

The SAS® Transformation Project—Deploying SAS Customer Intelligence for a Single View of the Customer

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ABSTRACT

Building a holistic view of the customer is becoming the norm across industries. The financial services industry and retail firms have been at the forefront of striving for this goal. Firm ABC is a large insurance firm based in the United States. It uses multiple campaign management platforms across different lines of business. Marketing campaigns are deployed in isolation. Similarly, responses are tracked and attributed in silos. This prevents the firm from obtaining a holistic view of its customers across products and lines of business and leads to gaps and inefficiencies in data management, campaign management, reporting, and analytics.

Firm ABC needed an enterprise-level solution that addressed how to integrate with different types of data sources (both external and internal) and grow as a scalable and agile marketing and analytics organization; how to deploy campaign and contact management using a centralized platform to reduce overlap and redundancies and deliver a more coordinated marketing messaging to customers; how to perform more accurate attribution that, in turn, drives marketing measurement and planning; how to implement more sophisticated and visual self-service reporting that enables business users to make marketing decisions; and how to build advanced analytics expertise in-house. The solution needed to support predictive modeling, segmentation, and targeting.

Based on these challenges and requirements, the firm conducted an extensive RFP process and reviewed various vendors in the enterprise marketing and business intelligence space. Ultimately, SAS® Customer Intelligence and SAS® Enterprise BI were selected to help the firm achieve its goals and transition to a customer-centric organization. The ability for SAS® to deliver a custom-hosted solution was one of the key drivers for this decision, along with its experience in the financial services and insurance industries. Moreover, SAS can provide the much-needed flexibility and scalability, whether it is around integrating external vendors, credit data, and mail-shop processing, or managing sensitive customer information. This paper provides detailed insight on the various modules being implemented by the firm, how they will be leveraged to address the goals, and what their roles are in the future architecture. The presentation includes detailed project implementation and provides insights, best practices, and challenges faced during the project planning, solution design, governance, and development and production phases. The project team included marketers, campaign managers, data analysts, business analysts, and developers with sponsorship and participation from the C suite. The SAS® Transformation Project provides insights and best practices that prove useful for business users, IT teams, and senior management. The scale, timing, and complexity of the solution deployment make it an interesting and relevant case study, not only for financial clients, but also for any large firm that has been tasked with understanding its customers and building a holistic customer profile.

INTRODUCTION

SAS® is building an end-to-end campaign management solution with work streams for data management, campaign planning and execution, reporting and analytics. The above design will be customizable and easily scalable based on the data and marketing needs. SAS® can easily integrate with growing external vendors as well as new internal lines of business and products. A SAS® hosted solution removes the need for the firm to support typical IT tasks. The SAS® Transformation Project is reviewed from a functional perspective, which includes the four work streams below:

- Data Onboarding
- Campaign Planning and Execution
- Channel Integration
- Campaign Measurement

Each section is explained in context of the business requirements, SAS® modules, benefits, key learnings and recommendations. This paper will give the reader of how different modules of the SAS® Customer Intelligence and Business Intelligence suite can be used to solve for different requirements of marketing and campaign management. This paper will also provide insights into challenges faced by a typical large scale implementation and the key learnings.

Figure 1 Introduction.



Figure 1. SAS® Transformation Project Functional View

DATA ONBOARDING

Data onboarding requires the campaign management solution to be able to integrate data feeds (ad-hoc and automatic) from internal and external sources (third party administrators and vendors) from across the firm into a centralized hosted SAS® database (db). The data can be customer data, response data or campaign data. The solution should be able to identify different types of files (mostly flat files) and load them automatically for different lines of business, products and customer audiences. The solution will also need to ensure data quality across data sources by providing audit/control reports. The onboarding logic will not only need to provide better data management but should also be able to improve data quality by performing address cleansing, de-duplication, code standardization, data refreshes and alerting on missing values and fields. An assessment was performed for all the incoming and outgoing data feeds into the firm to build mapping and data model requirements. The above were translated to requirements for SAS and for defining the SLAs and user roles and security.

The solution will onboard files and check for data quality using Informatica and SAS® db. It will also provide data enrichment through Acxiom, credit append, house-holding and NCOA updates in an automated manner. The above functionalities will provide faster file processing and troubleshooting as the firm grows and scales.

