trends, tools, and applications are integral to the future success of businesses, enabling them to harness the power of data for strategic decision-making and innovation. By embracing advanced analytics, self-service BI, big data technologies, and emerging technologies like IoT and blockchain, organizations can stay ahead in today's rapidly evolving business landscape.

3. How BI Trends (5 BI trends) can help to make timely and effective decisions?

The first BI trend I choose to talk about is the AI. Predictive analytics algorithms driven by AI examine past data to project future patterns and results. These algorithms can foresee future possibilities and hazards by spotting patterns and correlations, giving decision-makers the ability to act proactively. To help investors and financial institutions make educated decisions, predictive analytics models in the finance industry, for example, can estimate stock values or identify fraudulent transactions (Sharda et al., 2015). AI systems can comprehend and analyse spoken and written human language thanks to NLP approaches. Chatbots and virtual assistants with AI capabilities can communicate with users in real time, responding to questions, giving advice, and providing information. NLP-based chatbots in customer care can help clients with typical questions, speeding up response times and raising client satisfaction (Liu et al., 2019).

Another BI trend I chose is the Governance. Governance in business intelligence (BI) refers to the framework and processes established to ensure the effective management, quality, and security of data and analytics within an organization. In order to guarantee the accuracy, consistency, and dependability of the data used for decision-making, governance frameworks establish rules and procedures for data collection, integration, and cleansing. Organisations can make decisions based on reliable information if they maintain excellent data quality (Wang & Strong, 1996). To prevent unwanted access to or misuse of sensitive data, governance frameworks include roles, duties, and access controls. Organisations may protect their data assets and ensure availability, confidentiality, and integrity by putting strong security measures in place. This will allow decision-makers to safely access pertinent information (Fenz et al., 2012).

The next BI trend is the automation. Automation in business intelligence (BI) plays a crucial role in enabling organizations to make timely and effective decisions by streamlining data processing and analysis processes. Key performance indicators (KPIs) and warnings in the data can be continuously monitored by automated BI systems, which can identify patterns and abnormalities as they arise. Decision-makers may react quickly to changes in the corporate environment and make well-informed judgements quickly using this proactive strategy (Larissa & Guo, 2019). Certain sophisticated business intelligence systems integrate machine learning and artificial intelligence to offer automated decision support. In order to suggest the best courses of action, these systems evaluate enormous volumes of data. This reduces the cognitive load of complicated decision-making tasks and provides decision-makers with data-driven insights (Watson et al., 2015).

Another BI trend is the collaborative BI. Collaborative Business Intelligence (BI) refers to the integration of BI tools with collaborative platforms, enabling teams to share insights, discuss findings, and make collective decisions in real-time. With collaboration platforms like Microsoft Teams or Slack, team members can rapidly share insights, reports, and dashboards thanks to collaborative business intelligence (BI). Decision-makers are able to act swiftly and decisively because of the speedy information transmission that guarantees them access to the most recent data and analysis (Luftman et al., 2015). Real-time

collaboration tools like version control, annotation, and commenting are provided by collaborative BI solutions, enabling team members to work together on data analysis at the same time. Discussions, brainstorming sessions, and problem-solving are facilitated by this real-time engagement, which results in more prompt and efficient decision-making (Peffer et al., 2014).

The last BI trend is the quality management. Quality management BI can help make timely and effective decisions by providing real-time insights into quality metrics, identifying trends, and facilitating proactive interventions to prevent quality issues. By finding correlations and patterns in quality data, BI tools for quality management facilitate root cause analysis (Bertels et al., 2015). Decision-makers can identify the root causes of quality problems and take appropriate action by delving deeper into the data. Managers can, for example, adopt targeted changes or modify sourcing strategies to prevent recurrence if a surge in defect rates is linked to a particular supplier or production process. Also, quality management BI facilitates decision-making by providing pertinent data in an understandable and useful manner (Chen et al., 2017). Making informed decisions at all organisational levels is made possible for decision-makers by giving them access to customisable reports, dashboards, and alarms that are catered to their particular requirements. Frontline supervisors can receive real-time notifications for prompt action on production floor issues, while executives can access executive summaries that highlight critical quality performance metrics to make strategic decisions.

4. Conclusion

In conclusion, in today's cutthroat corporate environment, the significance of business intelligence (BI) trends and technologies cannot be emphasised. Innovation is being fueled by business intelligence (BI) trends like self-service BI, big data technologies, sophisticated analytics, and integration with emerging technologies like blockchain and IoT. These trends allow organisations to leverage data for both operational efficiency and strategic decision-making. Businesses may gain deeper insights from data, find hidden trends, and improve prediction accuracy by utilising sophisticated analytics techniques like machine learning and artificial intelligence. This promotes focused interventions, proactive decision-making, and competitive advantage.

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