

Prepared for CA
June 2009

Total Economic Impact™ Of CA Wily Application Performance Management

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TABLE OF CONTENTS

| | |
|--|----|
| Executive Summary | 3 |
| Purpose | 3 |
| Methodology..... | 3 |
| Approach..... | 4 |
| Key Findings | 4 |
| Disclosures..... | 5 |
| CA Wily APM: Overview..... | 6 |
| Analysis..... | 6 |
| Interview Highlights..... | 7 |
| TEI Framework | 8 |
| Costs | 9 |
| Benefits | 13 |
| Risk..... | 17 |
| Flexibility..... | 19 |
| TEI Framework: Summary..... | 20 |
| Study Conclusions..... | 21 |
| Appendix A: Composite Organization Description | 23 |
| Appendix B: Total Economic Impact Overview | 24 |
| Appendix C: Glossary..... | 25 |

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Executive Summary

In March 2009, CA commissioned Forrester Consulting to examine the total economic impact and potential return on investment (ROI) that enterprises may realize by deploying CA Wily Application Performance Management (APM). CA Wily APM manages the performance and availability of critical Web-based and composite applications and also manages the service quality of end user transactions in real time. This study illustrates the financial impact of moving from multiple, automated point-solutions, along with manually intensive effort, to a global, highly automated testing and monitoring solution.

In conducting in-depth interviews with four existing customers, Forrester found that these organizations achieved significant benefits, some easily measured for this ROI study and others that are equally valuable but that we could not quantify. Specifically, the benefits fall into the following categories: 1) reduced application support and operations team costs; 2) productivity gains for application developers; 3) reduced IT help desk costs; 4) removed cost of other monitoring solutions; 5) greater revenue assurance and enhancement; 6) better end customer experiences; and 7) improved end-to-end transaction monitoring, performance, and stability.

There were some key themes that emerged during the interviews with four existing CA Wily APM customers. They include the following:

- Application support and operations teams were able to accomplish significantly more work with less effort and 25% fewer resources.
- There is a much better understanding of end-to-end processes and how IT supports the business operations.
- Application developers realized a 10% to 15% improvement in productivity.
- Applications now perform significantly better, and the time to bring applications into production is greatly reduced.

The four customers interviewed were able to provide metrics to quantify components of the first four benefits. For the interviewed customers, Forrester found an anticipated return on investment (ROI) of between 269% (risk-adjusted) and 305% (non-adjusted) with CA Wily APM. The risk-adjusted net present value (NPV) is \$2.9 million with a payback period of 8 months.

Purpose

The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of CA Wily APM on their organizations. Forrester's aim is to clearly show all calculations and assumptions used in the analysis. Readers should use this study to better understand and communicate a business case for investing in CA Wily APM.

Methodology

CA selected Forrester for this project because of its industry expertise in IT Management Software (ITMS) and Forrester's Total Economic Impact™ (TEI) methodology. TEI not only measures costs and cost reduction (areas that are typically accounted for within IT), but it also weighs the enabling value of a technology in increasing the effectiveness of overall business processes.

For this study, Forrester employed four fundamental elements of TEI in modeling CA Wily APM:

1. Costs and cost reduction.
2. Benefits to the entire organization.
3. Risk.
4. Flexibility.

Given the increasing sophistication that enterprises have regarding cost analyses related to IT investments, Forrester's TEI methodology serves an extremely useful purpose by providing a complete picture of the total economic impact of purchase decisions. Please see Appendix B for additional information on the TEI methodology.

Approach

Forrester used a five-step approach for this study:

1. Forrester gathered data from existing Forrester research relative to CA Wily APM and the application performance management market in general.
2. Forrester interviewed CA marketing and product management personnel to fully understand the potential (or intended) value proposition of CA Wily APM.
3. Forrester conducted a series of in-depth interviews with four organizations currently using CA Wily APM.
4. Forrester constructed a financial model representative of the interviews. This model can be found in the TEI Framework section below.
5. Forrester created a composite organization based on the interviews and populated the framework using data from the interviews as applied to the composite organization.

Key Findings

Forrester's study yielded the following key findings:

- **ROI.** Based on the interviews with the four existing customers, Forrester constructed a TEI framework for a composite organization (see Appendix A) and the associated ROI analysis illustrating the financial impact areas. As seen in Table 1, the risk-adjusted ROI for the composite organization is 269% with a breakeven point (payback period) of 8 months after the initial deployment period.
- **Benefits.** As discussed previously, some of the benefits associated with CA Wily APM were difficult to quantify for this study. For the purposes of the ROI analysis, only benefits associated with reduced headcount for the application support and operations team, improved productivity for application developers, revenue assurance, reduced IT help desk costs, and the cost of removed monitoring tools were quantified. The risk-adjusted, present value of the benefits for the composite organization amount to \$4.0 million over a three-year period.
- **Costs.** Implementing CA Wily APM and integrating applications are fairly straightforward processes. Therefore, initial implementation costs are small. The majority of the costs are

Total Economic Impact™ Of CA Wily Application Performance Management

for licenses and ongoing maintenance. The risk-adjusted, present value of the costs for the composite organization amount to \$1.1 million over a three-year period.

Table 1 illustrates the original and risk-adjusted financial results for the composite organization based on data and characteristics obtained during the interview process. Forrester risk-adjusts these values to take into account the potential uncertainty that exists in estimating the costs and benefits of a technology investment. The risk-adjusted value is meant to provide a conservative estimation, incorporating any potential risk factors that may later affect the original cost and benefit estimates. For a more in-depth explanation of risk and risk adjustments used in this study, please see the “Risk” section.

