

A Forrester Total Economic  
Impact™ Study  
Commissioned By Cisco

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# The Total Economic Impact Of Cisco Data Center Optimization Services

FORRESTER®

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### ABOUT FORRESTER CONSULTING

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## Executive Summary

Cisco commissioned Forrester Consulting to examine the total economic impact and potential return on investment (ROI) enterprises may realize by utilizing Cisco Data Center Optimization Services. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact, benefits, and value of Cisco's services offering at an organization.

(See [Appendix A](#) for a description of this service.)

*"You cannot successfully run a global enterprise that is aggressively growing and changing without this (service) . . . The demands are too high for us to not be partnering with Cisco."*

~Director of Network Communications and Engineering at a large, multinational insurance agency

### COMPANIES INCREASE NETWORK STABILITY AND ROLL OUT NEW TECHNOLOGY FASTER THANKS TO CISCO'S SERVICES TEAM

The Forrester Total Economic Impact™ (TEI) methodology and framework has been utilized to assess technology solutions since 1996. Per this established methodology, Forrester constructed a composite organization based on interviews and real-world data from four existing Cisco customers. The financial analysis component of the study concluded that the composite organization experienced the risk-adjusted ROI, costs, and benefits shown in Figure 1.

The composite organization analysis points to risk-adjusted total benefits of \$1.62 million over three years versus costs of approximately \$250,000 per year, adding up to a risk-adjusted net present value (NPV) of \$737,944.

With guidance from the Cisco Services team, the interviewed organizations identified benefits in three areas:

- Increased incremental profits and accelerated time to market due the faster rollout of new technology.
- Decreased cost due to network outage avoidance – Cisco's strategic guidance stopped incidents that used to occur monthly prior to Cisco's arrival and strategic guidance.
- Improved business and/or operational implementation success, reducing the costs of amelioration.

This analysis translates to benefits of \$523,625 in Year 1, \$787,333 in Year 2, and repeat benefits of over \$300,000 each year thereafter. Numerous qualitative benefits were also identified, such as transfer of knowledge and access to industry-specific best practices from Cisco to the internal IT team, resulting in improved customer confidence in their own strategic planning capabilities.

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



Source: Forrester Research, Inc.

- › **Benefits.** The composite organization experienced the following key benefits that represent those experienced by the interviewed companies:
- **One quarter faster rollout of new technology in support of a key business objective.** With Cisco Services team supporting internal IT's pursuit of a business goal, the composite organization was able to deliver a new tech-heavy offering one quarter ahead of time and drive incremental profits as a result.
  - **Complete avoidance of execution-related network outages.** Cisco's partnership with internal IT eliminated the likelihood of network outages — once a drag on the composite organization's customer-facing business and "reliable" brand image.
  - **Reduced project implementation costs.** Prior to Cisco engagement, the composite organization suffered from numerous faulty project implementations each year, leading to additional cash outlays for external support. Cisco's guidance has mitigated the situation by ensuring first-attempt successes for the composite organization's projects.
- › **Costs.** The composite organization experienced the following key costs:
- **Subscription fees of \$249,167 per year.** The composite organization purchased a 36-month Cisco Data Center Optimization Service contract at a risk-adjusted rate of \$249,167 per year or \$747,500 over 3 years. This contract gave them one shared project manager, one shared lead engineer, and five shared specialized engineers – the effort of the project team effectively equivalent to having 75% of a full-time engineer. Moreover, this service grants the composite organization and all of its team members access to Cisco's Technical Knowledge Library.

## Disclosures

The reader should be aware of the following:

- › The study is commissioned by Cisco and delivered by Forrester Consulting.
- › Forrester makes no assumptions as to the potential return on investment 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 Cisco's Data Center Optimization Services.
- › Cisco reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.
- › The customer names for the interviews were provided by Cisco.

## TEI Framework And Methodology

### INTRODUCTION

Forrester leveraged its Total Economic Impact™ framework and real-world data from customer interviews to construct an analysis for organizations considering Cisco's Data Center Optimization Services. The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision.

### APPROACH AND METHODOLOGY

Forrester took a multistep approach to evaluate the impact that Cisco's Data Center Optimization Services can have on an organization (see Figure 2). Specifically, we:

- Interviewed Cisco marketing/sales/engineering personnel and Forrester analysts to gather data related to the service offering and its marketplace.
- Interviewed four organizations currently using Cisco's Data Center Optimization Services to obtain data with respect to costs, benefits, and risks.
- Designed a composite organization based on characteristics of the interviewed organizations.
- Constructed a representative financial model 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.

