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MAKING LEADERS SUCCESSFUL EVERY DAY

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The Total Economic Impact™ Of Implementing Microsoft's Productivity Platform

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Executive Summary

Decades of investment in process automation and business applications have increased profit and raised the revenue per employee by automating rote processes, streamlining workflows, and giving people better tools to complete tasks. But businesses haven't yet systematically tackled the productivity of information workers. There is no "chief productivity officer," no executive focused on identifying where individual work and team work can be improved. Yet this is where the biggest business gains in information work lie. It's left to employees themselves or to the IT organization to introduce new tools that make information workers and teams, particularly distributed and multi-company teams, more productive.

Any investment in tools that gives someone time back in their day, or makes them productive from any location or device, or improves a proposal or service request by reaching the right expert, or accelerates a decision process by bringing people together across offices and organizations, or saves time by eliminating travel with better conferencing tools will pay off many times over. It pays off mostly because of the massive scale of the benefit to each individual. Giving someone even five productive minutes back in their day means a 1% increase in their overall productivity. For a company with 3,000 information workers, that's like having 30 more fully-ramped and productive people without increasing headcount. That's the real opportunity to improve business productivity and profitability.

In February 2010, Microsoft commissioned Forrester Consulting to examine the Total Economic Impact™ (TEI) and potential return on investment (ROI) on the integrated value or "better together" impact that enterprises may realize by deploying Microsoft Office 2010, SharePoint 2010, Exchange 2010 and Office Communications Server 2007 R2 together. To understand the financial impact of investing in the latest version of these products, Forrester conducted in-depth interviews with 12 Microsoft customers that have started using these products and compiled their results and forward-looking expectations into a composite case study of a life sciences organization with 3,000 information workers.

In conducting the interviews with these Microsoft customers, Forrester found that that each product offers significant benefits on its own. In-depth discussions on the benefits of each individual product are summarized in other documents and TEI case studies listed in Appendix C below.

The focus of this study, however, was organizations that have implemented multi-product solutions based upon Microsoft's latest Office productivity-related offerings, often in conjunction with a Windows Server 2008 R2-based infrastructure. Forrester found that these organizations achieved additional "better together" benefits of integrating the products for end users and for IT administrators. In particular, we found that the composite organization, based on the companies we interviewed collectively, could achieve:

Improved Productivity and Collaboration

- Improvements in workforce productivity, resulting in savings, on average, of 82.33 hours per year or 3.96% of time per employee per day for the composite organization. Even if only half of these savings is recaptured in work related activities, the productivity gains would accrue to approximately $7.05 million in benefits (risk-adjusted, present value [PV] over a three-year period). Productivity gains were due to:

  1. Less switching between applications as collaboration features among the different products are more integrated and work better together.

2. Direct and efficient access to team members' availability through Presence that accelerates connecting to the person that can help.

3. Improved ease of finding and accessing topic and skills-based expertise and knowledge through SharePoint MySites, Active Directory, and better search capabilities.

4. Less time searching and managing documents and email due to improved search and better email management features.

5. Faster application use and higher feature use due to the consistency of the Ribbon User Interface (UI) interface across all applications.

6. Improved reporting - incorporating, analyzing, and sharing of data - for business intelligence (BI) users.

- Improved collaboration process via improvements like the document coauthoring feature for distributed teams, such as sales, clinical trial teams, or professional services, resulting in over $1.3 million (risk-adjusted, PV) in gains.

Cost Savings

- Over $1.2 million (risk-adjusted, PV) in cost savings from replacing legacy business intelligence (BI) solutions and lessening demand for expensive developer resources due to functionality available in SharePoint 2010 and Excel 2010.

- Reduced instances of travel resulting in cost savings from more integrated and seamless conferencing collaboration and communications experiences, as well as viewing and editing on different devices with Microsoft Office 2010 and SharePoint 2010.

- Over $575,000 (risk-adjusted, PV) in conferencing and long-distance telecom costs avoided by utilizing features such as Voice over IP (VoIP), web/video and dial-in audio conferencing.

- Over $1.3 million (risk-adjusted, PV) in IT administration savings through implementing a standardized environment, with common administration and management tools across SharePoint 2010, Exchange 2010 and Office Communications Server.

- Reduction in email storage costs of over $242,000 (risk-adjusted, PV).

- Reduction in training costs primarily driven by a consistent user interface across applications.

The study also identified possible areas of future benefits as customer organizations take advantage of new capabilities in enterprise voice and the flexibility of implementing hosted or on-premises solutions of SharePoint 2010, Exchange 2010 and Communications Server 2007 R2 for select user groups.

Purpose

The purpose of this study is to provide readers with a framework to evaluate the potential financial "better together" or combined impact of collectively deploying Office 2010, SharePoint 2010, Exchange 2010 and Communications Server 2007 R2 in their organizations.

To understand the financial impact of these products individually, the reader should refer to other Total Economic Impact case studies on Microsoft Office 2010, SharePoint 2010, Exchange 2010, and the Unified Communications Suite. Details on these studies are contained in Appendix C.

Forrester's aim is to clearly show all calculations and assumptions used in the analysis. Readers should use this study to better understand and communicate a business case for investing in Microsoft's productivity platform.

Key Findings

Forrester's study yielded a number of key findings:

- **ROI.** Forrester constructed a TEI framework, based on the customer interviews, for a composite organization and the associated ROI analysis. This analysis illustrates the financial impact areas. As seen in Table 1, the risk-adjusted ROI for the composite company is **301%** with a breakeven point (payback period) of **7.4 months** after deployment.

- **Benefits.** Quantified benefits accruing to the composite organization, which reflect the experiences and the expectations of the companies interviewed for the study, amount to approximately **$13.95 million** (risk-adjusted, present value) over a three-year period. These financial benefits include workforce productivity savings through enhanced communication and collaboration, IT administration savings, and cost savings for travel, training, and email storage as well as cost savings related to avoiding third-party BI costs and conferencing solutions.

- **Costs.** The costs for the upgrade to the full solution are **$3.48 million** (risk-adjusted, present value) over the first three years. These costs include client and server software licensing and renewal costs, additional hardware, implementation labor, professional services fees for implementation and training fees. The composite organization in this study is assumed to be renewing an Enterprise Agreement for which they were already licensed on and using Microsoft Office 2007, SharePoint 2007, Exchange 2007, and Communications Server 2007 R2. While most of the software had been deployed to all information workers, the company had previously rolled out Communications Server 2007 R2 only to a select user group.

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	325%	301%
Payback period (months)	6.8	7.4
Total costs (PV)	($3,424,243)	($3,480,862)
Total benefits (PV)	$14,547,057	$13,948,195
Total (NPV)	$11,122,814	$10,467,333

Source: Forrester Research, Inc.

Methodology

Microsoft selected Forrester for this project because of Forrester's Total Economic Impact (TEI) methodology, as well as Forrester's industry expertise in enterprise collaboration strategy and tools, computer architectures, server and data center management, and the emerging trend of using Microsoft Office as a front end for line-of-business information and processes.

Forrester employs four fundamental elements of TEI in modeling the financial implications of migrating or upgrading to Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2 (also referred to in the document as "Microsoft's productivity platform").

1. Costs.

2. Benefits to the entire organization.

3. Flexibility.

4. Risk.

Given the increasing sophistication that enterprises have regarding cost analyses related to IT investments, Forrester's TEI methodology serves a valuable purpose by providing a complete picture of the total economic impact of purchase decisions.

Approach

Forrester used a five-step approach for this study:

1. Forrester gathered data from existing Forrester research relative to Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2, as well as the enterprise messaging, communications, collaboration, information management, and productivity tools markets.

2. Forrester interviewed Microsoft product management, marketing, and strategy personnel to fully understand the potential "better together" value proposition of Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2.

3. Forrester conducted a series of in-depth interviews with 12 organizations currently using Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2.

4. Forrester created a composite organization based on the interviews and populated the framework using data from the interviews as applied to the composite organization.

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

Disclosures

The reader should be aware of the following:

- The study is commissioned by Microsoft and delivered by the Forrester Consulting group.

- Microsoft reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings.

- The customers for the interviews were provided by Microsoft.

- 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 Microsoft's productivity platform consisting of Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2.

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

Microsoft's Productivity Platform: Overview

According to Microsoft, the latest versions in Microsoft's productivity platform best enable customers to take on new business challenges, innovate, and amplify people's impact.

Broadest vision for what productivity is.

Microsoft claims that productivity is not about desktop documents, word processing, or spreadsheets. Modern productivity combines important business capabilities in a very seamless experience. It means things like finding expertise and surfacing up knowledge and insights inside the organization. It means great collaboration and great unified communications. It means enterprise content management.

