



AdventureWorks

- .Customers
- .Products
- .Time and Sales
- .Opportunities
- .Appendix

Britta Smith
April 2023



Total Number of Customers

18484

Retail

635

Resellers

19119

Retail and Resellers

Total Sales

29.38M

Retail

82.70M

Resellers

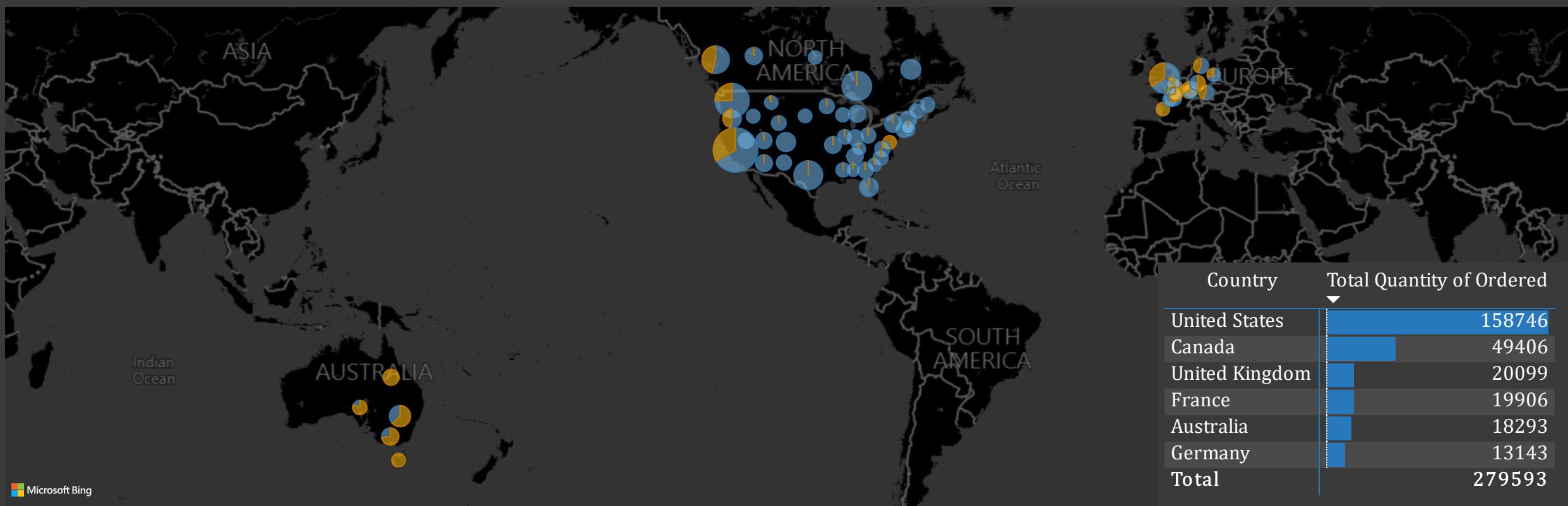
112.08M

Retail and Resellers



Total Quantity Ordered by State / Province and Customer Type

Customer Type • Reseller • Retail



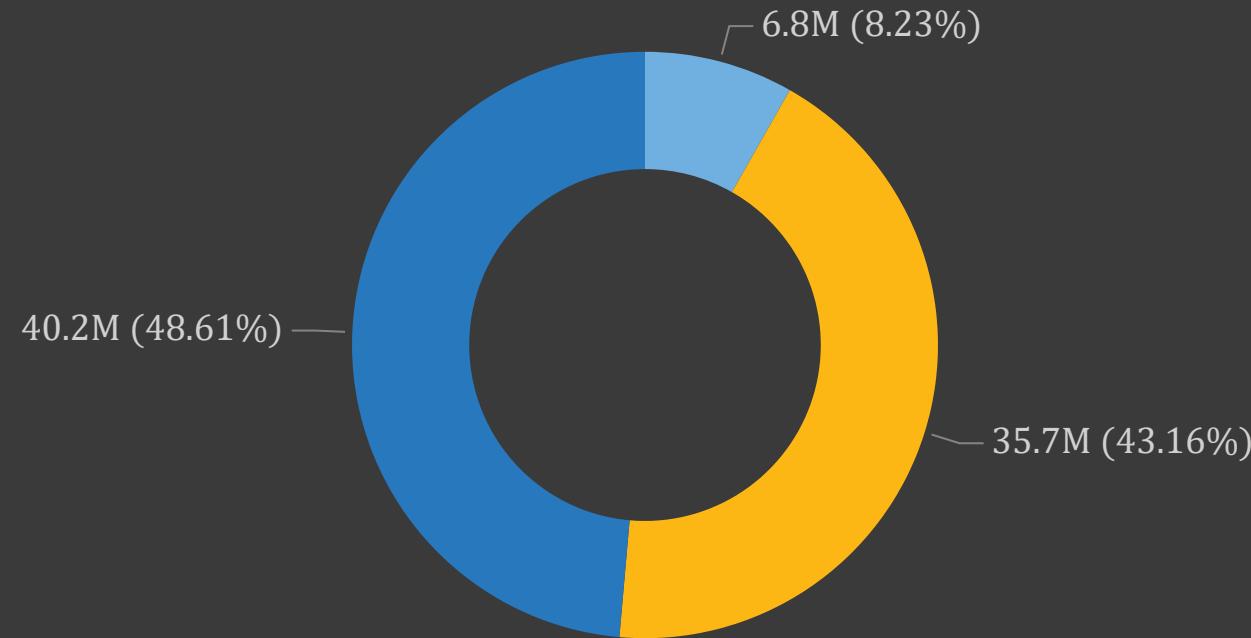
Worldwide total quantity of products ordered from 2011 to 2014 were higher for resellers (219,134) than retail customers (60,459).

Out of all states / provinces, California quantity ordered made up 8.69% of the total.

