1. Introduction

- CTI has numerous core segment financial advisors (FA) who buy financial products from CTI every year.
- CTI’s objective is to maximize the purchases made by those FA.
- CTI and MIT aim to create a holistic FA scan system that monitors the transaction activity of the FA and sends alarms when anomalies are detected.
- Our approach is summarized as:

2. Data

- Each FA has a distinct trading pattern.
- FA with consistent trading pattern has better performance.
- Feasible to filter out FA with consistent trading pattern and business significance.
- Feasible to build personalized Health Scan for each FA.

3. FA Filtering - Optimization

Objective: Selecting FA with the least abnormal transaction pattern.

\[
\min \sum_i z_i \frac{\sigma_i}{\mu_i} \]

Business Constraints:
- Each FA must have certain amount of Sales over the past 2 years.
- Total purchase amount by all selected FA should > 80% of total sales.

Technical Constraints:
- Each FA must have more than 12 months where they have made at least 1 sale over the past 2 years.

4. FA Health Scan Overview

5. Model Results and Implications:

**FA Filtering ---- Optimization**
- Optimization model selected 32% of advisors.
- All 32% of advisors have adequate predictability.
- Those predictable FA accounts for 82% of the sales.

**FA Health Scan ---- Predicting Next Transaction Date**
- Moving average outperforms the baseline model by 68%.
- Exponential smoothing outperforms the Moving Average by 13%.

**FA Health Scan ---- Causal Analysis**
- Causal Analysis establishes that purchasing a new product type could lead to an increasing purchase amount in future.
- Statistical Inference and regression analysis to provide personalized recommendations for the number of distinct asset types held given FA’s AUM.

**Overall Business Implications**
- Manually Checking all FA in different territories.
- Automatic anomaly Detection + Dashboard Generation.
- Time Saving in terms of data processing and analyzing across all levels of the firm.

6. Use Cases

**Use Case**
**Use Case Description**
- FA Health: For each predictable FA, show transactional health by incorporating all alerts together.
- Channel Health: For each channel, show overall business health by aggregating all territories and advisors together.
- Territory Health: For each territory, show scoreboard by aggregating FAs in the territory together.

**Methodology Overview:**

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7. Future Steps

- **Feedback loop:** Establish a way to interact with the system and for the sales team to provide feedback when they intervene.
- **Pilot Project:**
- **Full Integration to Salesforce:**