Forrester employed four fundamental elements of TEI in modeling the Cisco service offering:

- Costs.
- Benefits to the entire organization.
- Flexibility.
- Risk.

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

**FIGURE 2**  
TEI Approach



Source: Forrester Research, Inc.

## Analysis

### COMPOSITE ORGANIZATION

A total of four interviews were conducted for this study, involving representatives from the following companies (Cisco customers based in the United States and Europe):

- A large, diversified property and casualty insurer with business in a majority of US states as well as in Europe, Latin America, and Asia.
- A large, commercial and retail bank with additional offerings in insurance, investments, and mortgages, and a majority of business coming from its US operations.
- A major European telecommunications provider that offers fixed line and mobile telephony, as well as Internet, digital television, and networking services offerings.
- A mid-sized, regional telecommunications and information technology company located in the United States.

The interviewees represented a wide spectrum of Cisco customers in order to demonstrate the relevance of the service offering to a variety of verticals. This variety is instructive in understanding how Cisco's services have benefited the full range of customer types.

Forrester incorporated the information from the customer interviews into the Forrester TEI framework to synthesize a composite organization, and performed an ROI analysis that illustrates the areas financially affected by the service offering. The resultant composite organization represents a large financial services company of about 20,000 employees, with offices across the United States, Europe, and Asia. Additionally, the composite organization has the following attributes:

- Headquarters in the United States, and 600 office and branch locations distributed across the United States and internationally. Approximately 70% of its business and office locations are located in the United States, and 30% are evenly distributed between Europe and Asia.
- Annual revenues of approximately US\$5 billion, growing at a 5% growth rate, and operating margins of 10% on average per year. The majority of the firm's business comes from its retail and commercial banking divisions, with a growing percentage coming from its insurance arm.
- Two large data centers located in the United States. Each data center equipped with Cisco Nexus® Switches and 2,500 physical servers per data center, and 6,000 network devices supported.
- 10,000 external business customers, as well as 20,000 internal employees supported.
- Purchased a 36-month Cisco Data Center Optimization Services contract; specifically, the Unified Fabric Optimization service for Cisco Nexus. The Cisco team supporting the composite organization includes one shared project manager, one shared lead engineer, and five shared technology-specific engineers. Additionally, the Cisco account manager is available for interaction when required.

In purchasing three years of Cisco's Data Center Optimization Services, the composite company had the following objectives:

- **Receive proactive guidance.** Given the evolving range of data center technology available to the organization, its internal IT team saw the need for a more comprehensive and proactive/strategic guidance on an ongoing basis. As both of the organization's data centers predominately relied on Cisco technology, the team sought direct access to subject-matter expertise from Cisco regarding optimization routes and potential areas for investment and improvement.
- **Improve network stability.** Execution-related outages had become commonplace prior to the engagement, as new business strategies continually drove the need to quickly integrate new technologies. To fulfill these time-sensitive

business objectives but preserve network stability, the internal IT team sought a strategic advisor and partner with relevant vertical-specific expertise.

- **Expand the organization's ongoing relationship with Cisco.** Leadership in the data center staff had worked with Cisco Services before in one-off engagements. Satisfied with the results from the earlier engagements, the leadership wanted to secure additional and more strategic services on a permanent basis.

## INTERVIEW HIGHLIGHTS

### *Situation*

The four interviewed organizations expressed relatively similar reasons for purchasing Cisco's Data Center Optimization Services, as reflected above in the composite organization. Most interviewees predominantly utilized Cisco hardware in their data centers, and had come to trust Cisco's strategic advice over the years in various standalone consulting engagements. As their business units were routinely requesting integration of emerging technologies across the firm, the complexity of their data center operations and risks of network outages had grown exponentially. Data center leadership eventually determined that ongoing guidance was needed to better support the business units, and requested additional budget to bring the Cisco Services team onboard.

### *Solution*

The IT teams at all interviewed organizations, whether telecommunications service providers or large enterprises, spoke of the paradigm shift from operating solely as a cost center to more of a partner in revenue generation. Overwhelmingly, all four interviewed companies stated that the top benefit of the Cisco Services team was that they supported the data center staff in better delivering non-IT business goals. Their multiyear service subscription also led to operational improvements, such as decreased network outages and a decreased likelihood of repeat project implementation.

