***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.