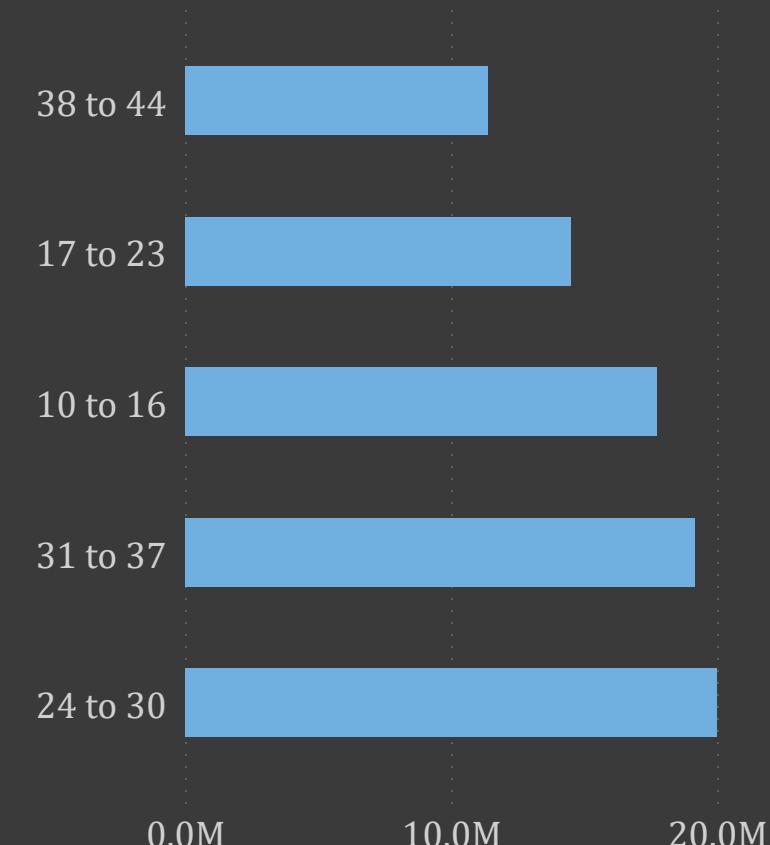
Total Sales by Store Business Type

Business Types: OS Online Store, BM Bicycle Manufacturer, BS Bicycle Store

● BS ● BM ● OS

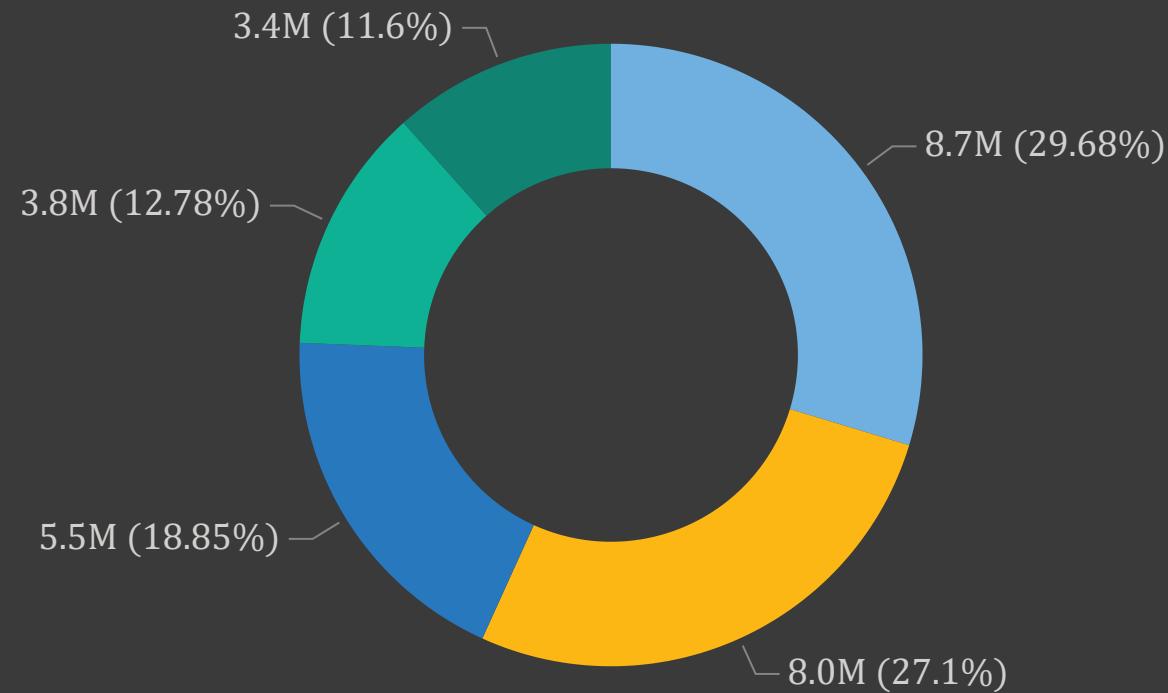


Total Sales by Years Open



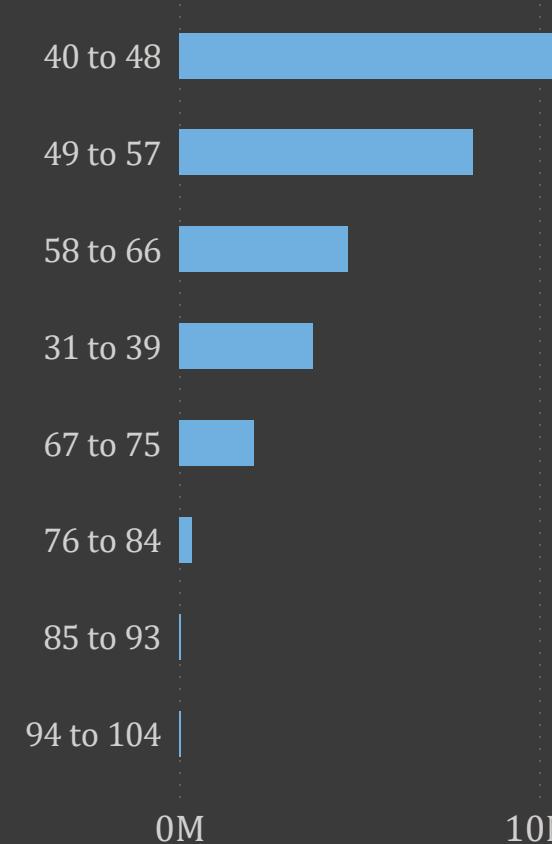
The average year opened was 1986. Online stores had the highest total sales from 2011 to 2014. Stores that have been open 24 to 30 years had the highest total sales, accounting for 75.79% of total sales.

Total Sales by Retail Customer Annual Income



● 50001-75000 ● 25001-50000 ● 75001-100000 ● greater than 100000 ● 0-25000

Total Sales by Age on Order Date



Customer age range: 34 to 104 Average age: 52

There were more male (9,351) customers than female (9,133), and 1,488 customers preferred not to answer.
Retail customers making \$50,001 to \$75,000 annually accounted for 29.68% of total sales from 2011 to 2014.

Customers between the ages of 40 and 48 accounted for 35.40% of total sales.

