

A Forrester Total Economic Impact™
Study Commissioned By SAS
May 2017

The Total Economic Impact™ Of SAS Real- Time Decision Manager

Table Of Contents

Executive Summary	1
Key Findings	1
TEI Framework And Methodology	3
The Real-Time Decision Manager Customer Journey	4
Interviewed Organization	4
Key Challenges	4
Key Results	4
Financial Analysis	5
Increased Revenue From Identifying New Subscribers	5
Increased Revenue From Higher Number Of Campaigns	6
Increased Revenue From Improved Response Rates	7
Flexibility	7
Total Costs	8
Financial Summary	9
SAS Real-Time Decision Manager: Overview	10
Appendix A: Total Economic Impact	11

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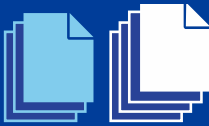
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Executive Summary

Benefits And Costs



Increased PV revenue from campaigns over three years:
\$26.3 million



Three-year PV license costs:
\$1.6 million



Hardware and staffing PV costs:
\$1.2 million

SAS provides a platform that brings together previously disparate data to make real-time decisions about customers and campaigns that help its customers take advantage of marketing opportunities that would be impossible using conventional tools. SAS commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Real-Time Decision Manager (RTDM). The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of RTDM on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed one customer with several years of experience using RTDM. The customer is a major telecommunications provider in Asia.

Prior to using Real-Time Decision Manager, the organization had a number of groups doing analytics and building campaigns, but it lacked a single platform to handle inbound and outbound activities. Part of its goal in moving to SAS was to sync up customer data into a single, consolidated storage area so that analysts could understand the typical journey for customers.

After implementing RTDM, analysts developed a better understanding of specific customer needs. The chief data architect told Forrester: “Using RTDM, we can offer data upgrades at the right time and through the right channel. We are making it easier for customers to make the purchase, and we keep finding more and more ways to enhance the customer journey. RTDM is key into our ability to do these things.”

Key Findings

Quantified benefits. The interviewed organization experienced the following risk-adjusted quantified PV benefits:

- › **Increased revenue of 18% per year by identifying new subscribers.** Using SAS Real-Time Decision Manager along with related SAS products enabled the organization to identify additional customer segments and respond to market opportunities faster. The result was an incremental \$16.7 million in revenue that generated more than \$3.8 million in profit over three years.
- › **Increased revenue of 7% per year by increasing the number of campaigns to upgrade existing customers.** By identifying the right customers for upgrades, the organization was able to act on opportunities that lined up the customer needs tailored to each customer’s specific journey. The same staff increased the number of campaigns by 30%, or 300 more campaigns per month, resulting in increased revenue of more than \$7.2 million and more than \$1.8 million in profit.
- › **Increased revenue by raising the response rate of incremental campaigns by 10%.** The response rate for the incremental campaigns and new customer segments resonated better than the company’s typical campaign and had response rates that were 10% higher. As a result, the organization generated another \$2.4 million in revenue, which equated to \$545,904 in profit.



ROI
120%



Benefits PV
\$6.2 million



NPV
\$3.4 million



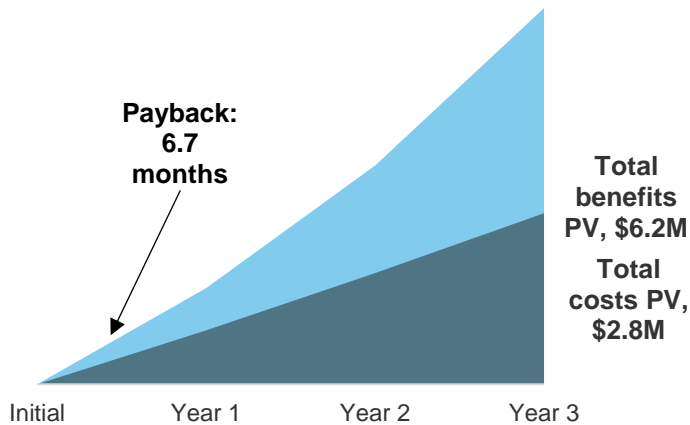
Payback
6.7 months

Costs. The interviewed organization experienced the following risk-adjusted PV costs:

