





# FICO® Xpress Optimization

## Products and Services

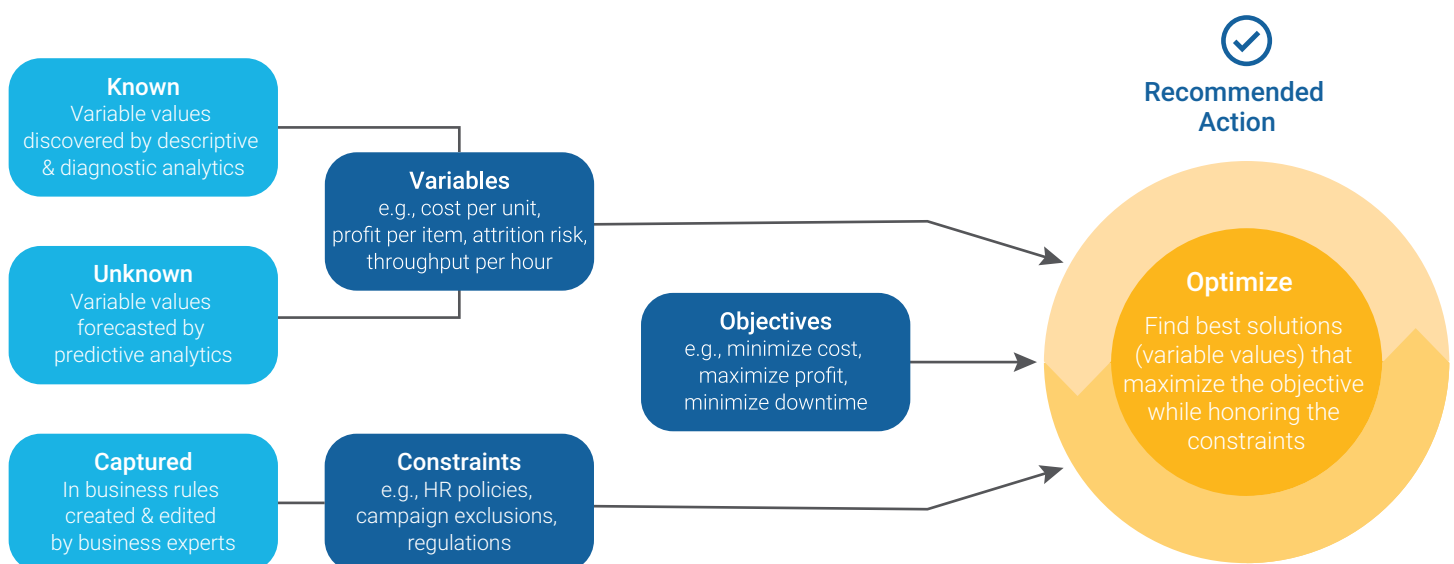
Making Optimization Accessible to Everyone, Everywhere

### With FICO® Xpress Optimization:

-  **An airline** saved \$49 million a year in costs
-  **An energy company** reduced CO<sub>2</sub> emissions by 20–50 million metric tons a year
-  **A bank** increased new sales by 29%, amounting to \$41 million in revenue the first year
-  **An auto finance company** helped 10,000 customers a year avoid delinquency

Optimization is the mathematical process of finding the best decision for a given business problem within a defined set of constraints—and it can be the difference between success and failure in today’s highly competitive marketplace. FICO® Xpress Optimization products and services allow businesses to quickly and easily apply optimization techniques to solve their business problems, faster.

Our deep portfolio of optimization options enables users to easily build, deploy and use optimization solutions that meet their needs. Standard capabilities include scalable high-performance solvers and algorithms, flexible modeling environments, rapid application development, comparative scenario analysis and reporting capabilities, for on-premises and cloud installations.



## Designed for Every Level of User

FICO® Xpress Optimization products and services are both deep and wide and provide a framework for all types of users. They generally serve five main groups and their key requirements are:

BUSINESS USER	BUSINESS ANALYST	SOLUTION DEVELOPERS	DATA SCIENTISTS	OPERATIONS RESEARCH PROFESSIONALS
Intuitive scenario creation	Design and configuration of decision impact models	Build web applications/ optimization solutions	Build mathematical models to reflect business problems	Design, develop and configure models, services and solutions
Collaborative visualization and reporting of results	Define key metric calculations	Enable business users and analysts to control aspects of the model through a user-friendly interface	Create overall analysis and visualizations	Access broad solver and algorithm choices
Comparative “what-if?” analysis	Detailed decision analysis		Utilize robust and flexible modeling languages	Model and metric customization

FICO offers products, solutions and services that allow every level of user to successfully utilize optimization to solve business problems.

## Key Building Blocks for Successful Optimization

### Industry-Leading Optimization Algorithms and Solvers

FICO offers powerful and versatile solvers to help you model with greater accuracy and solve highly complex, real-world problems. We provide a wide array of sophisticated optimization algorithms for solving large-scale linear and mixed integer problems, as well as non-linear problems.

### Detailed Scenario Configuration, Analysis and Reporting

The true power of optimization to solve business problems comes from running comparative scenarios that show where you are today, and identifying the potential opportunities that exist. FICO’s optimization solutions provide a wide array of simulation and optimization techniques that allow you to modify constraints and explore trade-offs in order to identify the optimal strategy that best meets your goals and constraints.

