Price optimization in retail consumer lending
Table of contents

Executive summary .....................................................................................................................2
Background on price optimization .............................................................................................3
Price optimization ........................................................................................................................5
The impact of constraints ........................................................................................................... 5
The implications of constraints .................................................................................................8
How does price optimization work? ...........................................................................................8
Price optimization in practice.................................................................................................12
Conclusions............................................................................................................................14
Strategy optimization solutions from Experian.....................................................................15
Getting started with price optimization...................................................................................15
About Experian Decision Analytics..........................................................................................16
Executive summary
All customers are equal, but some are more equal than others. It’s a simple reality — different customers have different profitability. And that means organizations can’t afford to treat all customers identically.

If an organization offered the same “average” price to every customer applying for a loan, low-risk customers would secure better rates with other organizations, while lower-quality customers would not. The result? Only the relatively higher-risk customers would select the average product, skewing the population down, increasing average losses and reducing profitability.

The combined effect of average pricing is twofold: fewer low-risk customers and more high-risk customers.

Risk-based pricing addresses this issue by offering different prices for customers with different risk profiles. This works, to a degree, since it equalizes margins. But an increase in price will reduce business volume — the question is, by how much?

Pricing based solely on risk doesn’t address this issue, and a business needs to understand the price elasticity of customer demand to maximize profitability. Understanding this dimension allows a business to price each customer to maximize profitability, reflecting the fact that different customers are likely to take up differently priced loans — something that a simple risk-based approach usually doesn’t consider.

But while maximizing profit is critical, it isn’t always the sole driver in making customer decisions. The business needs to operate within other operational, financial, regulatory and organizational constraints (such as volume, margin and bad debt), and balancing these different factors is an essential part of portfolio management. This requires a solution that lets an organization make the best pricing decisions on each customer while maximizing overall profit within business constraints.

Price optimization doesn’t just deliver improved profitability. It also provides a better understanding of overall business performance. For many organizations, the real benefits are gained through improved operational and financial management and the ability to respond to changing economic and competitive environments more dynamically.

Specifically, price optimization lets an organization improve its customer decisioning through:

• Decisioning at a finer level of granularity — Decisions can be made based on an individual’s specific characteristics, not just a group of customers within a segment.

• Taking more factors (or decision dimensions) into consideration when making a decision — The propensity to take up the loan or lending facility, early settlement, insurance, value, and term can be considered in addition to risk.

• Dynamic response to different economic, operational or competitive environments — Price optimization can evaluate various scenarios and predict the likely outcome based on each, which means that changes to decisions can be evaluated and implemented more quickly.

• Considering factors other than profit as constraints — The business can forecast profit components and manage profit within these constraints more effectively.

• Making the best possible decision for the customer and organization by taking a holistic view of the customer decision — Traditional rule-based decisioning only considers one customer at a time. Price optimization considers the effect of other customer decisions in order to work within operational and financial constraints.

• Better management of key business groups — A loan portfolio may contain customers from different sources, such as different dealers, risk segments or channels. In auto finance, the management of a third-party dealer is often essential to the business’s performance. Decisions can be taken on individual customers without considering the wider impact on the dealer relationship.
• **Integrating pricing decisions and the operational process** — The business recognizes that decisions on new customers cost money. As a result, it should consider the costs of decisions for different customers in the context of their potential profitability.

• **The ability to develop strategies that consider different economic outcomes** — This helps a business ensure that the impact of a potential economic downturn is relatively small.

**Background on price optimization**

**Setting the price**

There are several ways to set price for any product. The following table from the Tower Group identifies a number of different approaches retail banks are using to set pricing strategies.

Organizations are developing ever-more sophisticated approaches that recognize the need for pricing decisions to distinguish different customer profiles and needs.

The development of advanced analytical techniques has helped organizations better understand customers and differentiate strategies accordingly.