Microsoft cites 3 key differentiators that separate its latest productivity platform from other offerings:

1. **Best productivity experience across the PC, the phone, and the browser.**

   Organizations are comprised of an increasingly diverse user base, from task workers to highly mobile information workers. Each user has different needs according to things like how and from where they work. They need to be able to seamlessly use the PC, the phone, or the browser to do things like respond to email, access important files, or collaborate to make edits to Office documents. Microsoft delivers the ability to "round-trip" edits to Office documents from the PC, to the phone, to the browser, and back.

2. **The cloud on your terms.**
   Some customers choose to go 100% with a cloud-based solution while others choose to maintain some productivity solutions on-premises. Microsoft is dedicated to helping customers think about how to use the cloud in the most effective way.

3. **Platform that enables developers to rapidly respond to business needs.**
   Organizations can leverage the current skills of their development teams to reduce costs and deliver solutions that are more adaptable to business changes. Developers can build applications quickly for Office, SharePoint, Exchange, and Communications Server with rich APIs and support for Open XML, Silverlight, REST, and LINQ as well as integrate with Line of Business systems using Business Connectivity Services.

According to Microsoft, customers that deploy these applications together can realize the benefits of extending rich productivity capabilities to more users:

Business Intelligence
- Improve organizational effectiveness by enabling efficient decision making at all levels through familiar tools that allow employees to visualize, access and manage information on their own, democratizing data within your organization.

Collaboration
- Provide the tools to connect, innovate, and work together across different devices and social channels, through functionality like coauthoring and offline access to content.

Enterprise Content Management
- Drive broad adoption of content management practices by simplifying common tasks through easy interaction between Office and SharePoint. With confidence and security,

maintain compliance and manage traditional documents, social content, web content and rich media both inside the enterprise and beyond the firewall.

Enterprise Search
- Help people quickly and easily find the information and expertise they need by extending search and building search-driven applications on a single integrated platform.

Unified Communications
- Make communication seamless for users regardless of location by bringing together e-mail, presence, instant messaging, VoIP, web, audio and video conferencing, and voice mail on a single integrated platform that is secure, flexible, and reliable.

Microsoft's productivity platform includes the following products:

- Microsoft Communications Server and Communications Online Services
- Microsoft Exchange Server and Exchange Online Services
- Microsoft Office
- Microsoft SharePoint Server and SharePoint Online Services

Analysis

Forrester's approach to evaluate the financial impact that implementing Microsoft Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2 can have on an organization includes the following steps:

- Interviews with Microsoft marketing, sales, and strategy personnel.

- In-depth interviews of 12 organizations currently using the product under study.

- Construction of a composite organization based on characteristics of the interviewed organizations.

- Construction of a common financial framework for the combined implementation of Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2.

Interview Highlights

Representatives from the following Microsoft customer organizations were interviewed for this study:

1. A global organization that operates information and communications technology (ICT) for multinational organizations and public institutions.

2. A US-based business technology services provider.

3. An information and communication technology solutions and services provider based in the Netherlands.

4. A US-based construction consulting firm.

5. A UK-based group of companies that operate a global portfolio of online gambling products and services.

6. A global manufacturing leader in electronics and electrical engineering.

7. A global business technology services provider with more than 10,000 employees.

8. The Sweden-based arm of a worldwide humanitarian organization.

9. A North American commercial property and casualty insurance organization.

10. A leading multichannel retail organization in Central and Eastern Europe.

11. A North American contract electronic manufacturer.

12. A leading trade organization in Italy, representing more than 20,000 business members.

It is important to note that Results of this study are based on both the experiences and the forward-looking expectations of the interviewed companies, some of which were still in the early stages of their implementation of different solution combinations of Microsoft's productivity platform.

The 12 interviews uncovered a number of important insights on a combined implementation and use of the Microsoft products within these organizations:

- Organizations consistently cited benefits around improved collaboration, better integration among the different applications, a common GUI (graphical user interface), and improved manageability as drivers for deploying and upgrading to the new products across Microsoft's productivity platform.

- Organizations that heavily relied on business intelligence and content management solutions all experienced benefits from consolidating these BI and other collaboration tools around the Microsoft platform.

- The "better user experience" contributed to higher adoption rates for the new collaboration technology among their users, when compared to other productivity tool rollouts in the past.

- Customers with highly distributed and mobile work teams realized more productivity and collaboration benefits for their workforces.

    Contributing to this was the improved ability to collaborate — to communicate and work on documents together and share desktops — on different devices. As the head of one organization's Windows Server team stated, "We're quite a mobile workforce. We've hired 500-plus people this year, our temporary offices are bursting, and we're trying to get people to work from home. It's a massive project: Working Across Locations. And Communications Server is a key part of that – presence, IM, video, voice, voicemail within Exchange 2010 mailbox and Communications Server 2007 R2 as part of our mobile strategy."

    Another factor was the social media capabilities that engendered a sense of community and facilitated connections among the expertise distributed throughout a global organization. One professional services firm noted, "This has enabled us to share more information across our consulting department. They are working with customers but not talking to colleagues on a daily basis. They are isolated. This [Microsoft product suite deployment] is a huge advantage – they get a connection to the people they need at a certain time."

- Customers who had to-date done partial deployments expected to see more substantial results once they rolled out all products to their users. One customer with a small group deployment noted, "We're not seeing the full benefits yet. With Exchange 2010, Communications Server 2007 R2, and Office 2010 — by themselves you do see improvement, but the real benefit is once everyone is on 2010. Then you'll see the full potential."

- While most of the organizations interviewed were concerned about collaboration internally, one company was setting new levels of collaboration with external partners and customers using features like Communications Server federation, shared calendars with Exchange 2010, PowerPoint Broadcast, and SharePoint Workspaces in Office 2010. The project leader noted, "Three years ago at a global summit, we decided we needed a new vision. We're collaborating with other companies using Communications Server and LiveMeeting. As long as they have a Microsoft ID and GUID. There is now a tight integration with IM,

application sharing, presence integration. There is no logistics barrier with the customer. It's collaboration without boundaries."

- Customers with 2003 and 2007 versions of Microsoft products saw the benefits of upgrading. As one customer noted, "2010 is far more mature than earlier versions, with its flexibility and enhanced developer components and tools."

- Several companies had cut their video-conferencing costs by deploying the voice capabilities of LiveMeeting and Communications Server 2007 R2 and a few were in the exploratory stages of building business cases around PBX replacement and considering enterprise voice implementation. Forrester did speak with a Communications Server 2007 R2 customer who quantified their PBX displacement experience and benefits, but had not yet implemented any of the other products focused on in the study. As a result, benefits around an enterprise voice implementation are discussed in the forward-looking flexibility section instead.

TEI Framework

With the information obtained in the customer interviews, Forrester has constructed a TEI framework for those organizations considering a full implementation of Microsoft's productivity platform. The objective of the framework is to identify the cost, benefits, risk factors, and flexibility that affect the decision to invest in this solution.

Composite Organization

Based on interviews with 12 customers who had experience deploying different joint combinations of Microsoft Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2, Forrester constructed a composite company and an associated ROI framework to reflect the investment in and implementation of a combined solution. The composite organization that Forrester synthesized from these interviews is a life sciences organization based in North America with 15 locations worldwide. The following are key characteristics of the composite organization described in the case study:

- Organization size and dimensions.

    o $1.6 billion in revenue.

    o 4,500 employees with 3,000 information workers.

    o Offices in two North American locations with regional offices in Europe, India, and Asia Pacific.

    o The organization is planning a phased implementation of Microsoft Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2 with full deployment after one year to 3,000 users.

- Environment prior to investment.

    o The organization had implemented Office 2007, Exchange 2007, and SharePoint 2007.

- o The organization had deployed Communications Server 2007 R2 for presence and instant messaging to its 500 sales, marketing, and engineering staff.

- o The organization has a third-party sales and CRM solution with data for line-of-business applications residing in a non-Microsoft database.

- o The organization has a heterogeneous data warehouse environment. It already owns SQL Server 2008 Enterprise Edition with Software Assurance.

- o The organization had previously invested in much of the required server hardware.

- o The organization is renewing a platform Enterprise Agreement that includes the Enterprise Client Access License (ECAL) Suite. The ECAL Suite includes client access licenses for SharePoint 2010, Exchange 2010 and Office Communications Server 2007 R2.

Reasons For Investment And Adoption Of The Microsoft Productivity Platform

The composite company would like to take advantage of the synergy of these Microsoft products working together to improve information worker productivity, and realize time and cost savings, as well as manage risks. With the changing business climate and potential for market expansion, the organization also aims to improve business outcomes and sales results by being able to rapidly respond to and enable important business changes. The goals of the deployment include:

- Taking advantage of presence — the ability to see who is available and how to reach them — to streamline collaboration on every document and in every email.