Table 1: Composite Company ROI: Original And Risk-Adjusted

| Summary financial results | Unadjusted | Risk-adjusted |
|------------------------------------|-------------|---------------|
| | (Best case) | |
| ROI — three years | 305% | 269% |
| Payback | Seven | Eight |
| Total three-year costs (PV) | \$1,045,101 | \$1,081,863 |
| Total three-year benefits (PV) | \$4,228,801 | \$3,995,763 |
| Total three-year net savings (NPV) | \$3,183,700 | \$2,913,900 |
| Internal rate of return (IRR) | 266% | 235% |

Source: Forrester Research, Inc.

Forrester found that higher ROIs were associated with companies that had very manual methods for testing and monitoring applications, along with complex IT environments where transactions were dependent on many data stores and disparate applications. One customer relied on third-party Software as a Service (SaaS) providers, further increasing the complexity.

Disclosures

The reader should be aware of the following:

- The study was commissioned by CA and delivered by Forrester Consulting.
- CA 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.
- The customer names for the interviews were provided by CA.
- Forrester makes no assumptions as to the potential return on investment that other organizations will receive. Forrester strongly advises that readers should use their own estimates within the framework provided in the study to determine the appropriateness of an investment in CA Wily APM.

- This study is not meant to be used as a competitive product analysis.

CA Wily APM: Overview

The CA Wily APM solution provides 24x7 monitoring of all business transactions for today's complex and distributed, composite and Web application environments. This solution includes CA Wily Customer Experience Manager (CEM) and CA Wily Introscope.

CA Wily Introscope monitors complex Java and .NET applications in real-time, proactively detects problems before they affect users and enables IT to resolve issues quickly to ensure that services are optimally performing and available. With capabilities for rapid triage, root-causes analysis and historical data reporting, CA Wily Introscope makes it possible to quickly identify and determine where the bottlenecks are. This enables the proactive elimination of unplanned outages, and the ability to manage service levels, optimize resources and lower the management costs of complex applications.

CA Wily CEM allows the business and IT to understand and respond to the online experience of each end-user. It monitors individual end-user transactions in real-time, enabling you to measure Service Level Agreements (SLAs), identify and triage problems before customers are affected, manage incidents by business impact and improve service delivery.

Recently added capabilities in the CA Wily APM solution include the following:

- Custom business dashboards that show real-time operations of a Web business and describe how end-user service quality is impacting the health of the bottom line.
- New graphics capabilities that automatically show dependencies of services within a SOA environment. They display health check information in a real-time dashboard, so, application support managers can instantly grasp complex environments in a visual manner.
- Transaction monitoring for more application and infrastructure components: SOA Middleware platforms; MQ environments; Databases through integration with CA Insight; Citrix; and Oracle Forms through integration with CA eHealth.

Analysis

As stated in the Executive Summary, Forrester took a multistep approach to evaluate the effect that implementing CA Wily APM can have on an organization, including:

- Interviews with CA marketing and sales personnel.
- In-depth interviews with four organizations currently using CA Wily APM.
- The construction of a common financial framework for the implementation of CA Wily APM.
- The construction of a composite organization based on characteristics of the interviewed organizations.

Interview Highlights

At the time of the interviews, each interviewed organization had been a CA Wily APM customer for at least one year. A brief description of each:

1. A US-based media company. The company uses Introscope and CEM for its digital rights/content management system, which is critical to its business. This is one of the three core systems driving the business.
2. A US-based logistics company. The company uses Introscope for pre-production, production, and monitoring on approximately 100 of their 800 applications.
3. A division of a global IT company. Introscope and CEM are used on 14 applications with high-transaction volumes and business value. These include the single sign-on portal, workflow management, sales order entry, and the sales quoting form.
4. A European financial services IT joint venture operation providing IT services to two regional banks. They use Introscope for pre-production and production with approximately 50 strategic applications out of 250 applications.

The four in-depth interviews with CA's customers uncovered a number of important insights:

- Three of the customers interviewed decided to implement an application performance management solution because they were redeploying their applications as J2EE or .NET Web applications. One customer said "We knew we were not going to be able to do this without the correct tools to make sure it was ready to launch. We needed the capability to monitor on a daily basis how the applications were performing."
- All of the customers said that the end-to-end, real-time application monitoring is very important to them. "It is the real-time graphical display and warning capabilities that allow the IT team to react immediately. Proactive alerts enable us to try to solve a problem before a customer notices and calls the help desk."
- CA Wily APM is often used as the highest-level monitoring tool, helping users to quickly isolate where further investigation is needed. "We have several different layers of management tools. This is the top layer in the application stack. When we see slow response time or memory problems, we receive alerts and use Introscope to dive deep into what is happening within an application. We then use the application-specific tools to do fine-tuning."
- Three of the customers describe how CA Wily APM helped with successful application launches through pre-production and testing. "The stakeholders and execs were placing bets on how badly our major application launch would go. We went live on the original launch date. Other than typical, expected issues over the first four to six weeks, there were no problems because they were identified in testing. One of the executives said, 'I've never seen a major rollout go out this smoothly in 20 years.'"
- The customers interviewed talked about the fact that it is cheaper and preferable to identify problems in pre-production and the way in which CA Wily APM has helped in this area. "It is much cheaper to identify problems before going into production. We have clearly saved a lot of money in these areas."

- All of the customers focused on using CA Wily APM on the highest-value applications first. This made for quick and easy launches while reducing the time until realizing value from the tool. “We walked through the implementation guide. The hardest part was identifying the applications we wanted to add first. Now we are basically training our people on how to roll out new applications.”
- Features specifically cited as being very valuable included predictive/proactive monitoring, historical analysis for capacity planning, root cause analysis, and baseline/metric definition.

TEI Framework

Introduction

From the information provided in the in-depth interviews, Forrester has constructed a TEI framework for those organizations considering implementing CA Wily APM. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Most monetary values shown in this study are rounded to the nearest dollar for simplicity of presentation. Actual financial calculations might be based on figures carried to more decimal points than shown here and therefore not entirely match the resultant figures presented in the tables.

