A Forrester Total Economic Impact™ Study

Commissioned By

Google

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The Total Economic Impact™ Of Google Apps For Work

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Executive Summary

Google Apps for Work can improve collaboration and communication and help save costs along with enhancing workforce mobility.

The costs and benefits for a composite organization of 12,000 employees, based on customer interviews, are:

- **License costs: $10 per user per month.**
- **Initial and ongoing costs: $1,163,395.**
- **Total cost savings and benefits: $17,083,603.**

Google commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Google Apps for Work. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Google Apps for Work on their organizations.

To better understand the benefits, costs, and risks associated with Google Apps for Work, Forrester interviewed several customers with multiple years of experience using Google Apps for Work. Google Apps for Work is a suite of applications that includes Gmail, Google Drive (file storage and sharing), Hangouts (video meetings and chat), Docs, Sheets, Slides, Forms, Calendar, and Sites, including security and admin controls. Many organizations around the world are utilizing Google Apps for Work to increase collaboration, engagement, and productivity in an effort to enhance business innovation, improve customer experiences, and streamline business processes. Additionally, they are improving employee engagement by giving their employees the ability to access information and work from anywhere on any device.

Prior to Google Apps for Work, companies had implemented on-premises email, storage, and communication tools that failed to create an all-encompassing communication and collaboration solution. Employees were not able to access documents remotely and collaborate effectively. These limitations led to frustration, loss of productivity, and expensive IT systems that weren't supporting the needs of their workforce. One interviewed organization had to send hard drives all over the country to combine information on local drives. With Google Apps for Work, employees are able to streamline processes that require multiple stakeholders' input, collaborate in real time using Google Docs, and have true mobility to work from any device, anywhere. Said a corporate technology senior director: ". . . Besides saving money and allowing us to be way more productive than we ever were, it has changed our culture completely. . . . It's allowed us to really go where we never thought we could go, where we have to go twice as fast as everybody else. Everybody has to be able to collaborate with everybody else. . . . We have to be able to do it from anywhere. It has changed the way that we think around here completely."

GOOGLE APPS FOR WORK IMPROVES COLLABORATION AND COMMUNICATION

Our interviews with six existing customers and subsequent financial analysis found that a composite organization of 12,000 employees and 10,000 Google Apps for Work users experienced the risk-adjusted ROI and benefits shown in Figure 1.

The composite organization realized benefits of $17.1 million versus implementation costs of $4.2 million, adding up to a net present value (NPV) of $12.9 million. This translates to benefits of $170,836 per 100 users over three years. With Google Apps for Work, Hangouts has transformed how people communicate and meet. Organizational managers can train, assess, and provide feedback to employees without having to travel on-site. The composite organization experienced travel reductions of 12 trips per manager per year, leading to $2.4 million in annual savings.

FIGURE 1
Financial Summary Showing Three-Year Risk-Adjusted Results

Source: Forrester Research, Inc.

› **Benefits.** The composite organization experienced the following risk-adjusted benefits that represent those experienced by the interviewed companies:

- **Increased collaboration efficiency led to $8,013,311 in savings.** With the ability to collaborate in real-time using Google Docs, Sheets, and Slides; create project collaboration spaces in Google Sites; and easily access and share files, even on the go, with Google Drive, employees were able to streamline business processes while collaborating more effectively, leading to a time savings range across the organization of 15 minutes to 2 hours per week per employee.
- **Improved mobility reduced travel costs by $5,371,600.** Mobility allows employees to work in the moment. Whether on the go commuting to work or at a client site, employees are able to be more efficient with their time and improve their responsiveness. Being able to utilize personal devices including the iPhone, iPad, and Android has increased engagement, leading to greater agility across the organization. Furthermore, the ability for employees to work from home, remote offices, or in the field has reduced the need to travel on-site for in-person meetings like trainings or annual evaluations. Overall, mobility creates an environment where employees are able to work together, share ideas, innovate, evaluate decisions, and improve business performance without having to be in a physical office.
- **A cloud-based solution reduced legacy IT costs by $502,979.** Google's cloud-based file storage and email solution removed the dependency for on-premises legacy servers and storage, reducing maintenance costs and allowing IT to focus on more impactful activities.
- **A new telephony solution resulted in legacy telephony cost savings of $3,195,713.** Google Hangouts provides the communication platform for conferencing and calling, leading to a reduction in telephone services and reduced conferencing services.

› **Costs.** The composite organization experienced the following risk-adjusted costs:

- **Software licensing fees of $3,068,881 over three years, or $10 per user per month.** These are the monthly Google Apps for Work license costs.
- **Professional services fees of $231,000, or $23 per user over six months.** Google Apps for Work recommends the use of a third-party integrator during the implementation and rollout of the software for medium to large organizations.
- **Third-party change management costs of $231,818, or $23 per user.** Change management is critical in ensuring high adoption rates and maximizing collaboration and improvements. Through the use of a third-party change management service and in conjunction with Google's support through transformation sessions, our composite organization required five months of support in the first year.
- **Internal training costs of $700,576, or $70 per user over three years.** While many employees use Google Apps in their personal lives, making adoption relatively easy and intuitive, internal training is suggested to ensure collaboration and productivity improvements are maximized**.** These costs represent the hours employees will spend in training classes and utilizing eLearning sessions.

Disclosures

The reader should be aware of the following:

- The study is commissioned by Google and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.
- Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in Google Apps for Work.
- Google reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.
- Google provided the customer names for the interviews but did not participate in the interviews.