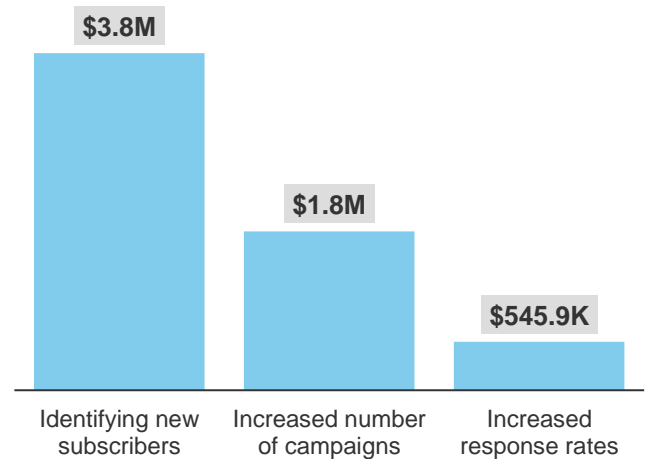
- > **Cost to license SAS Real-Time Decision Manager and related products.** The cost for a suite of SAS products (e.g., Marketing Automation and Enterprise Miner, among others) that the organization used along with RTDM totaled more than \$1.5 million over three years.
- > **Cost of additional staff to manage the SAS environment.** The organization hired two employees to manage and optimize the SAS environment, at a total cost of \$602,479 over three years.
- > **Cost of hardware to host the SAS environment.** The hardware used to host the SAS environment averaged about 40% of the software license fees and totaled \$627,273 over three years.

Forrester's interview with an existing customer and subsequent financial analysis found that the interviewed organization experienced benefits of \$6.2 million over three years versus costs of \$2.8 million, adding up to a net present value (NPV) of \$3.4 million and an ROI of 120%.

Financial Summary



Benefits (Three-Year)



TEI Framework And Methodology

From the information provided in the interview, Forrester has constructed a Total Economic Impact™ (TEI) framework for organizations that are considering implementing SAS Real-Time Decision Manager.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that SAS Real-Time Decision Manager can have on an organization:

The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.



DUE DILIGENCE

Interviewed SAS stakeholders and Forrester analysts to gather data relative to Real-Time Decision Manager.



CUSTOMER INTERVIEW

Interviewed one organization using Real-Time Decision Manager to obtain data with respect to costs, benefits, and risks.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interview using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organization.



CASE STUDY

Employed four fundamental elements of TEI in modeling SAS Real-Time Decision Manager's impact: benefits, costs, flexibility, and risks. Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves to provide a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by SAS and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in SAS Real-Time Decision Manager.

SAS reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.

SAS provided the customer name for the interview but did not participate in the interview.

The Real-Time Decision Manager Customer Journey

BEFORE AND AFTER THE REAL-TIME DECISION MANAGER INVESTMENT

Interviewed Organization

For this study, Forrester conducted one interview with a SAS Real-Time Decision Manager customer. The organization is a telecommunications provider based in Asia with 10 million subscribers.

Key Challenges

During the interview, the organization expressed challenges that precipitated its adoption of SAS Real-Time Decision Manager:

- › **Disjointed teams doing analytics and campaign planning.** The chief data architect said: “We had had a number of groups doing analytics and building campaigns, but we lacked a single platform to handle inbound and outbound activities. The problem is that the data was not synchronized into a single consolidated storage area that would allow us to see the entire journey of the customer.”
- › **Delayed analytics that often missed the market opportunity.** The organization told Forrester: “We had customers who were pushing the utilization limits of their plan, and we would never notice in time to offer them an upgrade until after our campaign was completed. By the time we gathered data, conducted analytics, and assessed the customer behavior, the time to offer an upgrade was far in the past.”

“We had a number of groups doing analytics and building campaigns, but we lacked a single platform to handle inbound and outbound activities.”

