

PROJECT | INTRODUCTION TO SQL

# DATA-DRIVEN STRATEGIES FOR New Wheels



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# AGENDA

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New Wheels

**Important Note:**

1. **[Q##]**: Refers to query number as in SQL file and Excel worksheet name.
2. **[AQ##]**: Refers to additional queries in SQL file and Excel worksheet name.



# EXECUTIVE SUMMARY



New Wheels faces declining sales and rising customer dissatisfaction. Key insights reveal falling ratings, order and revenue drops, and shipping delays. Recommendations include enhancing after-sales service, streamlining shipping, and targeted marketing in underrepresented states to drive growth and improve satisfaction.



# EXECUTIVE SUMMARY

New Wheels, a vehicle resale company, faces declining sales and rising customer dissatisfaction, impacting new customer acquisition. An in-depth data analysis was conducted to identify and address key issues.

## Problem Overview & Solutions Approach:

- **Declining Sales and Satisfaction:** Sales and customer satisfaction have decreased over the past year, affecting new customer acquisition.
- **Need for Quarterly Report:** A comprehensive report is needed for informed decision-making, using data-driven analysis with SQL to extract and analyze key metrics, and to visualize findings in Excel.

## Key Observations & Insights:

- **Declining Ratings and Rising Dissatisfaction:** Average ratings fell from 3.55 (Q1) to 2.4 (Q4), indicating increasing dissatisfaction.
- **Order and Revenue Decline:** Orders dropped from 310 (Q1) to 199 (Q4), and revenue fell from \$39.6M (Q1) to \$23.5M (Q4).
- **Operational Inefficiencies:** Average shipping days increased from 57 (Q1) to 174 (Q4).

## Recommendations:

- **Enhance After-Sales Service and Support:** Improve support to address customer dissatisfaction.
- **Streamline Shipping Processes:** Reduce delays and improve operational efficiency.
- **Targeted Marketing in Growth Areas:** Focus on underrepresented states to grow the customer base.

By addressing customer satisfaction, expanding to new markets, and optimizing operations, New Wheels can restore customer confidence, increase sales, and achieve long-term success.



## BUSINESS PROBLEM OVERVIEW & SOLUTION APPROACH

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New Wheels faces declining sales and customer satisfaction. The CEO seeks a detailed quarterly report to identify key metrics, customer preferences, and operational inefficiencies. Using SQL, data analysis was conducted, and insights were visualized in Excel to guide informed business decisions.



# PROBLEM OVERVIEW

New Wheels, a vehicle resale company, has seen a steady decline in sales and customer satisfaction over the past year. Critical customer feedback and ratings have led to a drop in new customers each quarter, raising concerns at the executive level. The CEO seeks a comprehensive quarterly report to assess the health of the business and make necessary decisions to reverse these trends.

## Business Context

- **Market Trend:** Increasing preference for pre-owned vehicles due to affordability, coupled with concerns about after-sales service quality.
- **Company Offering:** New Wheels provides an end-to-end service, from listing vehicles to shipping them to customers, including after-sales support.
- **Sales Decline:** A noticeable drop in sales over the past year, impacting overall business performance.
- **Customer Feedback:** Negative online feedback and ratings affecting the acquisition of new customers.

## Objectives

- **Identify Key Metrics:** Analyze sales data and customer feedback to identify key performance metrics and trends.
- **Customer Insights:** Understand customer preferences and satisfaction levels to address areas of concern.
- **Operational Efficiency:** Evaluate operational metrics such as shipping times to identify inefficiencies.
- **Data-Driven Decisions:** Provide a comprehensive quarterly report to guide the CEO in making informed business decisions.



# SOLUTION APPROACH

A structured data-driven analysis was conducted using SQL queries to extract and analyze key metrics from the database. This approach involved:

## **Data Collection and Preparation:**

- **Import Data:** Load the SQL dump file into a database for analysis.