TEI Framework And Methodology

INTRODUCTION

From the information provided in the interviews, Forrester has constructed a Total Economic Impact (TEI) framework for those organizations considering implementing Google Apps for Work. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision, to help organizations understand how to take advantage of specific benefits, reduce costs, and improve the overall business goals of winning, serving, and retaining customers.

APPROACH AND METHODOLOGY

Forrester took a multistep approach to evaluate the impact that Google Apps for Work can have on an organization (see Figure 2). Specifically, we:

- Interviewed Google marketing, sales, and product personnel, along with Forrester analysts, to gather data relative to Google Apps for Work and the marketplace for Google Apps for Work.
- Interviewed six organizations currently using Google Apps for Work to obtain data with respect to costs, benefits, and risks.
- Designed a composite organization based on characteristics of the interviewed organizations (see Appendix A).
- Constructed a financial model representative of the interviews using the TEI methodology. The financial model is populated with the cost and benefit data obtained from the interviews as applied to the composite organization.
- Risk-adjusted the financial model based on issues and concerns the interviewed organizations highlighted in interviews. Risk adjustment is a key part of the TEI methodology. While interviewed organizations provided cost and benefit estimates, some categories included a broad range of responses or had a number of outside forces that might have affected the results. For that reason, some cost and benefit totals have been risk-adjusted and are detailed in each relevant section.

Forrester employed four fundamental elements of TEI in modeling Google Apps for Work's service: benefits, costs, flexibility, and risks.

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

FIGURE 2

TEI Approach

Source: Forrester Research, Inc.

Analysis

COMPOSITE ORGANIZATION

For this study, Forrester conducted a total of six interviews with representatives from the following companies, which are global Google customers:

- A global company employing 1,400 in the media industry and reaching 275 million digital consumers around the globe each month. Based in the US, this organization has offices in the UK and China as well.
- Rentokil Initial, a London-based organization with 28,000 employees and 14,000 Google Apps for Work users. This organization has many offices throughout the world, with 80% of its employees working in the field. Google Apps for Work has been critical in supporting a large amount of acquisitions in the US over the past five years. Google Apps has allowed it to quickly integrate acquired companies into the same communication and collaboration platform, allowing employees to work together and share ideas sooner and helping to ensure success in the acquisition.
- A creative professional company, Imagination, headquartered in London with 22 offices around the world. This organization has a distributed workforce operating in 1,150 cities and 73 countries. With 1,200 Google Apps for Work users, Imagination has been able to empower its global workforce and leverage Google Drive and Sites as a content management system, supporting more than 500,000 tagged product images, videos, and case studies.
- A European online travel agency with 1,900 employees, all of whom are Google Apps for Work users.
- A multibillion Euro chemical manufacturing company. This organization employs 30,000 people (20,000 Google Apps for Work users) and has offices and plants scattered throughout Europe and Asia.
- A US-based manufacturing company with 12,000 Google Apps for Work users. This business-to-business (B2B) organization has offices in the UK, China, and Australia.

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected. The composite organization that Forrester synthesized from these results represents an organization with the following characteristics:

- A B2B multinational services company with offices located throughout the world.
- 12,000 employees, with 10,000 Google Apps for Work users.
- Annual revenue of $4 billion.
- Four hundred managers overseeing employees who are spread out across many offices and in the field.

After an extensive RFP and business case process evaluating multiple vendors, the composite organization chose Google and began deployment:

- The composite organization’s goals were to improve collaboration and communication; increase workforce mobility to enable faster decision-making and sharing of ideas; execute more effectively; increase productivity; and increase employee engagement, leading to overall stronger business performance and higher customer satisfaction.
- The composite organization wanted to drive IT cost savings by moving from a legacy on-premises server solution into the cloud.
- A third-party integrator was utilized for the six-month period that included design, pilot, and implementation.

- Google Apps for Work was released across all 10,000 employees at the same time, but adoption, or the rate at which employees incorporated the use of Google Apps into the way they worked, ramped over three years (60% in Year 1, 75% in Year 2, and 100% in Year 3).
- Training sessions for all employees were held with online learning guides, and champions within different departments assisted in real-time teaching.
- Adoption and collaboration were accelerated through five months of change management.

> *"Google Sites was the hidden gem. . . . We now have over 300 active self-service project sites."*
>
> ~Senior director, global media organization

INTERVIEW HIGHLIGHTS

In the age of the customer, companies across the globe are facing increasing pressures to stay competitive and meet their customers' needs. Google Apps for Work transforms the way people work, and with the right tools and increased engagement, employees are now sharing ideas, sitting in on meetings remotely, and partnering with subject matter experts they previously wouldn't have. The result has been an increase in innovation, leading to better quality of service and higher customer satisfaction. In addition, many IT organizations are also under cost pressures to help contribute to the bottom line. One IT leader we interviewed has a mission to specifically grow collaboration and engagement within his organization through the use of technology.

While the reasons for investing in Google Apps for Work differed across many organizations, there were some commonalities. Most interviewed companies expressed their interest in transforming the way their organization worked through increasing collaboration, mobility, and innovation. These variables, along with antiquated communication systems, have driven the need for our composite organization to choose Google Apps for Work.

