

A Forrester Total Economic Impact™ Study Prepared For AppSense

Total Economic Impact Of The AppSense Management Suite

Project Director: Sadaf R. Bellord

December 2012

FORRESTER

Headquarters | Forrester Research, Inc.
60 Acorn Park Drive, Cambridge, MA 02140 USA
Tel: +1 617.613.6000 | www.forrester.com

Forrester Consulting
Making Leaders Successful Every Day

TABLE OF CONTENTS

Executive Summary.....	2
Use Of AppSense Leads To IT Operational And Capital Cost Savings.....	2
Factors Affecting Benefits And Costs.....	3
Disclosures.....	4
TEI Framework And Methodology.....	5
Analysis.....	6
Interview Highlights.....	6
Costs.....	8
Benefits.....	12
Flexibility.....	17
Risk.....	18
Financial Summary.....	20
The AppSense Management Suite: Overview.....	21
Appendix A: Composite Organization Description.....	22
Appendix B: Total Economic Impact™ Overview.....	22
Appendix C: Glossary.....	23
Appendix D: Endnotes.....	24

© 2012, Forrester Research, Inc. All rights reserved. Unauthorized reproduction is strictly prohibited. Information is based on best available resources. Opinions reflect judgment at the time and are subject to change. Forrester®, Technographics®, Forrester Wave, RoleView, TechRadar, and Total Economic Impact are trademarks of Forrester Research, Inc. All other trademarks are the property of their respective companies. For additional information, go to www.forrester.com.

About Forrester Consulting

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit www.forrester.com/consulting.

Executive Summary

In March 2012, AppSense commissioned Forrester Consulting to examine the total economic impact and potential return on investment (ROI) enterprises may realize by deploying the AppSense Management Suite. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of the User Virtualization Platform on organizations having shared server-based computing environment.

Use Of AppSense Leads To IT Operational And Capital Cost Savings

In-depth interviews with five existing customers and subsequent financial analysis found that a composite organization based on these companies experienced the risk-adjusted ROI, costs, and benefits shown in Table 1. See Appendix A for a description of the composite organization.

Table 1

Composite Organization Three-Year Risk-Adjusted ROI¹

ROI	Payback period	Total benefits (PV)	Total costs (PV)	Net present value
284%	5 months	\$2,399,016	(\$625,095)	\$1,773,921

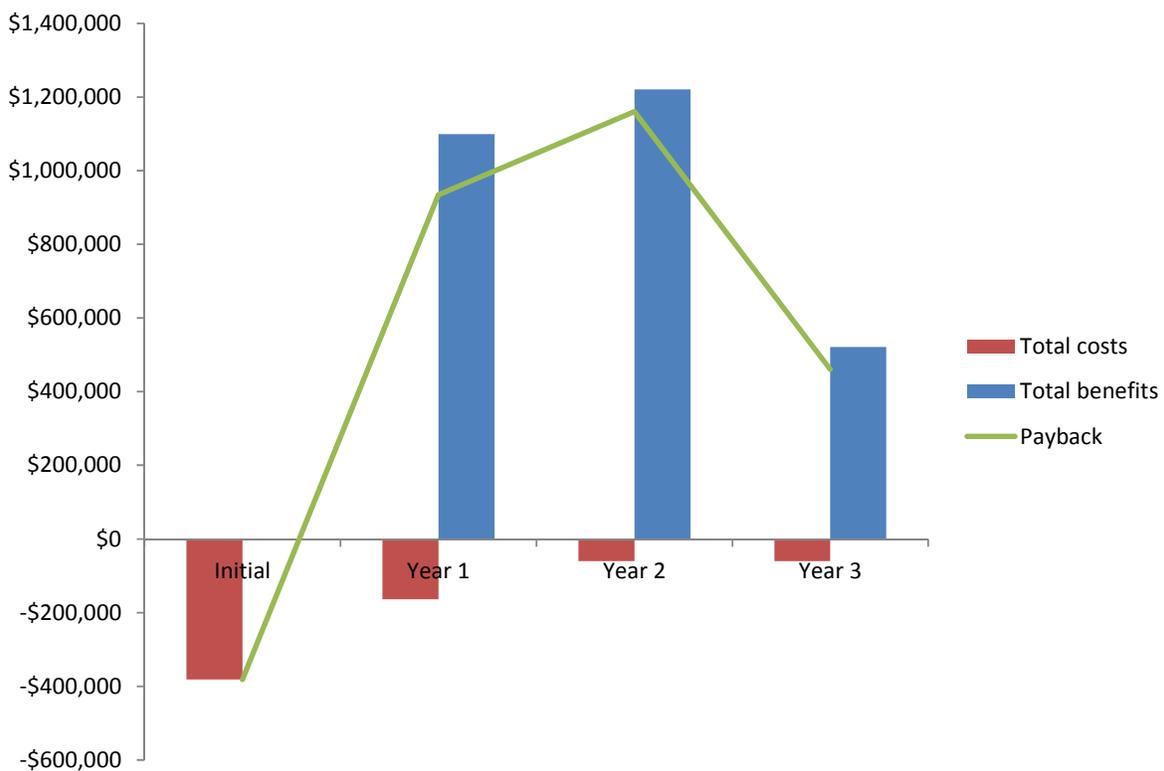
Source: Forrester Research, Inc.

