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Prepared for Progress Actional

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The Total Economic Impact™ Of Progress Actional Management For Today's Interconnected Applications

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Executive Summary

In February 2009, Progress Actional commissioned Forrester Consulting to examine the total economic impact and potential return on investment (ROI) enterprises may realize by deploying Progress Actional. The Progress Actional solution provides visibility, security, and control of the activities of services and end-to-end business transactions in a runtime environment. This study illustrates the financial impact of deploying Actional at an organization that has asked to remain anonymous: a large private financial service company based in the United States. This firm has been using a SOA architecture for seven years. Runtime monitoring and management of its portfolio of SOA-based services was a critical requirement for meeting the company's business goal of being "the No. 1 institutional site for 2008".

In conducting in-depth interviews with this customer, Forrester found that this company achieved:

- **Cost savings.** Cost savings were especially observed in the IT department. In both production and test environments, Actional reduced the personnel time required to establish monitoring and management for SOA-based services. **Even more important, it cut by 85% the number of people required for break-fix.** In addition, service quality reports that were previously tedious to manually prepare and correlate now are readily available in real time.

- **Improved productivity.** By continuously optimizing the operation of critical SOA business services and proactively taking actions even before the business is affected, the reference organization was able to reduce the number of production incidents. This improved the performance of the critical services used by the company's Web applications and portals, thus increasing the productivity of the internal and external sales people that rely on these systems.

Purpose

The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Progress Actional 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 the Progress Actional solution.

Methodology

Progress Actional selected Forrester for this project because of its industry expertise in SOA management and Forrester's Total Economic Impact™ (TEI) methodology. TEI not only measures costs and cost reduction (areas that are typically accounted for within IT); it also weighs the enabling value of a technology in increasing business effectiveness.

For this study, Forrester employed four fundamental elements of TEI in modeling the Progress Actional solution:

1. Costs and cost reduction.

2. Benefits to the entire organization.

3. Flexibility.

4. Risk.

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 A for additional information on the TEI methodology.

Approach

Forrester used a multistep approach for this study:

1. Forrester gathered data from existing Forrester research relative to the Progress Actional solution and the SOA management market in general.

2. Forrester interviewed Progress Actional marketing and sales personnel to fully understand the potential (or intended) value proposition of its Transaction Management solution.

3. Forrester conducted a series of in-depth interviews with an organization currently using the Progress Actional solution *in production*.

4. Forrester constructed a financial model representative of the interviews. This model can be found in the TEI Framework section below.

5. Forrester populated the framework using data from the interviews.

Key Findings

Forrester's study yielded a number of key findings:

- **ROI.** Based on interviews with a customer using the Progress Actional solution, Forrester constructed a TEI framework and the associated ROI analysis illustrating the financial impact areas. As seen in Table 1, the **ROI for this reference company is 208%,** with a **breakeven point (payback period) of less than 12 months** after deployment.

- **Benefits.** One of the principal benefits that the customer achieved can be expressed as time savings in the IT department. Time is saved in setting up service management, in reporting on service operations, and especially in problem resolution. Instead of being obliged to manually gather and correlate information from various sources, the data is now readily available in real time with end-to-end visibility. By continuously optimizing the service operations, the customer also managed to decrease the number of production incidents affecting the company's Web applications and portals. This resulted in higher rates of productivity for the sales agents and external partners working with these systems.

- **Future expansion of benefits.** To date, the customer has made use of major features of Progress Actional. There are numerous other advanced features available for further optimization in the future of its services environment. For example, in the near future, the customer intends to integrate Progress Actional with its asset repository and a BPM product — thus realizing even more time savings.

- **Costs.** The main cost categories for adoption of the Progress Actional solution are: a) one-off software license fees; b) investment in additional hardware; c) installation costs; d) ongoing monthly maintenance fees for the Progress Actional product; and e) internal ongoing costs for administering and maintaining the solution over the years.

Table 1 illustrates the risk-adjusted cash flow for the reference 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: Reference Company ROI, Risk-Adjusted (US$)

Ref.	Category	Calculation	Year 1	Year 2	Year 3	Total	PV
R1	Total costs		$(454,787)	$(66,258)	$(66,943)	$(587,988)	$(570,347)
R2	Total benefits		$599,208	$597,462	$620,552	$1,817,222	$1,655,208
R3	Flexibility		$100,282			$100,282	$100,282
R4	Total	R1+R2+R3	$244,704	$531,204	$553,609	$1,329,516	$1,185,144
R5	Return on investment	R4/(-R1)					208%
R6	Payback period						Within 12 months

Source: Forrester Research, Inc.