The key learning for this work stream was that data assessment/mapping is crucial to the success of such projects and hence, warrant sufficient focus during initial part of the project. Any changes in the mapping

require changes to the SAS database. Also, when dealing with multiple lines of business, solving for data quality issues takes more time than expected. Lastly, since this is being deployed as hosted solution, it required more interaction with the SAS teams than expected.

CAMPAIGN PLANNING AND EXECUTION

Campaign planning and execution was implemented using SAS® Marketing Operations Management (MOM) and Marketing Automation (MA) from the Customer Intelligence Suite. This section discusses how both the tools were leveraged to achieve the objectives of the business for end to end campaign management.

CAMPAIGN PLANNING AND OPERATIONS

The firm's key requirements was to be able to track campaign planning and approvals better. Also, the solution should be able to generate and document campaign briefs, store creatives and campaign assets along with campaign metadata (dates, counts etc.). This will help automate campaign workflows and provide more visibility to the campaign managers and marketing operations teams in form of notifications and checklists.

SAS ® MOM is a robust tool that provides capabilities around planning and financial management, production management, marketing reporting and analytics, marketing fulfillment and marketing asset management. SAS MOM was selected as it streamlines end to end marketing operations, helps deploy campaigns faster and provides visibility to marketing operations. SAS MOM is also able to track delivery of campaign files to respective fulfillment channels and vendors.

Figure 1 SAS Marketing Operations Management Interface

Financial Services > 2011 PLAN FOR INVESTMENTS AND TRUST > INTEGRATED MARKETING CAMPAIGN

Info Campaigns **Budgets** Expenses Scorecard Reviews User Roles Workflows Versions

Financial Information

Currency: USD

Planned	Allocated	Committed	Spent	Unallocated
725,000.00	411,000.00	135,000.00	65,000.00	314,000.00

Release Money

Cost Centers

Name	Planned Amount	Unallocated Amount
Corporate Marketing	200,000.00	170,000.00
Wealth Management	525,000.00	144,000.00
Total	725,000.00	314,000.00

Delete Add/Edit

Forecast

Forecast Attribute	Q1	Q2	Q3	Q4	Total
Advertising	50,000.00	60,000.00	55,000.00	65,000.00	230,000.00
Direct Marketing	75,000.00	80,000.00	75,000.00	80,000.00	310,000.00
Events	25,000.00	25,000.00	20,000.00	15,500.00	85,500.00
Internet	20,000.00	15,000.00	10,000.00	15,000.00	60,000.00
Total	170,000.00	180,000.00	160,000.00	175,500.00	685,500.00

Display 1. SAS MOM's Financial Management Capabilities

The key challenge for this work stream was that every business unit has its own campaign management process and channels to market their products. This resulted in working with multiple third party vendors and different file layouts, SLAs and protocols leading to an increased cost of maintenance. Also there was no centralized campaign planning, budgeting and forecasting tool available in the current state operations and hence had to be designed from scratch.

