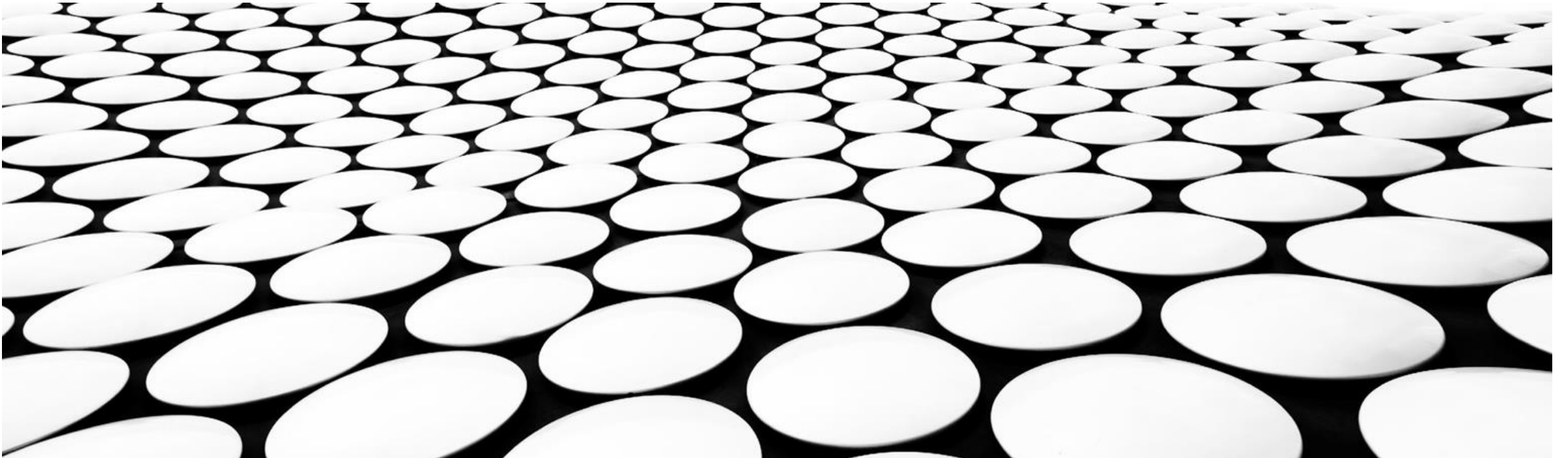


Data Mining at Blackwell Electronics

Brenton Ray, Lonnie Long, Wajahat Khan, Brian Mattis



Brand Preference Prediction

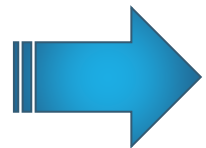
Request to predict end user laptop preferences

Using surveys that were both completed and uncompleted, the goal was to analyze and find patterns in certain fields:

