


Chapter 11

Optimizing Sales and Inventory Performance Using AI and Business Intelligence in POS Environments

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ABSTRACT

This chapter explores how integrating Artificial Intelligence (AI) with Power BI enhances B2B Point-of-Sale (POS) operations through intelligent visualization and analytics. By transforming raw transactional data into actionable insights, Power BI dashboards enable real-time tracking of sales trends, inventory turnover, and regional performance. The analysis demonstrates improvements in sales forecasting

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accuracy by 27%, inventory efficiency by 21%, and decision-making speed by 35%. AI-driven analytics strengthen forecasting and stock optimization while promoting proactive decision-making. The study emphasizes the strategic value of Power BI in creating data-driven, agile, and efficient B2B ecosystems, establishing it as a key enabler of intelligent business operations and long-term competitiveness.

1. INTRODUCTION

The emergence of Artificial Intelligence (AI) and Business Intelligence (BI) has changed how the B2B companies are considering sales optimization and inventory management. The modern business is founded on the assumption that data-oriented knowledge will be used to streamline the operations of the Point-of-Sale (POS) and forecast demand as well as profitability maximization. This chapter discusses how the powerful instrument of visualization and analytics, i.e., Power BI, can be used to transform the raw data in the B2B into actionable intelligence (Chen et al., 2022). AI algorithms can be used when integrated with interactive dashboards to help the organizations to recognize the sales trends, optimize stocks and guide the organizations in making strategic decisions. The visualization tools incorporated in the POS systems provide a clear picture of the performance of the businesses and therefore the managers can make sound and proactive decisions. Through a method of the systematic discussion of data models, visualization systems, and Power BI dashboards, this chapter demonstrates how the sales and inventory analytics could be optimized into a more efficient operation and competitive B2B domain. (Bhargava, 2023).

1.1 Overview of AI and Business Intelligence in B2B Context

There is a change in altered B2B operations with illustrations of Artificial Intelligence (AI) and Business Intelligence (BI) which provides foresight and real-time support in decision-making. Patterns are identified by AI through machine learning models and analytics algorithms to automate its pattern recognition systems and its BI systems including Power BI, Tableau, and Qlik and then visualize the resulting patterns to be comprehended by humans. High dimensional data is generated by the transaction records and supplier networks as well as customer relationship systems in the B2B sector, which requires sophisticated analysis (Paschen et al., 2020). It is combined in BI systems to produce a set of dashboards that reflect the tendencies in sales cycles, price and demand. The combination of AI and a business can enable it to analyze past data and make correct predictions of future performance. The AI-BI combination results in an increased degree of efficiency of resource allocation,

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