Disclosures

The reader should be aware of the following:

- The study is commissioned by Progress Actional and delivered by the Forrester Consulting group.
- Progress Actional 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 Progress Actional.
- 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 report to determine the appropriateness of an investment in Progress Actional.
- This study is not meant to be used as a competitive product analysis.

Progress Actional Management for Today's Interconnected Applications: Overview

Progress Actional accelerates business results by quickly detecting, diagnosing, and reacting to problems before the business is affected. The solution ensures the performance and availability of end-to-end runtime environments — across heterogeneous systems, without coding or configuration, and without performance impact.

Actional's patented Flow Mapping technology automatically provides end-to-end visibility, revealing the "big picture" of underlying transaction paths with insight into interdependencies and behavior. With this level of visibility, organizations can monitor service interactions, understand dependencies, and begin to proactively manage every single important business transaction.

Leveraging a centralized approach to management, Actional fully decouples the policy life cycle from the service development life cycle, where policies such as service-level agreements are created centrally and distributed across the enterprise for a more efficient, cost-effective solution. As policy violations and deviations are generated, alerts are triggered, and flow maps of "violating" transactions are displayed, enabling organizations to quickly find the root cause of issues — eliminating hours of IT and development diagnostics.

Users can pinpoint the exact location of problems across all applications, down to the specific service, operation, or process step, and capture and analyze details down to the message-content level. Progress Actional makes sure the most important customers, partners, and channels always have the best service by dynamically optimizing select transactions. The solution makes it easy to maintain key service-level agreements, and dimensional analysis tools help catch problems before they even occur.

Companies can use Progress Actional to keep an eye on process metrics, and key performance indicators with real-time operational views and user-configurable, browser-based dashboards. With real-time insight into IT operations, businesses can optimize critical business processes and technology investments to deliver faster, more effective services to customers. IT organizations don't need to worry about failed transactions or downtime — they can stay focused on what matters: revenue generation, employee productivity, and customer satisfaction.

Progress Actional also provides organizations with comprehensive runtime SOA governance capabilities. These complement governance tools such as registries and repositories and form an essential part of a comprehensive SOA governance strategy.

Analysis

As stated in the Executive Summary, Forrester took a multistep approach to evaluate the impact that implementing Progress Actional can have on an organization:

- Interviews with Progress Actional marketing and sales personnel.
- In-depth interviews with a financial services organization currently using the Progress Actional solution in production.
- Construction of a financial framework for the implementation of Progress Actional for this organization.

Interview Highlights

The company that was interviewed for this study is a large private financial service group based in the United States. The company underwent a project consolidating all of its business logic and business processes to a Web services architecture. It uses Progress Actional to monitor and control the end-to-end experience of its Web applications and portals for account servicing and customer relationship management (CRM). The CRM site is used by about 1,000 internal employees and approximately 5,000 external resources reselling the company's products.

The customer interviews uncovered the context of the customer's environment and a number of insights, including:

- In 2007, the company experienced performance issues with its Web applications and portals. The decision was taken to put tools in place to get a better visibility on the underlying business processes and to improve their performance. The stated business goal was to "be the No. 1 institutional site for 2008".
- The complexity of the company's SOA environment presented challenges to achieving its 2008 service quality goal. Although its SOA-based services accessed only two major application environments, one for servicing and one for CRM, its services provide for more than 400 different types of service requests. It couldn't track who was using which services, and it couldn't tell which services were performing well (or not). It couldn't tell how many different services an individual user request touched, or what the relationships were between the services. Performance problems were not only hard to identify, but the source of a performance problem might be in the Web application, in any of the services spread across both .NET and Java environments, or in the underlying databases. All this will only get worse in the future, as the organization is planning to introduce a business process management solution into the mix.
- The main driver for adopting a services management solution was to gain improvements in the stability and performance of its CRM system through better visibility into the execution and performance of critical services. The IT and business people wanted to ensure that the CRM system supported the company's world-class service goals. This required understanding which services were actually used when, how they performed, peak usage times, and usage trends. When there were problems, IT people needed to see multiple layers within service implementations to quickly identify the source of the problem. These new insights were then used to increase application uptime and performance. In addition, the organization also wanted to set up and use service-level agreements (SLAs) for different user communities (as opposed to one SLA overall for the system). In addition,

SLAs such as service response time, service throughput levels, and service availability may now be established separately for each service, as well as separately for user groups.