Composite Organization

Based on the interviews with the four existing customers provided by CA, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas affected financially. The composite organization that Forrester synthesized from these results represents a US-based, mid-sized financial services company. They implemented CA Wily APM a couple of years after re-architecting their applications on to J2EE and .NET platforms. The company uses CA Wily Introscope and CA Wily Customer Experience Manager on its most critical applications. There are approximately 20 full-time employees in the application support and operations team and 400 application developers working on the applications covered by CA Wily APM. The composite organization has a very heterogeneous infrastructure composed of multiple hardware platforms, data stores, and standards. (See Appendix A for more details on the composite organization.)

This study illustrates the financial impact of moving from an application performance management solution composed of multiple point solutions that handled only specific applications along with manually intensive processes to a solution that can automate end-to-end IT application testing and monitoring.

Framework Assumptions

Table 2 lists the discount rate used in the present value (PV) and net present value (NPV) calculations and the time horizon used for the financial modeling.

Table 2: General Assumptions

| Ref. | General assumptions | Value |
|-------------|----------------------------|--------------|
| A1 | Discount rate | 10% |
| A2 | Length of analysis | Three years |

Source: Forrester Research, Inc.

Total Economic Impact™ Of CA Wily Application Performance Management

Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult with finance to determine the most appropriate discount rate to use within their own organizations.

In addition to the financial assumptions used to construct the cash flow analysis, Table 3 provides salary assumptions used within this analysis.

Table 3: Salary Assumptions

| Ref. | Metric | Calculation | Value |
|------|--|---------------------|-----------|
| B1 | Fully burdened annual salary* per IT operations and development employees (Initial/Year 1) | [Increases 3% P.A.] | \$113,112 |
| B2 | Fully burdened annual salary* per IT help desk employee (Initial/Year 1) | [Increases 3% P.A.] | \$61,269 |

*Includes salary, variable compensation, and all direct benefits (e.g., health insurance).

Source: Forrester Research, Inc.

Costs

This section describes the overall costs of implementing CA Wily APM and the ongoing costs of managing the solution.

Internal Implementation Labor Costs

Implementing CA Wily APM and integrating it into applications is a straightforward process. Of the customers interviewed, the initial implementation duration varied from two months to integrate a couple of applications to six months to integrate 14 applications. All of the customers interviewed said that the actual CA Wily APM tool is easy to install. One customer said, “It took hardly any time at all. We created custom dashboards on the third day.”

The composite organization’s implementation reflects a typical implementation of the solution on a single server and the integration with a few of the most critical applications. The remaining applications were implemented “business as usual” by the operations team and application developers after the initial period.

Based on information collected from customers and applied to the composite organization, Forrester estimates that the total composite organization’s internal labor costs for the initial implementation are equal to the product of the number of employees involved, the number of months, and the fully burdened monthly cost per employee. Two full-time-equivalent (FTE) employees worked three months each at a fully burdened cost of \$9,426 per month during the initial period of the study. The resulting total cost equals \$56,556.

Table 4: Internal Implementation Labor Costs, Non-Risk-Adjusted

| Ref. | Metric | Calculation | Initial |
|------|---|-----------------|----------|
| C1 | Number of IT FTEs | | 2 |
| C2 | Months | | 3 |
| C3 | Fully burdened monthly cost per IT resource | =B1 / 12 months | \$9,426 |
| Ct | Internal implementation labor costs | C1 * C2 * C3 | \$56,556 |

Source: Forrester Research, Inc.

Professional Services

Companies implementing CA Wily APM typically use CA's professional services to assist with their initial system implementation, configuration, training, and the integration of the earliest applications. This lasts throughout the initial implementation. Some consulting may also be used in subsequent periods to help with upgrades and integration of particularly complicated applications.

Table 5: Professional Services, Non-Risk-Adjusted

| Ref. | Metric | Calculation | Initial | Year 1 | Year 2 | Year 3 |
|------|-----------------------|--------------|----------|----------|---------|---------|
| D1 | Number of consultants | | 1 | 1 | 1 | 1 |
| D2 | Hourly rate | | \$328 | \$328 | \$328 | \$328 |
| D3 | Hours | | 100 | 50 | 25 | 25 |
| Dt | Professional services | D1 * D2 * D3 | \$32,800 | \$16,400 | \$8,200 | \$8,200 |

Source: Forrester Research, Inc.

Hardware Costs

The customers interviewed typically ran CA Wily APM on a single, midlevel server. One customer specifically commented on how the "low-performance overhead" of CA Wily APM meant that it did not bog down the customer's systems or require a lot of hardware.

The composite organization purchased one midlevel server to run the solution.

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Table 6: Hardware Costs, Non-Risk-Adjusted

| Ref. | Metric | Calculation | Initial | Year 1 | Year 2 | Year 3 |
|------|---|--|----------|----------|----------|----------|
| E1 | Number of servers added to host CA Wily APM | | 1 | | | |
| E2 | Cost per added server | | \$15,000 | \$15,000 | \$15,000 | \$15,000 |
| E3 | Total annual maintenance | 15% * sum E1 [through current year] * E2 | | \$2,250 | \$2,250 | \$2,250 |
| Et | Hardware costs | (E1 * E2) + E3 | \$15,000 | \$2,250 | \$2,250 | \$2,250 |

Source: Forrester Research, Inc.

CA Wily APM License Costs

License costs for CA Wily APM are based on the processing power on the hardware for the underlying applications. For distributed computing applications like those used by the composite organization, it is dependent on the number of CPUs and cores. The base license cost covers the first two cores on the CPU. Each additional core costs half of the base license cost. In addition, Customer Experience Manager typically requires two appliances to monitor Internet transactions. There is an incremental charge for these appliances if CEM is being used.

Among the customers interviewed, the license costs ranged from approximately \$100,000 to \$1.5 million, depending on the number of applications and processors involved. A typical license cost for a midsized implementation is typically around \$400,000 including maintenance over a three year period. The composite organization's implementation is slightly larger than typical, resulting in higher license costs. It also includes two CEM appliances. This does not reflect any potential discounts.

