

GLOBAL MART

Sales Performance Analysis

CRISP-DM Capstone Project

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Introduction & Problem Statement

About GlobalMart

GlobalMart is a multinational retail company specializing in three product categories:

- Furniture
- Office Supplies
- Technology

Operations span multiple regions across the United States.

Problem Statement

GlobalMart needs to optimize its sales performance and profitability through data-driven decisions. Currently, there is no clear visibility into:

- Which regions are underperforming
- Which products drive the most profit
- Seasonal trends affecting sales

Project Goal

As a data analyst, my task is to explore, analyze, and visualize GlobalMart's sales data to identify growth opportunities, uncover trends, and address challenges in sales performance. This will enable management to make informed, data-driven decisions.

Business Understanding

Business Context

- Retail company with 3 product categories
- Operations in 4 US regions
- Sales across 8 states
- Data period: December 2022 - 2024
- Need for profitability optimization

Analysis Objectives

1. Analyze overall sales trends
2. Compare regional performance
3. Evaluate product profitability
4. Identify seasonal patterns
5. Provide actionable recommendations

Key Questions to Answer

- Which region generates the most sales? Is it also the most profitable?
- Which product category has the best profit margin?
- Are there seasonal patterns we can leverage?
- Which states should we focus on for growth?

Data Understanding

Dataset Overview

Total Records:	1,010 rows
Columns:	12 fields
Time Period:	Dec 2022 - Dec 2024
Regions:	4 (East, West, Central, South)
States:	8 US states
Categories:	3 product categories

Data Quality Issues Found

Missing Order Date:	61 rows (6%)
Missing Region:	60 rows (6%)
Missing Sales:	60 rows (6%)
Duplicate Rows:	10 rows
Invalid Quantity:	4 rows (text values)
Negative Discounts:	5 rows (should be 0-100%)
Inconsistent Names:	Case issues

Data Quality Assessment: ~70 rows (7%) require cleaning before analysis

Data Preparation

Cleaning Steps (Power Query)

1. Standardized Region names
→ Trim + Capitalize Each Word
2. Removed 10 duplicate rows
3. Filtered out null values
→ ~51 rows with missing data
4. Removed invalid Quantity
→ 4 rows with text entries
5. Removed negative Discounts
→ 5 invalid rows

Transformations Applied

New Columns Added:

- Order Year (from Order Date)
- Order Month (from Order Date)
- Quarter (calculated field)

Data Type Formatting:

- Sales, Profit → Currency
- Discount → Percentage
- State → Geographic category

Result: 940 clean records (93% data retention)

Data Modeling

Data Model Structure

Tables Created:

- DateTable - Calendar for time intelligence
- GlobalMart_Sales_Data - Fact table
- ProductDim - Product dimension
- RegionDim - Region dimension

Relationships: One-to-many (*:1)

DAX Measures

Measure Name	Purpose
Total Sales	Sum of sales
Total Profit	Sum of profit
Total Orders	Count of orders
Total Customers	Order-based (no customer ID)
Profit Margin	Profit / Sales
Sales YOY %	Year-over-year %
Sales YTD	Year-to-date
Profit YTD	YTD profit
Avg Order Value	Sales / Orders
Total States	Distinct states

+ Sales %, Sales MTD, Sales YOY Arrow, Total Quantity, Average Discount

Dashboard Development

Five interactive dashboards created to address analysis objectives

1

Executive Summary

High-level KPIs and navigation hub

2

Sales Overview

Detailed sales analysis with filters

3

Regional Performance

Geographic analysis

4

Product Analysis

Category profitability

5

Customer Analysis

Order distribution

Shows order counts by region and identifies top-performing states. Helps understand customer geographic spread.

Interactive Features: Navigation buttons, Back buttons, Slicers, Clear All, Cross-filtering, Tooltips

Executive Summary Dashboard - Visual Guide

Understanding each visual element on the main dashboard

KPI Cards (Top Section)

Total Sales
\$1.08M

Sum of all sales revenue.
Shows overall business volume.

Total Profit
\$326K

Total profit across all years
(2022-2024). Filtered views
show yearly amounts.

Profit Margin
30.23%

Total Orders
940

Charts & Visuals

Sales Trend Line Chart

Shows how sales change over time (monthly/yearly). Helps identify seasonal peaks like December.

Sales by Region (Donut/Bar)

Displays regional contribution to total sales. Quickly shows West dominates with 67%.

Category Breakdown

Shows sales split across Furniture, Office Supplies, and Technology categories.