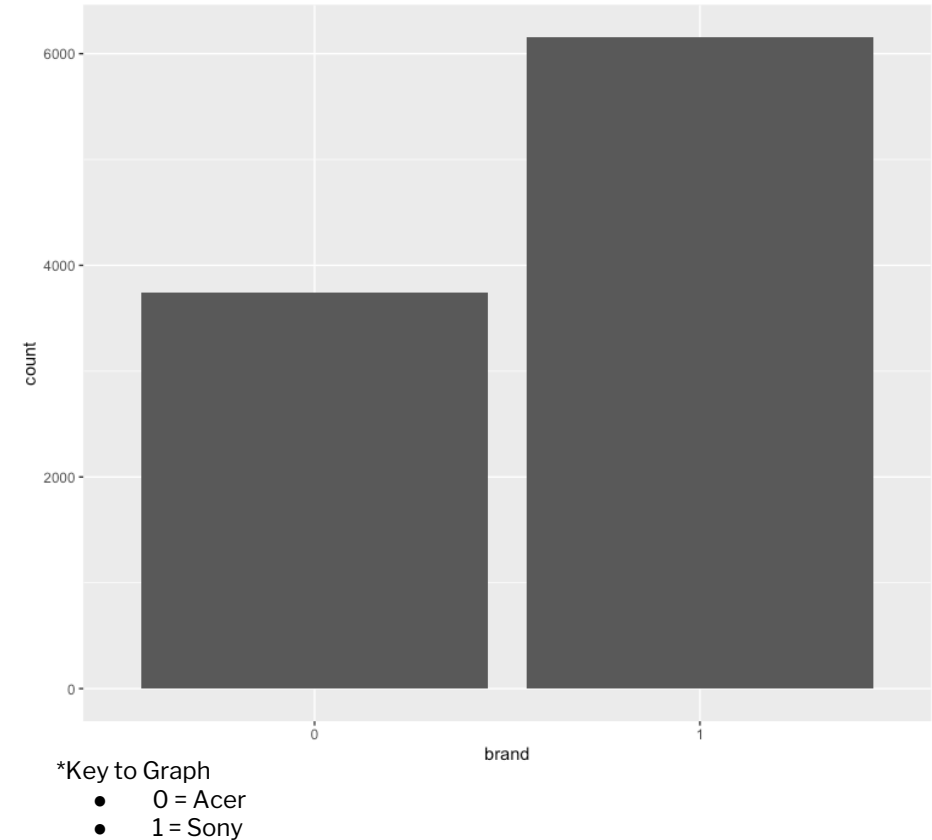
- Income, age, education level, car make, credit, and zip codes

Data science team was able to:

- Train and test data to make predictions on important fields
- Found that salary and age have most impact when making predictions on laptop preferences
- Upon testing multiple analyses, we found a 90% accuracy score with certain models



- Sony is the preferred brand upon prediction analysis
- Can use this technique to make predictions on preferences for other product



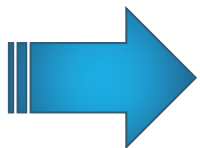
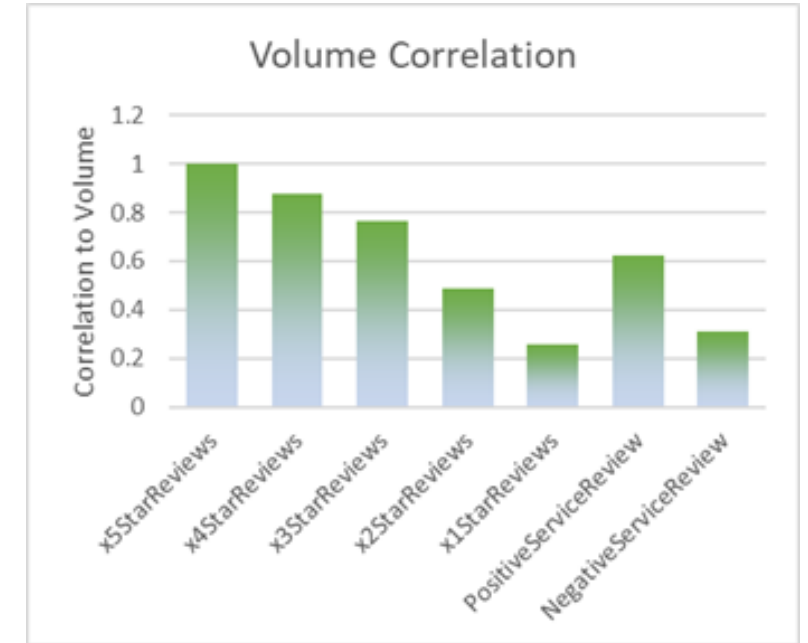
Sales Volume Predictions

The Data Science team used existing product sales volumes and product attributes to predict the sales of new products

- Star-reviews, service reviews, type of product, product physical sizing

Data science was able to:

- Determine which attributes played the largest role in sales volume prediction
- Generate models to predict the sales volume of new products with high certainty