### *Results*

- **A new mobile banking channel is created, faster.** The composite organization was able to build its new mobile banking channel one quarter faster, thanks in large part to proactive guidance received during multiple strategy and architecture reviews with Cisco.
- **Complete elimination of execution-related outages.** Before Cisco, the composite organization used to experience approximately three P1 outages per year, and approximately nine P2-P4 outages. Cisco solutions, such as Unified Fabric Optimization, helped reduce this incidence rate to zero.
- **No more redo projects.** The composite organization used to experience 10 faulty project implementations per year, necessitating redo work and additional costs. Guidance from Cisco engineers has eliminated this trend as well.

## BENEFITS

The composite organization summarized in this study is based on the four interviewed companies, and realized the following benefits:

- › Incremental profit due to one quarter faster rollout of new technology.
- › Direct cost avoidance of network outages.
- › Reduced project implementation costs.

All interviewed organizations perceived Cisco Services engineers as an extension of their existing internal technology team, and viewed the primary benefit of Cisco engagement as enablement in delivery of non-IT, business-led objectives. Additionally, all but one mentioned the benefits of increased uptime, improved network stability, and improved success rates in project implementation. Moreover, all four said that they positively benefited from knowledge transfer between Cisco engineers and existing IT employees. This knowledge transfer benefit is accounted for twice in the ROI analysis. First, it is the underlying assumption that reduces the number of avoided network outages and re-do projects per year (e.g., for Year 2, Forrester assumes reduced failure rates due to continued benefit of knowledge transfer in Year 1). Secondly, Forrester accounts for the benefits of knowledge transfer in the Flexibility section of this study.

### + *Incremental Profit Due To One Quarter Faster Rollout Of New Technology*

All interviewed organizations benefited from the time savings generated by Cisco Services guidance during delivery of a business goal. In one example, a European telecommunications service provider stated that the Cisco team improved the time-to-market for its new cloud hosting service by nine months. In another example, a multinational insurer was tasked with fielding new GPS monitoring devices to customers to assess their driving patterns and behavior (with the intent of offering lower rates to high-performing customers). The company estimated that Cisco's guidance in this network-intensive process resulted in a one quarter faster time-to-market. That customer simply quoted, "You cannot successfully run a global enterprise that is aggressively growing and changing without [Cisco Services]."

Forrester utilized another example from the interviews when creating the composite organization; the faster rollout of a new mobile banking channel. In this case, the Cisco Services team utilized an agile methodology to assist a retail bank in building its mobile banking channel. The interviewed company estimated that Cisco engineers allowed development of this channel one quarter faster than expected. The company stated that its fastest growing channel was mobile web-based, and that one of the largest challenges was development of code for the website to ensure flexibility of all applications and first-rate viewing across all mobile devices. As the code had to detect device types by device characteristics — a network-intensive process — guidance by Cisco Services was a key requirement. For the sake of this study, Forrester assumes that 5% of total revenue came from this new channel in Year 2, and that Cisco assisted in building it one quarter faster (as compared to a pre-Cisco baseline environment).<sup>1</sup> The resultant benefit was calculated off of the bank's operating profit, and only the percentage that was directly attributable to mobile banking was accounted for (i.e., only the revenue that would not be realized without mobile device use). Forrester encourages readers to substitute in their own technology needs and resultant revenue and profit implications, as appropriate.

As shown in Table 1, for the composite organization the resultant impact amounts to a one-time risk-adjusted benefit of \$371,875 in incremental profits in Year 2 due to a one quarter faster rollout of the new technology. In all interviews, the interviewees mentioned similar efficiency gains as compared to the pre-Cisco baseline environment in about four to nine months. However, as mentioned earlier, the benefit amount will vary depending on the business goal supported, its revenue and profit implications, and the marginal time savings created by Cisco's engineers. This variance has been captured in the risk-adjustment.

**TABLE 1**  
**Incremental Profit Due To One Quarter Faster Rollout Of New Technology**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Total annual revenue		\$5,000,000,000	\$5,250,000,000	\$5,512,500,000
A2	Operating profit margin		10%	10%	10%
A3	Mobile channel percentage		0%	5%	7%
A4	Direct attribution percentage (revenue that would not be realized without mobile)		0%	5%	5%
A5	Percentage of year where Cisco assisted in the rollout		0%	25%	0%
At	Incremental profit due to one quarter faster rollout of new technology	$(A1 \cdot A2 \cdot A3 \cdot A4 \cdot A5)$	\$0	\$328,125	\$0
	Risk adjustment			↑13%	
Atr	Incremental profit due to one quarter faster rollout of new technology (risk-adjusted)		\$0	\$371,875	\$0

Source: Forrester Research, Inc.

