



Presented by Omolara Buhari

**Data analytics EU –class B-Cohort
25-04**

**Project Name: NovaMed Solutions:
Sales Performance Analysis and
Reporting**

OUTLINE

- Introduction
- Aim of the Project
- Business Problem
- Approach - Analysis of NovaMed's performance
- Dashboard: Top / Bottom Analysis(1) and Customer Analysis(2)
- Key Insights
- Recommendations
- Conclusion

Introduction

NovaMed Solutions is a leading pharmaceutical distributor supplying essential medications to a diverse healthcare sector. Currently, NovaMed is facing challenges in optimizing sales performance, efficiently managing inventory, and identifying key market opportunities.

The company has collected detailed sales data, covering revenue, profit margins, drug sales performance, and customer demographics. This dataset provides a valuable opportunity for in-depth analysis, trend identification, and data-driven decision-making to enhance business strategies and streamline operations.

Aim Of The Project

Project Objective: Provide support to the NovaMed company in making smart, data-driven decisions through effective data analysis and visualization to enhance sales monitoring and customer insights.

Key Objectives:

- **Data Cleaning:** Prepare clean datasets, accurate datasets for reliable analysis.
- **Data Analysis:** Use Power BI Tools such as Power BI desktop, Visualization pane, Power Query editor, DAX, and Data modeling to uncover trends and patterns.
- **Dashboarding:** Design a clear visual dashboard using Filters, a visualization graph, and slicers to present insights.
- **Business Insights:** Deliver actionable recommendations based on data findings to guide strategic decisions.

Business Problem

- Inaccurate demand forecasting and inefficient inventory management processes
- Challenges in pinpointing best-selling and underperforming products and customer segments
- Insufficient understanding of customer purchasing patterns and demographic profiles.
- Absence of visual, data-driven strategies to enhance operational efficiency and seize market opportunities

Data Analysis Approach

- Data was imported into Power BI, transformed, and loaded into Power BI Desktop to visualize the interplay of activities in various customer segments, countries, and products(Drugs)
- Top / Bottom Performance Analysis was conducted using interactive dashboards. The key sales metrics—revenue, profit, and cost of goods sold (COGS)—with month-over-month comparisons were calculated on the data sets and included on the dashboard. Top-performing and underperforming drugs and customers based on dynamic, filterable measures to support data-driven decisions were included on the dashboard
- Customer Analysis was used to explore customer demographics, revenue distribution by buyer type, and purchasing patterns. Geographic sales maps were included to visualize regional performance, helping identify key revenue sources and potential market opportunities.

Visual Analysis of NovaMed's Data (including Dashboards)