- The Progress Actional solution was chosen following a thorough tender and selection process. According to the reference organization, the Progress Actional product showed better performance (the company required that the solution introduce overhead of less than 4%) and had a more powerful dashboard view compared with the other products that were under consideration.

- The company uses Progress Actional in its production IT operations environment, but also in preproduction in its quality assurance environment and its performance testing environment. The benefits of the product extend to all three environments, especially the preproduction environments, where the company finds and fixes most of its service problems (before the services go into production).

- According to the reference organization, two major benefits from the Progress Actional solution that affected the company's evaluation and purchase decisions were more efficient and faster root-cause analysis and the ability to proactively take actions when a service degrades — even before the business notices the problem. For the company's key services, for instance, policies have been created that send dashboard alerts and automatic emails when predefined thresholds are exceeded.

- In discussing the benefits it receives from Progress Actional, the company focused on particular product features including its ability to "see" multiple layers within a service implementation, its ability to monitor the flow of a business process, tracking SOAP protocol exceptions, and specialized monitoring policies for "gold-level" services. In turn, these features support softer benefits such as the ability to hold people accountable for stability and performance of their components within the system.

- In the near future, the Progress Actional solution will also be used to update the asset repository and feed real-time data into a separate BPM product. The company has not yet used advanced features of the product such as its ability to automatically initiative corrective actions in response to production alerts.

- The company's biggest challenges when installing the product were first to pass the severe performance tests — it reports that Progress Actional was very responsive in fixing such issues — and second to synchronize the installation in the production environment with the company's once-every-three-months deployment schedules.

TEI Framework

Introduction

From the information provided in the in-depth interviews, Forrester has constructed a TEI framework for organizations considering implementation of Progress Actional. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision.

This section illustrates a sample ROI analysis for the reference organization. This model was created as a result of discussions with this organization to determine the underlying costs and benefits of engaging with the Progress Actional solution. Data contained within this model is based on information received from the interview participants. Since this model examines just one

customer, data and the financial ROI should not be seen as validation of the potential return that a given organization may achieve from the use of the Progress Actional solution. Organizations must use their own data to determine their own potential return.

Framework Assumptions

Table 2 lists the discount rate used in the PV and NPV calculations and time horizon used for the financial modeling. It also contains the assumed working days per year, working hours per day, fully loaded hourly salary, and annual salary inflation rate employed in this model.

Table 2: General Assumptions

Ref.	General assumptions	Value
A1	Yearly discount rate	10%
A2	Length of analysis	Three years
A3	Working days per year	238
A4	Working hours per day	8
A5	Fully loaded hourly salary	US$112
A6	Annual salary inflation rate	2%

Source: Forrester Research, Inc.

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.

Costs

This section summarizes the costs that the reference organization incurred deploying the Progress Actional solution.

The initial investment included one-off license fees of $160K, the costs of additional hardware required ($50K), and the labor costs for preparing, testing and installing the solution. The customer estimated the efforts involved in this project to five months for two full-time equivalents (FTE). The model uses the fully loaded hourly rate in Table 2 to calculate the associated costs.

Recurring costs can be broken down into annual maintenance fees for the Progress Actional product of $32K, and the internal costs associated with the administration and maintenance of this solution corresponding to 15% of one FTE.

Table 3 summarizes the almost $566,000 in costs expended by the reference organization in deploying Progress Actional over a three-year period.

Table 3: Total Costs (US$)

Ref.	Costs	Calculation	Year 1	Year 2	Year 3	Total	PV
B1	One-time license costs		$160,000	$-	$-	$160,000	$160,000
B2	Initial hardware investment		$50,000	$-	$-	$50,000	$50,000
B3	Initial installation costs (internal)		$179,200	$-	$-	$179,200	$179,200
B4	Annual maintenance fees		$32,000	$32,000	$32,000	$96,000	$87,537
B5	Annual admin/maintenance (internal)		$31,987	$32,627	$33,279	$97,894	$89,152
B6	Total costs	sum(B1:B5)	$453,187	$64,627	$65,279	$583,094	$565,889

Source: Forrester Research, Inc.

Benefits

This section summarizes the quantifiable benefits that the reference organization incurred deploying the Progress Actional solution. The different types of benefits are explained in the subsections below.

