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*Prepared for Citrix Systems, Inc.*

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## **The Total Economic Impact™ Of The Application Streaming Feature of Presentation Server 4.5**

### **Single Company Analysis**

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**The Total Economic Impact™ Of The Application Streaming Feature of Citrix Systems, Inc.  
Presentation Server 4.5**

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## **Executive Summary**

In 2006, Citrix Systems, Inc., commissioned Forrester Research to examine the financial impact and potential benefits of implementing the application streaming feature of Citrix Systems, Inc.'s Presentation Server 4.5. To evaluate the impact, Forrester examined the specific costs and risk elements incurred, and benefits and flexibility realized, by a customer in the EAP (early adopter program) that implemented the beta version of the application streaming feature of Presentation Server 4.5 to deploy Windows desktop applications. This customer, Sonnenschein Nath and Rosenthal LLP, employs 700 lawyers and other professionals in 11 US cities and Brussels. With a global reach throughout the Americas, Asia, and the Middle East, the firm serves the legal and public interest needs of many of the world's best-known and most admired businesses, nonprofits, and individuals. Founded in 1906, the firm is a leader in innovative legal services, serving its clients through integrated interoffice cooperation and teamwork among practice groups to provide efficient, effective, and timely legal services and business counseling.

### **Purpose**

The purpose of this study is to provide readers with a framework for evaluating the potential financial impact of implementing the application streaming feature of Citrix Systems, Inc.'s Presentation Server 4.5. Forrester's aim is to clearly show all calculations and assumptions that go into the analysis as a way to further readers' understanding of, and help them to evaluate, the application streaming feature of Presentation Server 4.5.

### **Methodology**

Citrix Systems, Inc., selected Forrester for this project because of our expertise in application delivery infrastructure solutions and Total Economic Impact (TEI) analysis methodology. TEI measures not only costs and benefits (areas typically accounted for within IT), but also the enabling value of increasing the overall effectiveness of business processes. Forrester's TEI methodology serves an extremely useful purpose by providing a complete picture of the total economic impact of purchase decisions (Appendix A provides additional information about the TEI methodology).

### **Approach**

Forrester employed a four-step approach in this study.

1. Forrester interviewed Citrix Systems, Inc.'s marketing, product management, and sales employees in an attempt to more fully understand the value proposition of the application streaming feature of Presentation Server 4.5.
2. Using knowledge of the product, as well as input from existing Forrester research and Citrix Systems, Inc., a Forrester representative interviewed Michael Barnas, director of Application Services, and Mark Nolan, manager of Application Operations, about the costs, benefits, risks, and flexibility options of using the application streaming feature of Citrix Systems, Inc.'s Presentation Server 4.5.
3. Forrester constructed a financial value model representative of the data collected in the interviews.
4. Forrester created this study, which examines and represents the estimated value of the findings derived from the customer interview and analysis process as well as from Forrester's independent research.

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## Key Findings

Table 1 summarizes the costs Sonnenschein will incur and savings it may realize over a four-year period from deploying the application streaming feature of Citrix Systems, Inc.'s Presentation Server 4.5.

**Table 1: Four-year Summary Financial Results — Sonnenschein Nath and Rosenthal LLP**

Summary of financial results	Risk-adjusted
Total costs (present value) *	(\$85,918)
Total cost savings and benefits (PV)	\$1,247,084
Total (net present value)	\$1,161,166
Payback period	Within 30 days

Source: Forrester Research, Inc.

The four-year, risk-adjusted total net present value (NPV) of \$1,161,166 represents the incremental net cost savings and benefits attributed to using the application streaming feature of Presentation Server 4.5 to deploy Windows applications to (at any given time) an average of 100 disconnected desktop/laptop users as compared to Sonnenschein's prior use of Presentation Server without the application streaming feature. (Details are provided below in the Costs, Benefits, Flexibility, and Risk sections.) Forrester Research and Sonnenschein also identified significant unquantified business benefits attributable to the application streaming feature of Presentation Server 4.5 (see page 10).

\* Note: Forrester did not include license or support costs associated with Citrix Systems, Inc.'s Presentation Server 4.5 because the application streaming feature of Presentation Server 4.5 is "included" in the license fee, no licensing costs are specifically associated with this feature. Instead, this study focuses on the *incremental* costs and benefits associated with implementing the application streaming feature of a product (Presentation Server 4.5) Sonnenschein has already purchased.