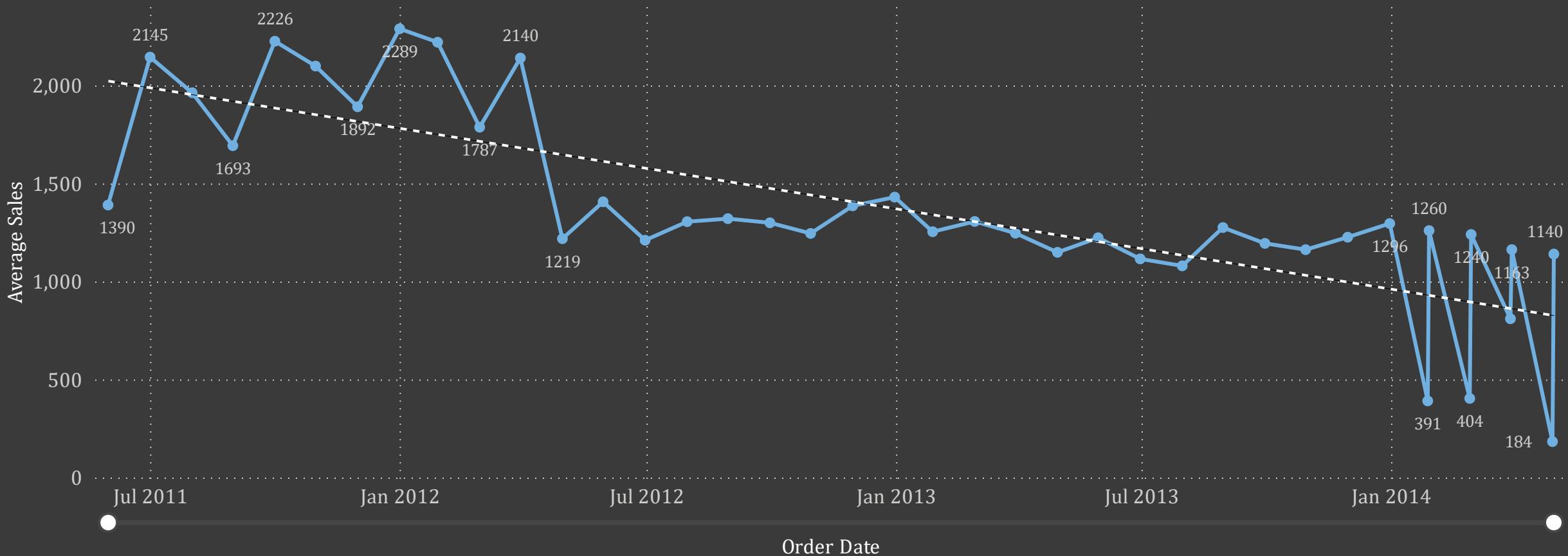
Number of Orders by Category

Number of Orders by Subcategory



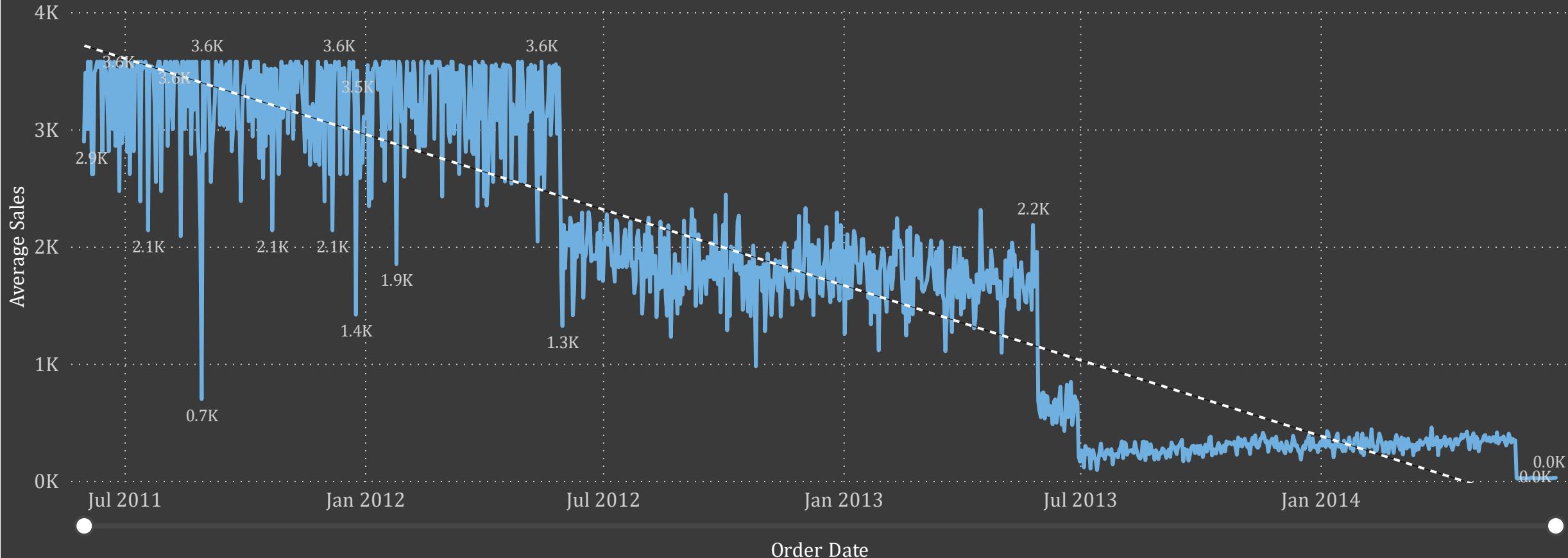
2011 to 2014: Number of Orders by Product and Customer Type

Reseller: Average Sales by Order Date



Quarterly sales totals were highest for the 3rd quarter from 2011 to 2014. March and October were the months with highest sales. Purchases were placed most at the end of the month, followed by the 1st of the month. While most purchases were placed on Monday, day of the week sales did not have a predictable pattern. From 2011 to 2014, the trend in sales was a decrease as displayed by the trendline. Several anomalies occurred in 2014 with volatile average sales markedly lower than expected.

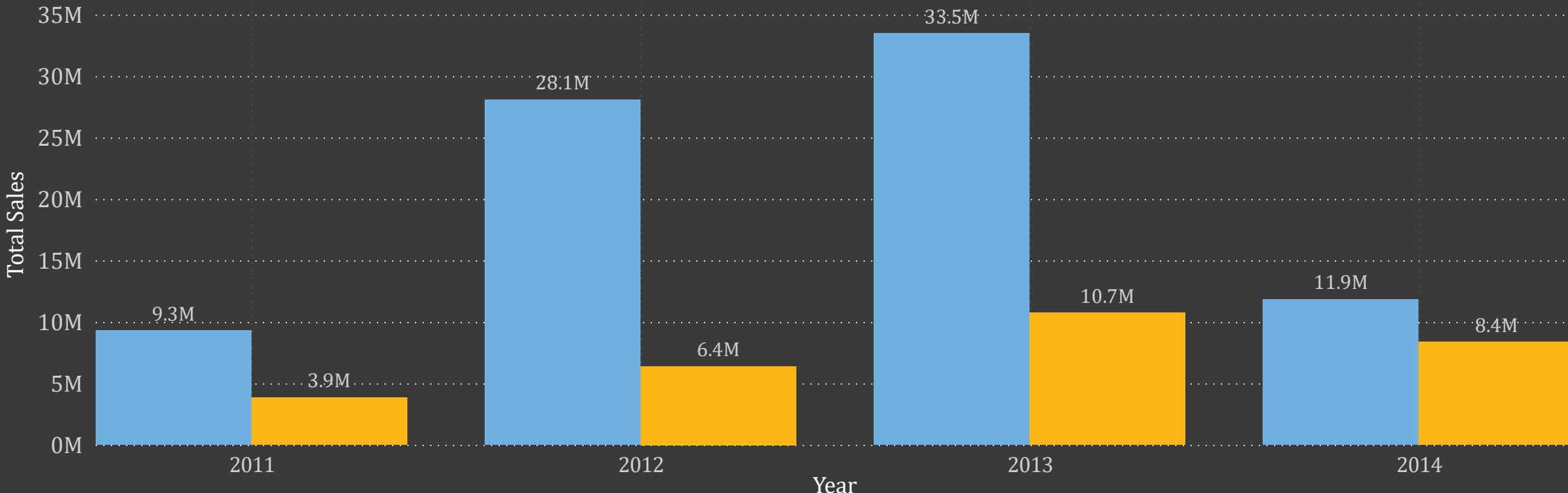
Retail Customers: Average Sales by Order Date



The 2nd quarter had the greatest total sales from 2011 to 2014 amongst retail customers. Most sales occurred in April and May. Both day of the month and day of the week did not display a predictable pattern. Sales from 2011 to 2014 showed a decreasing trend, which intensified annually at the beginning of June / end of May. Retail sales differ from reseller sales in that purchases are made daily, while store purchases are isolated monthly.

Total Sales by Year and Customer Type

Customer Type • Reseller • Retail



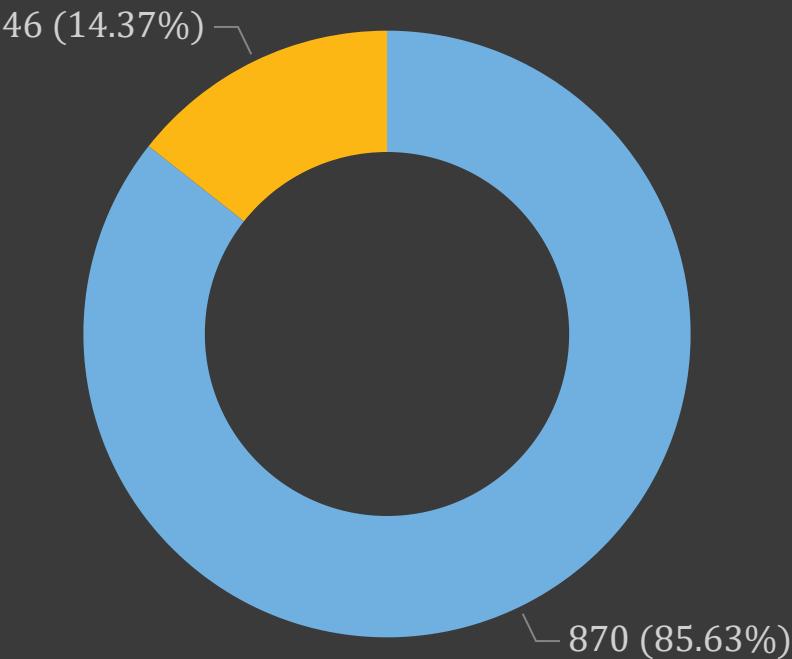
Both reseller and retail total sales trended up annually from 2011 to 2013, but trended down steeply from 2013 to 2014.

What are the causes for this? What are the actions we can take?