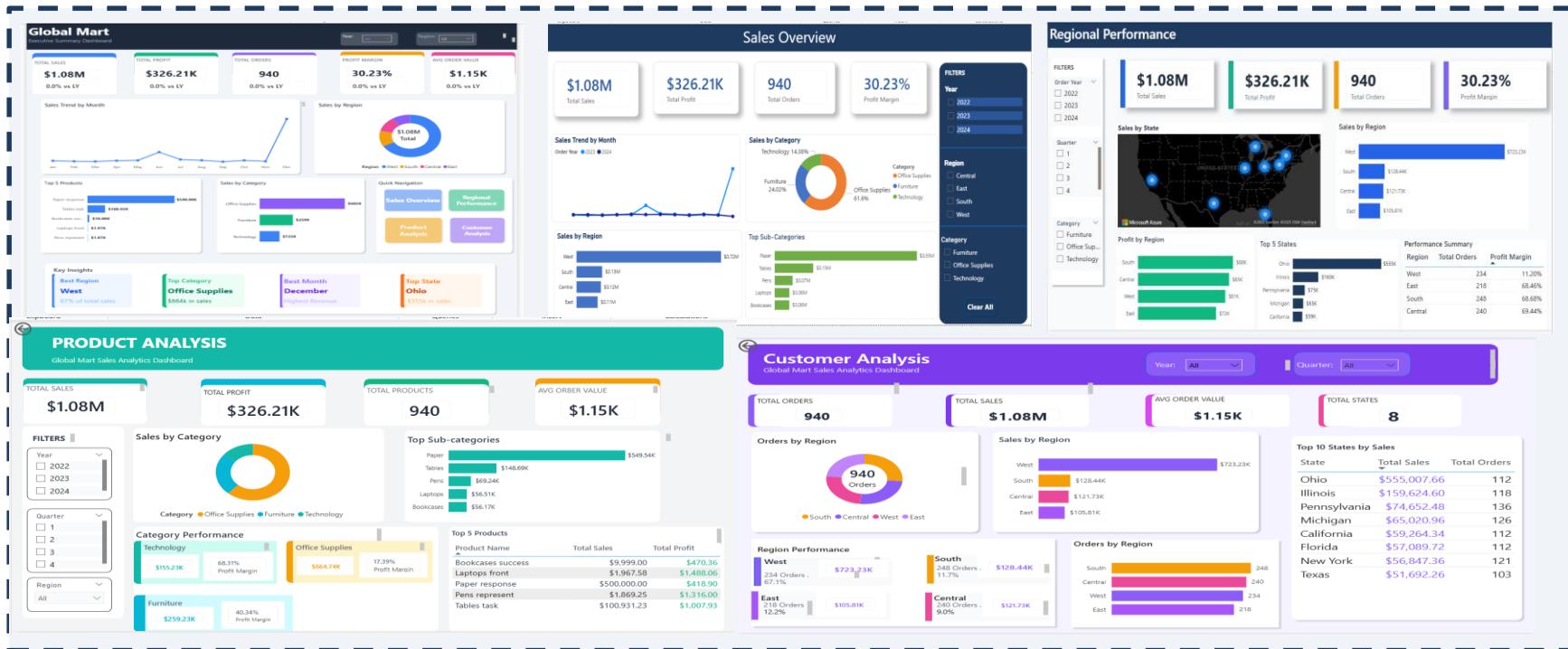
Navigation & Interactivity

Navigation Buttons: Click to jump to detailed pages (Sales, Regional, Product, Customer)

Year/Region/Category Slicers: Filter all visuals by selecting specific values

Cross-Filtering: Clicking any chart element filters other visuals automatically

Dashboard Screenshots



Finding 1: Regional Performance Gap

Source: Regional Performance Dashboard

Region	Sales	Share	Profit	Margin	Analysis
West	\$723K	67%	\$81K	11.2%	HIGH sales, LOW margin
East	\$142K	13%	\$97K	68.5%	Best profit margin
Central	\$128K	12%	\$83K	64.8%	Good performance
South	\$85K	8%	\$65K	76.5%	Highest margin %

The Problem

West generates 67% of sales but only 11.2% profit margin. East makes MORE profit (\$97K) on LESS sales (\$142K). This is a major profitability issue.

The Opportunity

If West improved margin to 40%:
Profit: \$81K → \$289K
Additional profit: +\$208K/year

Finding 2: Product Profitability

Source: Product Analysis Dashboard

Category	Sales	Share	Profit	Margin	Analysis
Office Supplies	\$664K	61.6%	\$115K	17.4%	Volume leader
Furniture	\$259K	24.0%	\$104K	40.3%	Balanced
Technology	\$155K	14.4%	\$106K	68.3%	Best margin!

Key Insight

Technology has HIGHEST margin (68.3%) but LOWEST sales share (14.4%).

It generates nearly equal profit (\$106K) as Office Supplies (\$115K) with 4x LESS sales.

Growth Opportunity

If Technology sales increase 50%:
From \$155K → \$232K
Additional profit: +\$53K/year

Technology is under-leveraged!

Finding 3: Geographic & Seasonal Patterns

Source: Customer Analysis & Sales Overview Dashboards

Top Performing States

State	Sales	Share
Ohio	\$555K	51.4%
California	\$102K	9.5%
New York	\$97K	9.0%
Texas	\$85K	7.9%

Ohio dominates with 51.4% of total sales.
This success model should be studied and replicated.

Seasonal Pattern

December Peak Identified

December shows highest sales across all years.

YoY 2022→2023: +4,620%

Note: Large YoY due to incomplete 2022 baseline (Dec only). 2023 was first full year: \$834K.

Action: Prepare inventory and marketing campaigns by November to capture Q4 peak.

Recommendations

1 Fix West Region Margins

Current: 11.2% Target: 40%+

Actions:

- Audit discount practices
- Review pricing strategies
- Apply East region practices

Impact: +\$150-200K/year

2 Grow Technology Sales

Current: 14% share Target: 25%

Actions:

- Increase Tech marketing
- Bundle with Office Supplies
- Target business customers

Impact: +\$80-100K/year

3 Leverage Seasonality

- Prepare inventory by November
- Launch Q4 marketing campaigns
- Ensure staffing for peak

Impact: +15-20% Q4 sales

4 Replicate Ohio Success

- Analyze Ohio's success factors
- Apply strategies to other states
- Focus on neighboring states

Impact: Improve underperforming states

Estimated Total Impact: +\$250-350K annual profit improvement

Conclusion

Project Summary

What Was Done:

- Cleaned 1,010 → 940 records (93%)
- Built a star schema data model
- Created 15+ DAX measures
- Developed 5 interactive dashboards
- Identified 3 major findings
- Provided 4 recommendations

Key Takeaways

1. West region urgently needs margin improvement - potential +\$200K
2. Technology is under-leveraged with a 68% margin
3. December peak offers planning opportunity
4. Ohio's success model can guide expansion