The interviews revealed that Google Apps for Work enabled the following:

- **Mobility.** Google Apps for Work, with its mobile apps for iOS and Android, allows employees to access files, send emails, join video calls, and collaborate in real time within documents from wherever required. This ability has driven increased engagement throughout the organization, not only increasing innovation but employee morale as well. Many of the interviewed managers have been able to be more flexible with their teams' working environments, allowing employees to work from home at certain times of the day to avoid traffic or reducing driving between local offices through the use of Hangouts rather than holding in-person meetings. A large savings was due to a reduction in management travel related to annual assessments or quarterly trainings that once had to be done in person but are now being delivered virtually with Google Hangouts.
- **Collaboration.** Google Apps for Work has created an advantage for organizations with real-time collaboration, version control, and time savings capabilities. With Google Slides, week-long processes that once required many employees to email their slides to a central contact for consolidation now only take minutes to finalize, as real-time consolidation can take place. With Google Hangouts and Docs, in-meeting collaboration sessions have become more common across organizations, shortcutting

> *"If we need to get together on a Google Hangout and talk something through, everyone would be looking at the same thing. They can all be updating at the same time. That's a tremendous value."*
>
> ~ Strategic infrastructure planning manager, global manufacturing company

discussions and reducing meeting times. One IT leader has seen firsthand how collaboration sessions can reduce meetings from hours to minutes in an example he discussed with 20 people collaborating in a Google Doc at the same time. This meeting was organized to brainstorm and build solutions. A moderator was designated to lay out the ground rules and structure to help focus the work and conversation and maintain the goal of imagining and creating. Other organizations have seen increased coordination between upper and lower management, stating a 30% savings in people's time by using Google Docs. Another company tasked its top scientists to improve its forecast accuracy, which was a major undertaking requiring the collaboration of experts across three different locations. The interviewed leader stated, "There is no way that we could have ever done this as a team spread out throughout the country without Google Apps, without being able to do multiple Hangouts, without being able to share documents . . . [and without a collaborative culture this wouldn't have been successful]."

> *"We introduced them to Hangouts . . . and they've had a 40% reduction in their management travel costs."*
>
> ~Keith Chisholm, program director, Rentokil Initial

- **Modernized email and communications.** The cloud-based communication and collaboration platform has allowed the organization to decommission its legacy email and storage servers, saving on maintenance and support along with reducing growth and replacement costs. Additionally, the cloud-based environment enables employees to seamlessly access documents, emails, and other files on smartphones, tablets, or laptops. Enabling companies to be more responsive to customers and clients ultimately leads to improved customer satisfaction. Through the use of Hangouts, employees can now communicate with colleagues whenever and wherever. This allows questions to be answered on the go and improves the way employees work and communicate. One corporate IT head said, "For me, [Hangouts] was a change of life. . . . I no longer use the telephone."

BENEFITS

The composite organization experienced a number of quantified benefits in this case study:

- Increased collaboration efficiency enables the sharing of ideas, documents, spreadsheets and presentations across many locations globally, resulting in product improvements, enhanced business processes, and higher productivity.
- Improved mobility provides employees flexibility in their working environments, reducing the amount of wasted travel time and leading to increased morale and engagement.
- Reduced legacy IT costs were realized by avoiding the purchase of new servers and storage.
- Telephony savings were achieved through reduced telephone service needs and lower conferencing service demand.

Increased Collaboration Efficiency

The composite organization indicated that a key benefit from the Google Apps for Work implementation was an increase in employee collaboration through the use of Google Drive, Docs, Sheets, Slides, and Hangouts. Employees from the composite organization are now able to work in the same document, presentation, or spreadsheet at the same time and utilize Hangouts to hold collaboration sessions while including geographically remote colleagues. As a result, the composite organization's highly collaborative workers, who make up half the Google Apps for Work users and are defined as those who would realize the most benefit from collaboration tools, are realizing 1 to 2 hours of savings per week among a variety of processes, while less collaborative workers are experiencing 25%, or 15 to 30 minutes of savings per week. Examples of process improvements include:

- Having the most current documents at the beginning of a meeting, which creates efficiencies and ensures everyone has the correct information.
- Holding collaboration sessions reduced post meeting workload, back and forth messaging, and improved overall speed to finalize documents.
- Accessing and automatically consolidating emailed documents.
- Accessing information and documents from anywhere, leading to increased productivity.

Following the Google Apps for Work implementation, the composite organization realized 32.5 hours of employee efficiencies per week. The annual technology adoption rate, or the rate at which employees incorporated the use of Google Apps into the way they work, was 60% in Year 1, growing to 100% in Year 3. As a result, the composite organization saved 39,000 hours in Year 1; 75,319 hours in Year 2; and 137,917 hours in Year 3. At an average wage of $45 per hour for each Google Apps user, the total benefit from increased collaboration efficiency over the three years was $9,427,425, or about $943 per user.

Interviewed organizations provided a broad range of collaboration efficiency improvements, since there are a variety of outside forces that might also affect this. To compensate, this benefit was risk-adjusted and reduced by 15%. The risk-adjusted total benefit resulting from improved collaboration over the three years was $8,013,311, or about $801 per user. See the section on Risks for more detail.