Opportunities

Inactive Customer Conversion: have not placed an order in 12 months, but have in the past 24 months

● Retail Customers ● Resellers

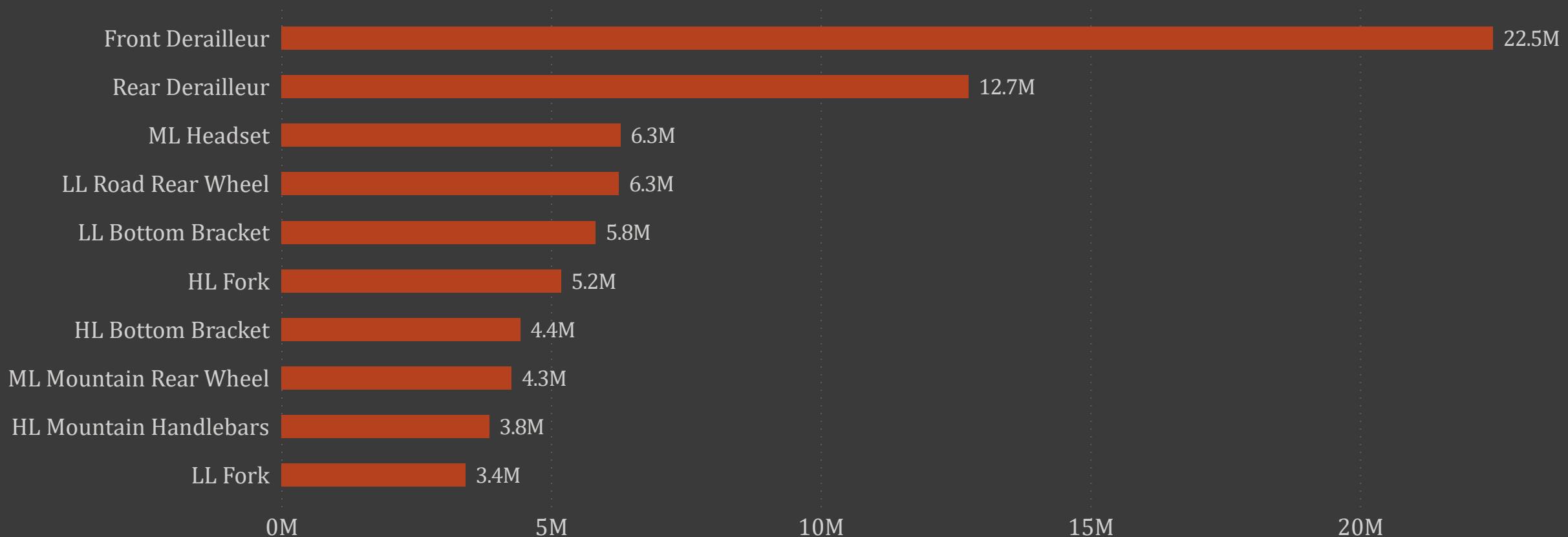


Should inactive customers become active once again, we stand to regain **\$4 million dollars in sales** (\$3 million from resellers and \$0.9 million for retail). This is assuming the converted customers make average sales amounts consistent with historical data.

A new **stored procedure** is available to aide the sales team in reaching out to these individuals with ongoing up-to-date reports.

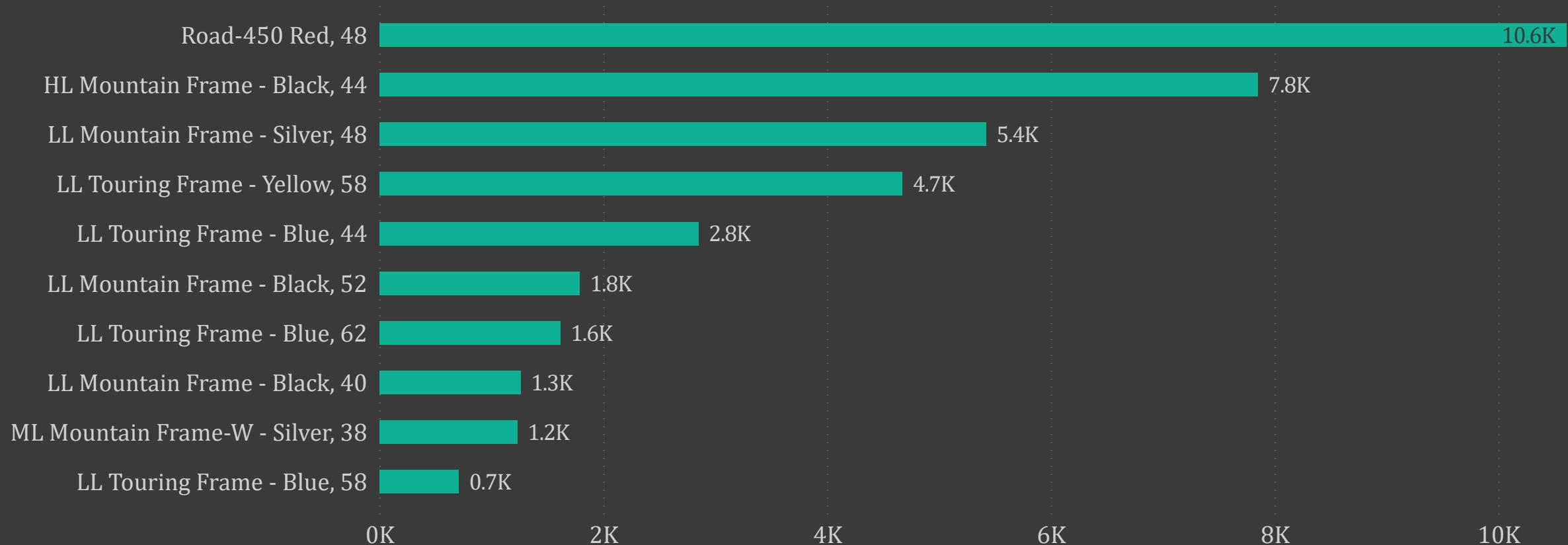
Cost Containment Opportunity

Supply > Demand by Product



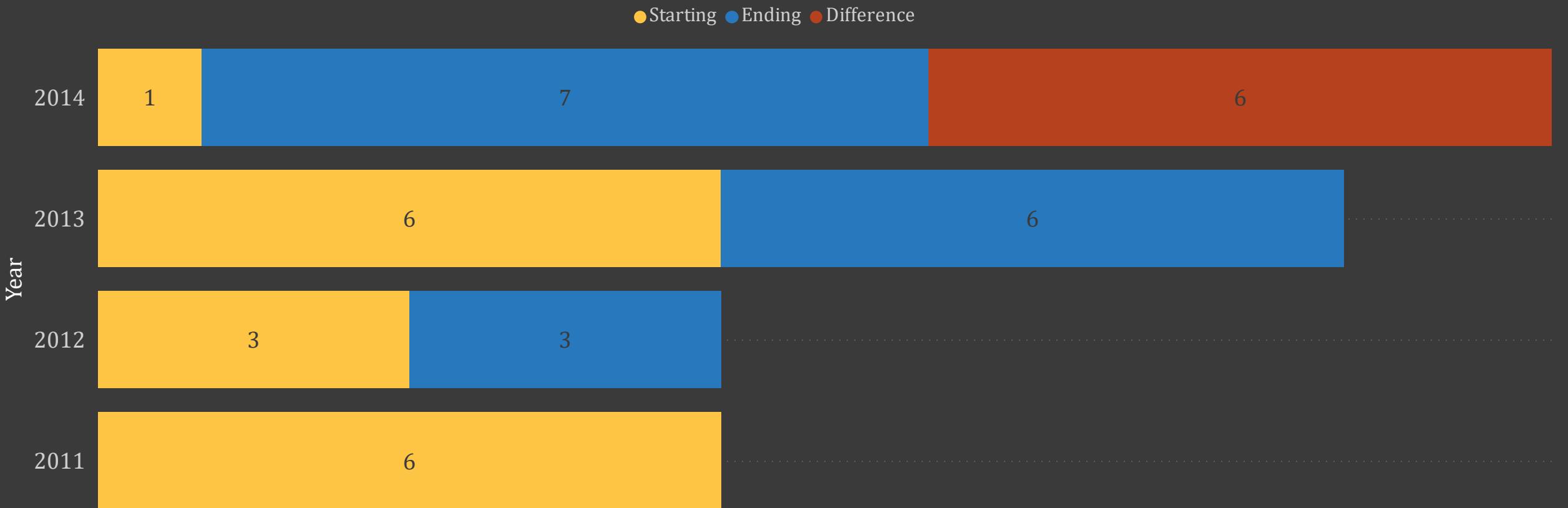
Customer Demand Opportunity

Demand vs Supply by Product: Quantity produced closest to quantity purchased



Opportunity: Address Promotion Balance

Number of Promotions: Starting and Ending by Year



Promotions in 2011 to 2013 were utilized by resellers extensively, but in 2014 use (or availability) decreased significantly.

The number of discounts ending in 2014 may have led to decreased sales and volatility observed in sales over time.