- **Benefits.** The composite organization experienced the following benefits:
 - **IT operation cost savings.** This category represents the value associated with the reduction of help desk calls related to items such as profile corruption and rights management.
 - **Worker productivity cost savings.** This category represents end users' productivity gain resulting from reduction of profile corruption incidents, improvement in logon time, and relevant access to data and applications.
 - **Capital expense cost savings.** This category represents the reduction in projected capital expenses after implementation of the AppSense solution.
 - **Project-based cost savings associated with application migration.** This category represents the cost savings associated with the Windows XP to Windows 7 migration as well as physical to virtual migrations.
- **Costs.** The composite organization experienced the following costs:
 - **Software license, annual support costs, and professional services.** This category represents the investment in AppSense to deploy User Virtualization Platform.

- **Internal costs associated to deployment.** This category represents the internal resources allocated to planning, testing, implementation, and training of AppSense.
- **External deployment cost.** This category represents the investment in professional services for planning to deployment phases of implementation.

Figure 1

Composite Organization Three-Year Risk-Adjusted Financial Summary



Source: Forrester Research, Inc.

Factors Affecting Benefits And Costs

Table 1 illustrates the risk-adjusted financial results that were achieved by the composite organization. The risk-adjusted values take into account any potential uncertainty or variance that exists in estimating the costs and benefits, which produces more conservative estimates. The following factors may affect the financial results that an organization may experience:

- **Worker and IT efficiencies.** Improvements to logon time and reduction of profile corruptions and other support tickets led to efficiencies for IT staffing addressing those issues and workers affected by them. The number of calls

received by IT support staff and the duration of effort needed to address worker productivity affect the level of benefits estimated.

- **Impact of availability.** The overall benefit of improved availability will depend on the type of supported application as well as the productive value of the type and number of end users.
- **Planning and preparation for application migration.** Internal allocation of resources to application migration that is derived from the complexity of environment could affect the overall deployment costs.

Disclosures

The reader should be aware of the following:

- The study is commissioned by AppSense and delivered by the Forrester Consulting group.
- 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 the AppSense User Virtualization Platform.
- AppSense 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 AppSense.

TEI Framework And Methodology

Introduction

From the information provided in the interviews, Forrester has constructed a Total Economic Impact™ framework for those organizations considering implementing the AppSense User Virtualization Platform. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision.

Approach And Methodology

Forrester took a multistep approach to evaluate the impact that the AppSense User Virtualization Platform can have on an organization (see Figure 2). Specifically, we:

- Interviewed AppSense marketing and sales management and Forrester analysts to gather data relative to the User Virtualization Platform and the marketplace for desktop virtualization.
- Interviewed five organizations currently using the AppSense User Virtualization Platform to obtain data with respect to costs, benefits, and risks.
- Designed a composite organization based on characteristics of the interviewed organizations (see Appendix A).
- Constructed a financial model representative of the interviews using the TEI methodology. The financial model is populated with the cost and benefit data obtained from the interviews as applied to the composite organization.

Figure 2

TEI Approach



Source: Forrester Research, Inc.