## **Analytical Process:**

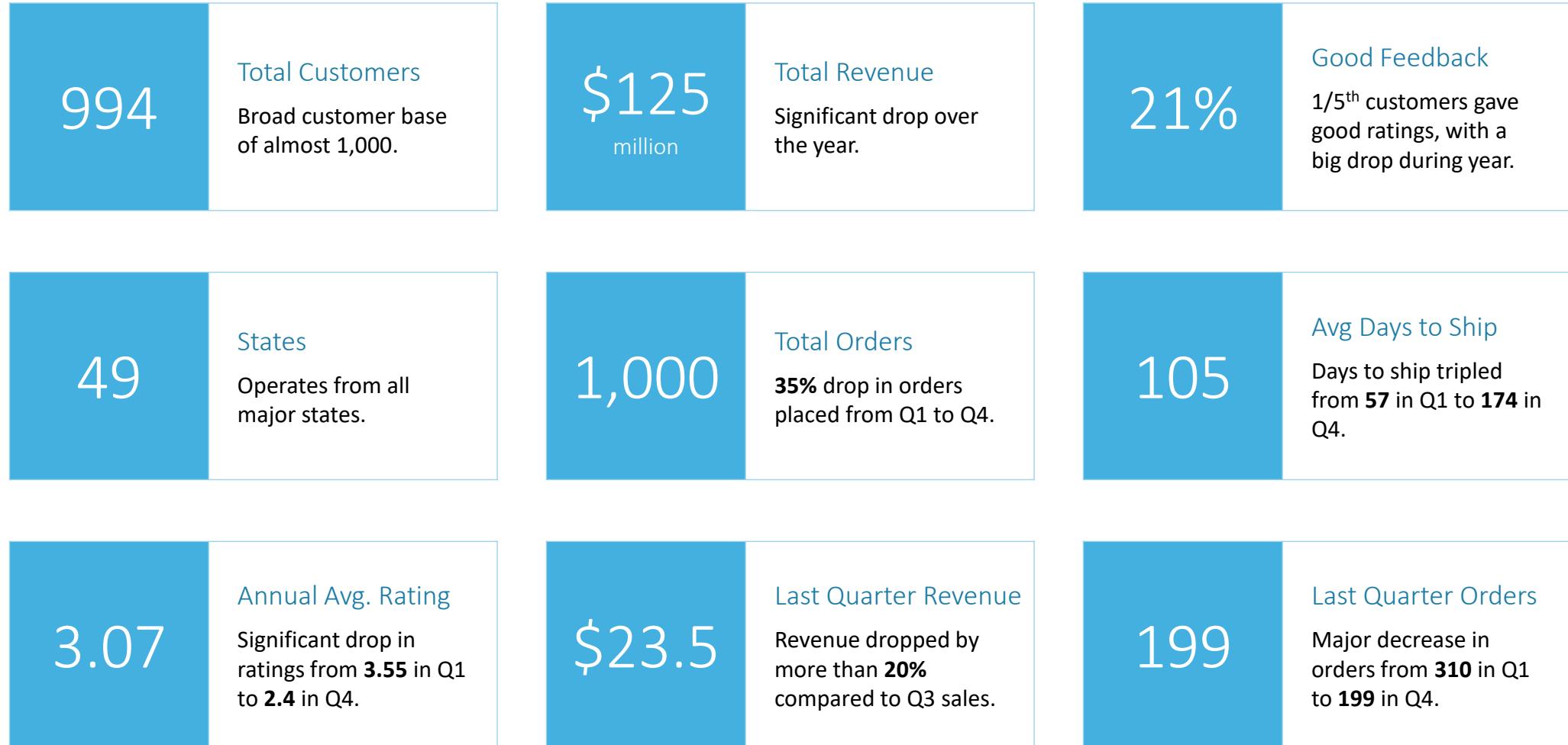
- **SQL Queries:** Develop SQL queries to extract relevant data based on business questions.
- **Data Analysis:** Analyze customer distribution, feedback trends, vehicle maker preferences, and operational metrics.

