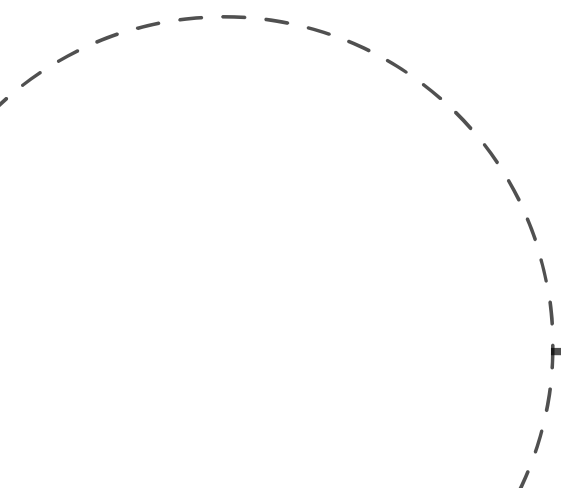




PRODUCT EXPANSION

Product line analysis by:
Ben & Forest



Agenda

01 Findings

Using sound data science principles on data acquired from the Codeup cloud database, search for quantitative indicators of a product line with room for expansion.

02 Recommendations

Based on relationships in our findings, we will recommend the category we think has the highest potential for growth, the technology product line.

03 Projections

We will simulate the effectiveness of our recommendations to demonstrate the benefits of expanding the target product line.



Executive Summary

Expand Technology

Targeted product analysis reveals underperforming product lines and steers us towards a product line that can be expanded to drive up profits.

Goals

Maximize effectiveness of product line expansion by identifying the product line with: (1) the highest profitability and, (2) the largest amount of room for growth in sales volume.

Recommendations

Technology line needs expansion.

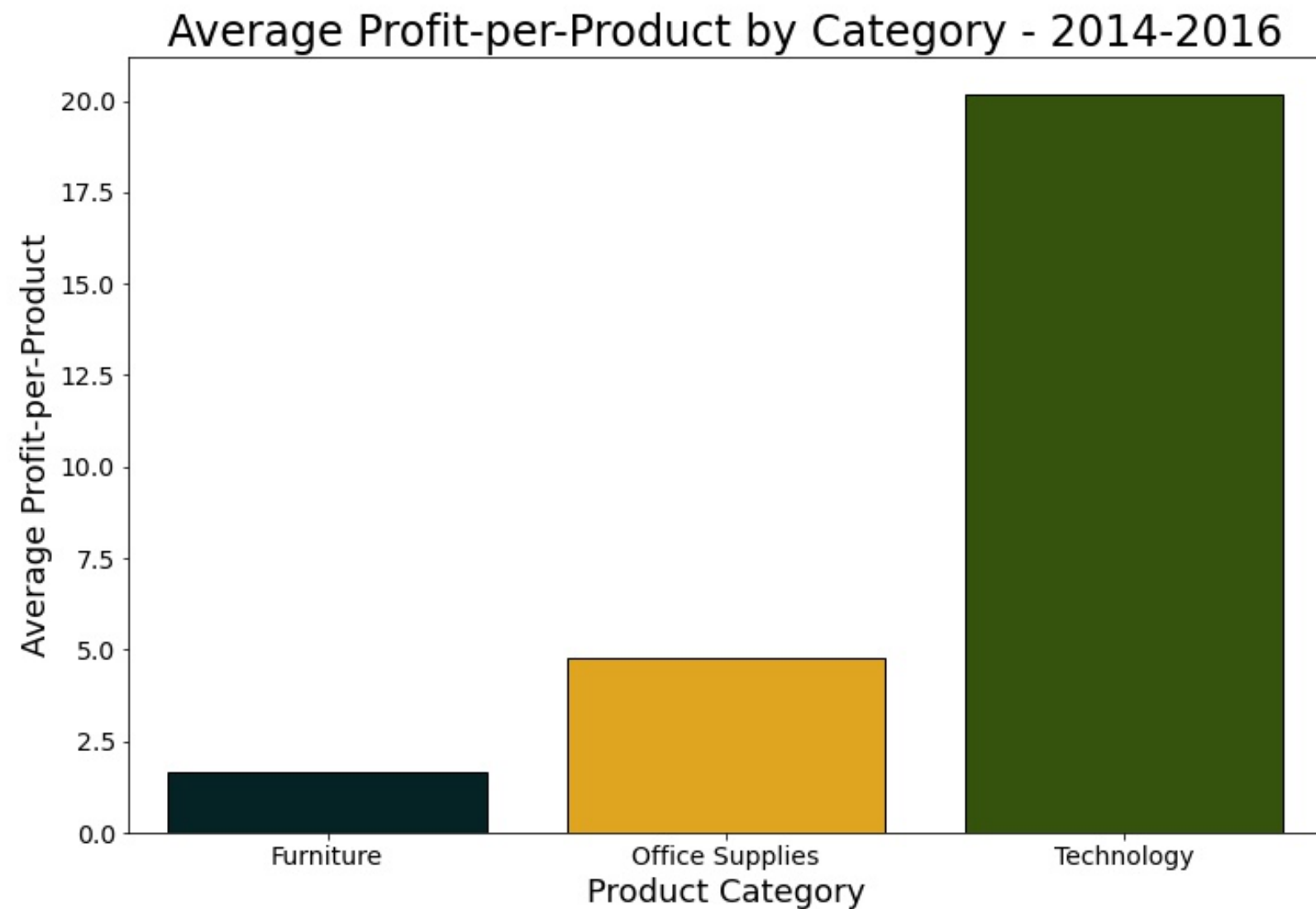
Discounts need to be capped.

