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## **The Total Economic Impact Of IBM Lotus Notes/Domino 8.5 Upgrade Multicompany Study**

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## Executive Summary

In June 2009, IBM commissioned Forrester Consulting to examine the total economic impact and potential return on investment (ROI) enterprises may realize by upgrading their existing Lotus Notes/Domino client and server platform to Notes/Domino 8.5. Notes/Domino 8.5 combines new messaging and collaboration features for both end users and IT to improve overall enterprise efficiency. This study illustrates the financial impact of companies upgrading their client and server platforms to 8.5 from a previous version of Notes/Domino.

In conducting in-depth interviews with seven existing customers, Forrester found that these companies achieved tangible improvements in operational and capital cost efficiency, IT administration cost savings, and levels of end user productivity.

### Purpose

The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Notes/Domino 8.5 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 upgrading to Notes/Domino 8.5 within their organization.

### Methodology

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

For this study, Forrester employed four fundamental elements of TEI in modeling the financial impact of Notes/Domino 8.5 solutions:

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

Given the increasing sophistication 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 five-step approach for this study:

1. Forrester gathered data from existing Forrester research relative to IBM Notes/Domino 8.5 solutions and the collaboration and messaging market in general.

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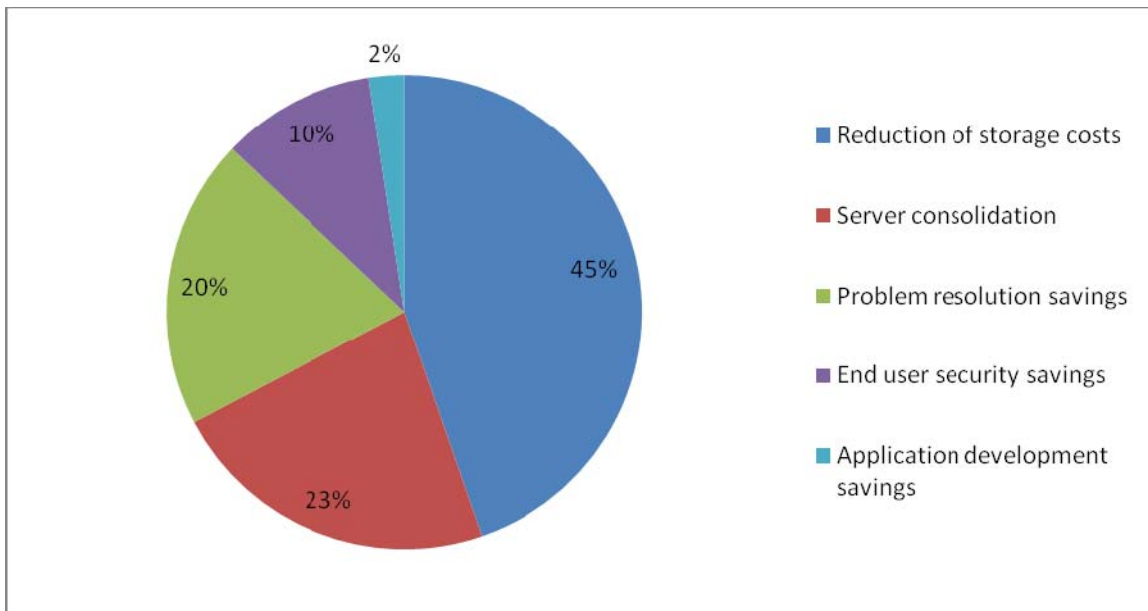
2. Forrester interviewed IBM Notes/Domino 8.5 product management, marketing, and sales personnel to fully understand the potential (or intended) value proposition of Notes/Domino 8.5 solutions.
3. Forrester conducted a series of in-depth interviews with seven organizations currently using IBM Notes/Domino 8.5 solutions on a combination of client and server platforms.
4. Forrester constructed a financial model representative of the interviews. This model can be found in the TEI Framework section below.
5. Forrester created a composite organization based on the interviews and populated the framework using data from the interviews.