TABLE 1
Collaboration Efficiency Improvements

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
A1	Number of Google Apps for Work users			10,000	10,300	10,609
A2	Adoption rate			60%	75%	100%
A3	Hourly rate per employee			$45.00	$46.35	$47.74
A4	Number of hours saved per highly collaborative workers annually	Employees save 1 to 2 hours per week		52	78	104
A5	Number of hours saved per less collaborative workers annually	25% of highly collaborative worker hours saved		13.0	19.5	26.0
A6	Percent of highly collaborative workers using Google Apps for Work			50%	50%	50%
A7	Percent of less collaborative workers using Google Apps for Work	1 - A6		50%	50%	50%
A8	Productivity conversion			20%	20%	20%
At	Collaboration efficiency improvements	(A1*A2*A3*A4*A6*A8)+ (A1*A2*A3*A5*(1-A6)*A8)	$0	$1,755,000	$3,491,024	$6,584,227
	Risk adjustment	🡻 15%				
Atr	**Collaboration efficiency improvements (risk-adjusted)**		**$0**	**$1,491,750**	**$2,967,370**	**$5,596,593**

Source: Forrester Research, Inc.

Improved Mobility

Mobility, or the ability for employees to work from anywhere on any device, means employees now have the capability to access Google Apps for Work from their personal device, whether that be an Android, tablet, iPhone, iPad, or personal computer. Across our composite organization, a cultural shift has occurred, increasing the engagement and productivity of employees. Now they are able to access files without using a VPN service, attach files to emails remotely, and join meetings without physically being present, essentially working without boundaries. The composite organization was able to greatly reduce management travel trips by instituting a policy change where managers were required to train and evaluate employees using hangouts rather than in

person. Since the organization has 400 traveling managers who were taking four trips per year to three separate locations, a decrease of 4,800 trips was seen each year. With the average trip costing $500, our organization saved $2.4 million per year, or $6,000 per manager.

Interviewed organizations provided a broad range of travel savings, since there are a variety of internal and external forces that might also affect this. To compensate, this benefit was risk-adjusted and reduced by 10%. The risk-adjusted total benefit resulting from travel savings over the three years was $5,371,600, or about $5,400 per manager per year. See the section on Risks for more detail.

TABLE 2
Improved Mobility Benefit – Management Travel Savings

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
B1	Number of managers traveling annually			400	400	400
B2	Number of locations traveled per manager			3	3	3
B3	Average trip cost			$500	$500	$500
B4	Trips per year to each location			4	4	4
Bt	Improved mobility benefit - management travel savings	B1*B2*B3*B4	$0	$2,400,000	$2,400,000	$2,400,000
	Risk adjustment	🡻 10%				
Btr	**Improved mobility benefit - management travel savings (risk-adjusted)**		**$0**	**$2,160,000**	**$2,160,000**	**$2,160,000**

Source: Forrester Research, Inc.

Reduced Legacy IT Costs

When migrating to the Google Apps for Work environment, the composite organization was able to remove legacy on-premises servers from operations, realizing approximately $3,000 of savings per server in the first three years and approximately $1,500 of maintenance cost savings per server in each of the three years. As the composite organization was able to decommission 100 servers over this time period, the total cost avoidance over three years was $558,866.

As many of the interviewed organizations realized a varying degree of complete server decommission due mostly to internal variables, a risk adjustment decrease of 10% has been applied to these results. The risk-adjusted total benefit resulting from reduced legacy IT costs over the three years was $502,979. Excluding this benefit from the TEI yields a ROI of 292% and an NPV of $12.3 million over three years. See the section on Risks for more detail.

TABLE 3
Reduced Legacy IT Costs

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
C1	Number of servers avoided over three years			100	100	100
C2	Adoption rate			60%	75%	100%
C3	Number of servers avoided each year	C1*C2 - sum of previous years		60	15	25
C4	Average cost per server			$3,000	$3,090	$3,183
C5	Annual maintenance cost per server			$1,500	$1,545	$1,591
Ct	Reduced legacy IT costs	C3*C4+(C3+sum of previous years)*C5	$0	$270,000	$162,225	$238,703
	Risk adjustment	↓ 10%				
Ctr	**Reduced legacy IT costs (risk-adjusted)**		**$0**	**$243,000**	**$146,003**	**$214,832**

Source: Forrester Research, Inc.

Legacy Telephony Savings

The composite organization realized savings in two telephony categories. The first was the cost savings related to telephone services. Through the use of Google Hangouts, the organization was able to remove 7,800 phones from use over three years, resulting in $3,378,590 savings (present value). The second was the reduction in demand for conferencing services. Again, Google Hangouts was being adopted in place of the legacy conferencing services, saving the company $616,051 over three years (present value) (see Table 4 for more details).

Interviewed organizations provided a broad range of telephony savings, since there are a variety of internal and external forces that might also affect this. To compensate, this benefit was risk-adjusted and reduced by 20%. The risk-adjusted total benefit resulting from legacy telephony savings over the three years was $3,195,713. See the section on Risks for more detail.

TABLE 4
Legacy Telephony Savings

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
D1	Number of phones planned to be retired over next three years	7,800 to be retired over three years		7,800	7,800	7,800
D2	Adoption rate			60%	75%	100%
D3	Number of phones to be retired each year	D1*D2		4,680	5,850	7,800
D4	Annual service cost per phone			$226	$226	$226
D5	Annual conferencing services cost			$321,429	$321,429	$321,429
D6	Annual conference plan savings	D5*D2		$192,857	$241,071	$321,429
Dt	Telephony cost savings	D3*D4+D6	$0	$1,250,537	$1,563,171	$2,084,229
	Risk adjustment	🡻 20%				
Dtr	**Telephony cost savings (risk-adjusted)**		**$0**	**$1,000,430**	**$1,250,537**	**$1,667,383**

Source: Forrester Research, Inc.

Total Benefits

Table 5 shows the total of all benefits across the four areas listed above, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total benefits to be a PV of $17,083,603, or $170,836 per 100 users.