Traditional economic theory teaches that price is set where supply meets demand. If lenders can raise price to increase margins, organizations make supernormal profits and new suppliers will enter the market, increasing supply and subsequently reducing price. Conversely, if high competition results in reduced prices and losses, some organizations will leave the market, and prices will rise back to an equilibrium position.

But in reality, there are many different markets. Customers have different needs and different risk profiles, and they behave in different ways. As a result, there are many different submarkets, each with its own theoretical equilibrium position.

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-Price Pricing</td>
<td>One size fits all.</td>
</tr>
<tr>
<td>Cost-Plus Pricing</td>
<td>The costs associated with the product (marketing, operations, overhead, risk, etc.) are aggregated with an added markup for profit.</td>
</tr>
<tr>
<td>Market-Based Pricing</td>
<td>Pricing for a product or service is based on what the market will bear. Competitors are surveyed to understand the established pricing of a product or service in the market.</td>
</tr>
<tr>
<td>Index-Based Pricing</td>
<td>The pricing of a product or service is pegged to a moving index.</td>
</tr>
<tr>
<td>Risk-Based Pricing</td>
<td>In this variation on cost-plus pricing, a risk assessment is added to the costs of a product or service based on the customer’s credit score. This strategy has a lending orientation.</td>
</tr>
<tr>
<td>Adjusted-Risk-Based Pricing</td>
<td>In this variation on risk-based pricing, supplemental information is factored in. Multidimensional scoring factors in debt-to-income ratios and other data.</td>
</tr>
<tr>
<td>Profit-Based Pricing</td>
<td>Pricing is based on a profit maximizing a combination of costs, risk, and customer price elasticity.</td>
</tr>
</tbody>
</table>

*Pricing strategies become more sophisticated and rely on more powerful analytics as the decisioning process increases in complexity*

---

*Figure 1: Evolution of pricing strategies (Source: Tower Group).*
Why differential prices are inevitable for a bank

Most banks offer a range of products and services to satisfy the needs of a wide range of customers. Governments encourage the concept of a universal bank in an attempt to ensure that the financially disadvantaged aren’t disenfranchised from financial services. Consequently, it’s rare for a bank to focus on a narrow subset of customers (although private banks are perhaps exceptions), and most banks are usually in the business of developing long-term relationships throughout the customer’s life.

Critical to each business’s success is its ability to identify the specific customer potential based on better understanding the customer’s behavior. In recent years, with the increase in data availability, the ability to process that data and the improved decisioning technology, there’s a natural tendency for organizations to develop increasingly more sophisticated models to predict different customers’ profit.

But universal banks aren’t the only suppliers in a market. Niche competitors will specialize in lending to specific customer types. Using the greater availability of data, more sophisticated analytics, lower service costs and focused marketing, these organizations will often cherry-pick lower-risk customers, enabling them to increase profit margins.

The longer-term result is that other organizations are attracted to this market sector and competition increases, which means organizations need to offer reduced rates to maintain or gain more business.

The net effect for an organization that deploys a single price across different customer risk profiles is a reduced number of low-risk customers, resulting in a decline in the average performance of its portfolio. In this situation, the organization has three options:

- Increase prices to preserve overall margins, which will shift its market position down further but allow it to maintain unit profits (although at reduced volumes).
- Introduce differential pricing by customer risk.

The role of risk-based pricing

Risk-based pricing, by definition, allows organizations to vary the price charged to customers based on the customer’s credit risk.

Organizations can increase margins, cover bad debt charges and potentially lower cutoffs to accept business that was previously marginally unprofitable.

Why risk-based pricing isn’t always sufficient

The risk-based pricing approach is limited. As price increases, the propensity for customers to take up the loan at a given price decreases. For higher-risk customers, the price increase also results in smaller customer volumes, but the price charged to the customer should be sufficient to cover the losses.

