

A Forrester Total Economic Impact™ Study Prepared For Cisco

# The Total Economic Impact™ Of Cisco SMARTnet Service

A Multi Company Value Analysis

Project Director: Jon Erickson

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FORRESTER

Headquarters | Forrester Research, Inc.  
400 Technology Square, Cambridge, MA 02139 USA  
Tel: +1 617.613.6000 | Fax: +1 617.613.5000 | [www.forrester.com](http://www.forrester.com)

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## Executive Summary

Beginning in 2010, Cisco commissioned Forrester Consulting to examine the total economic impact and potential return on investment (ROI) enterprises can realize by investing in and leveraging Cisco SMARTnet® Service. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Cisco SMARTnet Service on their organizations.

SMARTnet is a technical support service that provides an organization's IT staff direct, anytime access to Cisco engineers and extensive Cisco.com resources. Cisco SMARTnet Service differs from traditional warranty on Cisco products by providing accelerated hardware replacement options, Cisco operating system updates, direct access to Cisco Technical Assistance Center (TAC) staff, online troubleshooting and support tools, as well as proactive problem diagnosis. These capabilities provide an additional level of business continuity assurance within critical parts of the network environment.

## SMARTnet Delivers Greater System Support and Reduced Cost

Our interviews with 4 existing enterprise customers and subsequent financial analysis found that a composite organization based on the companies we interviewed experienced the risk-adjusted ROI, costs, and benefits shown in Table 1.

**Table 1**

Composite Organization Three-Year Risk-Adjusted Sales Growth/ROI/TCO<sup>1</sup>

ROI <sup>1</sup>	Payback period	Total benefits (PV)	Total costs (PV)	Net present value
192%	Within 9 months	\$1,527,352	(\$1,004,324)	\$523,028

Source: Forrester Research, Inc.

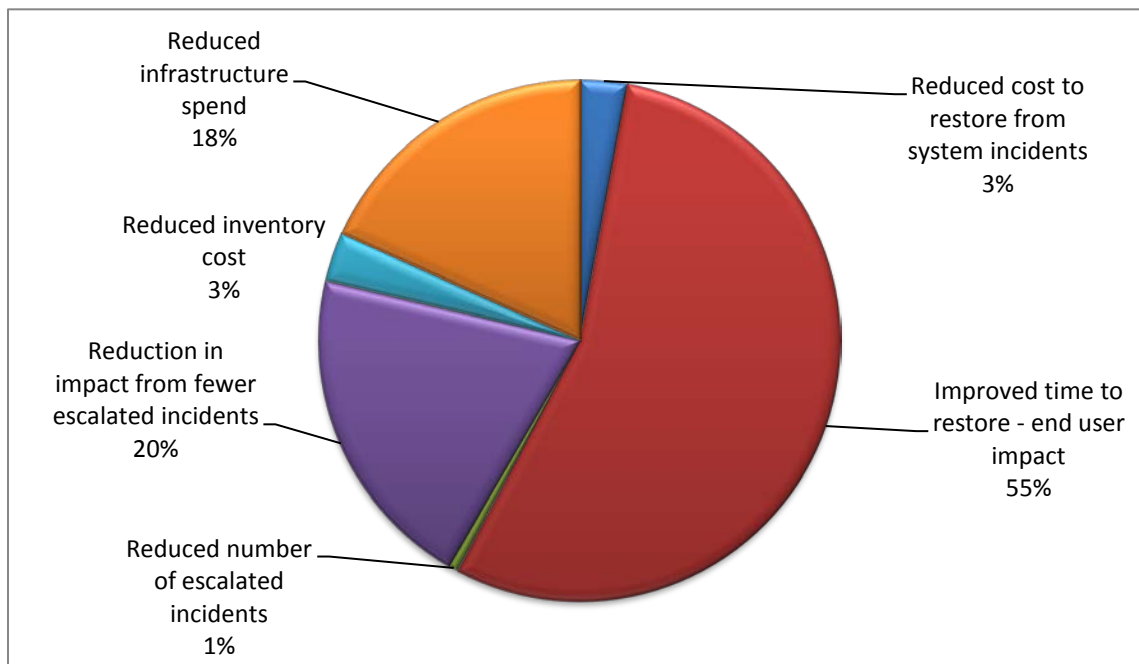
- **Benefits.** The composite organization experienced the following benefits that represent those experienced by the interviewed companies. Figure 1 provides a graphical breakdown of the incremental benefits over a three year period:
  - **Reduced cost to restore from system incidents.** SMARTnet provided an enhanced level of service for the organization to restore from system incidents sooner compared with warranty coverage, resulting in lower IT effort to resolve unforeseen issues and lower downtime to end users.
  - **Reduced number of escalated incidents.** SMARTnet provided a way to reduce the likelihood that system events would be escalated from a minor localized incident to a major incident affecting the whole organization. The result of fewer escalated incidents was a reduced support cost and improved system availability through proactive information of possible trouble spots.

