



## SAS® Marketing Optimization

Plan, prioritize and optimize customer contacts to maximize profits

### What does SAS® Marketing Optimization do?

SAS Marketing Optimization enables you to maximize economic outcomes by making the most of each individual customer contact while considering business variables, such as resource and budget constraints, contact policies, the likelihood that customers will respond and more.

### Why is SAS® Marketing Optimization important?

SAS Marketing Optimization increases the ROI of marketing campaigns by determining the best offers for individual customers. It also provides insight into the implications of changing business constraints, such as budget, channel capacity and contact policies.

### For whom is SAS® Marketing Optimization intended?

Marketing campaign managers, business analysts, segment managers and quantitative analysts can use SAS Marketing Optimization to ensure that direct marketing activities deliver the greatest possible economic results.

### Overview

Cutting through marketing noise to deliver the right message to a receptive customer presents serious challenges for any company – especially as marketing organizations face increased pressure to do more with less.

Segmentation, predictive modeling and testing improve the effectiveness of individual customer interactions – but they alone can't address the full scope of daily marketing realities. Marketers must balance competing business goals across divisions, manage multiple marketing programs against constraints (e.g., channel capacity), control budgets and manage customer contact policies. Internal political battles add another layer of complexity. At a multiproduct organization with hundreds of campaigns and millions of customers, how do you decide which campaigns go to which customers?

To maximize profit or ROI, enforce contact policies and stay within budget, you need far more than just experience and human intuition. SAS Marketing Optimization applies mathematical techniques to maximize campaign returns by revealing how to make the most of each individual customer contact – while taking multiple business variables into consideration.

Using what-if analysis, the software determines the best offers for individual customers and gives insight into the implications of changing business constraints. You can target customers to maximize profitability, response rates, asset levels or other parameters – while recognizing preferences, propensities, profitability, costs, contact policies and other communications goals.

### Key Benefits

- **Improve marketing ROI.** Effective targeting leads to higher response rates, improved channel effectiveness and reduced spending. It also means fewer deleted emails and unwanted direct mail solicitations. Segmentation and rules-based approaches to prioritizing marketing offers can't come close to delivering the same results as the math-based approach offered by SAS Marketing Optimization.
- **Gain insight into the impact of changes.** SAS Marketing Optimization gives you a quantitative prediction about the impact of making changes to constraints, such as budget, contact policy and more, so you can make decisions based on facts, rather than relying on instinct. You can easily create and modify what-if scenarios to see what revenue gains are possible if the campaign budget is increased by some percentage – or to see what impact a higher contact frequency will have on customer lifetime value.
- **Enhance your contact strategy.** Optimize across complex contact policies to avoid oversaturating customers and violating corporate governance requirements. Eliminate uncoordinated and conflicting communications, and incorporate relevant relationship factors – such as customer risk, advertising exposure and householding – into the optimization to ensure that valuable customers receive the best possible set of communications across every channel.



## Solution Overview

SAS Marketing Optimization uses a mathematical optimization process to improve the economic return of business-to-consumer direct marketing campaigns. When used with SAS Marketing Automation, SAS® Enterprise Miner™ or other SAS solutions, the software can also amplify your investments in third-party campaign management and data mining applications.

### Easy-to-Use Interface

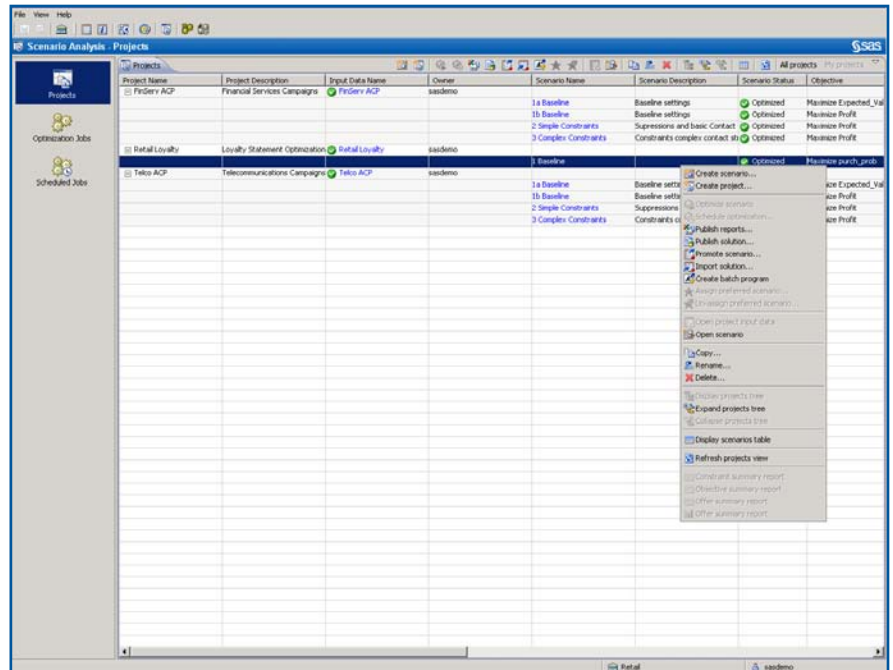
An easy-to-use interface guides users through the solution using an intuitive, logical process. Wizards assist you with more complex tasks. All scenarios, constraints, reports and analyses are defined and performed through the user interface.