- Enabling people to discover and use richer functionality delivered through the Office interface they are familiar with and use daily.

- Enabling a collaborative culture in which people more efficiently and easily find, interact with, analyze, share, and manage info, content, and expertise.

- Making real-time collaborations richer, easier, and more efficient.

- Enabling people to more efficiently and easily use (and IT to manage) richer integrated messaging, voice communications, and online meetings options.

- Improving how people can stay productive and efficiently/effectively collaborate when mobile, working remotely, or offline.

- Reducing risk exposure to intellectual property loss/leaks and making it efficient and easy for IT and users to be in compliance with laws and regulations.

- Improving user accessibility to increased email and documents storage capacities while decreasing associated costs.

- Getting and extending more value to more users from significant existing investments in Line-Of-Business (LOB) systems and data.

- Improving the ease and timeliness associated with generating insights and making decisions.

- Freeing up IT for more strategic projects while increasing IT productivity and lowering admin and support costs.

- Enabling customized solutions that adapt to business needs rather than requiring business process changes to adapt to solutions.

- Having the flexibility to choose (based on business needs and savings potential) hosted solutions for some deployments.

Framework Assumptions

Table 2 lists the discount rate used in the present value (PV) and net present value (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 environments. Readers are urged to consult with their finance departments to determine the most appropriate discount rates to use within their own organizations.

Costs

The main costs associated with this combined implementation are: 1) client software licensing renewal costs, 2) server software licensing and renewal costs; 3) server hardware costs, 4) implementation labor costs, 5) professional fees and 6) training costs. The following are the cost inputs to the financial analysis.

Client Software

The composite organization is renewing an Enterprise Agreement with an Enterprise Client Access License (ECAL) Suite which includes Software Assurance. The ECAL Suite includes Client Access Licenses for SharePoint 2010, Exchange 2010 and Office Communications Server 2007 R2. There is no additional licensing cost for Microsoft Office Live Meeting. For an enterprise of 3,000 users, renewing a platform Enterprise Agreement with an ECAL Suite costs the organization $123 annually per user or a total of $369,000 per year.

The composite organization is also renewing Microsoft Office, moving from Office 2007 Pro Plus to Office 2010 Pro Plus, under their platform Enterprise Agreement. At a cost of $125.33 annually per user, the total renewal cost to the composite organization is $376,000 per year.

The total cost of renewing a platform Enterprise Agreement with the ECAL Suite and Microsoft Office 2010 Pro Plus is $745,000 annually or $2,235,000 over three years.

Note that in the following table, client software fees for years 1, 2, and 3 are paid at the start of each year so these values are listed in the previous year.

Table 3: Client Software Licensing Renewal Fees

Ref.	Metric	Calculation	Per period	Year 1	Year 2	Year 3	Total
A1	ECAL Suite		369,000				
A2	Office 2010 Pro Plus		376,000				
At	Client Software Licensing Renewal Fees	A1 + A2	745,000				
Ato	Total (original)		($745,000)	($745,000)	($745,000)	$0	($2,235,000)

Source: Forrester Research, Inc.

Server Software

The composite organization has one data center in the US and each international location has its own servers. As part of the new deployment, the organization purchased Windows Server 2008 R2 Enterprise Edition, Exchange Server 2010 Enterprise Edition, Communications Server 2007 R2 Enterprise Edition and SharePoint Server 2010 licenses and software assurance for a cost of $101,528 annually or a total of $304,584 over three years.

Note that server software fees for years 1, 2 and 3 are paid at the start of each year so these values are listed in the previous year.

Table 4: Server Software Licensing and Renewal Fees

Ref.	Metric	Calculation	Per period	Year 1	Year 2	Year 3	Total
At	Server software licensing and renewal fees		101,528				
Ato	Total (original)		($101,528)	($101,528)	($101,528)	$0	($304,584)

Source: Forrester Research, Inc.

Additional Hardware

To support the implementation of Microsoft Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2, the composite organization made the decision to provision these on new hardware and purchased 132 servers at an average cost of $6,000 each. This translates to an initial upfront cost of $792,000.

Implementation — Internal Labor

Customers interviewed for this study had varying estimates on the internal labor required to roll out a full solution to their entire organizations. These estimates were dependent on the size of the organization and the size of the internal IT team available for deployment, as well as each organization's particular processes around planning, testing, and deployment for enterprise software.

Forrester estimates that for planning and deployment of this combined solution, the composite organization spent 3,351 hours of labor in year 0 and an additional 1,436 hours in year 1 until full deployment for a total of 4,787 hours over the three-year analysis.

Implementing the BI solution took up approximately 2,947 of these hours. One engineer spent 2 months setting up a new major business intelligence (BI) solution based on Office, Sharepoint and SQL Server, 12 months building and preparing the data warehouse, one month transferring data from the data warehouse to SharePoint 2010, and two months of testing for a total of 17 months or 2,947 hours.

At a fully loaded compensation for an IT engineer of $110,000 annually or $52.88 per hour, the total internal implementation costs for the composite organization is $253,159 over three years.

Professional Services

Some of the organizations interviewed used professional services in their Microsoft enterprise software deployment. Others chose to exclusively use internal resources. All customers interviewed were part of Microsoft early adopter programs that gave these organizations free access to Microsoft resources during deployment.

For the composite organization, however, an external consultant was used to design dashboards for the BI solution at a cost of $30,000.

Training Costs

The composite organization hired a third-party consultant for user training for a select group of power users at a cost of $15,000 in the first year. Training for the rest of the organization is conducted by internal resources, with 80 training seminars conducted initially and an additional 40 training seminars in the first year. With 12 hours of total training per seminar at an internal cost of $28.85 per hour, internal training costs are $27,692 and $13,846 in years 0 and 1 respectively. Total training cost over the three-year analysis is $41,538.

Total Costs

Total costs for the initial implementation are shown in Table 5 below.

Table 5: Total Costs (Non-Risk-Adjusted)

Costs	Initial	Year 1	Year 2	Year 3	Total
Client software fees	(745,000)	(745,000)	(745,000)		(2,235,000)
Server software licensing and renewal fees	(101,528)	(101,528)	(101,528)		(304,584)
Hardware costs	(792,000)				(792,000)
Implementation costs — internal labor	(177,211)	(75,948)			(253,159)

Professional fees	(30,000)				(30,000)
Training costs	(27,692)	(13,846)			(41,538)
Total	($1,873,431)	($936,322)	($846,528)		($3,656,281)

Source: Forrester Research, Inc.

Benefits

> *"What is the most valuable feature of Office, SharePoint, Exchange, and Communications Server? Well, the integration between all the products is great but the biggest benefit we'll see is the productivity benefit from all the collaboration features."* (CIO, contract electronic manufacturer)

> *"All the applications now play in the same sandbox. They are all integrated with commonality and transparency. 2010 is a good strategic platform decision for the organization."* (CIO, insurance organization*)*

In interviews with Microsoft customers, Forrester identified the following key benefits resulting from an investment in a combined implementation of Microsoft's Productivity Platform:

Improved productivity and collaboration:

- Improved workforce productivity

- Improved collaboration process for distributed teams

Reduced costs:

- Cost savings from replacing legacy BI solutions and lessening demand for developer resources

- Travel cost savings with improved Web and video conferencing, voicemail systems as well as viewing and editing on different devices

- Cost avoidance savings by utilizing features such as Voice over IP (VoIP), web/video and dial-in audio conferencing.

- IT administration savings through a standardized environment with improved administration and management tools

- Reduction in storage costs

- Reduction in training costs primarily driven by a consistent user interface across applications.

Workforce Productivity Savings

The organizations interviewed all noted that deploying Microsoft Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2 together would result in productivity benefits for their users. These benefits came from varying areas, listed below:

- **More integrated collaboration platform.**

  "The biggest thing I hear with every user is the LiveMeeting single point of entry to do everything with collaboration is a huge win." (CIO, contract electronic manufacturer)

  Customers reported time savings of as much as 15 minutes daily due to less switching between disparate applications as collaboration features among the different Microsoft products are more integrated. Companies were using different products for voice, IM, video-sharing and email. "We no longer have to orchestrate different tools. With one platform, we can now manage IM, email, [and] LiveMeeting and share content. It's better for the end users. They're not sitting there and sorting out their environment for the first 5 or 10 minutes of the meeting." one CIO noted. Consolidation of the number of products used for collaboration made the user experience better for these companies and saved their workers time.

  "We are seeing advantages because we have standardized on Microsoft," one customer, an IT service provider, said. "They understand that this [integration] is the first step to centralized and online collaboration. They've done a tremendous job in getting this scenario surfaced in the right way."