### Key Findings

Forrester's study yielded three key findings:

- **ROI.** Based on the interviews with the seven existing customers, Forrester constructed a TEI framework for a composite organization and associated ROI analysis illustrating the financial impact areas. As seen in Table 1, the ROI for our composite company is 147% with a breakeven point (payback period) of 12 months after deployment.
- **Benefits.** Benefits included improved IT and end user productivity as well as reduced capital and operational costs within the messaging and collaboration environment.

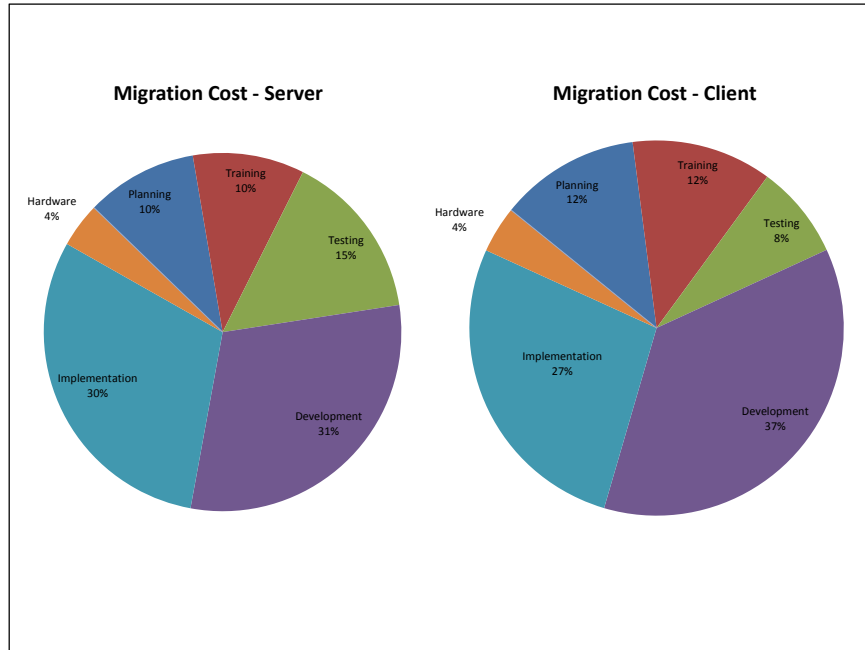
Figure 1: Total Three-Year Benefit Breakdown – Client and Server



Source: Forrester Research, Inc.

- **Costs.** Upgrade costs include software license and maintenance fees, cost of implementation, development, planning and testing, as well as cost of training and administration.

**Figure 2: Total Upgrade Cost Breakdown – Client and Server**



Source: Forrester Research, Inc.

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

**Table 1: Composite Company ROI, Risk-Adjusted**

Summary financial results	Original estimate	Risk-adjusted
ROI	167%	147%
Payback period (months)	11.0	12.0
Total costs (PV)	450,000	457,500
Total benefits (PV)	1,199,665	1,131,684
Total (NPV)	749,665	674,184

Source: Forrester Research, Inc.

Forrester found that higher ROIs depended on the size and scope of upgrade, the familiarity with the Notes/Domino platform, the level of additional hardware required, as well as the level of planning invested for the upfront upgrade.

### Disclosures

The reader should be aware of the following:

- The study is commissioned by IBM and delivered by the Forrester Consulting group.
- IBM 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 IBM.
- Forrester makes no assumptions as to the potential ROI 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 an upgrade to Notes/Domino 8.5.
- This study is not meant to be used as a competitive product analysis.
- All study results are in US dollars, though the benefits are the same regardless of the country or currency.

## IBM Notes/Domino 8.5 Messaging And Collaboration — Client And Server: Overview

According to IBM, IBM Lotus Notes and Lotus Domino software delivers a proven platform for collaborative business applications, messaging, and workflow. It provides a reliable, security-rich messaging and collaboration environment for more than 46,000 companies worldwide, helping increase employee productivity, facilitate decision-making, and improve overall responsiveness. IBM has leveraged its 20 years of leadership in business collaboration solutions to provide a new kind of desktop application that can help deliver an enhanced user experience, drive greater business value, and boost IT performance.

IBM Lotus Notes and Domino 8.5 now include many new features and enhancements.