Conversely, reducing price on lower-risk customers means an increased proportion of customers in this band.
This reduces risk profiles, but also may reduce the average rate (and potentially the margin) on the customer base. But there are key issues with this overall approach, especially on higher-risk customers who are priced. The problem is that the profile of customers who take up the loan is likely to be different from the population that doesn’t. So increasing the price not only reduces volume, it also increases loss rates to a greater level than what was predicted by the risk score. Consequently, increasing prices increases losses — and eventually reduces overall profits.

**Profit maximization for each customer**

Assuming we can predict how different customers respond to different prices, we can maximize the expected profit for each customer. If we maximize profit for each customer decision, an organization can, in theory, maximize its overall profitability by maximizing the individual decision for each customer.

The business volume, margins and profit can be plotted against price. As price increases, volumes decrease and margins increase. But the net impact on overall profitability is often an initial increase, followed by a decline as the volume of business declines and revenues no longer cover operating and fixed costs.

Different customer groups will have differently shaped curves, so differential pricing strategies will deliver different profit results. But every organization has constraints (such as volume, bad debt, market share and proportion priced) that prevent it from simply maximizing profit. This implies that the business needs to understand the impact of these constraints and determine the strategy that maximizes profit while operating within them.

A cautionary note: Some organizations describe maximizing profit for each customer as “optimization.” This is true if the business is able to make individual decisions without impacting its overall business goals. But as previously identified, maximizing profit for each individual customer isn’t always possible because of the wider business constraints.

Maximizing individual customer profit is a good place to start, but it’s not the endgame. The use of the term “price optimization” should imply the desire to set price in such a way as to maximize profits within the portfolio through considering business and operational constraints.

**Price optimization**

To summarize, we have set out the different approaches to making pricing decisions. Customer pricing ranges from a simple portfolio approach to an individual price-based approach that maximizes profit within the business’s constraints.

Again, where there are no portfolio-level constraints, maximizing individual customer profit is sufficient. So when determining the type of solution that can be developed, it’s important to understand the type of constraints that exist in an organization.

**The impact of constraints**

There are several different types of constraints. The key constraints for pricing are described here.

**Financial constraints**

Maximizing profit implies that making a decision that increases revenue by $1 but costs only 99 cents would be desirable. In reality, organizations require a minimum return on equity or capital, which means that such thin margins would be unacceptable.

Most organizations also have a mix of short- and long-term profit objectives. For example, insurance revenues can typically be booked earlier than interest revenues. As a result, an organization, through adjusting the mix of business, may adjust the balance of short- and long-term revenues by pricing customers who take insurance in a different way than those who don’t.
Similarly, certain customer groups may have greater cross-sell potential for additional products and services, but generate lower short-term revenues. The business has the option of taking shorter- or longer-term profits — $1 of profit today is potentially more attractive than $1 tomorrow, even when an appropriate discount factor has been applied.

From a similar perspective, most organizations are organized along product lines. Targets are set by product, but the long-term value of the business depends on the ability to cross-sell products across different customer groups. There is a compromise between the different objectives and definitions of profit within the business, and the relative tradeoff needs to be managed effectively.

This tradeoff is measured according to the different strategies the organization could take. This is shown in the following diagram, which demonstrates the tradeoff between customer value and product value. Customer value may consider additional revenue generated from the lifetime customer relationship, while product value considers only the revenue generated from the product being priced.

**Operational constraints**
Making pricing decisions requires underwriters to manage referral decisions. The amount of resources available to manage the decision is invariably limited, so the business’s ability to assess all credit applications fully will be constrained. Ultimately the business may choose to decline certain marginally profitable customer groups rather than invest considerable cost and resources determining which applications could be accepted.

**Uncertainty constraints**
Any pricing decision has a degree of uncertainty. The higher the uncertainty, the more risk the organization is taking, and the more susceptible it is to a change in situation. So when assessing two different loan prices that generate the same expected profit but have different risks, it’s likely that the lower-risk option would be selected.