The license costs depicted in this study are what a reader's organization may expect to pay for a higher midsized implementation. This may exceed what the customers interviewed for the study actually paid. Also, these license costs may not reflect any additional potential discounts.

The composite organization license and maintenance increased as additional applications were integrated into the solution. Twenty percent maintenance is charged annually on all license costs to date.

Table 7: CA Wily APM License Costs, Non-Risk-Adjusted

| Ref. | Metric | Calculation | Initial | Year 1 | Year 2 | Year 3 |
|------|---------------------------|-------------------------------------|-----------|-----------|-----------|----------|
| F1 | Total added license costs | | \$200,000 | \$125,000 | \$125,000 | \$0 |
| F2 | Maintenance | 20% * sum F1 [through current year] | | \$65,000 | \$90,000 | \$90,000 |
| Ft | CA Wily APM license costs | F1 + F2 | \$200,000 | \$190,000 | \$215,000 | \$90,000 |

Source: Forrester Research, Inc.

Total Economic Impact™ Of CA Wily Application Performance Management

Ongoing Operations — Labor

Managing the CA Wily APM solution is very simple. The actual management of the underlying applications and their integration into the solution is done by the application support and operations team along with the application developers. The customers interviewed had between .25 and 1 FTE managing the solution overhead. In most cases, they did not have to add an employee since the solution resulted in a significant decrease in time to complete other activities.

To clearly show the total cost of ownership (TCO), the composite organization has added 1 FTE to manage CA Wily APM.

Table 8: Ongoing Operations — Labor, Non-Risk-Adjusted

| Ref. | Metric | Calculation | Initial | Year 1 | Year 2 | Year 3 |
|------|--|-------------|---------|-----------|-----------|-----------|
| G1 | Number of IT FTEs | | | 1 | 1 | 1 |
| G2 | Fully burdened annual cost per IT resource | = B1 | | \$113,112 | \$116,505 | \$120,000 |
| Gt | Ongoing operations — labor | G1 * G2 | | \$113,112 | \$116,505 | \$120,000 |

Source: Forrester Research, Inc.

Total Costs

Table 9 summarizes the composite organization's costs to implement and operate CA Wily APM.

Table 9: Total Costs Of Wily APM, Non-Risk-Adjusted

| Ref. | Costs | Initial | Year 1 | Year 2 | Year 3 | Total | Present value |
|------|-------------------------------------|------------------|------------------|------------------|------------------|--------------------|--------------------|
| Ct | Internal implementation labor costs | \$59,384 | | | | \$59,384 | \$59,384 |
| Dt | Professional services | \$34,440 | \$17,220 | \$8,610 | \$8,610 | \$68,880 | \$63,679 |
| Et | Hardware costs | \$15,000 | \$2,250 | \$2,250 | \$2,250 | \$21,750 | \$20,595 |
| Ft | CA Wily license costs | \$210,000 | \$199,500 | \$225,750 | \$94,500 | \$729,750 | \$648,933 |
| Gt | Ongoing operations — labor | | \$113,112 | \$116,505 | \$120,000 | \$349,616 | \$289,271 |
| | Total | \$318,824 | \$332,082 | \$353,115 | \$225,360 | \$1,229,380 | \$1,081,863 |

Source: Forrester Research, Inc.

Benefits

The first half of the benefits section details the quantitative benefits included in the ROI analysis for the composite organization. The second half describes qualitative benefits that the interviewed customers experienced but that could not be quantified. The qualitative benefits are potentially as valuable as the quantitative ones and should be taken into consideration when analyzing the total return on investment realized by implementing CA Wily APM.

Application Support And Operations Team Savings

As described earlier, CA Wily APM greatly simplifies the effort to test and monitor transactions and application. Across the four companies interviewed, the average reduction in FTEs required for the application support and operations team was 25%. Activities that particularly benefited from the solution were testing, quality assurance, monitoring, and problem triage.

A comparable figure was used for calculating the savings realized by the composite organization. The benefit increases over time as more applications are managed by the solution and the team becomes more familiar with operating and exploiting the capabilities of CA Wily APM.

Table 10: Applications Support And Operations Team Savings, Non-Risk-Adjusted

| Ref. | Metric | Calculation | Year 1 | Year 2 | Year 3 |
|-------------|---|--------------------|---------------|---------------|---------------|
| H1 | Number of IT FTEs reduced or avoided | | 2 | 4 | 5 |
| H2 | Annual fully burdened cost per IT FTE | = B1 | \$113,112 | \$113,112 | \$116,505 |
| Ht | Application support and operations team savings | H1 * H2 | \$226,223 | \$452,446 | \$582,524 |

Source: Forrester Research, Inc.

Productivity Gain — Application Developers

In addition to the IT application support and operations team, application developers also benefit greatly from the ease with which applications can be tested and monitored. “It is not just an application support tool. It affects development organizations across the company.” The customers interviewed reported across the board productivity gains for application developers whose applications are managed by CA Wily APM by up to 15%.

For the composite organization, the number of application owners who benefited increased as more applications were integrated. In the first year, the number of developers was kept low since two of the customers reported this being realized after six months. The overall result is a 10% reduction in the total time required by application developers to complete their work. Because not all productivity gains directly result in additional output — for example, some time is spent around the water cooler — only 50% of this benefit is realized in the study.

Total Economic Impact™ Of CA Wily Application Performance Management

Table 11: Productivity Gain — Application Owners, Non-Risk-Adjusted

| Ref. | Metric | Calculation | Year 1 | Year 2 | Year 3 |
|----------------|--|---------------------|-----------|-------------|-------------|
| I1 | Number of application developers affected | | 70 | 200 | 300 |
| I2 | Increased productivity | | 10% | 10% | 10% |
| I3 | Annual fully burdened cost per application developer | = B1 | \$113,112 | \$116,505 | \$120,000 |
| I4 | Percent captured | | 50% | 50% | 50% |
| I _t | Productivity gain — application owners | $I1 * I2 * I3 * I4$ | \$395,890 | \$1,165,049 | \$1,800,000 |

Source: Forrester Research, Inc.