Forrester employed four fundamental elements of TEI in modeling the AppSense User Virtualization Platform's service:

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

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

Analysis

Interview Highlights

A total of five interviews were conducted for this study, involving representatives from the following companies:

1. Global oil and gas exploration and production company based in the United States. The organization has a total of 6,000 employees and operates in the Americas, EMEA, and Australia.
2. Large Australian natural gas producers that serves customers in Australia and Asia. The organization has 2,800 employees working across its operations.
3. Large education institution with 20,000 concurrent user sessions based in Australia.
4. Large petroleum distributor based in Australia with 800 users, 200 retail stores, and 75 remote oil terminals or tank farms.
5. A large regional healthcare organization based in the United States with 6,000 employees, 40 clinics, and a 500-bed hospital. The organization is planning a large hospital expansion for 2014.

The five interviews revealed:

Interviewees had deep knowledge of infrastructure and system architects who were typically involved with all aspects of application delivery from design to implementation and back-end services. These organizations were running between 400 and 500 applications using shared server-based computing environment from a leading vendor.

The major reasons for deploying AppSense for the interviewed organizations were to:

- **Increase worker productivity, reduce downtime, and have less workforce interruption instances.** Our interviewees mentioned that in a shared server-based desktop computing environment, their users must have profiles that keep up with their settings. However, when using multiple applications, their profiles had a tendency to corrupt. The reason was that some applications do not behave optimally in a multiple user desktop environment, so they were writing to the same location at the same time for different settings. As a result, some of the settings wouldn't be retained properly, and sometimes the profiles wouldn't work at all. This series of events would leave users without any settings, resulting in frustration and loss of productivity.
- **Reduce support costs and have fewer desk-side support visits.** The profile corruption led to large volume of help desk calls and numerous desk-side support visits. Our interviewees agreed that their help desk staff was in reactive mode, addressing one profile issue after another. The help desk used to receive between 13 to 15 help desk calls per day for profile-related issues alone. Each call required 30 minutes to 45 minutes to resolve. The calls

typically involved one of two scenarios: Either the application wouldn't run because it didn't have the settings it needed, or the user couldn't run any applications because their settings were corrupted. There were processes for how to fix either scenario, but the user wouldn't be able to fix the problem themselves — it had to be done by either an administrator or a person with elevated privileges.

- **Reduce capital cost.** A number of interviewees mentioned that when they deployed their shared server-based computing solutions, the added flexibility sparked an increase in user adoption. While the increase in user adoption was the goal, they also noticed significant performance issues, which negatively affected users' experience. To address the performance issues, these organizations had to deploy additional servers to reduce the load per server and improve performance. This additional capital expenditure was especially painful because it was only a temporary fix, required additional support and management resources, needed space in the data center, and increased power and cooling costs. By deploying the AppSense Management Suite, these organizations were able to improve the scalability of existing infrastructure and reduce the need for additional server hardware, thus reducing capital expenses needed before the AppSense solution was implemented.
- **Improve employee satisfaction and provide more flexible remote access.** The organizations interviewed had 25% to 50% of their staff either working remotely or requiring access from different endpoints or through mobile devices. By offering the ability to connect and obtain access quickly, these organizations were able to see improved employee satisfaction. (Note: While the organizations interviewed discussed this point, we could not obtain enough data to quantify it.)
- **Reduce project-based costs.** A number of interviewed organizations used the AppSense solution to plan their upcoming platform or application migrations. For this study, we looked at the impact of migrating from Windows XP to Windows 7 for the composite organization. Prior to deployment of AppSense, the organizations interviewed were employing short-term contractors to provide help desk coverage so the existing full-time IT staff could focus on employee migrations. Our interviewees said that with a large number of remote users, their staff was expected to travel between three to five months during each deployment phase to ensure that everyone was successfully migrated. Because these organizations elected to hire temporary contractors to augment their permanent full-time staff instead of hiring additional full-time employees, they incurred additional expenses because the contractors' hourly rate was higher than full-time permanent headcount.
- **More easily support third-party contractors or new employee onboarding.** For some interviewees, the implementation of the AppSense solution provided faster contractor and new employee onboarding processes. While the organizations interviewed discussed this point, we could not obtain enough data to quantify it.
- **Managing licensing cost.** Another future benefit that our interviewees hoped to achieve with the AppSense Management Suite is the ability to more accurately track existing application license usage across the organization. This will allow these organizations to better negotiate the number of licenses needed in the future. While the organizations interviewed discussed this point, we could not obtain enough data to quantify it.

Composite Organization

Based on the interviews with the five existing customers provided by AppSense, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected. The

composite organization that Forrester synthesized from these results represents an organization with 2,500 workers, 40% of workers work outside of the main headquarters.

Framework Assumptions

Table 2 provides the model assumptions that Forrester used in this analysis.

