Catching the Big Fish and Rising Stars

Data-Driven Client Targeting at MFS

Dido Stoikou and Jan Philipp Girgott | **MFS Team:** Nadine Kawkabani, Brian Shaw, Erin Haley, Brendan Mannix, Suzet Nkwaya, Benjymino Celestin, Peter Filonowicz, Tri Mai | **Faculty Advisor:** Prof. Rodrigo Verdi

MFS 100 years

Project Overview

Problem Statement

MFS sells its investment funds through **financial advisors** to end clients. While external MFS sales reps focus on high-value advisors through expensive in-person meetings, internal salespeople cover the broad base through phone calls. **Since MFS' external sales resources are limited, we developed a data-driven approach to identify the "Big Fish" and "Rising Star" advisors MFS should prioritize to target (right graph).**

Which advisors should MFS prioritize to target?

Big Fish	**Rising Stars**
Known high-value advisors *making large investments*	Unnoticed high-value advisors *with future high growth*
Customer Value Prediction 1- and 3-year time horizons	**Rising Star Detection** Growth over 2-year horizon

Data

We use five datasets:

- Advisor Details and Evaluations
- Past Advisor Transactions
- Past Advisor Interactions
- Past Portfolio Compositions
- Past Fund Performances

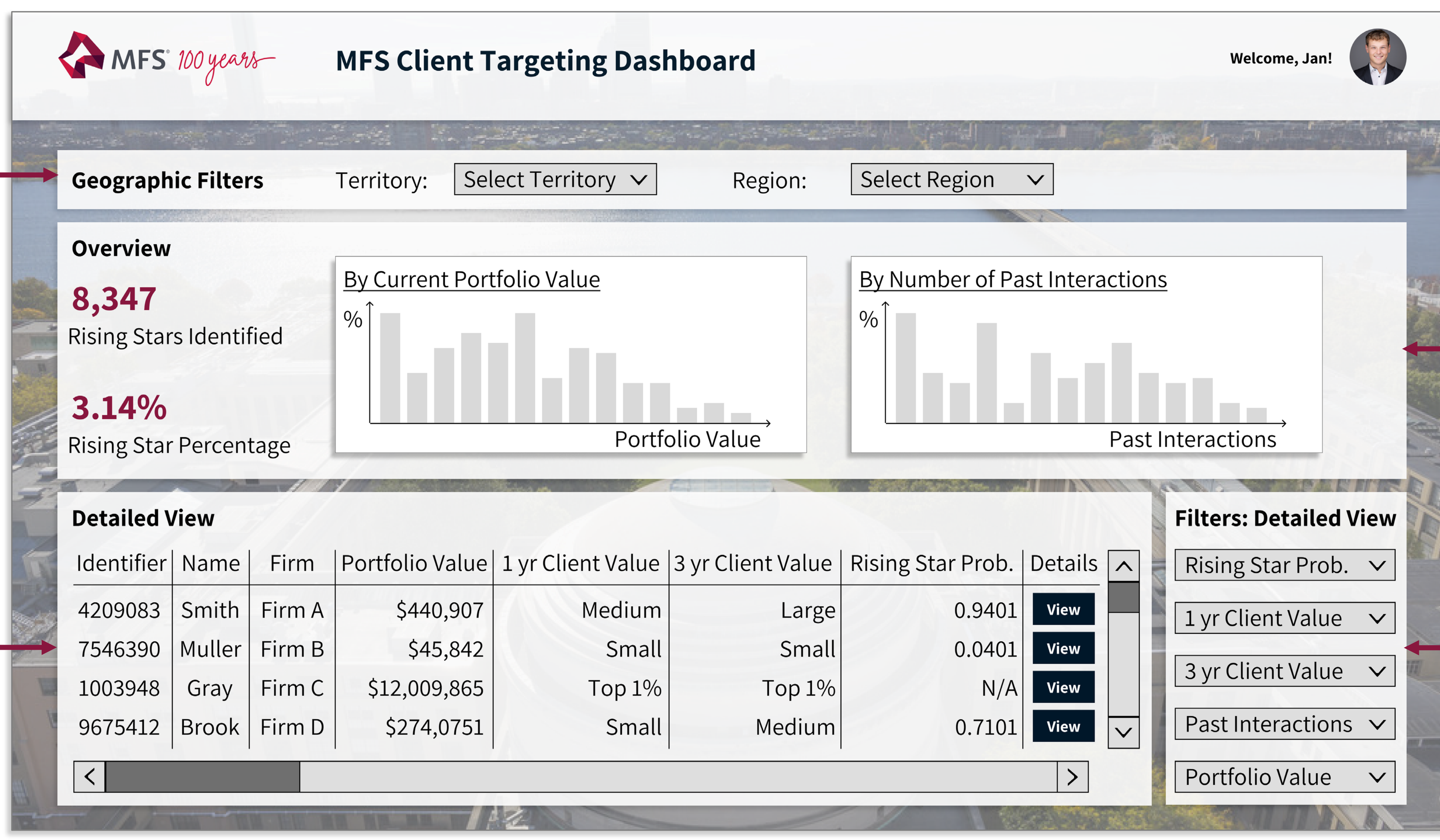
Product: MFS Client Targeting Dashboard

Our product is projected to save MFS $18m annually by freeing up 20% of sales reps' time to pursue new, high-potential advisors identified by our models.