Revenue Assurance And Enhancement

CA Wily APM ensures that the applications it is monitoring are performing as desired and that there are fewer outages. If there is a problem, it can be diagnosed, triaged, and fixed much faster. This results in revenue assurance from improved performance and potentially additional revenues from faster time-to-market. One of the companies interviewed stated that if the core applications monitored by CA Wily APM went down, the lost revenue would be approximately \$2.5 million per hour. Another company explained that it “can now create and sell a new product in one day instead of weeks.”

This benefit can vary widely from one organization to another depending on the type of applications being monitored and the history of outages. It is recommended that the reader use this framework to determine the applicability and scope of this benefit based on the specifics of their organization.

For the composite organization, the revenue dependent on applications monitored by CA Wily APM increased as more applications were added. The duration of unplanned downtime was reduced but not completely eliminated. This is because there are other potential causes of application outages that this solution does not address, i.e. server failure. The reduction in outage time improved over the course of the study as the operations team learned to better use CA Wily APM capabilities to avoid and more quickly fix outages. No revenue enhancement benefits were included in the ROI analysis.

Table 12: Revenue Assurance And Enhancement, Non-Risk-Adjusted

| Ref. | Metric | Calculation | Year 1 | Year 2 | Year 3 |
|----------------|---|------------------|----------|-----------|-----------|
| J1 | Revenue per hour linked to APM applications | | \$40,000 | \$50,000 | \$60,000 |
| J2 | Hours of unplanned outage (historical) | | 3 | 3 | 3 |
| J3 | Hours of unplanned outage (with APM) | | 2 | 1 | 1 |
| J _t | Revenue assurance and enhancement | $J1 * (J2 - J3)$ | \$40,000 | \$100,000 | \$120,000 |

Source: Forrester Research, Inc.

Total Economic Impact™ Of CA Wily Application Performance Management

Help Desk Savings

Two of the companies interviewed had sizable IT help desks. On average, they saw a 20% reduction of staff and trouble tickets. “Because all the problems were solved beforehand, there was a significant reduction in application problems after they went live. Otherwise the help desk would have been flooded globally.”

The composite organization has 10 FTEs on the IT help desk. By year 3, it realized a 20% headcount savings because of fewer trouble tickets and faster resolution times once a problem was discovered.

Table 13: Help Desk Savings, Non-Risk-Adjusted

| Ref. | Metric | Calculation | Year 1 | Year 2 | Year 3 |
|------|---|-------------|--------|----------|-----------|
| K1 | Number of help desk FTEs reduced or avoided | | | 1 | 2 |
| K2 | Annual fully burdened cost per help desk resource | =B2 | | \$61,269 | \$63,107 |
| Kt | Help desk savings | K1 * K2 | | \$61,269 | \$126,214 |

Source: Forrester Research, Inc.

Removal Of Other Monitoring Tools

CA Wily APM is an end-to-end application monitoring solution that can be integrated with a wide range of underlying applications and data stores. Like two of the customers interviewed, the composite organization had several monitoring tools focused on individual applications. Implementing CA Wily APM meant that these other monitoring tools did not have to be renewed or upgraded, resulting in one-time savings.

Table 14: Removal Of Other Monitoring Tools, Non-Risk-Adjusted

| Ref. | Metric | Calculation | Year 1 | Year 2 | Year 3 |
|------|---|-------------|-----------|--------|--------|
| L1 | Cost of other tools not upgraded or renewed | | \$200,000 | | |
| Lt | Removal of other monitoring tools | = L1 | \$200,000 | | |

Source: Forrester Research, Inc.

Total Economic Impact™ Of CA Wily Application Performance Management

Total Quantified Benefits

Table 15 summarizes the total quantified benefits that the composite organization realized by using CA Wily APM.

Table 15: Total Quantified Benefits Of CA Wily APM, Non-Risk-Adjusted

| Ref. | Benefits | Year 1 | Year 2 | Year 3 | Total | Present value |
|------|---|------------------|--------------------|--------------------|--------------------|--------------------|
| Ht | Application support and operations team savings | \$226,223 | \$452,446 | \$582,524 | \$1,261,193 | \$1,017,239 |
| It | Productivity gain — application developers | \$395,890 | \$1,165,049 | \$1,800,000 | \$3,360,939 | \$2,675,117 |
| Jt | Revenue assurance and enhancement | \$40,000 | \$100,000 | \$120,000 | \$260,000 | \$209,166 |
| Kt | Help desk savings | | \$61,269 | \$126,214 | \$187,482 | \$145,461 |
| Lt | Removal of other monitoring tools | \$200,000 | | | \$200,000 | \$181,818 |
| | Total | \$862,113 | \$1,778,763 | \$2,628,738 | \$5,269,614 | \$4,228,801 |

Source: Forrester Research, Inc.

Qualitative Benefits

Improved End-To-End Application Performance And Stability

CA Wily APM improves application performance and stability by providing tools for testing and monitoring. It also allows IT organizations to view transactions across multiple applications, cross application platforms, and data repositories. “The tool allows us to easily spot performance issues in testing phase through stress testing — thus reducing potential outage time.” “It brings long-term stability to applications.”

CA Wily APM helps another company “ensure that applications are performing as optimally as possible. The developers really use it to understand where the software code is spending its time. From a lean, mean driving machine standpoint, Wily is an important performance-enhancing tool.”

One of the companies runs an application that had twice as many concurrent users as expected shortly after launch. They are “lucky the tool was in place” or would have likely encountered performance problems.

Improved Customer Experience

CA Wily APM allows the companies interviewed to identify performance problems before the customer ever realizes that they exist. This results in improved customer experiences for internal and external customers. One customer also uses the solution to identify proper performance expectations and set reasonable SLAs with customers.

