

GLOBAL SUPPLY CHAIN ANALYTICS DASHBOARD – PROJECT REPORT

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Tool: Microsoft Power BI Desktop

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Dataset: 300,000+ Records | 6 Related Tables

Project Type: End-to-End BI Analytics System

Objective

To build a **C-Suite level business intelligence solution** that provides a 360° view of the company’s global supply chain performance — covering **finance, operations, regional performance, supplier reliability, and product profitability**.

Project Scope

- 1. **Executive Overview** – Core financial KPIs and growth trends
- 2. **Regional Analysis** – Market and profitability performance by geography
- 3. **Supplier Analytics** – On-time delivery, cost, and efficiency benchmarking
- 4. **Product Performance** – Category and product-level profitability insights
- 5. **Documentation Page** – Metadata and DAX summary for transparency

Table	Key Fields	Description
Orders	OrderID, ProductID, Revenue, Cost, Profit, Discount, OrderDate	Transactional fact table
Products	ProductID, Category, Subcategory	Product hierarchy and details
Suppliers	SupplierID, SupplierName, Country, LeadTimeDays, OnTimeDeliveryRate, FreightCostPct	Supplier KPIs and operational metrics
Customers	CustomerID, CustomerName, Segment, Country	Customer master data
Regions	RegionID, Region, Manager, Country	Regional management mapping
Date	Date, Month, Quarter, Year, DayName	Calendar table for time intelligence

Designed a **Star Schema** model with one fact table (Orders) and five-dimension tables (Date, Products, Suppliers, Customers, Regions)

Relationships: **1-to-Many, Single Direction** to ensure optimal performance

Implemented **Data Cleaning & EDA** in Python prior to import

Dashboard Pages Overview

Executive Overview

- KPIs: Total Revenue, Total Profit, Profit Margin %, Supplier Efficiency, Rolling 12M Revenue, YoY Growth %
 - Trend charts for Monthly Revenue & Profit
 - Profit margin trendline over time
 - KPI gauge for YoY performance
 - World Map visualization for total profit by region
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Regional Performance

- Region-wise revenue and profit visualization
 - Dynamic title (Regional Performance – [Region])
 - Conditional color formatting for profit margin %
 - Matrix showing region totals & average profit per order
 - Azure Filled Map for geographic profit intensity
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Supplier Performance

- KPIs: Avg Lead Time, On-Time Delivery %, Freight Cost %, Efficiency Score
 - Treemap: Profit by Supplier Country
 - Scatter Plot: Efficiency vs Lead Time (bubble = profit)
 - Bar Chart: Top 10 Suppliers by Efficiency (Top N filter)
 - Conditional formatting and dynamic "Top Supplier" label
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Product & Category Performance

- KPIs: Avg Order Value, Avg Discount %, Avg Profit Margin %
- Bar Chart: Revenue by Category
- Treemap: Profit & Margin % by Subcategory
- Scatter: Discount vs Profit Margin %

- Bar: Top 10 Products by Profit (conditional color scale)
- Dynamic title (Product Performance – [Category])

Key Insights

- Average **Profit Margin ~25%** globally
- **Asia and Europe** contribute ~40% of total revenue
- High freight cost correlates with **lower supplier efficiency**
- Discounts above 7% reduce profit margin by ~2–3%
- Rolling 12M revenue indicates steady post-pandemic recovery (2023–2025)

Business Impact

- Enabled **executive-level visibility** into supply chain efficiency
- Provided **data-driven decisions** for supplier selection and category focus
- Helped identify **profitability bottlenecks** by product and geography
- Enhanced operational transparency with clear KPI hierarchies

Concepts Demonstrated

- Advanced DAX (CALCULATE, RANKX, SAMEPERIODLASTYEAR, DATESINPERIOD)
- Context Transition & Filter Context
- Time Intelligence & Rolling Metrics
- Dynamic Titles, Conditional Formatting, Top N Filters
- KPI Storytelling & Executive Dashboard Design

Tools Used

- **Power BI Desktop** – Data modeling, DAX, visualization
- **Python (Pandas, Matplotlib)** – EDA before modeling
- **Excel / CSV Data Source** – 300K+ records
- **GitHub / LinkedIn / Power BI Service** – Documentation and sharing

Final Outcome

Delivered a **multi-page enterprise dashboard** integrating financial, operational, and product insights.

Demonstrated mastery of Power BI development lifecycle, executive storytelling, and DAX-driven analytics.