Table 2
Model Assumptions

Ref.	Metric	Calculation	Value
A1	Hours per week		40
A2	Weeks per year		52
A3	Hours per year (M-F, 9-5)	(A1*A2)	2,080
A4	Average fully loaded annual salary of IT help desk administrator		\$83,200
A5	Average fully loaded hourly rate of IT help desk administrator	(A4/A3)	\$40
A6	Average fully loaded annual salary of IT staff		\$104,000
A7	Average fully loaded hourly rate of IT staff	(A6/A3)	\$50
A8	Average fully loaded annual salary of non-IT worker		\$100,000
A9	Average fully loaded annual salary of non-IT worker	(A8/A3)	\$48
A10	Average hourly rate of an IT contractor		\$125

Source: Forrester Research, Inc.

The discount rate used in the PV and NPV calculations is 10% and time horizon used for the financial modeling is three years. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult with their respective company's finance department to determine the most appropriate discount rate to use within their own organizations.

Costs

This section describes the costs related to the implementation of the AppSense Management Suite for the composite organization over a three-year period. The costs associated with deployment and ongoing management cost of the AppSense Management Suite is based on the composite organization. Cost categories have been defined based on

aggregated findings from the five customers interviewed for the TEI study. All costs are constructed on list price and do not include any negotiated discounts. The following cost model can serve as a framework for other organizations.

Forrester defines three categories of costs: software license and annual support costs, internal implementation cost, and external implementation costs. We did not allocate direct ongoing management costs to this implementation because the customers interviewed did not allocate a dedicated headcount or portion of resource effort to ongoing management. After implementing AppSense, these organizations measured a significant improvement on their environment's performance. As a result, they were able to reduce the number of ongoing, repetitive tasks and reallocate resources to more strategic projects.

Software License And Annual Support Costs

This category shows the license and annual support costs to implement the AppSense Management Suite. We based our estimates on the composite organization using Gold Support. The cost of this service is typically 20% of the license price. Tables 3 and 4 illustrate the total costs for 2,500 user organizations.

Table 3

Software License Fees

Ref.	Metric	Calculation	Initial
B1	License fees		\$119
B2	Number of licenses		2,500
Bt	Software license fees	$B1*B2$	\$297,500

Source: Forrester Research, Inc.

Software maintenance cost is paid annually starting in Year 1.

Table 4

Annual Software Maintenance Costs

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
C1	Total license cost		\$297,500	\$0	\$0	\$0
C2	Annual maintenance percentage		20%	20%	20%	20%
Ct	Annual software maintenance costs	$C1*C2$	\$0	\$59,500	\$59,500	\$59,500

Source: Forrester Research, Inc.

External Implementation Costs

This category represents the professional services costs associated with the AppSense Management Suite implementation. The organizations interviewed have used external resources to support their implementation efforts. Depending on the complexity of their environment and the skill set of their staff, these organizations have used professional services to support some combination of initial planning and implementation and the application migration effort.

Table 5 illustrates the investment in this category for the composite organization. The cost is estimated based on an hourly rate of \$150. We estimate the two consultants allocated a total of:

Table 5

External Implementation Costs

Ref.	Metric	Calculation	Initial
C1	Number of consultants		2
C2	Consultant hourly rate		\$150
C3	Number of hours per day		8
C4	Number of days per engagement		17
Ct	External implementation costs	$C1 * C2 * C3 * C4$	\$40,800

Source: Forrester Research, Inc.

Internal Implementation Costs

This category represents internal efforts associated with the implementation of the AppSense Management Suite and the planning necessary to migrate the organization from their Windows XP platform to Windows 7.

The interviews with five existing customers revealed that these organizations initially deployed AppSense Management Suite to manage performance challenges they faced with their existing shared server-based computing environment. These organizations initially allocated resources to basic deployment of AppSense. After completing the initial deployment, they assigned resources to planning, migration, and testing of their Windows XP to Windows 7 project.

Table 6 represents planning, implementation, testing, and training resources and a breakdown of costs for the composite organization.

Table 6
Planning, Implementation, And Training Costs

Ref.	Metric	Calculation	Initial	Year 1
D1	Number of staff participating in planning for application migration		3	3
D2	Average fully loaded hourly rate of IT staff		\$50	\$50
D3	Total number of hours allocated to application migration	6 months dedicate 20 hours per week to planning		520
D4	Number of weeks required for planning and implementation for desktop virtualization		4	
D5	Number of hours per week		25	
D6	Training costs		\$5,000	
Dt	Planning, implementation, and training costs	$D1 * D2 * (D3 + D4 * D5) + D6$	\$20,000	\$78,000

Source: Forrester Research, Inc.