Customer Experience Manager allows IT organizations to review problem transactions that have transpired to identify the cause and implement a quick and appropriate fix. Customers can receive a response to their inquiries that is faster and more accurate. “If we have a support call that is historical, we can play back the transaction within CEM and see any alerts or incidences. We can trace this back through the systems to identify the cause. We can also use it as a defense mechanism to determine if everything was fine on our end and that the problem was with the customer’s systems.”

Another company is heavily dependent on third-party service providers with a lot of external data flows. If there is a service disruption to internal users, the IT organization can determine if the source of the problem was from an external service provider. It can notify users and management that the source of the problem was external and get compensation based on the SLAs in place.

Risk

Risk is the third component within the TEI model. It is used as a filter to capture the uncertainty surrounding different cost and benefit estimates. If a risk-adjusted ROI still demonstrates a compelling business case, it raises confidence that the investment is likely to succeed because the risks that threaten the project have been taken into consideration and quantified. The risk-adjusted numbers should be taken as “realistic” expectations, as they represent the expected values considering risk. In general, risks affect costs by raising the original estimates, and they affect benefits by reducing the original estimates.

Each benefit and cost is assigned either a “low,” “medium,” “high,” or “none” risk rating. The following benefits and costs were rated as having either low, medium, high, or no risk:

- **Internal implementation labor costs — medium risk.** Depending on the number and complexity of applications that are being integrated in the beginning, the initial implementation may be longer than depicted in this study.
- **Professional services — medium risk.** Professional services fees are directly related to the implementation timeline, based on size and complexity. Therefore, professional service fees may be higher if the initial duration is longer.
- **License costs — medium risk.** Each customer is unique with regard to the amount of processing power covered by the license. This study represents a typical midsize implementation. If the implementation is significantly larger with higher license costs, it can be assumed that the benefits will also be larger, resulting in a comparable ROI.
- **Application support and operations team savings — low risk.** All four customers interviewed reported similar proportional savings. In absolute terms, this may vary from customer to customer.
- **Productivity gain, application developers — medium risk.** The 10% productivity gain used in this study is in line with what was reported by the interviewed customers. Some organizations may have fewer application developers or may have already automated APM in some areas, resulting in lower benefits.
- **Revenue assurance and enhancement – medium risk.** If an organization is not using CA Wily APM with applications that are directly tied to revenue generation or if the associated hourly revenue is lower, this benefit may not be fully realized.

Total Economic Impact™ Of CA Wily Application Performance Management

- **Help desk savings — medium risk.** This benefit may not be realized by other organizations if they do not have a sizable help desk.
- **Removal of other monitoring tools — high risk.** If an organization does not have other APM products in place, this benefit will not be realized. Other organizations may realize a greater benefit if they have invested in many APM solutions. Also, an organization without any prior APM solution will see higher benefits in most of the other categories.

For the purpose of this analysis, Forrester risk-adjusts cost and benefit estimates to better reflect the level of uncertainty that exists for each estimate. The TEI model uses a triangular distribution method to calculate risk-adjusted values. To construct the distribution, it is necessary to first estimate the low, most likely, and high values that could occur within the current environment. The risk-adjusted value is the mean of the distribution of those points.

For example, the risk associated with internal implementation labor costs is defined as “medium.” This risk level was chosen because other companies may spend more time or have more employees as part of the initial implementation. Therefore, a reasonable likelihood exists that someone reading this paper will incur more costs of this nature. The original estimated cost is \$56,566. To calculate the risk-adjusted cost, the “most likely” scenario was set at 100% of cost, the “high” scenario was assigned 115% of cost, and the “low” scenario was assigned 100% of cost. The rounded mean of these three values is 105%. The resulting cost used in the risk-adjusted tables is \$59,384, or 105% of \$56,566.

The following tables show the values used to adjust for uncertainty in cost and benefit estimates. Readers are urged to apply their own risk ranges based upon their own degree of confidence in the cost and benefit estimates.

Table 16: Risk Adjustments To Costs

| Ref. | Risk adjustments to costs | Low | Most likely | High | Risk adjusted |
|------|--|------|-------------|------|---------------|
| M1 | Internal implementation labor costs (medium) | 100% | 100% | 115% | 105% |
| M2 | Professional services (medium) | 100% | 100% | 115% | 105% |
| M3 | Hardware costs (none) | 100% | 100% | 100% | 100% |
| M4 | CA Wily license costs (medium) | 100% | 100% | 115% | 105% |
| M5 | Ongoing operations — labor (none) | 100% | 100% | 100% | 100% |

Source: Forrester Research, Inc.

Table 17: Risk Adjustments To Benefits

| Ref. | Risk adjustments to benefits | Low | Most likely | High | Risk adjusted |
|------|---|-----|-------------|------|---------------|
| N1 | Application support and operations team savings (low) | 90% | 100% | 105% | 98% |
| N2 | Productivity gain — application developers (medium) | 80% | 100% | 103% | 94% |
| N3 | Revenue assurance and enhancement (medium) | 80% | 100% | 103% | 94% |
| N3 | Help desk savings (medium) | 80% | 100% | 103% | 94% |
| N4 | Removal of other monitoring tools (high) | 50% | 100% | 100% | 83% |

Source: Forrester Research, Inc.

The four customers interviewed described some risk mitigation strategies they followed to reduce the overall risk to project success. They included the following:

- **Extensive investigation and planning.** This involved thoroughly researching potential solutions, including CA Wily APM, and performing a proof of concept for both Introscope and CEM.
- **Getting buy-in from key users.** “The business really joined in together with IT to make this a success.”
- **Phased integration.** One of the customers took a big bang approach. The other three integrated applications in a phased manner.

One customer summed it up by saying, “This was a relatively low-risk initiative for us. It is an IT tool put in place by IT for IT. If it did not work, we would be the ones who suffered. End users would never know.”