#### ★ Direct Cost Avoidance Of Network Outages

Three of the four interviewed organizations benefited from the direct cost avoidances of network outages. In one example, the Head of Enterprise Infrastructure at a retail bank witnessed increased reliability after bringing Cisco onboard: “The fact is our tickets and our downtime are fantastic right now . . . they’re right where we want them to be.” In another example, a senior network engineer at a telecommunications service provider highlighted the preventative value of Cisco’s rigorous on-site audits (see bottom-right quote).

For the composite organization, Forrester utilized an example heard from a large multinational insurer. Prior to the utilization of Cisco’s Data Center Optimization Services, the insurer suffered from three to six P1 class execution-related outages per year, in addition to approximately nine P2-P4 outages.<sup>2</sup> Notably, since bringing Cisco onboard, the outage number has been reduced to zero per year. The Director of Network Communications and Engineering attributes this “dramatic improvement in the stability of the environment” to the high levels of collaboration between her organization’s internal IT team and Cisco staff. She explained that for core data center work, “The Cisco engineers are actually in the data center with my team while we do any kind of design, architectural changes, or upgrades to pieces of equipment that are core to the network . . . [and] the chemistry on the team is great!”

Based on the interviewee’s internal estimates, Forrester modeled the cost of a P1 outage at \$800,000 in lost profits, and the cost of P2-P4 outages at \$75,000. However, as a majority of customers will simply return at a later date if an application or service is unavailable, Forrester assumes that only 10% of the affected business is completely lost (mostly potential new business). Lastly, Forrester

*“They have helped us keep [our UCS systems] working by pointing out issues through the audit process, in advance, so we can fix them before they bite us.”*

~Senior network engineer at a large telecommunications service provider

assumes that the likelihood of outages decreases every year after Year 1 due to knowledge transfer from Cisco Services to the client's internal IT team. As shown in Table 2, for the composite organization the impact translates to a risk-adjusted benefit of \$302,375 in cost avoidances in Year 1, \$216,333 in Year 2, and \$130,292 in Year 3.

**TABLE 2**  
**Direct Cost Avoidance Of Network Outages**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
B1	P1 outages avoided per year		3	2	1
B2	P2-P4 outages avoided per year		9	8	7
B3	Cost of P1 outage		\$800,000	\$800,000	\$800,000
B4	Cost of P2-P4 outage		\$75,000	\$75,000	\$75,000
B5	Percentage of lost business that does not return		10%	10%	10%
Bt	Direct cost avoidance of network outages	$((B1*B3)+(B2*B4))*B5$	\$307,500	\$220,000	\$132,500
	Risk Adjustment		↓ 2%	↓ 2%	↓ 2%
Btr	Direct cost avoidance of network outages (risk adjusted)		\$302,375	\$216,333	\$130,292

Source: Forrester Research, Inc.

### ★ Reduced Project Implementation Costs

All but one interviewed company benefited from the improved performance of their internal data center staff. These organizations suffered from faulty project implementations before Cisco engineers were onboard to support, leading to delayed project completion as well as new costs of hiring external support. A senior IT telecom engineer at a bank emphasized the importance of Cisco's assistance in mitigating project risks at the outset; "The last thing in the world we want is a 'do-over,'" he emphasized. "We're service providers to our lines of business internally."

Forrester utilized a different, positive example from a regional telecommunications service provider for the composite organization. The company saw its project implementation costs reduced as more work was completed correctly on first attempt, and fewer projects had to be redone. The organization estimated that it developed an entirely new product approximately 10 times a year, and before the assistance of Cisco Services, it often took several attempts to implement the new technology correctly. Assuming that the organization gave Cisco engineers sufficient notice of its request for guidance, Cisco Services provided detailed workshops, held one-on-one sessions, and distributed a video recording to all IT members who missed the presentation. This process allowed the IT team to get implementation done correctly on the first try, avoiding the costs of hiring professional services to come on-site to help them implement a redo attempt.

Based on cost information provided by the interviewed organization, Forrester calculates that one redo project costs \$22,500, based on three technicians supporting for three days at rate of \$2,500 per day. As before, Forrester assumes that the likelihood of redo work decreases every year after Year 1 due to knowledge transfer from Cisco Services to the organization's internal IT team. As shown in Table 3, for the composite organization the impact translates to a risk-adjusted benefit of \$221,250 in cost avoidances in Year 1, \$199,125 in Year 2, and \$177,000 in Year 3.