## **Visualization and Reporting:**

- **Charts and Graphs:** Create visualizations in Excel to illustrate key findings.
- **Quarterly Report:** Summarize insights and present them in a clear, actionable format for the CEO.



# BUSINESS OVERVIEW







# CUSTOMER METRICS

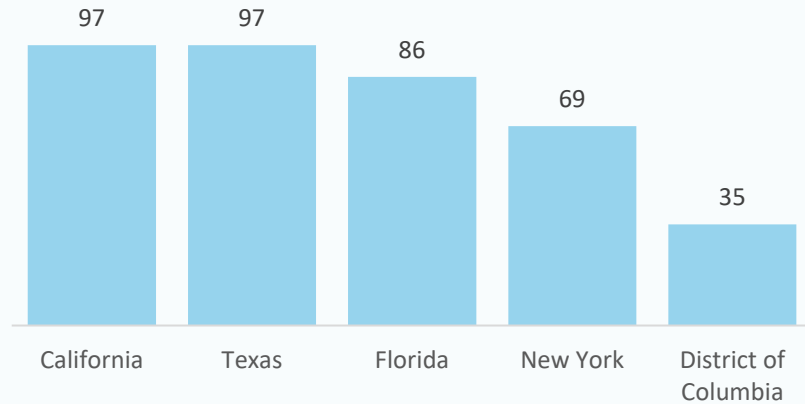


Customer metrics reveal a diverse distribution, with Chevrolet leading in 17 states. Ratings declined from 3.55 to 2.4, indicating rising dissatisfaction. Preferences vary widely, potential for targeted marketing. Satisfaction trends show increasing negative feedback, necessitating improvements in customer service and engagement.



# CUSTOMER METRICS

[Q01] Customers Spread across States (Top 5)



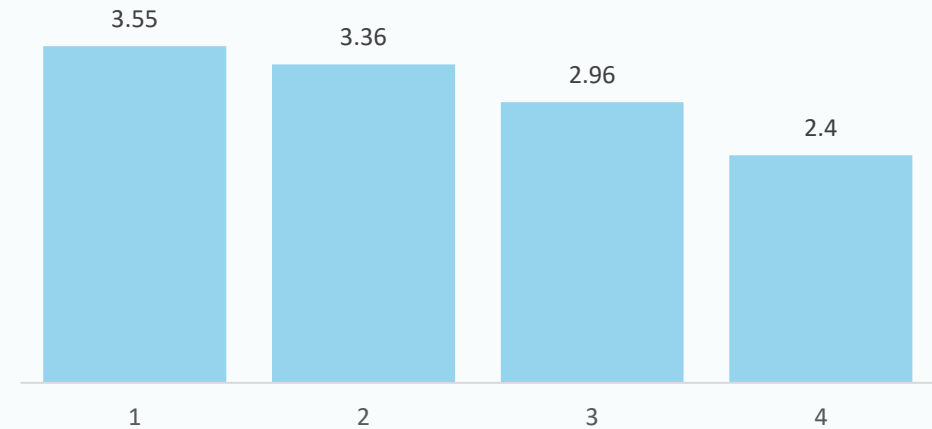
## Key Insights:

- California and Texas lead with 97 customers each. Sharp decline in customers beyond top four states.
- New Wheels' business is spread across 49 states, highlighting their wide network.
- 18 states have less than 10 customers.

## Observations:

- Significant customer concentration in a few states; many states have potential for market expansion.

[Q02] Average Rating by Quarter



## Key Insights:

- Average ratings steadily decrease from Q1 (3.55) to Q4 (2.4).
- Notable drop in average rating from Q3 (2.96) to Q4 (2.4).

