# Use Cases of Data Mining

PREPARED BY:

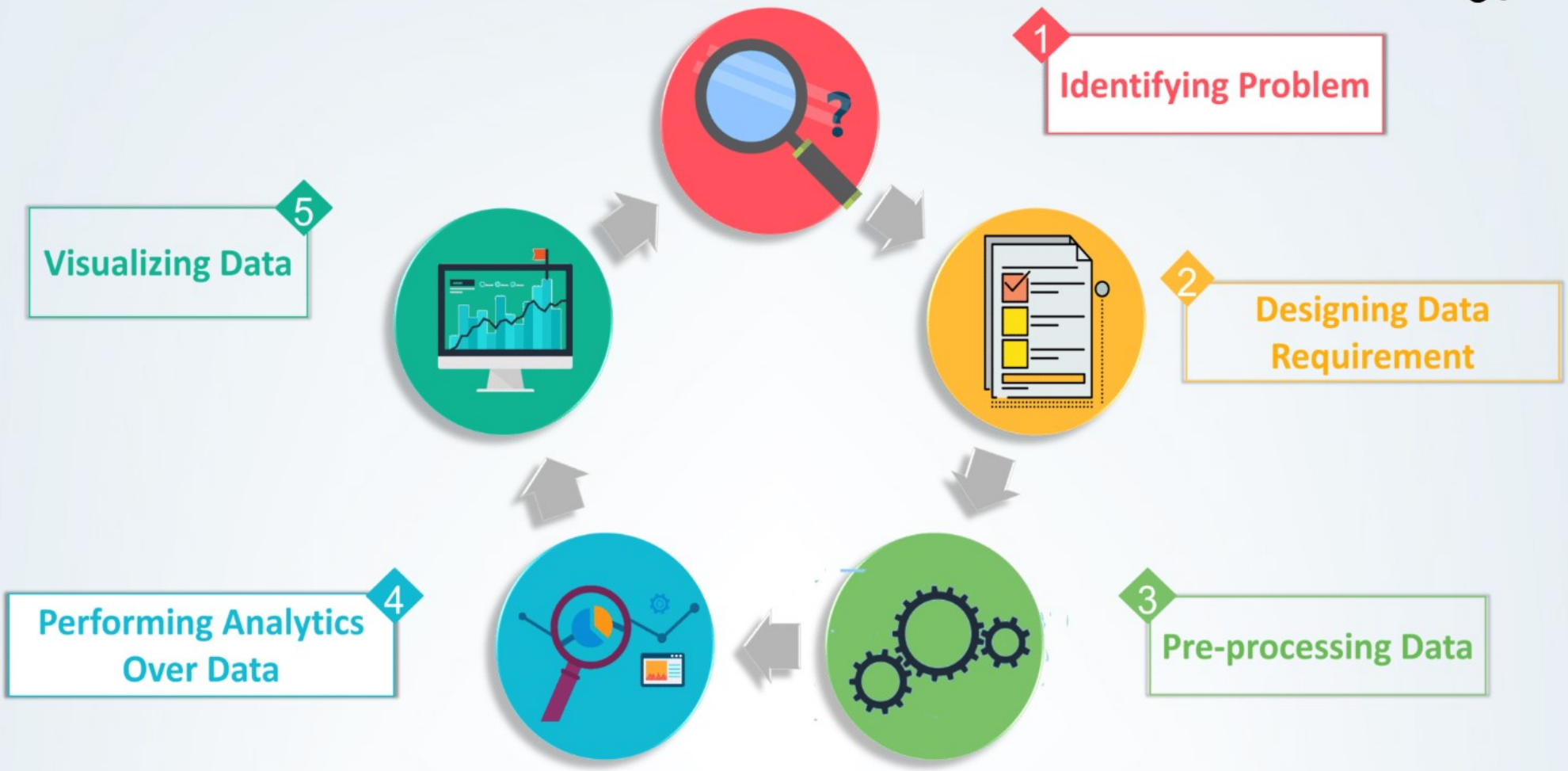
Steven Melendez

DATE:

07/07/2019

Blackwell Electronics

**Data mining** is the process of discovering patterns in large data sets involving methods at the intersection of machine learning, statistics, and database systems




**Data analytics** is the science of analyzing raw **data** in order to make conclusions about that information.

Many of the techniques and processes of **data analytics** have been automated into mechanical processes and algorithms that work over raw **data** for human consumption