**TABLE 3**  
**Reduced Project Implementation Costs**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Re-do projects per year		10	9	8
C2	Daily cost of external technician to support re-do of project		\$2,500	\$2,500	\$2,500
C3	Number of external technicians required to support re-do of project		3	3	3
C4	Number of days required to re-do project		3	3	3
Ct	Reduced project implementation costs	$C1 \times C2 \times C3 \times C4$	\$225,000	\$202,500	\$180,000
	Risk adjustment		↓2%	↓2%	↓2%
Ctr	Reduced project implementation costs (risk adjusted)		\$221,250	\$199,125	\$177,000

Source: Forrester Research, Inc.

#### Total Benefits

Table 4 shows that the risk-adjusted benefits add up to approximately \$523,625 in Year 1, \$787,333 in Year 2, and over \$300,000 in Year 3. The total present value of all benefits is just over \$1.3 million.

**TABLE 4**  
**Total Benefits (Risk-Adjusted)**

Benefit	Initial	Year 1	Year 2	Year 3	Total	Present Value
Incremental profit due to one quarter faster rollout of new technology	\$0	\$0	\$371,875	\$0	\$371,875	\$307,335
Direct cost avoidance of network outages	\$0	\$302,375	\$216,333	\$130,292	\$649,000	\$551,564
Reduced project implementation costs	\$0	\$221,250	\$199,125	\$177,000	\$597,375	\$498,685
<b>Total benefits</b>	<b>\$0</b>	<b>\$523,625</b>	<b>\$787,333</b>	<b>\$307,292</b>	<b>\$1,618,250</b>	<b>\$1,357,584</b>

Source: Forrester Research, Inc.

## COSTS

The composite organization experienced one primary cost associated with the Cisco Service offering:

### › Subscription contract fee.

All interviewed organizations had relatively a similar purchasing experience. Prior to investment, all utilized a majority of Cisco technology in their data centers and had had positive experiences with other Cisco Services teams in the past. Each interviewed company had a primary Cisco account manager with whom they could engage to learn more about Cisco's new hardware offerings, as well as any services that could be independently procured and/or bundled into a larger hardware purchase. Indeed an added benefit of purchasing Cisco Services is its simplicity: Companies can buy the subscription as they would purchase any other stock-keeping unit (SKU) from Cisco, avoiding the time-consuming Request for Proposal (RFP) process of traditional consulting. Costs varied among the interviewed companies due to their total number of data centers, and the relative size of each data center in terms of its servers and square footage. Generally speaking, companies with more and larger data centers, such as telecommunications service providers, necessitate more Cisco solutions and personnel to support them — increasing their annual subscription price. The Cisco Data Center Optimization Services contract fee is the only cost used for the ROI analysis of investment by composite organization.

### 💰 *Subscription Contract Fee*

Annual costs of interviewed organizations varied as dependent on their total number of data centers, and relative size of each data center. Costs can range from an annual amount of \$100,000 on the low-end to \$800,000 on the high-end. Assuming a Cisco Nexus backplane-based data center deployment for a \$5 billion retail banking and insurance firm with multiple data centers (see Composite Organization for details), Forrester assumed an annual risk-adjusted fee of \$249,167 and a three-year subscription contract (see Table 5). This subscription amount is invoiced monthly over the course of three years, and the subscription fee is fixed for the term of the engagement. For this amount, the composite organization receives guidance from one shared project manager, one shared lead engineer, and five shared technology-specific engineers (the effort of the project team effectively equivalent to having 75% of a full-time engineer). Additionally, a Cisco account manager is available for interaction when required. On average, the Cisco team spends 5% to 10% of the contract length working on-site, and the remaining percentage assisting remotely. However, more than one interviewed company anticipated this percentage to increase as necessary to support the delivery of a complex new initiative, or help resolve a critical fault in the data center.

**TABLE 5**  
**Subscription Contract Fee**

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
D1	Subscription contract fee		\$230,000	\$230,000	\$230,000
Dt	Subscription contract fee	D1	(\$230,000)	(\$230,000)	(\$230,000)
	Risk adjustment		↑8%	↑8%	↑8%
Dtr	Subscription contract fee (risk-adjusted)		(\$249,167)	(\$249,167)	(\$249,167)

Source: Forrester Research, Inc.

### *Total Costs*

Table 6 shows the total cost of the risk-adjusted subscription fee as well as its present value, discounted at 10%. Over three years, the composite organization expects risk-adjusted total costs to total a net present value of \$619,641.