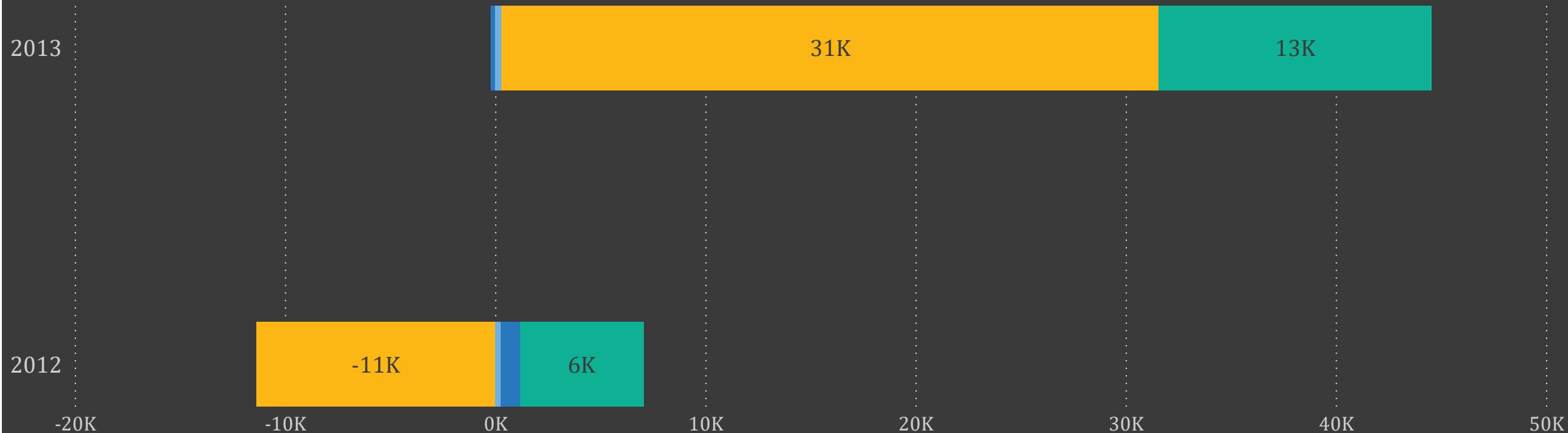
The strength of this hypothesis is supported by the discontinuation of all volume discounts at the end of May 2014.

Volume discounts had been in effect since 2011. In June 2014, resellers made no purchases.

Opportunity: Prudent Price Increases

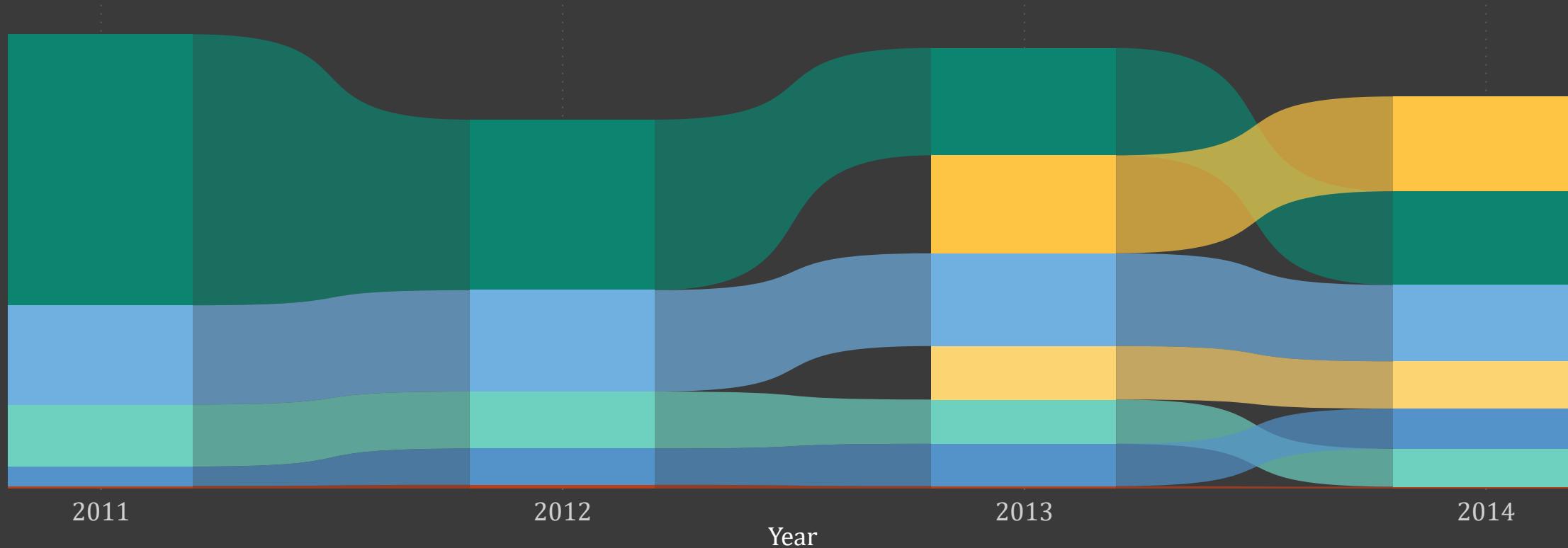
Change in product subcategory price by year

- Accessories ● Bikes ● Clothing ● Components



Average Sales by Product and Year

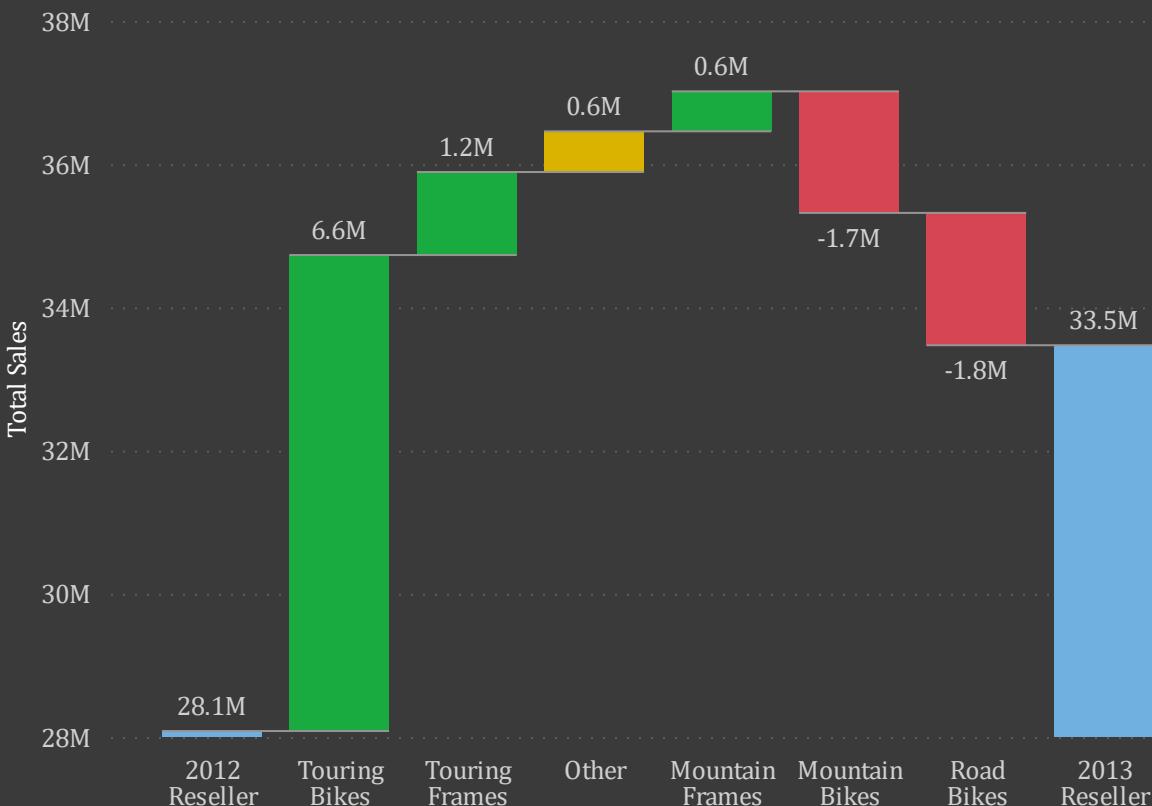
Product Subcategory • Helmets • Mountain Bikes • Mountain Frames • Road Bikes • Road Frames • Touring Bikes • Touring Frames



One can see that mountain bike and mountain frame sales (green) and road bike and road frame sales (blue) were outshined by touring bikes and frames (yellow) once we began selling touring bikes at the end of May 2013.