<sup>1</sup> Forrester calculates Return on Investment (ROI) as the net impact from the resulting technology. It is calculated as the present value ratio of net benefits to total costs [(PV Total benefits - PV Total costs) / (PV Total Costs)]. In other words, for every dollar the organization invests in SMARTnet, it receives the equivalent of \$2.92 in positive benefit.

- **Reduced inventory cost.** SMARTnet provided immediate access to Cisco support, allowing organizations to reduce the number of spare parts on hand leading to reduced inventory holding costs.
- **Reduced infrastructure cost.** SMARTnet provided access to enhanced operating system software support and updates to allow organizations to easily manage the latest upgrades of the network OS, improving functionality while at the same time delaying additional investments in hardware.
- **Costs.** The composite organization experienced the following incremental costs of investing in SMARTnet:
  - **Cost of SMARTnet.** The primary cost of SMARTnet was the annual recurring cost for the enhanced level of support.

**Figure 1**

Total Benefits, Risk Adjusted – Present Value



Source: Forrester Research, Inc.

### Factors Affecting Benefits And Costs

Table 1 illustrates the risk-adjusted financial results that were achieved by the composite organization. The risk-adjusted values take into account any potential uncertainty or variance that exists in estimating the costs and benefits, which produces more conservative estimates. The following factors may affect the financial results that an organization may experience:

- Size of Cisco Services Agreement
- Scope of SMARTnet contracts purchased

- Composition of network devices
- Size and scale of network incidents

## **Disclosures**

The reader should be aware of the following:

- The study is commissioned by Cisco and delivered by the Forrester Consulting group.
- Forrester makes no assumptions as to the potential return on investment that other organizations will receive.  
Forrester strongly advises that readers should use their own estimates within the framework provided in the report to determine the appropriateness of an investment in SMARTnet.
- 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

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### Introduction

From the information provided in the interviews, Forrester has constructed a Total Economic Impact™ framework for those organizations considering implementing SMARTnet. 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 SMARTnet can have on an organization (see Figure 2). Specifically, we:

- Interviewed Cisco technical, marketing, and sales personnel and Forrester analysts to gather data relative to SMARTnet and the marketplace for SMARTnet.
- Interviewed 4 organizations currently using SMARTnet as part of their overall Cisco Enterprise agreement 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.

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### Figure 2

#### TEI Approach



Source: Forrester Research, Inc.

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Forrester employed four fundamental elements of TEI in modeling SMARTnet's service:

1. Costs.
2. Benefits to the entire organization.
3. Flexibility.
4. 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.

## Analysis

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### Interview Highlights

A total of 4 interviews were conducted for this study, involving representatives from the following companies (Cisco customers based in the United States and Europe):

1. A North American manufacturer of personal security devices leveraging SMARTnet within their primary datacenter environment.
2. A US federal government agency leveraging SMARTnet for selected switches across their infrastructure.
3. A European financial services organization leveraging SMARTnet across key points of their infrastructure network.
4. A North American producer of energy services leveraging SMARTnet across current routers and switches across several primary data centers within the United States and Canada.