TABLE 5
Total Benefits (Risk-Adjusted)

Ref.	Benefit Category	Initial	Year 1	Year 2	Year 3	Total	Present Value
Atr	Collaboration efficiency improvements	$0	$1,491,750	$2,967,370	$5,596,593	$10,055,713	$8,013,311
Btr	Improved mobility benefit - management travel savings	$0	$2,160,000	$2,160,000	$2,160,000	$6,480,000	$5,371,600
Ctr	Server cost avoidance	$0	$243,000	$145,003	$214,832	$603,835	$502,979
Dtr	Telephony cost savings	$0	$1,000,430	$1,250,537	$1,667,383	$3,918,350	$3,195,713
	Total benefits (risk-adjusted)	**$0**	**$4,895,180**	**$6,523,910**	**$9,638,808**	**$21,057,897**	**$17,083,603**

Source: Forrester Research, Inc.

COSTS

The composite organization experienced a number of costs associated with the Google Apps for Work solution:

- Software license fees.
- Professional services.
- Change management fees.
- Internal training costs.

These represent the mix of internal and external costs experienced by the composite organization for initial planning, implementation, and ongoing maintenance associated with the solution.

Software Licensing Fees

Google Apps for Work has a very simple licensing structure. The cost incurred by our composite organization was $10 per user per month. With 10,000 users in Year 1 and growing at 3% per year, our composite organization paid a total of $3,068,881 in software licensing fees over three years, or about $12,000 per 100 users per year.

TABLE 6
Software Costs

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
E1	Annual license fees per user	$10/user/month		$120	$120	$120
E2	Number of Google Apps for Work users			10,000	10,300	10,609
Etr	**Software license fees**	**E1*E2**	**$0**	**$1,200,000**	**$1,236,000**	**$1,273,080**

Source: Forrester Research, Inc.

Professional Services

The composite organization hired a Google-recommended third-party integrator to help with the implementation of Google Apps for Work. The implementation took six months from design to deployment and cost $35,000 per month on average. The total cost incurred by the composite organization over the initial six months was $210,000.

Professional services are more variable from organization to organization, depending on complexity of implementation and the project timeline. To compensate, this cost was risk-adjusted up by 10%. The risk-adjusted cost of annual maintenance over the three years was $231,000. See the section on Risks for more detail.

TABLE 7
Professional Services

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
F1	Implementation time (months)		6			
F2	Professional services fees per month		$35,000			
Ft	Professional services (third-party integrator)	F1*F2	$210,000	$0	$0	$0
	Risk adjustment	↑ 10%				
Ftr	**Professional services (third-party integrator) (risk-adjusted)**		**$231,000**	**$0**	**$0**	**$0**

Source: Forrester Research, Inc.

Change Management

Proper change management practices were critical in ensuring high adoption among our composite organization's workforce. A third-party firm was hired to help design training materials including webinars, eLearning tools, and classroom sessions, along with oversee change management communications within the organization. In conjunction with internal department champions and Google's transformation resources, change management activities helped to maximize the value the composite organization realized from its integration of Google Apps for Work. Over five months, change management services cost $212,500 (see Table 8 for more details on third-party change management costs).

Change management costs can vary from organization to organization depending on resistance to adoption, budgets, and other internal and external factors. To compensate, this cost was risk-adjusted up by 20%. The risk-adjusted cost of change management in the first year was $255,000, or $2,550 per 100 users. See the section on Risks for more detail.

With a technology rollout affecting nearly the entire organization, it is important that proper training is provided. One benefit of Google Apps for Work is that many employees are already using Google Drive, Gmail, and a combination of other Google applications in their personal life, reducing the learning curve. However, it is important not to assume everyone knows how to use Google Apps in order to maximize the benefits employees will gain from its use. Furthermore, using Google Apps for work typically requires a different understanding of productivity-enhancing features (e.g., the priority inbox or filters in Gmail) and supporting behaviors (e.g., how to collaborate in Docs in a work setting, alongside different functions and levels). In Table 9, we've captured the cost associated with the time employees will spend in classrooms being trained or taking eLearning modules.

Our composite organization provided 2 hours of in-classroom training for all highly collaborative users in the first year. In Year 2, an additional hour of self-learning time has been allocated for half of the highly collaborative users, with an additional 1 hour for 10% of these users in Year 3. For less collaborative employees, 1 hour of self-training has been allocated for webinars and access to eLearning tools in the first year. Based on an average hourly wage of $45, growing at 3% per year, this resulted in present value internal training costs of $636,888 (see Table 9 for details on employee hours and costs of internal training).

These internal training costs can vary from organization to organization depending on workforce exposure to Google Apps prior to deployment and other external factors. To compensate, this cost was risk-adjusted up by

10%. The risk-adjusted cost of internal training over the three years was $700,576, or $7,006 per 100 users. See the section on Risks for more detail.

TABLE 8
Change Management Services

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
G1	Months for change management			5	0	0
G2	Change management costs per month			$42,500	$42,500	$42,500
Gt	Change management services	G1*G2	$0	$212,500	$0	$0
	Risk adjustment	↑ 20%				
Gtr	**Change management services (risk-adjusted)**		**$0**	**$255,000**	**$0**	**$0**

Source: Forrester Research, Inc.