Total Costs

Table 7 summarizes the investment in the AppSense Management Suite and its related planning and implementation costs.

Table 7
Total Costs — Non-Risk-Adjusted

Ref.	Cost category	Initial	Year 1	Year 2	Year 3	Total	PV
Ato	Software license fees	(\$297,500)	\$0	\$0	\$0	(\$297,500)	(\$297,500)
Bto	Annual software maintenance costs	\$0	(\$59,500)	(\$59,500)	(\$59,500)	(\$178,500)	(\$147,968)
Cto	External implementation costs	(\$40,800)	\$0	\$0	\$0	(\$40,800)	(\$40,800)
Dto	Planning, implementation, and training costs	(\$20,000)	(\$78,000)	\$0	\$0	(\$98,000)	(\$90,909)
	Total costs	(\$358,300)	(\$137,500)	(\$59,500)	(\$59,500)	(\$614,800)	(\$577,177)

Source: Forrester Research, Inc.

Benefits

This category represents the benefits derived from the implementation of the AppSense Management Suite for organizations that have faced performance and profile corruption challenges with their existing shared server-based computing environment.

The organizations interviewed experienced a series of end user profile corruptions and increased logon times on a regular basis. These challenges consumed IT help desk resources to allow the user to get back into the system and work. In addition, it forced IT to acquire additional servers to improve performance. These organizations were also considering specific application or platform migration projects that would affect all workers within the organization. Some of the workers from the interviewed organizations were located outside of the headquarters or main offices. As a result, the application or platform migration project was more complex to ensure that remote workers can have a seamless migration.

For the composite organization, we have identified four categories of benefits: IT operational cost savings, worker productivity cost savings, IT capital expense cost savings, and project-based operational cost savings. The sections below describe these benefits in detail.

IT Help Desk Productivity Cost Savings

Interviewed customers noted that their help desk team received a number of inquiries annually to address ongoing profile corruption issues. These calls usually lasted about 30 minutes or required additional back-end effort to address the issue. These interruptions forced IT into a reactive mode. Our interviewees said that after implementing the AppSense Management Suite, they were able to eliminate 100% of these types of calls.

For the composite organization; this category represents 9% of the overall benefits. We estimate that the help desk for the composite organization received 4,875 calls annually prior to implementing the AppSense Management Suite. We assume an IT help desk staff spent 30 minutes to address this issue. To remain conservative, we estimate that the organization was able to eliminate 90% of these calls after migration to AppSense. Table 8 illustrates the calculation.

Table 8

IT Help Desk Staff Productivity Cost Savings

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
A1	Annual number of help desk call			4,875	4,875	4,875
A2	Fully loaded hourly rate of IT help desk staff			\$40	\$40	\$40
A3	Number of hours saved			0.5	0.5	0.5
A4	Percentage of reduction in user profile issues			90%	90%	90%
At	IT help desk staff productivity cost savings	A1*A2*A3*A4	\$0	\$87,750	\$87,750	\$87,750

Source: Forrester Research, Inc.

Workers Productivity Cost Savings

Our interviewees said that in addition to IT help desk productivity loss, the workers also experienced disruption and productivity loss as a result of profile corruption. For this category, we are estimating the impact of reduction in the number of help desk calls from the standpoint of worker or end users.

Based on the interviews, we estimated this benefit for the composite organization. We assume workers experiencing profile corruption lose 50 minutes of productive time per incident. This category represents 17% of the overall benefits. To remain conservative, we estimate that the organization was able to eliminate 90% of these calls after migrating to AppSense. Table 9 illustrates the calculation.

Table 9

Workers Productivity Cost Savings

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
B1	Annual number of help desk call			4,875	4,875	4,875
B2	Workers average fully loaded hourly rate			\$48	\$48	\$48
B3	Number of hours saved			0.8	0.8	0.8
B4	Percentage of reduction in user profile issues			90%	90%	90%
Bt	Workers productivity cost savings	$B1*B2*B3*B4$	\$0	\$168,480	\$168,480	\$168,480

Source: Forrester Research, Inc.

