IDENTIFYING GROWTH OPPORTUNITIES AND OPERATIONAL GAPS AT PLANT CO.
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Business Problem

Plant Co., a company that sells plant-related products, has been experiencing stagnating revenue growth despite expanding its product offerings and customer base. Executives suspect operational inefficiencies and missed sales opportunities but lack clarity on what's driving performance at a granular level.

To address this, the company requires a comprehensive performance report and a dynamic, interactive dashboard that provide actionable insights into:

- Underperforming and high-performing segments across products, locations, and customer accounts.
- Operational inefficiencies such as pricing inconsistencies, and elevated COGS.
- Strategic growth opportunities with potential for further investment by product, account, and region.

Key Business Questions

Sales & Performance
- Which products or product families generate the most and least revenue and margin?
- Which geographic regions (countries, postal codes) show the highest and lowest sales volume?
- Are there customer accounts consistently purchasing below average or not reordering?

Profitability & Operational Efficiency
- Where are gross margins low due to high COGS or suboptimal pricing?
- Are there pricing discrepancies for the same product across accounts or regions?
- Are certain product types or sizes more price-sensitive than others?

Customer & Market Insights
- Are there high-potential geographic clusters based on sales density and proximity?
- What is the lifetime value (LTV) and purchasing behavior of different account types?
- Which product categories are growing fastest over time?

Operational Metrics
- How does product mix vary by account, and how does this impact profitability?
- Are some products being consistently overstocked or understocked based on sales patterns?

Dataset Overview

The dataset includes the following variables:

- Accounts
  - Account ID
  - Master ID
  - Account (Client Name)
  - Country/Country Code
  - Postal Code
  - Street Name/Number
- Products
  - Product Name
  - Product Name ID
  - Product Family
    - Product Family ID
    - Product Group
    - Product Group ID
    - Product Size
    - Product Type
- Sales Data: January 1, 2022 – April 14, 2024
  - Sales Amount (USD)
  - Quantity Sold
  - Price (USD)
  - COGS (USD)
  - Date of Closed Sale

VISUALIZATION CHOICES AND DASHBOARD NAVIGATION

The dashboard compares data from the selected year with the prior year to identify areas of weak operational performance and potential growth opportunities. All visualizations are fully interactive; any selection made in one chart automatically updates the others.

Beneath the project title banner, there is a key metrics section.

- On the left, the dashboard title dynamically updates based on the selected year and business performance metric (Gross Profit, Quantity, or Sales/Revenue).
- To its right, there is a year selector dropdown and a button slicer for choosing the business performance metric. Both controls update all visualizations across the dashboard.
- On the far right, four KPI cards display:
    1. Year-to-date (YTD) value,
    2. Year-to-date vs. prior-year-to-date (YTD vs PYTD) variance,
    3. Prior-year-to-date (PYTD) value,
    4. Gross profit percentage (GP%) indicator.

At the bottom left, a stacked column chart shows year-to-date versus prior-year-to-date changes in the selected business metric (Gross Profit, Quantity, or Sales/Revenue) by Product Size.

To the right of the stacked column chart, a waterfall chart displays year-to-date versus prior-year-to-date changes in the selected business metric (Gross Profit, Quantity, or Sales/Revenue) by Country, with drill-down capability to explore Customer and Product details.

On the bottom right, two charts provide deeper profitability insights:

- The line and stacked column chart displays year-to-date values of the selected business performance metric by Quarter, with columns segmented by Product Type and a drill-down option to view monthly details. The line represents the prior-year-to-date values, enabling quick comparison between YTD and PYTD performance.

- Below it, the scatter plot displays the Account Profitability Segmentation, where each dot represents a client account. The Y-axis shows the Gross Profit Percentage (GP%), and the X-axis shows the selected business metric (Gross Profit, Quantity, or Sales/Revenue). This visualization segments accounts according to profitability and performance relative to the averages shown by the red reference lines.