1. Top / Bottom Analysis
2. Customer Analysis

NOVOMED DASHBOARD

Top / Bottom Analysis

Month

All

Drug Name

All

Customer ID

All

82%

Profit Margin

\$10M

Total COGS Sold

\$46M

Total Profit

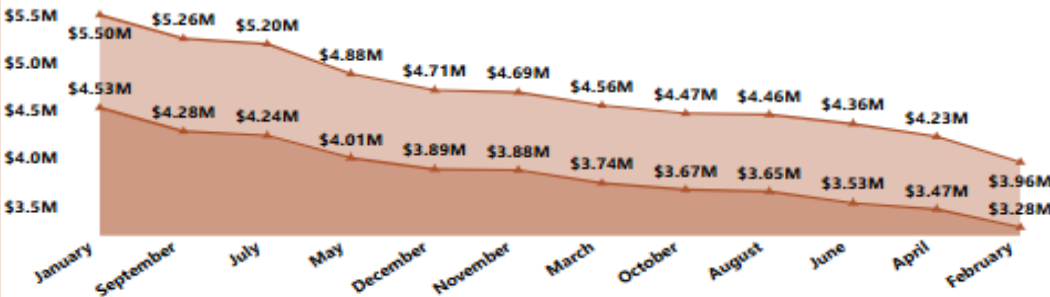
213K

Total Quantity Sold

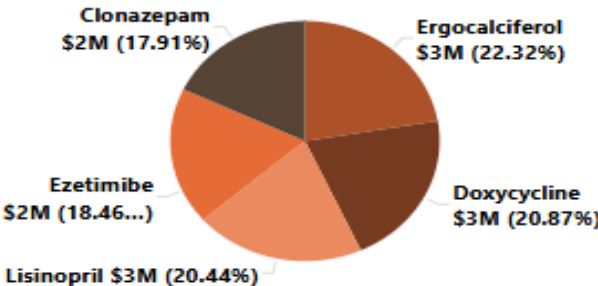
\$56M

Total Revenue

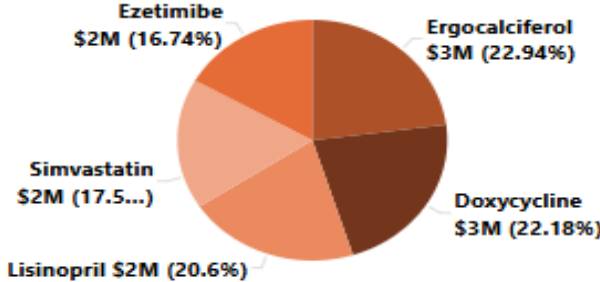
Month On Month Sales Performance



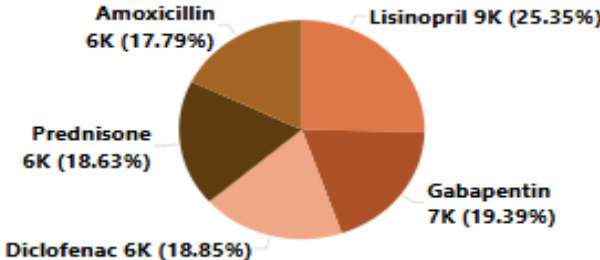
Top 5 Drugs By Total Revenue



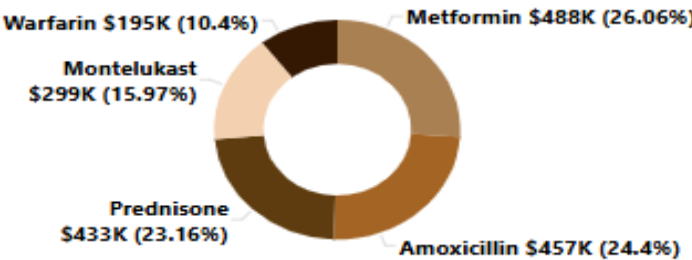
Top 5 Drug By Total Profit



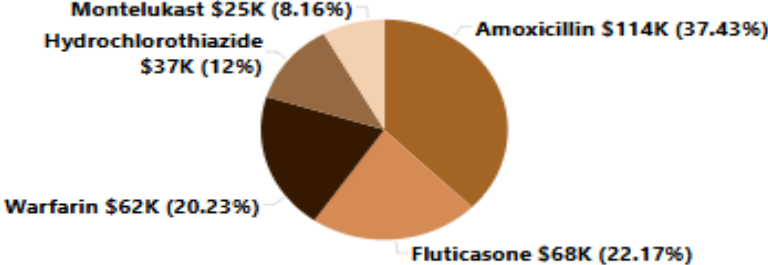
Top 5 Drug By Total Quantity Sold



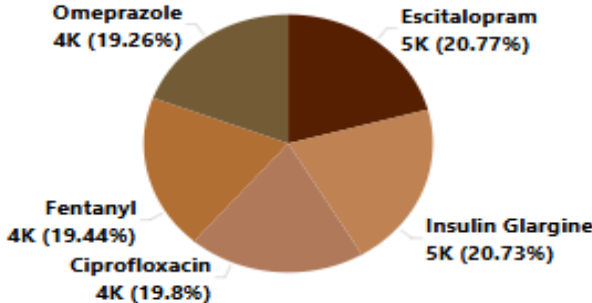
Bottom 5 Drugs By Total Revenue



Bottom 5 Drugs By Total Profit



Bottom 5 Drugs By Total Quantity Sold



Top Performing Customers Based On Revenue

191	32	102	181
Bob \$555K	David \$478K		
196	81		
		David \$441K	David \$441K
John \$538K	John \$466K	80	176
115	6		
John \$480K	John \$445K	David \$432K	John \$430K

