



Debt Collections

A Case Study

How we used machine learning to drive improvement across all debt types for a national debt collection agency.

Background

The Company

A major debt collection company was seeking to increase collection revenue while decreasing collection expenses.

The Problem

The performance of traditional data models had plateaued, despite the company using multiple providers. The models were expensive and utilized high cost, highly-regulated credit bureau data.

The Goal

The company wanted to increase collections while decreasing collection costs.



Our Approach:

Used Machine Learning to Develop Better Models

Utilizing existing data, we used our machine learning platform to develop 3 different models for the company to focus on, based on debt type and collection status.

- Small debts (Under \$100)
- Debts 90-180 days past due
- Debts more than 180 days past due

Leverage 3rd Party Demographic Data Vs. Credit Bureaus

3rd party demographic data includes information about interests, intentions and demography. This data provides more detailed insights and fills in gaps about users. It isn't governed by FCRA rules and is much less expensive.

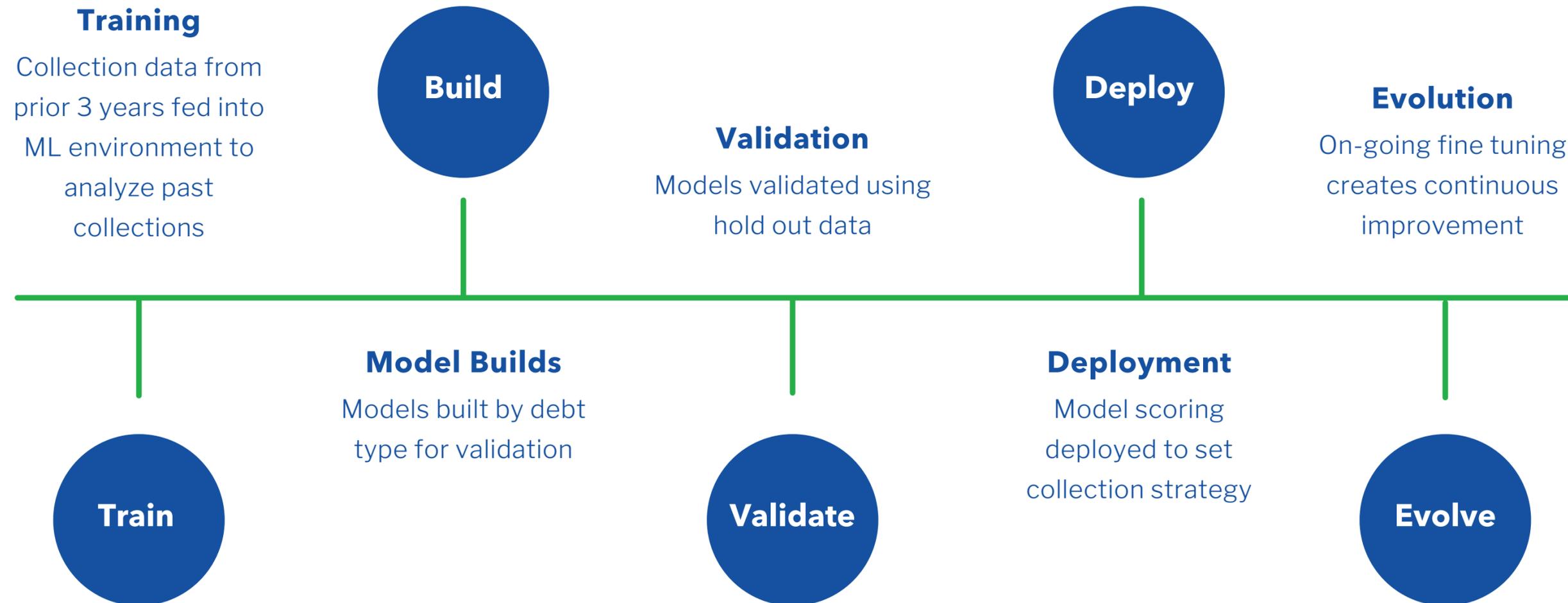
Utilized Existing Data to Set New Goals

3-5 years of revenue management history allowed our machine learning platform to develop new models and goals. Based on this data, we were able to implement a daily scoring process to identify debtors with the greatest propensity to pay.

