**Project Overview**

**Problem Statement**

Utilize analytical tools to extract insights from existing clients to better understand the prospects, particularly on:

- **WHO:** Which advisors to target
- **HOW:** How to spend our time with the advisors

**Dataset Description**

- Target prospect categories are identified by**
  - check product usage
  - check financial results
  - check financial advisor

- The master data frame contains 94,540 advisors with 91 features spanning from 2017 to 2019
- Top and bottom advisors have significantly different behaviors for asset under management and transaction
- Live calls and in-person meetings are the dominant types of interaction

**Solution Plan**

- **Step 1:**
  - Group advisors into Tier A – Tier D
  - Tier D advisors identified as prospects

- **Step 2:**
  - Predict future tiers and sales
  - Look for prospects with tier lift or significant sales lift

- **Step 3:**
  - Prescribe the optimal ways of interaction to each prospect

**Timeline**

- **March – April:** Receive Data and Set up technical tools
- **May:** Data processing and feature engineering
- **June:** Build predictive model pipelines
- **July:** Build prescriptive models
- **August:** Final Deliverables

**Methods**

**Prediction: Who to Target**

**Define the targets**

- **Target #1:** Advisors who tier up
  - Classification:
    - multi-class classification
    - Decision Tree
    - Random Forest
    - XGBoosting
    - Optimal Classification Tree
    - hierarchical classification
    - Decision Tree
    - Random Forest
    - XGBoosting

- **Target #2:** Advisors who have significant sales lift without tier-up

**Modeling Structure**

- **Classification:**
  - multi-class classification
  - Decision Tree
  - Random Forest
  - XGBoosting
  - Optimal Classification Tree
  - hierarchical classification
  - Decision Tree
  - Random Forest
  - XGBoosting

- **Regression:**
  - Linear Regression
  - Lasso
  - Elastic Net
  - Decision Tree Regressor
  - Random Forest
  - XGBoosting

**Prescriptive Model Evaluation**

**Prescription: How to Target**

- Goal: Assign the optimal combination of calls and meetings to maximize sales on each financial advisor

**Results & Conclusions**

- **We ran the models on 2017, 2018, and 2019**
- The best classification models give out-of-sample accuracy scores consistently above 0.7
- The best regression models give out-of-sample R² ranging from 0.4 ~ 0.5

**c) Evaluation on sales lift**

- We can improve the total gross sales by 43.14% with ~50% more advisors identified

**Prescriptive Model Evaluation**

**Method**

- Opt with Tuned prescription factor (optimal D.E., stratified split)
  - Treatment accuracy: 0.1
  - Outcome accuracy: -0.05

- Regress, Compare, LASSO
  - Treatment accuracy: 0.03
  - Outcome accuracy: -1.9

- Regress, Compare, MNN
  - Treatment accuracy: 0.67
  - Outcome accuracy: -5.58

**Opt beats Regress & Compare methods by balancing outcome prediction and optimal treatment assignment**

**Recommendations**

- Combining the predicted model with sales teams expertise gives the best targeting result
- For predicted model, we can tailor the model to firm level to achieve more specialized alignment strategy
- For prescriptive model, we can leverage a greater dataset and utilize Policy Trees to assign optimal dosages for both arms of our treatment