Another aspect of end user productivity gain is improvement in logon time. The organizations interviewed noted that they have experienced a 10-minute (or 90%) improvement in average logon time after deployment of AppSense. We assumed that 45% of the composite organization end users work remotely or outside headquarter and main offices.

To remain conservative, we estimate that the organization was able to eliminate 50% of these calls after migration to AppSense. Table 10 illustrates the calculation.

Table 10
Reduced Workers Log On Time

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
C1	Number of workers			2,500	2,500	2,500
C2	Percent of employees working outside of headquarter and main offices			45%	45%	45%
C3	Workers average fully loaded hourly rate			\$48	\$48	\$48
C4	Reduction in logon time			0.2	0.2	0.2
C5	Number of working weeks per year			50	50	50
C6	Percent of savings captured			50%	50%	50%
Ct	Reduced workers logon time	$C1 * C2 * C3 * C4 * C5 * C6$	\$0	\$270,000	\$270,000	\$270,000

Source: Forrester Research, Inc.

Capital Expense Cost Savings

Our interviewees mentioned after deploying AppSense, IT organizations were able to quickly address the performance challenges of their shared server-based computing environments.

The organizations interviewed were required to add servers to address performance challenges, profile corruption, and extended logon times. The increase in the number of servers in the short term increased capital expenses and raised operational costs to support the added hardware. For example, one of our interviewees mentioned that the organization deployed to shared server-based computing terminal for about 1,100 users. Shortly after, the user adoption grew to 1,300 and the performance was significantly reduced. At that point, the organization had to purchase physical servers to maintain performance. As the number of users grew to 1,500, 1,700, and 2,100, instead of deploying additional servers, the organization deployed AppSense and was able to increase performance to meet the demand. If the organization didn't have the AppSense Management Suite, for every 200 users, it was required to add additional hardware to address performance challenges.

Based on the result derived from the interviews, we estimate that the composite organization was required to deploy a server in Year 1, and two servers in Year 2. We estimate the cost at \$35,000 per server and we assume that the organization eliminated this cost completely. Table 11 illustrates the calculation.

Table 11
Capital Cost Savings Resulting From Performance Improvement

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	Number of servers			1	2	
F2	Cost per server			\$35,000	\$35,000	
F3	Percent of saving captured			100%	100%	
Ft	Capital cost savings resulting from performance improvement	$F1 * F2 * F3$	\$0	\$35,000	\$70,000	

Source: Forrester Research, Inc.

Project-Based Cost Savings

The final aspect of benefits illustrates the one-time value gained from application or platform migration efforts that the organizations interviewed achieved.

A number of interviewed organizations used the AppSense solution to design their upcoming platform or application migration process. For this study, we measured the impact of migrating from Windows XP to Windows 7 for the composite organization.

Prior to deployment of AppSense, these organizations employed short-term contractors to provide help desk coverage so the existing full-time IT staff could focus on employee migrations. Our interviewees mentioned that with a large number of remote users, their staff was expected to travel between three to five months during each deployment phase to ensure that everyone is successfully migrated. These organizations elected to hire temporary contractors as opposed to permanent full-time staff. However, the tradeoff was that the contractors' hourly rate was higher than full-time permanent headcount.

Based on the interviews, we estimate that the composite organization had two rollout phases. In Year 1, the organization migrated 1,000 users and then 1,500 users in Year 2. We calculate that a total of three contractors at an average hourly rate of \$125 were hired to provide 1,040 hours or 26 weeks of support during Year 1 and the same during Year 2. Table 12 illustrates the investment for this category. Our interviewees agreed that after implementing the AppSense solution, they could completely eliminate this expense.

Table 12
Contractors Cost Avoidance To Replace IT Staff Needed For On-Site Migration

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
D1	Number of contractors hired			3	3	

D2	Average hourly rate			\$125	\$125	
D3	Number of hours			1,040	1,040	
D4	Percent of savings captured			100%	100%	
Dt	Contractors cost avoidance to replace IT staff needed for on-site migration	$D1 * D2 * D3 * D4$	\$0	\$390,000	\$390,000	\$0

Source: Forrester Research, Inc.

Another aspect of this benefit is the reduction in administrative effort when migrating from Windows XP to Windows 7. In addition to planning, these organizations expected significant travel and desk-side support demand for their IT administrators. Based on the interviews with five customers, we estimate that the composite organization was able to reduce the time required to migrate each user by three hours. We assumed that three IT administrators were still allocated to the platform migration project, and that they migrated 1,000 users in Year 1, and then 1,500 users in Year 2. To remain conservative, we estimate that 50% of this productivity benefit was realized. Table 13 shows the calculation.

