

FORRESTER®

The Total Economic Impact™ Of Cisco Identity Service Engine (ISE)

Better Security, Cost Savings, And Business Benefits
Enabled By ISE

MARCH 2022

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Executive Summary

Organizations face ever increasing challenges managing secure networks while providing users with the access to systems and information needed to do their jobs efficiently and to create value. These challenges continue to be exacerbated by the need to support increased remote working. Companies that deploy Cisco Identity Services Engine achieve improved security, IT and security team efficiencies, and better business outcomes.

[Cisco Identity Services Engine](#) (ISE) is a network access control (NAC) solution that streamlines secure network management and gives users and devices segmented access to corporate resources. It also provides rich information and context to help security teams identify and remediate threats faster. Cisco commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying ISE.¹ The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of ISE on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed five decision-makers with experience using ISE. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single [composite organization](#). Some companies are using ISE in conjunction with [software-defined access \(SDA\)](#) environments based on Cisco DNA Center. The incremental benefits of using ISE in an SDA environment are discussed in the [Flexibility section](#) of this study.

Prior to using ISE, these interviewees noted how their organizations struggled to manage network segmentation with sufficient granularity, spent too much time on network management and security enforcement, and could not handle the dramatic increase in user devices accessing networks. However, prior attempts yielded limited success,

KEY STATISTICS



Return on investment (ROI)
191%



Net present value (NPV)
\$673K

leaving them with manual processes that did not scale or meet existing and future security requirements. These limitations led to access-related security breaches, overworked network operations and security teams, and business users not having timely access to needed resources.

After the investment in ISE, the interviewees all said that they provided more granular access faster and more efficiently. This has resulted in fewer security events, which reduces business user downtime and the associated cost and effort to identify, isolate, and remediate breaches. ISE also improves business outcomes such as increased revenues by keeping business users productive, reducing security-related outages that can affect customers or otherwise tarnish brand reputation, and increasing collaboration through guest access and broadening of bring-your-own-device (BYOD) policies.

Reduction in access-related security events

50%



KEY FINDINGS

Quantified benefits. Risk-adjusted present value (PV) quantified benefits, as applied to the composite organization, include:

- **Reduction in applicable security breaches by 50% and avoidance of 25% increase in staffing for the associated security team.** This study focuses on security events ISE helps protect against such as rogue devices, devices not fully updated with access, and people inadvertently accessing network resources they should not. It excludes other threats such as phishing attacks that ISE is not designed to address, even though ISE integration with a solution such as Cisco Secure Analytics enables an automated response to these other threats. ISE is implemented at the beginning of the study's three-year period and reduces applicable security events by 50%. Fewer events reduce user downtime during remediation. Fewer events also mean that the composite organization does not need to add people to the security team to achieve the desired level of protection and responsiveness. Together, these benefits are worth \$442,000 over three years. This benefit does not include other potential costs of a breach such as lost revenue, fines, and brand reputation damage because it varies greatly depending on the size and nature of a breach and on company specifics such as industry and size.
- **Avoidance of 66% increase in staffing for the IT network operations team.** ISE provides tools to streamline and automate many processes associated with access and management. They also provide better reporting and analytics, which saves time and helps IT make proactive changes to avoid future problems. Additionally, there is reduced effort supporting users who are having difficulties accessing networks. The existing network operations team avoids adding two additional resources to support growth and achieve the level of service it does with ISE. The three-year value is \$348,000.

“Combining ISE with SDA is going to make our security model much stronger. It will also greatly simplify life for the security team.”

— Network engineering services assistant director,
higher education organization

- **Fewer hours (5,400) per year in access-related user downtime, which can be used to create business value.** Existing users save time registering new devices and accessing networks by using self-service tools and being automatically assigned resources and permissions based on business rules. Additionally, new hires have access to resources sooner, which means they can start adding value to the organization faster. These time savings are a proxy for improved business outcomes because the value someone creates should equal the pay they receive at a minimum. The total benefit over three years is \$236,000.

Unquantified benefits. Benefits that are not quantified for this study include:

- **Increased employee satisfaction.** Providing employees with timely and smooth access to the network resources they need to do their job improves their satisfaction. Employees also like to use their personal devices rather than using multiple mobile phones. This is especially important for remote users, which is a very large portion of the workforce in post-COVID hybrid working models. Increased employee satisfaction can result in increased productivity and less employee churn.

- **Increased value from other security solutions.** Adding Cisco ISE increases the benefits customers realize from other security solutions. This occurs through tighter integration; the combination of signals (context) from across the security stack for better analytics, reporting, and response; and a more strategic relationship with Cisco.

Costs. Risk-adjusted PV costs include:

- **Internal costs, including deploying and managing the solutions.** Cisco ISE deploys in the Initial Period of the study, and it takes 2.5 full-time employees (FTEs) two months to complete, followed by DNA Center. There is ongoing effort of 0.25 FTEs to manage ISE. The total cost over the life of the study is \$137,000.
- **External costs, including licenses, hardware, and professional services.** The composite prepays a three-year contract for ISE at the time of implementation and uses some professional services to deploy ISE. The total external costs are \$215,000.

