



An 8-Point Tune-Up to Boost Auto Lending

How analytics and business rules are helping lenders steer more top-line growth to the bottom line

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As the auto industry continues to recover from the financial crisis, lenders are gearing up for more profitable growth. Over the past few years, the focus has been on improving loss management. Now the need is for similar advances in profit management, starting at originations.

This paper looks at eight smart ways to boost profits based on the experiences of FICO clients in auto lending.

Low-risk buyers, ready to purchase after years of delay, are in everyone's headlights. One captive finance company projects a 30–40% increase in loan volume over the next two to three years, and some independents are likely to see even higher jumps. While the number of applications to be processed is climbing, so is pressure from dealers. They want immediate decisions, in some cases, round the clock, and they expect competitively priced responses, including alternatives for nonconforming applications.

This white paper looks at eight of the best ways to increase portfolio profitability, from origination to funding and servicing. Based on the experiences of FICO clients in the auto lending industry, the paper highlights successful strategies to:

1. Speed up decisions with custom scores.
2. Sharpen segmentation of risk categories.
3. Optimize pricing to maximize profit.
4. Adjust risk scores to future economic conditions.
5. Fast-track deployment of new analytics.
6. Automate funding processes with business rules.
7. Take more effective early-stage collections actions.
8. Boost recoveries with optimized placements.

» INSIGHTS**1. Speed Up Decisions with Custom Scores**

To improve originations decisions, savvy risk managers are first taking advantage of the extra precision they gain simply by moving to the most up-to-date credit bureau score (the FICO® 8 Auto Score lifts predictability in auto originations decisions by up to 9%). Then they're using additional analytics to *differentiate risk within the standard risk score bands*.

Custom originations models analyze application data as well as credit bureau data, creating a more robust picture of applicant risk. Scores that analyze alternative financial behavioral data (purchase payment plans, checking accounts, property, public records, etc.) also provide additional insight, especially valuable for new-to-credit applicants and those with meager or tarnished credit histories.

These additional analytics help lenders make faster decisions about applicants whose risk levels are in the "gray zone" where the creditworthiness of applicants and profitability of deals become more complicated.

A large captive finance company, for example, was losing too much business to other lenders. While the lender was making decisions on most applications within two to three minutes, gray-zone applications had to be referred to an analyst for manual review, and that often took 30 minutes or more. Frustrated dealers, looking to build customer satisfaction and loyalty among interested buyers, turned to other sources out of necessity.

By introducing FICO custom originations models into its underwriting strategies and deploying them into a business rules management system (see "Fast-track deployment of new analytics" on page 5), the lender has been able to eliminate much of the need for manual review while increasing control over risk exposure. As a result, response times even on these more complex decisions are down to just a few minutes.

2. Sharpen Segmentation of Risk Categories

Another way of improving decisions for borderline applicants, and precision in all originations decisions, is to separate populations within standard risk score bands into more granular segments. By increasing segmentation, lenders can create and test a wider range of underwriting and pricing strategies. But while more differentiation can increase precision, it's possible to go too far, ending up with an unwieldy number of segments, each with its own risk scorecard. How do lenders know what number of segments will be most effective?

Analytic segmentation techniques, such as genetic algorithms, can help answer that question while reducing the time and cost involved in the segmentation process. Using an initial decision tree segmentation scheme built by an analytics expert, the algorithm automatically generates additional sub-trees and compares their predictiveness. It keeps the best sub-trees, combining and mutating them to create a new generation of sub-trees below them. The process continues until the present generation of sub-trees is not producing any better results than the previous generation.

The end result is a set of business rules representing the most effective segmentation scheme and a set of predictive models for each segment. FICO recently used this technique to build 11 new originations scorecards for a large captive auto finance company. The models, which are currently being deployed, are expected to reduce delinquencies by 20%.