- The first major change expands on options for building or expanding Domino applications. Domino Designer will now be freely accessible in IBM developerWorks for no charge. This expansion in access brings Domino's RAD tool to a broader community of developers aimed at increasing the solutions that are available for the Domino platform.
- The second major change for this release is a repackaging of Domino client solutions in order to simplify the purchasing options to better align with how people work versus what they need to complete their work. The Domino client options are delivered as a client access license (CAL), where access to the Domino platform is put into two categories: Enterprise CAL and Messaging CAL.

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- The third major change for this release includes a vast array of features for accessing data across the form factors (desktop, mobile, and Web). This release includes many features and enhancements that improve the usability of the solutions for both the end user (Lotus Notes, Lotus iNotes, and Lotus Notes Traveler) and developers (Domino Designer).

### Analysis

As stated in the Executive Summary, Forrester took a multistep approach to evaluate the impact that implementing Notes/Domino 8.5 solutions can have on an organization:

- Interviews with IBM, product management, marketing, and sales personnel.
- In-depth interviews of seven organizations currently using Notes/Domino 8.5 solutions.
- Construction of a common financial framework for the implementation of Notes/Domino 8.5.
- Construction of a composite organization based on characteristics of the interviewed organizations.

### Interview Highlights

A total of seven interviews were conducted for this study, involving representatives from the following IBM customers based in the US:

- **A US-based global manufacturer of consumer product goods with roughly \$15 billion in annual revenue and 35,000 employees.** The organization had upgraded to Notes Domino 8.5 Server and was currently piloting the rollout of Notes/Domino Client to 3,000 employees.
- **A US-based manufacturing organization with roughly 400 employees and annual revenues of \$200 million per year.** The organization had upgraded to Notes Domino 8.5 Server and had begun to upgrade selected employees to 8.5 Client.
- **A European-based automotive parts manufacturer with roughly 25,000 employees and annual revenues of €320 million per year.** The organization had fully upgraded to Notes Domino 8.5 Server and expects to pilot 8.5 Client in 2010.
- **A regional US-based municipality located in the southeastern US with roughly 200 employees.** The organization has upgraded both its client and server environment to Notes/Domino 8.5.
- **A European division of a global financial services organization with roughly 2,000 employees spread throughout Europe, the Middle East, and Africa (EMEA).** The organization has fully upgraded to Notes/Domino 8.5 Server.
- **A European-based plumbing manufacturer with 5,500 employees and €2.2 billion in annual sales.** The organization has upgraded to Notes/Domino 8.5 Server and is piloting the rollout of 8.5 Client.
- **A European-based financial services organization with roughly 12,000 employees and more than €500 million in gross cash receipts.** The organization has fully upgraded its server environment to Notes/Domino 8.5 and has upgraded the majority of its users to a combination of iNotes and full 8.5 Client.



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The seven in-depth interviews uncovered several common themes that drove the analysis. These included:

- **Controlling storage costs.** Several organizations noted that one of the key drivers for the upgrade to 8.5 Server was to take advantage of storage costs savings through the use of the Domino Attachment and Object Service (DAOS) feature, which allowed for tangible reductions in storage costs.
- **Improving IT efficiency.** Organizations also noted new features that allowed for greater control and flexibility over their Notes/Domino environment.
- **Enhancing client responsiveness.** Another impact noted by several of the organizations was the improvement in time to respond to client issues. This included leveraging new capability such as ID vault to respond more efficiently to password resets.
- **Closer integration with existing end user processes.** Finally, organizations that had upgraded their client environment to 8.5 saw improvements in the end user experience as well as creation of a more efficient platform for development of new applications within the Notes/Domino environment. Organizations that had developed custom browser and client applications to support existing business processes found reduced time to develop and deploy to multiple platforms,

The composite organization created from the results of the customer interviews represents a US-based global services organization that has deployed Notes/Domino 8.5 both for its client and server platforms. Prior to investing in Notes/Domino 8.5, the organization was using a combination of 6.6 and 7.0 client and server platforms to run its collaboration and messaging environment.

The representative organization currently has 10,000 users accessing the Notes/Domino environment. Prior to the investment in 8.5, storage growth was increasing by 30% to 40% with similar growth in the cost of operations and support. With the investment in Notes/Domino 8.5, the organization is looking to consolidate its existing server footprint of fifteen primary servers for the Notes/Domino environment.