The Basel Accords have attempted to address the whole issue of decision risk through determining the level of economic capital an organization should hold in order to reflect the risk. The cost of holding the capital and the return on the capital is therefore an integral part of the decision process.

To a degree, the development of risk-adjusted performance measures has meant that an organization has already factored in its (economic) profit to calculate the degree of risk. But any organization still has the option to assess the degree of risk it wishes to take.

**Legal constraints**
In some markets, such as the United Kingdom, there is a legal restriction on the proportion of customers who can be priced higher than an advertised or typical rate. If this constraint is based on a calculation using number of loans (as opposed to value), it also means that an organization is more likely to price those applications where there is a relatively high benefit of pricing. These tend to be long-term, high-value loans.
It also means that an organization may choose not to price some customers who may be marginally unprofitable, just as it could price one customer who is very profitable. When the profit from the priced customers is greater than the loss on the nonpriced customers, the net profit is positive and the constraint continues to be met.

Where organizations work through intermediaries, there may be an implicit (or even explicit) contract between the loan provider and the intermediary or dealer to manage the proportion of customers who are priced or the average rate offered through the channel. While individual customers will be priced based on the individual deal, the overall agreement with the dealer may imply an agreed level of business, average price or number of loans.

Effectively, lenders need to maximize profitability while meeting the contractual obligations for each dealer. But, of course, different dealers provide different quality and volume of business, so the overall terms of business for different dealers are also likely to be different.

**Customer constraints**

However good the analytics of an organization, it’s unlikely that all factors in a decision can be considered in the profit value to be maximized. The implication is that the business will identify a range of offers for which the customer is eligible, and not all prices will be offered to all customers. It simply doesn’t make sense to offer the highest price to your most profitable customer, whatever the analytics may say.

Models are built on historical experience from past decisions. If these particular offers haven’t been made to similar customers, it’s not possible to predict the impact of the price with absolute certainty. So any testing of different prices needs to be done with care and circumspection — and certainly prior to wider rollout.

**Bad debt constraints**

Organizations are often constrained by the amount of bad debt they can incur. This may be due to the perception created in the financial markets about the poor quality of lending, which creates uncertainty. But it also may impact the organization’s cost of funds required to service debt. Some organizations that have securitized their debts also have agreements to maintain bad debt rate levels within specified ranges.
This means that while the business could potentially achieve higher profits, it must take a more conservative approach to its pricing strategy.

**Budget constraints**
Recruiting customers costs money, and in most businesses this is a key constraint. While maximizing profit at the pricing decision is a key objective, sufficient revenues need to be generated to cover the cost of recruiting customers.

**The implications of constraints**
Ideally, an organization should consider the effect of different price offers within the real-world constraints. But managing multiple constraints at multiple levels (e.g., total portfolio, specific dealers or channel) is a complex problem, particularly when trying to identify optimum profit. This is a classic optimization problem, but the challenge is to solve such a problem across a large number of customer records, with multiple price points and many constraints applied at different levels.

In addition, it’s important not only to satisfy a constraint, but also to understand the cost of doing so. This cost may be in financial terms or in the use or requirement of other resources. It’s important that the business understands the tradeoff between different objectives in multiple potential scenarios and has the ability to evaluate many different scenarios quickly and then deploy into an operational environment.

The process of optimizing strategies should let an organization assess the effect of different actions, decisions, limits or terms on profit and other business metrics. It needs to provide insight into the tradeoff between different decision scenarios so the business can understand the effect of different constraints on profitability. Once the best tradeoff has been determined, it’s essential that the solution lets the business implement the results in the minimum time period.

**How does price optimization work?**

**What is price optimization?**
Price optimization allows a business to develop an overall pricing strategy that generates a high level of profit within its business constraints. The business can assess the best tradeoff between competing objectives and then implement individual customer decisions to meet these objectives.