ANALYSIS AND FINDINGS

Plant Co. currently offers around 1,000 different plants across three types—indoor, outdoor, and landscape—and three sizes: small, medium, and large. The company serves 620 clients across 50 countries on five continents. As of the data collection date, April 14, 2024, sales had been completed with clients in 36 countries.
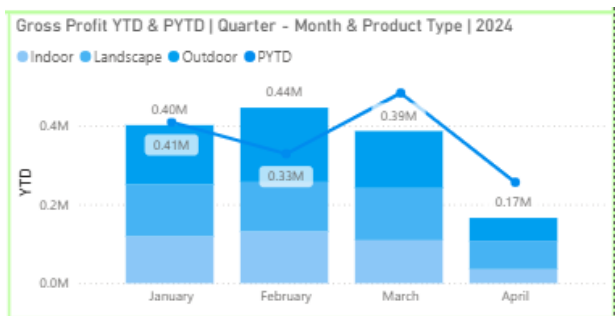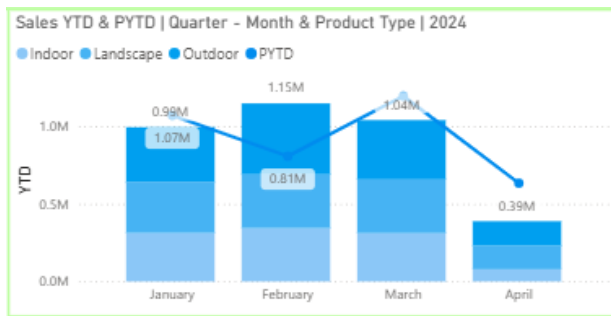
Data Limitations

This analysis is limited by the lack of sufficient historical sales and customer data required to calculate customer lifetime value (LTV), assess purchasing behavior by account type, analyze the variation of product mix between accounts, and determine whether certain product types or sizes are more price-sensitive than others. Without complete records of customer tenure, transaction frequency, and total spend over time, it is not possible to accurately estimate LTV or identify meaningful behavioral patterns across account segments.
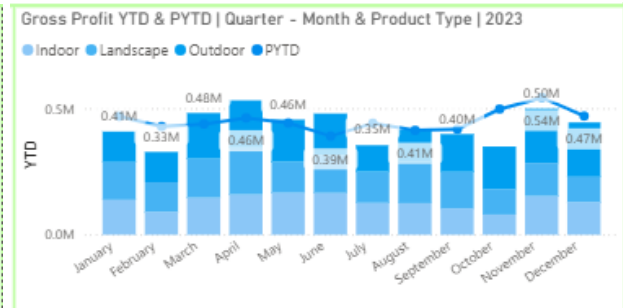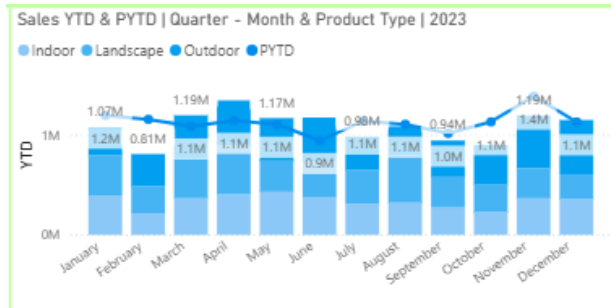
This analysis is also limited by the absence of detailed inventory data, including stock levels, reorder points, and lead times. Without this information, it is not possible to directly assess whether products are consistently overstocked or understocked. The insights derived from sales patterns alone can indicate demand variability or slow-moving items, but they do not confirm inventory imbalances.

Sales & Performance

While sales across plant categories remain relatively balanced, subtle but consistent shifts are emerging in 2024. Outdoor plants have taken a modest but clear lead, now accounting for 38% of total sales, up from a historically even distribution among outdoor, landscape, and indoor plants. Landscape plants hold steady at 33%, while indoor plants have slightly declined to 29%, suggesting a possible change in customer preference toward outdoor and garden-focused purchases.

By size, large plants (38%) are outperforming smaller ones. February stood out as the only month where both revenue and gross profit exceeded last year's figures, largely driven by strong outdoor plant sales. Although these differences aren't dramatic, they point toward a slow but steady shift in demand patterns that may become more pronounced in the remaining months of the year.

Sales YTD & PYTD | Quarter – Month & Product Type | 2023

Gross Profit YTD & PYTD | Quarter – Month & Product Type | 2023

Analyzing sales volume by country, China is the top buyer, with 51.21K units sold, more than four times the volume of the second-place country, Poland, which recorded 12.08K units. From second place onward, the decline in sales volume is relatively steady.

The countries with the lowest sales volumes are Australia (53.26 units), Nepal (90.68 units), and Malaysia (98.96 units).

Examining the distribution of countries in both the top and bottom segments, no clear geographical pattern emerges. The highest and lowest performing clients are spread across different continents, indicating that top or low repeat purchases are not concentrated in any specific region.

Without detailed inventory data, as previously mentioned, it is not possible to assess or confirm the impact of geographical barriers on sales patterns.