Setup Benefits

This benefit deals with the time saved when setting up services for monitoring and management. The Progress Actional product automatically discovers and monitors all services, after which the company has the option to establish custom policies, if needed, for any given service. This saved the reference company time that would have been spent to enhance each service's implementation with a minimal level of monitoring support (e.g., writing log records). The customer estimated a net gain of about 6 hours per service. This benefit only applies once for each service. Table 4 below presents the associated benefit amount.

Table 4: Setup Benefits (US$)

Ref	Metric	Calculation	Year 1	Year 2	Year 3	Total	PV
C1	Number of service operations		450	40	40		
C2	Number of hours gained for instrumenting each service for monitoring		6	6	6		
C3	Average fully loaded hourly rate	A5 (incl. inflation)	$112.00	$114.20	$116.50		
C4	Total setup benefits	C1*C2*C3	$302,400	$27,418	$27,966	$357,784	$350,437

Source: Forrester Research, Inc.

Reporting Benefit

This benefit is based on the amount of time saved when establishing weekly reports regarding service usage, performance, etc. Such reports are a primary feature of Progress Actional. Without Progress Actional, the data must be manually gathered, correlated, and reported. The reference organization estimated the time gained to 3 hours per week. Only 50% of the annual benefit amount is accrued in Year 1 during the ramp period. Table 5 below presents the calculation and the resulting three-year benefit amount.

Table 5: Reporting Benefits (US$)

Ref	Metric	Calculation	Year 1	Year 2	Year 3	Total	PV
D1	Number of hours gained per week for reporting		3	3	3		
D2	Number of hours gained per year for reporting	D1*52	156	156	156		
D3	Average fully loaded hourly rate	A5 (incl. inflation)	$112.00	$114.20	$116.50		
D4	Ramp-up; percentage of benefit taken into account		50%	100%	100%		
D5	Total reporting benefits	D2*D3*D4	$8,736	$17,821	$18,178	$44,735	$39,960

Source: Forrester Research, Inc.

Problem Solving Benefits

Organizations that do not have full real-time and end-to-end visibility of their services spend more time and effort for resolving problems with services. Often, it is not clear which layer in a service's implementation is the one causing the problem. Hunting down the source of the problem requires multiple support teams to scan log files, run test scenarios, and manually correlate results with other teams to find the origin of a problem. This benefit applies to the production and the preproduction/ testing environment.

According to the reference organization, before having a services management solution in place, a major problem in the production environment involved, on average, about 20 persons for about 6 hours each to perform root-cause analysis, fix the problem, and test the resolution. With Progress Actional's ability to identify the offending layer of the service implementation, it requires, on average, only three persons for about 3 hours each. Additionally, the reference organization said that problem resolution may be accomplished by less expensive personnel. This has been taken into account in the following calculations by reducing the fully loaded hourly salary by 20%.

Only 50% of the annual benefit amount is accrued in Year 1 during the ramp period. Table 6 below presents the calculation and the resulting three-year benefit amount for the production environment.

Table 6: Problem Solving Benefits (Production Environment)

Ref	Metric	Calculation	Year 1	Year 2	Year 3	Total	PV
E1	Number of major production incidents per year		13	11	9		
E2	Average number of people involved in problem solving before Actional		20	20	20		
E3	Average number of hours per person spent in problem resolution before Actional		6	6	6		
E4	Man hours spent per year resolving problems before Actional	E1*E2*E3	1 560	1 320	1 080		
E5	Average number of people involved in problem solving with Actional		3	3	3		
E6	Average number of hours per person spent in problem resolution with Actional		3	3	3		
E7	Man hours per year spent resolving problems with Actional	E1*E5*E6	117	99	81		
E8	Average fully loaded hourly rate without Actional	A5 (incl. inflation)	$112.00	$114.20	$116.50		
E9	Average fully loaded hourly rate with Actional	F8*80%	$89.60	$91.40	$93.20		
E10	Ramp-up; percentage of benefit taken into account		50%	100%	100%		
E11	Total problem solving benefits (production environment)	[(E4*E8) - (E7*E9)]*E10	$82,118	$141,749	$118 296	$342 163	$308 746

Source: Forrester Research, Inc.

Incidents in the preproduction/testing environment are more frequent, but as their impact is less critical for the business, fewer people get involved as compared to production issues.

Only 50% of the annual benefit amount is accrued in Year 1 during the ramp-up period. Table 7 presents the calculation and the resulting three-year benefit amount for the preproduction environment.