**What are the requirements?**
So far, this paper has established that:

- Maximizing profit for each customer, although a desirable objective, is rarely the option selected by an organization.
- There are many constraints that may influence the exact tradeoff between profit and other measures, such as volume, bad debt, margin, return on equity, or capital and business risk.
- These tradeoffs are multidimensional and often have complex interactions.

In order to manage across different constraints and to choose the best tradeoff, it’s necessary to predict the effect of different price approaches not only on profit, but also on each of the tradeoff dimensions.

To do this, the following is required:

- Models that predict the effect of different prices.
- Data (past experience that allows the business to understand the effect of different actions on similar customers).
- Simulation (the ability to apply models to historical data, simulate the results and generate expected metrics).
- Optimization to determine the maximum profit within the agreed constraints and enable the business to evaluate tradeoffs.
- Operational deployment through the creation of a rule set.
- Ongoing evaluation.
Predictive models
Optimization models must predict the effect of each price on each customer on the elements of profitability. So rather than just predicting customer behavior, the models predict customer behavior based on a specific decision or action (e.g., different price points).

Historical data
Clearly, different customers respond in different ways to a different price. As a result, in order to evaluate the effect of different prices on similar customers, the organization must have offered a range of prices to customers, or at least offered different prices across the portfolio from which an estimate can be made.

Consequently, when considering price optimization it’s desirable that the organization has previously undertaken differential pricing on similar customers in order to generate the experience and data to build the necessary models.

The profit equation
Each organization is likely to have its own definition of customer value or profitability. Some key issues that need to be addressed:

• **Granular prediction** — Since we are determining customer profit for each price, average portfolio estimates aren’t sufficient. (Some of the components of profit may be generated at a segment level, but the overall profit needs to reflect different customer behaviors.)

• **Forward-looking** — We are predicting the future effect of a price decision, so historical costs of customer recruitment, for example, are irrelevant.

• **Marginal or variable cost–focused** — Fixed costs are only relevant to measure the overall portfolio profitability and don’t impact the decision between competing price decisions.

• **Overall customer value** — Incorporate all significant dimensions of customer value, or as many as can be practically factored into the decision, to measure the overall customer value and not just the value of the product being priced.

Profit model dimensions
The following dimensions could be considered for each loan price for each customer:

• Propensity to take up.
• Loan value and term.
• Loan insurance commission (if applicable).
• Propensity to take loan insurance.
• Application decision cost.
• Early settlement propensity.
• Potential value of additional loan product sales.
• Potential value of other product sales.
• Bad debt losses.
• Cost of capital.

Often organizations have models that estimate these components, but the models are typically relevant only to a portfolio or business unit and don’t reflect the difference in values associated with different customer profiles. Overmodeling should be resisted. For example, operating costs are often difficult to assign at such a granular level. The critical factor is whether taking a specific action significantly impacts the cost or revenues assigned.

Modeling loan take-up
The biggest impact of changing price is on the propensity for the customer to take up the loan. Although, from our experience, there is also a significant impact on bad debt losses, with some effect on the early settlement rates and even the propensity to take insurance.
Different customers will be more or less likely to take up a loan at different rates. Trying to identify the relationship between price and take-up is critical to understanding the impact on customer profitability. Usually, credit risk is a key determinant of take-up, which is logical since a low-risk customer who is offered a high-rate loan still has the opportunity to go to a competitor to source the loan.

Clearly other factors will influence the customer propensity to go to an alternative organization for a loan, including the length of the existing customer relationship, the purpose of the loan, the customer perception of the organization (including the advertised rate), how time-critical the decision for the loan is, availability of other lenders to the customer (geographic and channel), the value and term of the loan (which would impact the magnitude of change in the monthly payment), and the competitive environment. For example, is the loan take-up based on a directly competitive environment such as vehicle finance, where there may be several organizations competing directly for the same business?

Using external data, such as credit bureau data, that focuses on customer risk, indebtedness and credit demand enables improved estimates of customer price elasticity for different customers. These estimates are then used to predict the effect on customer profitability. Since customers have different tolerance to be priced at a given level, it’s important to try to identify this tolerance and model the results.

