

UNLOCKING SALES INSIGHTS WITH POWER BI

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ABSTRACT

The process of Sales Data Analysis provides valuable insights into customer purchasing behavior, allowing businesses to comprehend the reasons behind these actions. By closely examining this behavior, organizations can optimize their future strategies. While major global brands have been leveraging sales data for improved decision-making, any company can harness these insights and reporting tools to achieve data-driven sales success. This research project focuses on the historical, current, and future trends within the sales industry, emphasizing the application of business analytics for crafting effective marketing strategies using data from various sources, with a specific focus on utilizing DAX query language and Power BI dashboards. The primary objective of this project is to demonstrate the application of Power BI in sales analysis. This entails employing SQL queries for data cleansing and utilizing DAX query language for creating a high-performance dashboard accessible to end users. The project's dashboard provides a comprehensive view of trends, business performance, top-selling products, regional product preferences, and overall market performance. Through the visualization of large datasets, this project offers a user-friendly platform for informed decision-making.

Keywords: Sales Analysis, Research, DAX Query, SQL, Dashboard, Data Visualization.

I. INTRODUCTION

Power BI serves as both the technical backbone and procedural framework for managing data. This platform is designed to gather, store, and thoroughly analyze the data stemming from a company's operations. It processes the entire spectrum of data generated by a business and presents comprehensive, easily understandable reports, performance metrics, and emerging trends that serve as valuable inputs for management decisions. Within the realm of Business Intelligence (BI), Power BI encompasses a wide array of components and software tools, including Power Query, Power Map, Power Pivot, Power View, Power Q&A, and Power BI Desktop, among others. These versatile tools collectively empower businesses to harness their data effectively and gain actionable insights. Power BI operates as a cloud-based data analysis solution, providing the capacity to report on and analyze data from a diverse range of sources. It is known for its user-friendly interface, enabling business analysts and power users to seamlessly interact with the platform and derive substantial benefits. Simultaneously, Power BI boasts the robustness and sophistication required for integration into enterprise systems, where BI developers can harness its capabilities for intricate data integration and modeling endeavors. In summary, Power BI stands out for its adaptability and robustness, making it an invaluable asset for businesses of varying sizes. It provides a unified platform for data analysis and reporting, bridging the gap between user-friendliness and enterprise-level complexity.

II. METHODOLOGY

Data Collection:

The initial phase of our methodology focuses on data collection. This crucial step involves the systematic gathering and measurement of information related to specific variables within established systems. Data collection provides the foundation for addressing pertinent questions and evaluating outcomes.

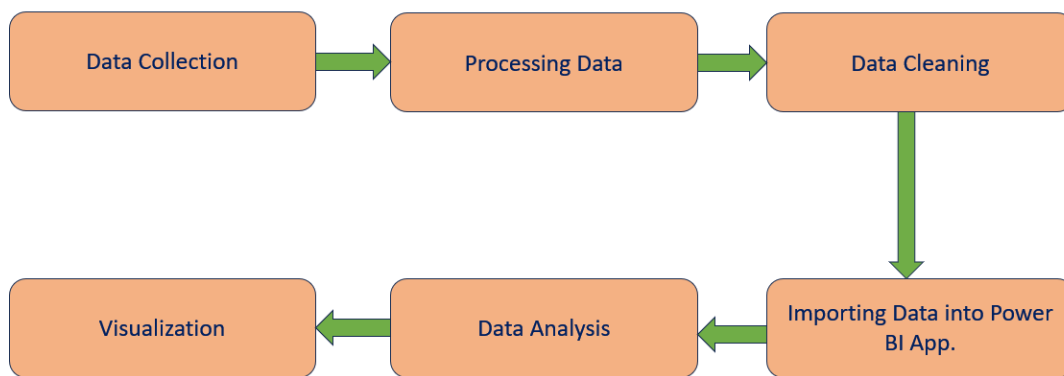
Data Processing: Power BI employs two primary data repositories for the storage and management of data. Information uploaded by users is stored in Excel sheets, creating a secure and accessible repository for analysis and reporting.

Data Cleaning: Following the data collection and storage phases, data cleaning becomes an integral step in the process. It is essential to ensure that the data is clean and transformed before proceeding to create visualizations or reports. Cleaning and transforming the data is vital for building high-quality visualizations. When this step is executed meticulously, it ensures that visualizations behave as expected, leading to more accurate and insightful insights.

