



SAS® Marketing Optimization

Plan, prioritize and optimize customer contacts to maximize profits

What does SAS® Marketing Optimization do?

SAS Marketing Optimization enables organizations to maximize economic outcomes by helping them make 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 who are comfortable working in spreadsheets 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 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 like 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 return, revealing how to make the most of each individual customer contact – while considering many business variables.

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.** Targeting effectively means higher response rates, improved channel effectiveness and reduced spending. It also means fewer deleted e-mails and unwanted direct mail solicitations. Using segmentation and rules-based approaches to prioritizing marketing offers will not achieve the same results as the math-based approach offered by SAS Marketing Optimization.
- **Gain insight into the impact of changes.** Rather than relying on instinct, SAS Marketing Optimization gives you a quantitative prediction about the impact of making changes to constraints such as budget, contact policy and more. You can easily create and modify what-if scenarios to see the increase in revenue if the campaign budget is increased by some percentage – or, to see the impact on customer lifetime value with higher contact frequency.
- **Enhance 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 into the optimization – such as customer risk, advertising exposure and householding – 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 investments in third-party campaign management and data mining applications.

Easy-to-use interface

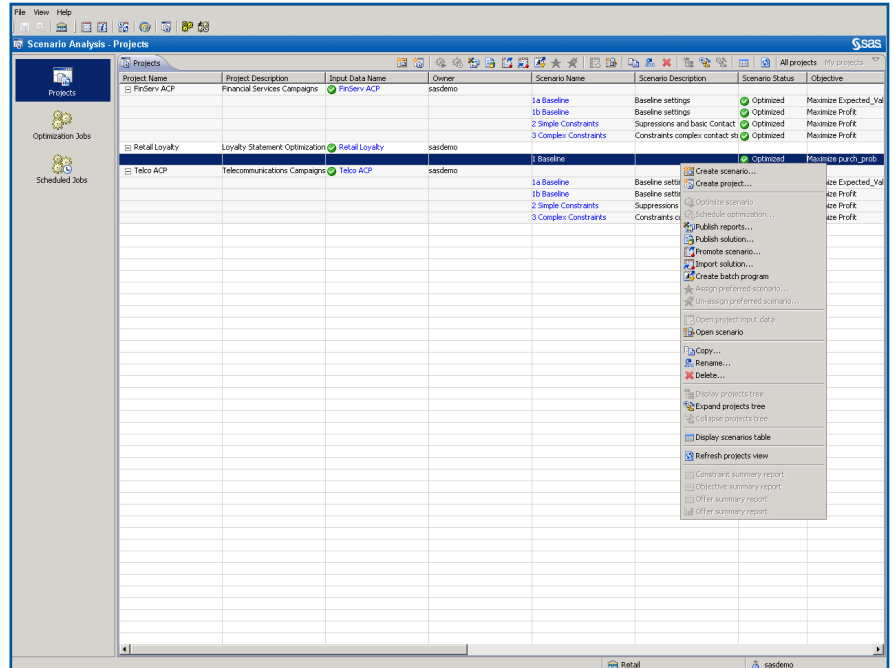
Users are guided through the solution using an intuitive and logical process. Wizards assist you with more complex tasks. All scenarios, constraints, reports and analyses are defined and performed through the user interface.