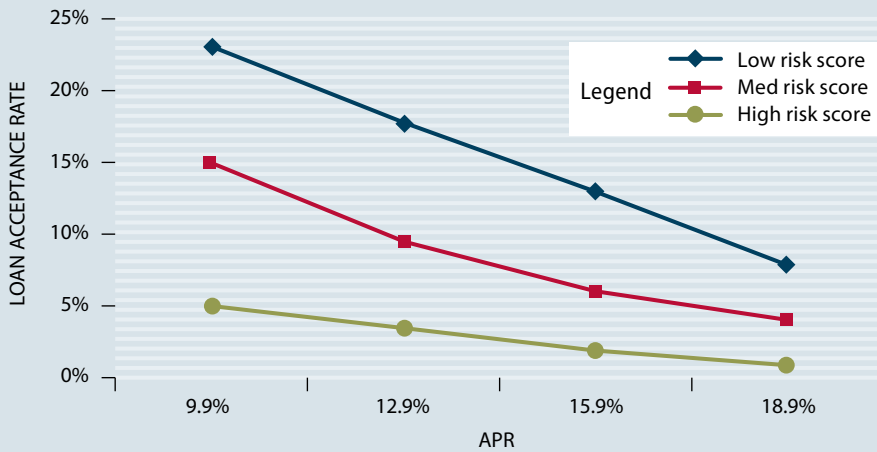
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3. Optimize Pricing to Maximize Profit

Precision in pricing auto loans is more important in the recovering market than ever before. To be able to approve and book sought-after, low-risk consumers, lenders must find extremely competitive price points that adequately cover risk exposure. To continue to extend credit to an expanding range of consumers, they need to appropriately price based on the borrower's risk. In all decisions, to drive profitable growth, lenders need to better understand the impact of pricing on a range of consumer behaviors that affect portfolio profitability.

Figure 1: Example of effect of price changes on offer acceptance

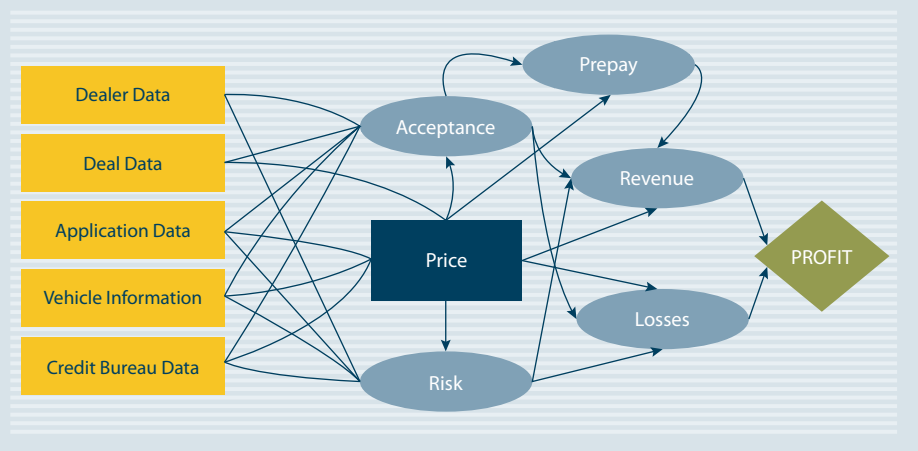
Loan Acceptance Rate by APR and Risk Score



Case in point: A large captive auto finance company is seeking more insight into the impact of pricing on multiple dimensions of consumer and dealer behavior in indirect lending. The company wants to know, for example:

- How would a small change in price impact the dealer's and consumer's appetite to accept the offer?
- How much of a price difference would a consumer accept before prepaying the debt with another lender's loan?
- How would a price that encourages consumer and dealer acceptance or consumer prepay behavior affect revenue, default rates, losses and profit?
- How to best set the price with the goal of reducing current operating losses while maintaining or exceeding current profitability levels.

Figure 2: Simplified decision model (comprising multiple action-effect models) for pricing



