



SAS® INTERACTION MANAGEMENT

Identify and act on changes in individual customer's behavior to influence customer growth and retention

What does SAS® Interaction Management do?

SAS Interaction Management uses a patented approach to event-driven marketing to track individual customer behavior and alert businesses to opportunities for delivering timely, effective communications that improve customer revenue, growth and retention.

Why is SAS® Interaction Management important?

A well-planned offer delivered too late is just as bad as a second-rate offer. SAS Interaction Management gives companies an opportunity to take a major step toward meaningful one-to-one customer communications by combining SAS' core strength in analytics with customer behavior tracking, helping you deliver precise offers at just the right moment.

Who is SAS® Interaction Management designed for?

SAS Interaction Management is designed for business managers who are concerned with the generation and delivery of actionable marketing leads throughout the organization. Quantitative users can design, build and execute triggers to support a wide variety of event- and behavior-based marketing programs. Marketing users can tailor and fine-tune event triggers based on their understanding of market or environmental events that impact customers, such as seasonal sales or interest rate fluctuations.



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Overview

As long as consumers continue to expect corner-store experiences in the digital age, the need for effective marketing will continue to grow. While the proliferation of markets and channels makes it harder than ever to understand customer behavior, the information your organization collects from these interactions is a valuable asset — one that savvy marketing organizations can use to stand out in today's flat, networked world.

Unfortunately, investments in operational CRM systems will never realize their promised potential if they can't provide an intimate understanding of individual customers. Likewise, a marketing approach based only on segmentation will miss timely opportunities to save or build upon customer relationships in today's fast-paced marketplace.

The fact is that many organizations still struggle to deliver specific, timely, actionable communications that will grow and retain customer relationships in a way that leverages current technology investments. But now there's a solution.

Proactively respond to changes in customer behavior

SAS Interaction Management helps marketers respond proactively to changes in an individual customer's behavior, enabling improved cross-sell, up-sell and retention strategies. By measuring the behavior of individual customers — in real time — the solution empowers you to deliver the best possible response for every customer exchange, as well as identify at-risk customers in time to intervene.

SAS also helps increase the value of your operational CRM systems by improving the efficiency, effectiveness and consistency of CRM activities across all channels.

Benefits

With SAS Interaction Management's patented approach to event-driven marketing, marketers and quantitative analysts can:

- **Automate ongoing, event-driven marketing programs** and move the marketing organization toward one-to-one customer communications.
- **Use predictive analytics to drive higher ROI** by improving success rates and managing message cost.
- **Incorporate time-sensitive third-party or environmental data** — such as stock market feeds — as a barometer for measuring customer behavior.
- **Continuously evaluate every customer individually** while constantly updating each customer's profile
- **Recognize meaningful, significant changes** in behavior that are specific to individual customers.
- **Communicate with customers at the right time** through virtually any delivery channel.
- **Deliver alerts about unexpected inactivity** — e.g. a missed deposit or a decrease in services used.
- **Identify and act upon significant customer behavior sequences** — as they occur — that determine when a customer is on a path to purchase, upgrade, cancel service, etc.

Key capabilities

Track and analyze individual customer behavior

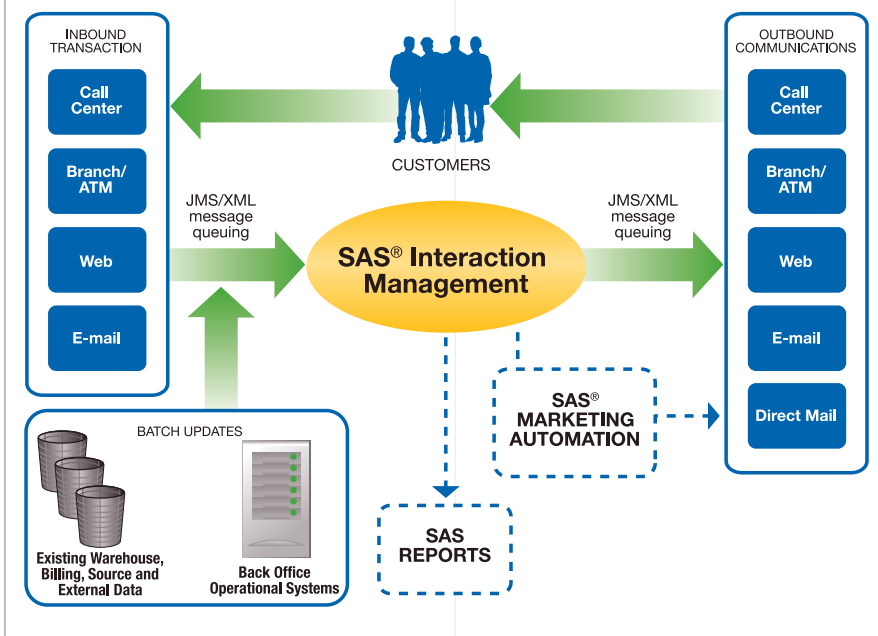
SAS Interaction Management tracks customers using behavior maps — state diagrams that model customer behavior across multiple behavioral dimensions.

- A state can be created to describe any measurable attribute (e.g., product preference).
- A customer or other entity — such as a household, account or product — may exist simultaneously in any combination of states (e.g., “high value” and “decreasing purchases”).
- States are linked, and as your relationship with each customer changes over time, SAS automatically changes each membership profile in each state.
- Behavior maps give quantitative users a sophisticated behavior modeling palette, while providing marketing users with a highly flexible, yet intuitive tool for tracking customer behavior.

