

Comprehensive Data Analytics Workflow for a Retail Business

Sales Performance Analysis & Strategic Recommendations

by Abnerson Ocampo

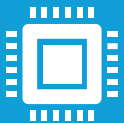
Project Overview & Objectives



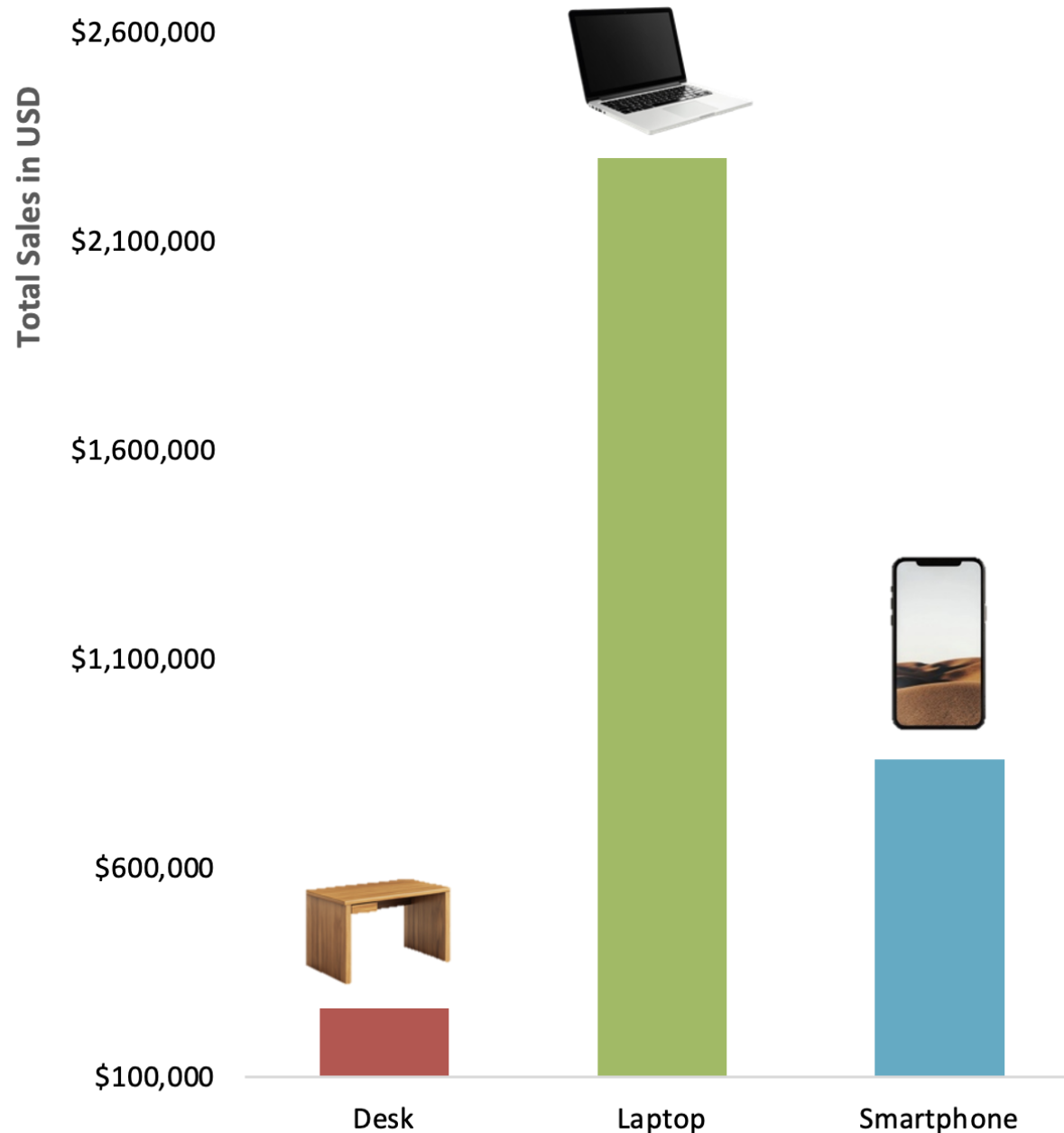
Overview: This project simulates a real-world data analytics process for a hypothetical retail business. The goal is to analyze sales data and extract meaningful insights to support business decision-making.