## TEI Framework

### *Introduction*

From the information provided in the in-depth interviews, Forrester constructed a TEI framework for those organizations considering implementation of Notes/Domino 8.5 solutions. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision.

### *Composite Organization*

Based on the interviews with seven existing customers provided by IBM, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas affected financially. The composite organization that Forrester synthesized from these results represents a North American services organization.

### *Framework Assumptions*

Table 2 lists the discount rate used in the PV and NPV calculations and time horizon used for the financial modeling.

**Table 2: General Assumptions**

Ref.	General assumptions	Value
	Discount rate	10%
	Length of analysis	Three years

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.

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

**Table 3: Salary Assumptions**

Ref.	Metric	Calculation	Value
A1	Hours per week		40
A2	Weeks per year		52
A3	Hours per year (M-F, 9-5)		2,080
A4	Hours per year (24x7)		8,736

Source: Forrester Research, Inc.

## Costs

Upgrade costs for the representative organization include cost of software, hardware, maintenance, implementation, and ongoing administration. The actual cost of the solution will vary depending on the size of the development staff as well as the level of data integration undertaken by the organization. Table 4 and Table 5 illustrate the per-user client and server upgrade cost for the representative organization.

**Table 4: Per-User Server Upgrade Cost**

Metric	Per-user cost	Total cost
Planning	3	34,000
Training	3	34,000
Testing	5	51,000
Development	10	102,000
Implementation	10	102,000
Hardware	1	13,600
Software (license and maintenance)		
Total	34	336,600

Source: Forrester Research, Inc.

**Table 5: Per-User Client Upgrade Cost**

Metric	Per-user cost	Total cost
Planning	2	19,200
Training	2	19,200
Testing	1	12,800
Development	6	57,600
Implementation	4	43,200
Hardware	1	6,400
Software (license and maintenance)		
Total	16	158,400

Source: Forrester Research, Inc.

## Total Costs

Table 6 illustrates the total incremental costs of the IBM platform for the interviewed organization.

**Table 6: Total Cost**

Costs	Initial
Total upgrade costs — server	(336,600)
Software license fees — client	(158,400)
Total upgrade costs	(495,000)

Source: Forrester Research, Inc.

## Benefits

Benefits for Notes/Domino 8.5 were divided across storage cost savings, server consolidation, problem resolution savings, end user efficiency savings, as well as application development cost savings.

### *Storage Cost Savings*

Through the use of the DAOS, organizations realized savings via reduced physical storage needs, future storage acquisition, and the ability to use tiered storage for different types of data/information. In addition, organizations benefit from reduced administrative costs associated with storage such as faster and smaller backups. The DAOS feature, coupled with the compression capabilities available in earlier versions of Lotus Domino, provides additional storage-related savings.

In order to construct the benefit for the representative organization, the model assumes the current level of storage across all users allocated to collaboration and messaging equates to 10,000 GB, or roughly 1 GB per user on average. If the organization stays on its current platform, the organization conservatively estimates that it will grow its storage by 40% per year, assuming the growth of staff is held constant. The representative organization also estimates that the current value of storage for the Notes Domino environment equates to \$350,000 with an additional \$4,000 of storage added in Year 1, increasing to \$6,240 by Year 3. In addition, the cost to support the storage environment prior to the movement to 8.5 equated to \$162,000 or 2 fully-burdened full-time equivalents (FTEs), increasing by \$64,000 to correlate with the overall growth in storage. Based on the results of the interviewed organizations, the model assumes that with the upgrade to 8.5, the representative organization can realize a 60% reduction in current storage assets, a 30% reduction in the growth of storage assets, as well as a 20% reduction in administration costs in the first year, increasing to 40% in Years 2 and 3. Based on these estimates, this results in a total storage cost efficiency of \$310,320 in Year 1, \$159,888 in Year 2 and \$170,755 in Year 3. Table 7 illustrates the calculation used.