Bottom Performing Customers Based on Total Revenue

87	47	110	105
Bob \$152K	John \$147K		
63	21		
		Alice \$141K	Bob \$127K
Alice \$152K	Carol \$145K	200	90
167	117		
David \$147K	Carol \$143K	Jane \$122K	Alice \$76K

NOVOMED DASHBOARD

Customer Analysis

Age Category

All

Gender

All

Customer Segments

All

Country

All

82%

Profit Margin

\$10M

Total COGS Sold

\$46M

Total Profit

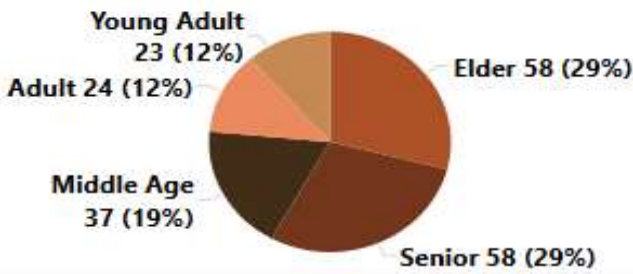
213K

Total Quantity Sold

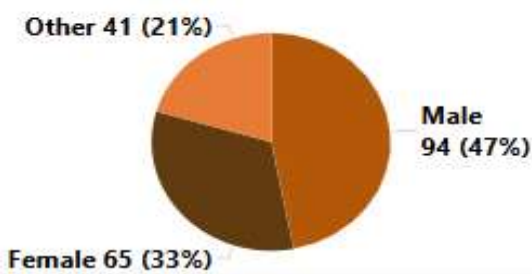
\$56M

Total Revenue

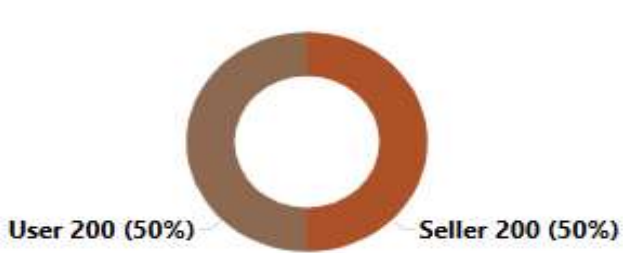
Analysis of Customer Distribution By Age Category



Analysis of Customer Distribution By Gender



Analysis Of Customer Distribution By Buyer Type



Average Revenue By Customer Segments



Revenue By Gender And Age Category

Age Category	Female	Male	Other	Total
Adult	\$1,128,548	\$3,658,838	\$1,697,485	\$6,484,870
Elder	\$5,200,531	\$7,343,106	\$4,121,754	\$16,665,391
Middle Age	\$4,443,382	\$4,157,358	\$1,736,218	\$10,336,957
Senior	\$6,105,653	\$7,991,231	\$2,056,952	\$16,153,836
Young Adult	\$1,292,893	\$2,973,108	\$2,378,521	\$6,644,521
Total	\$18,171,006	\$26,123,641	\$11,990,929	\$56,285,576

Revenue Breakdown By Country and Customer Type



Revenue For Top Top Two Countries



Key Insights

Top/Bottom Analysis

- Top KPIs (Key Performance Indicators):
 - Profit Margin (82%) – A High margin indicates strong profitability
 - Total Cost of Goods Sold (\$10M) – How much it costs to produce or buy the drugs
 - Total Profit (\$46M) – Revenue minus cost
 - Total Quantity Sold (213K) – Total units of all drugs sold
- Total Revenue (\$56M) – Total income from sales

Key Insights

Top/Bottom Analysis

- **Overall Sales Trends & Profitability**

- Month by Month Sales Performance:

Overall revenue & profit presented at their lowest in February (\$3.3M)(winter months), with January(**\$5.5M**) showing the highest revenue and profit

- Revenue by Country

Canada is bringing in the highest revenue, but in contrast, the United States is bringing in the lowest.