Table 7: Problem Solving Benefits (Preproduction Environment)

Ref	Metric	Calculation	Year 1	Year 2	Year 3	Total	PV
F1	Number of major production incidents per year		130	117	112		
F2	Average number of people involved in problem solving before Actional		5	5	5		
F3	Average number of hours per person spent in problem resolution before Actional		6	6	6		
F4	Man hours spent per year resolving problems before Actional	F1*F2*F3	3,900	3,510	3,360		
F5	Average number of people involved in problem solving with Actional		3	3	3		
F6	Average number of hours per person spent in problem resolution with Actional		3	3	3		
F7	Man hours spent per year resolving problems with Actional	F1*F5*F6	1,170	1,053	1l008		
F8	Average fully loaded hourly rate without Actional	A5 (incl. inflation)	$112.00	$114.20	$116.50		
F9	Average fully loaded hourly rate with Actional	F8*80%	$89,6	$91,4	$93,2		
F10	Ramp-up; percentage of benefit taken into account		50%	100%	100%		
F11	Total problem solving benefits (preproduction environment)	[(F4*F8) - (F7*F9)]*F10	$165,984	$304,747	$297,558	$768,288	$688,942

Source: Forrester Research, Inc.

Benefits Due To The Reduction In The Number Of Incidents

With Progress Actional continually monitoring service operations and raising alerts as thresholds are exceeded, IT operations can take proactive measures to prevent production problems before they occur. The reference organization experienced a decrease in the number of production incidents. These are problems that did not occur, and thus took zero time to fix, resulting in direct cost savings. The costs for solving a production incident are derived from Table 6 above.

Table 8 presents the calculation and the resulting three-year cost savings.

Table 8: Benefits Due To Reduced Number Of Incidents

Ref	Metric	Calculation	Year 1	Year 2	Year 3	Total	PV
G1	Number of major production incidents per year		13	11	9		
G2	Number of production incidents per year without Actional		16	16	16		
G3	Number of avoided incidents due to Actional		3	5	7		
G4	Costs to solve one incident (without Actional)	E2*E3*E8	$13,440	$13,709	$13,983		
G5	Total IT benefits from avoided production incidents	G3*G4	$40,320	$68,544	$97,881	$206,745	$183,526

Source: Forrester Research, Inc.

Benefits Due To Increased Uptime

The range of different types of production incidents might be caused by anything from overloaded application servers or slow database performance to network congestion or poorly written application code. Some problems result in degraded performance, others in handling inconsistent data sets, and still others may even result in complete service outages. Through its ability to track service request flows across multiple layers of a service implementation, Progress Actional is able to identify whether a problem is in Java or .NET, in one service or another, in between two services, or even in the database. To emphasize this, the company stated that they can even see the actual SQL statement that executed in the database. The ability to see such issues early helps to prevent problems, and identifying the source helps the customer fix the problem so that it does not happen again.

The benefit resulting from a reduced number of production incidents that has been evaluated in this case study is increased uptime for the company's Web applications and portals. The reference organization estimated the average application downtime during a major incident to be 30 minutes. An hour of downtime is estimated to cost $25,000 of lost revenue. Because Progress Actional reduces the number of production incidents, it increases business uptime.

Only 50% of the annual benefit amount is accrued in Year 1 during the ramp-up period. Table 9 presents the calculation and the resulting three-year benefit amount.

Table 9: Benefits Due To Increased Uptime And Improved Productivity

Ref	Metric	Calculation	Year 1	Year 2	Year 3	Total	PV
H1	Total revenues lost per hour of downtime or reduced performance		$25,000	$25,000	$25,000		
H2	Average downtime/reduced performance of service during a major production incident (in hours)		0.5	0.5	0.5		
H3	Number of major production incidents per year before Actional		16	16	16		
H4	Number of major production incidents per year with Actional		13	11	9		
H5	Additional uptime for services due to Actional (in hours per year)	(H3-H4)*H2	1.5	2.5	3.5		
H6	Ramp-up; percentage of benefit taken into account		50%	100%	100%		
H7	Total productivity benefits	H1*H5*H6	$18,750	$62,500	$87,500	$168,750	$147,882

Source: Forrester Research, Inc.

Total Benefits

Table 10 resumes the total benefits that were quantifiable for this study and explained above.