**Table 7: Storage Cost Efficiency**

Metric	Value	Current year	Year 1	Year 2	Year 3
Current level of storage (GB)		10,000			
Current value of storage assets		350,000			
Projected growth of storage assets			4,000	5,600	6,240
Capital cost of storage growth			140,000	196,000	218,400
Storage admin cost		162,000			
Growth of cost of storage admin			64,800	90,720	101,088
Estimated reduction of storage assets	60%				
Estimated reduction of growth of storage assets	30%				
Estimated reduction in storage administration costs — Year 1	20%				
Estimated reduction in storage administration costs — Year 2/Year 3	40%				
Estimated savings — current storage			210,000		
Estimated savings — storage growth			42,000	58,800	65,520
Estimated savings — storage admin			32,400	64,800	64,800
Estimated savings — storage admin — growth			25,920	36,288	40,435
<b>Total savings</b>			<b>310,320</b>	<b>159,888</b>	<b>170,755</b>

Source: Forrester Research, Inc.

### *Server Consolidation Savings*

In addition to storage cost savings, another area of benefits noted by several interviewed organizations included the possible cost avoidance through deferring existing server hardware and software upgrade through archiving applications. The implementation of IBM/Lotus Domino 8.5 allowed organizations to reduce the number of servers through server consolidation while maintaining acceptable levels of system performance. This resulted in direct hardware cost savings and administrative savings with fewer servers to manage.

In order to construct this benefit, the model assumes that prior to the investment in Notes/Domino 8.5 the organization managed fifteen servers per year for its messaging environment. The annual server cost equated to \$28,800 including the cost of administration, hardware, and software. Based on the data received during the customer interview process, the model assumes that the representative organization can consolidate the server cost by an estimated 25% per year. This equates to roughly \$108,000 per year as a result of avoiding possible server upgrades. Table 8 illustrates the calculation used.

**Table 8: Server Consolidation Savings**

Metric	Value	Current year	Year 1	Year 2	Year 3
Current number of servers	15				
Notes/Domino cost		2,400,000			
% breakdown of cost — baseline environment					
Server hardware and OS		3%	72,000	72,000	72,000
Server software		15%	360,000	360,000	360,000
Current number of servers			15	15	15
Current annual server cost			432,000	432,000	432,000
Average cost per server			28,800	28,800	28,800
% attributable to excessive servers	25%				
Target consolidation	25%				
Estimated server reduction			3.75	3.75	3.75
Estimated savings — annual cost			108,000	108,000	108,000

Source: Forrester Research, Inc.

### *Problem Resolution Savings*

In addition to capital cost savings, another area of benefit realized was from utilizing capabilities in Lotus Domino 8.5 to proactively identify and address potential issues prevent costly problems and outages from occurring in the environment. This capability reduced the cost associated with administrators resolving issues and end users calling into the help desk for assistance, while avoiding loss of productivity.

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Problem resolution savings is directly tied to the size of the individual's mail file. Though the use of DAOS, the organization can realize savings through greater stability of client systems by shifting storage away from the clients' devices. Also having attachments stored locally allows for faster backup and recovery of client storage reducing the potential for lost end user productivity. For example, one client noted a measurable decrease in problem resolution calls associated with large mailbox sizes through the implementation of Notes 8.5 server.

To calculate this benefit, the model assumes of the total annual \$2,400,000 annual cost for the Notes/Domino environment, roughly 27% of total cost is attributed to staffing, and 30% of the staffing cost is attributed to problem resolution. Based on the findings of the customer interviews, the model assumes a 30% reduction in IT support cost to resolve end user issues. Table 9 illustrates the calculation used.

**Table 9: Problem-Resolution Savings — IT Impact**

Metric	Value	Current year	Year 1	Year 2	Year 3
Notes/Domino cost	2,400,000				
% attributed to staffing	27%	648,000			
% of staffing cost attributed to problem resolution	30%	194,400			
Estimated reduction	30%		58,320		
Total yearly savings			58,320	58,320	58,320

Source: Forrester Research, Inc.

In measuring the reduced impact to end users, the model assumes of the 10,000 total Notes/Domino users, each user calls his/her internal support team an average of three times per year, with roughly 40% of calls related to the messaging and collaboration environment. With improved user functionality and ease-of-use features, the model assumes a 20% reduction in calls as a result of the upgrade. This results in a total savings of roughly \$36,000 per year. Table 10 illustrates the calculation used.