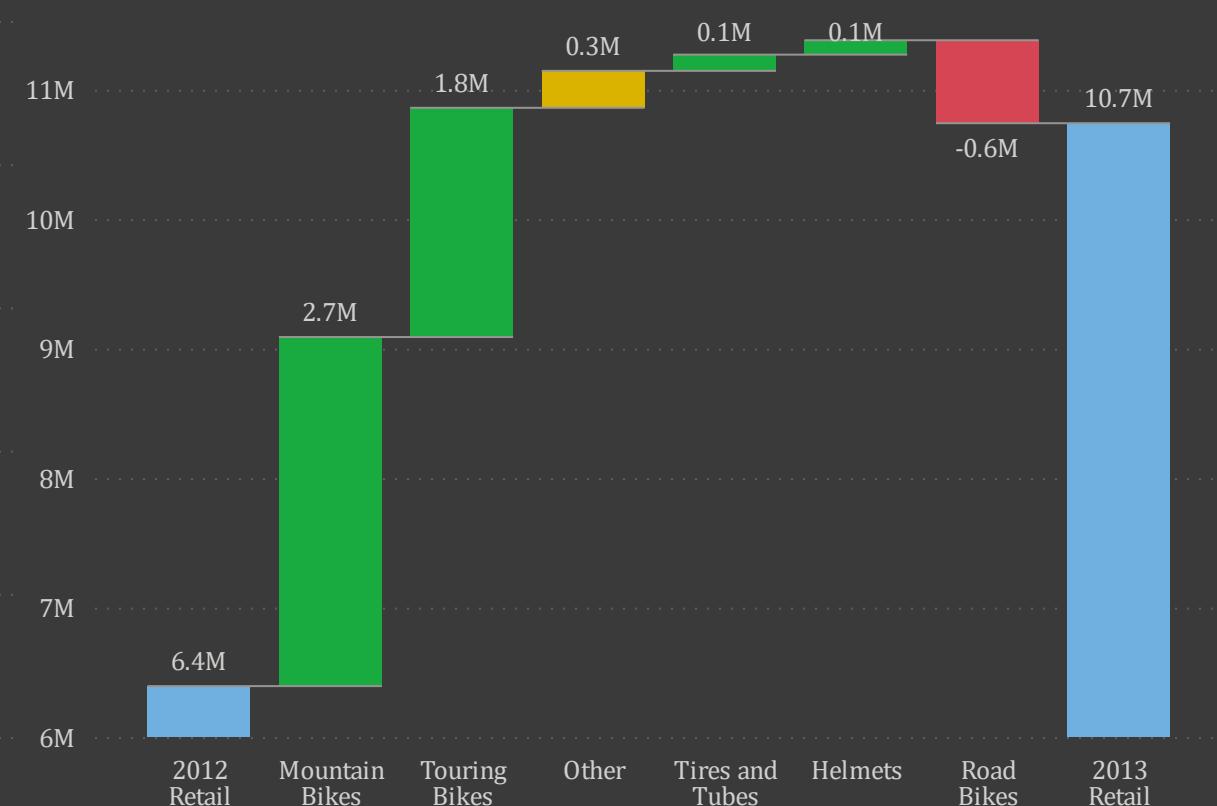
Resellers Change in Sales by Product Subcategory

2013 Change in Sales ● Increase ● Decrease ● Total ● Other



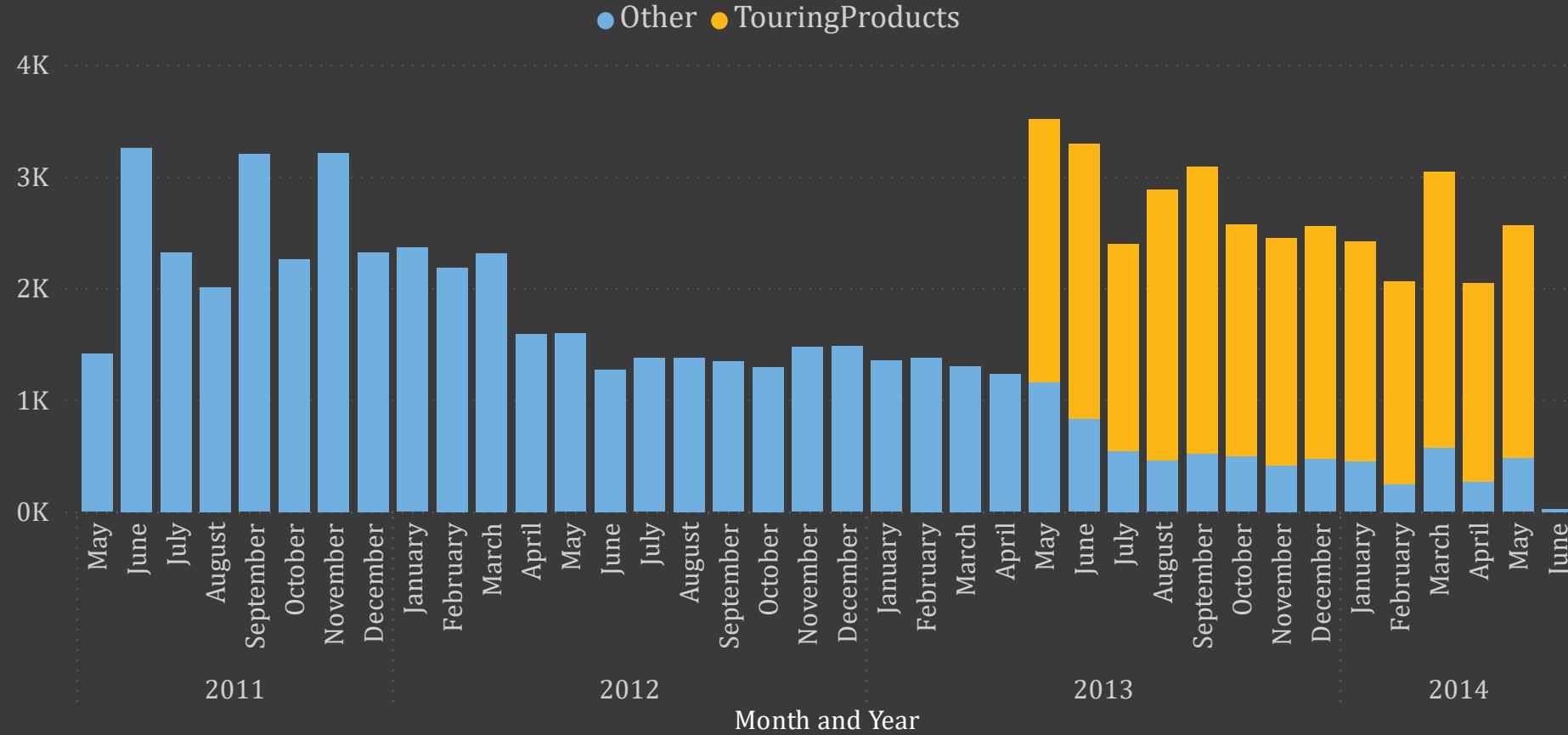
Retail Change in Sales by Product Subcategory

2013 Change in Sales ● Increase ● Decrease ● Total ● Other



The contribution of touring bike sales to total sales is apparent when looking at customer types separately. Both customer types make significant touring bike purchases, while road bike sales decrease from 2012 to 2013.