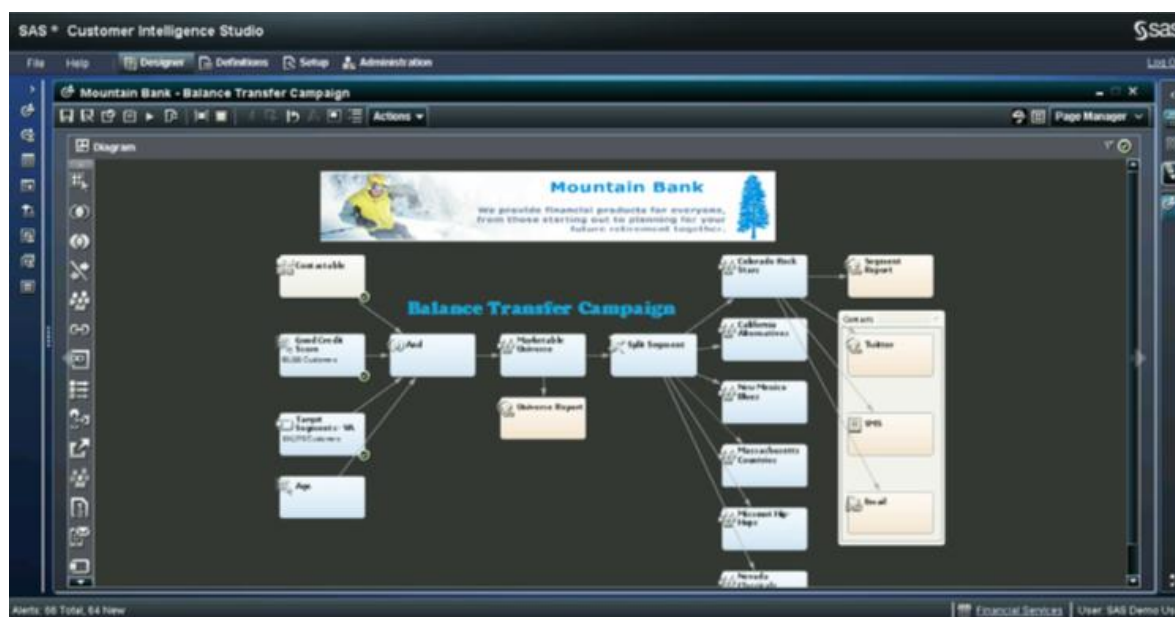
CAMPAIGN EXECUTION AND MANAGEMENT

The firm wanted a solution that not only automated campaign execution but also allowed campaign managers to forecast sales, project volumes and calculate the return on investment pre and post

campaigns. The solution should provide an easy to use interface to assign customers to segments, offers and channels. The solution should also allow campaign managers to define triggers for executing automated triggered campaign such as campaigns based on life events and customer activity.

SAS® Marketing Automation includes an OLAP server, Enterprise Server and Information Delivery Portal (IDP). It is widely used by campaign managers as it provides workflows, dashboards, priority based optimization, campaign testing tools, customizable predictive data models and advanced segmentation and analytics capabilities. SAS MA enables campaign managers to execute more campaigns faster, achieve better targeting and accurate segmentation which in turn improves response rates.

Figure 1 SAS Marketing Automation Interface



Display 2. SAS MA's drag and drop interface to create campaigns

The main challenge for this work stream was that the current implementation evolved over a period of time resulting in a convoluted architecture. Also, the current state segmentation and analytics was cumbersome and hence requirements had to be defined all over again for the future state architecture.

CHANNEL INTEGRATION

Channel Integration work stream includes the execution of a campaign through the fulfillment vendors, associated channel responses and attribution. SAS® can easily integrate with growing external vendors as well as new internal lines of business and products. SAS ® has proven to work with multiple vendors for all direct mail, email and online marketing needs

FULFILLMENT AND RESPONSES

The fulfillment process includes the following files and processes.

Campaign Mail File

The channel integration process is initiated by a campaign manager, who generates and executes a segmented mail list. The list identifies the prospects for a particular campaign. The segmented mail list, is loaded into SAS ®'s contact history and then is processed by campaign managers, who pass it to the fulfillment vendors for execution.

Vendor Response File

Fulfillment vendors execute the campaign and record the results from the mailings. Each vendor has the ability to update the segmented mail list for NCOA (national change of address registry) or DNS (do not

solicit) information before execution. The results from the executed mail file are passed back to the firm after execution. The results for a direct mail campaign can include indicators on if the mail was successfully sent, if the address had to be updated, or if the individual record had to be suppressed for the mailing. The email campaign can include similar indicators on if the campaign was sent, opened, clicked, bounced or unsubscribed. The executed mail files from the vendors are received and processed internally by campaign managers first before being passed to SAS®. SAS® then updates the contact history to reflect the most accurate contact history of the campaign.

Channel Response File

Response vendors send response feeds on various responses received along the customer journey which includes an application phase, call center and policy phase. These responses are further standardized before being passed to SAS ®. SAS applies attribution and updates response history based on responses received.

ATTRIBUTION

There was a need for multi-channel attribution to tie responses to direct mail, digital marketing and call centers. The solution should be able to accurately attribute marketing response to the appropriate channels and touch points to measure the marketing ROI and support marketing planning. The solution should also be able to perform attribution on a daily basis for each response file.