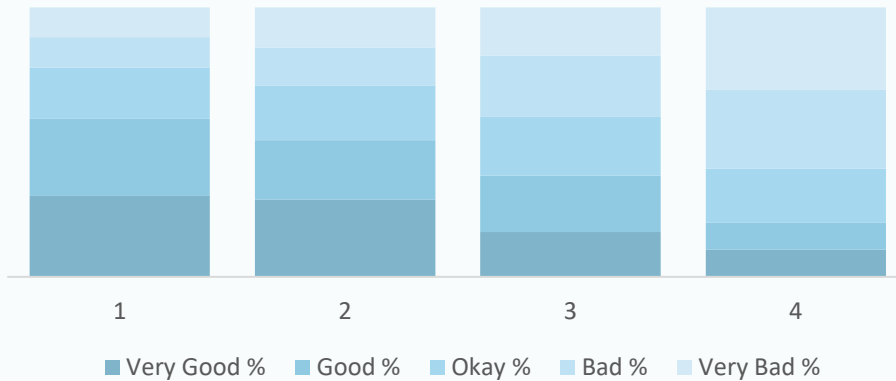
## Observations:

- Consistent decline suggests increasing customer dissatisfaction over the year.



# CUSTOMER METRICS

## [Q03] Customer Satisfaction Trend



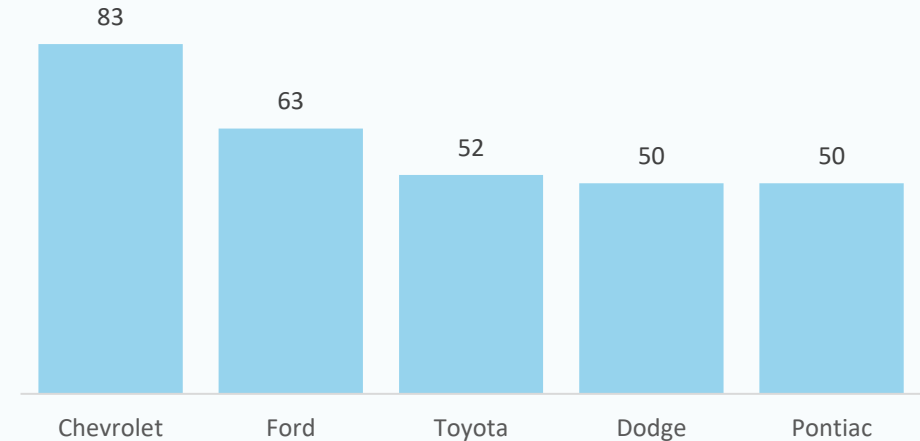
### Key Insights (Ratings):

- Very Bad % increases from 11% in Q1 to 31% in Q4.
- Very Good % drops from 30% in Q1 to 10% in Q4.
- Bad % consistently rises, peaking at 29.15% in Q4 and Good % is showing constant decline ending at 10%.

### Observation:

- Customers are becoming increasingly dissatisfied over time; a thorough investigation is encouraged.

## [Q04] Top 5 Vehicle Makers by Customer Count



### Key Insights:

- Chevrolet is the most preferred with 83 customers.
- Ford takes the 2<sup>nd</sup> spot with 63 customers.
- Toyota, Dodge, and Pontiac have above 50 customers.