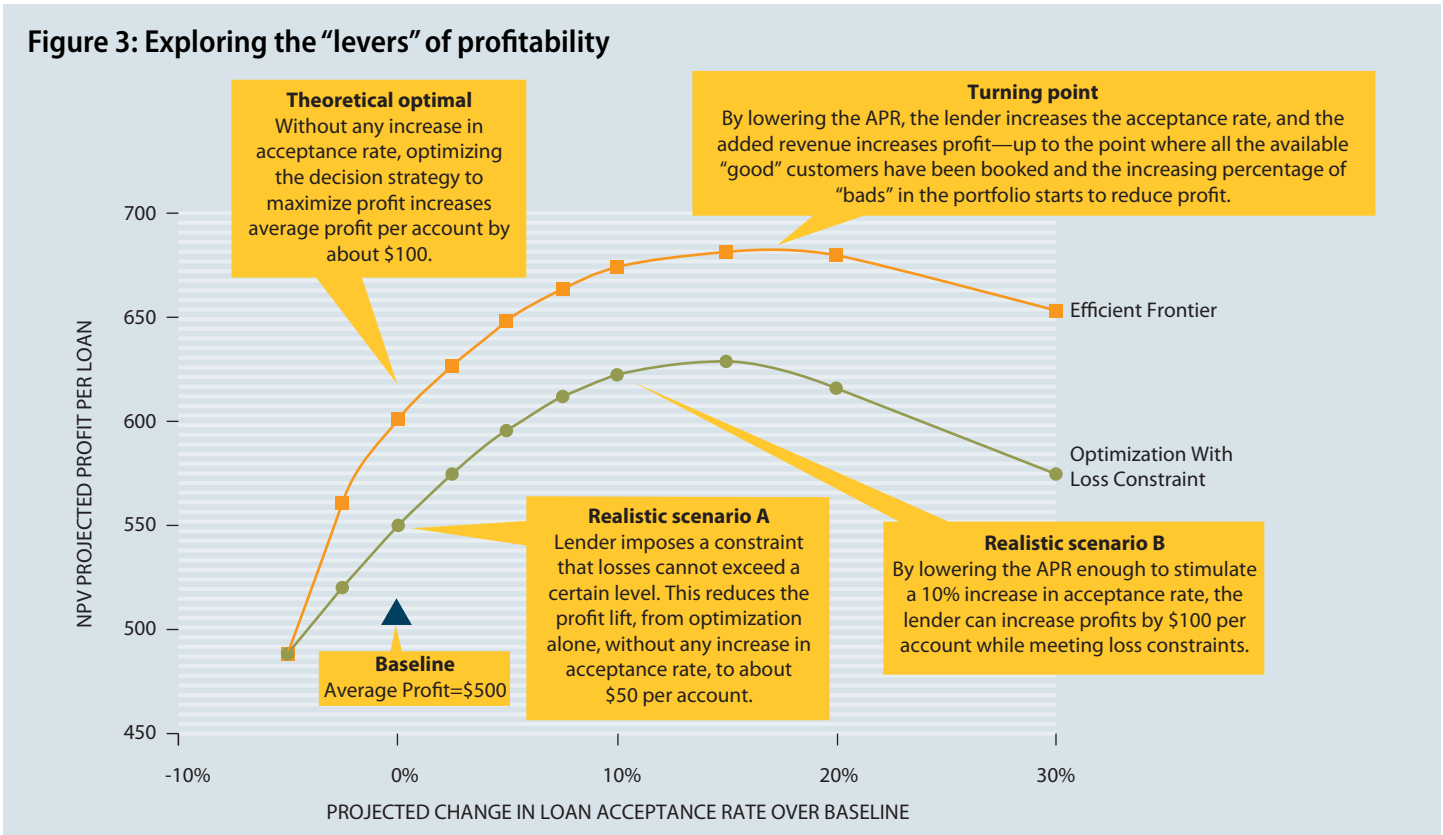
Optimization can provide answers, and the essential first step is action-effect modeling. Action-effect models help solve complex problems like this by predicting how consumers and dealers will respond to various actions the lender might take. They not only establish mathematical relationships between lender actions and the predicted customer and dealer responses, but also with various business outcomes such as profit, loss, exposure, cost, etc.

This decision model is used to create decision strategies, which are then optimized for a specific business objective (e.g., maximum profit) against portfolio-level constraints (e.g., losses, loan volumes, etc.). Simulation is also an important part of this process. Lenders can evaluate multiple profitable strategies before identifying one or a few to implement in production.

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As shown in Figure 3, by trying out a variety of “what if?” scenarios, lenders can explore the trade-offs between risk and reward, and generate a range of potential optimal operating points for consideration and discussion. Usually, the theoretical optimal is reined in a bit to find realistic optimized strategies that meet business constraints.

Figure 3: Exploring the “levers” of profitability



The output of pricing optimization is a strategy that determines prices for individual customer decisions that meet portfolio-level goals. Performance improvements will generally be in the range of 5% to 20%.