Tested Our Models vs. Other Vendors

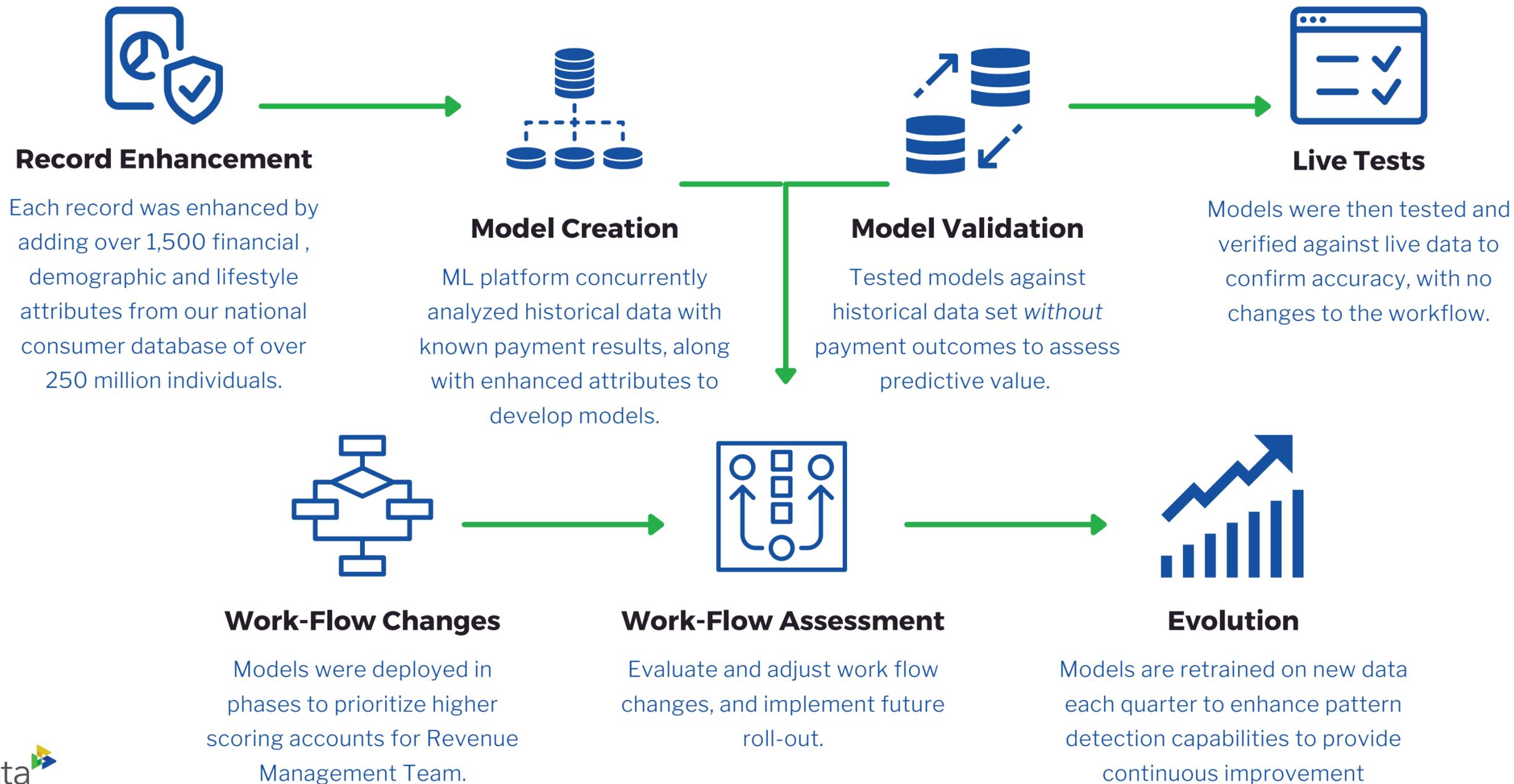
We tested our machine learning model against two incumbent vendor platforms to validate our results.