Table 13
IT Administrators Physical Application Migration Cost Avoidance

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
E1	Number of IT administrators			3	3	
E2	Average time required to migrate each end user			3	3	
E3	Average fully loaded hourly rate of IT help desk staff			\$40	\$40	
E4	Number of end users migrated			1,000	1,500	
E5	Percent of savings captured			50%	50%	
Et	IT administrators physical application migration cost avoidance	$E1 * E2 * E3 * E4 * E5$	\$0	\$180,000	\$270,000	\$0

Source: Forrester Research, Inc.

Total Benefits

Table 14 summarizes the total quantitative benefits associated with implementation of the AppSense Management Suite.

Table 14

Total Benefits — Non-Risk-Adjusted

Ref.	Benefit category	Initial	Year 1	Year 2	Year 3	Total	PV
Ato	IT staff (help desk) productivity cost savings	\$0	\$87,750	\$87,750	\$87,750	\$263,250	\$218,221
Bto	End user productivity cost savings	\$0	\$168,480	\$168,480	\$168,480	\$505,440	\$418,985
Cto	Reduced workers logon time	\$0	\$270,000	\$270,000	\$270,000	\$810,000	\$671,450
Fto	Capital cost savings resulting from performance improvement	\$0	\$35,000	\$70,000	\$0	\$105,000	\$89,669
Dto	Contractors cost avoidance to replace IT staff needed for on-site migration	\$0	\$390,000	\$390,000	\$0	\$780,000	\$676,860
Eto	IT administrators physical application migration cost avoidance	\$0	\$180,000	\$270,000	\$0	\$450,000	\$386,777
	Total benefits	\$0	\$1,131,230	\$1,256,230	\$526,230	\$2,913,690	\$2,461,962

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. This provides an organization with the “right” or the ability to engage in future initiatives but not the obligation to do so. There are multiple scenarios in which a customer might choose to implement the AppSense Management Suite and later realize additional uses and business opportunities. Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix B).

Our interviewees are planning to use the AppSense Management Suite when tracking existing application license usage across their respective organizations. This will allow these organizations to negotiate the number of licenses needed in the future. Table 15 offers an overview of flexibility benefit calculation framework.

Table 15
Flexibility Benefit Framework

Metric	Measurement
Asset value (benefit)	IT or business costs avoided, increase in end user productivity, and revenue generated
Cost to acquire option	Planning, development, and testing costs to produce the AppSense Management Suite to track existing corporate licenses across the organization
Expiration	Time-to-expire (in years)
Flexibility	Black-Scholes option pricing model

Source: Forrester Research, Inc.

Risk

Forrester defines two types of risk associated with this analysis: implementation risk and impact risk. “Implementation risk” is the risk that a proposed investment in the AppSense Management Suite may deviate from the original or expected requirements, resulting in higher costs than anticipated. “Impact risk” refers to the risk that the business or technology needs of the organization may not be met by the investment in User Virtualization Platform, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for cost and benefit estimates.

Quantitatively capturing investment and impact risk by directly adjusting the financial estimates results in more meaningful and accurate estimates and a more accurate projection of the ROI. In general, risks affect costs by raising the original estimates, and they affect benefits by reducing the original estimates. The risk-adjusted numbers should be taken as “realistic” expectations since they represent the expected values considering risk.

The following implementation risks that affect costs are identified as part of this analysis:

- Third-party resources needed during planning and implementation may vary from the estimates offered for the composite organization.
- The implementation costs could vary based on the internal skill set and competencies.

The following impact risks that affect benefits are identified as part of the analysis:

- The improvement in IT administrative effort could vary depending on the prior environment, number of applications being managed, and level of performance issues that end users are experiencing.
- Additional hardware acquisition could vary depending on the organization’s infrastructure and virtualization effort.
- The level of downtime and logon challenges could vary from what is originally anticipated depending on the network availability and connectivity issues for remote locations.