The four interviews uncovered several key themes that drove the creation of the financial analysis:

- All of the interviewed organizations had seen significant growth across their network infrastructure over the past several years. This growth resulted in increased reliance on the reliability and stability of individual network components in an increasingly dispersed network environment.
- While the dependence on the network has grown, organizations have seen pressure to maintain costs across IT resulting in minimal growth of staff to support the network. As a result, organizations were looking for ways to improve the scalability of their support organization to match demand without significantly increasing costs.
- Many of the interviewed organizations spoke of their investment as akin to an insurance policy to cover the stability and availability of the network. SMARTnet for them was seen as a service that could allow them to proactively mitigate risk of disruption but also reduce the severity of incidents by having access to Cisco personnel who could quickly help diagnose and resolve the root cause of incidents.
- The cost of the SMARTnet varied on a case by case basis. Many of the organizations interviewed had SMARTnet as part of their overall Cisco Enterprise agreement. Several of the organizations leveraged SMARTnet for all of their Cisco equipment while others targeted critical network devices within their environment.

### *Composite Organization*

Based on interviews with four existing customers — provided by Cisco — Forrester constructed a composite organization, referred to in this document as “Paragon.” The composite organization represents a US-based services

firm. It has \$800 million in revenue, headquarters in North America, and branch offices in Europe, the Middle East, and Asia with 2,000 employees. Paragon also has the following characteristics:

#### Current network environment

- Four locations, two data centers, and multiple remote offices.
- The infrastructure encompasses all security, firewall, VPN, SSL termination, load balancing, and data connectivity. Central infrastructure supports all enterprise and most division-specific applications.
- 80 IT staff located in a central location, with 10 of those staff allocated to network operations.

#### Reasons for investment in SMARTnet

- As several critical applications are running on the network, the business requires the network to be reliable, stable, and predictable. Otherwise, extended network downtime has significant financial implications.
- The organization has seen its investment in supporting critical parts of the network rise with the complexity of their environment and is looking for a way to free up operational capital through reduced inventory costs.
- The IT organization requires access to network engineering resources and expertise that are too costly to maintain internally.

#### Framework Assumptions

Table 2 provides the model assumptions that Forrester used in this analysis.

**Table 2**

#### Model Assumptions

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

Source: Forrester Research, Inc.

The discount rate used in the PV and NPV calculations is 10% and time horizon used for the financial modeling is 3 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.

## **Costs**

This section highlights the incremental cost impact to the representative organization from the investment in SMARTnet. Forrester assumes the investment cost is primarily the annual subscription cost paid to Cisco. For this analysis, Forrester assumes the representative organization incurs a cost of \$150,000 per year to cover the SMARTnet contract. This cost includes online access to support tools, direct access to Cisco TAC engineers, OS updates, and replacement parts coverage (next business day) of key network devices including switches and routers.

## Benefits

*“Leveraging Cisco SMARTnet enabled us to maximize the value from using Cisco products and provide a level of assurance within our IT environment.”*

North American Manufacturer

Benefits for the representative organization were divided into several key themes:

- Impact to restoration times
  - Reduced cost to restore from system incidents
  - Improved time to restore - end user impact
- Impact on escalation of incidents
  - Reduced number of escalated incidents
  - Impact from fewer escalated incidents
- Reduced inventory cost
- Improving network performance through OS updates

### *Impact to restoration times*

One of the key impacts as noted by the interviewed organizations was the ability of SMARTnet to provide an additional level of protection to respond to system incidents. This applies to both planned as well as unplanned incidents within the organizations network environment. One organization in particular noted that before they perform any changes to the network, they use Cisco resources to see if there are any known problem issues and to ensure quick resolution in the event of an unforeseen issue.

To calculate this benefit, Forrester examined both the impact to IT staff and end users who could be impacted by restoration from a system incident.

**Table 3**

Reduced cost to restore from system incidents

Ref.	Metric	Pre Investment Baseline	Post Investment
A1	Number of major system incidents	6	6
A2	Total FTE time to restore per incident (hours)	120	72
A3	Estimated time improvement		40%
A4	Cost per hour	\$80	\$80
At	Reduced cost to restore from system incidents		\$23,040

Source: Forrester Research, Inc.