Flexibility

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for some additional future investment. Flexibility would also be quantified when evaluated as part of a specific project. See Appendix B for more detail.

The customers interviewed for this study had phased implementations and continue to integrate additional applications. This approach was adopted by the composite organization. One of the customers is investigating integrating the solution with the organization’s ERP portal, which would create additional benefits. If a company has not yet implemented both Introscope and CEM, this would be another potential flexibility benefit.

The CA Wily APM solution creates inherently more flexible organizations as explained throughout the study. This flexibility is not predicated upon a future investment, so flexibility benefits are not included in the ROI analysis.

TEI Framework: Summary

Considering the financial framework constructed above, the results of the costs, benefits, and risk sections can be used to determine a return on investment, net present value, and payback period. Table 18 and Table 19, below, show the risk-adjusted cost and benefit values, applying the risk-adjustment method indicated in the “Risks” section and the values from Table 16 and Table 17 to the numbers in Table 9 and Table 15, respectively.

Table 18: Risk-Adjusted Costs

| Ref. | Costs | Initial | Year 1 | Year 2 | Year 3 | Total | Present value |
|-----------|-------------------------------------|------------------|------------------|------------------|------------------|--------------------|--------------------|
| O1 | Internal implementation labor costs | \$59,384 | | | | \$59,384 | \$59,384 |
| O2 | Professional services | \$34,440 | \$17,220 | \$8,610 | \$8,610 | \$68,880 | \$63,679 |
| O3 | Hardware costs | \$15,000 | \$2,250 | \$2,250 | \$2,250 | \$21,750 | \$20,595 |
| O4 | CA Wily license costs | \$210,000 | \$199,500 | \$225,750 | \$94,500 | \$729,750 | \$648,933 |
| O5 | Ongoing operations — labor | | \$113,112 | \$116,505 | \$120,000 | \$349,616 | \$289,271 |
| Ot | Total | \$318,824 | \$332,082 | \$353,115 | \$225,360 | \$1,229,380 | \$1,081,863 |

Source: Forrester Research, Inc.

Table 19: Risk-Adjusted Benefits

| Ref. | Benefits | Year 1 | Year 2 | Year 3 | Total | Present value |
|-----------|---|------------------|--------------------|--------------------|--------------------|--------------------|
| P1 | Application support and operations team savings | \$221,699 | \$443,397 | \$570,874 | \$1,235,969 | \$996,894 |
| P2 | Productivity gain — application developers | \$372,137 | \$1,095,146 | \$1,692,000 | \$3,159,282 | \$2,514,610 |
| P3 | Revenue assurance and enhancement | \$37,600 | \$94,000 | \$112,800 | \$244,400 | \$196,616 |
| P3 | Help desk savings | | \$57,593 | \$118,641 | \$176,233 | \$136,734 |
| P5 | Removal of other monitoring tools | \$166,000 | | | \$166,000 | \$150,909 |
| Pt | Total | \$797,435 | \$1,690,135 | \$2,494,315 | \$4,981,885 | \$3,995,763 |

Source: Forrester Research, Inc.

It is important to note that the values used throughout the TEI framework are based on in-depth interviews with four organizations and the resulting composite organization built by Forrester. Forrester makes no assumptions as to the potential return that other organizations will receive within their own environment. Forrester strongly advises that readers use their own estimates within the framework provided in this study to determine the expected financial impact of implementing CA Wily APM.

Study Conclusions

Forrester's in-depth interviews with four CA Wily Application Performance Management customers yielded several important observations:

- Quantitative benefits were realized in the form of lower IT labor costs, increased IT productivity, revenue assurance, and the removal of other IT application monitoring tools.
- CA Wily APM improved end-to-end application performance and stability.
- Customer experiences were improved because of improved performance and use of the Customer Experience Manager to review problem transactions.
- The overall IT infrastructure is now more flexible, and there is better coordination between the IT and business organizations.

The financial analysis provided in this study illustrates the potential way an organization can evaluate the value proposition of CA Wily APM. Based on information collected in four in-depth customer interviews, Forrester calculated a three-year, risk-adjusted ROI of 269% for the composite organization with a payback period of 8 months. All final estimates are risk-adjusted to incorporate potential uncertainty into the calculation of costs and benefits.

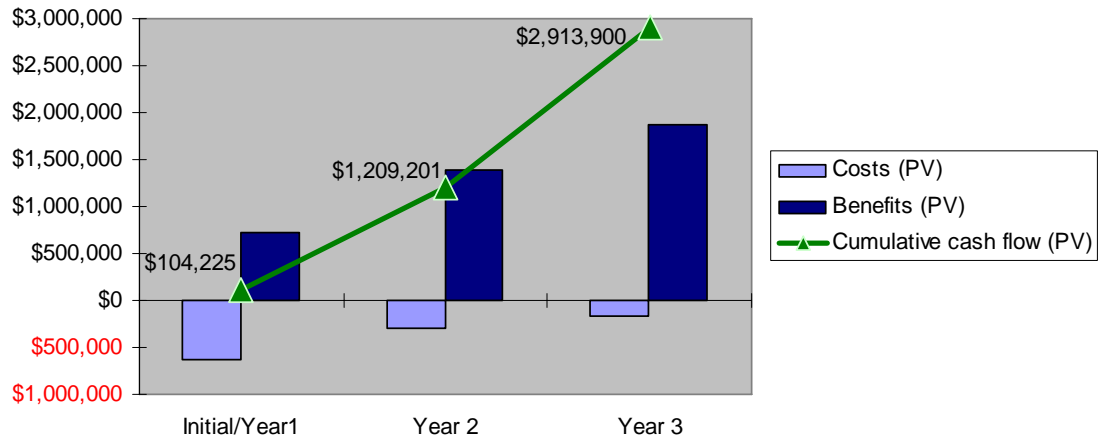
Table 20: ROI, Original And Risk-Adjusted

| Summary financial results | Unadjusted (Best case) | Risk-adjusted |
|------------------------------------|-----------------------------------|----------------------|
| ROI — three years | 305% | 269% |
| Payback | Seven | Eight |
| Total three-year costs (PV) | \$1,045,101 | \$1,081,863 |
| Total three-year benefits (PV) | \$4,228,801 | \$3,995,763 |
| Total three-year net savings (NPV) | \$3,183,700 | \$2,913,900 |
| Internal rate of return (IRR) | 266% | 235% |

Source: Forrester Research, Inc.