### Robust Optimization Formulation

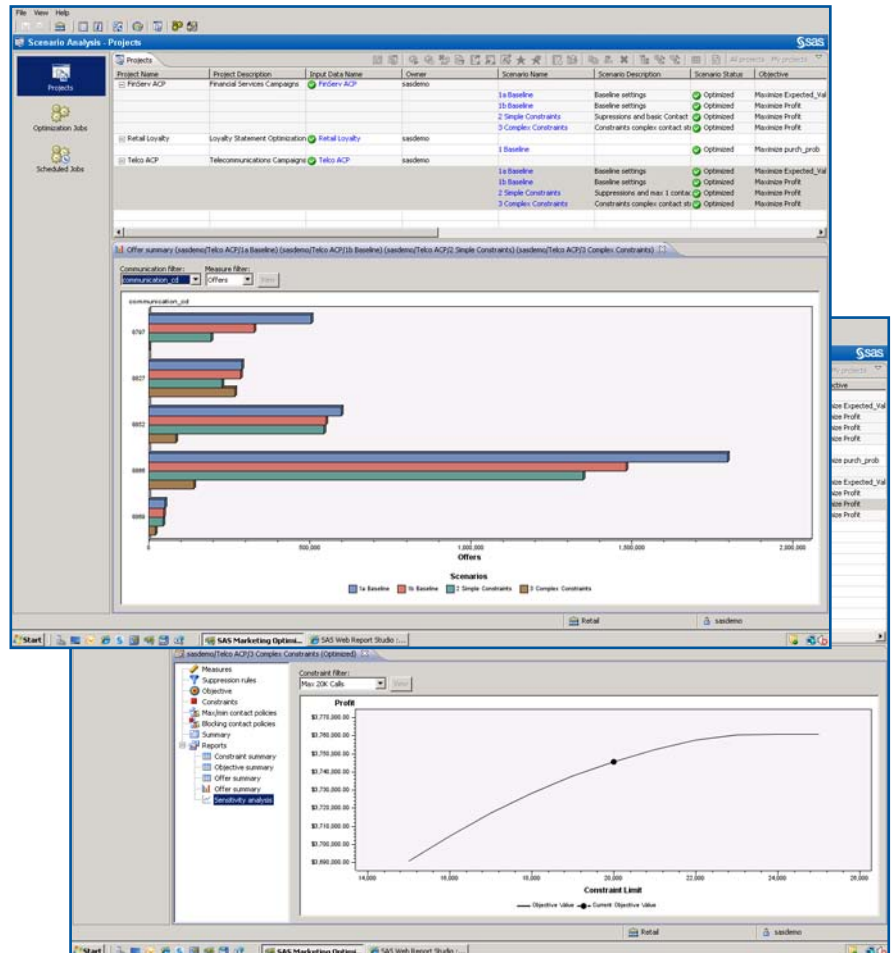
With SAS Marketing Optimization, you can combine constraints based on budgets, channel capacity, cell sizes, hurdle rates and individual customer contact policies. You can even create custom constraints, such as a minimum ROI or revenue threshold. For example, you can specify financially based tactical constraints, such as “spend at least US\$150,000 on offers to undermarketed customers in the Northeast.”

The first step is to define business objectives that focus on optimizing parameters, such as profit, revenues, response rates or total marketing cost. You can also define two objectives in the same scenario to see how competing goals, such as maximizing profit and minimizing risk, affect each other.

Next, you define business conditions that require a limit – e.g., you could put a ceiling on the total budget, or hold aggregate portfolio risk under a specific threshold. You can also include contact policies at the household or customer level within the same scenario.



*Menu-driven actions make it easy to define alternate scenarios within an optimization project.*



*Multiple views of a project are available through the reporting and graphics capabilities of SAS® Marketing Optimization.*

## Scenario Analysis

Within an optimization project, you can define alternate scenarios. Each scenario can have a different set of constraints, marketing costs, business objectives and customer contact policies. After specifying constraints, you can optimize multiple scenarios, then review and compare the outputs to determine which scenario will bring the best results.

## Reporting and Graphics

The solution's reporting and graphic capabilities provide multiple views of a project. For example, Offer Summary reports and graphs show total offers and expected profitability. Constraint Summary reports show actual consumption of resources in the optimized scenario, as well as opportunity costs for constraints – the additional profit that would result from one more unit of that resource.