The Process



The Solution

Combine machine learning (ML) with proprietary third-party demographic data to create robust propensity to pay models.





Technology: Deep Neutral Networks (DNN)

While Alesco Data employs a wide range of modeling techniques, we've enjoyed greatest success by utilizing Deep Neutral Networks (DNN) aka: Deep Learning.

Deep learning represents the very cutting edge of artificial intelligence. Instead of teaching computers to process and learn from data (which is how most machine learning works), with DNN, the computer trains itself to process and learn from data.

DNN finds the best mathematical solution that yields optimal results, especially in the case of identifying complex and non-linear relationships.

Results

Measured Impacts

Alesco DNN Machine Learning Model vs. Incumbent debt collection models



- Immediate improvement in collection success - 15% to 18% improvement over two incumbent modeling providers
- Eliminated reliance on credit bureau data, an annual savings of over \$100,000 in direct cost
- Outbound call center staffing reduced by 10% due to improved focus on collectible accounts while total accounts under collection increased over 30%
- Model refreshes 2x per year yield additional 1% lift on average at each refresh
- Met business critical SLA for daily scoring 100% of time over 3-year period.

Fewer Accounts Contacted, More Dollars Collected

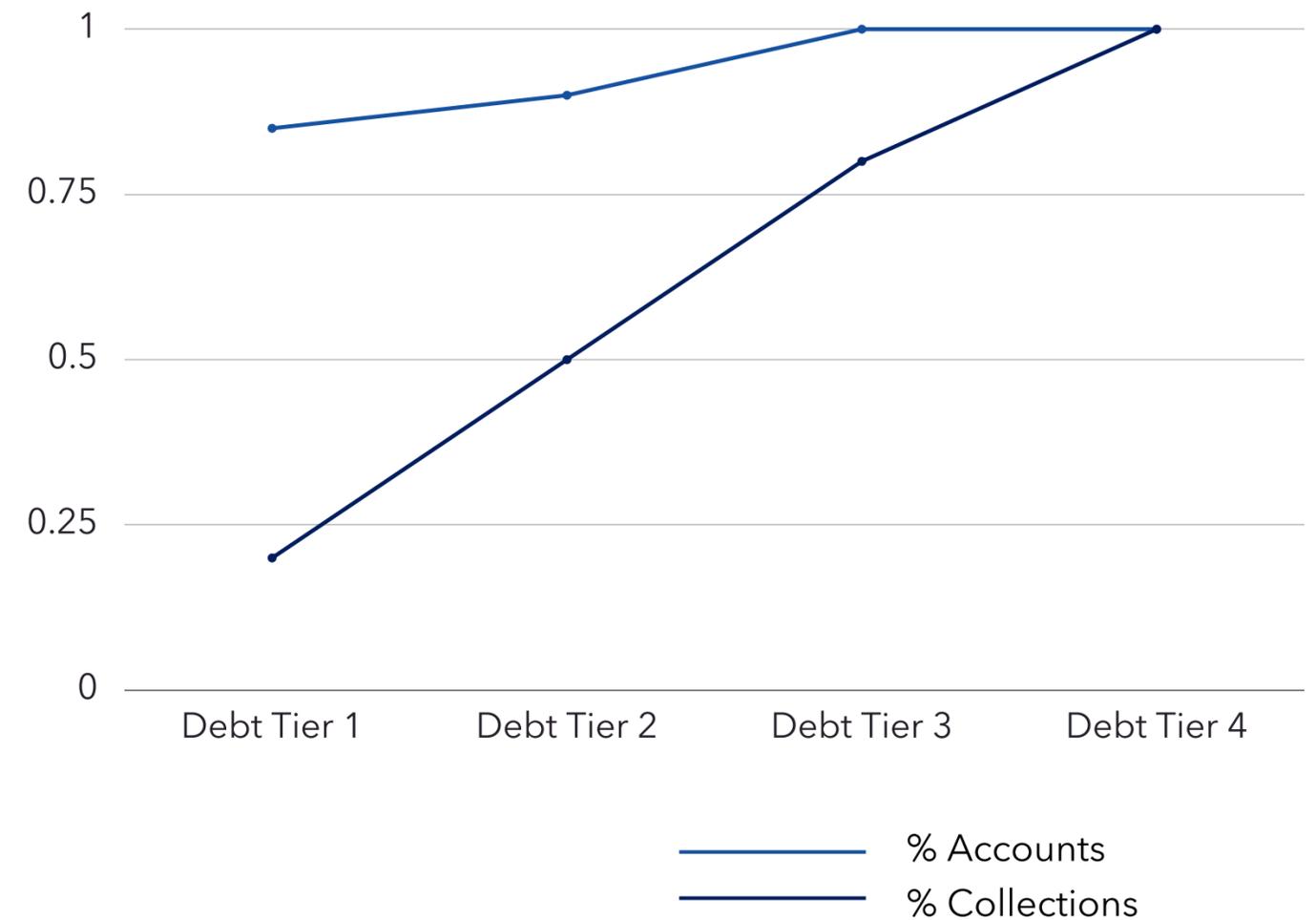
Best Performing Credit Model

Nearly 60% of Accounts required to yield 80% of total collections



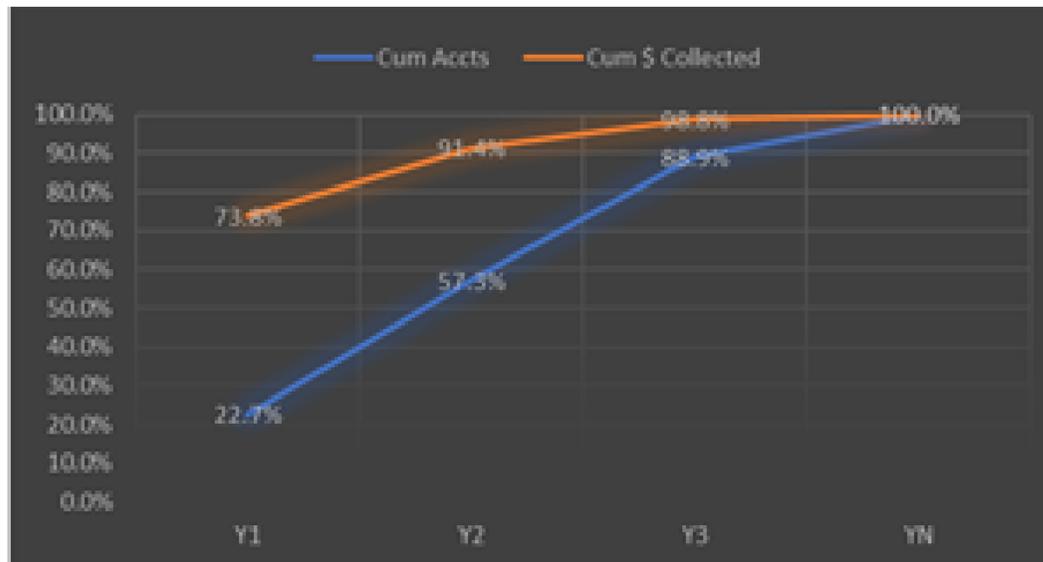
Machine Learning Model

Top 20% of Accounts yield 84% of Total Collections



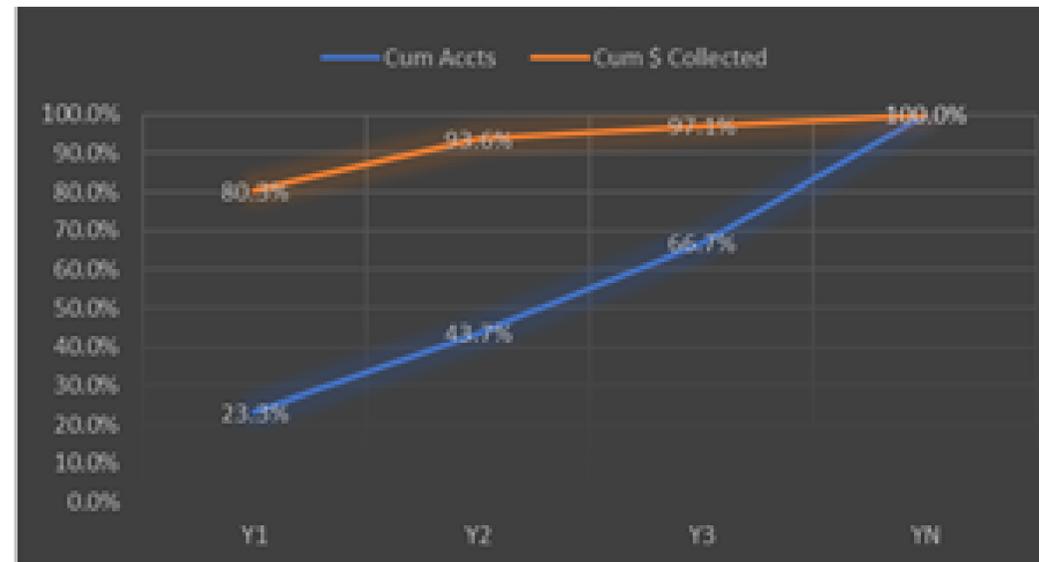
Machine Learning Drives Improvement Across All Debt Types

Debt Type A



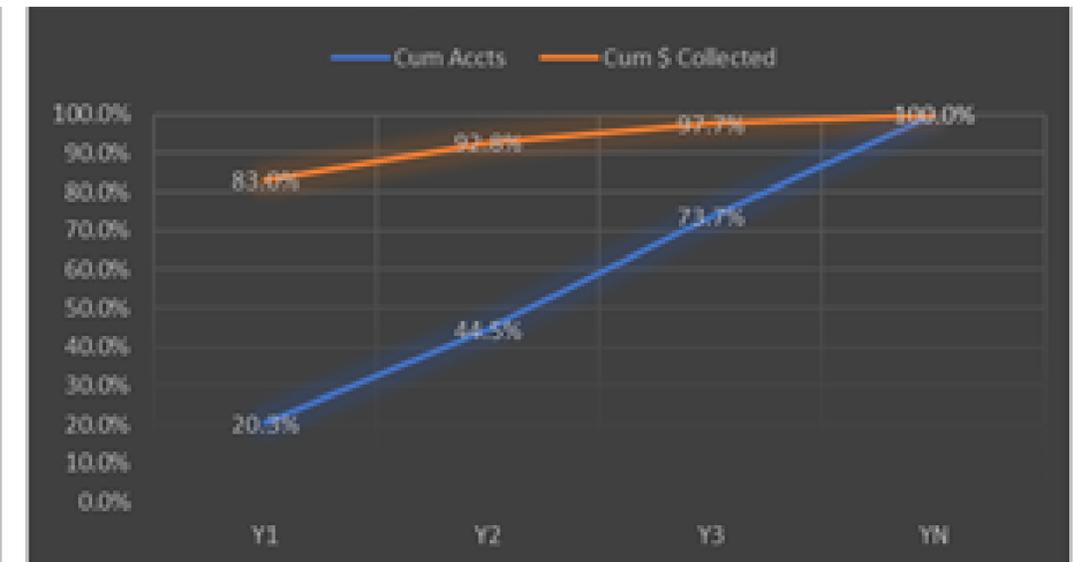
22% of
Accounts Yield
71% of Collections