**Table 10: Problem-Resolution Savings — End User Impact**

Metric	Value	Year 1	Year 2	Year 3
Total number of clients	10,000			
Number of help desk calls per user per year	3			
% related to Notes/Domino applications	40%			
Blended cost per call (includes lost productivity)	15			
Estimated reduction	20%			
Total yearly savings		36,000	36,000	36,000

Source: Forrester Research, Inc.

### *End User Security Savings*

Several organizations noted specifically the use of ID vault as a way of reducing the impact on Tier 1 support requirements. By storing a copy of a user ID centrally in a vault database on the server, users can reset their user password without having to contact internal support. One organization password reset calls into their helpdesk were typically at or near the top of the types of calls they receive in a given month. As a result, a key goal in the migration to Notes 8.5 was to reduce the number of password reset calls to the helpdesk. Another organization noted as well the enhanced Client Single Sign on feature within 8.5, allowing a user to sign into Lotus Notes without providing a unique Notes password.

Through the use of Lotus Notes ID files via the new Lotus Domino ID Vault, users can quickly recover from lost passwords or forgotten ID files, allowing them to improve productivity without waiting for administrative intervention. Administrators can focus on strategic initiatives while the secure ID vault capability transparently handles ID file operations such as name changes, password changes, and forgotten passwords, among other elements.

To calculate this benefit, the model assumes of the total annual \$2,400,000 cost for the Notes/Domino environment, roughly 27% of total cost is attributed to staffing, and 20% of the cost is devoted to management of end user security. Based on the findings of the customer interviews, the model assumes a 25% reduction in IT support cost to resolve end user issues. Table 11 illustrates the calculation used.



**Table 11: End User Security Savings — ITS Impact**

<b>Metric</b>	<b>Per period</b>	<b>Current year</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Notes/Domino cost	2,400,000				
% attributed to staffing	27%	648,000			
% attributed to end user security management	20%	129,600			
Estimated reduction	25%		32,400		
Total yearly savings			32,400	32,400	32,400

Source: Forrester Research, Inc.

In measuring the reduced impact to end users, the model assumes of the 10,000 total Notes/Domino users, each user calls his/her internal support team an average of three times per year, with roughly 20% of calls related to password resets. With the improved user functionality and ease-of-use features, the model assumes a 20% reduction in calls as a result of the upgrade. This results in a total savings of roughly \$18,000 per year. Table 12 illustrates the calculation used.

**Table 12: End User Security Savings – End User Impact**

<b>Metric</b>	<b>Value</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Total number of clients	10,000			
Number of help desk calls per user per year	3			
% related to password resets	20%			
Blended cost per call (includes lost productivity)	15			
Estimated reduction	20%			
Total yearly savings		18,000	18,000	18,000

Source: Forrester Research, Inc.

### *Application Development Savings*

New application development features allowed several organizations to realize gains in building and deploying new browser and client applications. The new XPages capability allows flexibility in design and applications to be written once for all clients, saving development time. The Domino Designer on Eclipse provides a common application development experience for all types of

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applications, providing ease of use and extended functionality through the Eclipse framework. Applications written years ago continue to run, avoiding the need for additional development time.

Many of the interviewed organizations noted they are planning on increasing their application development initiatives both on the client and browser and having the ability to write a single application once for both platforms reduces the overall development effort as well as the time to deploy new applications. One organization noted in particular they employ roughly 4 FTE's for Notes application development, managing roughly 200 applications on both client and browser. Having a single development platform for both enabled the organization to reduce on average the time to deploy browser and client based applications by 20% and reduce the cost of development by 10% to 15%.

To calculate this benefit, the model assumes of the total annual \$2,400,000 cost for the Notes/Domino environment, roughly 16% of the total cost is attributed to client software, and 20% of the cost is devoted to staffing of the application development environment. Based on the findings of the customer interviews, the model assumes a 15% reduction in application development cost as a result of improved application development tools. Table 13 illustrates the calculation used.

**Table 13: Application Development Savings**

Metric	Per period	Current year	Year 1	Year 2	Year 3
Notes/Domino cost	2,400,000				
% client software	16%	384,000			
% attributed to staffing	20%	76,800			
Estimated reduction	15%		11,520		
Total yearly savings			11,520	11,520	11,520

Source: Forrester Research, Inc.