Data Constraints: The dataset is highly limited. This project will demonstrate on how to work with imperfect data. The goal is to extract meaningful insights despite the limitations.



Tools Used: Python (Data Cleaning), SQL (Ad Hoc Customer Behavior Analysis), Excel (Analysis & Dashboard)

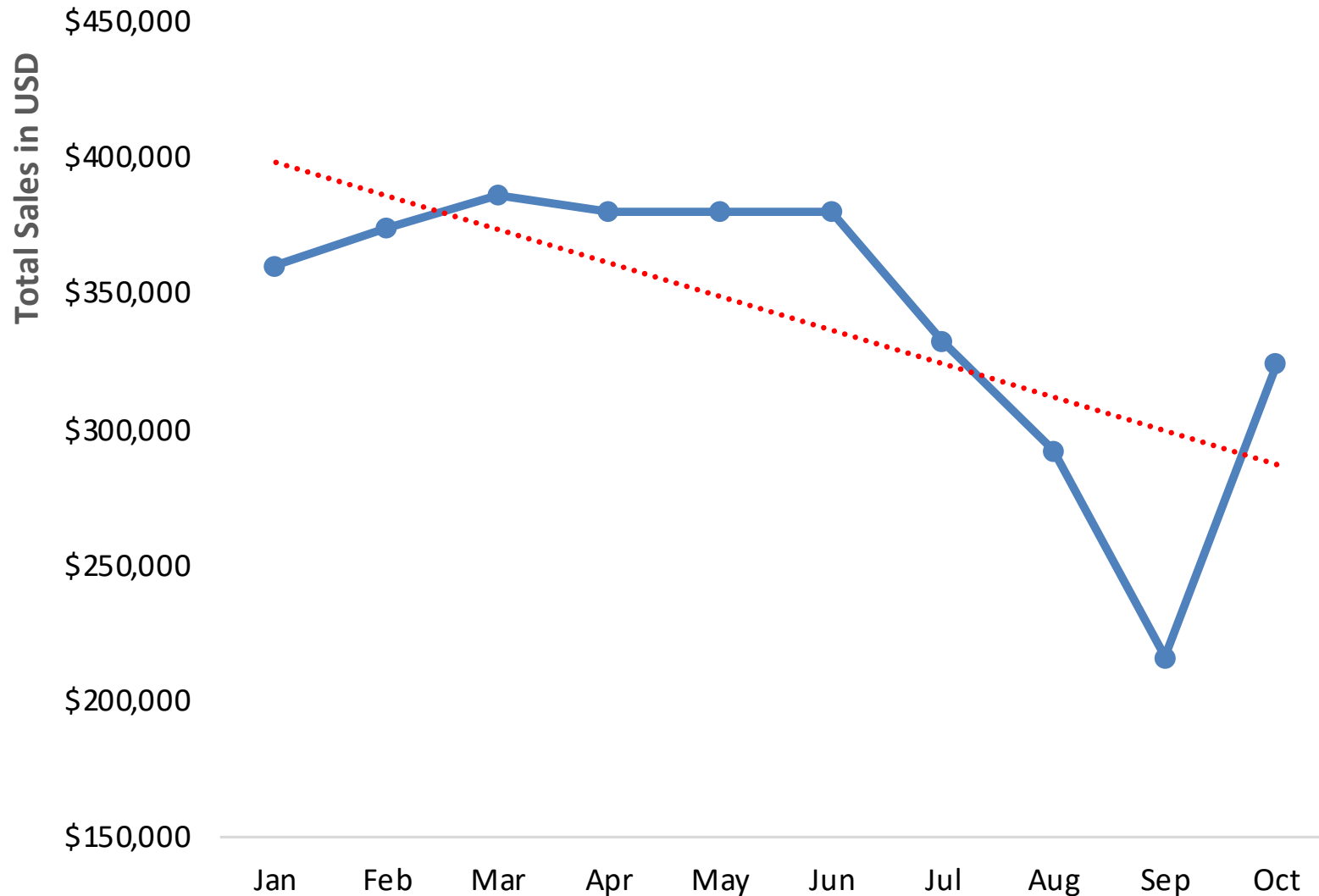


Which Product had the Most Sales?

Total Sales Performance by Product of 2023

- **Laptops** generated the highest revenue, surpassing **\$2.5M** in total sales.
- **Smartphones** ranked second, with sales just under **\$1M**.
- **Desks** had the lowest sales, bringing in around **\$260K**, making up only a small portion of total revenue.

