



INNOVATION
PRODUCTS

TEAM

GROUP 2



Pavani Pragada



Harichandana Gonuguntla



Joshua Hawley

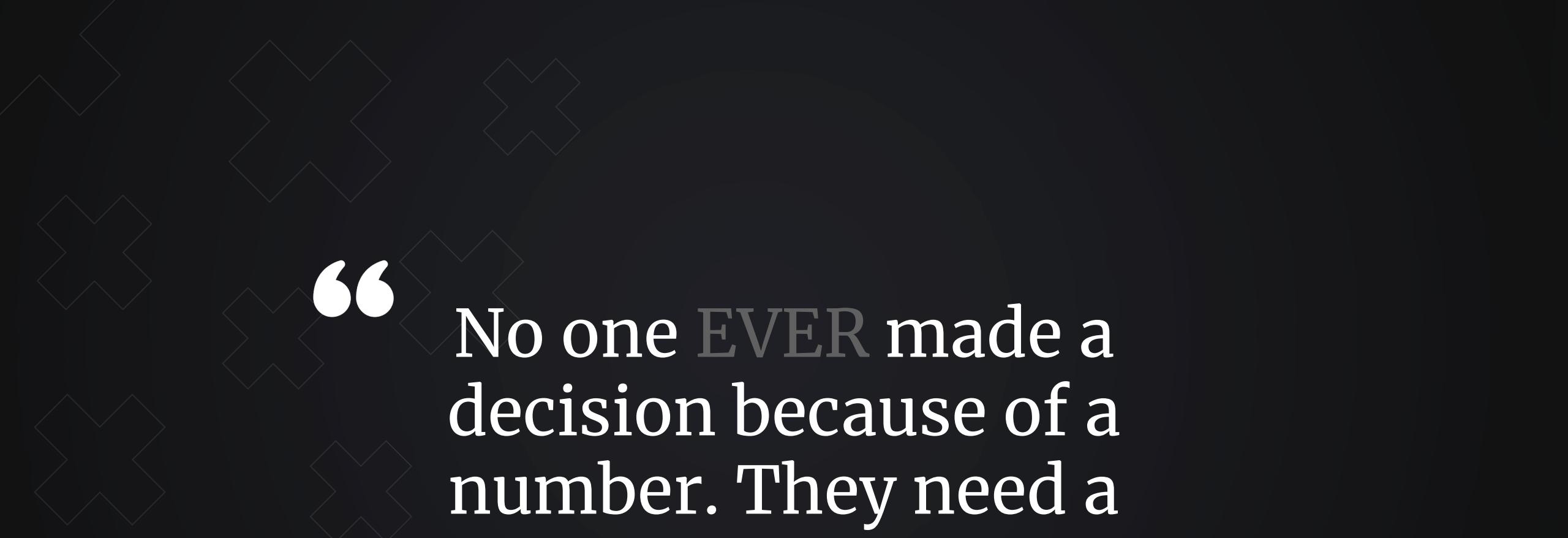
PRODUCT INNOVATION

THE TASK



INTRODUCING NEW PRODUCTS

- ➔ Broader Customer Segments
Trends such as health-consciousness and sustainability
- ➔ Crucial For Revenue Growth
Keeps customer engagement fresh and looking for new products
- ➔ Enhance Brand Appeal
Revitalizes sales and marketing efforts – leading to increased visibility



“ No one EVER made a decision because of a number. They need a STORY. ”