Total Economic Impact™ Of CA Wily Application Performance Management

Figure 1: Summary Financial Results, Risk-Adjusted



Source: Forrester Research, Inc.

Appendix A: Composite Organization Description

In this TEI study, Forrester has created a composite organization to illustrate the quantifiable costs and benefits of using CA Wily Application Performance Management. The composite organization is intended to represent a midsized financial services company. The company is based in the United States with limited operations overseas to service corporate customers.

Several years prior to implementing the CA Wily APM, the organization undertook a major re-architecting of its applications to make them web-based applications — J2EE and .NET. At the time, they did not make any changes in how application testing and monitoring was performed. Subsequently, they discovered that the applications could no longer be managed using their own methods and tools. The added cost and complexity was too much, forcing them to look for a new, better way to manage these applications.

The organization's IT infrastructure is very complicated, common with an IT department that layers in new solutions over time. There are multiple hardware types, backend databases, and data standards. In addition, there are several authentication mechanisms and some web services that were developed in-house and others provided by third-party vendors. Application development is spread between multiple teams in a variety of physical locations.

The organization uses the CA Wily APM solution, consisting of both CA Wily Introscope and CA Wily Customer Experience Manager (CEM). Both were piloted at the same time, and Introscope was more broadly implemented prior to CEM. CA Wily APM is used for pre-production, and in production for proactive monitoring.

The Application Support and Operations Team is made up of approximately 20 full-time employees. In addition, there is an IT help desk composed of 10 full-time employees. The organization has deployed CA Wily APM to monitor its most critical, customer-facing applications. There are 400 application developers working on applications covered by CA Wily APM. These transactions represent a minority percentage of the total applications but a high percentage in terms of revenue assurance and customer satisfaction. The types of transactions include the following:

- Online banking.
- New application processing — mortgages and loans.
- Trading accounts.
- External money transfers.

Over a three year period, CA Wily APM was extended to more applications and CEM was more broadly implemented. The organization is considering adding in additional, lower-value applications as well as integration into its ERP portal.

Appendix B: Total Economic Impact Overview

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.

The TEI methodology consists of four components to evaluate investment value: benefits, costs, risks, and flexibility. For the purpose of this analysis, the impact of flexibility was not quantified.

Benefits

Benefits represent the value delivered to the user organization — IT and/or business units — by the proposed product or project. Often product or project justification exercises focus just on IT cost and cost reduction, leaving little room to analyze the effect of the technology on the entire organization. The TEI methodology and the resulting financial model place 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. Calculation of benefit estimates involves a clear dialogue with the user organization to understand the specific value that is created. In addition, Forrester also requires that there be a clear line of accountability established between the measurement and justification of benefit estimates after the project has been completed. This ensures that benefit estimates tie back directly to the bottom line.

Costs

Costs represent the investment necessary to capture the value, or benefits, of the proposed project. IT or the business units may incur costs in the forms of fully burdened labor, subcontractors, or materials. Costs consider all the investments and expenses necessary to deliver the proposed value. In addition, the cost category within TEI captures any incremental costs over the existing environment for ongoing costs associated with the solution. All costs must be tied to the benefits that are created.

Risk

Risk measures the uncertainty of benefit and cost estimates contained within the investment. Uncertainty is measured in two ways: the likelihood that the cost and benefit estimates will meet the original projections and the likelihood that the estimates will be measured and tracked over time. TEI applies a probability density function known as "triangular distribution" to the values entered. At a minimum, three values are calculated to estimate the underlying range around each cost and benefit.

Flexibility

Within the TEI methodology, direct benefits represent one part of the investment value. While direct benefits can typically be the primary way to justify a project, Forrester believes that organizations should be able to measure the strategic value of an investment. Flexibility represents the value that can be obtained for some future additional investment building on top of the initial investment already made. For instance, an investment in an enterprise-wide upgrade of an office productivity suite can potentially increase standardization (to increase efficiency) and reduce licensing costs. However, an embedded collaboration feature may translate to greater worker productivity if activated. The collaboration can only be used with additional investment in training at some future point in time. However, having the ability to capture that benefit has a present value that can be estimated. The flexibility component of TEI captures that value.

Appendix C: Glossary

Discount rate: The interest rate used in cash flow analysis to take into account the time value of money. Although the Federal Reserve Bank sets a discount rate, companies often set a discount rate based on their business and investment environment. Forrester assumes a yearly discount rate of 10% for this analysis. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult their organizations to determine the most appropriate discount rate to use in their own environment.

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.

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

Payback period: The breakeven point for an investment. The point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Return on investment (ROI): A measure of a project’s expected return in percentage terms. ROI is calculated by dividing net benefits (benefits minus costs) by costs.

A Note On Cash Flow Tables

The following is a note on the cash flow tables used in this study (see the Example Table below). The initial investment column contains costs incurred at “time 0” or at the beginning of Year 1. Those costs are not discounted. All other cash flows in Years 1 through 3 are discounted using the discount rate shown in Table 2 at the end of the year. Present value (PV) calculations are calculated for each total cost and benefit estimate. Net present value (NPV) calculations are not calculated until the summary tables and are the sum of the initial investment and the discounted cash flows in each year.

Example Table

| Ref. | Category | Calculation | Initial cost | Year 1 | Year 2 | Year 3 | Total |
|------|----------|-------------|--------------|--------|--------|--------|-------|
| | | | | | | | |

Source: Forrester Research, Inc.