The software also generates sensitivity curves that show optimization objectives (e.g., profit) corresponding to a wide range of constraint values, which makes it easy to analyze trade-offs between objectives and constraints. If a secondary objective is defined, a Range Analysis chart shows trade-offs between the two objectives – e.g., how much an increase in revenue affects profits.

## Contract Strategy Enforcement

To prevent conflicting communications and unwanted clutter, you can designate a maximum number of offers that each customer should receive throughout the set of campaigns being optimized. You can also set limits on rolling time periods, channels and which products to market to each customer.

## Key Features

### Optimization Formulation

Maximize profit, revenue, account balance and more; minimize marketing costs; and achieve sales volume goals using optimization formulation to account for:

- Budget, contact policies and resource consumption.
- Customer-level attributes, such as consumer credit scores or recent purchase amounts.
- Desired minimum or maximum cell sizes for any campaign, offer or offer combination.
- Nearly any custom customer-level criteria, such as “total revenues greater than or equal to \$25 million,” or “average portfolio risk score greater than or equal to 680.”

### User-Friendly Interface

Navigate easily through the optimization process with an interface that lets you:

- Use wizards for frequent tasks and for integrating with SAS Marketing Automation.
- Hide or expose advanced optimization functions to support different users' needs.

### Scenario Analysis

Use scenario analysis to determine impact of each constraint on the overall objective as you:

- Optimize multiple scenarios, then review and compare outputs.
- Run different scenarios based on constraints and optimization objectives, contact policy and offer economics.
- Send the optimal solution directly to the campaign execution system.

### Contact Strategy Enforcement

Over- or under-contacting customers can affect loyalty, response rates and profit. This easy-to-use tool lets you:

- Specify how many offers to assign each customer or household across the planning horizon or rolling time period.
- Specify number of offers from a group or subgroup (e.g., make at most two cross-sell offers through email or at most one rebate offer per brand).
- Specify blocking policies (e.g., if you make Offer A, don't make Offer B for three weeks).

### Reporting and Analysis

- Prebuilt reports include:
  - Offer Summary reports and graphs showing total costs, total profit and other metrics by offer, product, channel, time period, campaign, offer group or offer subgroup.
  - Optimal results by offer, product, channel, time period, campaign, offer group or offer subgroup.
- Visual Sensitivity analysis for all constraints.
- Range Analysis graph when two objectives are defined.
- Collaborative capabilities let you publish or email reports about competing scenarios before execution.
- OLAP cubes, which are automatically created based on input data and results of scenarios, enable detailed analysis of results before execution.
- Rich reports compare differing objectives within a scenario and show comparisons across scenarios to reflect the impact on various counts and critical measures.

### SAS® High-Performance Marketing Optimization

SAS Marketing Optimization is now underpinned by SAS High-Performance Analytics to enable:

- Rapid optimization of massive volumes of customer data.
- Ability to quickly solve complex optimization challenges that were previously unsolvable.
- Ability to run optimizations against the entire set of customer data, not just a sample or control group.
- Integration with SAS High-Performance Analytics – massive customer data is sent out to the appliance, distributed, optimized and returned in an easy and efficient fashion.
- Faster, more detailed optimization.

## SAS® High-Performance Marketing Optimization

To accommodate the growing sophistication of marketing programs, SAS Marketing Optimization is now underpinned by high-performance analytics capabilities from SAS.

Built on a high-performance optimization engine, SAS High-Performance Marketing Optimization improves scalability and reduces computation time, enabling you to optimize billions of rows of customer data quickly and efficiently. The software makes it faster and easier to get accurate information, so you can make smarter decisions and solve more complex business problems.

In fact, problems that were previously unsolvable due to size or complexity can now be handled easily. For example, you can now optimize runs with hundreds of

campaign offers, thousands of contact policy constraints and billions of rows of customer records in just minutes, rather than the hours or even days it would take to run in the past. That's because massive customer data is sent out to the appliance, distributed, optimized and returned in an easy and efficient fashion. In addition, you can:

- **Get more accurate optimization results.** Run optimizations against the entire set of customer data, not just a sample or control group. This enables you to test and experiment with different modeling techniques against all of your customer data.
- **Enhance the speed of optimization.** Perform detailed modeling, forecasting and selection at a much faster rate, enabling you to solve critical business issues and make fact-based decisions quickly and confidently.

## SAS® Marketing Optimization System Requirements

To learn more about SAS Marketing Optimization system requirements, download white papers, view screenshots and see other related material, please visit: [sas.com/marketingoptimization](http://sas.com/marketingoptimization).

## About SAS

SAS is the leader in business analytics software and services, and the largest independent vendor in the business intelligence market. Through innovative solutions, SAS helps customers at more than 55,000 sites improve performance and deliver value by making better decisions faster. Since 1976 SAS has been giving customers around the world THE POWER TO KNOW®. For more information, visit us at [sas.com](http://sas.com).



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