A risk-adjusted NPV that demonstrates a compelling business case 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, because they represent the expected value considering risk, should thus be taken as "realistic" expectations. Assuming normal success at mitigating risk, the risk-adjusted numbers should more closely reflect the expected outcome of the investment.

The objective of this study is to illustrate the savings and benefits Sonnenschein realized from deploying the application streaming feature of Presentation Server 4.5, not those that other organizations might obtain by doing so. The results can nevertheless guide other organizations' expectations with respect to the savings and benefits that might be realized in their particular business environments.

## Disclosures

The reader should be aware of the following disclosures associated with this study.

- The study was commissioned by Citrix Systems, Inc., and delivered by the Forrester Consulting group.

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- Citrix Systems, Inc., and Sonnenschein reviewed and provided feedback to Forrester, but Forrester maintained editorial control over the study, its findings, and financial data. Forrester did not accept any changes to the study that contradicted its findings, obscured the meaning of the study, or changed any of the data collected.
- The customer name for the study was provided by Citrix Systems, Inc.
- Forrester makes no assumptions as to potential savings other enterprises might realize within their business environments. Forrester strongly advises readers to use their own estimates within the framework provided in the study to determine the appropriateness of implementing the application streaming feature of Presentation Server 4.5.
- This study is not an endorsement by Forrester of Citrix Systems, Inc., or its offerings.
- The study is not a competitive product analysis.

## **About The Application Streaming Feature Of Citrix Systems, Inc.'s Presentation Server 4.5.**

Citrix Systems, Inc., describes application streaming as an innovative new feature of its Presentation Server 4.5 product that enhances IT administrators' ability to centralize management of all Windows-based applications. By integrating application virtualization and application streaming in a single solution, Presentation Server can dynamically select the best application delivery method based on user profile, application type, and physical location. Applications thereby become an on-demand service that is always available and always up to date.

### **Customer Challenges**

The reality today is that many companies are hitting a wall of complexity when it comes to managing their ever-growing number of desktop applications and diverse access scenarios. This complexity translates into a huge amount of time and money spent providing what amount to patchwork solutions. The application streaming feature of Presentation Server 4.5 offers a compelling solution for centrally delivering all Windows-based applications to both Presentation Server environments and desktops.

### **Simplify Management, Cut Costs**

The application streaming feature of Presentation Server 4.5 reduces the cost of testing, installing, and supporting applications. Applications are streamed to a protected isolation environment, greatly simplifying application management.

The application streaming feature of Presentation Server 4.5 enables IT to do the following.

- Deliver Microsoft Windows applications, including 2007 Microsoft Office system and Microsoft Vista applications, to desktops and laptops. Application streaming can also deliver Microsoft Windows Server 2003, Windows Server 2003 x64, and Microsoft Windows 2000 Server applications across Presentation Server farms.
- Eliminate application conflicts and operating system instability resulting from desktop application installation.

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- Reduce the costs associated with regression testing, deployment, maintenance, updates, and de-provisioning for applications being run locally on users' machines.
- Enable IT to offer applications as an on-demand service.
- Lower application support costs by automatically updating and repairing applications every time they are used.
- Speed regulatory and security compliance by eliminating the need for extensive testing to certify applications.
- Enhance security by giving IT administrators complete control over applications delivered to desktops, even those of unmanaged partners and users.

## **Sonnenschein Adopts The Beta Version**

Sonnenschein serves the legal and public interest needs of many businesses, nonprofits, and individuals with 700 lawyers and other professionals in eleven U.S. cities and Brussels and global reach throughout the Americas, Asia, and the Middle East.

Sonnenschein's business environment includes approximately 1,600 desktops and 250 applications. At any given time, approximately 100 of the 700 lawyers and other professionals are remote, disconnected users.

Sonnenschein began using the beta version of the application streaming feature of Presentation Server 4.5 in August 2006 to satisfy a high-level strategic business objective of supporting the mobility needs of these disconnected users in order to enable on-demand offline productivity.