The attribution process determines which campaign should be given the credit for a customer response. An attribution level is assigned to each response. The attribution level identifies the confidence that is assigned to a match. The overall attribution level is determined based on the confidence level associated with matching a customer response to a campaign. The following are predecessors to attribution processing:

- Creation of response history and contact history tables
- Population of contact history as part of campaign execution
- Delivery of fulfillment files from SAS® to the firm containing campaign and contact history information (when applicable)
- Transfer of formatted response files from the firm to SAS that contain response details

Formatted responses are delivered using vendor and channel response files. When a response file is received as part of data intake, the data from each response file is loaded into staging tables and held for attribution processing. Upon successful completion of attribution processing, each responder record is deleted from the staging table and inserted into the appropriate response table.

SAS® provides the flexibility and ease of programming attribution rules and codes to support multi-channel and more sophisticated attribution techniques. The main challenge with this work stream was that the solution was dealing with multiple channels on both the response and fulfillment side leading to a complex implementation architecture.

CAMPAIGN MEASUREMENT

The SAS® campaign management solution will receive response data from channels and vendors in a centralized database on a daily basis. This data will be leveraged to evaluate campaign effectiveness and ROI as well as perform advanced analytics to optimize campaigns and increase response and conversion further.

CAMPAIGN ROI

The firm wanted the capability to measure campaign effectiveness and evaluate metrics such as costs, revenues, volumes, conversion and ROI across dimensions such as lines of business, product, region, channel, segment and time. The ROI is required pre and post campaign to create forecasts and projections for campaign planning purposes.

The solution will use SAS® Information Delivery Portal (IDP) as it provides capabilities such as visualization and dashboards, information delivery, customization, search and notifications along with self-service functionality. SAS® IDP is based on OLAP cube studio and provides support for integration with various open standards tools.

With SAS® IDP the campaign management solution will enable faster and efficient decision making. The campaign management solution will also use SAS® Web Report Studio which provides capabilities for report management, report interaction and role based report authoring and distribution. This will help empower business users with self-service reporting. Also, it will help streamline the time spent on reporting by providing exception reporting and notifications.

Figure 1 SAS Information Delivery Portal Interface



Display 3. SAS IDP provides visuals to understand the pulse of the business

CAMPAIGN ANALYTICS

The campaign management solution should be able to support test and control and provide the ability to develop and store business rules, requirements, model scores and analysis. The models will be used to append model scores to existing customers and assign model scores to new customers. The models will be calibrated with new responses based on customer behavior. The solution should also provide campaign managers with analysis of the customer universe and segments. The campaign management solution should have the capability to integrate models developed in different analytical applications such as SPSS® and R®.

In the current state, different environments are being used for data management and reporting/analytics, leading to inconsistencies in tracking and measurement. Marketing is mostly single touch with lack of visibility into customer life time value and share of wallet. With the analytics capabilities provided by SAS® the firm will be able to support multi-touch and triggered marketing programs that drive cross-sell, upsell and customer retention based on customer value and scores. This will also empower marketers and campaign managers to perform analytics in-house.

CONCLUSION

This project gave a large firm the ability to have a complete view of the customer and a single integrated platform for all their marketing activities across multiple lines of business. Having a hosted solution at SAS saved time and money on in-house infrastructure and reduced the overall time to production. Proper planning allowed for implementation of both the SAS® MOM and SAS® MA tools in one release. An iterative approach where one Line of Business was implemented during each phase reduced complexity

and made the project more manageable. Close cooperation between the business and IT teams at the firm and SAS's implementation team helped to quickly resolve any issues found along the way.

Key learnings and recommendations:

- The Firm and SAS have different marketing vernaculars that impeded communication. Regular meetings early in the project between the key stakeholder and the SAS implementation team can be used to understand each other's terms and definitions to help mitigate these issues.
- Data integration between the Firm and SAS is usually the long pole in the implementation so start work on this track as soon as possible in the project and have a dedicated team to resolve problems found.
- Regular meetings between the Project Managers from SAS and the Firm improved the resolution of issues that surfaced at every phase of the project. Constant communication is key when working with any vendor but is especially important in a hosted solution.
- Testing must be closely coordinated between the Firm's IT and business teams, and SAS's implementation teams to ensure a successful and complete end-to-end testing that catches the majority of issues prior to production release.
- Training on the SAS suite of tools needs to be done with the current marketing SMEs to ensure success. "Train the trainer" methods seemed to be an effective way to quickly get the Firm's marketing teams up to speed on the new capabilities and processes.

REFERENCES

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