Debt Type B



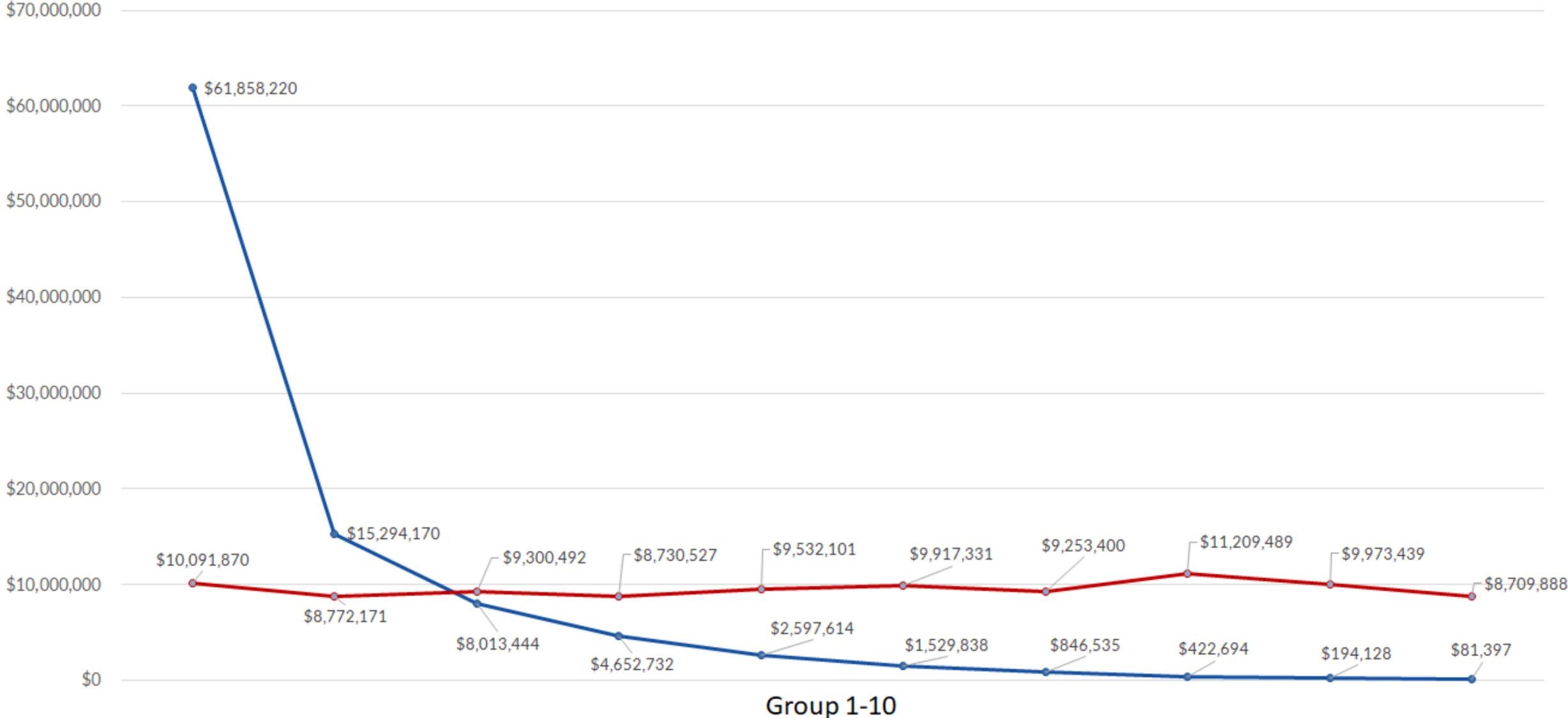
21% of
Accounts Yield
86% of Collections