You can combine behaviors to create “dynamic segments” that characterize members whose current behavior indicates an immediate — and likely passing — opportunity to increase the value of that relationship. Using the “high value” and “decreasing purchases” states, for example, you could create a “high value at risk” segment that includes all members of both states. Like state membership, dynamic segment membership varies with time.

You can also apply any conditional expression to define a segment. For example, an analyst might further refine the “high value at risk” segment with additional qualifiers, such as “profitability score > 0.8” or “time since last correspondence > 14 days.”

INTERACTION MANAGEMENT COMMUNICATIONS FLOW



SAS® Interaction Management communication flow

Compare current and past behaviors

To enrich behavior maps, SAS Interaction Management also includes robust customer trending capabilities that aggregate, summarize and analyze each customer’s past data. This enables the comparison of a customer’s current behavior to his or her past or typical behavior.

Users can apply time-derivative functions — such as averages, slopes and standard deviations — that are useful for detecting subtle changes in a customer’s behavior.

Trigger leads of significant customer events

SAS Interaction Management uses the insight generated through behavior maps to create event triggers (or “leads”), which initiate time-sensitive marketing actions for individual customers. These event triggers are driven by:

- **Behavior.** Changes in any behavior dimension can alert you to potential opportunities or threats in a customer relationship. Alternatively, a customer who has passed through a particular sequence of states might also trigger an alert or generate a new sales lead.
- **Transactions.** Abnormally large purchases, deposits and other transactions of interest can initiate event triggers.
- **Time.** If a customer maintains a longer-than-average period of inactivity, for example, a specific type of communication might be needed to promote reactivation.

SAS Interaction Management can easily create triggers that combine absolute and relative trigger thresholds. For example, absolute triggers might include “send Large Purchase trigger if last purchase > \$1,000” or “send Call Eligible trigger if last communication > 30 days.”

For each customer profile it maintains, SAS Interaction Management defines a “normal” level of activity and understands the context of that relationship on a true one-to-one basis. This contextual customer understanding also enables the use of relative trigger thresholds, such as “send Large Purchase trigger if a customer’s last purchase > 2.5 * his average purchase.” These trigger settings automatically adjust over time, reflecting changes in normal customer behavior.

Integrate with customer analytics

SAS Interaction Management leverages insights collected from SAS’ advanced customer analytics solutions, such as SAS Enterprise Miner. At one level, a quantitative analyst may use SAS Enterprise Miner to understand historic trends and to build and maintain behavior maps to solve specific business problems, such as customer retention. SAS Enterprise Miner scores can also be used as criteria to determine if a new alert should be sent.

Integrate with campaign management

Using the included Database Marketing Adapter, SAS Interaction Management can send triggers to SAS Marketing Automation for execution of near-real-time outbound communications. SAS Interaction Management extends the reach of SAS Marketing Automation by “listening” to a broad range of transaction systems (e.g., direct deposit or payment systems) and improves the ability of SAS Marketing Automation to measure responses.

Key features

Accurate, timely and actionable event triggers

*** Compares each customer’s present behavior to past behavior.**

- Explicitly assesses time, enabling evaluations of inactivity.
- Detects deviations from each customer’s norms.
- Conducts ongoing complex calculations.
- Analyzes behavior patterns.
- Maintains up-to-the-moment profiles of each customer.
- Improves accuracy of other evaluation processes by providing assessment at the moment it’s needed.

Scalable, high-throughput Java-based architecture

*** Processes millions of transactions per hour, even on a departmental server.**

- Real-time and batch implementations.
- Multithreaded processing.
- Parallel data processing.
- Data I/O in JMS queues.
- Hierarchical state structure yields for efficient transaction processing.

Sophisticated, flexible modeling and design environment

- State-based, customer profile-based, rules-based and query-based approaches to event detection combined in a single application.
- Relative and absolute trigger settings.
- Integration with predictive analysis from SAS Enterprise Miner.
- Robust state-based behavior modeling environment.
- Robust trending functions.
- Standards-based application.
- Integration with other systems via open standard protocols.
- Database Marketing Adapter enables easy integration with SAS Marketing Automation running on all supported databases, as well as integration with other JDBC-compliant applications.

Efficient, intuitive user interface and application framework

- Single point of control for creating and executing all marketing alerts, including behavior-based, transaction-based and time-based event triggers.
- Single GUI for designing, testing and deploying applications.
- Auto-adapting of event triggers that are “fire and forget” instead of “redo every quarter.”
- Applications saved as XML files, enabling cut/paste reusability and easy customization.

About SAS

SAS is the leader in business intelligence software and services. Customers at 40,000 sites, including 96 of the top 100 FORTUNE Global 500® companies, use SAS software to manage and gain insights from vast amounts of data, resulting in faster, more accurate business decisions; more profitable relationships with customers and suppliers; compliance with governmental regulations; research breakthroughs; and better products. Only SAS offers leading data integration, intelligence storage, advanced analytics and business intelligence applications within a comprehensive enterprise intelligence platform. Since 1976, SAS has been giving customers around the world **The Power to Know.®** www.sas.com.

Technical Requirements

Software

Operating systems

- Microsoft Windows 2000 with Service Pack 3 or later
- Microsoft Windows XP

Behavior analysis engine internal database

- Oracle 8.1.7 or higher
- Microsoft SQL Server 2000 with Service Pack 3

Middleware

- Any JMS 1.0.2 or higher compliant software (e.g. IBM Websphere MQ)

Hardware

Processor

2.2GHz Pentium IV or faster

Memory

512MB of RAM (minimum)

Disk Space

2GB (minimum)



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