Capstone Project - Public Project Summary

Visualization of Information Management Data using PowerBI

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2024 June

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Project Overview

This project aimed to integrate Canon Europe's Information Management Software (IMS) with Microsoft PowerBI for enhanced data visualization. The primary goal was to convert raw data into actionable insights, facilitating informed decision-making processes for Canon's clients. Due to the sensitive nature of live data, the project utilized a mock dataset to ensure data integrity and security.

Key Problem and Objectives

The key problem identified was the lack of an integrated dashboard linking Canon's IMS with PowerBI, which limited the ability to transform raw data into meaningful insights. The project aimed to create a foundational understanding of information management and reporting needs specific to Canon's IMS. This involved establishing a connection between a demo instance of Canon's IMS and PowerBI, and developing meaningful visualizations to highlight relevant metrics.

Desired Outcomes

The desired outcome was to develop and demonstrate a live dashboard featuring insightful and actionable metrics using the mock data. This dashboard aimed to enhance decision-making processes for Canon's clients through effective data utilization, making it a pivotal tool for leveraging data for strategic advantages.

Mock Data Generation Process

Given the confidentiality requirements, a mock dataset was created to simulate real-world data. The mock dataset represented a medium-sized enterprise specializing in tech gadgets, including approximately 5,000 rows of mock invoice data. For this project, the dataset featured invoices that Canon's IMS manages.

The initial mock dataset was sourced from Kaggle and underwent multiple iterations to include necessary columns and timestamps. Challenges included maintaining data integrity and ensuring logical timestamp sequences. The final dataset included columns such as invoice timestamps, tax rates, and amounts, suitable for further analysis and visualization.

PowerBI Dashboards

The final dataset was uploaded to PowerBI to generate insightful dashboards. These dashboards provided comprehensive overviews of the invoice processing workflow, including volume trends, processing times, and team efficiency metrics. Key features included:

- **Invoice Volume Analysis**: Dashboards highlighted invoice volumes by quarter and month, helping managers plan team activities around workload peaks and troughs.

- **Efficiency Measurement**: Metrics identified processing times and backlogs, enabling managers to address bottlenecks and optimize workflows.
- **Performance Analytics**: Comparative analysis of team efficiency in processing invoices, providing insights into workload distribution and performance.

Other Potential Use Cases

Beyond invoice processing, the dashboards offered potential use cases in customer analysis. By tracking purchasing patterns and customer preferences, businesses could tailor marketing strategies and improve customer engagement. Insights into high-value customers and seasonal trends could enhance loyalty programs and overall customer satisfaction.

Learning Experience

I gained valuable experience in data management, analysis, and visualization. Key lessons learned included the importance of iterative data refinement, attention to detail in data accuracy, and the practical application of PowerBI in business analytics. The project highlighted the challenges of working with mock data and the need for patience and precision in data preparation, something that turned out to be as troublesome as cleaning raw data.

Conclusion

This project successfully demonstrated the integration of mock instance of Canon's IMS with PowerBI, showcasing the potential benefits of enhanced data visualization for informed decision-making. It highlighted the practical applications of business analytics tools in real-world scenarios, and the dashboards developed serve as a template for future enhancements. Overall, the project met its objectives and laid the groundwork for continued analytical projects in data management and visualization, offering a robust framework that can be adapted and expanded upon in the future.