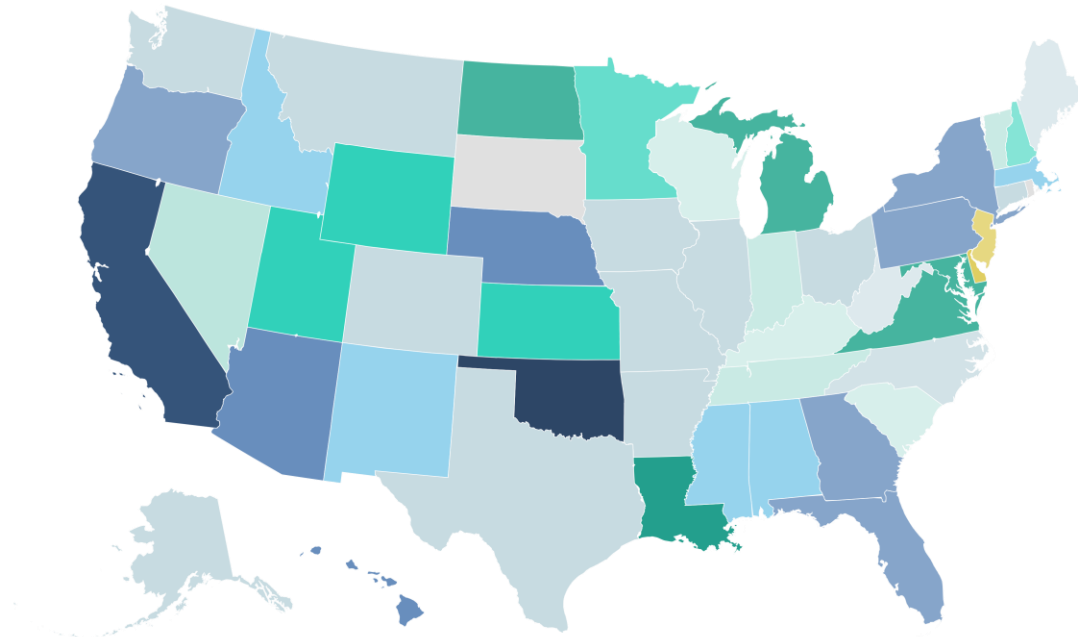
### Observation:

- Customers prefer a wide range of vehicle makers, with notable interest in diverse brands like Mercedes-Benz, Mazda, and Mitsubishi, apart from the top 5 makers.



# CUSTOMER METRICS

- Dodge
- Chevrolet
- Cadillac
- Pontiac
- GMC
- Mitsubishi
- Suzuki
- Volkswagen
- Audi
- Ford
- Nissan
- Maserati
- Mercury
- Volvo
- Toyota
- Mazda
- Chrysler
- Hyundai
- Isuzu



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## [Q05 / AQ07] Preferred Vehicle Makers

Vehicle Maker	States	Customers
Chevrolet	17	54
Dodge	12	24
Pontiac	11	20
Ford	10	28
Toyota	9	25

### Key Insights:

- Chevrolet leads in 17 states with 54 customers indicating strong national presence and brand loyalty.
- Diverse preferences across brands, Dodge (12 states), Pontiac (11 states), Ford (10 states), Toyota (9 states).
- Ford, Toyota, and Chevrolet are consistently popular, showing strong market presence.
- Luxury brands like Audi, Maserati, and Porsche have dedicated customer bases in specific states.
- Brands like Dodge and Pontiac show potential for targeted marketing to expand in less dominant states.



# REVENUE METRICS

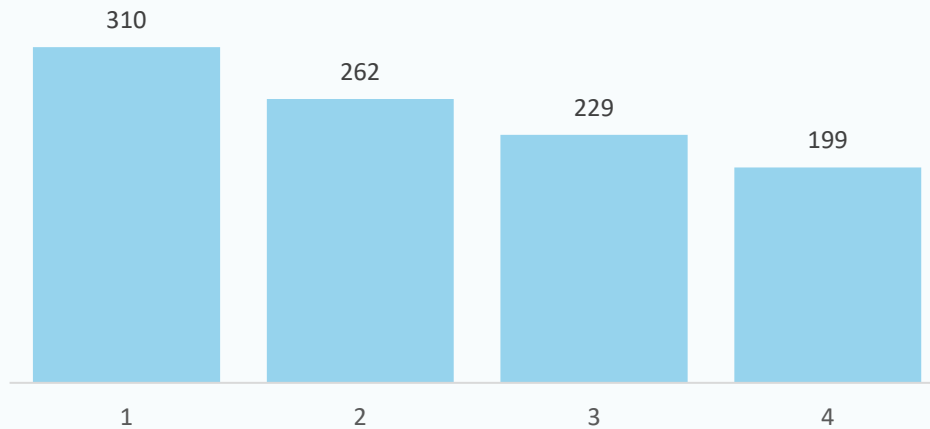
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Revenue metrics reveal a consistent decline in orders and revenue throughout the year, with a significant drop from Q1 to Q2. Top tier customers generate the highest average revenue, emphasizing their importance amid ongoing revenue challenges and declining orders.



