

## **Financial Dashboard – Data Analysis Logic, Insights, and Assumptions**

### **1. Objective**

The objective of this project was to design an interactive Financial Dashboard in Power BI to monitor the company's financial performance, compare actual performance against budget, and analyze cash flow, profitability, and working capital trends. The dashboard enables decision-makers to evaluate key financial KPIs and identify business risks and opportunities.

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### **2. Data Understanding & EDA (Exploratory Data Analysis)**

The dataset consisted of five main components:

- Monthly P&L Data (Revenue, COGS, Gross Profit, Opex, EBITDA)
- Cash Flow Data (Cash Inflows, Cash Outflows, Net Cash Flow)
- Sales Data (Product/Service, Region, Date)
- Receivables and Payables Aging
- Budget vs Actual Data

#### **Data Cleaning & Validation Steps:**

- Checked for missing and null values – No major missing values found in critical financial columns.
- Verified date format and created a proper Date hierarchy (Year, Quarter, Month).
- Ensured numeric columns such as Revenue, EBITDA, and Cash Flow were correctly formatted.
- Validated financial logic:

Gross Profit = Revenue – COGS

Net Cash Flow = Cash Inflows – Cash Outflows

- Removed duplicate records and ensured consistency across tables.

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### **3. Data Modeling Logic**

A star schema approach was used:

- Date table connected to all financial tables using Date column.
- Sales table linked using Product/Service and Region.
- Budget table connected using Date for variance analysis.

This structure ensured accurate aggregation and filtering across visuals.

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#### **4. KPI Calculation Logic**

The following key performance indicators were calculated using DAX measures:

- Total Revenue = Sum of Revenue
- Gross Margin % = Gross Profit / Revenue
- EBITDA % = EBITDA / Revenue
- Net Cash Flow = Cash Inflows – Cash Outflows
- Budget Variance % = (Actual – Budget) / Budget

These KPIs help evaluate profitability, operational efficiency, and liquidity.

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#### **5. Key Insights Identified**

Based on analysis of the dataset:

- Revenue showed a consistent upward trend over the time period, indicating business growth.
  - Gross Margin and EBITDA margins remained stable, suggesting efficient cost control.
  - Certain months showed negative cash flow due to higher cash outflows, highlighting liquidity risk periods.
  - Budget vs Actual analysis revealed variance in multiple months, indicating areas of underperformance.
  - Receivables aging showed delays in collections, which may impact future cash flow.
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#### **6. Dashboard Design Logic**

The dashboard was designed in three sections:

**Top Section:**

KPI cards showing Revenue, Gross Margin %, EBITDA %, and Net Cash Flow.

**Middle Section:**

Revenue trend and Budget vs Actual comparison for performance monitoring.

**Bottom Section:**

Cash Flow Waterfall and Receivables Aging to analyze liquidity and risk.

Interactive slicers were added for Year, Quarter, Month, Region, and Product to enable dynamic analysis.

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## **7. Assumptions**

- All financial values are assumed to be in the same currency.
  - Budget values represent management targets.
  - No inflation or currency adjustment was applied.
  - Net Cash Flow was calculated using inflows and outflows provided.
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## **8. Conclusion**

The dashboard provides a comprehensive view of financial performance, enabling stakeholders to monitor revenue growth, profitability, budget performance, and cash flow health. It supports data-driven decision-making and helps identify financial risks and improvement areas.

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**Tool Used:** Power BI