- **Access to team members' availability through Presence.** Another benefit of the deployment of these Microsoft products was direct and efficient access to team members' availability through Presence that accelerates connecting with the person that can help. "Knowing if someone is available through Presence – that's contributed between 2 to 3 hours a week," one systems integrator estimated. Another customer mentioned that among the key things that improved their teams' productivity was the value derived from "contextual collaboration – knowing that someone who sent me that email is online." Presence helps facilitate interactions among colleagues and speeds up the collaboration process for these companies. One interviewed organization had federated out presence and instant messaging to include their partner channel. "We now have the ability to get through to the customer, we can sell more products, have better retention, and enhance market share — that's top line impact."

- **Topic and expertise location through social networking features and improved search.** Customers interviewed have also seen improved topic and skills-based expertise location through SharePoint MySites, Active Directory, and better search capabilities with their combined deployment. "The social networking benefit — our users have voiced out that this is important," one customer said, "when they're writing email, it's all tied in with Active Directory, so you see people's pictures. With 2010, it's easier and this has been especially beneficial for our IT group where we deal with individuals in 13 locations across Canada, the US, and China." Another customer echoed the same sentiment, saying, "Outlook social connectors, the people pane to get the pictures — users get excited about little things like that."

  Improving access to experts and relevant information through social networking and improved search has especially benefited the companies we interviewed who have distributed project teams. Consultants working on customer projects which needed specific expertise could find the right people to connect to by searching based on skills to find the necessary consultant resources within their global organization.

  Customers also noted the improved Search feature with Office 2010 and SharePoint 2010. "Conversation view is good, but the Outlook search function is fantastic," one desktop manager remarked. Project information was now easier to locate, resulting in

productivity savings and in one case, at least 10% lower audit costs, for these
organizations.

- **Improved management of documents and email.** Customers interviewed also reported
spending less time searching and managing documents and email due to improved search
and better email management features. While one customer noted that this was a "simple"
feature improvement, it also brought the "biggest advantage." "It's saved 90 minutes a
week of searching and getting the right information and that's a conservative estimation,"
this business development director said.

  "It's not just online search. Archiving and retention capabilities are much richer and more
  robust," noted the head of one organization's workplace architecture team. Availability of
  voicemail transcriptions over email was one area noted as a useful productivity feature.
  One other company estimated that improved search had saved 40% of the time spent
  bookkeeping for a subset of their users.

- **Consistent Ribbon UI interface among applications**. Implementing a consistent
interface of the Ribbon UI across all applications contributed to faster application use and
higher feature use to the interviewed organizations. "Having Outlook be an outlier from the
rest of the office applications [in previous versions] was a disadvantage, but now there is a
better user experience and improved productivity," one customer noted. Customer
estimates for this improvement ranged from 5% to 10%. Another customer estimated
"productivity savings of 20 minutes a week per person" due to the "familiarity with the tool,
with the same ribbon." Customers also noted that they improved their collaboration with a
"much more seamless user graphical interface compared to Office 2007."

- **Improved reporting - incorporating, analyzing, and sharing of data.** By using
SharePoint 2010 and Office 2010, particularly the tools available in Excel and PowerPivot,
some of the customers interviewed noted that heavy BI-users within their organizations
could reduce the time it took to prepare reports. One BI analyst interviewed noted,
"Productivity reports used to take me 8 to 9 hours to complete. Now with tools like
PowerPivot, I can build the initial report in 1 to 2 hours. Then even more savings come into
play because PowerPivot pulls from live data sources, automatically making adjustments
that were time consuming in the past." Another customer estimated that with implementing
SharePoint 2010, using PowerPivot with pre-prepared tables and "one point of entry" for BI,
their users could reduce report production time and increase productivity for these users by
an hour a day.

While customers attributed productivity time savings to each area, different companies may see
varying levels of productivity benefits based on their deployments and the nature of their workforce.
Taking this into consideration and to provide a composite view for the purposes of this study, these
individual savings listed will all be rolled up under one benefit category — workforce productivity
savings.

To conservatively estimate the productivity savings for the composite organization's 3,000 users,
Forrester divided these information workers into three different categories: power users, regular
users, and occasional users. Time saved by deploying Microsoft Office 2010, SharePoint 2010,
Exchange 2010, and Communications Server 2007 R2 is estimated at 30 minutes, 15 minutes, and
5 minutes per day respectively for each information worker category.

Table 6: Information Worker Categories — Composite Organization

Info worker category	Percentage of workforce	Impact	Description
Power user	30%	30 min. per day	High collaboration, analysis and communication requirements
Regular user	60%	15 min. per day	Average collaboration requirements
Occasional user	10%	5 min. per day	Minimal collaboration requirements

Source: Forrester Research, Inc.

Forrester further assumes that with user productivity savings, only 50% of the time saved is used for productive work. This risk-adjustment is applied as Forrester takes into consideration that customers interviewed are chosen by Microsoft and are early adopters of the technology. In addition, as full deployment for the composite organization will be completed at the end of the first year, the financial model only considers that 50% of the benefits from user productivity savings will be realized in year 1.

At an average annual compensation per FTE of $60,000 or $28.85 per hour, the total user productivity savings for the composite organization consisting of 3,000 information workers is $8,671,875 over three years.

Table 7: Workforce Productivity Savings

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
A1	Number of workers		3,000			
A2	Hourly rate per worker		28.85			
A3	Percentage power users		30%			
A4	Number of hours (saved)		130			
A5	Percentage regular users		60%			
A6	Number of hours (saved)		65			
A7	Percentage occasional users		10%			
A8	Number of hours (saved)		22			
A9	Percent captured		50%			
At	Workforce productivity savings	A1*A2*((A3*A4)+(A5*A6)+(A7*A8))*A9	3,187,500			
Ato	Total (original)		$1,734,375	$3,468,750	$3,468,750	$8,671,875

Source: Forrester Research, Inc.

Using assumptions of 52 weeks in a year and 2080 hours in a year, Forrester arrives at a weighted impact hours per year by multiplying percentage of the workforce by the unweighted impact hours per year for the particular information worker category. The same methodology is applied to

percentage productivity increase. Forrester then calculates that information workers for the composite organization will see, on average, a 3.96% improvement in productivity which translates to savings of 82.33 hours or approximately 2 work weeks per year.

Table 8: Workforce Productivity Improvement — Average

Info worker category	Percentage of workforce	Unweighted			Weighted	
		Impact minutes /day	Impact hours/year	Percentage productivity increase	Impact hours/year	Percentage productivity increase
Power user	30%	30	130	6.25%	39.0	1.88%
Regular user	60%	15	65	3.13%	39.0	1.88%
Occasional user	10%	5	43	2.08%	4.3	0.21%
Total/Average	100%				82.33	3.96%

Source: Forrester Research, Inc.

Improved Collaboration Process For Distributed Teams

New features like document coauthoring, improved search, centralized document repositories, social discovery, collaborative workflows, and "one-click" to communicate were cited by a number of companies we interviewed as benefits in helping distributed teams work together. These organizations usually had distributed teams in different time zones who needed to collaborate on critical documents, such as proposals for the sales team and client documentation for professional services teams. With Office 2010 and SharePoint 2010, these organizations can now publish and share documents in one place and synchronize their edits on Office 2010 with the back-end environment using SharePoint 2010. Users could also share desktops as well as communicate and work together through unified audio, video and web conferencing and desktop sharing. This makes collaboration for these distributed teams more efficient and reduces project completion time.

The composite organization has a distributed sales team working on proposals as well as a distributed special projects team working on documentation for clinical trials. A typical proposal will involve an average of 10 people, and the sales team for the composite organization works on 12 proposals a month. The coauthoring feature saves on average 2 days per proposal. This results in 23,040 total hours saved per year.

The composite organization also has a special projects team of 200 people worldwide who collaborate on the documentation needed in the clinical trials process. It is estimated that coauthoring saves each team member 10% of their time in a 40 hour work week.

For a more conservative estimate, it is assumed that only 50% of time saved is used for productive work. In addition, the financial model only considers that 50% of the benefits from these productivity savings will be realized in year 1. This results in an average of $655,385 savings per year.

Table 9: Improved Collaboration Process For Distributed Teams

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
A1	Number of hours saved per proposal		160			
A2	Average number of proposals a month		12			
A3	Hourly rate per FTE		$28.85			
A4	Number of workers in special projects		200			
A5	Percentage of time saved		10%			
A6	Annual rate per FTE		$60,000			
A7	Percent capture		50%			
At	Improved proposal process for distributed teams	(A1*A2*A3*12) + (A4*A5*A6*A7)	$655,385			
Ato	Total (original)		$327,692	$655,385	$655,385	$1,966,154

Source: Forrester Research, Inc.