**TABLE 6**  
**Total Costs (Risk-Adjusted)**

<b>Benefit</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>	<b>Present Value</b>
Subscription contract fee	(\$249,167)	(\$249,167)	(\$249,167)	(\$747,500)	(\$619,641)
<b>Total costs</b>	<b>(\$249,167)</b>	<b>(\$249,167)</b>	<b>(\$249,167)</b>	<b>(\$747,500)</b>	<b>(\$619,641)</b>

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 in the future. This flexibility provides an organization with the “right” or the ability to engage in future initiatives but not the obligation to do so. All four interviewed companies stated that they benefited from knowledge transfer between Cisco engineers and their internal technology team, and that this transfer gave them greater flexibility and capability in a post-Cisco environment.

Generally speaking, knowledge transfer occurred via both formal and informal channels. Formally, the Cisco project manager would often schedule “lunch and learn” sessions to introduce a new piece of technology or review a best practice, in addition to holding monthly training sessions for on-site and remote workers, and attending weekly “open form” call to answer questions. Informally, knowledge transfer occurred whenever a Cisco engineer would collaborate with a member of the internal technology team in delivering complex new initiative. As the Head of Enterprise Infrastructure at a retail bank summarized, “We never bring [Cisco] in to ‘do’ for us; it’s to teach us ‘how to do.’ They teach us how to fish, and don’t do the fishing for us.”

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*“We never bring [Cisco] in to ‘do’ for us, it’s to teach us ‘how to do’. They teach us how to fish, and don’t do the fishing for us.”*

~Head of Enterprise Infrastructure at a retail bank

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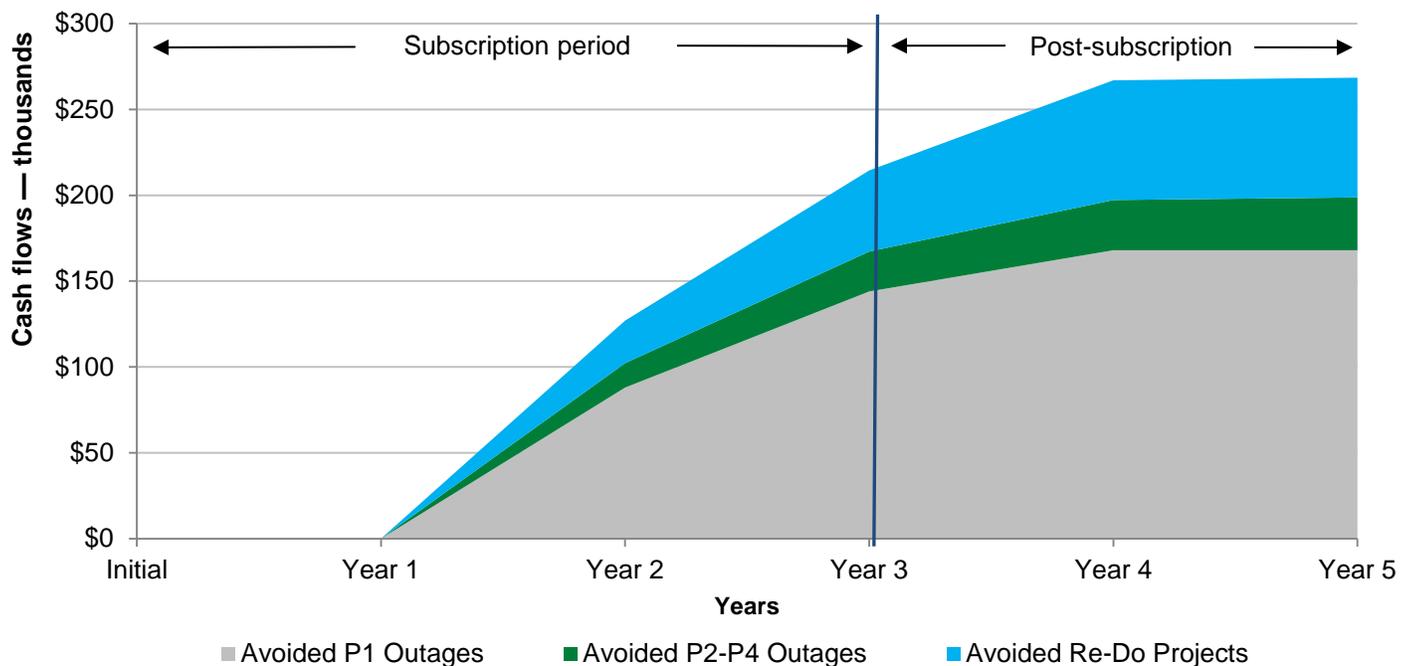
In order to estimate the financial value of this knowledge transfer, Forrester calculated the average annual benefits of avoiding P1 network outages, P2-P4 network outages, and redo implementation projects over a five-year time horizon.<sup>3</sup> Forrester employed probabilistic scenario analysis to gauge the most-likely benefits over this period, and determined the probability for each scenario based on the four qualitative interviews. Table 7 shows the potential value of knowledge transfer over five years, and Figure 3 represents this concept graphically. In this framework, Forrester assumes that the client organization actively sought to learn from Cisco during the subscription period (Years 1-3), and moreover implements the best practices acquired in the post-subscription environment (Years 4-5). Forrester also assumes that the value of knowledge transfer is maximized once the probability of cost-incurring events, such as P1 network outages, is reduced to zero. Implicitly, this framework also assumes that the staff trained in Years 1-3 do not attrite in Years 4-5. Forrester encourages readers to apply their own estimates when assessing the value that their organization may receive from this benefit.