**Table 4**

Improved time to restore - end user impact

Ref.	Metric	Pre investment Baseline	Post Investment
A1	Number of major system incidents	6	6
A2	Average number of users impacted	2,500	2,500
A3	Duration of incident (Hours)	4	2.8
A4	Estimated improvement in time		30%
A5	Time transferred to productive time		30%
A6	Cost per hour	\$80	\$80
At	Improved time to restore - end user impact		\$432,000

Source: Forrester Research, Inc.

*Impact on escalation of incidents*

In addition to reducing the time to restore from an incident, another area of benefit noted by the interviewed organizations is the reduced impact from incident escalation as a result of use of SMARTnet. Several organizations noted having access to Cisco online and TAC based support helps them reduce the likelihood that localized incidents would spread to impact a greater number of users and applications both inside and outside the organization.

As with the first set of benefits, Forrester also examined the impact of reduced escalation of incidents both from an IT and end user perspective.

**Table 5**

Reduced number of escalated incidents

Ref.	Metric	Per Period
A1	Number of incidents escalated from Tier 2 to Tier 3	4
A2	Time improvement- Tier 2 vs. Tier 3	4
A3	Time savings	60
A4	Hourly rate per worker	\$80
At	Reduced number of escalated incidents	\$4,800

Source: Forrester Research, Inc.

**Table 6**

Reduction in impact from fewer escalated incidents

Ref.	Metric	Per Period
A1	Number of incidents escalated from Tier 2 to Tier 3	4
A2	Potential Exposure	2,500
A3	Hourly Rate Per Worker	\$80
A4	Percent Captured	20%
At	Reduction in Impact from Fewer Escalated Incidents	\$160,000

Source: Forrester Research, Inc.

*Reduced Inventory cost*

The third area of benefit noted by several of the interviewed organizations was the ability to reduce the amount of spare part inventory on hand as a result SMARTnet. Organizations who had noted this benefit were leveraging flexible hardware replacement options as part of their SMARTnet contract including 2-hour, 4-hour, and next business day depending on the criticality of the covered device.

**Table 7**

Reduced Inventory Cost

Ref.	Metric	Per Period
A1	Annual inventory cost	\$120,000
A2	Estimated reduction	20%
At	Reduced inventory cost	\$24,000

Source: Forrester Research, Inc.

*Improved Network Performance Through OS Updates*

The final area of benefit noted during the interviews was the ability to obtain and install minor and major updates for the licensed OS feature set of the covered hardware providing organizations with access to current versions of OS software. Organizations noted in a complex infrastructure, it was difficult to keep current with the latest OS updates to their network infrastructure hardware. In several instances, organizations would go ahead and upgrade their entire hardware without realizing there was an existing update to the OS, mitigating the need to upgrade all devices on the network. As a result, organizations could delay having to refresh portions of their infrastructure by upgrading just the OS to the latest operation system environment.

**Table 8**

Improved network performance through OS updates

Ref.	Metric	Calculation	Per Period
A1	Annual Spend - HW		\$48,000,000
A2	Percent attributable to Network Infrastructure		20%
A3	Percent allocated to hardware upgrades		15%
A4	Percent delayed to OS updates		10%
At	Reduced Infrastructure spend		\$144,000

Source: Forrester Research, Inc.

**Total Benefits**

Table 9 illustrates total benefits resulting from the SMARTnet investment. Benefits are reduced by 50% in the first year to take into account the ramp up time to receive benefit.

**Table 9**

Total Benefits

Benefits	Year 1	Year 2	Year 3	Total	Present Value
Reduced cost to restore from system incidents	11,520	23,040	23,040	57,600	46,824
Improved time to restore - end user impact	216,000	432,000	432,000	1,080,000	877,956
Reduced number of escalated incidents	2,400	4,800	4,800	12,000	9,755
Reduction in impact from fewer Escalated Incidents	80,000	160,000	160,000	400,000	325,169
Reduced inventory cost	12,000	24,000	24,000	60,000	48,775
Reduced Infrastructure spend	72,000	144,000	144,000	360,000	292,652
<b>Total</b>	<b>\$393,920</b>	<b>\$787,840</b>	<b>\$787,840</b>	<b>\$1,969,600</b>	<b>\$1,601,132</b>

Source: Forrester Research, Inc.