Quantity YTD | Country – Customer – Product

Quantity YTD | Country – Customer – Product
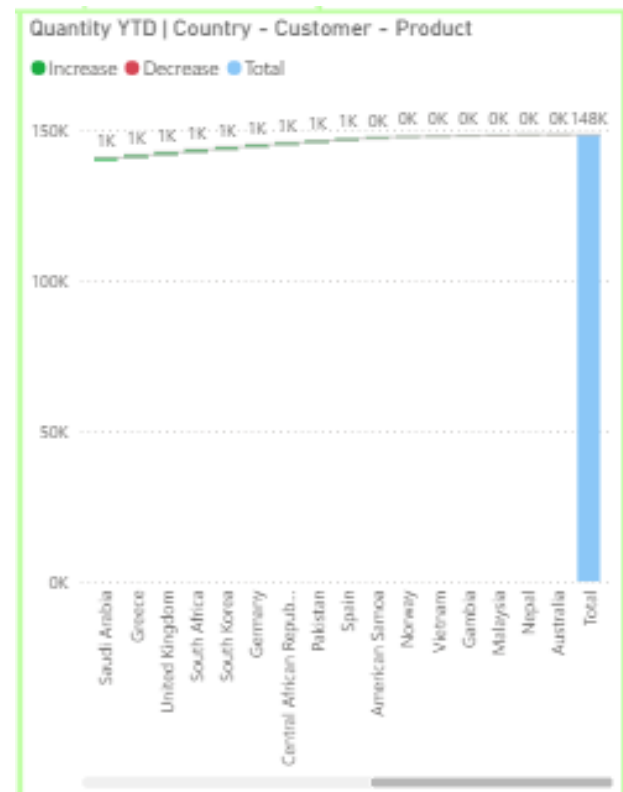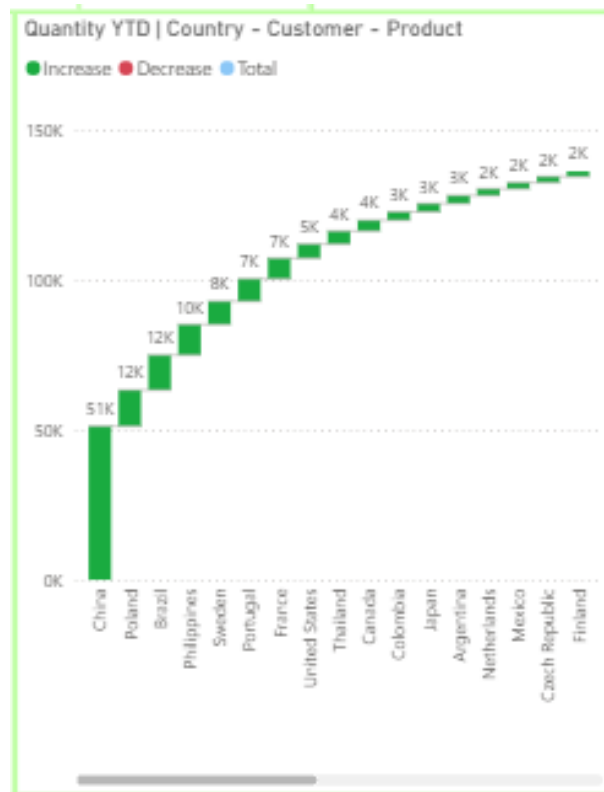
Market Insights

Given the company's global presence, three main geographic clusters emerge based on proximity: Europe, Asia, and Africa. Africa accounts for only about 3% of sales and therefore shows limited growth potential.

Asia and the Middle East form the largest and most diverse cluster, contributing approximately 50% of sales and 50% of client accounts. This region demonstrates both high current sales density and significant growth potential, particularly across emerging markets in South and West Asia.

Europe has a high concentration of active client accounts, around 27%, with consistent sales performance across multiple countries, representing roughly 30% of total sales.

These clusters reflect natural groupings of markets with shared logistical routes, as well as cultural and economic proximity, making them strategic targets for regional expansion and tailored marketing strategies.

Accounts performance

The following three scatter charts illustrate the distribution of clients based on the gross profit percentage from their purchases and their corresponding revenue, sales volume, or gross profit. In each chart, the red lines indicate the average values for the two measures displayed.

A substantial number of accounts fall below both average lines. Clients in the bottom-left quadrant represent the least profitable and lowest-contributing segment. They generate low sales volume, limiting their total contribution to revenue, and deliver low profit margins, meaning the company earns less profit per sale.

This segment may include small clients with limited purchasing capacity, products sold at significant discounts, higher cost of goods sold (COGS), inefficient pricing or unfavorable contract terms, or clients operating in regions or sectors with weaker market conditions.