4. Adjust Risk Scores to Future Economic Conditions

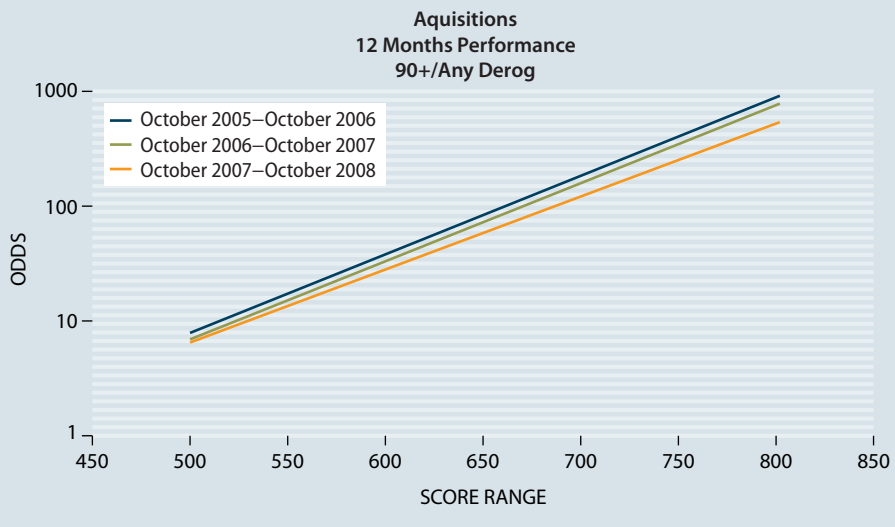
Auto lenders, like other creditors, determine their underwriting and pricing strategies based partly on the expected default rates associated with risk score bands. In times of rapid economic change, the historical data underlying this relationship between default rate and score band becomes less reliable for predicting consumer behavior.

In the recent economic downturn, actual default rates began to diverge rapidly from expected default rates. For instance, consumers with newly booked auto loans and a FICO® Score of 700 in 2008 performed like those with a score of 690 in 2007 and 670 in 2006 (see Figure 4). Even when economic conditions changed, the FICO® Score continued to remain robust and rank-order consumers by credit risk, as it’s designed to do; but since default rates are not fixed by score band, lenders were seeing more “bad” payers than before in a given score range.

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Figure 4: Increasing credit risk over a recent three-year period

FICO® Auto Score, Auto Finance Loans, National



Source: FICO® Score Trends

Many auto lenders took too long to adjust the score cutoffs in their originations strategies, resulting in higher than necessary delinquencies and losses. In the aftermath of the crisis, risk managers in the auto financing industry are monitoring portfolio performance more closely and adjusting score cutoffs more frequently. Still, this approach is reactive, since lenders change their strategies after observing that risk levels have changed. Better results come from a proactive approach, in which lenders build into their strategies anticipated economic impacts on risk.

Forward-looking “economically calibrated” analytics can predict shifts in default rates at specific score bands under various economic scenarios. It provides a scientific means for auto lenders to determine how much to raise score cutoffs ahead of a downturn in order to keep default rates steady. In an improving economy, it helps lenders lower their cutoffs in a timely way to avoid depressing revenue by being overly conservative.

Economic impact modeling can be applied to a variety of score types, including not only the FICO® Score, but custom application risk scores and behavior scores. It can take into consideration 150 different economic indicators, including GDP, unemployment and housing prices, as well as account for varying degrees of vulnerability to economic impacts by geographic region and demographics.

While this technique is new, early work with FICO clients in other lending areas is already pointing to strong benefits. In one evaluation for a bank, the result was a 5% increase in profit per decision. The bank is now implementing economic calibration analytics across 15 markets and multiple product lines.

5. Fast-Track Deployment of New Analytics

In today’s dynamic markets where customer behavior is changing, the value of analytic insights is greatly affected by how quickly they can be deployed into operations.

A large independent auto lender, for example, is looking to reduce new scoring model deployment time from the industry average of six months to one month. The bottom-line impact of faster deployments could be substantial: If a new predictive model is projected to reduce losses by 3-5%, saving the company about \$10 million annually, getting it into operations five months sooner makes a \$4 million difference.

The foundation for this accelerated deployment is the FICO™ Blaze Advisor® business rules management system (BRMS). It reduces the time from insight to action by enabling analytic models to be deployed into rules-driven processes without the need for time-consuming recoding. Models can be combined flexibly with policy rules, calculations and other decisioning elements into efficient automated originations processes or as decisioning services callable by existing application processing systems.

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Another advantage for the lender: FICO selected the most predictive population characteristics for this lender's portfolio among the hundreds available from the credit bureaus. FICO used these characteristics to build custom credit models, and also set up processes with the bureaus so that the same characteristics are available in production through the regular feeds to the company's operational systems.