Chief data architect



Key Results

The interview revealed that key results from the Real-Time Decision Manager investment include:

- › **Integration between campaigns and channels.** The customer told Forrester: “Previously, we relied on SMS, but now have Ultra Mobile Broadband (UMB) and are using an interactive voice response (IVR) call using RTDM to do the procurement. We integrated our internal applications with a dealer app, and it all works seamlessly.”
- › **Increased automation of fulfillment.** The chief data architect said: “About 50% to 60% of our campaign fulfillment is now automated. Automation reduced our fulfillment time from an average of three days down to only 15 minutes.”
- › **Increased response rates that drove higher conversions.** The organization reported a “pickup” in the rate of customers that opted into the suggested offers during campaigns.
- › **Enhanced productivity of the analytics and campaign team.** The director told Forrester: “Today, for mobile internet, we build one single framework and one set of business rules for 2 million subscribers. We break down the list by data on nonuser, infrequent user, consistent free basic internet user, and high, low, and medium users. Within each segment we have further refinements. We then overlay a propensity model to assess every customer every month and determine the right offers for their unique needs. We built it once and run it repeatedly.”

“About 50% to 60% of our campaign fulfillment is now automated. Automation reduced our fulfillment time from an average of three days down to only 15 minutes.”

Chief data architect



Financial Analysis

QUANTIFIED BENEFIT AND COST DATA

Total Benefits

REF.	BENEFIT	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Atr	Identifying new subscribers	\$1,047,200	\$1,500,787	\$2,154,380	\$4,702,367	\$3,810,938
Btr	Higher number of campaigns	\$523,600	\$709,007	\$977,224	\$2,209,831	\$1,796,159
Ctr	Improved response rates	\$157,080	\$215,738	\$299,219	\$672,038	\$545,904
	Total benefits (risk-adjusted)	\$1,727,880	\$2,425,532	\$3,430,823	\$7,584,236	\$6,153,000

Increased Revenue From Identifying New Subscribers

The organization told Forrester that it:

- › Realized increased revenue from identifying and reaching out to new sets of buyers. Its customers typically make purchase decisions within a 10-day window for this organization's products.
- › Reduced the average time to analyze and leverage data from weeks to hours. Prior to using SAS, the average time to gather data, run reports, and devise campaigns was two weeks, meaning that the window of opportunity was already closed.
- › Identified additional usage patterns by consumers that allowed it to make the right offer at the right time and via the right channel.
- › Increased revenue by 18% per year with more accurate and more timely data, resulting in a total uplift in revenue over three years of more than \$16.7 million.

The table above shows the total of all benefits across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the interviewed organization expects risk-adjusted total benefits to be a PV of more than \$6.1 million.

Because the results of readers will vary widely, Forrester adjusted this benefit downward by 15%, yielding a three-year risk-adjusted total PV of more than \$3.8 million over three years.

Increased Revenue From Identifying New Subscribers: Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
A1	Revenue baseline for targeted segments	$(A1_{PY} + A2_{PY} + B1_{PY} + C1_{PY}) * 110\%$	\$26,666,667	\$36,109,333	\$49,769,494
A2	Increased revenue from campaigns targeting new subscribers	$A1 * (14\%_{Y1}, 16\%_{Y2}, 18\%_{Y3})$	\$3,733,333	\$5,350,400	\$7,680,499
A3	Profit margin		33%	33%	33%
At	Profit from increased revenue from identifying new subscribers	$A2 * A3$	\$1,232,000	\$1,765,632	\$2,534,565
	Risk adjustment	↓15%			
Atr	Profit from increased revenue from identifying new subscribers (risk-adjusted)		\$1,047,200	\$1,500,787	\$2,154,380

Increased Revenue From Higher Number Of Campaigns

In addition to the first benefit, the organization:

- › Used SAS Real-Time Decision Manager to make its organization more efficient in capturing data and running campaigns. The organization identified over 1,000 unique customer segments and developed propensity modeling.
- › Increased its monthly average by 300 campaigns, which was an increase of 30% for the organization.
- › Raised the number of campaigns with a net result of increasing revenue by 7% per year, for a total of more than \$7.1 million in incremental revenue over three years.