Table 10: Total Benefits (US$)

Ref	Benefits	Calculation	Year 1	Year 2	Year 3	Total	PV
I1	Total setup benefits	C4	$302,400	$27,418	$27,966		
I2	Total monitoring benefits	D5	$8,736	$17,821	$18,178		
I3	Total problem solving benefits (production environment)	E11	$82,118	$141,749	$118,296		
I4	Total problem solving benefits (preproduction environment)	F11	$165,984	$304,747	$297,558		
I5	Total benefits from avoided production incidents	G5	$40,320	$68,544	$97,881		
I6	Total productivity benefits	H7	$18,750	$62,500	$87,500		
I7	Total benefits	I1+I2+I3+I4 +I5+I6	$618,308	$622,779	$647,378	$1,888.465	$1,719,494

Source: Forrester Research, Inc.

Risk

Risk is the third component within the TEI model; it's 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, since 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.

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, take the case of the annual internal administration costs. The $97,894 value used in this analysis can be considered the "most likely" or expected value. However, this value might vary based on the complexity of the changing environment. This variability represents a risk that must be captured as part of this study. Forrester uses a risk factor of 110% on the high end, 105% as the medium, and 100% on the low end. This has the effect of increasing the cost estimate to take into account the fact that original cost estimates are more likely to be revised upward than downward.

Forrester then creates a triangular distribution to reflect the range of expected costs, with 105% as the mean. Forrester applies this mean to the most likely estimate, $97,894, to arrive at a risk-adjusted value of $102,788.

However, most of the cost figures in this study are not risk-adjusted. License costs, for example, can be determined with a high degree of certainty (and contractually set) before a project is started. License, upfront investment, initial installation, and maintenance costs presented in this study are not risk-adjusted for this reason.

The following tables show the values used to adjust for uncertainty in cost and benefit estimates. Different cost and benefits estimates have different levels of risk adjustments. Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

Table 11: Cost Category Risk Adjustments

Ref	Risk to cost	Low	Medium	High	Risk-adjusted
J1	One-time license costs	100%	100%	100%	NA
J2	Hardware investment	100%	100%	100%	NA
J3	Installation costs (internal)	100%	100%	100%	NA
J4	Annual maintenance fees	100%	100%	100%	NA
J5	Annual admin/maintenance (internal)	100%	105%	110%	105%
J6	Integration with asset repository (Flexibility option A)	100%	100%	100%	NA
J7	Integration with BPM solution (Flexibility option B)	100%	100%	100%	NA

Source: Forrester Research, Inc.

Risk adjustments for benefits reduce the original benefits estimates. For example, Forrester applies a risk range of 90% on the low end of the estimate, 95% on the medium, and 100% on the high end for cost savings from reduction of incidents. This has the effect of reducing the benefit estimate by 5%, equal to 95% of the original value.

Table 12: Benefit Category Risk Adjustments

Ref	Risk to benefit	Low	Medium	High	Risk-adjusted
K1	Reduced time for instrumenting services	96%	98%	100%	98%
K2	Reduced time for reporting	96%	98%	100%	98%
K3	PRODUCTION - better problem solving	92%	96%	100%	96%
K4	PREPRODUCTION - better problem solving	92%	96%	100%	96%
K5	Reduction in number of major incidents	90%	95%	100%	95%
K6	Increased uptime/productivity	90%	95%	100%	95%
K7	Integration with asset repository (Flexibility option A)	90%	95%	100%	95%
K8	Integration with BPM solution (Flexibility option B)	90%	95%	100%	95%

Source: Forrester Research, Inc.

Flexibility

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

To date, the customer has made use of major features of Progress Actional. However, there are numerous other advanced features available for future further optimization of its SOA environment. Forrester believes that there are several such real options available to the reference organization, including:

- Enhanced business process insight, especially when the firm introduces its business process management solution.
- Use of Progress Actional's service stabilizers to configure smarter responses to production conditions.
- Dynamic prioritization of requests from external users.
- Comprehensive security and policy enforcement for services.
- Improved capacity management by understanding the aggregate load that multiple services place on servers and other SOA platform elements.

The flexibility component of TEI can capture that value using the industry-standard Black-Scholes option pricing model.

At the time of publication, the customer identified the following two areas that present additional uses of the Progress Actional solution that he intends to build upon the existing implementation.

The customer intends to integrate Progress Actional with its asset repository. By investing about 40 hours of integration work upfront, the company will save two FTEs per month for not having to keep the asset repository up-to-date manually.