With application streaming, Citrix Systems, Inc.'s Presentation Server 4.5 will extend Sonnenschein's ability to centrally manage and deliver Windows-based applications to these 100 users (and possibly to all users in the future). The streaming feature will deliver applications to their devices whenever and wherever the attorneys want them, even when they're not connected to a network. Applications are cached locally in an "isolation environment" rather than installed on the device, eliminating application conflicts and the need for extensive compatibility and regression testing.

Tactical problems and issues that it will be trying to remedy or resolve by implementing the application streaming feature of Presentation Server 4.5 are prioritized by Sonnenschein below.

- Enabling users to use applications offline.
- Reducing the cost of compatibility testing.
- Reducing costs of regression testing.
- Reducing application installation costs.
- Controlling costs related to the number and use of software licenses.
- Facilitating management of frequent real-time updates.
- Reducing application change management costs.

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- Relieving frustration arising from desktop application conflicts.
- Reducing costs by managing only one image of applications.
- Reducing costs of desktop refresh cycles.
- Speeding de-provisioning of applications from terminated employees, contractors, partners, etc.

## Costs, Benefits, Flexibility, And Risks

To calculate the NPV for Sonnenschein's investment in the application streaming feature of Presentation Server 4.5, Forrester analyzed the costs, benefits, flexibility, and risks associated with deploying the solution.

### Costs

The incremental costs associated with implementing and maintaining the application streaming feature of Presentation Server 4.5 will total **\$98,300** for the four-year period of this analysis, and include the following expenses.

- **Pre-preplanning, deployment, and configuration labor — \$2,700.** Labor associated with planning the implementation of the application streaming feature of Presentation Server 4.5 cost \$2,700 for 80 hours of time and effort (using a fully loaded cost per person of \$70,000). The preplanning tasks included architectural planning, application validation, functional and performance testing, and assessment of the user community to determine which candidates were best positioned to take advantage of the streaming feature.
- **Citrix Systems, Inc.'s Presentation Server 4.5 license and annual support costs — \$0.00 (zero \$).** In August 2006, Sonnenschein purchased 185 Presentation Server licenses. In March 2007, it increased the total to 300 licenses and expects to have purchased a total of 1,500 licenses by December 2007. Forrester did not include license or support costs associated with Citrix Systems, Inc.'s Presentation Server 4.5 because the application streaming feature is "included" in the license fee. There being no licensing costs specifically associated with this feature, this study focuses instead on the *incremental* costs and benefits associated with implementing a feature (application streaming) of a product (Presentation Server 4.5) Sonnenschein has already purchased.
- **Adding two servers — \$25,600.** To host the application streaming feature of Presentation Server 4.5 required two servers and software purchased at an initial cost of \$16,000 plus \$3,200 annually for maintenance support.
- **IT Administrator — \$70,000.** To manage the application streaming feature of Presentation Server 4.5 necessitated allocating ¼ FTE to administer the solution at a cost of \$17,500 annually.

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**Table 2: Sonnenschein’s Projection Of Incremental Costs Associated With The Application Streaming Feature Of Presentation Server 4.5.**

Projected costs	2006 (Early adopter)	2007 (Ramp-up)	2008 (Fully deployed)	2009 (Fully deployed)	Total	PV
Pre-preplanning, deployment, and configuration labor	\$2,700	0	0	0	\$2,700	\$2,700
CPS license costs	0	0	0	0	\$0	\$0
Two servers to host Citrix Systems, Inc.’s solution	\$16,000	\$3,200	\$3,200	\$3,200	\$25,600	\$23,686
IT administrator (1/4 FTE)	\$17,500	\$17,500	\$17,500	\$17,500	\$70,000	\$59,532
<b>Total costs</b>	<b>\$36,200</b>	<b>\$20,700</b>	<b>\$20,700</b>	<b>\$20,700</b>	<b>\$98,300</b>	<b>\$85,918</b>

Source: Forrester Research, Inc.

## Benefits — Quantified

Sonnenschein is projecting that implementing the application streaming feature of Presentation Server 4.5 will yield the following significant, quantifiable benefits valued in the aggregate at **\$3,083,680** (non risk-adjusted). At the time of the interview, the company was in beta early adopter mode. It predicts that full implementation will occur *during* 2007 with completion by the end of that year. Forrester and Sonnenschein recognize that the 2007 benefits will ramp up and represent only 33% of subsequent full-years’ benefits in 2008 and 2009. Forrester discusses additional benefits Sonnenschein was not able to quantify at this time on page 10.