TABLE 9
Internal Training Costs

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
H1	Number of employees trained	Based on total users		10,000	5,300	1,339
H2	Hourly rate per employee			$45	$46	$48
H3	Hours of training for highly collaborative workers			1.5	1.0	1.0
H4	Hours of training for less collaborative workers			1.0	0.0	0.0
H5	Percent of highly collaborative workers using Google Apps for Work			50%	50%	50%
Ht	Internal training costs	(H1*H2*H3*H5)+ (H1*H2*H4*(1-H5))	$0	$562,500	$122,828	$31,962
	Risk adjustment	↑ 10%				
Htr	**Internal training costs (risk-adjusted)**		**$0**	**$618,750**	**$135,110**	**$35,158**

Source: Forrester Research, Inc.

Total Costs

Table 10 shows the total of all costs as well as associated present values, discounted at 10%. Over three years, the composite organization expects total costs to total a net present value of a little more than $4.2 million, or $41,314 per 100 users.

TABLE 10
Total Costs (Risk-Adjusted)

Ref.	Cost Category	Initial	Year 1	Year 2	Year 3	Total	Present Value
Etr	Software license fees	$0	$1,200,000	$1,236,000	$1,273,080	$3,709,080	$3,068,881
Ftr	Professional services (third-party integrator)	$231,000	$0	$0	$0	$231,000	$231,000
Gtr	Change management services	$0	$255,000	$0	$0	$255,000	$231,818
Htr	Internal training costs	$0	$618,750	$135,110	$35,158	$789,019	$700,576
	Total costs (risk-adjusted)	**$231,000**	**$2,073,750**	**$1,371,110**	**$1,308,238**	**$4,984,099**	**$4,232,275**

Source: Forrester Research, Inc.

FLEXIBILITY

Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for some future additional investment. This provides an organization with the “right” or the ability to engage in future initiatives but not the obligation to do so. There are multiple scenarios in which a customer might choose to implement Google Apps for Work and later realize additional uses and business opportunities. Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in Appendix B).

The Google Apps marketplace provides additional capabilities and functionality that can be integrated into the Google Apps for Work software for a fee or sometimes free of cost. Since these are third-party software modules built specifically for use with Google Apps, they are considered flexibility options. For the purposes of this study, the third-party app marketplace options have not been included in the valuation due to the variability of use across interviewed companies.

RISKS

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

TABLE 11
Benefit And Cost Risk Adjustments

Benefits	Adjustment
Increased collaboration efficiency	↓ 15%
Improved mobility benefit – management travel savings	↓ 10%
Reduced legacy IT costs	↓ 10%
Telephony savings	↓ 20%

Costs	Adjustment
Professional services	↑ 10%
Change management fees	↑ 20%
Internal training costs	↑ 10%

Source: Forrester Research, Inc.

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

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

- **Increased collaboration efficiency.** A variety of collaboration improvements were identified, along with risk in adoption in collaboration capabilities, leading to a risk adjustment of 15%.
- **Improved mobility benefit – management travel savings.** The variability in an organization's management travel demands resulted in a 10% risk adjustment.
- **Reduced legacy IT costs.** The size of the organization's current email and storage infrastructure may vary, leading to a 10% risk adjustment.
- **Legacy telephony savings.** Depending on an organization's phone replacement cycle and conferencing demands, a wide range of savings may be realized. A 20% risk adjustment was applied to account for this range of potential outcomes.

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

- **Professional services.** Some organizations may see longer implementation times or higher costs depending on the complexity of integration and specific third-party vendor. A 10% risk adjustment was applied to account for these variables.
- **Change management.** Costs depend greatly on an organization's culture toward change and appetite to adopt new software and best practices. A 20% risk adjustment was applied to change management fees.
- **Internal training costs.** A 10% risk adjustment was applied based on the learning curve of each unique workforce.

The composite organization identified risks related to replacing current software solutions that were not included in the benefits of this business case. These solutions included: previous writing and spreadsheet licenses, backup and disaster

recovery services, a file share audit manager, and sensitive document security. Some interviewed organizations incurred additional costs beyond their previous incremental third-party software solutions. These costs were not built into the business case, as not all organizations demonstrated this need.

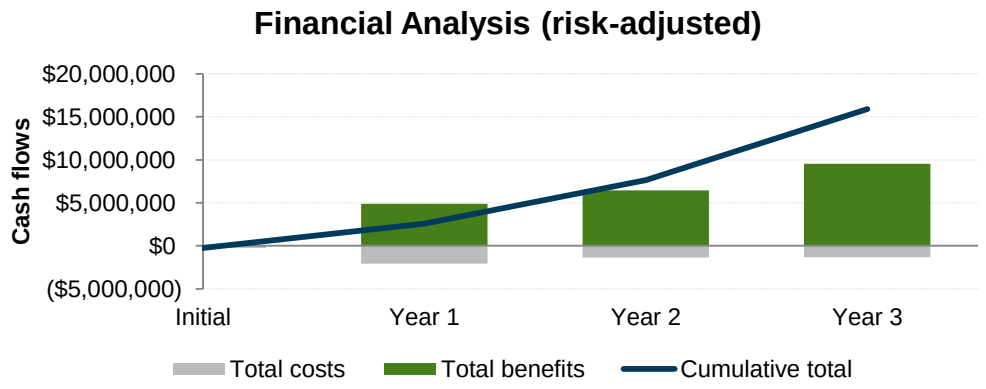
Table 11 shows the values used to adjust for risk and uncertainty in the cost and benefit estimates for the composite organization. Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

Financial Summary

The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment in Google Apps for Work.