**TABLE 7**  
Potential Value Of Knowledge Transfer

Benefit	Subscription period			Post-subscription			Present value
	Year 1	Year 2	Year 3	Year 4	Year 5	Total	
Knowledge transfer	\$0	\$127,000	\$214,500	\$267,000	\$268,500	\$877,000	\$615,198

Source: Forrester Research, Inc.

**FIGURE 4**  
Potential Value Of Knowledge Transfer



Source: Forrester Research, Inc.

## 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 Cisco Data Center Optimization Services 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 Cisco, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for cost and benefit estimates.

Capturing quantitative investment and impact risk, by directly adjusting the financial estimates, results in more meaningful and accurate estimates and a more accurate projection of the ROI. The risk-adjusted numbers should be taken as “realistic” expectations since they represent the expected values considering risk.

The following implementation risks that affect costs have been identified as a part of this analysis:

- Cisco Data Center Optimization Services costs may increase from initial estimates should client companies expand the scope of engagement during the three-year subscription period. As the majority of the Cisco engineers remotely support more than one company in a given year, the client company would need to expand their existing contract if considerably more on-site time was required, or if originally out-of-scope Cisco Services are later deemed useful. Contract pricing depends upon various factors including the size of deployment, number of locations, how the initial implementation was done, features enabled, and focus activity areas for optimization.

The following impact risks that affect benefits have been identified as a part of this analysis:

- Client companies may not all receive equal amounts of value from retaining the Cisco Services team. Interviewed organizations emphasized that a high-touch engagement model was needed at a sufficiently senior level on the client-side in order to ensure the Cisco team was utilized correctly. As one senior IT director explained, “The customer team has to be engaged at the right level or you end up not using the Cisco resources appropriately and you don’t get the business benefit . . . You want to use this for the good of the company . . . [and not] use it for things that are tactical but don’t give you the big payoff.”

Table 8 shows the values used to adjust for risk and uncertainty the cost and benefit estimates. The TEI model uses a triangular distribution method to calculate risk-adjusted values. To construct the distribution, it is necessary to first estimate the low, most likely, and high values that could occur within the current environment. The risk-adjusted value is the mean of the distribution of those points. Readers are urged to apply their own risk ranges based on their own degree of confidence in the cost and benefit estimates.

**TABLE 8**  
**Benefit And Cost Risk Adjustments**

<b>Benefits</b>	<b>Low</b>	<b>Most likely</b>	<b>High</b>	<b>Mean</b>	<b>Adjustment</b>
Incremental profit due to one quarter faster rollout of new technology	90%	100%	150%	113%	↑13%
Direct cost avoidance of network outages	90%	100%	105%	98%	↓2%
Reduced project implementation costs	90%	100%	105%	98%	↓2%
<b>Costs</b>					<b>Adjustment</b>
Subscription contract fee	100%	100%	125%	108%	↑8%

Source: Forrester Research, Inc.

## Financial Summary

The cost and benefit financial calculations can be used to determine the return on investment and net present value for the organization's investment in Cisco Data Center Optimization Services, as shown in Table 9. Payback period has not been included due to the high levels of variance surrounding the timing of the benefit with the largest upside potential, the incremental profits due to one quarter faster rollout of new technology. These values are determined by applying the Risk section's adjustment values from Table 8 to the cost and benefits numbers in Tables 4 and 6.