Experian’s research has shown that, in addition to credit risk score, existing credit commitments and past payment behavior are key predictors in estimating loan take-up (and other behaviors).

**Estimating different loss rates by price**

Changing price usually has a relatively small impact on the monthly payment and hence loan payments, so one could assume that the effect on loss rates is also relatively small. Unfortunately, this isn’t always the case. In practice, a change in rate can have a significant effect on the loss rate. This effect isn’t just generated from the change in monthly payment, but also from the change in the population that takes up the loan. Customers who take up loans at a given price are an intrinsically different risk from those who don’t — even if they have the same score.

---

**Figure 5:** The example above demonstrates how a segmentation system based on external bureau data can be used to predict customer behavior over a 12-month outcome period. Outcomes include whether the customer takes up the loan, defaults, settles the loan, reduces or increases lending, or pays to term.

---

**Legend**
- Non take up
- Bad
- Early settler
- Less lending
- More lending
- Good payer

Based on “Attitude to credit” segment at account opening
This may come as a shock to some credit analysts, and perhaps you can hear them shouting, “Surely the score should predict the risk!” But individuals still hold additional information that isn’t captured in the score. This is factored into the customer’s decision to take up the loan or source it from another provider at a better rate. Risk scores typically don’t estimate the customer’s attitude or need.

The result: The expected loss rate from 100 customers priced at a low rate is lower than the rate from the same customers at a higher rate, because the higher-risk customers tend to take up at the higher rates while the lower-risk customers don’t. This phenomenon is sometimes called “adverse selection.”

**Decision simulation**

Once models have been built, they need to be applied to historical data in order to generate data for decision design. This process may be frequently repeated with different data sets, price points, customers eligible for different prices and different subpopulations. Some models, such as bad debt predictions, need a long outcome, but they need to be applied to recent data to reflect recent customer profiles.

**Optimization**

Once models have been applied to a relevant data set, the output can be used to develop an optimization decision. An optimization technique needs to be able to:

- Consider all dimensions of profitability.
- Apply constraints at the portfolio and subportfolio level (such as risk band, channel and customer type).
- Assess many potential prices.
- Modify the eligibility rules assigned for different price offers to different customers.
- Analyze the tradeoff between different objectives.
- Determine the effect of different constraints.
- Analyze the effect of different exogenous factors to assess the solution’s stability.
- Consider many customers.

The output should be an algorithm that can be deployed within the operational environment. The output could take many forms (rules, scorecard, tree), but it should reflect the modification of the maximum profit caused through the application of constraints. Where there are multiple decision points, however, it’s unlikely that a conventional rule-based system would provide sufficient discrimination to allow all rates to be allocated using all profit dimensions.

It’s likely that changes to the deployed solution will be required on a regular basis due to changes in factors like market position, base rates, targets and customer profiles. As a result, the regeneration of the decision should be rapid and implemented within hours and days — not weeks and months.

**Operational deployment**

The requirement for rapid deployment means that evaluation, testing and analysis of any potential strategy should be undertaken in an analytical environment. Testing of strategies in the operational environment should be confined to ensure that the operational test environment generates the same decisions as the simulation environment. This means the analysis of appropriate strategies can be undertaken in advance and the final check undertaken just before the decision to move a new strategy to a live environment.

In addition, the operational deployment needs to support champion/challenger testing (on both optimized strategies against rule-based strategies and different optimized strategies), management of price options and eligibility, scorecards (applied to price options, not just customers), and generation of the profit equations.
Evaluation

Once the strategy has been deployed, the effect of customer action needs to be evaluated and compared with the existing champion and/or against the design of experiment challenger strategies.

As part of the optimization process, estimates of all the components of profitability should be made. This enables a direct comparison between the estimated and actual results at each stage. But optimization relies on past data to generate an algorithm for deployment. As a result, the population distribution also may affect the overall results of the solution. Clearly there will be differences — no model is perfect — and it will be necessary to update the models periodically.