Cost Savings - Using 2010 for BI Solutions

"With just SharePoint 2010 and Office 2010, at my level I can actually design how I want dashboards to go out, who they go out to, and what they get to slice and dice. We can now keep a pulse on the finances of the company on a daily basis and report them up and down. It allows us to gather as much information [as possible] to make the best decision." (Business analyst, construction consulting firm)

Several companies interviewed reported using out-of-the-box functionality of SharePoint 2010 and Office 2010 to build solutions for managing information and reporting as an alternative to other business intelligence (BI) solutions. As one project manager noted, "2010 provides a platform for us to streamline business processes and focus on efficiency. We are able to create and quickly deploy business solutions so our users can easily access and analyze information." Projects mentioned range from display of financial information and KPIs (Key Performance Indicators), to time-off forms, to productivity reporting and expense reporting. One organization created a helpdesk solution where its agents and managers could review performance metrics in dashboards using Excel Services and SharePoint. This enabled the company to track compliance, analyze staffing levels and continuously look for ways to improve customer service.

With SharePoint 2010 and PowerPivot for Excel 2010 (a free add-in for Excel 2010) for advanced analytics, organizations interviewed implemented self-service BI where users can pull in data from internal and external data sources to create their own reports, dashboards, and other BI solutions without relying as heavily on scarce BI architect resources. Reports could be linked and secured to backend data sources, which saved time to refresh the reports when new data was available. For the IT department, SharePoint 2010 with PowerPivot for SharePoint also provides a management dashboard which enables IT to track report usage, understand server utilization and proactively provide additional support where necessary.

Apart from these developer savings, customers interviewed also reported savings from replacing legacy business intelligence solutions or outright cost avoidance savings of purchasing an

alternative BI solution. One company estimated that it would see future licensing and hardware savings from implementing a centralized entry point for BI as opposed to implementing a localized third-party BI solution in its 20 countries of operation.

The composite organization sees cost savings from replacing legacy business intelligence (BI) solutions and lessening demand for expensive developer resources due to functionality available in SharePoint 2010 and Excel 2010. The composite organization would not be replacing their legacy data warehouse. Licenses for a legacy third-party BI solution cost the organization $798 per user for its 250 users with maintenance of 20% per year. The composite organization has also reduced BI architect demand of 4,000 hours annually by 50% at a cost of $200 an hour. Total cost avoidance savings for the organization is $1,479,300 over three years.

Table 10: Cost Savings — Alternative BI Solution And BI Architect Resources

Ref.	Metric	Calculation	Year 1	Year 2	Year 3	Total
A1	Licensing cost for a third-party BI solution		$798.00			
A2	Number of users		250			
A3	Percentage		100%	20%	20%	
A4	Hourly rate of BI architect		200.00			
A5	Number of hours required annually		4,000			
A6	Reduction in BI architect time		50%			
At	Cost avoidance of legacy business intelligence solution and BI architect time	(A1*A2*A3)+ (A4*A5*A6)	599,500	439,900	439,900	
Ato	Total (original)		$599,500	$439,900	$439,900	$1,479,300

Source: Forrester Research, Inc.

Travel Savings

Customers interviewed who took advantage of the improved Web and video conferencing as well as viewing and editing on different devices saw a reduction in travel costs for their companies. "We have less business trips," one systems engineer remarked, "with LiveMeeting and Communications Server 2007 R2, our 500-user pilot group saved between 3 to 4 meetings a month." One customer with a very mobile workforce where 60% of its employees travel outside of headquarters noted that a full deployment could potentially save the company 50% in travel costs between headquarters and customer sites. Another company's goal once Communications Server 2007 R2 was fully deployed was to reduce travel by 25%.

Apart from improved Web and video conferencing, some companies interviewed also noted that the need to travel for meetings was reduced as their information workers could now collaborate better even from mobile devices. For one company, Communications Server 2007 R2 and the PowerPoint 2010 Broadcast Feature enabled a geographically dispersed team to collaborate on proposals that would normally have required face-to-face meetings they would need to travel to. They noted, "With the Broadcast app on PowerPoint 2010, our CEO doesn't have to be on the call with us, he can be on the mobile. Everyone in 10 different locations can get on the conference call and they can run

through the proposal. Normally, we'd have to all get in one conference room. Now, we are able to do dry runs on the go."

For the composite company, travel savings are conservatively calculated as eliminating one meeting per month for 500 high-travel users within the organization. Of these 500 saved meetings a month, 80% would have required travel by car at a cost of $100 per trip while the remaining 20% would have required air travel at a cost of $650 per trip. As full deployment for the composite organization will be completed at the end of the first year, the financial model only considers that 50% of the benefits from overall travel cost savings will be realized in year 1. Total cost savings to the composite organization is $3.15 million over three years.

Table 11: Travel Cost Savings

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
A1	Number of employees		500			
A2	Number of meetings saved per month		1			
A3	Percentage by car		80%			
A4	Travel cost saved by car		$100.00			
A5	Percentage air travel		20%			
A6	Travel cost saved by air		$650.00			
At	Travel cost savings	A1*A2*((A3*A4)+(A5*A6))	1,260,000			
Ato	Total (original)		$630,000	$1,260,000	$1,260,000	$3,150,000

Source: Forrester Research, Inc.

Cost Avoidance – Conferencing Technology

With the communication capabilities available through Office 2010 and Communications Server 2007 R2, organizations can use integrated audio/video and web conferencing and enterprise voice save communications costs. A number of the companies interviewed had seen voice conferencing services costs reduced as they could now host their own audio conferencing bridge on Communications Server 2007 R2. Additionally, by using presence, instant messaging and peer-to-peer voice, one organization noted a 12 to 1 reduction in its long-distance bills. Companies interviewed who had legacy third-party audio/web conferencing service providers noted that the experience was not as smooth when compared to using a full Microsoft platform including Office 2010. With the ease of communications within Microsoft applications, end-users' technology adoption were greater. As one customer put it, "The functionality to reduce conference calling was already there [in previous Microsoft versions] but now it is easier to use with 2010."

With the Office 2010 and Communications Server 2007 R2 deployment, the composite organization replaced a legacy voice conferencing platform resulting in hardware cost savings of $10,000 a year, and a reduction in related long distance bills from $25,000 a month to $1,500 a month.

To reflect the pace of the deployment, only 50% of these benefits replacing video conferencing solutions with new voice capabilities through Microsoft is expected to be realized in year 1. Total savings to the organization by this shift to voice conferencing using Office 2010 and Communications Server 2007 R2 is $730,000 over three years.

Table 12: Conferencing Technology Cost Savings

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
A1	Reduced hardware cost difference		$10,000			
A2	Old long-distance bill per month		$25,000			
A3	New long-distance bill per month		$1,500			
At	Cost avoidance — conferencing technology	A1 + ((A2-A3)*12)	292,000			
Ato	Total (Original)		$146,000	$292,000	$292,000	$730,000

Source: Forrester Research, Inc.

IT Administration Savings

In deploying the combined solution, the interviewed companies also realized IT administration savings due to the improvement in managing and monitoring tools in these Microsoft products. One organization noted that this improvement has saved "at least 40 hours a month per person in IT in managing Exchange and Communications Server." Another customer said that "We have more time to do development instead of operative work."

Another source of IT administration savings mentioned by customers is the implementation of a standardized environment with Microsoft. "With a more homogenous IT environment, we can deliver the same level of service with less FTEs," one CIO said. By eliminating multiple vendors, IT teams now only had a single product/platform to support, giving them "more time to execute and make better use of data." The CIO for a global manufacturing leader noted that with a full deployment, the company would have a set of common tools compared to its previous environment of 500 packages with potential savings of 20% for the entire IT budget.

Without the IT administration savings through implementing a standardized environment and improved SharePoint 2010 and Exchange 2010 administration features, the composite organization would have needed to hire 25% more people for the same level of work. At an annual rate per IT engineer FTE of $110,000, this has saved the organization $1,650,000 in new hire costs over three years.

Table 13: IT Administration Savings

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
A1	Size of IT team		20			
A2	Percentage additional FTEs required		25%			
A3	Annual rate per IT engineer FTE		$110,000			
At	IT administration savings	A1*A2*A3	$550,000			
Ato	Total (original)		$550,000	$550,000	$550,000	$1,650,000

Source: Forrester Research, Inc.

Reduction In Storage Costs

Customers interviewed who implemented Exchange 2010 had noted that their storage costs were reduced in ranges from 20% to 30%. With Microsoft's Productivity platform, organizations could now use cheaper storage disks as compared to their previous solution. This also resulted in the added benefit of allowing the organization to increase the mailbox size limits for their users for a better user experience.