Account Profitability Segmentation | GP% and Gross Profit
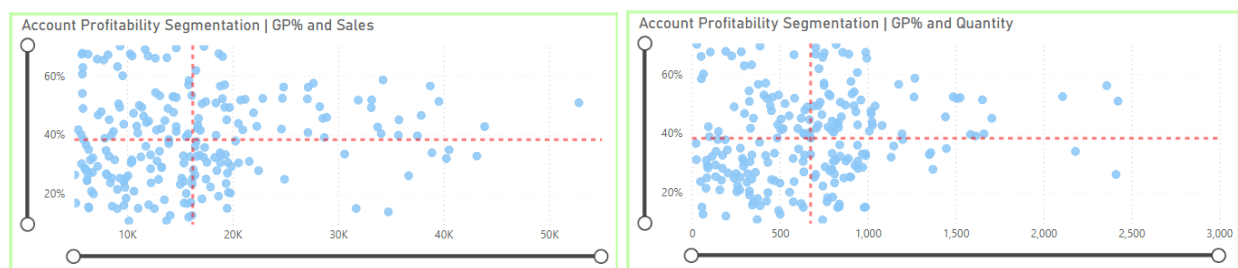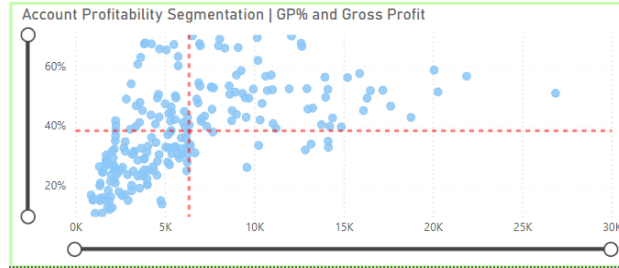
Profitability & Operational Efficiency

The cost of goods sold (COGS) varies across the same product and country, but differences among suppliers and their prices are to be expected in a company with global operations.

Gross profit margins also show significant variation, even for the same product and country, ranging from 10.1% to 70%. This discrepancy may be due to different discounts applied to each client, as no consistent relationship between COGS and profit margin is observed.

Consequently, the price of the same product differs between accounts and even within the same account, supporting the idea that varying discounts or pricing policies are being applied. These inconsistencies in pricing may be affecting sales, given the lack of a clear pricing strategy, clients might be discouraged from making repeat purchases and maintaining a long-term commercial relationship.

MARKETING RECOMMENDATIONS

Based on the analysis of sales performance, gross profit margins, and account profitability, the following recommendations are proposed to improve overall business efficiency and profitability:

Product Portfolio Optimization

Evaluate the possibility of discontinuing products with consistently low sales volumes and weak profitability.

Reducing underperforming items would lead to a leaner product portfolio, which can decrease inventory management complexity, minimize supplier dependencies, and lower raw material and operational costs.

Market and Geographic Focus

Assess the profitability of each country in which the company operates. Countries with persistently low profit margins or high marketing and logistical barriers may be generating unnecessary costs and diverting resources from more profitable markets.

Consider reducing or discontinuing sales efforts in those regions to redirect focus toward markets where sustainable, long-term relationships can be established and marketing activities are more cost-effective.

Client Portfolio Optimization

Use the Account Profitability Segmentation chart in the dashboard to evaluate individual client performance and identify areas for improvement. Specifically:
- Review pricing and discount policies for clients positioned below both average lines (low revenue/quantity/gross profit and low gross profit percentage).
- Evaluate cost-to-serve to ensure that servicing these clients does not erode overall profitability.
- Identify upselling and cross-selling opportunities for accounts with potential growth, aiming to move them toward higher revenue and margin segments.
- Consider deprioritizing or discontinuing accounts that consistently deliver low profitability and lack strategic importance.

Sales Team Performance and Feedback

Assess the performance of the sales team, as they play a critical role in acquiring new clients and maintaining long-term relationships.

At the same time, actively gather and analyze their feedback, as sales personnel have direct insight into client satisfaction, market needs, and emerging opportunities. Incorporating their suggestions, when feasible and profitable, can strengthen customer retention and operational alignment.

Pricing and Discount Policy Review

No clear pattern in pricing or discount structures was identified in the analysis, suggesting inconsistency in their application.

A comprehensive review of pricing and discount policies is recommended to establish a standardized framework that supports profitability, prevents margin erosion, and ensures fairness and transparency across customer segments.

Gross Profit Margin Assessment

The analysis also revealed no clear pattern between gross profit percentage over the cost of goods sold (COGS), indicating potential inefficiencies in pricing strategy.

It is recommended to review the current gross profit percentage targets to ensure that all operational and overhead costs are adequately covered, preventing potential underpricing and financial losses.