

Project Report: Axon Retail - Sales Data Management and Analysis

Executive Summary

Axon, a small classic car retailer, faced challenges in managing and analyzing their sales data, impacting decision-making. To address this, a Business Intelligence (BI) solution using Microsoft PowerBI and SQL was implemented. The solution successfully imported, integrated, cleaned, and transformed data from a MySQL database. It provided interactive dashboards, performed advanced analytics, and enabled real-time data-driven decisions. This report details the project's journey and outcomes.

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1. Introduction

1.1 Business Problem Overview

Axon, a classic car retailer, struggled with managing and analyzing sales data, leading to ineffective decision-making. The absence of a centralized system hindered access to accurate and up-to-date sales reports.

1.2 Project Objectives

The capstone project aimed to implement a BI solution using PowerBI and SQL to:

Import and integrate data from a MySQL database.

Clean and transform data for analysis.

Build interactive dashboards and reports.

Perform advanced analytics and extract insights.

Enable real-time access for management.

2. Data Description

2.1 Data Sources

The project utilized a MySQL database comprising multiple tables, including Customers, Products, ProductLines, Orders, OrderDetails, Payments, Employees, and Offices.

2.2 Data Preparation

Data was imported, integrated, cleaned, and transformed to ensure readiness for analysis.

3. Business Intelligence Solution

3.1 Tool Selection

Microsoft PowerBI and SQL were selected as the BI tools due to their suitability for the project's objectives.

3.2 Dashboard Overview

The PowerBI dashboard includes:

Total Order Value and Payments

Geographic Analysis

Performance Metrics

Category-wise Sales Distribution

Sales Trends Over Time

Category-wise Profit Analysis

4. Data Analysis and Visualization

4.1 Total Order Value and Payments

Two cards display total order value and total payments received from customers.

4.2 Geographic Analysis

A pie chart shows the top 10 countries where products were sold.

4.3 Performance Metrics

Three stacked bar charts represent the top 10 employees, customers, and product-wise profit.

4.4 Category-wise Sales Distribution

A funnel visualization displays category-wise sales distribution.

4.5 Sales Trends Over Time

A line chart with date hierarchy illustrates sales performance trends over time.

4.6 Category-wise Profit Analysis

A treemap visualizes category-wise profit distribution.

5. SQL Analytics

5.1 SQL Queries

SQL queries were employed to extract profit and trend data.

6. User-Friendliness and Accessibility

The solution prioritized user-friendliness, ensuring easy access for the sales team and management in real-time.

7. Business Impact

The BI solution has positively impacted Axon's ability to manage and analyze sales data, improving decision-making processes.

8. Conclusion

The project successfully addressed Axon's sales data management and analysis challenges, providing a robust BI solution that enhances decision-making.

9. Recommendations

Consider future enhancements, ongoing data quality management, and expanding data sources for more comprehensive analysis.

10. Acknowledgments

Acknowledgment of those who contributed to the project's success.

11. Appendices

Supplementary information, including detailed SQL queries and additional visualizations.

12. References

References to data sources, tools, and literature used in the project.

13. Document Revision History

A log of document revisions and updates.

14. Attachments

Includes relevant attachments such as data export files, PowerBI dashboard screenshots, and SQL script files.