Robust optimization formulation

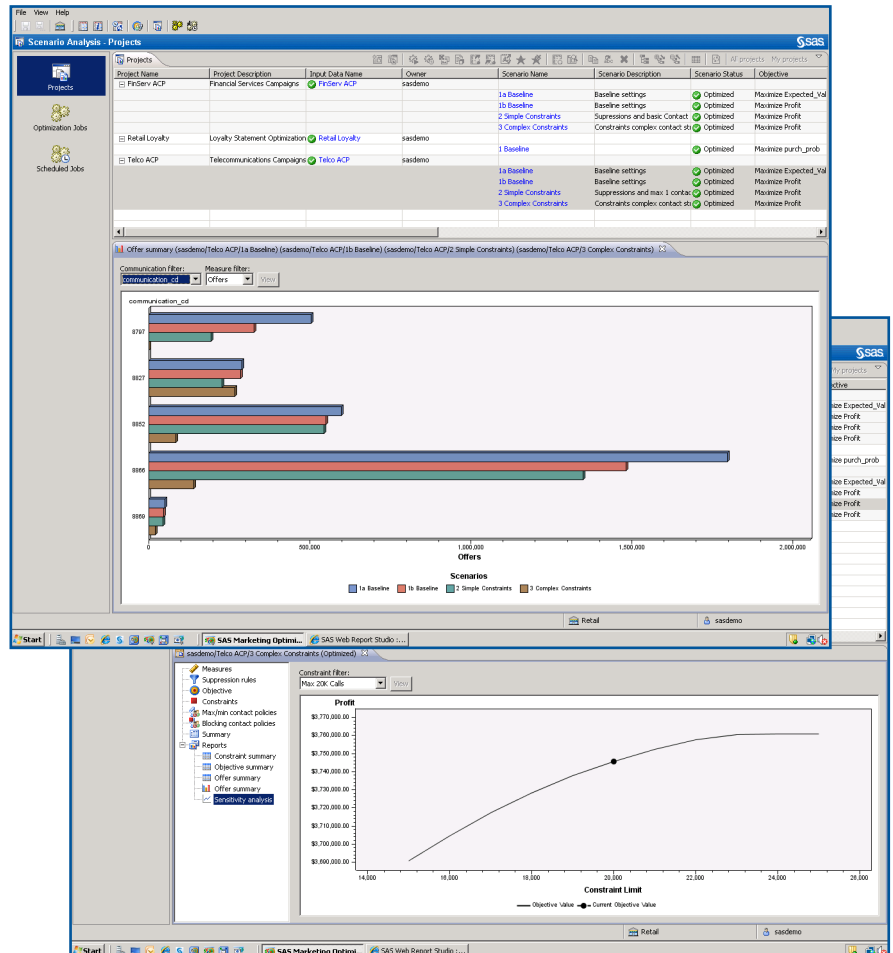
With SAS Marketing Optimization, you can combine constraints based on budgets, channel capacity, cell sizes, hurdle rates and individual customer contact policies. You can even create custom constraints, such as a minimum ROI or revenue threshold. For example, you can specify financially based tactical 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 like maximizing profit and minimizing risk affect each other. Next, you define business conditions that require a limit – you could put a ceiling on the total budget, or the aggregate portfolio risk could be held under a specific threshold. You can also include contact policies at the household or customer level within the same scenario.

Scenario analysis

Within an optimization project, you can define alternate scenarios. Each 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 in SAS® Marketing Optimization.

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

SAS Marketing Optimization includes reporting and graphics that provide multiple views of a project. 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 objective and constraints. If a secondary objective is defined, a Range Analysis chart shows trade-offs between the two objectives – for example, how much an increase in revenue affects profit.

Reliable enforcement of contact strategies

To prevent conflicting communications and unwanted clutter, you can assign a maximum number of offers to deliver to each customer throughout the set of campaigns being optimized. You can also set limits on rolling time periods, channels or specific products marketed to each customer.

Sophisticated, scalable optimization engine

To accommodate the growing sophistication of marketing programs, SAS Marketing Optimization is built on a high-performance optimization engine designed to improve scalability and reduce computation time. The software makes it faster and easier to get accurate information – so you can make smart decisions and solve complex business problems.

Key Features

Optimization formulation

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

- Budget, contact policies and resource consumption.
- Channel availability for store, branch, call center, direct mail, e-mail, mobile or other channels.
- 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 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.
- Reuse existing work.
- 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

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 e-mail 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 e-mail reports of 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 impact on various counts and critical measures.

Technical Requirements

Operating systems

- HP-UX Itanium: HP-UX 11iv2 (11.23), 11iv3 (11.31)
- HP-UX PA-RISC: HP-UX 11iv2 (11.23), 11iv3 (11.31)
- IBM AIX
- Linux
- Microsoft Windows 64-bit editions
- Sun Solaris

Clients

- Microsoft Windows

Application servers

- Oracle Weblogic
- IBM WebSphere
- JBoss

Required software

SAS Marketing Optimization ships with all the required server-side software. [SAS Information Delivery Portal](#) and SAS Web Report Studio deployments (part of the SAS Marketing Optimization

solution) require an application server. Scheduling software is required to schedule optimization scenarios to run at a later time. Both Platform LSF and the OS AT scheduler are supported.

Optional software

SAS Marketing Optimization is designed to use predictive models of customer response, economic valuation models of customer profitability and marketing costs, and the results of design of experiments (DOE) tests on offers and treatments. SAS products that provide or facilitate these capabilities are [SAS Enterprise Miner](#), [SAS/QC®](#) and [SAS Activity-Based Management](#).

[SAS Marketing Automation](#) provides campaign management and execution capabilities to complete the marketing communication process chain.

Integration with Microsoft Office (for reporting and analysis) requires Microsoft Office 2000 or later.