Key Insights

Top / Bottom Analysis Contd.

Top Selling & Underperforming Drugs

The 5 Top Drugs by total profit , by total revenue, and quantity sold

By Total Revenue:

Top revenue generators like **Ergocalciferol**, **Doxycycline**, etc.

Shows both value and percentage contribution.

By Total Profit:

Drugs like **Ergocalciferol**, **Doxycycline**, and **Simvastatin** bring the highest profit, which may differ from top revenue (due to cost differences).

By Total Quantity Sold:

Lisinopril leads with 9K units sold (25.35% of total volume).

This shows what sells most, regardless of price.

The 5 Underperforming drugs by total Profit, by total Revenue, and total quantity sold

Drugs like **Warfarin**, **Montelukast**, **Fentanyl** , **Prednisone** , and **Amoxicillin** are consistently underperforming in total profit or revenue, and in Quantity sold Indicates low pricing, low demand, or high production cost.

Key Insights

Top / Bottom Analysis Contd.

Top performing Customers:

Our top customer like **Bob (\$555K)** and **John (\$480K)** are top contributors.

Underperforming Customers

Customers such as **Alice(\$141K,,)**, **Carol (\$141K,)** and **Jane (\$152K)** showed low engagement.

Key Insights

Customer Analysis

1. High-Engagement Segments

Top Customer Segment: Preferred Customers yield the highest average revenue (\$20.3M).

2. Low Engagement Segments:

In the customer type, frequent buyers had the least revenue of the top performers, indicating that they were likely buying cheaper-priced drugs.

Key Insights

Customer Analysis Contd...

3. Demography: Age & Gender Trends

Purchases were concentrated among certain age brackets, with notable gender-based preferences in drug types. Elderly and senior customers are high-value groups in terms of both number and revenue. Male customers contribute nearly half of the total revenue.

4. Demography: Buyer Types

Equal split between Users and Sellers (50% each). Pharmacies emerged as the most profitable buyer type, followed by hospitals

Key Insights

Customer Analysis Contd...

Countries: Top Markets

Two countries, Canada and Australia, are identified as the two top-performing countries contributing the largest to sales. Other mapped insights revealed untapped regions.

Countries: Regional Gaps

The United States, including North America, and European countries such as France and the United Kingdom, performed the lowest by revenue contribution across the different customer segments and their purchasing behaviour. These low-performing regions are flagged for further exploration and/or targeted campaigns.

Recommendation

Focused Production:

Novamed currently produces 39 drugs. Refine its current strategy to optimize the sales of higher-priced drugs with low COGS and high profits like Lisinopril, Doxycycline, Ciprofloxacin, Monetasone to benefit more from manufacturing fewer of the cheaper drugs like Montelukast, Hydrochlorothiazide, Amoxicillin with low sales prices, high COGS and low profits even with high volume sales.

Targeted Marketing Campaigns/Incentives:

Design targeted marketing campaigns and/or incentives to retain new customers currently contributing about 24m in the six geographical regions with nearly half of that (11m) contributed from Canada.

Conclusion

The NOVOMED Sales dashboard reveals strong profitability and highlights clear product and customer segments for strategic focus. By leveraging this data, NOVOMED can enhance sales efficiency, reduce losses from underperforming products, and strengthen customer value.

The NOVOMED Customer Dashboard highlights a well-performing business with clear high-value customer groups. With Elder and Senior customers as top revenue drivers, and males forming nearly half of the customer base, NOVOMED can refine its marketing, sales, and engagement strategies to enhance profitability. Geographic and customer segment insights offer clear paths for strategic expansion and deeper market penetration.

By using these insights effectively, NOVOMED can sustain its impressive 82% profit margin and strengthen its market leadership in the pharmaceutical sector.

Thank you

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- **PowerBI Capstone Project:: NovaMed Solutions: Sales Performance Analysis and Reporting**