***Total Benefits***

Table 14 illustrates the total three-year benefits as a result of the upgrade to the IBM Notes/Domino 8.5 solution.

**Table 14: Total Benefits**

Benefits	Year 1	Year 2	Year 3	Total	Present value
Reduction of storage costs	310,320	159,888	170,755	640,963	542,539
Server consolidation	108,000	108,000	108,000	324,000	268,580
Problem-resolution savings	94,320	94,320	94,320	282,960	234,560
End user security savings	50,400	50,400	50,400	151,200	125,337
Application development savings	11,520	11,520	11,520	34,560	28,649
<b>Total benefit</b>	<b>574,560</b>	<b>424,128</b>	<b>434,995</b>	<b>1,433,683</b>	<b>1,199,665</b>

Source: Forrester Research, Inc.

## Risk

Forrester defines two types of investment risk associated with this analysis: implementation and impact risk. **Implementation risk** is the risk that a proposed technology investment may deviate from original resource requirements needed to implement and integrate the investment, 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 technology investment, resulting in lower overall total benefits. The greater the uncertainty is, the wider the potential range of outcomes for cost and benefit estimates. Quantitatively capturing investment risk by directly adjusting the financial estimates results in more meaningful and accurate estimates and a more accurate projection of the ROI.

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

- Installation and testing could demand more time than originally anticipated.
- Timeliness of having to provide specific functionality to meet business requirements exists.
- Acquisition costs could be higher than originally anticipated for hardware and software.

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

- The amount of development savings may be lower than originally anticipated due to the time it takes to train and move to the new XPages environment.

### *Steps For Measuring Investment Risk*

Risk factors are used in TEI to widen the possible outcomes of the costs and benefits (and resulting savings) associated with a project. 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 estimate. The expected value — the mean of the

distribution — is used as the risk-adjusted cost or benefit number. The risk-adjusted costs and benefits are then summed to yield a complete risk-adjusted summary and ROI. In this study, Forrester discovered that engaging with IBM was a relatively low-risk endeavor, as expressed by the interviewed organizations, and applied a risk factor of 102% to the costs and 98% to the benefits to the benefits calculations.

## **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).

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 an ROI, net present value, and payback period. Table 15 shows the consolidation of the numbers for the composite organization.

**Table 15: Cash Flow Summary — Risk-Adjusted**

	<b>Initial</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>	<b>NPV</b>
Total costs	503,250				503,250	457,500
Total benefits		542,002	400,094	410,345	1,352,441	1,131,684
Total		38,752	400,094	410,345	849,191	674,184
ROI						147%
Payback period (months)						12

Source: Forrester Research, Inc.

It is important to note that values used throughout the TEI Framework are based on in-depth interviews with seven organizations and the resulting composite organization built by Forrester. Forrester makes no assumptions as to the potential return that other organizations will receive within their own environment. Forrester strongly advises that readers use their own estimates within the framework provided in this study to determine the expected financial impact of implementing Notes/Domino 8.5 solutions.

## Study Conclusions

Forrester's in-depth interviews with Notes/Domino 8.5 customers yielded several important observations:

- Based on information collected in interviews with current Notes/Domino 8.5 solutions customers, Forrester found that organizations can realize benefits in the form of improved IT and end user productivity as well as reduced capital and operational costs within the messaging and collaboration environment.
- Of the customers interviewed, several factors contributed to the difference in ROIs. These depended on the size and scope of upgrade, the familiarity with the Notes/Domino platform, the level of additional hardware required, as well as the level of planning invested in the upfront upgrade.

The financial analysis provided in this study illustrates the potential way an organization can evaluate the value proposition of Notes/Domino 8.5 solutions. Based on information collected in seven in-depth customer interviews, Forrester calculated a three-year risk-adjusted ROI of 147% for the composite organization with a payback period of 1 year. All final estimates are risk-adjusted to incorporate potential uncertainty into the calculation of costs and benefits.

Based on these findings, companies looking to implement Notes/Domino 8.5 solutions 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:** This is 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):** This is 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):** This is 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:** This is 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):** This is the 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. PV calculations are calculated for each total cost and benefit estimate. 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.