The first step in evaluation is to measure the actual performance of each profit metric against the values predicted in the model development and optimization processes.

This is similar to the bad debt reporting currently undertaken — but undertaken over all relevant dimensions of profit. Clearly where there are differences between actual and forecast, the deviation needs to be assessed and passed back into the optimization evaluation process.

But evaluation also plays a critical role in generating the data for future model development. The design of any strategy is based on models, which are based on historical data — the better the data, the better the models. Ideally, similar customers should be offered different rates.

For the purpose of model development, it would be ideal if customers were randomly chosen for different prices and the effect monitored. In practice, this isn’t feasible, but what may be possible is applying a test in which customers are allocated different prices on a test basis around a typical price band. This band could be set by risk and would reflect the boundary of potential prices set through optimization.

Price optimization in practice

Price optimization has been operationally deployed within the personal loan sector. It lets businesses maximize profit within (multiple) constraints and determine the best tradeoff between profit, volume, return on investment and bad debt.

The following case study represents the decision process an organization deploying optimization would go through in developing an optimized strategy.

Business challenge

The business challenge was to improve profitability through better pricing decisions in order to set the most appropriate rate for each customer to maximize revenues within constraints.

Some of the constraints considered:

- Take-up rates.
- Proportion of customers priced.
- Bad debt rates.
- Early settlement rates.
- Insurance revenues.
Decision refer rates.
Channel volumes.
Return on investment.

Business solution
The solution comprised a fully integrated price optimization system that included:
- Predictive models.
- Marketswitch Optimization® technology.
- Strategy management business rules engine.
- Analytical reporting system.

Current decision

Unconstrained baseline

Application of constraints
Using the Marketswitch Optimization software, a revised solution was created with the constraints applied to both these factors.

Analyzing the tradeoff
The above scenario would be a more attractive position than a simple maximization of profit. But there’s still another consideration — what’s the tradeoff between profitability and default rates? Put another way, could you reduce default rates without significantly impacting profitability?

To achieve this, a range of different optimization scenarios were executed in Marketswitch Optimization. The result shows the tradeoff between bad debt and profitability. This was done by evaluating different optimization objective functions that compare the objective of maximizing profit with reducing default rates.
Conclusions

Price optimization delivers real benefit
Organizations are considering how best to address key business challenges in customer decisioning, and price optimization is increasingly viewed as a key part of that change process.

Pricing is a complex customer decision that needs to reflect the dynamic market conditions and individual customer behavior.

The benefits of price optimization
Price optimization is a true game-changer because it lets an organization work from a top-down perspective rather than a bottom-up one. The business is able to understand the tradeoffs between different scenarios and measure the effect of applying constraints.

Price optimization lets an organization determine the best price for each customer and manage its wider business goals and objectives. In addition to price decisioning, the same methodology can be applied to most customer decisions across the Customer Life Cycle.

Price optimization allows the management of business change to be directly addressed. Organizations can better plan how to incorporate decisioning into the wider strategic, operational and competitive environment.

The challenges of optimization
Optimization is a different approach to customer decisioning. It challenges conventional wisdom since it requires the business to score the offer, not the customer. As a result, optimization will require smarter model building and more governance since organizations are now able to simulate many different business scenarios and evaluate the merits of each. Of course, an advanced analytics team should aspire to this goal anyway. Organizations should aim to set strategies without understanding the incremental effect of the actions on different customer groups.

But the result is that business strategists will be able to understand the benefits of changing customer strategies and implement the changes with a far greater degree of certainty, which will give them increased status and influence.
Strategy optimization solutions from Experian

Enterprise optimization solutions
Experian® offers a range of optimization solutions that help organizations maximize the value of every action taken, across marketing and credit activities.