This consistency is significant. Traditionally, analytic models have been built in design environments that are not tightly linked with operational environments and with data that doesn't look like production data, necessitating tedious, recurring translations back and forth. Using consistent data definitions in development, production and reporting reduces time to market for new and updated models. It facilitates performance measurement and evaluation, enabling faster test-and-learn cycles.

Overall, the lender expects that the ability to bring analytic insights into rules-driven processes will substantially increase the number of applications it can automatically decision from the current level of 25%. FICO's experience with other installment loan types demonstrates the feasibility of doubling this rate or more. Analytic insights may also provide the means to implement risk-based verification. Lenders reduce average processing times and cut costs by focusing scrutiny on those applications where it makes the most difference.

Auto lenders can achieve similar efficiencies in other critical business processes as well. The same business rules management system can be used, for example, to not only automate application processing, but also manage incentive programs for dealers, sales reps and customers. Lenders have the means to balance multi-level incentives with pricing objectives and other factors involved in complicated lending decisions. Intricate trade-offs that often get made by "winging it" today are performed more scientifically and consistently to achieve enhanced risk management and higher profits.

6. Automate Funding Processes with Business Rules

Funding loan contracts is a policy-intensive, labor-intensive and sometimes complex process. As such, it's another part of the credit lifecycle where lenders benefit from business rules automation and potentially from analytics as well.

A large captive lender is initially using business rules management to increase speed and consistency in checking inbound contracts against the structure and stipulations of approved deals. Business rules can perform an even wider range of contract processing functions, including automatically invoking the company's pricing policies for different types of vehicles and applying relevant state and federal regulations. The BRMS also places contracts into appropriate queues for review and sign-off, as well as prompts and monitors follow-up actions on outstanding items.

These basic automated efficiencies can help lenders get funds to dealers sooner, while substantially reducing their own labor requirements. Improved consistency and reduced error rates speed funding and lower labor costs, as well as increase dealer satisfaction and customer loyalty.

There's also the potential to add analytics to make rules-driven funding processes more efficient. Some of the predictive models already used in underwriting loans could do double duty by helping companies respond faster and more efficiently when dealers submit contracts that depart from approved deals. Outputs from these predictive models could be incorporated into decision models that balance the many complex factors affecting the profitability of a contract. This technique could enable lenders to be prepared with a range of alternative deal configurations "in their back pocket" to be pulled out as needed.

» INSIGHTS**7. Take More Effective Early-Stage Collections Actions**

One of the most important things lenders can do to improve portfolio profitability is to skillfully manage early-stage delinquencies. This is particularly true during times of economic stress, when even good customers may fall behind on payments as they try to juggle obligations with multiple creditors.

It's critical to keep in mind that collections actions are customer service functions. Lenders that apply broad-brush policies can end up causing customers, who would have been profitable despite their present delinquency, to seek refinancing elsewhere. For instance, some accounts could be 28 days late throughout their entire loan term and still be profitable.

On the other hand, broad-brush policies can result in lenders taking "too little, too late" actions on some accounts, resulting in higher than necessary recovery costs and losses. It's common for auto lenders, for example, to have a blanket policy of sending a pre-repossession notice when an account reaches 45 days delinquent. But for those accounts where there is a high probability of default, it may be smarter to take action earlier and bring the vehicle to auction before its asset value depreciates further.

Business rules management enables lenders to combine a variety of policy rules in flexible ways that point to the right treatment for individual accounts. Adding custom collection scores to these decision processes helps focus treatments by predicting which accounts are most likely to roll to the next stage of delinquency.

Knowing which accounts are most likely to roll, creditors can act early to prevent indebtedness from growing, and concentrate their best efforts on those accounts with the greatest potential to generate significant losses. Knowing which accounts are least likely to roll (self-curers), creditors can save the expense of contacting and avoid the risk of annoying customers who will probably pay without additional inducement. These insights enable lenders to allocate resources efficiently.

In FICO's experience, financial services that use collections-specific analytics to focus their efforts, instead of a solely balance- or time-based approach, typically see improvements of .5% to 2% in amounts recovered. That can amount to millions in annual write-off savings.