**Incremental billings (revenue) — \$2,706,280.** Initial projections suggest that the application streaming feature of Presentation Server 4.5 will reduce login time for the 100 remote, disconnected users (10 minutes saved per day). As a result, Sonnenschein predicts that billings (revenue) will increase an average of \$11,660 per (disconnected) attorney per year, for an annual revenue increase of \$1,160,000. With 2007 being a ramp-up year for benefits, Forrester assumes that \$386,280 or 33% of the benefit will be realized in 2007 and 100% in 2008 and 2009.

**Savings in regression testing — \$210,000.** **Michael Barnas**, Sonnenschein’s director of Application Services, states that prior to implementing the application streaming feature of Presentation Server 4.5 regression testing represented 50% of the company’s overall application deployment cost. The director predicts that after adding the application streaming feature of Presentation Server 4.5, the cost of regression testing will be reduced to 35% to 40% of overall costs. The reduction in regression testing time and effort will save Sonnenschein 2.0 FTEs annually beginning six months after the full implementation of the application streaming feature. Sonnenschein will thus be able to re-deploy 2.0 FTEs beginning mid-2008 saving \$70,000 in 2008 and \$140,000 in 2009 (2.0 FTEs at an annual fully loaded cost of \$70,000 each).

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**Reduction in application management costs — \$105,000.** Sonnenschein believes it will be able to reduce its six-person application management team by one FTE using the application streaming feature of Presentation Server 4.5, and thus be able to re-deploy one application management staff beginning mid-2008 saving \$35,000 in 2008 and \$70,000 in 2009 (1.0 FTE at an annual fully loaded cost of \$70,000).

**Savings in remote application deployments — \$38,400.** Sonnenschein’s current ESD (electronic software distribution) tools were not adequate to deploy applications to disconnected users or to small offices with no distribution server and over relatively small network circuits (Sonnenschein does not leverage a VPN, or virtual private network). With the application streaming feature of Presentation Server 4.5, the company will be able to distribute applications and critical updates to these remote users much more quickly and cost effectively. These attorneys were often in locations in which needed applications could not be gotten to them, with the result that Sonnenschein would sometimes need to fly IT support people to a remote attorney’s office or to client location to download software or complete upgrades. These trips historically occurred about five times per year at the cost of the IT support person being out of the corporate office for two days per trip plus travel expenses. Sonnenschein estimates savings per trip at \$560 in labor and \$2,000 in expenses for total annual savings of \$12,800 in years 2007, 2008, and 2009.

**Decommission WinINSTALL servers — \$24,000.** Sonnenschein will be able to achieve cost reductions by decommissioning four WinINSTALL servers. Centralizing its Presentation Server 4.5 application streaming environment will spare Sonnenschein the costs associated with refreshing these four servers over the next three years. Savings will be \$8,000 per year in each year of this analysis.

**Table 3: Non-Risk Adjusted Benefits — Sonnenschein’s Projection Of Incremental Benefits Associated With The Application Streaming Feature Of Presentation Server 4.5.**

Projected benefits	2006 (Early adopter)	2007 (Ramp-up)	2008 (Fully deployed)	2009 (Fully deployed)	Total benefits
Incremental billings (revenue)	\$0	\$386,280	\$1,160,000	\$1,160,000	\$2,706,280
Savings in regression testing	\$0	\$0	\$70,000	\$140,000	\$210,000
Reduction in application management costs	\$0	\$0	\$35,000	\$70,000	\$105,000
Savings in remote application deployments	\$0	\$12,800	\$12,800	\$12,800	\$38,400
Decommission WinINSTALL servers	\$0	\$8,000	\$8,000	\$8,000	\$24,000
<b>Total benefits</b>	<b>\$0</b>	<b>\$407,080</b>	<b>\$1,285,800</b>	<b>\$1,390,800</b>	<b>\$3,083,680</b>

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Source: Forrester Research, Inc.

### Benefits — Unquantified

Sonnenschein identified the following future benefits of using the application streaming feature of Presentation Server 4.5, but was *not* able to quantify these benefits at this time.