# REVENUE METRICS

## [Q06] Orders per Quarter



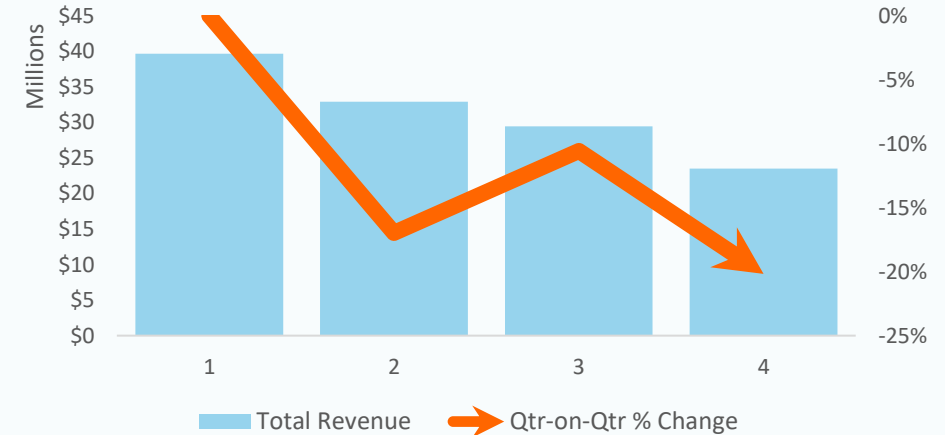
### Key Insights:

- Order count steadily decreases from Q1 (310) to Q4 (199).
- The largest drop is between Q1 (310) and Q2 (262).
- Each subsequent quarter shows fewer orders, indicating ongoing issues.

### Observation:

- The number of orders has consistently declined each quarter, indicating a downward trend in sales.

## [Q07] Revenue Change Quarter-on-Quarter



### Key Insights:

- Revenues drop from \$39.6M in Q1 to \$23.5M in Q4.
- The most significant drop is in Q4, with a -20.18% change.
- Each quarter shows a negative percentage change, indicating sustained revenue challenges.

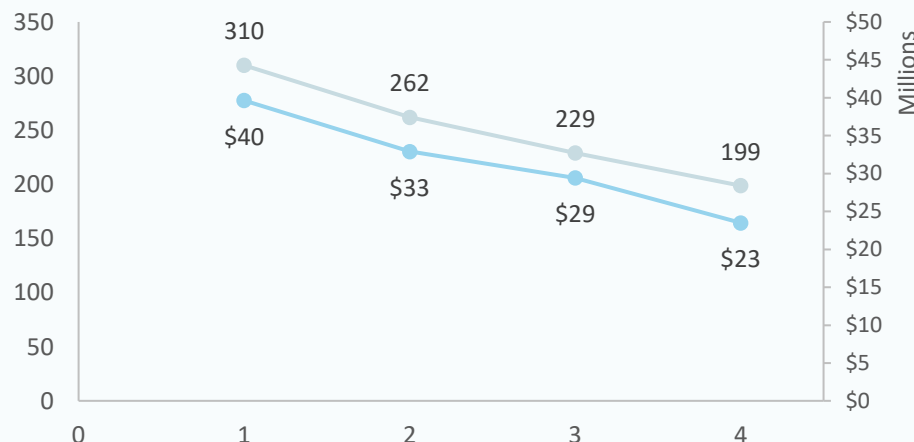
### Observation:

- Quarter-on-quarter revenue consistently declines, with the largest drop in Q4.



