

CASE STUDY: MACHINE LEARNING PREDICTS OUTCOMES IN FINANCIAL SERVICES

PFC Integrates Data Analytics Models into Sales Practices

Overview

Incumbent organizations have one substantial advantage over more nimble, disruptive companies: data. The information about your customers that resides in your data centers should be a true market differentiator. Your company's ability to drive useful analytic insights from your data will determine how well you can exploit this advantage.

Machine learning helps businesses like yours rapidly identify patterns in their data, including:

- **Customer profiles:** how do my customers buy, what makes a customer satisfied, etc.?
- **How do I optimize my operations:** where are the deficiencies in my supply chain, how do I procure and store my inventory, etc.?
- **How do I market my services:** What are customers willing to pay? Who are my high-margin customers? Where am I losing money?

Fusion Alliance partners with organizations to unlock these insights and drive true predictive value.

Long-time client Primary Financial Company (PFC) and Fusion partnered on a pivotal initiative to explore advanced analytics/machine learning to drive data-driven predictive outcomes.

The project is entering a second phase, but already **PFC and Fusion will be able to ascertain with over 80% accuracy and 70% precision the likelihood of a particular investor to buy a given investment.**

Market Reality

Big data has enabled machine learning to advance to a new level of problem solving and creation of new opportunities. As a result, companies across industries are leveraging machine learning to gain and act upon insights about individual customers in ways never before imagined.

Organizations with the expertise to leverage machine learning will significantly widen the gap between themselves and competitors who aren't able to move beyond traditional analytics tools.

Objectives

- Explore advanced analytics and machine learning to drive data-driven predictive outcomes in the financial services vertical

Approach

- Identify over 100 candidate "features" of data from public and private data sources
- Apply Fusion's "practical analytics," focusing on data that is applicable to the described use case
- Rapidly operationalize the data to allow for better training of the model

Outcomes

- Based on analytical profiles of financial institutions, PFC identified prospects to target with limited marketing and sales resources
- Identify rate and term recommendations to allow for effective market making
- Provide the PFC trading desk with a list of potential investors with their expected likelihood to buy the specific product

Keys to Success

- A clear understanding of the target accuracy of the predictive models. By defining the required utility of these models, PFC could realize business value without the churn of endless model tuning
- Client participation proved vital to overall success. PFC could quickly understand errant data and numbers and drive the value of Fusion's models higher

The Solution

PFC manages an investment program for institutional investors to invest substantial funds in federally insured CDs. The company:

- Monitors, tracks, collects and disburses principal and interest on nearly 40,000 CDs
- Manages over \$7 billion in assets
- Supports relationships with 5,000 financial institutions and institutional investors

Transforming Goals into Reality

PFC wanted to improve sales targeting to predict CD issuers' funding needs and institutions' desires to invest. It partnered with Fusion to explore the following machine learning models:

- Identify best issuers for sales solicitation, including former, current and prospective issuers
- Provide rate guidance to investors and rate/term guidance for CD issuers
- Target investors by likelihood of close

The process included four main steps: data acquisition, transformation, model development and predictive analytics.

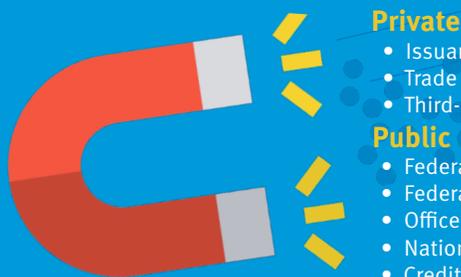
All relevant private and public data sources were identified and acquired to gain more information on current and prospective customers. PFC and Fusion then collaborated to determine meaningful and available factors. Next, the data was transformed so these factors would be consistent and accurate. With a solid foundation, Fusion developed machine learning models that would learn and identify patterns, then recognize those patterns when seen again to apply lessons to predict outcomes.

The first phase was highly successful, producing the following benefits, with more to come in the next phase.

- Equipped PFC sales team with a qualified list of issuers to target



SOURCES IDENTIFIED FOR PFC DATA ACQUISITION



These data points were integrated into the existing SimpliCD (investment platform) issuer data to offer a higher distribution of information to pattern-match for the prospect.

based on previous profiles of customers. This enables efficient use of PFC's finite sales and marketing budget

- Provided a deeper understanding of where CD issuers need to price their instruments and the rate at which investors are likely to purchase. Understanding this spread allows PFC to potentially achieve larger-scale trading business
- Provided a simple way for PFC's co-brokers to market the right product at the right time to the portfolio of investors

What Differentiates Fusion?

In partnering with clients, Fusion's data science and application development teams work together to unlock business insight. We allow the data to tell the story without introducing bias to the underlying predictions. This hybrid approach allows us to apply agility in the process to rapidly operationalize insights into tools and platforms you use every day.

Relevant Takeaways

- The barrier of entry for advanced analytics is lower than many expect
- Fusion's Practical Analytics allows for rapid iteration of data to determine the viability of the given use case and of machine learning
- Determining which customers are

profitable allows you to focus your sales/marketing energy on customers who will result in actual profit



Primary Financial

About Primary Financial

Primary Financial Company (PFC) is a credit union service organization owned by 10 corporate credit unions across the nation. PFC manages an investment program through which institutional investors can invest substantial funds in federally insured CDs. The company was founded in 1996, with corporate offices in Dublin, Ohio.

Fusion Alliance



About Fusion

Fusion Alliance delivers actionable insights, customer experiences and human-driven technologies that transform the way our clients envision and shape their businesses.

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