# Data Mining
# Applications

JULY, 2019

# Investigate Customer Buying Patterns

MARKET VALUE ANALYZED

$8,3 MM

Highest spend per Region
Central $4,154 MM

ONLINE SALES VS IN STORE

54%

Percent of sales online

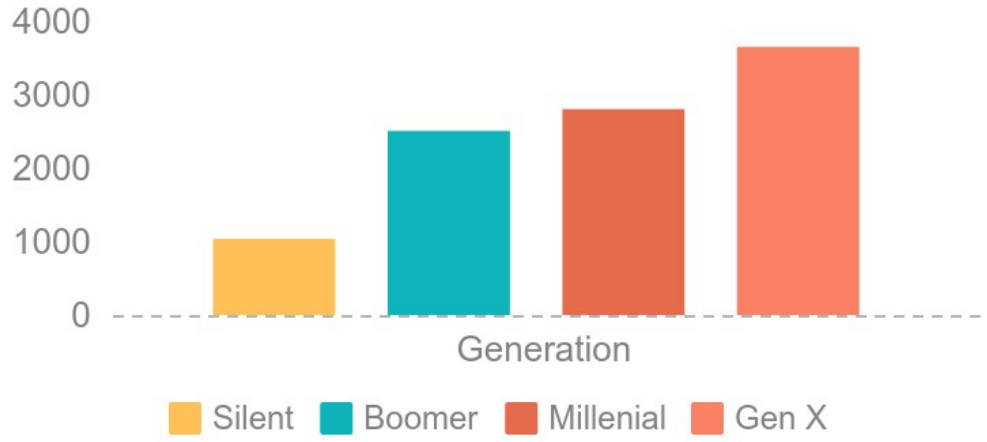
NUMBER OF Categories

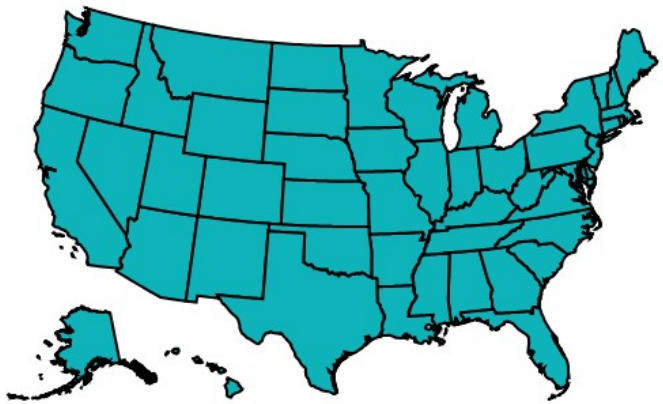
4

ALGORITHM PRECISION

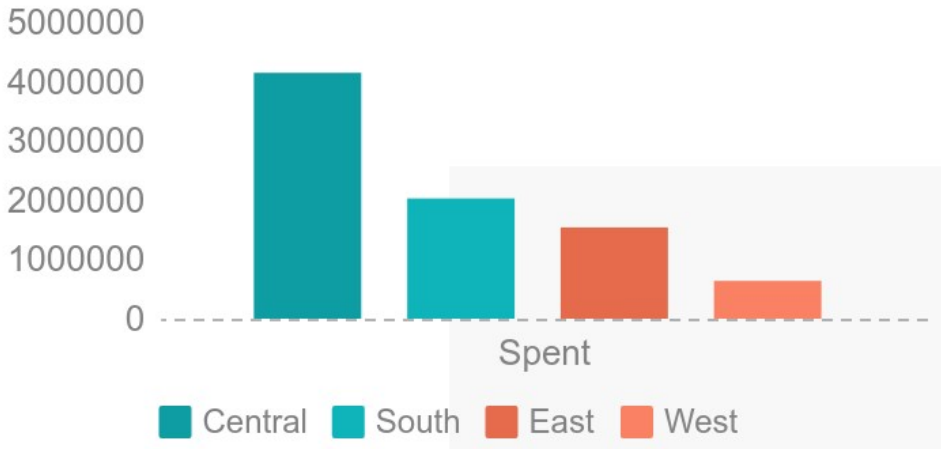
60%

## Customer Segmentation



## Spent by Region

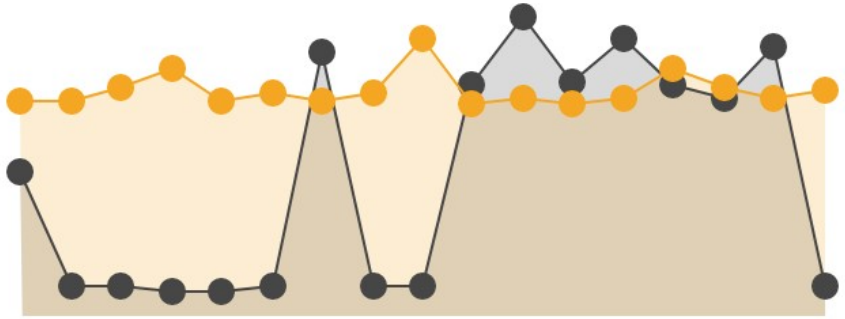


JULY, 2019

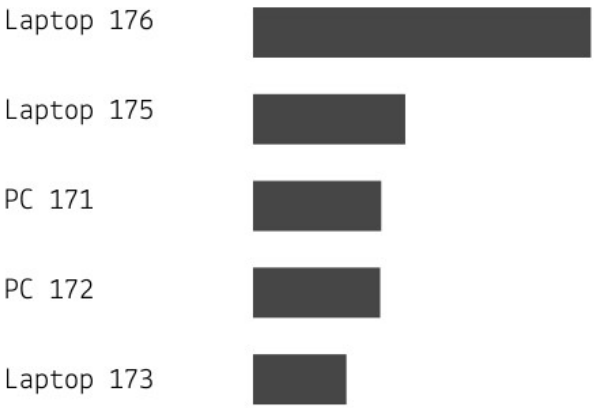
# Predict Profitability

Marketing BOOSTER

## Variability between Models Predictions




## Profitability Prediction




### AVG PROFIT VALUE OF NEW PRODUCT

$522 K

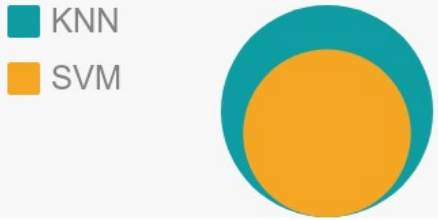
### SALES FORECAST

$14,22 MM

Total per product, **closing in the next fiscal period**

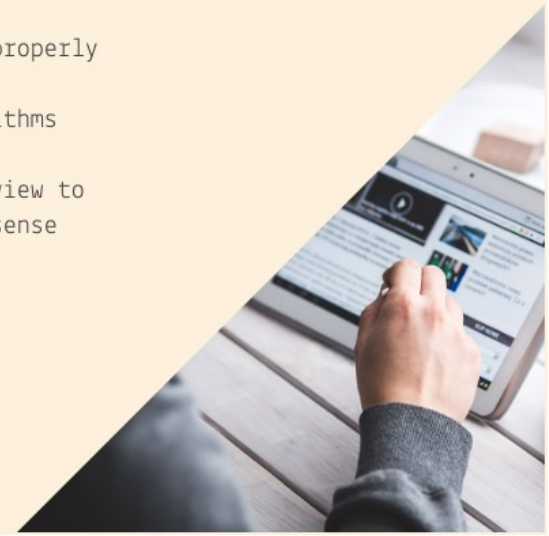
### Correlation

### RMSE




### KEY TAKEAWAYS

- **Takeaway #1:** Clean the data properly
- **Takeaway #2:** Train the algorithms
- **Takeaway #3:** Conduct peer review to ensure results has business sense



Blackwell Electronics

# Future Applications

Data Mining and Machine Learning

## SUPERVISED LEARNING

- **Classification:**
  Customer retention
  Fraud Detection
- **Regression:**
  Forecasting
  Predictions
  New Insights

## UNSUPERVISED LEARNING

- **Dimensionally:**
  Big Data Visualization
- **Clustering:**
  Recommend systems
  Targetted Marketing
  Customer Segmentation

## REINFORCEMENT LEARNING

- Real time decisions
- Learning Tasks

## DATA MINING

- **Reduce Cost:**
  Discover patterns
- **Improve Sales:**
  Develop new strategies
- **Improve Customer Satisfaction:**
  Data to define customer advocacy strategies

# THANK YOU

Copyrights - SML