Table 13: Flexibility Option A: Integration With Asset Repository

Ref	Metric	Calculation	Year 1	Year 2	Year 3	Total	Total (risk-adjusted)
L1	Average number of man hours saved per month		16	16	16		
L2	Average number of man hours saved per year	L1*12	192	192	192		
L3	Average fully loaded hourly rate	A5	$112.00	$114.20	$116.50		

Ref	Metric	Calculation	Year 1	Year 2	Year 3	Total	Total (risk-adjusted)
L4	Ramp-up; percentage of benefit taken into account		50%	100%	100%		
L5	Total net benefit of this option	L2*L3*L4	$10,752	$21,934	$22,373	$55,059	
L6	Number of hours for integration		40	-	-		
L7	Integration cost to take advantage of this option	-L3*L6	$(4,480)	$-	$-	$(4,480)	
L8	Flexibility benefit of this option (Black-Scholes formula)	Black - Scholes(L5;-L7)	$51,417			$51,417	$48,668

Source: Forrester Research, Inc.

The second option that the customer intends to implement is the integration between Progress Actional and a third-party BPM solution. The calculation below only captures the one-time integration cost savings. It does not take into account business benefits that might result from the integration of these two tools.

Table 14: Flexibility Option B: Integration With BPM Solution

Ref	Metric	Calculation	Year 1	Year 2	Year 3	Total	Total (risk-adjusted)
M1	Number of service operations		450	40	40		
M2	Number of service operations selected for integration with BPM - assumption 10%	M1*10%	45	4	4		
M3	Number of UI touchpoints for integration with BPM	M2	45	4	4		
M4	Number of hours gained for service operations and UI touchpoints		6	6	6		
M5	Average fully loaded hourly rate	A5	$112.00	$114.20	$116.50		

Ref	Metric	Calculation	Year 1	Year 2	Year 3	Total	Total (risk-adjusted)
M6	Total net benefit of this option	(M2+M3)*M4 *M5	$60,480	$5,484	$5,593		
M7	Number of hours for development per service and UI touchpoint		2	2	2		
M8	Development cost to take advantage of this option	-(M2+M3)*M5 *M7	$(20,160)	$(1,828)	$(1,864)		
M9	Flexibility benefit of this option (Black-Scholes formula)	Black Scholes(M6; -M8)	$54,981			$54,981	$51,614

Source: Forrester Research, Inc.

The flexibility component of TEI captures that value using the financial industry standard Black-Scholes model. Forrester values the sum of the above flexibility options at approximately $106,000 (non–risk-adjusted) or $100,000 (risk-adjusted). This value exists in addition to risk-adjusted benefits described in this analysis.

The value of flexibility is unique to each organization, and the willingness to measure its value varies from company to company (see Appendix A for additional information regarding the flexibility calculation).

TEI Framework: Summary

Considering the financial framework constructed above, the results of the costs, benefits, risk, and flexibility sections using the representative numbers can be used to determine a return on investment, net present value, and payback period. Table 15 shows the consolidation of the numbers for the reference organization.

Table 15: Reference Company ROI, Non-Risk-Adjusted (US$)

Ref	Category	Calculation	Year 1	Year 2	Year 3	Total	PV
N1	Total costs	-B6	$(453,187)	$(64,627)	$(65,279)	$(583,094)	$(565,889)
N2	Total benefits	I7	$618,308	$622,779	$647,378	$1,888,465	$1,719,494
N3	Flexibility	L8+M9	$106,397			$106,397	$106,397
N4	Total	N1+N2+N3	$271,519	$558,152	$582,099	$1,411,769	$1,260,003
N5	Return on investment	N4/N1					223%

Source: Forrester Research, Inc.

Table 16 shows the risk-adjusted values, applying the risk adjustment method indicated in the "Risks" section and the values from Tables 11 and 12 to the numbers in Tables 3 and 10.

Table 16: Reference Company ROI, Risk-Adjusted (US$)

Ref	Category	Calculation	Year 1	Year 2	Year 3	Total	PV
O1	Total costs	-B6 (risk adj)	$(454,787)	$(66,258)	$(66,943)	$(587,988)	$(570,347)
O2	Total benefits	I7 (risk adj)	$599,208	$597,462	$620,552	$1,817,222	$1,655.208
O3	Flexibility	L8+M9 (risk adj)	$100,282			$100,282	$100,282
O4	Total	O1+O2+O3	$244,704	$531,204	$553,609	$1,329,516	$1,185,144
O5	Return on investment	O4/O1					208%
O6	Payback period						Within 12 months

Source: Forrester Research, Inc.