**Risk**

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 SMARTnet 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 SMARTnet, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for cost and benefit estimates.

Quantitatively capturing 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. 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 implementation risks that affect costs are identified as part of this analysis:

- The actual cost of the SMARTnet service will vary on a customer by customer basis due to the final negotiated price and number of covered devices in the network.
- The cost to evaluate and plan for leveraging SMARTnet could be material due to the customer’s baseline environment.

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

- The amount of savings and network availability improvement may be greater than originally anticipated.

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.

## Financial Summary

The financial results calculated in the Costs and Benefits sections can be used to determine the return on investment, net present value, and payback period for the organization's investment in SMARTnet. These are shown in Table 10 below.

**Table 10**

Cash Flow — Non-Risk-Adjusted

Cash flow — Original estimates						
	Initial	Year 1	Year 2	Year 3	Total	Present value
Costs	(\$150,000)	(\$150,000)	(\$150,000)	(\$150,000)	(\$600,000)	(\$523,028)
Benefits		\$393,920	\$787,840	\$787,840	\$1,969,600	\$1,601,132
Net benefits	(\$150,000)	\$243,920	\$637,840	\$637,840	\$1,369,600	\$1,078,105
ROI	206%					
Payback period	Within 8 Months					

Source: Forrester Research, Inc.

Table 11 below shows the risk-adjusted ROI, NPV, and payback period values. These values are determined by applying the risk-adjustment values in the Risk section.

**Table 11**

Cash Flow — Risk-Adjusted

Cash flow — Risk-adjusted estimates						
	Initial	Year 1	Year 2	Year 3	Total	Present value
Costs	(\$150,000)	(\$150,000)	(\$150,000)	(\$150,000)	(\$600,000)	(\$523,028)
Benefits		\$375,768	\$751,536	\$751,536	\$1,878,840	\$1,527,352
Net benefits	(\$150,000)	\$225,768	\$601,536	\$601,536	\$1,278,840	\$1,004,324
ROI	192%					
Payback period	Within 9 months					

## Appendix A: SMARTnet: Overview

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According to Cisco<sup>2</sup>, resolve network problems rapidly with direct, anytime access to Cisco experts and hardware replacement matched to your needs.

### *When Minutes Matter, Depend on SMARTnet to Deliver*

When a problem occurs that can disrupt business continuity, IT departments are under intense pressure to resolve the issue as quickly as possible before it can affect the business. Cisco® SMARTnet® Service facilitates rapid resolution of critical network issues and improves operational efficiency through a combination of expert technical support, flexible hardware coverage, and smart, personalized capabilities.

SMARTnet provides the following device-level support:

- Direct access 24 hours a day, 365 days a year to specialized engineers in the Cisco Technical Assistance Center (TAC)
- Extensive self-help support through Cisco's online knowledge base, communities, resources, and tools
- Smart, proactive diagnostics and real-time alerts for devices enabled with the Smart Call Home feature
- Ongoing operating system (OS) software updates, including both minor and major releases within the licensed feature set
- Hardware replacement options including 2-hour, 4-hour, and next-business-day (NBD) advance replacement, as well as return-for-repair (RFR)
- Optional onsite service that provides a field engineer who can install replacement parts at customer's location

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<sup>2</sup> For additional information, please see [www.cisco.com/go/smartnet](http://www.cisco.com/go/smartnet)



## Appendix B: Total Economic Impact™ Overview

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

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

### *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.

### *Risk*

Risk measures 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 minimum, three values are calculated to estimate the underlying range around each cost and benefit.

### *Flexibility*

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

## Appendix C: Glossary

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**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 organization to determine the most appropriate discount rate to use in their own environment.

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

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

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

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

### *A Note On Cash Flow Tables*

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

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### **Table [Example]**

Example Table

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

Source: Forrester Research, Inc.

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## Appendix D: Endnotes

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<sup>1</sup> Forrester risk-adjusts the summary financial metrics to take into account the potential uncertainty of the cost and benefit estimates. For more information on Risk, please see page 14.