Daniel Kahneman

THE PROCESS

DECISION PROCESS

01 Examine Data

Taking a closer look at
the available data

04 Question Analysis

Answering questions with
existing results

02 Model Creation

Writing the models for
later analysis

03 Model Refinement

Tuning and adjusting the
hyperparameters

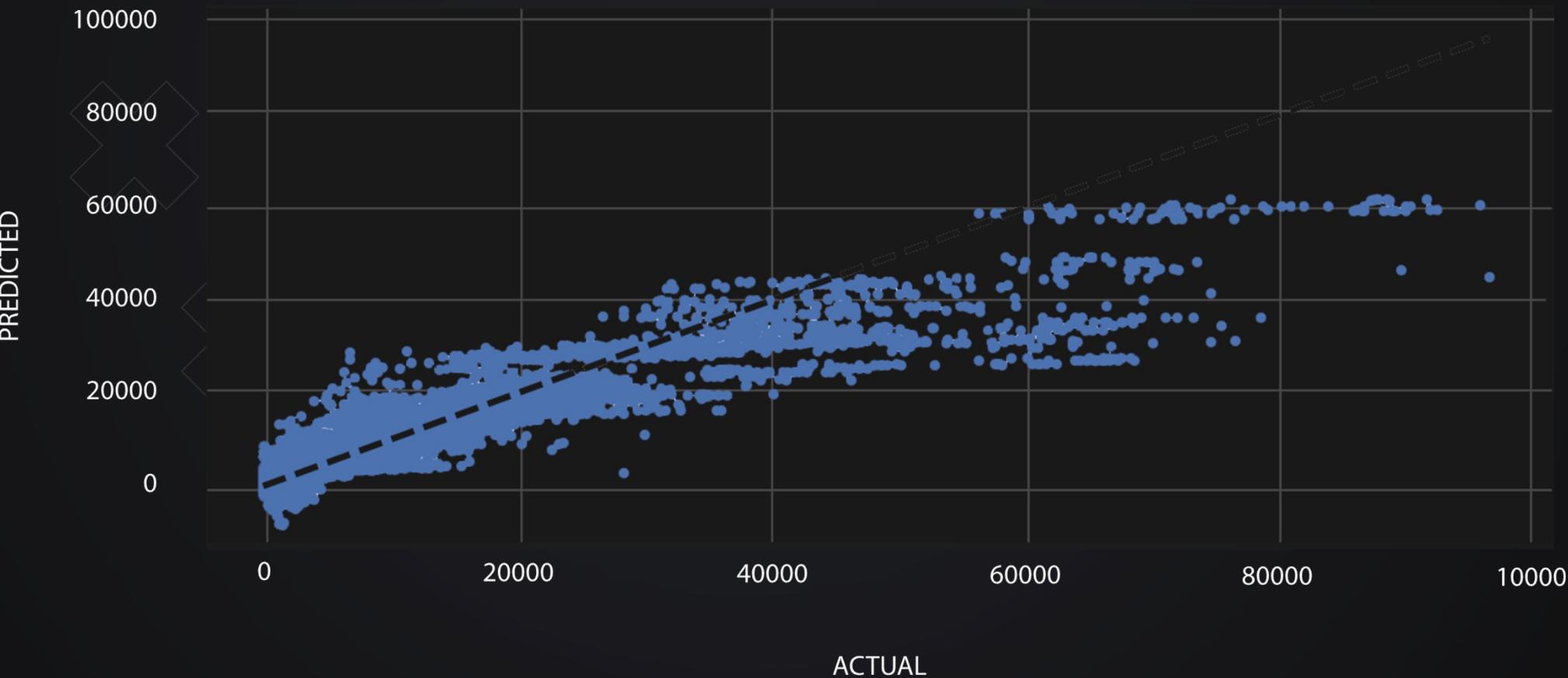




MODELING

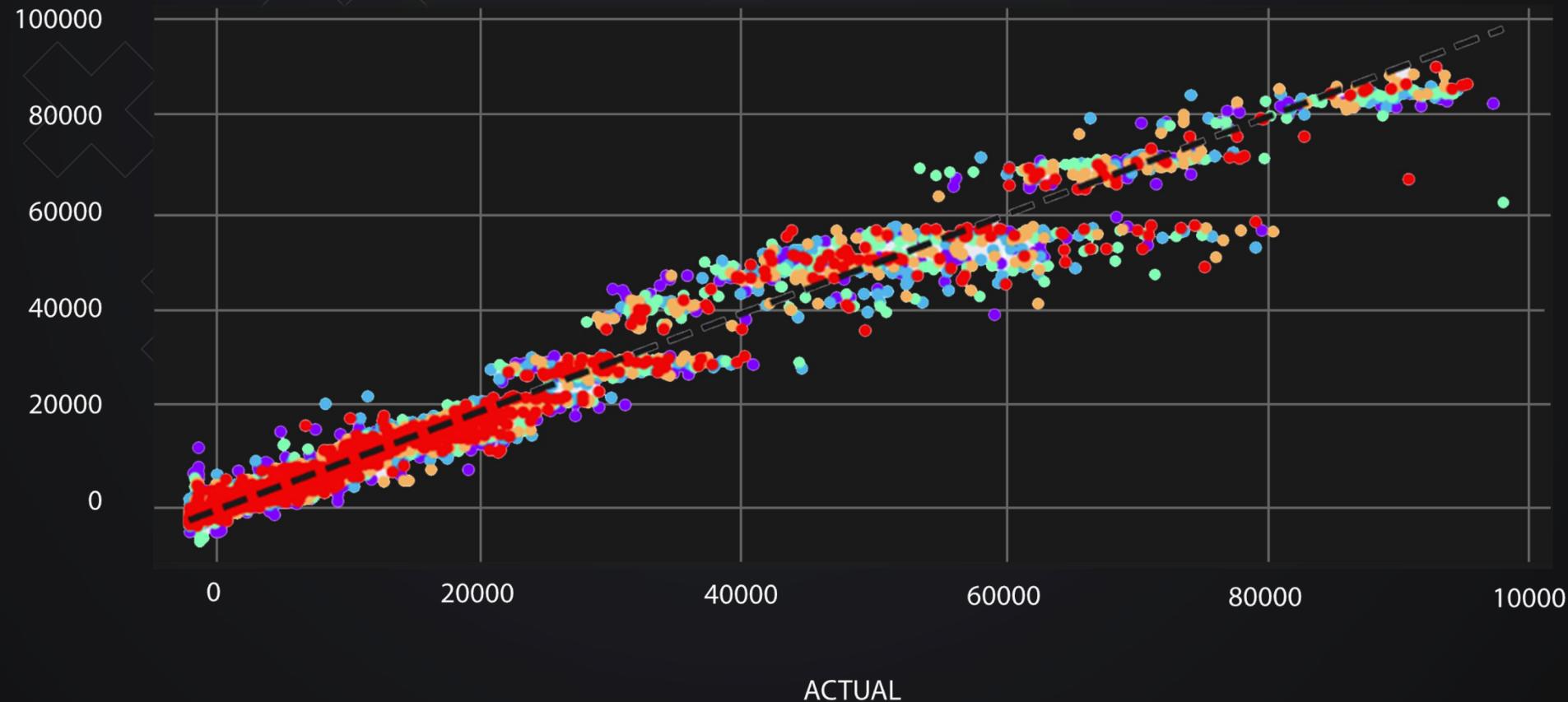


PREDICTED v ACTUAL