Sales Trends in 2023: Key Insights from Seasonal Patterns



The Rise & Fall of Sales: What Drove the Shift?

- Sales gradually increased from January to May, peaking around **\$400K**.
- A sharp decline started in July, dropping to nearly **\$200K** in September before bouncing back in October.
- The **overall trend** shows a **downward trajectory**, signaling a need to investigate the cause of declining sales.

The Strongest Sales Performer Among States: **Illinois**

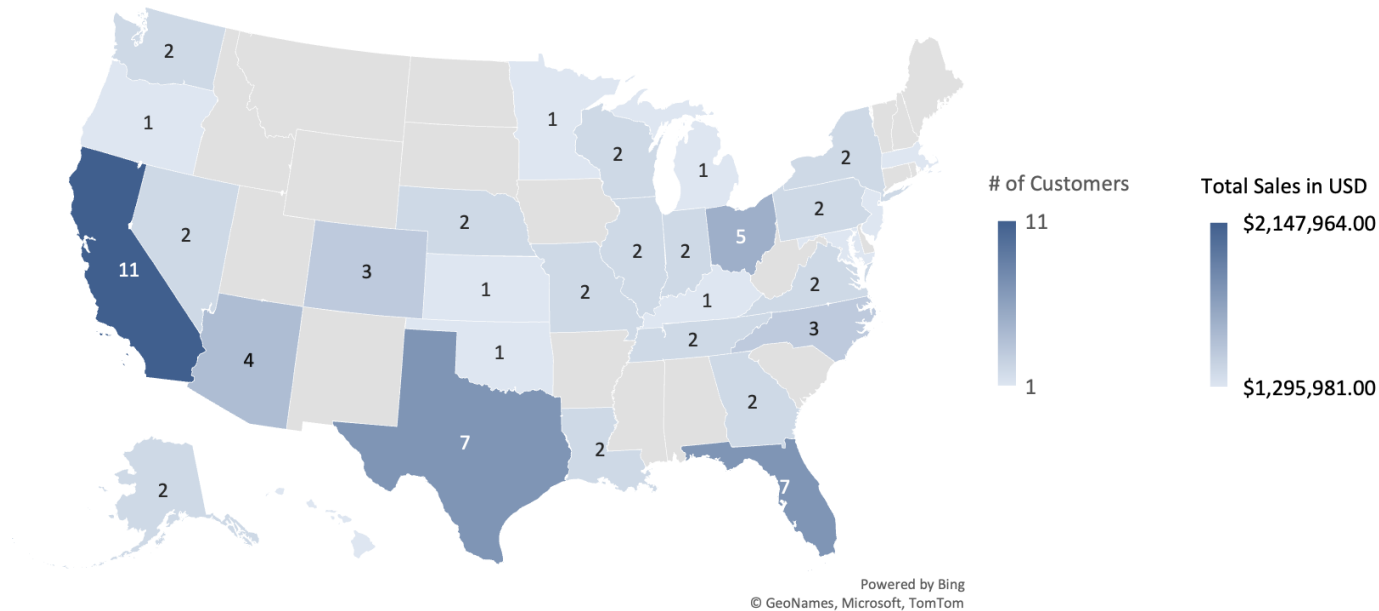
- Illinois generated the highest total revenue, reaching over **\$2M** in sales.
- **Electronics** accounted for approximately **87%** of Illinois' revenue, while **Furniture** contributed the remaining **13%**.