Most of the quantified benefits (see Table 3, above) are associated with the approximately 100 disconnected users. Sonnenschein believes it will be able to leverage the application streaming feature of Presentation Server 4.5 for its connected users as well, saving time and effort when deploying upgrades and applications across the entire user base, which today can be a very lengthy process. According to the director of application services, if the application streaming feature of Presentation Server 4.5 could significantly reduce the amount of time it takes to deploy applications, then Sonnenschein would leverage it across the entire enterprise.

Sonnenschein also anticipates future savings in license fees. In the past, Sonnenschein IT would rely on user groups to tell them how many licenses were needed; and typically users initially overestimated the need and/or did not notify IT when users stopped using applications. Another scenario involved IT deploying an application to a specific user for a short-term need and then not revoking the application after the need expired, tying up a license and incurring the associated cost. The application streaming feature of Presentation Server 4.5 will help Sonnenschein control who has which applications and when they can be taken back, thereby reducing future license fees.

### Flexibility Options

Flexibility, as defined by Forrester's TEI methodology, involves investing in additional capacity or agility today that can be turned into business benefits in the future, at some additional cost. Sonnenschein identified as a flexibility benefit of the application streaming feature of Presentation Server 4.5 that it can be used to reduce regression testing by *users*.

Because Sonnenschein is not yet ready to quantify the benefits or value of this flexibility option, Forrester will not include the value of this flexibility benefit in this analysis.

Some readers of this study might believe that their organizations are ready to take advantage of the flexibility options afforded by the application streaming feature of Presentation Server 4.5; in such instances, the option will have a present value that can be estimated. The flexibility component of TEI captures that value. The value of flexibility is clearly unique to each organization, and the willingness to measure its value varies from organization to organization (see Appendix A for additional information regarding flexibility).

### Risks And Risk Mitigation Strategies

Two aspects of risk and risk mitigation are considered in this study: project risks, and risks associated with the estimates of costs and benefits in a business case. There are summarized below.

#### *Project Risk And Mitigation*

Sonnenschein identified the following two risks associated with IT projects in general and with the application streaming feature of Presentation Server 4.5, in particular.

- Sonnenschein had issues with application integration during user sessions with the beta version of the solution. There was some difficulty getting the applications to interact with each other within the beta environment.

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- End users experienced an initial slowness when the application's core functionality was being streamed for the first time, but reported that this problem was not encountered the next and subsequent times they accessed the application, except when downloading new application functionality for the first time, which caused the same performance degradation as experienced when initially streaming the application's core functionality.

Sonnenschein believes that the application streaming feature of Presentation Server 4.5 will never be risk-free (as is the case with all IT projects), but IT staff were able to mitigate some risks by working closely with Citrix Systems, Inc.'s engineering team prior to implementation.

### *Risks Associated With Estimates Of Costs And Benefits*

For this study, benefit estimates are based on Sonnenschein's experiences with the beta version of the application streaming feature of Presentation Server 4.5. Because the future cannot be accurately predicted, there is risk inherent in predicting costs and benefits. Risk assessments provide a range of possible outcomes that reflect the risks associated with the cost and benefit estimates of IT projects in general and specific risks related to moving towards a particular technology solution.

Forrester and Sonnenschein agree that benefit projections based on the limited beta experience require some significant downward risk adjustments as follows (and summarized in Table 4 below):

### *Risk adjustments reflected in this study*

**Incremental billings (revenue) — \$2,706,280 (non-risk adjusted).** Absent actual histories of attorneys' increasing billings, *there is risk* in assuming that all attorneys will take full productive advantage of reduced login time (10 minutes saved per day) and translate that to incremental billings (revenue). Forrester has consequently risk adjusted this benefit **downward by 50% to a risk adjusted \$1,353,140**. This lower benefit is reflected in the risk-adjusted NPV in Table 1 in the Key Findings and Financial Analysis sections of this study.

**Savings in regression testing — \$210,000 (non-risk adjusted).** Sonnenschein's director of application services states that the reduction in regression testing time and effort will save the company's IT group 2.0 FTEs annually beginning six months after full implementation of the application streaming feature of Presentation Server 4.5. From a *risk adjustment* standpoint, Forrester's experience is that organizations that plan to re-deploy IT staff delay such moves by an average of 6-9 months. To reflect this potential delay in cost avoidance, Forrester **risk adjusted to zero dollars the \$70,000** savings that was to start in mid-2008. This lower benefit is reflected in the risk-adjusted NPV in Table 1 in the Key Findings and Financial Analysis sections of this study.