Debt Type C



20% of
Accounts Yield
83% of Collections

Results Model Lift

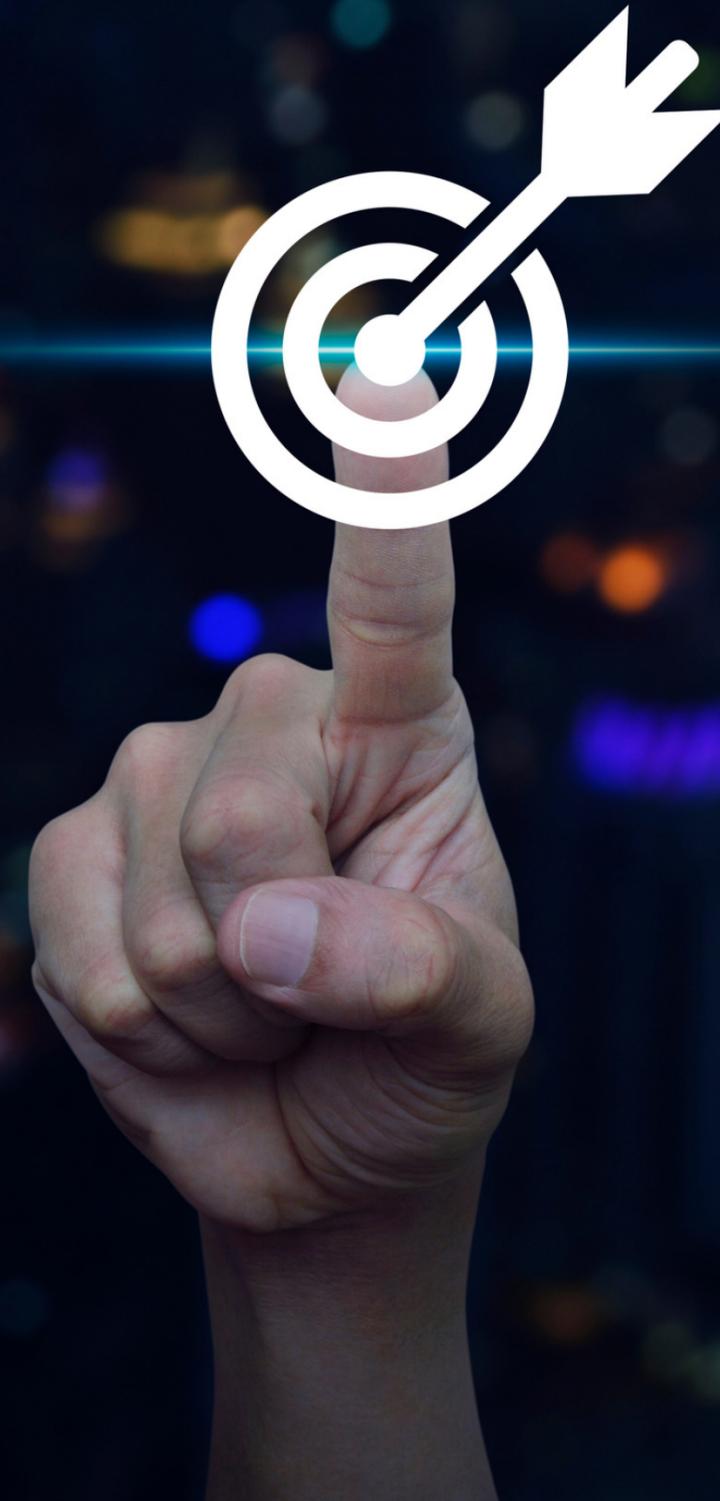


Debt Collected New	\$61,858,220	\$15,294,170	\$8,013,444	\$4,652,732	\$2,597,614	\$1,529,838	\$846,535	\$422,694	\$194,128	\$81,397
Debt Collected	\$10,091,870	\$8,772,171	\$9,300,492	\$8,730,527	\$9,532,101	\$9,917,331	\$9,253,400	\$11,209,489	\$9,973,439	\$8,709,888

Value Proposition

How do these align with your objectives?

- ▶ Utilize AI-based machine learning in performing all scoring records/accounts.
- ▶ No need for credit bureau data - or costs.
- ▶ Data to profile debtors is based on your data and publicly available demographic data, reducing your costs
- ▶ Identify debtors with the greatest propensity to pay
- ▶ Identify 80% of collectible receivables within 20% of all debtors
- ▶ Daily scoring process
- ▶ Continuous improvement
- ▶ Scalable solution to fit existing debt collection practices and system



About Us

Alesco Data combines Big Data assets with powerful Machine Learning algorithms that drive client's debt collection campaigns.

Our machine learning platform generates results that are 15% - 30% greater than traditional collection models.



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