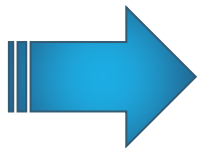


- Decreases the risks associated with introducing new products
- Guides inventory management to prevent over/under stocking of items
- Demonstrates what metrics matter to increase sales on items

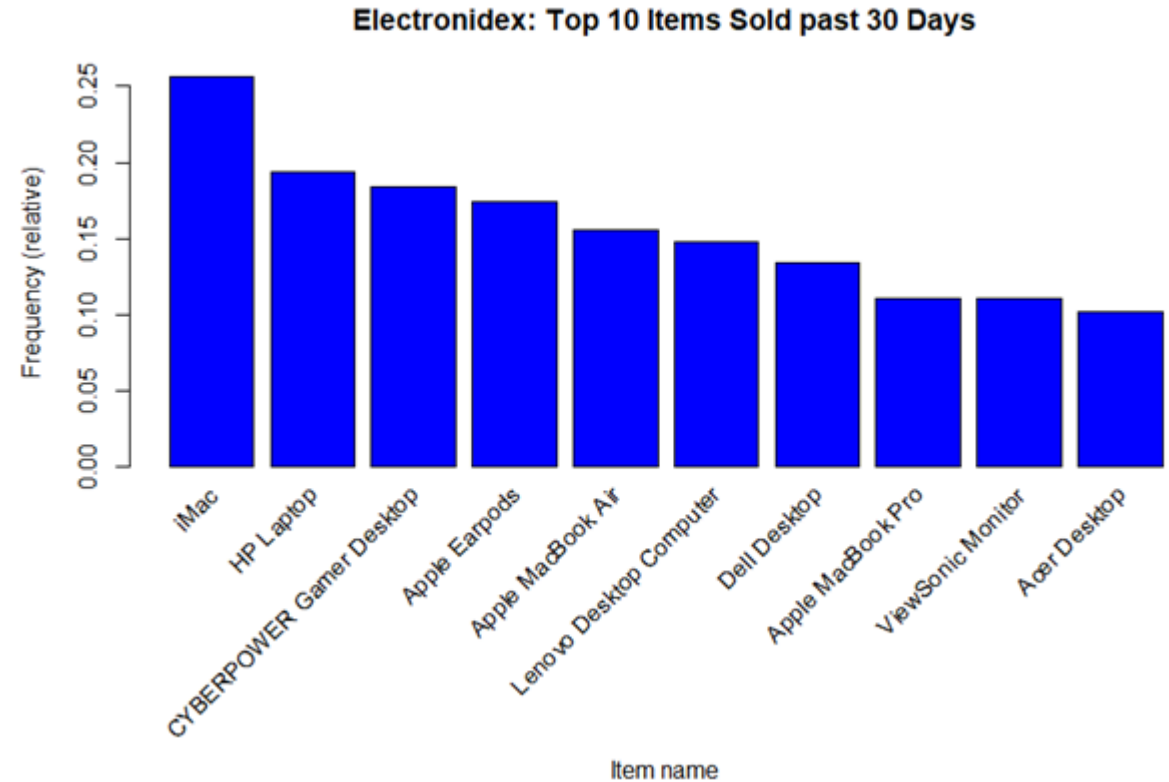
Market Basket Analysis

The Market Basket Analysis was used by the Data Science Team to identify patterns in Electronidex online sales for Blackwell Electronics.

- An algorithm reads the sales transactions to understand the relationship in items and their associated transactions.
- The model builds Association Rules that evaluate the likelihood an item will be purchased within combinations of other items.
- A Key Indicator of the strength of the Rules is the frequency that an item is sold.



- The Market Basket Analysis gains insight into Consumer Buyer Behavior
- Frequently used to develop Multi-Item Sales promotions



Where Do We Go From Here?

Taking Data Science Beyond Sales Data



Machine learning can be used to reduce Blackwell's expenses by automating audits of invoices and business expense reports



The logistics of product movement can be improved through models that optimize product shipping and transportation



Store and employee performance can be tracked and models can be used to identify trends which can inform manager decisions