# REVENUE METRICS

## [Q08] Revenue and Order Trends by Quarter



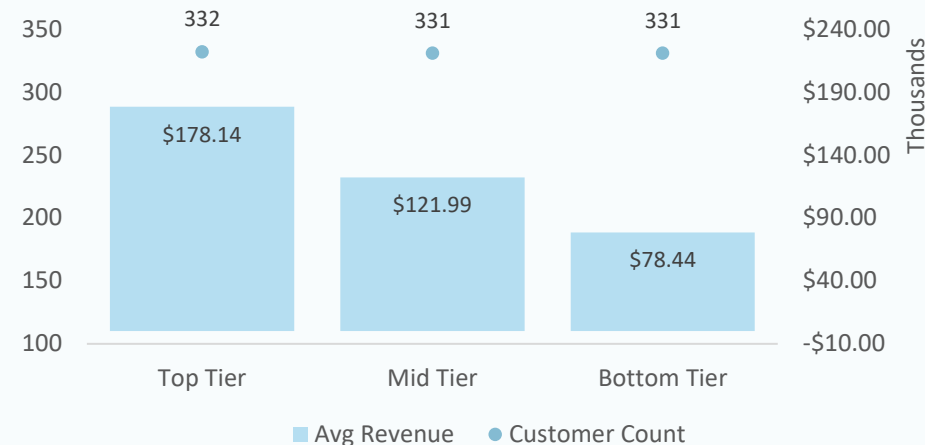
### Key Insights:

- Revenue drops from \$39.6M in Q1 to \$23.5M in Q4.
- Order count declines from 310 in Q1 to 199 in Q4.
- Both revenue and order count show a parallel downward trend across quarters.

### Observation:

- Revenue and order count steadily decline each quarter, indicating a consistent decrease in business performance.

## [AQ08] Customer Tiers by Revenue



### Key Insights:

- Top tier customers generate significantly higher average revenue, highlighting their importance to the business.
- There is a clear gradient in average revenue from top tier to bottom tier, indicating different spending behaviors.

### Observation:

- Top tier customers, despite similar numbers, contribute to significantly more revenue.



# SHIPPING METRICS



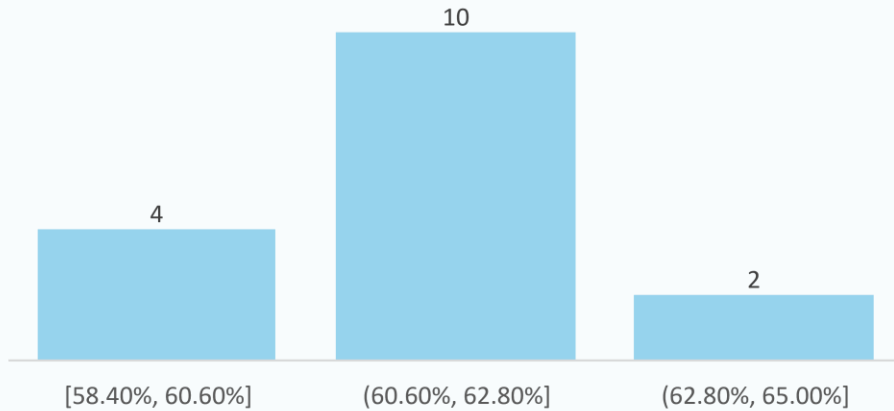
Shipping metrics reveal a tripling of average shipping days from Q1 to Q4, potentially contributing to rising customer dissatisfaction and declining ratings. Credit card discounts remain consistent, but shipping delays are a critical issue affecting overall revenue and customer satisfaction.