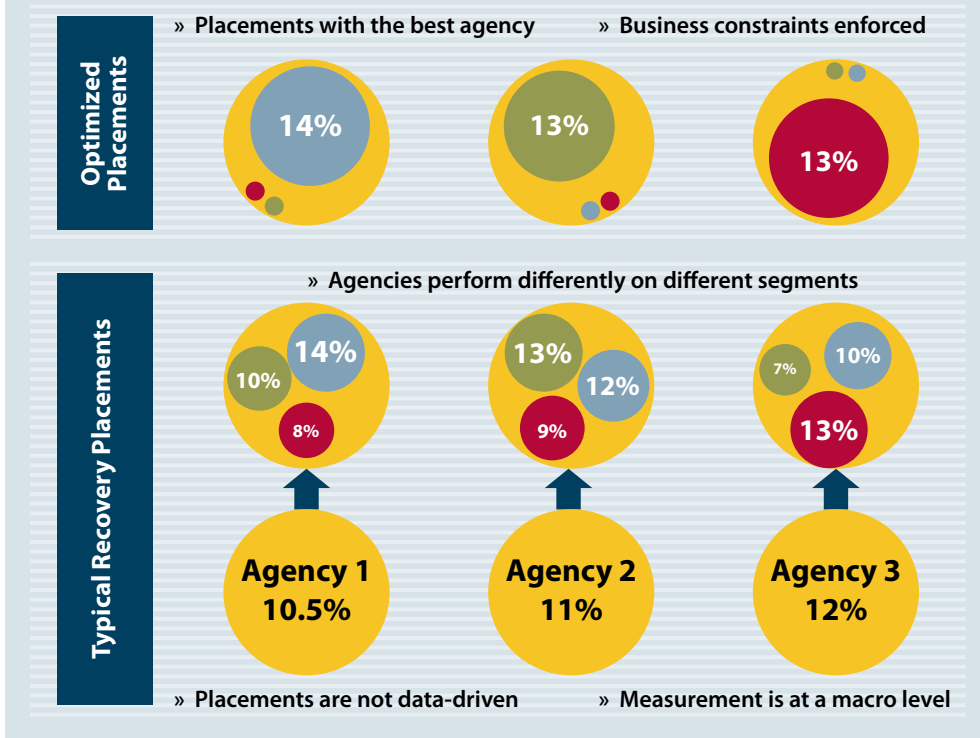
8. Boost Recoveries with Optimized Placements

As with early-stage treatments, taking a broad-brush approach to late-stage delinquencies can be counterproductive. For example, a lender might have the policy that its collections agencies cannot drop below a 70% settlement level. But not every customer has the same capacity to pay, so the result of this type of policy will be that no arrangement can be made with some customers. Resources will be wasted and valuable time lost in the race to recover the dollars owed.

Analytics and business rules management enable lenders to create more flexible strategies that make more efficient use of collections resources, including external agencies. A top-tier lender, for instance, has implemented the FICO® Debt Manager™ solution along with the FICO™ PlacementsPlus® service. This service provides business rules control over account placements and complete visibility over the status of outsourced accounts and agency performance. The projected results include an 8% improvement in liquidation rates, resulting in an estimated \$10 million annually in additional recoveries.

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Figure 5: Optimizing account placement



The next step is to add Placement OptimizerSM to the solution. It provides an empirically based method of assigning accounts to the collections resources most likely to maximize recovery from that account. The lender will be able to determine not only the optimal channel (in-house, agency/DCA placement, online settlement, IVR, debt sale), but also for outside placements, which specific agency should be working the account based on their past performance on that type of account. Optimized account placement is expected to further reduce losses by up to 20%.

A top-tier auto lender is working with FICO to optimize account placement. Advanced analytics in the Placement OptimizerSM solution can determine which of the lender's preferred agencies should work an account based on the agency's past performance on that type of account.

» Conclusion

Economic conditions and consumer behavior are starting to create conditions favorable for growth again in the auto industry. However, smart auto lenders aren't looking to go back to a pre-crisis "business as usual" mindset. They're looking ahead to a new era of more profitable growth driven by sharper analytic insights into risk and reward, and more flexible and efficient decision processes across the credit lifecycle.

Learn more about FICO solutions for auto lenders:

- Browse our **auto lending web pages** and watch the video **"Accelerate Auto Lending Growth."**
- View the recorded webinars **"Forecasting Auto Risk in Today's Economy"** and **"Improve Outsourced Collection and Recovery Rates."**

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