Table 12 below shows the risk-adjusted ROI, NPV, and payback period values. These values are determined by applying the risk-adjustment values from Table 11 in the Risks section to the unadjusted results in each relevant cost and benefit section.

FIGURE 3
Cash Flow Chart (Risk-Adjusted)



Source: Forrester Research, Inc.

TABLE 12
Cash Flow (Risk-Adjusted)

Summary	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	($231,000)	($2,073,750)	($1,371,110)	($1,308,238)	($4,984,099)	($4,232,275)
Total benefits	$0	$4,895,180	$6,523,910	$9,638,808	$21,057,897	$17,083,603
Total	**($231,000)**	**$2,821,430**	**$5,152,800**	**$8,330,569**	**$16,073,799**	**$12,851,328**
ROI						**304%**
Payback period (months)						**one month**

Source: Forrester Research, Inc.

Google Apps For Work: Overview

The following information is provided by Google. Forrester has not validated any claims and does not endorse Google or its offerings.

Google Apps for Work is a suite of applications that includes Gmail, Google Drive (file storage and sharing), Hangouts (video meetings and chat), Docs, Sheets, Slides, Forms, Calendar and Sites plus Admin controls designed specially for use within businesses. Google's applications run in web browsers without any additional software to install, as well as natively on iPhone, iPad and Android phones and tablets. Google also manages the back-end infrastructure in its scalable, reliable and secure data centers, so there are no servers for customers to purchase, configure, patch or upgrade over time.

GOOGLE APPS FOR WORK INCLUDES:

- **Gmail** provides business email including advanced spam filtering, instantaneous message search, integrated text, voice and multi-person video chat and other productivity enhancements such as Priority Inbox. Gmail is accessible on any mobile device through a standard email app and has dedicated mobile apps for iOS and Android.
- **Google Drive** is a file synchronization and sharing service that allows employees to access the most recent version of their work from anywhere, on any device, including smartphones and tablets. With Drive, employees can store any file up to 5TB and instantly view common formats including documents, PDFs, images and even HD videos right from their web browser or mobile device. Teams can share files or whole folders, and with granular file permissions it's simple to control who can view, comment on or edit each file. Google Drive is available with unlimited storage, and has dedicated mobile apps for iOS and Android, as well as apps to synchronize files from Windows and Mac computers.
- **Google Hangouts** is an online video meetings service that allows up to 15 people to connect in HD from their laptop, tablet, phone or conference room unit. Hangouts includes screen sharing for enhanced collaboration, as well as voice calling and instant messaging for quick conversations. Google Hangouts has dedicated mobile apps for iOS and Android.
- **Google Docs** brings real-time collaboration to documents, so teams can work on the same document at the same time and complete projects faster. Google Docs supports images, tables, equations, drawings, links and more. Social commenting allows for a quick gathering of feedback and approvals from the right people. With Google Docs employees can edit documents created in other major word processing software or convert popular document formats like .doc, .docx, and .rtf to Google Docs to activate collaborative functions. Google Docs works with or without an internet connection and has dedicated mobile apps for iOS and Android.
- **Google Sheets** is a powerful spreadsheet editor that lets employees collaborate on spreadsheets at the same time. Google Sheets supports tools like advanced formulas, embedded charts, filters and pivot tables to get new perspectives on data. Sheets enables employees to share lists, manage projects, analyze data and track results together. With Google Sheets, employees can edit spreadsheets created in other major spreadsheet software or convert popular spreadsheet formats like .xls, .xlsx, and .csv to Google Sheets to activate collaborative functions. Google Sheets works with or without an internet connection and has dedicated mobile apps for iOS and Android.
- **Google Slides** allows teams to create presentations together, with support for embedded videos, animations and dynamic slide transitions. Employees can share presentations privately with colleagues or partners or can publish them to the web for customers to view. With Google Slides, employees can edit presentations created in other major presentation software or convert popular presentation formats like .ppt and .pptx to Google Slides to activate collaborative functions. Google Slides works with or without an internet connection and has dedicated mobile apps for iOS and Android.
- **Google Forms** makes it possible to create custom web forms for surveys and questionnaires as easily as writing a document. Google Forms can be shared in email, embedded in a website or shared through social channels. Form responses are gathered in a spreadsheet instantly as they're submitted and can be analyzed directly in Google Sheets.

- **Google Calendar** allows employees to manage their schedules, create project calendars, schedule time with colleagues and add shared resources like conference rooms. Multiple calendars can be overlaid to instantly display a composite view of multiple people's schedules. Google Calendar is accessible on any mobile device with a standard calendar app and has dedicated mobile apps for iOS and Android.
- **Google Sites** lets employees create and share project websites and intranet pages without any programming skills or technical support. Google Sites helps keep everyone on the same page – literally – by making it easy to centralize and organize team documents, calendars, videos and more. With just a couple of clicks, sites can be optimized for viewing on smartphones and tablets.
- **Google Apps Vault** is a retention, archiving and eDiscovery tool for Google Apps. Google Apps Vault allows IT admins to manage business critical information and to prepare for the unexpected such as a lawsuit or employee departure. Google Apps Vault can reduce time and costs associated with responding to legal discovery requests, audits or internal investigations. If an employee leaves the organization, Google Apps Vault can help track the status of projects and communications they were involved with.
- **Hundreds of third-party applications** available from the Google Apps Marketplace extend Google Apps with capabilities such as CRM, project management, accounting and finance, and sales and marketing tools that work seamlessly with Google Apps, including the ease of single sign-on (SSO) access.