Touring Products vs Other Products: Average Sales by Month and Year

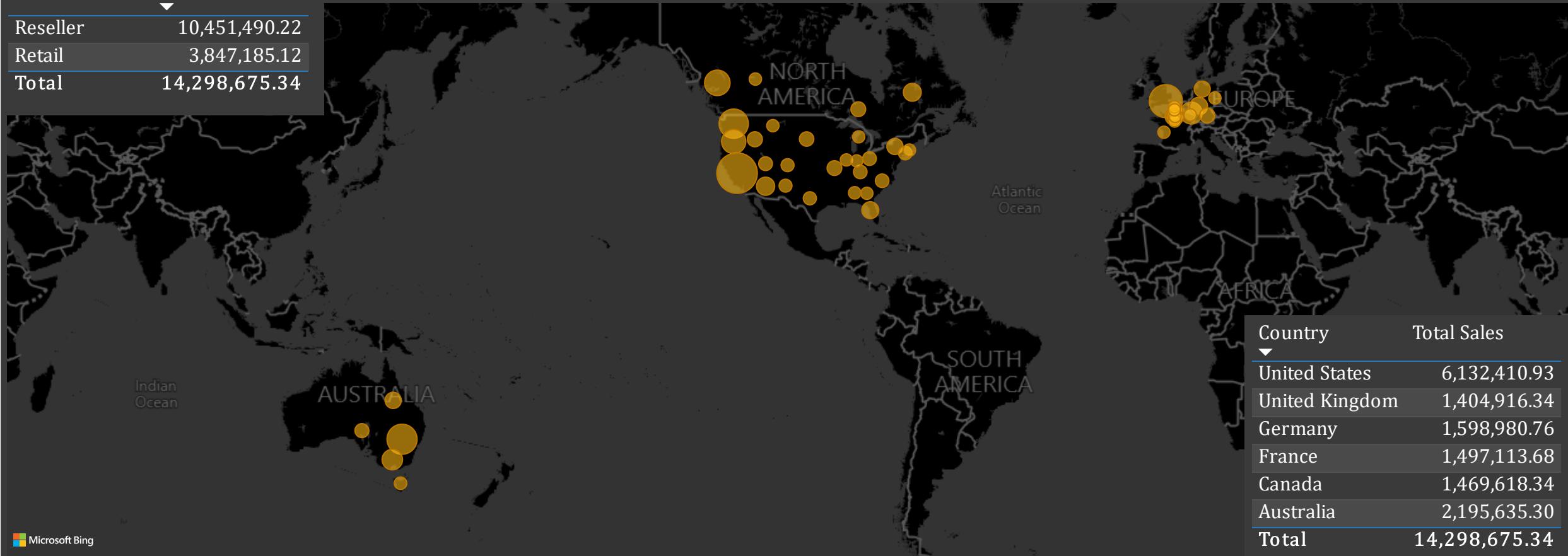


Touring Products	Quantity Ordered
Touring-1000 Blue, 60	1121
Touring-1000 Yellow, 60	1114
Touring-2000 Blue, 54	1010
Touring-1000 Yellow, 46	1005
Touring-1000 Blue, 46	1002
Touring-3000 Yellow, 44	851
Touring-3000 Yellow, 62	844
Touring-3000 Blue, 50	841
Touring-2000 Blue, 60	820
Touring-3000 Blue, 54	686
Touring-3000 Yellow, 50	686
Touring-1000 Yellow, 50	652
Touring-1000 Blue, 50	649
Touring-2000 Blue, 46	538
Touring-3000 Blue, 58	482
Touring-3000 Yellow, 54	453
Touring-1000 Blue, 54	413
Touring-1000 Yellow, 54	397
Touring-2000 Blue, 50	322
Touring-3000 Yellow, 58	293
Touring-3000 Blue, 44	292
Touring-3000 Blue, 62	281
Total	14752

When comparing average sales of touring products to all other products, we can see a shift in the cycling customers' priorities.

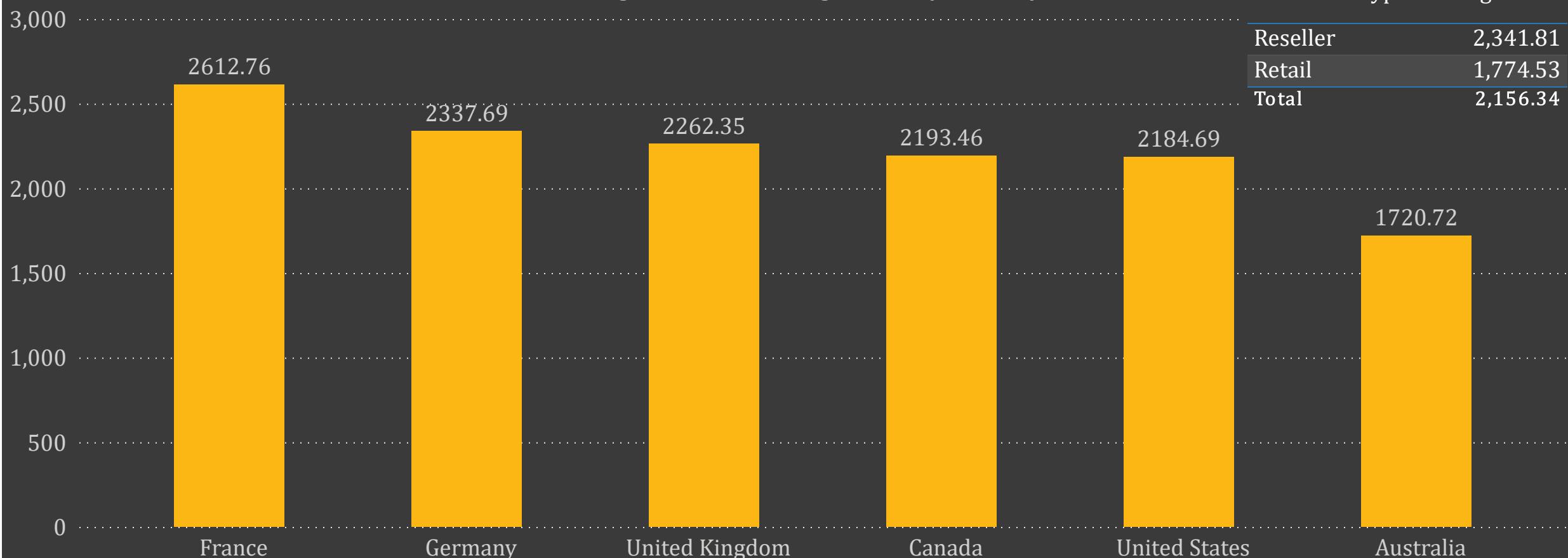
Customer Type	Total Sales
Reseller	10,451,490.22
Retail	3,847,185.12
Total	14,298,675.34

Touring Products: Total Sales by State / Province



In California, total sales of touring products made up 13.36% of the worldwide total. The United States retail and reseller total sales of touring products exceeded sales in other locations.

Touring Products: Average Sales by Country

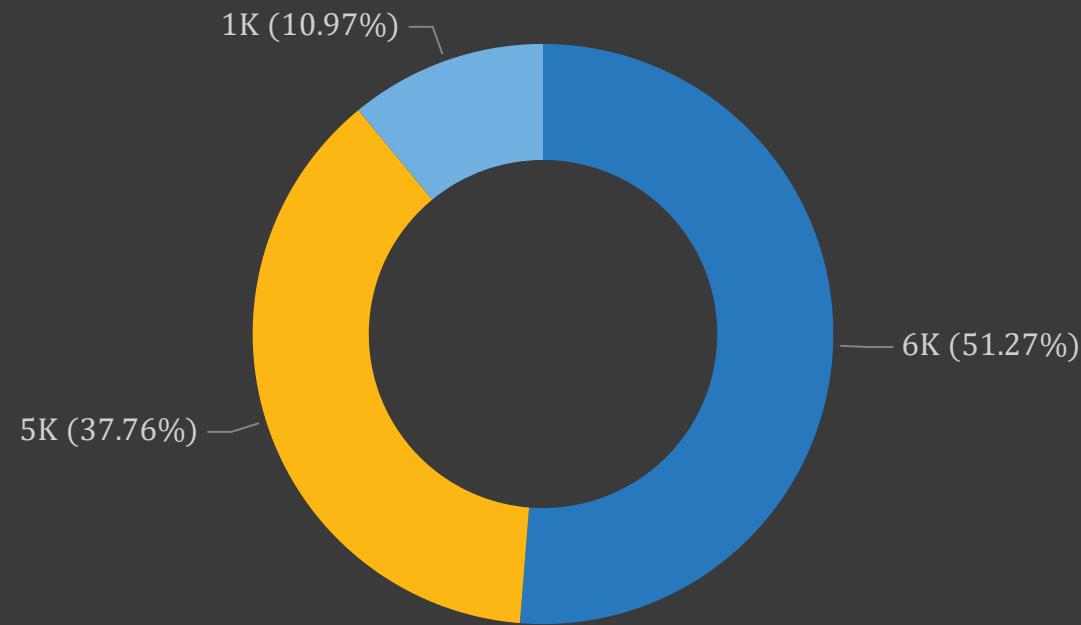


When looking at average sales of touring products by country, France takes the lead. Average sales among retail customers were highest in Canada. Average sales among resellers were highest in France.