Impact risk is the risk that the business or technology needs of the organization may not be met by the investment, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for benefit estimates.

To account for the variation in results that readers will experience based on their environments, Forrester adjusted this benefit downward by 15%, yielding a three-year risk-adjusted total PV of more than \$1.7 million.

Increased Revenue From Higher Number Of Campaigns: Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
B1	Increased revenue of 7% by running 30% more campaigns to targeted segments	A1*7%	\$1,866,667	2,340,800	2,986,861
B2	Profit margin		33%	33%	33%
Bt	Profit from increased revenue from higher number of campaigns	B1*B2	\$616,000	\$834,126	\$1,149,675
	Risk adjustment	↓15%			
Btr	Profit from increased revenue from higher number of campaigns (risk-adjusted)		\$523,600	\$709,007	\$977,224

Increased Revenue From Improved Response Rates

The third benefit reported by the organization was that the new customer segments targeted and incremental campaigns launched experienced a higher conversion rate than before using RTDM. Specifically, the new activities yielded an average of 10% more revenue, resulting in more than \$2.4 million in revenue over three years. The profit on this revenue totaled a present value of \$790,632. Similar to the other benefits, Forrester adjusted this benefit downward by 15%, yielding a three-year risk-adjusted total PV of \$545,904.

Increased Revenue From Improved Response Rates: Calculation Table

REF.	METRIC	CALC.	YEAR 1	YEAR 2	YEAR 3
C1	Revenue from increased response rate to campaigns to targeted segments	$(A2+B1)*10\%$	\$560,000	769,120	1,066,736
C2	Profit margin		33%	33%	33%
Ct	Profit on increased revenue from improved response rates	$C1*C2$	\$184,800	253,810	352,023
	Risk adjustment	↓15%			
Ctr	Profit on increased revenue from improved response rates (risk-adjusted)		\$157,080	\$215,738	\$299,219

Flexibility

The value of flexibility is clearly unique to each customer, and the measure of its value varies from organization to organization. There are multiple scenarios in which a customer might choose to implement Real-Time Decision Manager and later realize additional uses and business opportunities, including:

- › **Identify additional customer segments.** Using RTDM enabled the organization to understand both pay-as-you-go customers and prepaid customers.
- › **Leverage and integrate diverse channels.** The organization increased its use of multiple channels including SMS, UMB, and IVR and integrated these channels with dealer apps.
- › **Manage customers through their life cycle.** The organization developed an understanding of customers through stages, which enhanced the ability to offer appealing choices during acquisition, churn, cross-selling, and upselling.

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix A).

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for a future additional investment. This provides an organization with the “right” or the ability to engage in future initiatives but not the obligation to do so.

Total Costs

REF.	COST	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Dtr	Cost of SAS licenses	\$0	\$575,000	\$632,500	\$695,750	\$1,903,250	\$1,568,182
Etr	Cost of staff to manage SAS environment	\$0	\$165,000	\$247,500	\$330,000	\$742,500	\$602,479
Ftr	Cost of hardware to host SAS environment	\$0	\$230,000	\$253,000	\$278,300	\$761,300	\$627,273
	Total costs (risk-adjusted)	\$0	\$970,000	\$1,133,000	\$1,304,050	\$3,407,050	\$2,797,934

Total Costs

The organization incurred costs related to the SAS Real-Time Decision Manager environment that included the:

- › **Cost of SAS product licenses.** The organization pays license rates that are based on the number of active subscribers. The total license PV cost over three years totaled more than \$1.5 million and included several SAS products, including:
 - SAS Real-Time Decision Manager.
 - SAS Marketing Automation.
 - SAS Event Stream Processing.
- › **Cost of staff to manage the SAS environment.** The organization required two incremental employees to manage and optimize the SAS environment. The PV cost over three years totaled \$602,479.
- › **Cost of hardware to host the SAS environment.** The hardware for hosting the SAS environment averaged about 40% of the amount paid for software license fees. The total PV cost over three years was \$627,273.

The total PV costs over three years were more than \$2.7 million. Forrester did not risk-adjust these costs.

