**Portfolio Project: Power BI Implementation for Dataline Bike Company**

**Abstract**

This project develops an advanced business intelligence solution using Power BI for Dataline Bike Company, a global manufacturer and retailer of bikes and accessories. The project replaces the company’s manual reporting system, which relies on Excel and PDF reports, with an interactive, automated Power BI dashboard. The report directly serves the CEO and the Marketing & Product Teams, providing actionable insights into sales performance, revenue trends, and profitability across different product categories and global markets.

**Introduction**

In today’s data-driven business environment, organizations need robust analytics solutions to make informed decisions. The Dataline Bike Company struggled with inefficiencies due to a manual reporting process, which limited their ability to gain real-time insights into key business performance metrics. This project addresses these challenges by leveraging Power BI to deliver dynamic, automated, and user-friendly reports for multiple stakeholders.

**Data Sources**

The project integrates a combination of structured datasets:

* **Sales Data (2017-2020):** Four CSV files containing order transactions.
* **Supplementary Data:** An Excel file with multiple sheets containing additional product and customer information.

**Objectives**

This project aims to achieve the following objectives:

* Provide the CEO with insights into revenue and profitability trends across different countries and product categories.
* Equip the Marketing & Product Teams with tools to analyze year-to-date sales, profit trends, and detailed transaction-level data.
* Enhance data-driven decision-making through an interactive and visually compelling Power BI dashboard.
* Develop an optimized data model that ensures accurate and efficient reporting.

**Methodology**

**Data Preparation and Transformation**

* I performed data cleaning and preprocessing using Power Query in Power BI.
* I created a date dimension table to facilitate time-based analysis.
* I developed calculated columns and DAX measures for revenue, profit, and year-over-year comparisons.

**Dashboard Design and Implementation**

The Power BI report follows a structured approach to cater to different user requirements:

**CEO-Focused Reports:**

* **Profitability by Country:** A map visualization with tooltips shows profit trends across regions.
* **Revenue Growth Over Time:** A line chart illustrates sales trends over the years.
* **Category and Subcategory Profitability:** A matrix visual with conditional formatting enhances readability.

**Marketing & Product Team Reports:**

* **Year-to-Date Sales & Profit Change:** A dashboard compares current and previous year sales.
* **Customer Analysis:** Includes top 10 customers by revenue and average profit per customer trends.
* **Category Performance Analysis:** A line chart tracks revenue and profit margin development over time.
* **Detailed Drill-through Pages:** Transaction-level reports display order details, revenue, profit, product, and country information.

**Results and Findings**

The Power BI dashboard significantly improved data accessibility and decision-making efficiency.

* Business leaders identified profit and revenue trends, highlighting high-performing and underperforming product categories.
* The CEO gained immediate visibility into country-wise performance through interactive tooltips.
* The Marketing & Product Teams leveraged drill-through features to analyze customer behavior and sales performance.
* The data model and DAX calculations ensured accuracy and flexibility, supporting both high-level and granular insights.

**Conclusion**

This project successfully transitioned Dataline Bike Company from a manual reporting process to an automated, interactive Power BI solution. The implementation delivered real-time insights, improved efficiency, and enhanced strategic decision-making for key stakeholders. Future improvements may include integration with live data sources, further automation of ETL processes, and additional predictive analytics capabilities.