With the deployment of Microsoft Exchange 2010, storage costs for the composite organization decreased from $100,000 annually to $24,000 per year. Forrester also assumes that storage costs increase by 30% annually. Savings for the composite organization by implementing Microsoft's Productivity platform is $303,240 over three years.

Table 14: Reduction In Storage Costs

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
A1	Previous cost of storage		100,000			
A2	Current cost of storage		24,000			
A3	Increase in storage cost per year		30%			
At	Reduction in training costs	(A1-A2)*(1+A3)	76,000	98,800	128,440	
Ato	Total (original)		$76,000	$98,800	$128,440	$303,240

Source: Forrester Research, Inc.

Reduction In Training Costs

Customers interviewed took note of the advantages that resulted from implementing the familiar Ribbon UI across the applications in the combined solution. "With the Outlook integration with the ribbon, it's a better user experience," one customer said. Another customer with a focused deployment on BI solutions noted that using the common UI interface resulted in a higher adoption rate for the BI solution based on Excel 2010 and SharePoint 2010 when compared with a different BI tool. Another customer interviewed said that having the same UI for Office 2010 and SharePoint 2010 resulted in 10% faster adoption among its users. Several companies also cited reduced training costs as a result of a more consistent user interface across the applications.

The benefit of the familiar Ribbon UI across the applications is quantified as a reduction in training costs for the composite organization. With the common UI, the training requirement for deployment of Office 2010, SharePoint 2010, and associated web applications was reduced by 25% — from 1.5 days down to 1 day of training. These 4 hours of training saved represent a $173,077 reduction in training costs for the entire organization.

Table 15: Reduction In Training Costs

Ref.	Metric	Calculation	Per period	Year 2	Year 3	Total
A1	Number of workers		3,000			
A2	Hourly rate per worker		$28.85			

A3	Number of hours (saved)		4.0				
A4	Percent captured		50%				
At	Reduction in training costs	A1*A2*A3*A4	$173,077				
Ato	Total (original)		$173,077	$0	$0	$173,077

Source: Forrester Research, Inc.

Total Benefits

The sum of the benefits of Microsoft Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2 accruing to the composite company is $17,092,828. Readers of this study should recall that Forrester has calculated only the benefits that the interviewed Microsoft customers have experienced and were able to quantify within a range of estimates. Readers who are considering implementing this combined solution should use this study as a starting point for their organizations' business cases; there are likely additional quantifiable benefits to each individual product in Microsoft's productivity platform particular to your organization that have not been calculated herein[1].

Table 16 summarizes the quantified benefits described above.

Table 16: Total Benefits (Non-Risk-Adjusted)

Benefits	Year 1	Year 2	Year 3	Total
Workforce productivity savings	1,734,375	3,468,750	3,468,750	8,671,875
Improved collaboration process through coauthoring	327,692	655,385	655,385	1,638,462
Cost savings of legacy business intelligence solution and BI architect resources	599,500	439,900	439,900	1,479,300
Travel cost savings	630,000	1,260,000	1,260,000	3,150,000
Cost avoidance — conferencing technology	146,000	292,000	292,000	730,000
IT administration savings	550,000	550,000	550,000	1,650,000
Reduction in storage costs	76,000	98,800	128,440	303,240
Reduction in training costs	173,077			173,077
Total	$4,236,644	$6,764,835	$6,794,475	$17,795,953

Source: Forrester Research, Inc.

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[1] For a more in-depth analysis of additional benefits for individual products, please refer to the TEI case studies on Microsoft Sharepoint 2010, Exchange 2010, Unified Communications Products and Services, and Office 2010 listed in Appendix C.

Risk

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

For the purpose of this analysis, Forrester risk-adjusts most cost and all benefit estimates to better reflect the level of uncertainty that exists for each estimate. The TEI model uses a triangular distribution method to calculate risk-adjusted values. To construct the distribution, it is necessary to first estimate the low, most likely, and high values that could occur. The risk-adjusted value is the mean of those points. Cost estimates are risk-adjusted in the same way, except when cost amounts are determined by contract, so no risk adjustment is applied.

For example, take the case of the cost category internal labor for implementation, the $253,159 value used in this analysis can be considered the "most likely" or expected value. These costs will vary based on any unforeseen complexity or delay in implementation. Forrester applies a risk-adjustment factor of 135% to this amount to obtain the high estimate, 100% as the most likely, and 100% for the low estimate. This has the effect of increasing the cost estimate to take into account the fact that original cost estimates are more likely to be revised upward than downward. Forrester then creates a triangular distribution to reflect the range of expected costs, with 112% as the mean risk factor. Forrester applies this mean to the compensation total amount of $253,159 to arrive at a risk-adjusted value of $283,538.

Some cost figures are not risk-adjusted. License and software assurance charges, for example, can be determined with a high degree of certainty (and contractually set) before a project is started.

The other costs and benefits of the Microsoft implementation considered in this study are risk-adjusted using factors shown in the table below.

Table 17: Risk-Adjustment Factors

	Metric	Low	Orig.	High	Mean
Costs	Client software fees	100%	100%	100%	100%
	Server software licensing and renewal fees	100%	100%	100%	100%
	Hardware costs	100%	100%	110%	103%
	Implementation costs — internal labor	100%	100%	135%	112%
	Professional fees	100%	100%	120%	107%
	Training costs	100%	100%	110%	103%
Benefits	Workforce productivity savings	85%	100%	100%	95%

Improved collaboration process through coauthoring	95%	100%	100%	98%
Cost savings of legacy business intelligence solution and BI architect resources	95%	100%	100%	98%
Travel cost savings	85%	100%	100%	95%
Cost avoidance — conferencing technology	90%	100%	100%	97%
IT administration savings	90%	100%	100%	97%
Reduction in storage costs	95%	100%	100%	98%
Reduction in training costs	95%	100%	100%	98%

Source: Forrester Research, Inc.

All of the risk-adjusted cost and benefit amounts are shown in Tables 18 and 19 below.

Table 18: Total Risk-Adjusted Cost and Present Value

Costs	Initial	Year 1	Year 2	Year 3	Total	Present value
Client software fees	745,000	745,000	745,000		2,235,000	2,037,975
Server software licensing and renewal fees	101,528	101,528	101,528		304,584	277,734
Hardware costs	815,760				815,760	815,760
Implementation costs — internal labor	198,476	85,061			285,538	275,805
Professional fees	32,100				32,100	32,100
Training costs	28,523	14,262			42,785	41,488
Total	$1,921,387	$945,851	$846,528		$3,713,766	$3,480,862

Source: Forrester Research, Inc.

Table 19: Total Risk-Adjusted Benefit And Present Value

Benefits	Year 1	Year 2	Year 3	Total	Present value
Workforce productivity savings	1,647,656	3,295,313	3,295,313	8,238,281	6,697,085
Improved collaboration process	321,138	642,277	642,277	1,605,692	1,305,304

through coauthoring					
Cost savings of legacy business intelligence solution and BI architect resources	587,510	431,102	431,102	1,449,714	1,214,276
Travel cost savings	598,500	1,197,000	1,197,000	2,992,500	2,432,671
Cost avoidance — voice conferencing technology	141,620	283,240	283,240	708,100	575,631
IT administration savings	533,500	533,500	533,500	1,600,500	1,326,736
Reduction in storage costs	74,480	96,824	125,871	297,175	242,298
Reduction in training costs	169,615			169,615	154,196
Total	$4,074,020	$6,479,255	$6,508,303	$17,061,578	$13,948,195

Source: Forrester Research, Inc.

Flexibility

Flexibility, as defined by Forrester's TEI methodology, represents an investment in additional capacity or agility today that can be turned into future business benefits at some additional cost. This provides an organization with the "right" or the ability to engage in future initiatives but not the obligation to do so. There are a number of scenarios in which a customer might choose to implement an integrated solution to address a set of immediate user and IT requirements and later realize additional uses and business opportunities.

Forrester identified the following areas that present flexibility options for the composite organization in deploying an integrated solution.

Implementing Microsoft Business Productivity Online Suite (BPOS) At Branch Locations

Some of the companies interviewed were in the initial stages of evaluating BPOS for Microsoft SharePoint 2010, Exchange 2010, and Communications Server 2007 R2 in selected locations. Microsoft offers its customers the flexibility to choose hosted solutions or deploy on-premises for its productivity suite. In the evaluations, one customer noted, "The benefits of a hybrid implementation is that we are able to have good flexibility in placing applications where they can be run in the most cost-efficient manner and balance that with the demand by end users for availability." Reduction of IT management overhead and IT security improvement were other benefits cited by customers. Another customer envisioned, "In the future, there will be no concept of 'in the office'. Remote users will be connecting in the cloud and get the same experience as on-premises users."