PREDICTED v ACTUAL

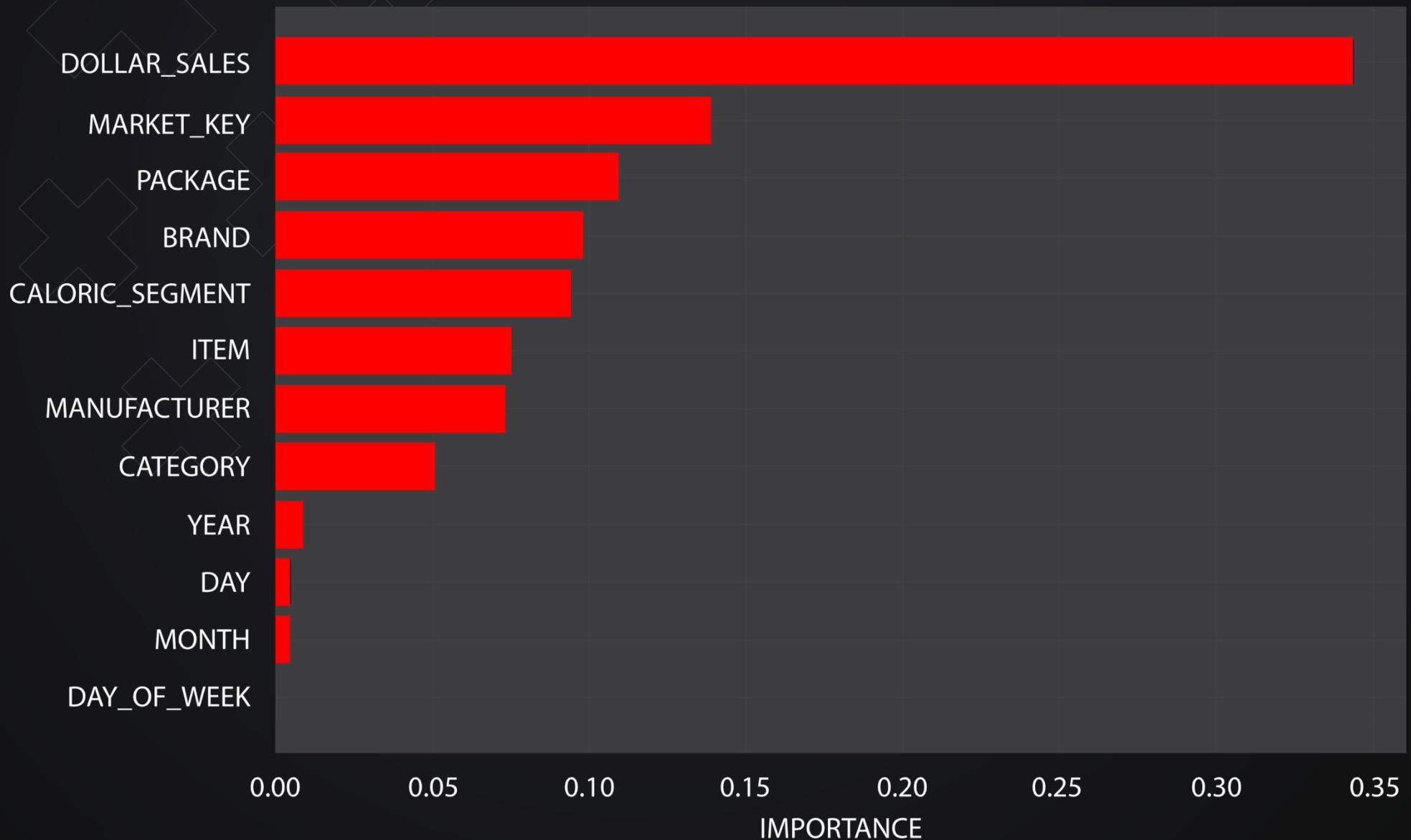
K-fold Cross Validation



LEARNING CURVE



FEATURE IMPORTANCE



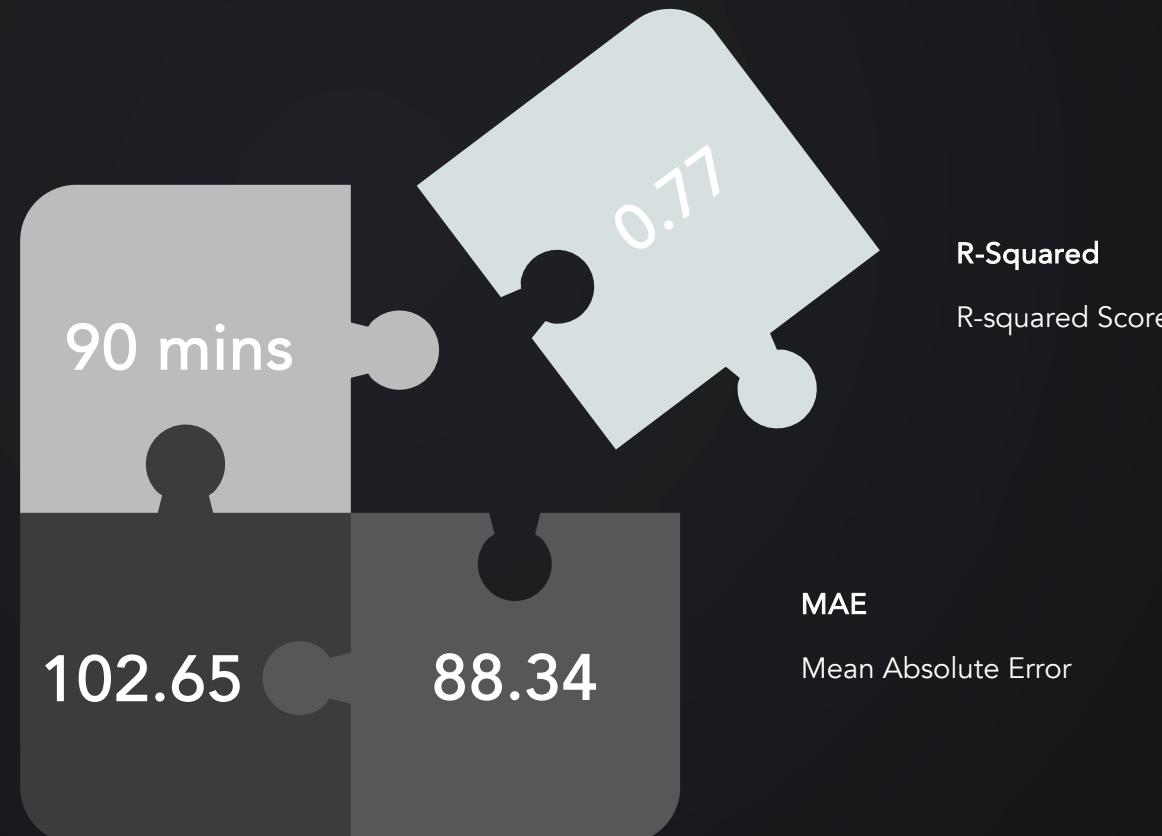
STATISTICAL AND PREDICTIVE MODEL ANALYSIS

