



FICO™ Custom Decision Optimization boosts portfolio profit through optimal credit line strategies

success story:
portfolio optimization



Client	A large, national credit card issuer*
Challenge	Safely build receivables through better credit line management strategies
Solution	FICO™ Custom Decision Optimization, an empirical approach to the art of strategy design
Results	In first 11 months, profitability improved \$6 million per million active accounts

Strategy also balances issuer's business objectives and resource constraints

» CHALLENGE

An early adopter of Custom Decision Optimization was determined to find the strategy that would best answer the typical and most vexing credit line increase questions: "How do we find the most profitable segments for credit line increase—without exceeding our risk parameters? Would boosting the credit lines of moderate-risk, high-revenue revolvers add significantly to our profits? How should we adjust our strategies to guard against an even sharper economic downturn, or to prepare to quickly take advantage of an upturn?"

The complexity of decisions like these—and their potential impact on the bottom line—is what keeps portfolio managers awake at night. There are literally hundreds of thousands of combinations of variable values that might go into a decision strategy tree, including master file information (time on books, utilization levels, revolving frequency), scores (risk, revenue, attrition) and action scenarios (increase line \$1,000, \$1,200 or \$1,500).

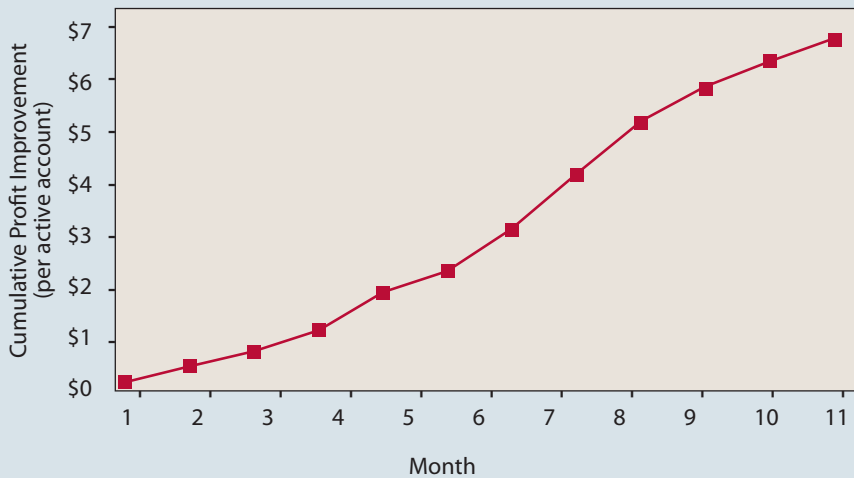
The issuer decided to participate in Custom Decision Optimization developments for two reasons. First, while former line increase strategies were profitable, the issuer believed it could realize greater profit with a more empirical strategy development approach. Second, the issuer needed a better means to engineer strategies while understanding the impact of balancing unique business objectives and resource constraints.

» SOLUTION

The issuer had been using the classic "adaptive control" approach to strategy design—implemented within FICO® TRIAD® adaptive control system—and over time had developed a profitable "champion" line increase strategy based on continuous comparisons to new "challenger" strategies. Custom Decision Optimization introduced a completely different approach to strategy design by using empirical analysis to simulate the impact of differing strategies on a business goal, such as bottom-line profitability, subject to a multitude of constraints such as contingent liability and losses. This approach also offers the advantage of allowing designers and users to graphically view and adjust the strategies as they are being developed.

* This case study is based on information from a FICO client that requested anonymity.

FICO consulting components provide design, delivery and training for analytic model deployment



The optimized strategy increased cumulative profit by more than \$6 per active account, or \$6 million per million active accounts. This measure of profit was based on revenue less cost of funds, collection costs and charge-offs to date.

The issuer saw an opportunity for competitive advantage with such a “real-time,” interactive process. It could not only create more optimal strategies, but it could also dramatically speed up their introduction.

FICO™ Custom Decision Optimization for Credit Line Management optimization technology has two main components:

- **The decision model.** FICO used data samples from large and medium card issuers to build a complex decision model that defines the mathematical relationships among all the complex facets of the decision to determine the optimal credit line strategy. The decision model, which was calibrated to the issuer’s unique cardholder population, uses predictive models such as risk and attrition, as well as other predictors, and the impact of the decision itself on intermediate variables (e.g., revenue, loss) to compute possible outcomes and their impact on profit. Instead of a score, the decision model delivers the optimal action for each individual: increase line by \$1,500, for example.

- **The optimization tool.** The optimization tool allows the model to operate within the card issuer’s constraints: such as balancing trade-offs between desired revenue and acceptable loss. The issuer was given control to determine the profit impact of decision strategies created within its defined risk constraints—for example, sharply limiting risk to guard against an economic downturn.

The process is also flexible and comprehensible, giving card issuers insight into the drivers of profitability. Portfolio managers can view strategy trees on a graphical user interface and project the results of alternative approaches to the strategies—such as the impact of loosening up business constraints—as they are being developed.

Final strategies are transferred to and from account management applications, such as FICO® TRIAD® adaptive control system and ACS, with ease, putting new strategies into operation faster.

Decision Yield

Precision

The issuer’s optimized line increase strategy resulted in higher receivables (balances per account) without incurring greater losses.

Agility

Portfolio managers have a flexible and comprehensible tool to view strategy trees on a GUI and to project results of alternative approaches to strategies.

Speed

Custom Decision Optimization allowed the issuer to dramatically speed up and roll out its introduction of new strategies.

» RESULTS

After developing an optimized strategy with the issuer, FICO applied it to a large random sample and pitted it against a similar sample employing the issuer’s most recent and sophisticated champion strategy. After 11 months of testing, the optimized strategy produced:

- **Higher receivables** via more than a \$70 increase in additional balance growth per active account than the prior champion strategy
- **Losses held in check**, with the percent of receivables that are two or more cycles delinquent 10 basis points lower than the prior champion strategy
- **An increase in cumulative profit** by more than \$6 per active account over the prior champion
- **Forecasted incremental profit growth** for the next six months to exceed \$11 per active account



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