# SHIPPING METRICS

[Q09] Average Discount by Credit Card Type



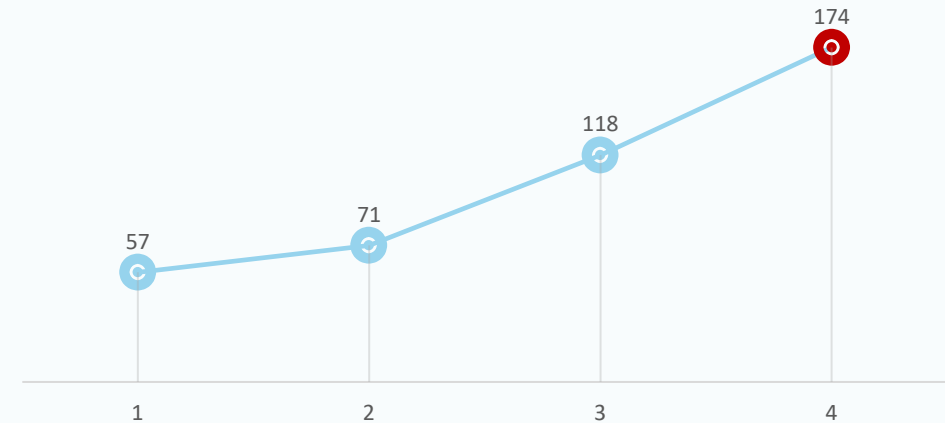
## Key Insights:

- Laser cardholders receive the highest discount at 64.38%.
- Most credit cards offer discounts between 60% and 63%.

## Observation:

- Credit card discounts are generally within a consistent range, with all the cards offering significantly higher discounts.

[Q10] Average Days for Orders to Ship per Quarter



## Key Insights:

- Average shipping days have more than tripled from 57 days in Q1 to 174 days in Q4.
- Prolonged shipping times likely contribute to the rising dissatisfaction and declining customer ratings and eventually a downward trend in revenue.

## Observation:

- Significant increases in shipping times are a likely factor in the drop in customer satisfaction, orders, and revenue.



## OBSERVATIONS & RECOMMENDATIONS



New Wheels faces declining orders, revenue, and customer ratings, with increased shipping delays contributing to dissatisfaction. California and Texas are top states, with high discounts and consistent customer tiers. Recommendations include improving shipping efficiency, targeting top customers, and expanding marketing in underrepresented states.



# OBSERVATIONS & FINDINGS

1. **Declining Orders:** Order count steadily decreases from 310 in Q1 to 199 in Q4.
2. **Revenue Drop:** Revenue consistently falls from \$39.6M in Q1 to \$23.5M in Q4.
3. **Customer Ratings:** Average ratings decline from 3.55 in Q1 to 2.4 in Q4.
4. **Shipping Delays:** Average shipping days increase considerably from 57 in Q1 to 174 in Q4.
5. **Top States:** California and Texas lead with 97 customers each.
6. **Customer Spread:** Business is spread across 49 states with growth potential in underrepresented areas.
7. **Customer Tiers:** Top tier customers generate significantly higher average revenue.
8. **High Discounts:** Laser cardholders receive the highest discount at 64.38%.
9. **Consistent Discounts:** Most credit cards offer average discounts between 60% and 63%.
10. **Parallel Trends:** Both revenue and order count show a parallel downward trend across quarters.



# INSIGHTS & RECOMMENDATIONS

1. **Improve Shipping Efficiency:** Reduce shipping times to enhance customer satisfaction and improve ratings.
2. **Focus on Top Customers:** Prioritize top tier customers to maximize revenue and foster loyalty.
3. **Target Underrepresented States:** Expand marketing efforts in states with lower customer count to increase market share.
4. **Enhance Customer Service:** Address key pain points highlighted in feedback to boost overall customer satisfaction.
5. **Optimize Discount Strategies:** Maintain consistent discount offerings while exploring additional incentives to attract customers.
6. **Analyze Revenue Trends:** Conduct a deeper analysis of revenue trends to identify and address underlying issues.
7. **Monitor Performance Metrics:** Regularly review key performance indicators to quickly respond to negative trends.
8. **Customer Retention Programs:** Implement loyalty programs to retain high-value customers and encourage repeat purchases.
9. **Operational Improvements:** Streamline operational processes to reduce delays and enhance overall efficiency.
10. **Strategic Investments:** Invest in technology and infrastructure to support long-term growth and customer satisfaction.



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