**Reduction in application management costs — \$105,000 (non-risk adjusted).** Sonnenschein believes it will be able to reduce its six-person application management team by one FTE using the application streaming feature of Presentation Server 4.5. From a *risk adjustment* standpoint, Forrester's experience is that organizations that plan to re-deploy IT staff delay such moves by an average of 6-9 months. To reflect this potential delay in cost avoidance, Forrester **risk adjusted to zero dollars the \$35,000** savings that was to start in mid-2008. This lower benefit is reflected in the risk-adjusted NPV in Table 1 in the Key Findings and Financial Analysis sections of this study.

**Savings in remote application deployments — \$38,400.** Forrester will not risk-adjust this benefit as it believes the savings estimates are conservative and fully achievable.

**Decommission WinINSTALL servers — \$24,000.** Forrester will not risk-adjust this benefit as it believes the savings estimates are conservative and fully achievable.

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**Table 4: Risk Adjusted Benefits — Sonnenschein’s Projection Of Incremental Benefits Associated With The Application Streaming Feature Of Presentation Server 4.5.**

Projected benefits	2006 (Early adopter)	2007 (Ramp-up)	2008 (Fully deployed)	2009 (Fully deployed)	Total benefits	PV
Incremental billings (revenue)	\$0	\$193,140	\$580,000	\$580,000	\$1,353,140	\$1,047,651
Savings in regression testing	\$0	\$0	\$0	\$140,000	\$140,000	\$99,649
Reduction in application management costs	\$0	\$0	\$0	\$70,000	\$70,000	\$49,825
Savings in remote application deployments	\$0	\$12,800	\$12,800	\$12,800	\$38,400	\$30,743
Decommission WinINSTALL servers	\$0	\$8,000	\$8,000	\$8,000	\$24,000	\$19,215
<b>Total benefits</b>	<b>\$0</b>	<b>\$213,940</b>	<b>\$600,800</b>	<b>\$810,800</b>	<b>\$1,625,540</b>	<b>\$1,247,084</b>

## Financial Analysis Summary — Sonnenschein

### Key Findings

Table 1 (repeated from the Executive Summary) summarizes the costs and savings Sonnenschein will realize over a four-year period from deploying the application streaming feature of Citrix Systems, Inc.’s Presentation Server 4.5.

**Table 1: Four-year Summary Financial Results — Sonnenschein Nath and Rosenthal LLP**

Summary of financial results	Risk-adjusted
Total costs (present value) *	(\$85,918)
Total cost savings and benefits (PV)	\$1,247,084
Total (net present value)	\$1,161,166
Payback period	Within 30 days

Source: Forrester Research, Inc.

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The four-year, risk-adjusted total net present value (NPV) of **\$1,161,166** represents the incremental net cost savings and benefits attributed to using the application streaming feature of Presentation Server 4.5 to deploy Windows applications to (at any given time) an average of 100 disconnected desktop/laptop users as compared to Sonnenschein's prior use of Presentation Server without the application streaming feature. (Details are provided below in the Costs, Benefits, Flexibility, and Risk sections.) Forrester Research and Sonnenschein also identified significant unquantified business benefits attributable to the application streaming feature of Presentation Server 4.5 (see page 10).

\* Note: Forrester did not include license or support costs associated with Citrix Systems, Inc.'s Presentation Server 4.5. Because the application streaming feature of Presentation Server 4.5 is "included" in the license fee no licensing costs are specifically associated with this feature. Instead, this study focuses on the *incremental* costs and benefits associated with implementing the application streaming feature of a product (Presentation Server 4.5) Sonnenschein has already purchased.

A risk-adjusted NPV that demonstrates a compelling business case 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, because they represent the expected value considering risk, should thus be taken as "realistic" expectations. Assuming normal success at mitigating risk, the risk-adjusted numbers should more closely reflect the expected outcome of the investment.

## Conclusions

This study is meant to provide the reader with a framework for examining the costs and benefits of deploying the application streaming feature of Presentation Server 4.5. Based on our in-depth discussions with Sonnenschein, Forrester projects a four-year risk-adjusted NPV of **\$1,161,166**.