Random Forest Metrics

RESULTS FROM RANDOM FOREST MODEL

Execution Time
Time to run the model

RMSE
Mean squared error



R-Squared
R-squared Score

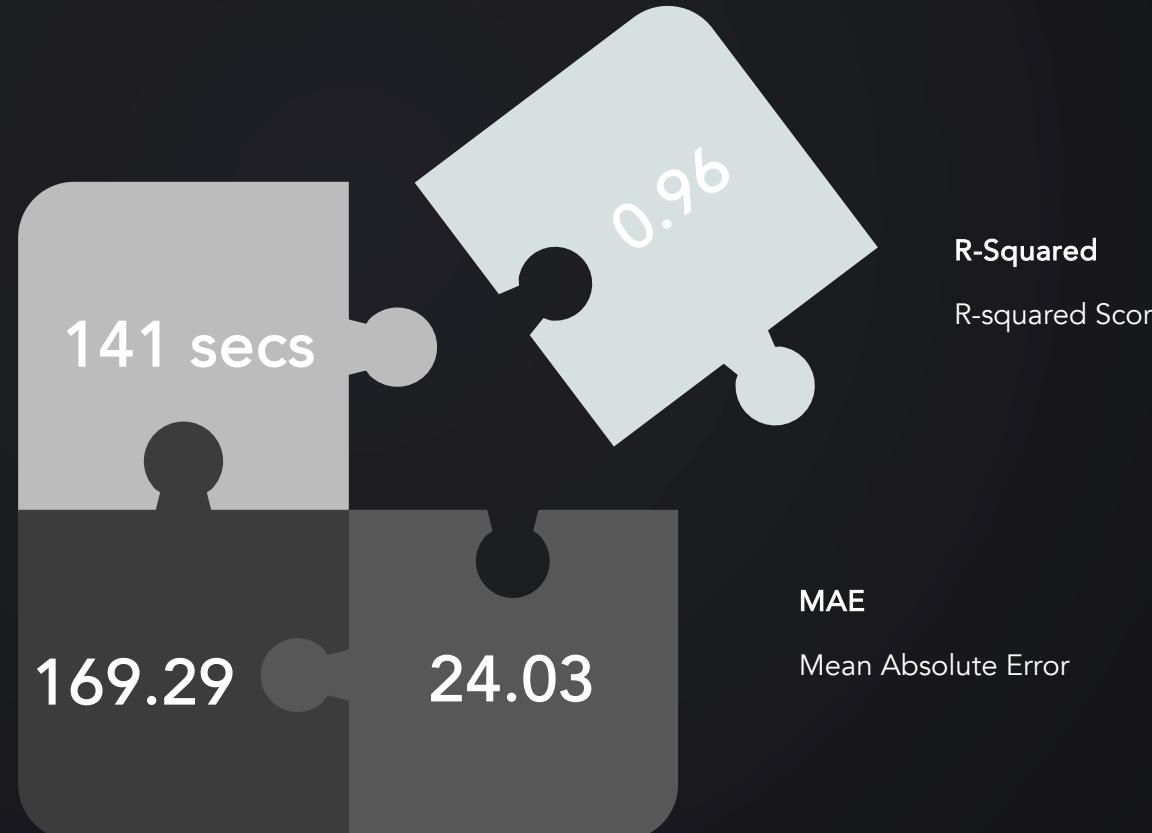
MAE
Mean Absolute Error

XGBoost Metrics

RESULTS FROM XGBOOST

Execution Time
Time to run the model

RMSE
Mean squared error





QUESTIONS

DIET SMASH PLUM 11SMALL 4ONE

Which 13 weeks of the year would this product perform best in the market? What is the forecasted demand, in weeks, for those 13 weeks?

Starting from week 32 and spanning the next 12 weeks suggests that the late Summer through Autumn might be the peak season for this product.



DIET VENOMOUS BLAST ENERGY DRINK KIWANO 16 LIQUID SMALL

Which 13 weeks of the year would this product perform best in the market? What is the forecasted demand, in weeks, for those 13 weeks?

The forecasted demand of this product, following historical trends, would be highest from week 47 which spans from late fall into winter, crossing over into the following year.



GREETINGLE HEALTH BEVERAGE WOODSY YELLOW .5L 12ONE JUG

Swire plans to release this product for 13 weeks, but only in one region. Which region would it perform best in?

The product is predicted to perform best in the "Midwest" region. All the top 13 predicted demand values belong to the "Midwest" region.



Lessons Learned



- Targeted approach to the overall problem
 - Breaking down the dataset further
 - A deeper understanding of the process



THANKS

FOR LISTENING