Geographic Filters
Sales reps can filter for their geographic region to see only relevant financial advisors

Detailed View
Breakdown of every relevant financial advisor by different dimensions, like:

- Current portfolio value
- Predicted short- and long-term customer value
- Rising star probability
- Past interaction count



Overview
High-level analysis with statistics and graphics:

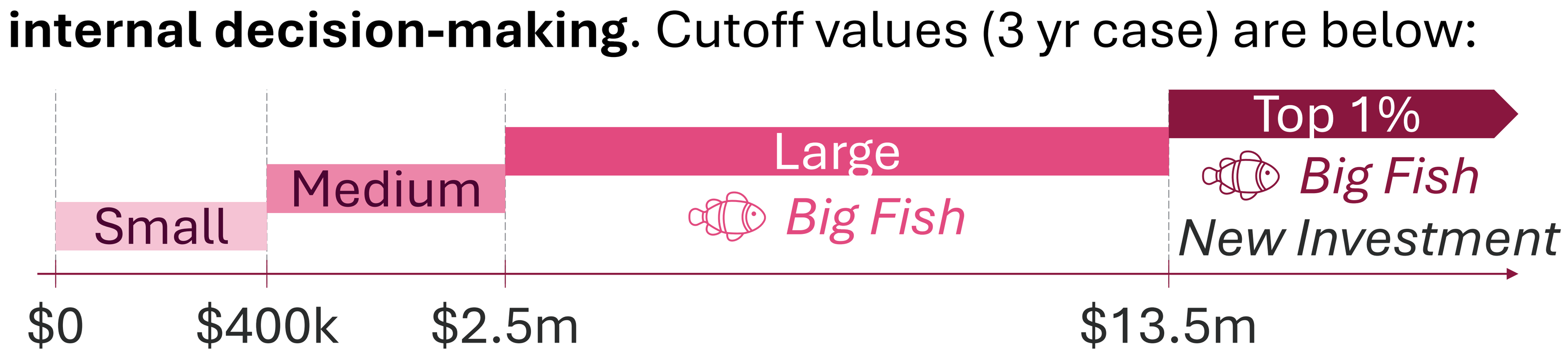
- Number and percentage of rising stars
- Graphs of advisors by current portfolio value and past interaction count

Filters: Detailed View
Tool to facilitate customized searches by sales reps to filter for "Big Fish" and/or "Rising Stars"

1) Big Fish: Short- and Long-term Customer Value

Multi-class Classification Framework

This models' target variable is *New Investment Over 1 or 3 Years*, respectively. Alongside predicting continuous values, we classified all advisors into different classes to find Big Fish (large, top 1%) since classification **aligns best with MFS' internal decision-making**. Cutoff values (3 yr case) are below:



This resulted in the following **classification pipeline**.

Features: past investment, investment timing/ frequency, portfolio return/growth/ size, advisor metadata, ... → **Models:** k-NN, CART, RF, LGBM, xgBoost, Neural Nets, Log. Regr. → **Predicted Class**

Evaluation

1-year time horizon

84.00%

Accuracy of *XGBoost* (best model)

3-year time horizon

79.80%

Accuracy of *XGBoost* (best model)

Insights: Strongest Predictors

1 year: top 5 feature importances

New investments last year	265.5
Time since last investment	29.9
Mean time between investments	11.0
Total current portfolio value	9.8
Business unit type	7.4

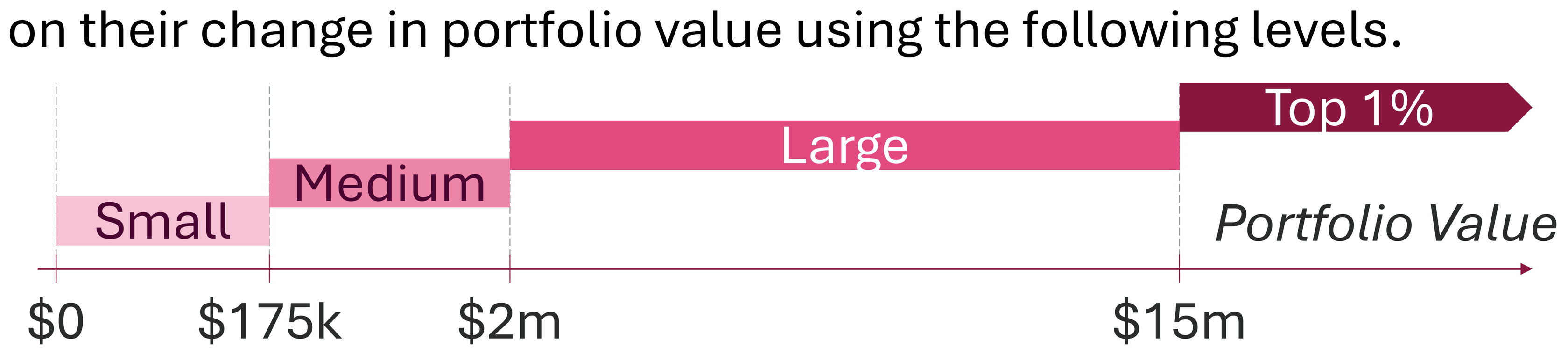
3 year: top 5 feature importances

New investments last 3 years	94.4
Time since last investment	22.5
Firm size	8.7
Firm type	5.6
Mean time between investments	5.0

2) Rising Stars: Detection

Binary Classification Framework

Whether a financial advisor is a rising star will be defined based on their change in portfolio value using the following levels.



An advisor is a **rising star** if they **move up 2 or more levels within 2 years.** This binary classification framework trained on similar features is only applied to *small* and *medium* advisors.

Evaluation

Best F1-Score (TabTransformer):

90.20%

Best AUC (Random Forest):

92.00%

Insights: Strongest Predictors

Top 5 feature importances (Rd. Forest)

Average past portfolio value	101.4
Overall compound growth rate	94.6
Current portfolio value	85.0
Portfolio value standard deviation	79.7
Time since first interaction	76.6

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