رواد مصر الرقمية

Ministry of Communications and Information Technology

Supply Chain
Analysis & Visualization
Report

Data Analytics

Microsoft Power BI Specialist Track

Part 1

Project Planning & Management

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Outline

1. Overview of the project
2. Project Objectives
3. Project Scope
4. Project Timeline
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Overview of the Project

This report gives a complete picture of how our supply chain is performing. We've combined data from every step—from buying parts and making products to storing inventory and delivering to customers.

Our main goal is to find what's slowing us down, and how we can improve.

We looked at key numbers like:

- How long it takes to get materials from suppliers.
- How quickly we sell through our inventory.
- The cost to make and ship our products.
- How many products are defective.

By putting all this information on a 6-page report, we make it easy to:

- See the entire journey of a product, from supplier to customer.
- Check which product types, suppliers and shipping companies are performing best.
- Monitor product quality and how well we're managing our stock.
- Understand what customers are buying.

Project Objectives

This project aims to provide a comprehensive 6-page report that evaluates and visualizes the overall performance of the supply chain using Microsoft Power BI. The report focuses on uncovering inefficiencies and identifying opportunities for improvement across key operational areas. The specific objectives are to:

- **Assess Supply Chain Efficiency**

  Evaluate the effectiveness of inventory management through metrics like stock levels, order quantities, and inventory turnover.
- **Analyze Supplier Performance**

  Identify suppliers with the highest lead times, production volumes, and quality performance (defect and inspection results).
- **Optimize Transportation Operations**

  Compare transportation modes and carriers based on average shipping time, cost, and defect rates to identify the most efficient logistics options.
- **Evaluate Product and Production Insights**

  Understand the relationship between manufacturing costs, product pricing, and defect rates across product types and SKUs.
- **Understand Customer Demand Patterns**

  Analyze product sales and revenue by customer demographics and locations to align inventory with market needs.

Project Scope

In Scope:

- Analysis of sales, costs, supplier performance, shipping, and quality metrics.
- Building Power BI dashboards for monitoring KPIs.
- Preparing datasets and reports to support decision-making.

Out of Scope:

- Direct negotiations with suppliers and carriers.
- Operational changes in manufacturing plants or logistics execution.

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Project Timeline

Week 1 - Project Planning and timeline

- Identifying the main objectives of the project.
- Develop Project schedule.

Week 2 - Data Understanding

- Identifying key business questions.
- Explore dataset columns and understand them.
- Starting to work at the final report.

Week 3 - Data Cleaning and Modeling

- Clean and preprocess data in Power Query.
- Handle missing or duplicate values.
- Format and standardize data fields.
- Build relationships between tables.
- Design star schema model.

Week 4 - Data Analysis Expressions (DAX)

- Create calculated columns, tables, and DAX measures.

Week 5 - Report Layout Design (Mockup)

- Create a visual mockup of the 6-page Power BI report layout (decide what each page will show).
- Define page structure — headers, titles, KPIs, and visual placements.
- Choose color palette, fonts, and formatting consistent with Power BI design best practices.
- Draft navigation buttons (Home, Back, Next Page) and page flow between visuals.

Week 6 - Visualization in Power BI

- Develop visuals and dashboards.
- Format 6-page report with homepage.
- Review results and insights.
- Finalize report design.

Deliverables

The project will produce a set of outputs that demonstrate the successful completion of the Supply Chain Analysis and Visualization Report.

1. **Comprehensive 6-Page Power BI Report**

   A dashboard that visualizes overall supply chain performance, including supply chain operations, performance overview, product performance, supplier and manufacturing insights, transportation overview and customer demand trends in addition to the visual mockups of the report.

2. **Power BI Data Model**

   A complete data model designed using the star schema, including relationships between tables, calculated columns, and DAX measures necessary for generating accurate insights.

3. **Project Documentation Report**

   A detailed written report outlining the project's objectives, methodology, data preparation steps, modeling approach, analysis, and insights. This serves as a supporting document to the Power BI dashboard.

4. **Insights and Recommendations Summary**

   A concise summary highlighting the key findings derived from the analysis.

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Task assignment and Roles

Team member	Role & Tasks
Rawnaa	
Nancy	
Hana	
Yasmin	
Rowaa	