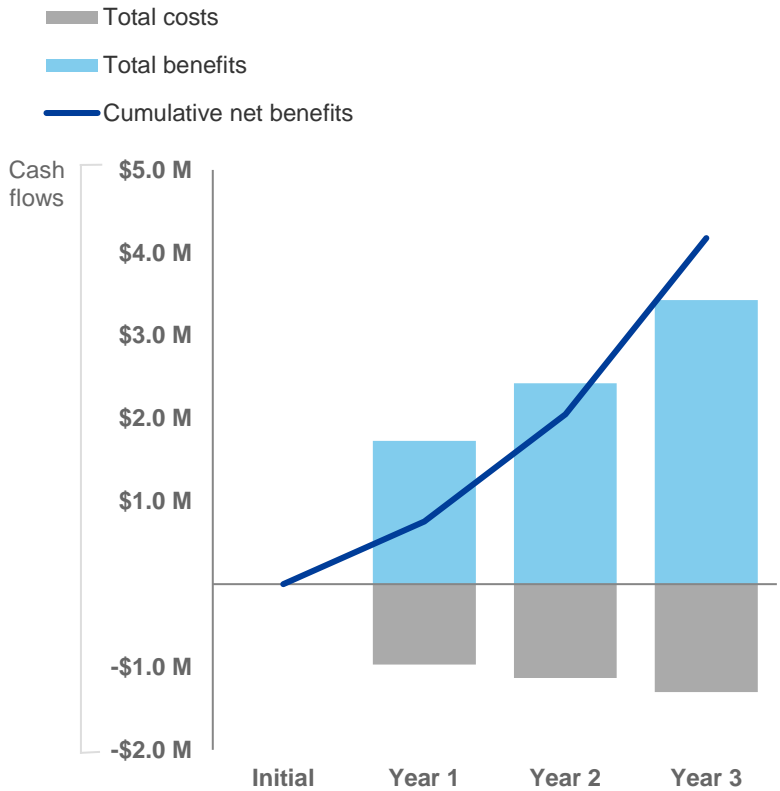
The table above shows the total of all costs across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the interviewed organization expects risk-adjusted total costs to be a PV of more than \$2.7 million.

Implementation risk is the risk that a proposed investment may deviate from the original or expected requirements, resulting in higher costs than anticipated. The greater the uncertainty, the wider the potential range of outcomes for cost estimates.

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the interviewed organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.



These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Table (Risk-Adjusted)

	INITIAL	YEAR 1	YEAR 2	YEAR 3	TOTAL	PRESENT VALUE
Total costs	\$0	(\$970,000)	(\$1,133,000)	(\$1,304,050)	(\$3,407,050)	(\$2,797,934)
Total benefits	\$0	\$1,727,880	\$2,425,532	\$3,430,823	\$7,584,236	\$6,153,000
Net benefits	\$0	\$757,880	\$1,292,532	\$2,126,773	\$4,177,186	\$3,355,067
ROI						120%
Payback period						6.7 months

SAS Real-Time Decision Manager: Overview

The following information is provided by SAS. Forrester has not validated any claims and does not endorse SAS or its offerings.

SAS Real-Time Decision Manager combines SAS Analytics with business logic and contact strategies to deliver enhanced real-time recommendations and decisions to interactive customer channels, such as websites, mobile apps, call centers, point of sale (POS) locations, and automated teller machines (ATMs).

SAS Real-Time Decision Manager helps organizations make smarter decisions by automating and applying analytics to the decision process during real-time customer interactions. By successfully meeting each customer's specific needs at the right time, the right place, and in the right context, your business can become more profitable.

SAS Real-Time Decision Manager provides distinct capabilities for marketers who define communication strategies, executives who need reports on marketing effectiveness, business analysts who model and predict customer behavior, and campaign managers who create target customer segments.

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

Total Economic Impact Approach



Benefits represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.



Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.



Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.



Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.



PRESENT VALUE (PV)

The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total NPV of cash flows.



NET PRESENT VALUE (NPV)

The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.



RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.



DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.



PAYBACK PERIOD

The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.