For Sonnenschein, a well-planned implementation that has an impact on its 100 remote and disconnected users will yield quantifiable IT labor and hardware cost savings as well as enable significant incremental revenue (billings) to be realized by the business (attorneys). Sonnenschein also believes that its investment in the application streaming feature of Presentation Server 4.5 provides it with future, yet-to-be-quantified opportunities to (1) reduce the amount of time it takes to deploy applications across the entire enterprise, and (2) reduce costs associated with license fees.

Other organizations likely to see beneficial results from using the application streaming feature of Presentation Server 4.5 will have the following characteristics or attributes.

- A significant number of users who work offline.
- The need to reduce the cost of testing, installing, and supporting applications for their users.
- Small to mid-size organizations with 100-5,000 employees.
- Not yet invested in ESD tools or unhappy with existing ESD tools.
- Frustrated with desktop application conflicts.
- Need help managing the Microsoft Vista transition (although this was not a factor for Sonnenschein).

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For Sonnenschein, the beta version of the application streaming feature of Presentation Server 4.5 is accompanied by a moderate level of risk and a very short 30-day payback period to recoup its investment.

Forrester makes no assumptions regarding the effects of the application streaming feature of Presentation Server 4.5 in other organizations. This study examines the financial impact on Sonnenschein of effects attributable to the implementation of the application streaming feature of Presentation Server 4.5. The underlying objective of this document is to provide guidance for technology decision-makers seeking to identify areas in which value can potentially be created by using the application streaming feature of Presentation Server 4.5.

## **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 and justify to both senior management and other key business stakeholders the tangible value to be realized from IT initiatives.

The TEI methodology consists of four components with which to evaluate investment value: costs, benefits, flexibility, and risk.

### **Costs**

Costs represent the investment necessary to capture the value or benefits of the proposed project. These costs might be incurred by IT or by the business units. They might be in the form of fully-burdened labor, subcontractors, or materials. Costs include all the investment and expenses needed to deliver the projected value. In addition, the cost category within TEI captures any incremental costs over the existing environment for ongoing expenses associated with the solution. All costs must be tied to the benefits that are created.

### **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 for analysis of the impact of the technology on the entire organization. The TEI methodology and resulting financial model place equal weight on the measure of benefits to that of costs, supporting a full examination of the impact of the technology on the entire organization. Calculation of benefit estimates requires a clear dialogue with the user organization to understand the specific value that is being created. In addition, Forrester requires that a clear line of accountability be 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.

### **Flexibility**

Within the TEI methodology, direct benefits represent one part of the investment value. Although direct benefits are typically 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 that builds on the initial investment already made. For instance, an initial investment in an enterprisewide upgrade of an office productivity suite can increase standardization (to increase efficiency) and reduce licensing costs. Later, the implementing organization might decide to take advantage of an embedded collaboration feature that might translate into greater worker productivity if activated. But this collaboration feature can only be used with an additional investment in user training. The ability to capture the benefit associated with this collaboration feature has a present value that can be estimated. The flexibility component of TEI captures that value using the Black-Scholes option pricing model.

### **Risk**

Risk, the fourth component of the TEI methodology, is a measurement of the uncertainty of benefit and cost estimates obtained for the investment. Uncertainty is measured in two ways, (1) as the likelihood that the cost and benefit estimates will meet the original projections, and (2) as the likelihood that the estimates will be measured and tracked over time.

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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.

## Appendix C: About The Project Director



**Bob Cormier**  
**Principal Consultant**

Bob is a principal consultant for Forrester's Total Economic Impact™ (TEI) service. He specializes in advising clients on the TEI framework, services that help organizations make decisions about the overall financial value of IT strategies and investments.

Bob, who came to Forrester through its acquisition of Giga Information Group, has more than 25 years' experience in the IT and consulting industries. Prior to joining Giga, he held senior-level positions at two leading eBusiness consulting firms, ZEFER and Cambridge Technology Partners. Bob has successfully led company efforts to optimize financial, operational, and resource planning activities by incorporating leading-edge, professional service automation (PSA) applications and enterprise resource planning (ERP) systems. He has also held management positions at Digital Equipment and Anixter International.

Bob earned an MBA from Bentley College and a B.S. in business from the University of New Hampshire. As an adjunct professor, he has taught finance and economics courses for more than 10 years at Southern New Hampshire University and Daniel Webster College.