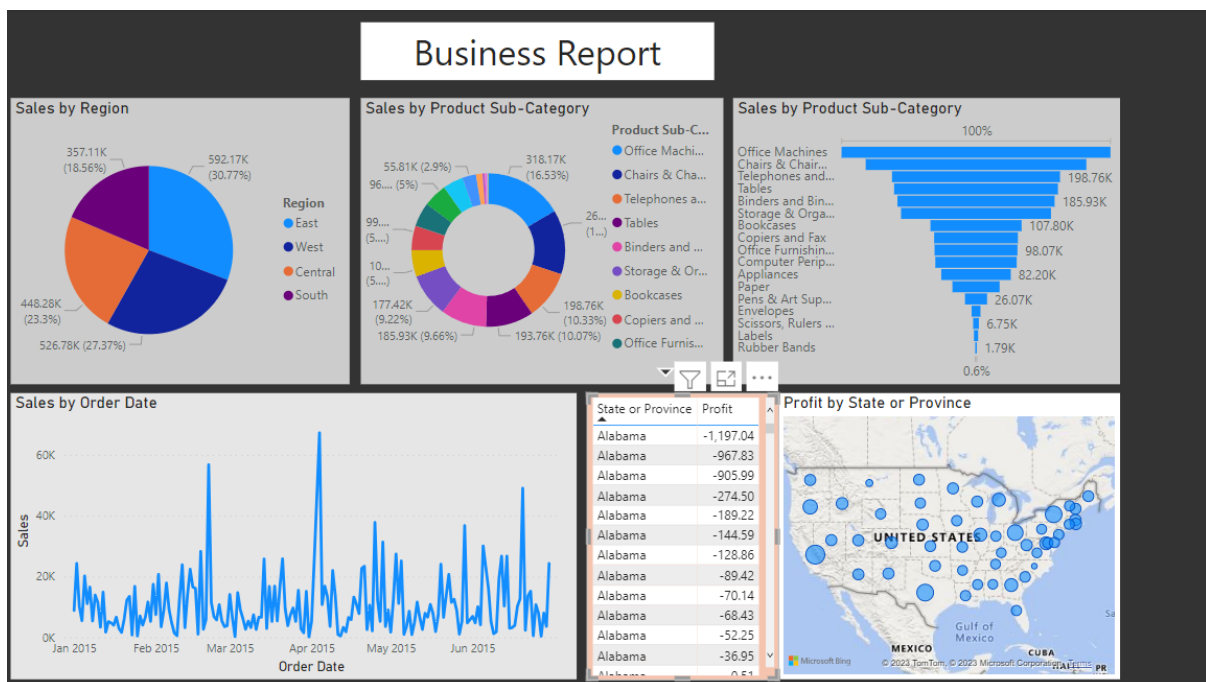
Data Analysis: Data analysis is a systematic procedure that involves the examination, refinement, transformation, and modeling of data. The ultimate objective is to unearth valuable insights, draw informed conclusions, and facilitate effective decision-making. Within this process, we employ DAX (Data Analysis Expressions) to manipulate and work with the data, enabling us to extract meaningful information.

Visualization: The visualization phase plays a pivotal role in the data analysis process. Here, we undertake the conversion of raw data into visual representations. This transformation is achieved by utilizing an array of charts, graphs, and other visualization techniques. The purpose of visualization is to present the collected data in a visually comprehensible manner, enhancing the understanding and interpretation of the data's inherent patterns and insights.

Data Visualization Flow Chart



III. RESULTS



In the above dashboard I have shown Pie chart it is representing Sales by region. Donut Chart shows Sales by product sub category. Funnel Chart shows sales by product sub category. Line chart shows sales by order date. Table is showing state wise profit. Map shows the profit by state or province. It's worth noting that the dashboard is designed for user convenience, allowing them to access comprehensive information simply by clicking on any of the visual elements contained within.

IV. CONCLUSION

Dashboards serve as invaluable tools for presenting real-time business status and monitoring organizational performance. A well-designed dashboard has the potential to streamline the decision-making process and prompt swift actions by efficiently delivering vital information to end users. In the context of this project, where a sales department grapples with a substantial influx of data daily, the need arises to transform raw data into actionable insights. To enhance data visualization and facilitate this transformation, we have seamlessly integrated Microsoft Power BI into our framework. This integration empowers us to effectively visualize and present sales data through a dynamic and user-friendly dashboard, bridging the gap between raw data and meaningful information. This strategic implementation paves the way for more informed decision-making and optimized business operations.

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