It is important to note that values used throughout the TEI Framework are based on in-depth interviews with one organization. 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 Progress Actional.

Study Conclusions

Forrester's in-depth conversations with this Progress Actional customer yielded several important observations. Based on information collected in these interviews, Forrester found that organizations can realize benefits in a number of areas:

- **Setup benefits.** instead of spending development time on instrumenting each service, the Progress Actional solution automatically discovers and monitors all services. This saved the reference organization about $350,000

- **Reporting benefits.** Before the introduction of Progress Actional, usage and performance reports were based on data that had to be gathered and correlated manually. With Progress Actional, the data is readily available, which resulted in a net time savings of three hours per week.

- **Problem solving benefits.** Organizations that do not have full real-time and end-to-end visibility of their services spend more time and effort for resolving problems with services. After the introduction of Progress Actional, the reference company saw the number of people involved in production problem resolutions cut by 85% and the amount of time needed to resolve a problem in the preproduction environment reduced by 70%.

- **Reduced number of production incidents.** With Progress Actional continually monitoring service operations and raising alerts as thresholds are exceeded, the reference organization was able to take proactive measures and prevent production problems from occurring. This resulted in net time savings that the reference organization valued at about US$200,000 over the three-year period.

- **Increased application uptime.** By continually optimizing the execution of the services in the production environment with the help of the Progress Actional solution, the reference organization observed a global increase in uptime of its mission-critical Web applications and portals as compared to the pre-investment state. The reference organization valued the 7.5 hours of increased uptime to about US$150,000.

The reference organization will also realize net time and cost savings from planned integrations of the Progress Actional solution with their asset repository and a third-party BPM product. To date, the customer that has been interviewed for this study has made use of major features of Progress Actional. However, there are numerous other advanced features available for further optimization of its services environment, such as the establishment of automatic policy enforcement rules, the use of advance security capabilities, smart automatic responses to production conditions, dynamic prioritization of service requests, and improved server capacity management.

The financial analysis provided in this study illustrates the potential way an organization can evaluate the value proposition of Progress Actional. Based on information collected during in-depth customer interviews, Forrester calculated a **three-year risk-adjusted ROI of 208%** for the reference organization with a **payback period of less than 12 months.** All final estimates are risk-adjusted to incorporate potential uncertainty in the calculation of costs and benefits.

Based on these findings, companies looking to implement Progress Actional can see cost savings and productivity benefits. Using the TEI framework, many companies may find the potential for a compelling business case to make such an investment.

Appendix A: 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 enterprisewide 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 B: 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 organization 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 at 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.

Appendix C: About The Project Managers

Paul Devine
Consultant, Forrester Consulting

Paul is a consultant for Forrester's Total Economic Impact (TEI) products and services. The TEI methodology focuses on measuring and communicating the value of IT and business decisions and solutions and providing an ROI business case based on the costs, benefits, flexibility, and risk of investments.

Paul has more than eight years consulting experience in the telecommunications and IT sector. Paul spent five years working as a consultant in Frost & Sullivan's ICT practice. During his time at Frost & Sullivan, Paul managed large primary research projects and consulting engagements across Europe, the Middle East, and Africa.

Paul earned a B.Sc. in Chemistry with Management Studies and a Master's in Technology and Innovation Management from the University of Sussex in the UK.

Paul is currently located in London.

Sebastian Selhorst
Consultant, Forrester Consulting

Sebastian is a consultant for Forrester's Total Economic Impact (TEI) products and services. The TEI methodology focuses on measuring and communicating the value of IT and business decisions and solutions and providing an ROI business case based on the costs, benefits, flexibility, and risk of investments.

Sebastian has more than eight years of professional experience in the telecommunications and IT outsourcing industry. Prior to joining Forrester, Sebastian worked as a project manager and consultant for EDS, where he engaged in large IT infrastructure and telecommunications on- and offshore outsourcing projects. His work included general project, account and financial management tasks, management of third-party relations and sales support. Sebastian began his career at Alcatel, where he was responsible for analyzing needs for new mobile network features and translating them into high-level technical requirements.

Sebastian holds a French and German M.Sc. from Ecole Centrale Paris and RWTH Aachen with a specialization in computer science and telecommunications. He is fluent in English, German, and French.