Experian’s optimization software
Experian’s decision optimization platform includes two software solutions: Marketswitch Optimization and Strategy Tree Optimization.

Marketswitch Optimization develops optimal, data-driven decisioning strategies at the individual customer level. Strategy Tree Optimization helps clients quickly design optimized decision strategy trees to deploy into an existing business rules engine. Both solutions use patented, mathematical, constrained optimization technology.

Each product can be used on its own or as a component integrated with most analytical tools, decision automation engines and customer management applications.

Expert optimization consulting
Our optimization experts provide best practice solution design and implementation services, including specialist analytical services to help you define and implement an analytical framework for testing, modeling and tracking the decision inputs.

We can work with you to identify the appropriate processes, resources and skill sets required to operate the solution, or we can manage the solution on your behalf. We can provide data discovery and enhancement and analysis services. And we can develop, implement and manage any models that are required.

Price optimization
Experian can deliver a range of services to help organizations adopt and deploy price optimization solutions. We offer a consulting-led proposition backed by world-leading technology, data and analytics.

The approach is to deliver flexible, user-maintained technology supported by consulting and analytical resources to provide maximum benefit as early as possible. The solution can be incorporated into existing decision processes and application processing systems and used to manage all aspects of customer decisioning. Key to the solution is the ability to integrate the key processes of analysis, optimization, deployment and evaluation. This enables optimized strategies to be updated and deployed rapidly.

Optimization requires a relevant set of historical data based on specific customer profiles, possible prices that may be offered to each customer, models and lending policy. The generation of relevant data requires the ability to simulate different combinations using recent loan applications. The Experian solution includes the ability to simulate the effects of different models, price options, policy and profit equation by applying appropriate parameters to historical data before passing the results into Marketswitch Optimization.

Getting started with price optimization
Experian consultants provide a range of consulting services to help organizations progress rapidly to price optimization deployment. These are summarized below.

Readiness audit
• How close is the business to realizing benefit price strategy optimization?
• Assessment of the business’s readiness for price strategy optimization.
Road map
• How do we start price strategy optimization from where we are today?
• Attain price strategy optimization through a customized plan of initiatives.

Proof of concept
• What’s the potential benefit of using price strategy optimization?
• Evaluation of price strategy optimization through low-impact analysis.

Implementation
• How do we deploy/integrate price strategy optimization in the business?
• Full production deployment of the Marketswitch Optimization software.

Best practice review
• Ongoing refinement of the price strategy optimization framework.
• Update of models.

About Experian Decision Analytics
Experian Decision Analytics enables our clients to make analytics-based customer decisions that support their strategic goals, so they can achieve and sustain significant growth and profitability. Through our unique combination of consumer and business information, analytics, decisions, and execution, we help clients to maximize and actively manage customer value.

Meaningful information is key to effective decision-making, and Experian is an expert at connecting, managing, interpreting and applying data and transforming it into information and analytics to address real-world challenges. We collaborate closely with clients to identify what matters most about their business and customers, then create and implement analytics-based decisions to manage their strategies over time.

In today’s fast-paced environment, developing, implementing and sustaining an effective strategy is imperative. Experian Decision Analytics helps organizations unlock a wealth of benefits immediately — and set the stage for long-term success.
Increased revenue — Our products and services enable clients to increase revenue by providing the insight and agility they need to find and engage the right customers, target products more effectively and grow market share.

Controlled risk — A broad range of risk management products and services help our clients verify identity, manage and detect fraud, optimize collection and recovery, and balance risk and reward.

Operational efficiency — Experian Decision Analytics helps our clients quickly integrate various information and processes to enhance operational efficiency and boost agility. Our flexible, collaborative approach helps organizations increase speed to market, enhance business agility and improve the quality of customers' experiences.

Compliance as a source of differentiation — Proven expertise lets clients use compliance as a source of competitive advantage. Experian Decision Analytics helps ensure compliance with essential regulations while helping organizations better understand customers.