The composite organization is evaluating a future implementation of Exchange 2010 in a BPOS environment for 250 of its information workers located in branch offices. This includes archiving and mobile device email access. The customer-estimated cost of implementing BPOS for these users in the branch office is $9 per user per month or $27,000 per annum for 250 users. The organization also estimates that the alternative of continuing to provide Exchange 2010 on-premises for these users would cost $15.40 per user a month, equaling $46,200 in total. This cost includes server

support costs (mobile device and Exchange server), IT administration costs, licensing costs, and anti-spam costs. In the flexibility analysis, the total benefit or asset value of implementing BPOS is estimated as the total cost avoidance of these on-premises costs.

The flexibility component of TEI captures that value using either the financial industry standard Black-Scholes or the binomial option pricing models. With a two-year time frame to use this option, as the composite organization will only start considering this opportunity after year 1, Forrester values the above flexibility option at $24,697. This value exists in addition to risk-adjusted benefits and ROI described in this analysis.

Table 20: Flexibility Analysis — BPOS Implementation

Ref.	Metric	Calculation	Per period
A1	Asset value (benefit — annual cost of on-premises Exchange solution)		$46,200
A2	Cost to acquire (BPOS implementation for 250 users)		$27,000
A3	Expiration (time to expire, in years)		2.0
At	Flexibility — BPOS implementation	Black-Scholes Model	$24,697

Source: Forrester Research, Inc.

Unified Communications — Enterprise Voice

"We've reached a new paradigm with Enterprise Voice deployments. With the new CS Wave 14 technology, we no longer have to think about the need for classic PBX equipment in new facilities. This new approach to voice communications improves the planning process while eliminating PBX equipment, reduction in floor space, reducing environmental costs like HVAC, power and maintenance. Overall, the capital and incremental operating cost models are much more favorable to the business." (Head, workplace architecture team, global electronics manufacturer)

Through Office 2010 and Communications Server 2007 R2, organizations can not only complement existing video conferencing solutions but these organization now have an opportunity to review the value of replacing existing enterprise voice solutions with new voice capabilities available in Microsoft products.

Most organizations interviewed for this study were still in the process of investigating enterprise voice. However, Forrester did speak with a Communications Server 2007 R2 customer who quantified their PBX displacement experience and benefits, but had not yet implemented the other products focused upon in this study. This particular customer noted, "We reduced yearly PBX upgrades and maintenance costs by $1.2 million." In addition, one customer noted, "As an IT owner, it's about cost and simplifying the environment, reducing OPEX." Another customer who was in the initial stages of planning a business case around this opportunity said, "We are paying a huge amount for IPT phones and our service provider, so using the extended Communications Server features will work well and be a big advantage. We don't have to invest in additional hardware. The question is do we co-exist or totally replace? It is on our agenda to investigate this."

The composite organization is evaluating implementing Communications Server Enterprise Voice and replacing the PBX system for 1,000 of its users. The estimated quantified benefits of this project would include: 1) cost avoidance of circuit costs and cost to support a trunking product; 2) green savings by avoiding the cost to heat, cool, and power these systems; and 3) PBX cost avoidance as these boxes are eliminated. The estimated total annual benefit (also called estimated asset value in the flexibility calculation) is $375,789.

The one-time cost to implement this project is estimated at $85,799. This includes: 1) the cost of USB headsets for 1,000 users; 2) training; 3) internal labor to convert users; 4) contract labor to convert sites; 5) time spent on planning; and 6) time spent on administration of the solution.

The flexibility component of TEI captures that value using either the financial industry standard Black-Scholes or the binomial option pricing models. With a two-year time frame to use this option, as the composite organization will only start considering this opportunity after year 1, Forrester values the above flexibility option at $296,901. This value exists in addition to risk-adjusted benefits and ROI described in this analysis.

Table 21: Flexibility Analysis — Communications Server Enterprise Voice Implementation

Ref.	Metric	Calculation	Per period
A1	Asset value (benefit — circuit and trunking cost avoidance, green savings, PBX elimination)		$375,789
A2	Cost to acquire (Communications Server Enterprise Voice and conversion for 1,000 users)		$85,799
A3	Expiration (time to expire, in years)		2.0
At	Flexibility — Communications Server Enterprise Voice implementation	Black-Scholes Model	$296,901

Source: Forrester Research, Inc.

Voicemail Cost Avoidance

Through the unified messaging features built into Microsoft Exchange 2010, organizations also have the opportunity to reduce their reliance on their corporate voicemail systems. While this feature is available in Exchange 2007, Exchange 2010 adds new capabilities such as audio voicemail preview and phone-based access to inbox in multiple languages. With Outlook 2010, Exchange 2010 delivers additional features to enhance user productivity including presence integration into the voicemail texts, ability to click on the text in the voicemail to listen to the portion of the voice mail, and protected voicemail. While not quantified at this time, organizations using this functionality could potentially decommission PBX voicemail systems and avoid the associated annual support and maintenance fees in the future.[2]

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[2] For a more in-depth analysis of this benefit category around Exchange 2010, please refer to The Total Economic Impact ™ Of Microsoft Exchange 2010 Prepared for Microsoft Corporation, November 2009 by Amit Diddee

Retiring Additional Legacy Technology Costs

The Microsoft Enterprise Client Access Licenses Suite also gives organizations access to additional technology from the Microsoft System Center and Forefront to better manage and secure the Microsoft Productivity Platform. While not quantified at this time, organizations that choose to access this additional technology in the future may have the potential to see further cost savings from retiring these legacy technologies in areas covered by the Enterprise Client Access Licenses Suite such as:

- Legacy voice-mail maintenance[3]

- Email Anti-Malware and Anti-Spam through Forefront Online Protection for Exchange or Forefront for Exchange 2010[2]

- Extended mobility through Exchange ActiveSync[2]

- Desktop Anti-Virus through Forefront Client Security

- Search appliances through intranet search capabilities available with FAST Enterprise Search capabilities found in SharePoint 2010

- Secure VPN Gateway through the Forefront Unified Access Gateway

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). Please note that the values calculated above exist in addition to risk-adjusted benefits described in this case study analysis; Forrester has not included the option value in the ROI calculations.

TEI Framework: Summary

Considering the financial framework constructed above, the results of the costs, benefits, and risk sections using the representative numbers can be used to determine a return on investment, net present value, and payback period. Table 22 shows the consolidation of the numbers for the composite organization.

Table 22: Total Costs And Benefits, Non-Risk-Adjusted

Ref.	Project cash flow	Calculation	Initial cost	Year 1	Year 2	Year 3	Total	PV/NPV
E1	Total costs		($1,873,431)	($936,322)	($846,528)	$0	($3,656,281)	($3,424,243)
F1	Total benefits		$0	$4,236,644	$6,764,835	$6,794,475	$17,795,953	$14,547,057
G1	Net savings			$3,300,322	$5,918,307	$6,794,475	$14,139,672	$11,122,814
H1	ROI	(F1-E1)/E1						325%
P3	Payback							6.8 months

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[3] For a more in-depth analysis of this benefit category around Exchange 2010, please refer to The Total Economic Impact™ Of Microsoft Exchange 2010 Prepared for Microsoft Corporation, November 2009 by Amit Diddee

	period							

Source: Forrester Research, Inc.

Table 23 below show the risk-adjusted values, applying the risk-adjustment method indicated in the "Risks" section.

Table 23: Total Costs And Benefits, Risk-Adjusted

Ref.	Project cash flow	Calculation	Initial cost	Year 1	Year 2	Year 3	Total	PV/NPV
J1	Total costs		($1,921,387)	($945,851)	($846,528)	$0	($3,713,766)	($3,480,862)
K1	Total benefits		$0	$4,074,020	$6,479,255	$6,508,303	$17,061,578	$13,948,195
L1	Net savings			$3,128,169	$5,632,727	$6,508,303	$13,347,812	$10,467,333
M1	ROI	(K1-J1)/J1						301%
P3	Payback period							7.4 months

Source: Forrester Research, Inc.

It is important to note that values used throughout the TEI Framework are based on in-depth interviews with 12 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 environments. Forrester strongly advises that readers use their own estimates within the framework provided in this study to determine the expected financial impact of implementing Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2.