Table 16 shows the values used to adjust for risk and uncertainty in the cost and benefit estimates. 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. Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

Table 16
Cost And Benefit Risk Adjustments

Costs	Low	Most likely	High	Mean
Software license fees	98%	100%	105%	101%
Annual software maintenance costs	98%	100%	105%	101%
External implementation costs	100%	100%	200%	133%
Planning, implementation, and training costs	100%	100%	200%	133%
Benefits	Low	Most likely	High	Mean
IT staff (help desk) productivity cost savings	92%	100%	105%	87%
End user productivity cost savings	92%	100%	105%	87%
Reduced workers logon time	92%	100%	105%	87%
Contractors cost avoidance to replace IT staff needed for on-site migration	80%	100%	103%	94%
IT administrators physical application migration cost avoidance	80%	100%	103%	94%
Capital cost savings resulting from performance improvement	80%	100%	103%	94%

Source: Forrester Research, Inc.

Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

Financial Summary

The financial results calculated in the Costs and Benefits sections can be used to determine the return on investment, net present value, and payback period for the organization's investment in the AppSense Management Suite. These are shown in Table 17 below.

Table 17

Cash Flow — Non-Risk-Adjusted

Categories	Initial	Year 1	Year 2	Year 3	Total	PV
Costs	(\$358,300)	(\$137,500)	(\$59,500)	(\$59,500)	(\$614,800)	(\$577,177)
Benefits	\$0	\$1,131,230	\$1,256,230	\$526,230	\$2,913,690	\$2,461,962
Net benefits	(\$358,300)	\$993,730	\$1,196,730	\$466,730	\$2,298,890	\$1,884,785
ROI	327%					
Payback period	4 months					

Source: Forrester Research, Inc.

Table 18 below shows the risk-adjusted ROI, NPV, and payback period values. These values are determined by applying the risk-adjustment values from Table 16 in the Risk section to the costs and benefits numbers in Tables 7 and 14.

Table 18

Cash Flow — Risk-Adjusted

Categories	Initial	Year 1	Year 2	Year 3	Total	PV
Costs	(\$381,339)	(\$163,835)	(\$60,095)	(\$60,095)	(\$665,364)	(\$625,095)
Benefits	\$0	\$1,098,668	\$1,220,668	\$520,968	\$2,840,303	\$2,399,016
Net benefits	(\$381,339)	\$934,833	\$1,160,573	\$460,873	\$2,174,939	\$1,773,921
ROI	284%					
Payback period	5 months					

Source: Forrester Research, Inc.

The AppSense Management Suite: Overview

According to AppSense, its User Virtualization technology enables people-centric computing. This disruptive technology decouples all aspects of the user from the device, manages this “persona” independent of the device, and applies it to any device on demand — be it physical PC, virtual desktop, or mobile device. The result is a device-independent environment, where BYOD becomes a reality without compromising security or integrity. Some of the benefits in user virtualization are listed below:

- **The same user experience on all devices.** All applications and personalization look and feel the same.
- **Reduction in IT complexity.** Migrations are easier, support costs go down, and licensing is optimized and properly managed.
- **Leverage of existing technologies.** Allows IT to easily stitch together PC, virtual desktops, virtual apps, and mobile devices into a cohesive solution.
- **Security and transparency.** Enables data storage and access, application management, user rights, and policy enforcement.

Appendix A: Composite Organization Description

Based on the interviews with the five existing customers provided by AppSense, Forrester created a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected. The composite organization that Forrester synthesized from these results represents an organization with 2,500 workers, 40% of workers work outside of the main headquarters. The organizations interviewed for this study were also managing between 400 and 600 applications.

In purchasing the AppSense Management Suite, the composite company has the following objectives:

- Extend the life of current desktops by either migrating to lower-cost or lower-risk thin clients, or some combination of these options.
- Increase data security and centralization, and simplify patch management.
- Increase user productivity, reduce downtime, and ensure fewer workforce interruptions.
- Improve employee satisfaction and provide more flexible remote access.
- Create more flexibility by providing access to work resources from personal devices including mobile devices.
- Reduce support costs and fewer desk-side support visits.
- More easily support third-party contractors.
- Ensure strong business continuity and disaster recovery strategies.

For the purpose of the analysis, Forrester assumes that the composite organization has also been evaluating options to also reduce time to close mergers and acquisitions and improve onboarding of new employees.

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.

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 form 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: 1) the likelihood that the cost and benefit estimates will meet the original projections, and 2) 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 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 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 respective 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 Framework Assumptions section) 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.

Appendix D: Endnotes

¹ Forrester risk-adjusts the summary financial metrics to take into account the potential uncertainty of the cost and benefit estimates. For more information on Risk, please see page 20.