The financial analysis provided in this study illustrates the potential way an organization can evaluate the value proposition of Cisco Data Center Optimization Services. Based on information collected in four in-depth customer interviews, Forrester calculated a three-year risk-adjusted ROI of 119% for the composite organization with an NPV of \$737,944 over a three-year period and 10% discount rate.

**TABLE 9**  
**Cash Flow: Risk-Adjusted**

	Cash flow: risk-adjusted estimates					
	Initial	Year 1	Year 2	Year 3	Total	Present value
Total Costs	\$0	(\$249,167)	(\$249,167)	(\$249,167)	(\$747,500)	(\$619,641)
Total Benefits	\$0	\$523,625	\$787,333	\$307,292	\$1,618,250	\$1,357,584
Net benefits	\$0	\$274,458	\$538,167	\$58,125	\$870,750	\$737,944
ROI						119%
Running Total	\$0	\$274,458	\$812,625	\$870,750		

Source: Forrester Research, Inc.

## Study Conclusions

Forrester's established TEI framework and methodology integrated with in-depth interviews with Cisco Data Center Optimization Services customers yielded three important observations:

- › Based on information collected in interviews with current customers, Forrester determined that the top benefit of Cisco's Services team was better delivery of non-IT business goals. Moreover, customers' multiyear service subscriptions also led to operational improvements, such as decreased network outages and a decreased likelihood of repeat project implementation.
- › Knowledge transfer is a key benefit that can stay with an organization after completion of its Cisco subscription. If the organization utilizes the Cisco Services team to meet appropriate strategic challenges, and invests time and effort into learning from Cisco engineers, the benefits of this added feature can significantly magnify the total value of the engagement.
- › Forrester found several factors that can lead to variance in the ROI. These factors include the business goals targeted during Cisco engagement, their revenue and profit implications, and the marginal time savings created by Cisco's engineers. Moreover, variance can also result from *how* Cisco engineers are utilized by client organizations — the more strategic their usage, the higher the potential return.

## Appendix A: Cisco Data Center Optimization Services Overview

The following information is provided by Cisco. Forrester has not validated any claims and does not endorse Cisco.

Cisco Data Center Optimization Services are part of a life-cycle plan-build-manage architecture-based approach that optimizes performance, security, and governance for applications, servers, and storage over a unified fabric. Client companies gain a holistic view of their data center functional areas to incorporate and improve Cisco's technologies. The resulting consolidated and optimized solution offers dynamic efficiencies that accelerate savings and makes client data center easier to manage and scale.

Cisco and its partners provide optimization solutions to enable secure, on-demand, and highly efficient automated data center operations for both virtual and physical infrastructure across each area of Cisco Domain Ten<sup>SM</sup> framework (see Figure 4). This broader view allows for greater consolidation and application performance from Cisco's unified hardware systems. Cisco's services portfolio also excels in providing best-in-industry people, processes, and practices, giving client companies the flexibility to optimize their data center by selecting customizable individual supporting service packages, organized by technology and solution.

**FIGURE 4**  
Cisco Domain Ten<sup>SM</sup> Framework



Source: Cisco Systems, 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.

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 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. 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 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.

## Appendix C: Glossary

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

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

### A NOTE ON CASH FLOW TABLES

The following is a note on the cash flow tables used in this study (see the example table below). The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1. Those costs are not discounted. All other cash flows in years 1 through 3 are discounted using the discount rate (shown in Framework Assumptions section) at the end of the year. 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.

**TABLE [EXAMPLE]**  
Example Table

Ref.	Metric	Calculation	Year 1	Year 2	Year 3

Source: Forrester Research, Inc.

## Appendix D: Endnotes

<sup>1</sup> Forrester finds that “On average, the banks we surveyed approximated that 7% of their total revenue in 2013 will come from digital channels. However, two out of 21 banks report driving revenues of over 21% from the digital channels, demonstrating that there are still untapped digital sales opportunities.” Source: “The State Of North American Digital And Multichannel Banking 2013,” Forrester Research, Inc., April 2, 2013.

<sup>2</sup> Forrester uses the term P1, P2, P3, and P4 network outage throughout this report. Generally speaking, a P1 (or Priority 1) outage entails a total loss of service such that customers, either internal or external, are unable to access the network. P2-P4 outages entail varying levels of service degradation, where P2 is the most severely degraded and P4 the least. More information on network outage definitions can be found at [www.itil-officialsite.com](http://www.itil-officialsite.com).

<sup>3</sup> See above.