STATE-OF-THE-ART SECURITY

Millions of organizations (including Google Inc.) trust Google's infrastructure to keep their most important corporate data safe. Google's network of data centers is engineered for security, reliability and redundancy, and backed by some of the world's leading experts in information security. Google data center physical security features a layered security model, including safeguards like custom-designed electronic access cards, alarms, vehicle access barriers, perimeter fencing, metal detectors and biometrics, and the data center floor features laser beam intrusion detection. Google's data centers are monitored 24/7 by high-resolution interior and exterior cameras that can detect and track intruders. Access logs, activity records and camera footage are available in case an incident occurs. Data centers are also routinely patrolled by experienced security guards who have undergone rigorous background checks and training. Google's information security team includes over 500 security and privacy professionals, part of the software engineering and operations division, who monitor the networks and the applications against threats.

Google's security practices are verified by independent 3rd party reviews. To demonstrate compliance with security standards in the industry, Google has sought and received security certifications such as ISO 27001 certification and SOC 2 and SOC 3 Type II audits. For customers who are subject to the requirements of the Health Insurance Portability and Accountability Act (HIPAA), Google Apps can also support HIPAA compliance. Google is also US-EU Safe Harbor certified and offers model contract clauses as an additional means of compliance with the European Data Protection Directive.

RELIABILITY, UPTIME GUARANTEE, AND SUPPORT

Google's Service Level Agreement (SLA) guarantees that Google Apps will be available at least 99.9% of the time, and the historical performance of the system has been significantly higher than this SLA threshold. Google provides enterprise-grade support to customers including 24/7 telephone support for critical administrative issues.

More information about Google Apps for Work is available at google.com/apps.

Appendix A: Composite Organization Description

For this TEI study, Forrester has created a composite organization to illustrate the quantifiable benefits and costs of implementing Google Apps for Work. The composite company is intended to represent a B2B multinational service company with $4 billion in annual revenue. The composite organization has offices spread throughout the world, which means its 12,000 employees are spread out across many offices and in the field. The company is focused on improving collaboration and innovation. It needs to bring its employees together in order to improve its products and customer experience. The composite company has 10,000 Google Apps for Work users.

In purchasing Google Apps for Work, the composite company has the following objectives:

- Improve collaboration and communication within the organization.
- Increase employee productivity and mobility.
- Realize IT cost savings.

For the purpose of the analysis, Forrester assumes that the composite organization has 100 legacy on-premises email and storage servers currently in use and will be able to decommission those servers once migrated into the Google Apps cloud-based environment. Additionally, Forrester assumes 400 managers are traveling to train and evaluate the composite organization's workforce.

FRAMEWORK ASSUMPTIONS

Table 13 provides the model assumptions that Forrester used in this analysis.

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

TABLE 13
Model Assumptions

Ref.	Metric	Calculation	Value
I1	Number of traveling managers		400
I2	Number of email and storage servers		100
I3	Phones planned for retirement		7,800
I4	Average cost per phone		$226
I5	Average Google App user salary		$93,600
I6	Hourly		$45

Source: Forrester Research, Inc.

Appendix B: Total Economic Impact™ Overview

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders. TEI assists technology vendors in winning, serving, and retaining customers.

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

BENEFITS

Benefits represent the value delivered to the user organization — IT and/or business units — by the proposed product or project. Often, product or project justification exercises focus just on IT cost and cost reduction, leaving little room to analyze the effect of the technology on the entire organization. The TEI methodology and the resulting financial model place equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization. Calculation of benefit estimates involves a clear dialogue with the user organization to understand the specific value that is created. In addition, Forrester also requires that there be a clear line of accountability established between the measurement and justification of benefit estimates after the project has been completed. This ensures that benefit estimates tie back directly to the bottom line.

COSTS

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

FLEXIBILITY

Within the TEI methodology, direct benefits represent one part of the investment value. While direct benefits can typically be the primary way to justify a project, Forrester believes that organizations should be able to measure the strategic value of an investment. Flexibility represents the value that can be obtained for some future additional investment building on top of the initial investment already made. For instance, an investment in an enterprisewide upgrade of an office productivity suite can potentially increase standardization (to increase efficiency) and reduce licensing costs. However, an embedded collaboration feature may translate to greater worker productivity if activated. The collaboration can only be used with additional investment in training at some future point. However, having the ability to capture that benefit has a PV that can be estimated. The flexibility component of TEI captures that value.

RISKS

Risks measure the uncertainty of benefit and cost estimates contained within the investment. Uncertainty is measured in two ways: 1) the likelihood that the cost and benefit estimates will meet the original projections and 2) the likelihood that the estimates will be measured and tracked over time. TEI risk factors are based on a probability density function known as "triangular distribution" to the values entered. At a minimum, three values are calculated to estimate the risk factor around each cost and benefit.

Appendix C: Glossary

Discount rate: The interest rate used in cash flow analysis to take into account the time value of money. Companies set their own discount rate based on their business and investment environment. Forrester assumes a yearly discount rate of 10% for this analysis. Organizations typically use discount rates between 8% and 16% based on their current environment. Readers are urged to consult their respective organizations 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 NPV of cash flows.

Payback period: The breakeven point for an investment. This is 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 the Framework Assumptions section) at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations are not calculated until the summary tables are the sum of the initial investment and the discounted cash flows in each year.

Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.

TABLE [EXAMPLE]
Example Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3

Source: Forrester Research, Inc.