

Component 1: Coursework: Written Report

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INTRODUCTION

In the competitive retail business, operational managers and decision-makers are essential for a company's success. One key aspect of a manager's responsibilities is to make effective and timely decisions that drive the business forward (Yu and Teoh, 2020). Modern Business Intelligence trends, tools, and applications empower decision-makers with necessary insights.

This report evaluates the significance of Business Intelligence for businesses, highlighting its role in enhancing operational efficiency, improving performance, and driving strategic decision-making. Through a comprehensive exploration of BI concepts, this report aims to showcase why BI trends, tools, and applications are the future for the business and how BI trends can help to make timely and effective decisions.

Business Intelligence and its importance for the business

Business intelligence is a technology-driven process that converts raw data into actionable insights for informed decision-making while overcoming hurdles such as inadequate governance, data quality, and insufficient field training (Shehadeh et al., 2023). Divided into five stages: data collection, storage, analysis, situation awareness, and data access. Each stage enhances decision-making, saves data for later use, finds trends, and provides reports (Microsoft, 2024).

BI solutions provide various features like reporting, advanced analytics, data visualization, location intelligence, customized alerts, data management, self-service analytics, integration with systems, predictive analytics, and mobile business intelligence. These tools enable businesses to make informed decisions, access real-time data, and enhance productivity in a competitive world (Mohammad et al., 2022). For example, a retail business can use BI tools to analyze sales data and identify patterns to optimize inventory levels, pricing strategies, and marketing campaigns. However, without BI tools, the retail company might rely on manual processes or outdated systems, which can be time-consuming and prone to errors.

ETL (Extract, Transform, Load) in BI systems consolidates structured and unstructured data from various sources, enabling evaluation and reporting. Data mining identifies trends, while BI tools provide modeling and analytics opportunities, helping businesses identify bottlenecks and inefficiencies, and thereby enhancing operational efficiency. Interactive dashboards, charts, graphs, and maps are all examples of data visualizations used to communicate findings. Finally, real-time adjustments and strategic changes are implemented based on the insights, allowing businesses to decrease inefficiencies, respond to market shifts, fix supply difficulties, and resolve consumer complaints (Olszac, 2020).

For example, if a firm loses clients due to bad customer service, BI tools may give statistics to help pinpoint the underlying problem. Similarly, if sales data

reveals that internet customers are earning more, firms might create new products or advertising techniques (Express Analytics, 2023).

BI has a significant impact on an organization's strategic, tactical, and operational levels, contributing to overall success. Companies are increasingly embracing BI solutions to obtain knowledge and compete in a rapidly changing industry. Accurate and timely data is critical for marketers to perform effectively, since inaccurate data may stymie efforts and reduce morale (Olszac, 2020).

However, it's important to consider potential consequences too. Adopting Business Intelligence (BI) raises data security risks due to increased data collection and analysis. Businesses must invest in robust security measures to protect sensitive information. Additionally, implementing BI requires employees to learn new tools and processes, which can be time-consuming and require additional resources (Carlington et al., 2018).

How BI trends can help to make timely and effective decisions

Cloud Business Intelligence (CBI) is a secure, on-demand data storage and processing solution with advantages such as processing power availability, storage, flexibility, and scalability. It can be used in public, private, community, and hybrid ways (Sandhu et al., 2021). For example, Cloud platforms enable sales managers to monitor performance, adjust marketing strategies, and boost revenue, while also enhancing productivity and innovation through collaboration, sharing insights, and data-based decision-making.

Olszac (2020) highlights factors causing the slow adoption of cloud BI, including data security concerns, integration risks, vendor maturity, performance limitations, and standardized pricing models.

However, cloud computing has disadvantages like internet access, speed, and direct access to resources, making it risky for companies (Taleb & Mohamed, 2020). For instance, a retail company may suffer reputational damage due to a data breach on a cloud platform, causing network outages and delays in decision-making and operations.

Embedded analytics is an emerging trend in business operations that incorporates data analytics into a user's workflow, hence increasing decision-making and efficiency. This approach encourages stakeholder engagement, which makes it easier to collect information from multiple business domains. According to Business Wire, organizations are implementing embedded analytics solutions to increase income, expand their markets, and gain a competitive advantage (Calzon, 2023). For example, a point-of-sale (POS) system is used by a retail line manager to track sales and manage inventory. He has access to

visualizations, dashboards, and reports with embedded analytics, which streamline workflow and enable quick action by allowing them to spot patterns, optimize inventory, and make data-driven decisions. Previously, line managers used separate analytics tools for data analysis, which was time-consuming and less efficient, as they had to switch between different applications or platforms.

Power BI is an incredibly popular BI trend that aids users in monitoring data, analysing data, and making informed decisions through custom data connectors and personalized dashboard visuals (Wall, 2019).

Power BI enables trend analysis using DAX (Data Analysis Expressions), a formula language for data models. For example, the business might use DAX functions to calculate growth rates, compare sales from one period to another, or identify which products are trending over a certain time frame. It features conditional formatting for visualizing trends and adds trend lines for forecasting and data-driven decisions (McKay, 2023).

However, there are a few potential drawbacks to consider, Power BI's advanced features may require a learning curve for users who are new to the tool, and there might be limitations in terms of data processing capabilities for very large datasets. Common challenges faced by organizations include data governance issues, integration complexities, user adoption barriers, and security risks (Miller, 2024).

Mobile BI refers to the usage of information on mobile devices to obtain business intelligence and analytics. It improves everyday operations, decision-making, and organizational cooperation by allowing real-time access to information, encouraging better communication, and engaging new stakeholders. It also includes KPIs, business data, and predictive analytics, allowing for faster reactions and strategic efforts (Tona and Carlsson, 2017).

Starbucks utilizes Mobile BI to provide its store managers with real-time data on sales, inventory, and customer preferences. This helps them optimize staffing, product offerings, and customer satisfaction (Beers, 2021).

Mobile BI faces challenges like data security risks, integration complexities, user adoption barriers, and connectivity dependencies. To mitigate these, operational managers must implement robust security measures, user training initiatives, and contingency plans (Rimawi, 2023).

Artificial intelligence (AI) is an important business intelligence trend that can automate data analysis, forecast future trends, provide personalized recommendations, detect fraud, enhance supply chain management, and analyze customer behaviour. It may improve operational efficiency, boost customer satisfaction, and provide a competitive edge in the retail industry. AI services are predicted to increase from \$5 billion to more than \$31 billion by

2028. While AI may reduce net employment in some sectors, it is expected to redefine cashier tasks and make smart staffing and restocking decisions, decreasing labor and replenishment costs (Yili, 2023).

The negative aspects of AI in BI include algorithm bias, data privacy risks, transparency issues, and data quality dependencies. To mitigate these, operational managers must implement ethical AI practices, robust security measures, explainable AI models, and data governance strategies (Omowole, 2021).

CONCLUSION

Without BI tools, retailers struggled to make data-driven choices. They used manual methods, which were time-consuming and prone to mistakes. Without real-time data and analytics, businesses struggled to comprehend customer preferences, optimize inventories, and recognise patterns. This resulted in inefficiencies, missed opportunities, and higher expenses.

In conclusion, the adoption of modern BI trends, tools, and applications is imperative for the success of retail businesses in today's competitive landscape. By harnessing the power of BI, decision-makers can gain valuable insights, drive operational efficiency, and capitalize on growth opportunities. However, it is essential to strike a balance between data-driven decision-making and human judgment to ensure innovation and strategic thinking are not compromised. As an operational manager and decision-maker in a retail business, embracing BI trends is key to unlocking the full potential of data and driving sustainable growth.

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