Predictions

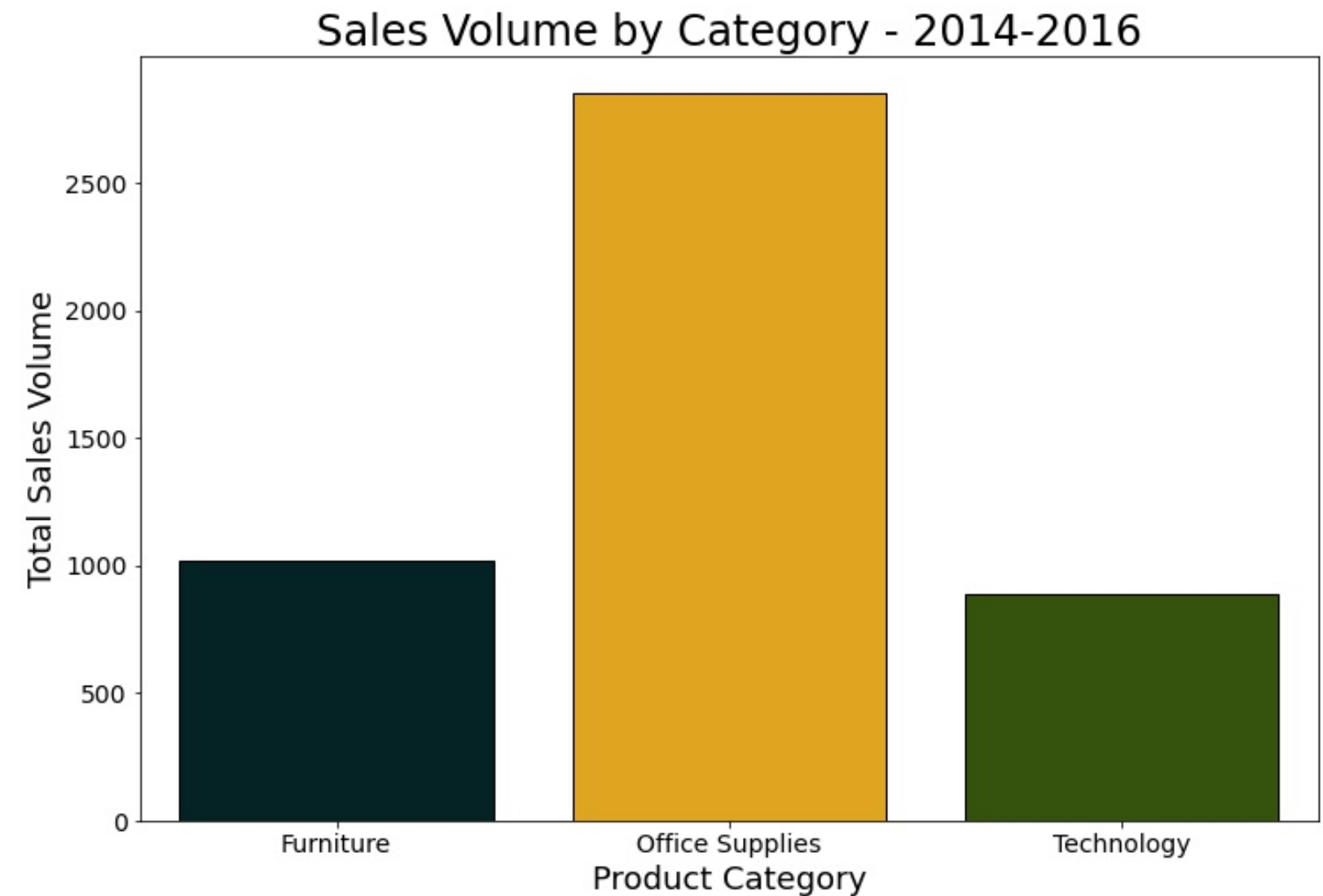
We predict an average monthly profit increase of 63% in the technology category, if our recommendations are followed.

