Premier Research Source

Driving Modern Business Intelligence Architecture for Operational Efficiency

Abdelraouf Ishtaiwi, Ahmad Al-Qerem,
Mohammad Al Khaldy, and Mohammad Alauthman

IGI Global
Scientific Publishing
Publishing Tomorrow's Research Today

and organizational culture. The framework merges new technologies with local restrictions using a stepwise approach and specific elements for zones like manufacturing, pharmaceuticals, and textiles. Implementation guidelines can lead to improvements in operational efficiency, market responsiveness, and competitive advantage. The methodology harmonizes global best practices with regional limitations and offers practical paths for organizations at different levels of digital maturity to implement these practices. This study helps to know localized BI strategies in developing economies and offers a sustainable digital transformation blueprint for the industrial landscape of Jordan.

Chapter 20

Integrating Artificial Intelligence in Business Intelligence Architectures for Predictive Decision-Making

Manish Kumar

The integration of Artificial Intelligence (AI) into Business Intelligence (BI) is transforming data-driven decision-making by enhancing predictive capabilities, automating analytics, and boosting efficiency. This chapter examines AI's role in modern BI, focusing on machine learning (ML), deep learning, and natural language processing (NLP) as key enablers. AI-powered BI enhances real-time data processing, enables predictive modeling, and helps organizations anticipate trends, optimize strategies, and mitigate risks. A comparative analysis highlights AI's improvements in accuracy, speed, and scalability over traditional BI. Real-world applications in finance, healthcare, and retail demonstrate AI's impact in generating actionable insights. The chapter also explores challenges like data quality, algorithmic bias, and ethical concerns, and uses statistical modeling, sentiment analysis, and case studies to illustrate how AI empowers proactive decision-making. It concludes with future trends and recommendations for leveraging AI in BI to drive innovation and growth.

Chapter 21

Integrating Business Intelligence Architectures into Moodle-Based E-Learning Systems: Strategies for Enhancing Operational Efficiency and Data-Driven Educational Insights

Ahmad Shtayyat, Ala Hamarsheh

This chapter discusses the inclusion of business intelligent (BI) architectures within Moodle-based e-learning systems with the goal of increasing operations functions and educational results. It offers a conceptual model uniting Moodle's modular system and more sophisticated BI elements, namely, data warehousing, predictive analytics, and personalised dashboards. Based on the current research and case studies, the chapter enumerates the use cases such as prediction of student performance, clustering, automated assessments, and recommender systems. It also looks into the role of AI in facilitating real time intervention, personalized learning and intelligent feedback. Metrics of KPI, CBM and faculty workload reduction are dealt with to evaluate BI impact. The chapter identifies challenges concerning infrastructure, faculty uptake, and data quality but suggests evidence-based solutions to the same. Recent trends including edge computing, mobile analytics, and sustainable BI design are explored, providing a visionary vision for organizations using data to tap Moodle's potential.

Activate Windows
Go to Settings to activate Windows.

Search
ENG
IN
13:57
11-07-2025