Resellers: Quantity Ordered by Business Type

Online Store, Bicycle Manufacturer, Bicycle Store

● OS ● BM ● BS



Resellers: Quantity Ordered by Store Age

24 to 30

38 to 44

17 to 23

10 to 16

31 to 37

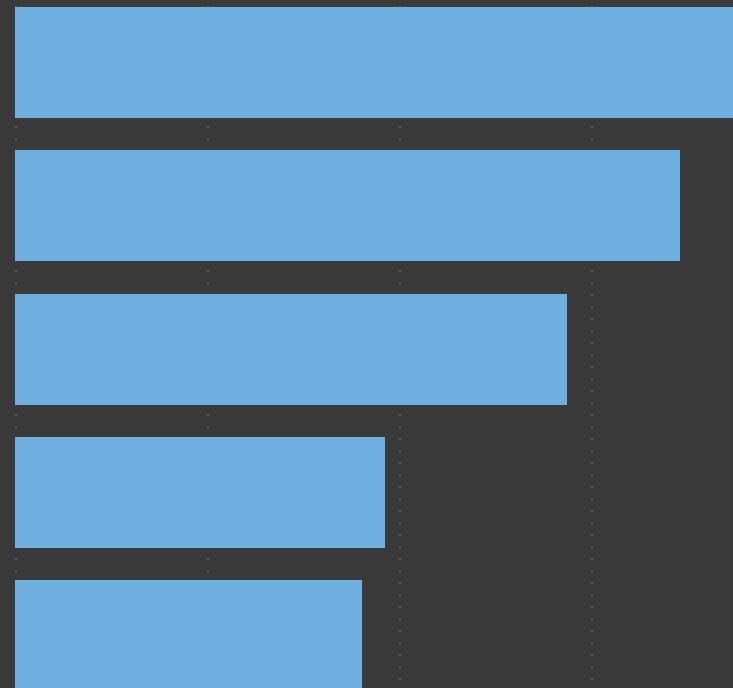
0K

1K

2K

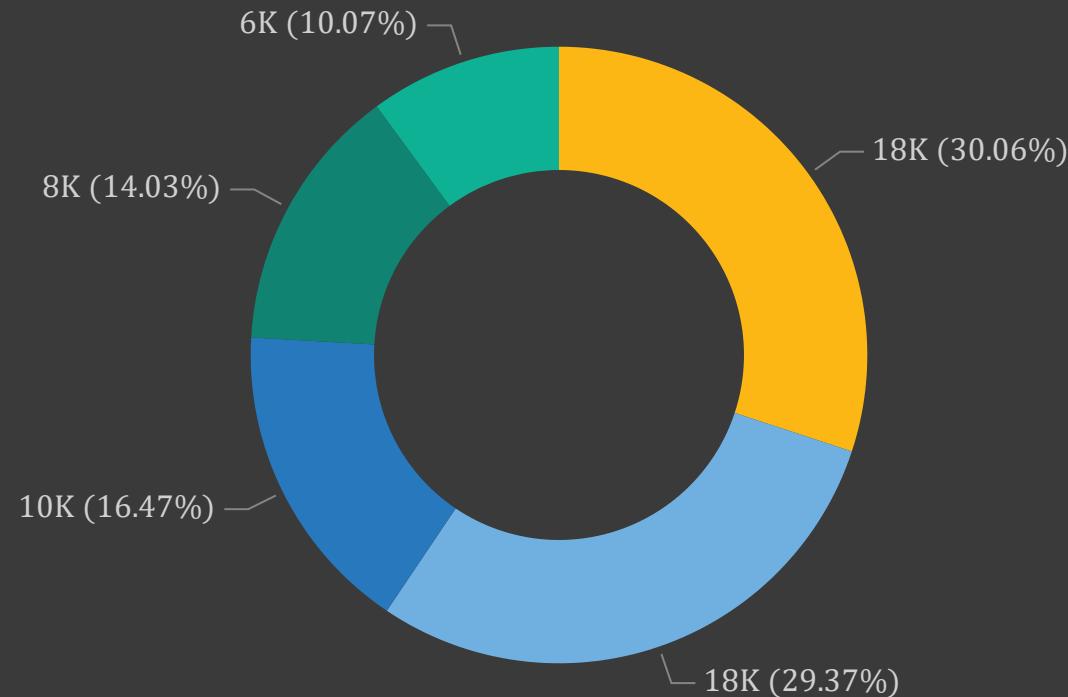
3K

4K

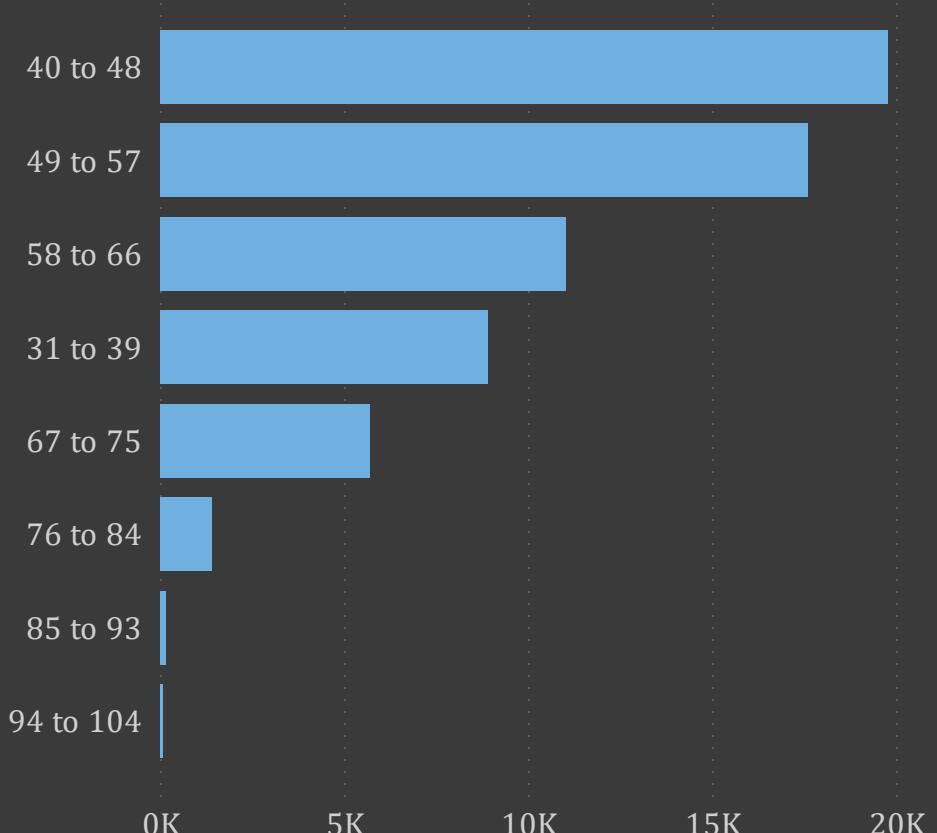


Retail: Quantity Ordered by Annual Income

● 25001-50000 ● 50001-75000 ● 75001-100000 ● 0-25000 ● greater than 100000



Retail: Quantity Ordered by Age





Sales may be decreasing overall, but...

- Smart data-driven actions can help us regain our momentum
- We can fine tune list price adjustments on bikes and components to regain lost resellers.
- We can balance supply and demand to decrease losses.
- Our inactive customers are available for conversion.
- New touring bike product trends are available to expand our customer base and alter our marketing strategies.

The future can be bright if we adapt to the changing market.



Thank you!

Britta Smith

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<https://github.com/brittabeta>

Appendix

- See AdventureWorks SQL Queries
- Microsoft SQL Server Essential Training, Adam Wilbert
- Power BI Essential Training, Gina von Courter
- <https://learn.microsoft.com/en-us/sql/t-sql/language-reference?view=sql-server-ver16>
- <https://social.msdn.microsoft.com/Forums/en-US/home?category=sqlserver>
- <https://learn.microsoft.com/en-us/sql/samples/adventureworks-install-configure?view=sql-server-ver16&tabs=ssms>
- <https://github.com/microsoft/sql-server-samples/tree/master/samples/databases>
- https://learn.microsoft.com/en-us/training/powerplatform/power-bi?WT.mc_id=powerbi_landingpage-docs-link
- <https://learn.microsoft.com/en-us/power-query/>