Findings

Possibilities for expansion, sales, profit, growth, etc.



Technology has the greatest profit per item sold.



Technology has the lowest sales volume.

Recommendations



Expand Technology Product Line

Focusing research & development, advertising, and marketing campaigns towards products and consumers in the technology market offers the highest ROI in terms of sales volume and profits.



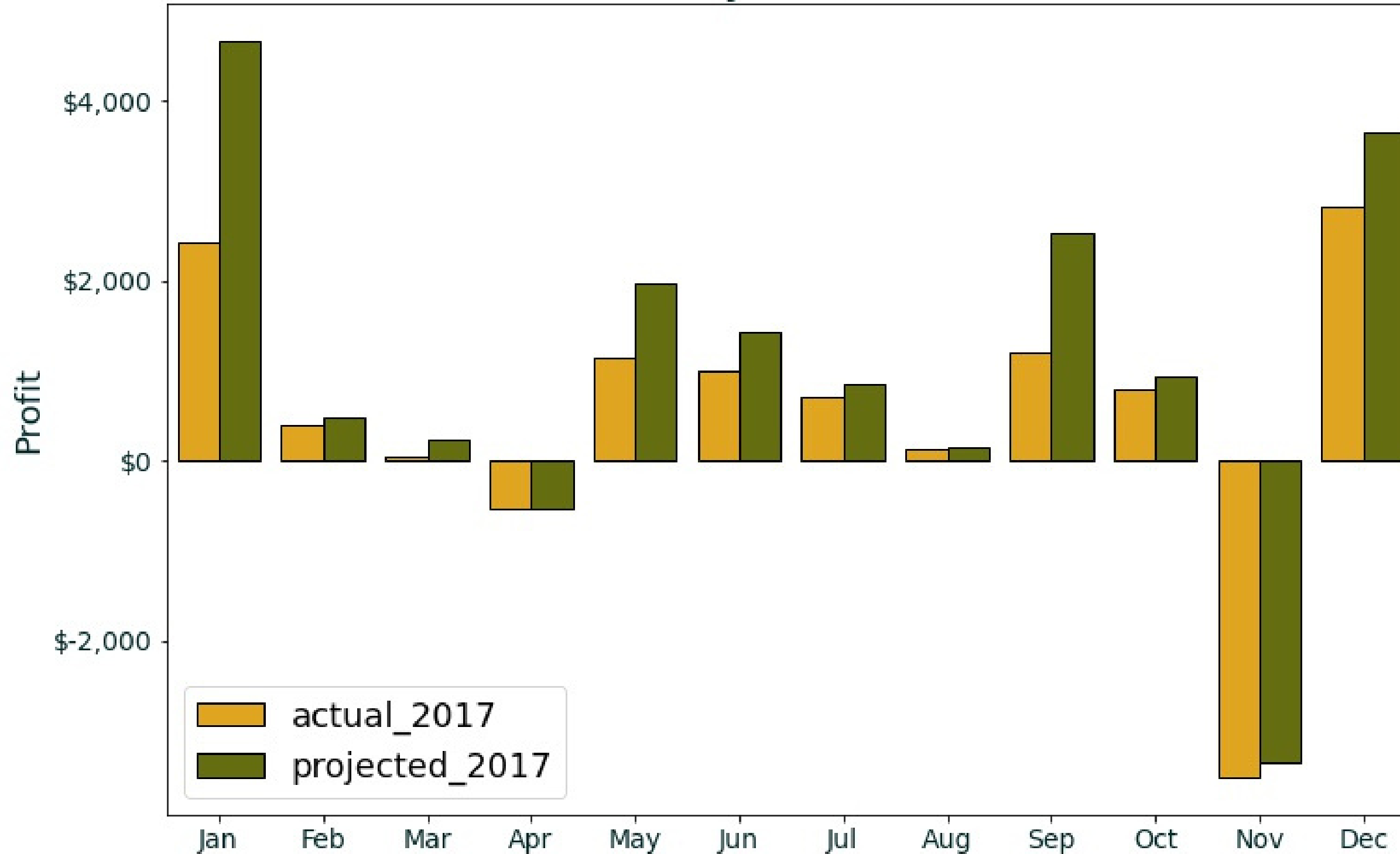
Reduce Discounts

In order to improve profitability overall, we recommend capping discounts at 35% for new customers.



Proposed Profits

Monthly Profit 2017



Project Growth

We expect monthly sales to grow by 63% on average.

Project Profit

We expect technology sales in 2017 could yield an annual profit increase of 96%.

Proposed Profits



Project Growth

We expect monthly sales to grow by 63% on average.

Project Profit

We expect technology sales in 2017 could yield an annual profit increase of 96%.

Conclusions

Technology Product Line Expansion

Profits on technology sales are higher than other product lines. Additionally, sales volume is lowest in this category. Based on profitability and projected room for growth, expansion efforts should be targeted on the technology product line.

Next Steps

With more time we would like to:

- use time-series analysis to predict 2018 profits.
- explore expansion opportunities for technology based on regional demands.
- explore expansion opportunities for technology based on various customers demands.

Appendix

Variables	Definition	DataType
order_date (index)	Date order was placed	datetime64[ns]
order_id	Order identifier assigned to each product name for each order	object
ship_date	Date order was shipped	datetime64[ns]
ship_mode	Mode of shipping for delivery: 'Standard Class', 'First Class', 'Second Class', 'Same Day'	object
segment	Customer type: Consumer, Cooperate, Home Office	object
country	Country to which shipment was delivered: 'United States'	object
city	City to which shipment was delivered	object
state	State to which shipment was delivered	object
postal_code	Postal code to which shipment was delivered	float64
sales	Sale total for product id * quantity in given order (\$USD)	float64
quantity	Total number of specified product ordered	float64
discount	Percentage of discount applied to order in decimal form	float64
profit	Sales - Product Cost	float64
category	Category the product belongs to	object
sub-category	Subcategory the product belongs to	object
customer_name	Name of customer	object
product_name	Name of product	object
region_name	General area of US where order was placed: 'Central', 'South', 'East', 'West'	object
days_to_ship *	Number of days from order_date to ship_date	int64

Thank you Rachel!