Study Conclusions

The data collected in this study indicates that standardizing and centralizing on a business productivity platform based on Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2 has the potential to provide a solid return on the investment. The risk-adjusted ROI of 301%, along with a rapid payback period (breakeven point) for the composite organization raises confidence that the investment is likely to succeed since the risks and uncertainty that may threaten the project have been considered and quantified. In interviews with Microsoft customers, Forrester found that organizations can realize benefits in the form of:

- Improvements in workforce productivity as evidenced by time savings and productivity gains due to:

    1. Less switching between applications as collaboration features among the different products are more integrated.

    2. Direct and efficient access to team members' availability through Presence that accelerates connecting to the person that can help.

    3. Improved ease of finding topic and skills-based expertise and knowledge through SharePoint MySites, Active Directory, and better search capabilities.

    4. Less time searching and managing documents and email due to improved search and better email management features.

    5. Faster application use and higher feature use due to the consistent interface of the Ribbon UI across all applications.

    6. Improved reporting - incorporating, analyzing, and sharing of data - for BI users.

- Improved collaboration process through the document coauthoring feature for distributed teams, such as sales, clinical trial teams, or professional services.

- Cost savings from replacing legacy business intelligence (BI) solutions and lessening demand for expensive developer resources due to functionality available in SharePoint 2010 and Excel 2010 with PowerPivot for Excel.

- Reduced instances of travel resulting in cost savings resulting from more integrated and seamless conferencing collaboration and communications experiences, as well as viewing and editing on different devices with Microsoft Office 2010 and SharePoint 2010.

- Voice conferencing and long-distance telecom costs avoided by utilizing features such as Voice over IP (VoIP), web/video and dial-in audio conferencing.

- IT administration savings through implementing a standardized environment, with common administration and management tools across SharePoint 2010, Exchange 2010 and Office Communications Server.

- Reduction in storage costs.

- Reduction in training costs primarily driven by a consistent user interface across applications.

Based on these findings, companies looking to implement Office 2010, SharePoint 2010, Exchange 2010, and Communications Server 2007 R2 can anticipate improvements in information worker efficiency, improved business and organizational productivity, and cost avoidance savings. Using the TEI framework, many companies may find the potential for a compelling business case to make such an investment.

Table 24: Composite Company ROI, Risk-Adjusted

Summary financial results	Original estimate	Risk-adjusted
ROI	325%	301%
Payback period (months)	6.8	7.4
Total costs (PV)	($3,424,243)	($3,480,862)
Total benefits (PV)	$14,547,057	$13,948,195
Total (NPV)	$11,122,814	$10,467,333

Source: Forrester Research, Inc.

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 enterprise wide upgrade of an office productivity suite can potentially increase standardization (to increase efficiency) and reduce licensing costs. However, an embedded collaboration feature may translate to greater worker productivity if activated. The collaboration can only be used with additional investment in training at some future point in time. However, having the ability to capture that benefit has a present value that can be estimated. The flexibility component of TEI captures that value.

Appendix B: Glossary

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

Net present value (NPV): The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.

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

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

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

A Note On Cash Flow Tables

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

Example Table

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

Source: Forrester Research, Inc.

Appendix C: Considering This Study in Context with Other Recently Published TEI Studies

The purpose of this study is to illustrate the "better together" benefits that organizations may achieve through implementing Microsoft's Productivity Platform (which includes Office 2010, SharePoint 2010, Exchange 2010 and Communications Server 2007 R2). This study focused on the benefits of integrating the products for users and IT administrators.

Each of these products may also offer additional individual benefits that were not discussed in this study. To understand the financial impact of implementing each individual product of Microsoft Office 2010, SharePoint 2010, Exchange 2010 and Unified Communications Suite products in depth, the reader should refer to previous Total Economic Impact case studies listed below.

All these Total Economic Impact studies each have a custom composite organization particular to each individual study with varying levels of existing assets and deployments. These have direct impact on the corresponding ROI figures and these values are unique to each organization and may vary from company to company.

An organization, when evaluating an investment in Microsoft's Productivity Platform, may use the TEI framework and the relevant cost and benefit categories contained in the joint study of Microsoft's Productivity Platform as well as those relevant categories contained in each individual product study (Office 2010, SharePoint 2010, Exchange 2010 and Unified Communications Products and Services) to find a compelling business case to make such an investment.

For the benefit of the reader, Forrester has excerpted sections describing the general quantified benefits in these case studies. For specific quantification of these benefits, please refer to the detailed Total Economic Impact studies which can be searched for at www.microsoft.com/bpio.

The Total Economic Impact ™ Of Microsoft Office SharePoint 2010
Prepared for Microsoft Corporation, March 2010 by Jeffrey North

> *"In conducting the interviews with Microsoft customers, Forrester found that organizations can achieve significant financial benefits from consolidating collaboration, document management, internal and external portal software, and search onto SharePoint Server 2010. The new capabilities of SharePoint 2010 can encompass line of business applications – accounting and finance, business intelligence, and other complex workloads for some customer organizations, allowing organizations to reduce the number of vendors and achieve lower software license and maintenance costs. Additional benefits can be accrued from lower IT administration and simplified application development by upgrading SharePoint 2003 and 2007 environments to SharePoint Server 2010.*
>
> *The study also uncovered benefits of improved collaboration and information worker productivity and indications of even stronger collaboration in the future as customer organizations take advantage of new capabilities in SharePoint Server 2010."*

The Total Economic Impact ™ Of Microsoft Exchange 2010
Prepared for Microsoft Corporation, November 2009 by Amit Diddee

> *"In conducting in-depth interviews with nine existing customers, Forrester found that these companies achieved cost avoidance of storage, reduced cost of high availability,*

cost avoidance in voicemail, savings in backup systems, fewer help desk calls, cost avoidance of mobility, enhanced communication security, and simplified compliance and legal discovery, among other benefits."

The Total Economic Impact ™ Of Microsoft Unified Communications Products and Services Prepared for Microsoft Corporation, October 2007 by Jeffrey North

"Forrester's in-depth interviews with Microsoft UC customers yielded important observations on the business value of the UC products. Forrester found that organizations can realize benefits in the form of:

- o *Individual and workgroup productivity.*

- o *Travel cost savings.*

- o *Reducing the time to complete projects.*

- o *Shortened sales cycles.*

- o *Cost reductions for dial-in conferencing and telephone charges.*

- o *Improved customer retention.*

Further, although not quantified for this case study, Forrester recommends that prospective UC implementers examine potential benefits in these categories as well:

- o *Reduced total cost of ownership of telephony a) equipment; b) management; and c) administration (moves/adds/changes), directory maintenance, charges to employees for mobile phone usage, and conferencing.*

- o *Reduced real-estate and physical office costs, such as leases, leasehold improvements, fixtures, office equipment, and IT/administrative support.*

- o *Reduced training expenses.*

- o *Improved ability to attract and retain quality employees.*

- o *Faster, better resolution of customer service issues.*

Forrester believes that unified communications offers the promise of significant competitive advantage in making customer and supplier/partner relationships stronger for firms that adopt these collaboration technologies."

The Total Economic Impact ™ Of Microsoft Office 2010 Prepared for Microsoft Corporation, May 2010 by Bob Cormier

"In conducting the interviews with Microsoft customers, Forrester found that the Organization can achieve significant risk-adjusted benefits in the following areas (see Benefits section for more details):

o *Coauthoring productivity benefits of **$3,375,450** (three years) in a sales and business development group.*

o *OneNote productivity benefits of **$990,000** (three years) for 40 discrete project teams.*

o *Elimination of 3rd party photo/video editing tools at a cost savings of **$34,328** (three years).*

o *Benefits associated with "can't live without" features of Office 2010 totaling **$6,815,813** in productivity benefits associated with the aggregate use of the following Office 2010 features/functionality: Microsoft Office Backstage view, Enhanced Ribbon across Office 2010 applications, Microsoft's Protected View feature, Paste/Preview, Conversation View, Quick Steps feature, Calendar Preview and Sparklines and Slicers (Excel 2010)."*

Appendix D: About The Project Director

Michelle S. Bishop
Senior Consultant

Michelle S. Bishop is a senior consultant with Forrester's Total Economic Impact (TEI) consulting practice. The TEI methodology focuses on measuring and communicating the value of IT and business decisions and solutions as well as providing an ROI business case based on the costs, benefits, risks, and flexibility of investments.

Prior to joining Forrester, Michelle held leadership roles in operations, technology, and marketing in such large organizations as Shell Corporation and Avaya. At Shell, she was the product manager for LPG retail distribution initiatives as well as project lead for quality and information security at Shell Philippines. While working at Avaya, she led the inventory reduction program and consulted on various aftermarket operations projects. Michelle also came to Forrester with process improvement and account management experience in high-growth start-ups in media and digital services.

Michelle holds a Bachelor of Science in Industrial Engineering from the University of the Philippines and a Master of Business Administration from the MIT Sloan School of Management.