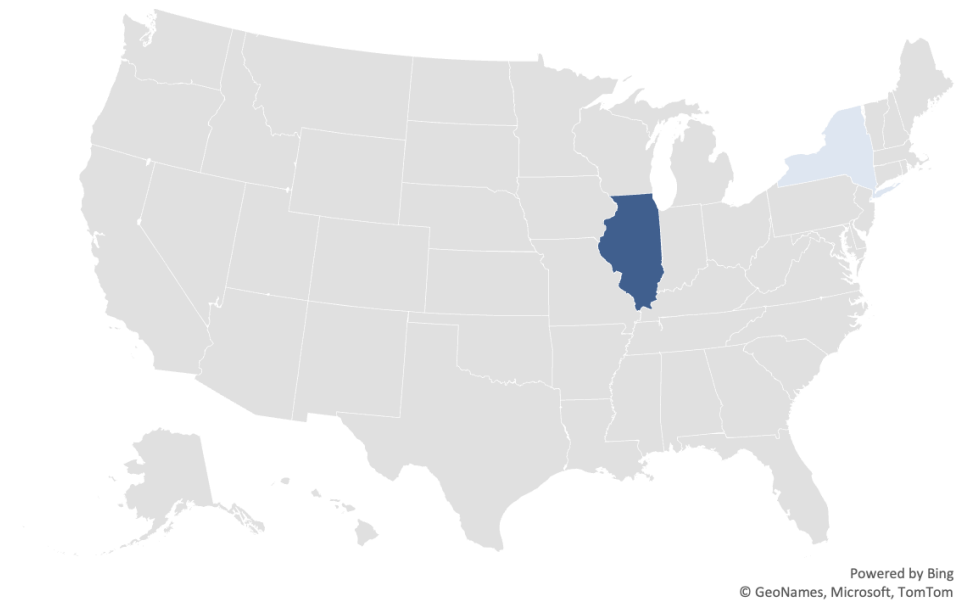
Customer Distribution **vs.** Actual Sales

- A **significant gap** exists between customer presence and actual purchases.
- Expanding sales efforts beyond Illinois and New York could unlock **revenue opportunities** in states with **existing** customer interest.

Customer Distribution



Revenue by State



Key Challenges & Recommendations

Key Challenges & Recommendations

Geographic Reach & Market Expansion

Limited Geographic Reach

- Sales transactions were only recorded in **two states**, limiting business growth opportunities.

Expand Market Reach & Entry Strategy

- Conduct **market research** to identify high-potential regions for expansion.
- **Start small**, scale fast.
- Begin with **2-3** expansion states to test demand.
- Focus on e-commerce and **digital marketing** to minimize upfront costs

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Key Challenges & Recommendations

Customer Engagement & Retention Strategies

Low Customer Engagement

- Only **three** unique customers made purchases, indicating a lack of customer base growth.



Improve Customer Acquisition & Retention

- Launch a customer **loyalty program** to incentivize repeat buyers.
- Strengthen **advertising** strategies to reach a broader audience.
- Use email marketing & personalized offers to **drive engagement**.
- Enhance **customer service & support**



Key Challenges & Recommendations

Addressing the Sales Decline from May-September

Significant Sales Decline

- A **sharp drop** in revenue was recorded after May, with a major decline in September.
- **Possible causes:** seasonality, pricing, competition, inventory issues.



Targeted Promotions & Seasonal Adjustments

- Implement **seasonal promotions** during low-performance months.
- Offer **discounts & targeted ads** to boost demand.
- Investigate **competition & pricing strategies** to stay competitive.



Source: retail-sales-data-2023

End