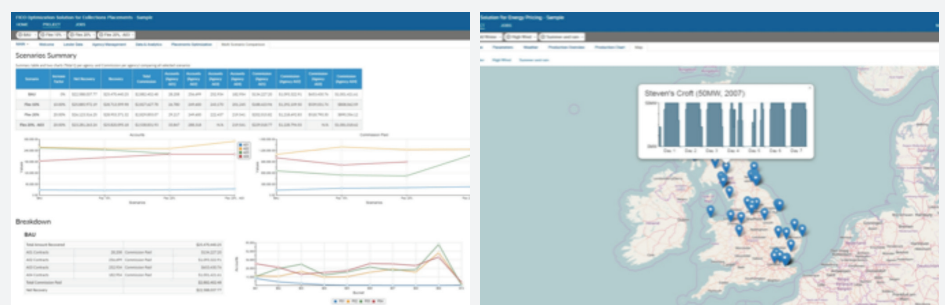
The scenario output provides tremendous insight into more profitable decisions and the impact of different combinations of business objectives, factors and constraints, across different segments and sub-populations.

### Ability to Model the Business Problem

Prescriptive analytics is about much more than the technology. It is vital to understand how to construct the problem and to validate the results very carefully, whether developing a mathematical model or configuring a framework that allows you to bring together:

- Decision variables, constraints and objectives
- Profit model of the decision
- Predictive and action-effect models
- Business expertise

### Interactive Visualizations



Users can explore various optimization scenarios and do side-by-side comparisons to determine the effectiveness of each strategy. Engaging visualization features help the user easily navigate the model and key in on important information.

### Ease of Deployment

FICO optimization solutions have extensive capabilities aimed at streamlining the process for creating, managing and deploying optimized decisions into production, either through optimization solutions that directly manage production systems (batch, near real-time or real-time) or by converting decisions into decision rules or decision trees that can be used in production decision management solutions.

## FICO Optimization Products and Services

FICO has a wide range of tools, solutions and services within its optimization portfolio.



### FICO® Xpress Optimization

Optimization tools and technology for use by operations researchers, data scientists and solution developers. FICO Xpress Optimization is sold in four components. It is available on-premises and in the cloud.

#### Xpress Insight

Visualize, collaborate and decide using solutions

- Extensible software application for deploying optimization models as solutions
- Scenario management, execution, file management
- Visualization and data analysis

#### Xpress Executor

Deploy and execute models

- Optimization execution services
- Executes Xpress Mosel models using the Xpress optimization engines
- Provides SOAP and REST interfaces for FICO or external applications

#### Xpress Solver

Optimization technologies

- Widest breadth of industry-leading optimization algorithms and technologies
- Includes Continuous Solvers, Mixed Integer/Quadratic Solvers, Non-Linear Solvers, Constraint Programming and Xpress Tuner

#### Xpress Workbench

Develop models, services and solutions

- Integrated Development Environment (IDE) for developing models, services and solutions
- Includes Xpress Mosel, an algebraic modeling & procedural program language
- Directly supports Python, Matlab, Xpress BCL



### FICO® Xpress Optimization Solutions

Point-and-click applications designed for use by business users and analysts to run and analyze optimization scenarios in highly intuitive and visual user interfaces.

#### FICO Xpress Optimization Solutions have been applied successfully across hundreds of use cases, including the following:

##### Use cases:

- Logistics and Supply Chain Planning
- Vehicle Route Planning
- Personnel Planning
- Scheduling
- Production Planning
- Retail Space Planning
- Maintenance Planning
- Logistics and Supply Chain
- Marketing Channel and Offer Management
- Collection Optimization
- Deposit Pricing
- Mortgage Pricing
- Alternative Deal Structure Pricing
- Credit Limit Management
- Transaction Authorization
- Fraud Referral
- Account Originations
- Social Networks
- Ad Placement
- Merchandising
- Consumer Packaged Goods
- Hospitality Pricing
- Natural Resource Extraction
- Pricing and Revenue Management
- Call Center Management
- Health Management and Resource Planning
- Process Industry Optimization
- Utilities Generation and Distribution

##### Industries:

- Banking and Financial Services
- Transportation and Logistics
- Energy and Utilities
- Manufacturing
- Telecommunications
- Retail
- Consumer Goods
- Technology
- Healthcare (Biotech, Medical, Pharmaceutical)
- Education
- Defense
- National and Local Government

FICO can help you develop a custom FICO optimization solution for just about any business problem.



### FICO® Xpress Optimization Services

Best-in-class optimization solution services

Work with FICO experts to tailor solutions, services and training to meet your needs

- Outsourced Solution Creation
- Partnership Development Projects
- Methodology Knowledge Transfer
- Standard Methodology and Frameworks
- OR and Business Domain Experts
- Predictive and Prescriptive Analytics

With more than 30 years of experience in modeling and optimization, FICO brings a wealth of knowledge to help our clients apply optimization to all their complex decisions, whether through our tools, solutions or custom development services. FICO's suite of optimization products, solutions and services can help you develop better decisions that are more profitable, more manageable and meet your business goals and constraints.

For more information and to  
learn how to try our software  
or get a demo, visit  
[www.fico.com/optimization](http://www.fico.com/optimization).



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