Avoided growth in network operations team headcount

66%



“We now receive fewer help desk tickets related to network access, especially from remote workers. Surveys have shown higher employee satisfaction.”

CIO, financial services organization

The decision-maker interviews and financial analysis found that a composite organization experiences benefits of \$1 million over three years versus costs of \$353,000, adding up to a net present value (NPV) of \$673,000 and an ROI of 191%.



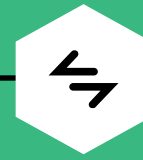
ROI
191%



BENEFITS PV
\$1.03M

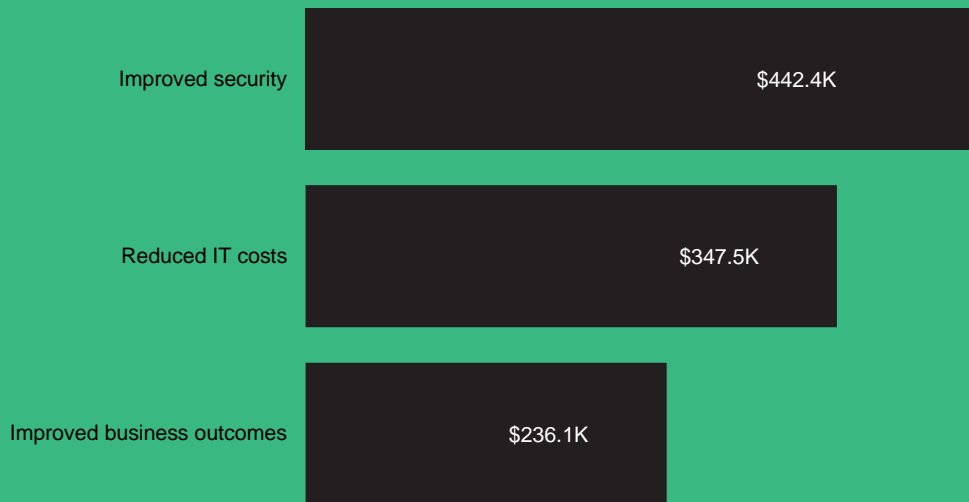


NPV
\$673K



PAYBACK
11 months

Benefits (Three-Year)



TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in ISE.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that ISE can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Cisco 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 study to determine the appropriateness of an investment in Cisco ISE.

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.

Cisco provided three of the five customer names for the interviews but did not participate in the interviews.



DUE DILIGENCE

Interviewed Cisco stakeholders and Forrester analysts to gather data relative to ISE.



DECISION-MAKER INTERVIEWS

Interviewed five decision-makers at organizations using ISE to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewees' organizations.



FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the decision-makers.



CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

The Cisco ISE Customer Journey

Drivers leading to the ISE investment

Interviewed Decision-Makers			
Interviewee	Industry	Region	Number of users
Enterprise architect	Higher education	EMEA	15,000
Network engineering services assistant director	Higher education	North America	11,500
CIO	Financial services	North America	6,000
Director	Media	EMEA	7,000
Technical team lead	IT services	LATAM	200

KEY CHALLENGES

Prior to implementing ISE, interviewees typically had a mix of homegrown and siloed network administration tools. They did not meet current needs, let alone anticipated future requirements.

The interviewees noted how their organizations struggled with common challenges, including:

- **The significant growth in the number of user devices and remote users.** All interviewees reported dramatic growth in the number of devices requiring access to networks, typically a 10x growth over the past five years. This was partly driven by more permissive BYOD policies. Additionally, COVID 19 work-from-home requirements meant that the proportion of workers who were remote went from single-digit percentages to almost 100%. This is expected to continue as a part of hybrid working models. The result was that existing tools, which included many manual processes, could not keep up with the growth.
- **Threats that security models and policies did not address.** Prior security solutions had problems such as a lack of granularity in segmenting networks and users, too much time to define and implement changes, and an inability

to quickly identify and isolate threats.

Interviewees said that they reached the point where throwing more bodies at the problem would not solve it.

- **Prior solutions that negatively affected business users.** Before adopting ISE, manual processes and inadequate tools meant that business users often struggled to get access to business networks and resources. This resulted in lost productivity and users' frustration. A specific use case that faced big challenges was guest access for customers, partners, students, etc.

“The greatest challenge we faced during the pandemic was having 7,000 people start working from home the next day. What we had in place was not good enough. We needed to add ISE, and we needed to add software-defined access to handle the changes.”

Director, media organization

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the five decision-makers that Forrester interviewed and is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The composite organization is a North American-based company with offices in some major commercial centers around the world. It has 5,000 employees, with a 5% annual churn rate. Annual revenues are \$1.3 billion. It uses homegrown and sometimes-older tools, along with many manual processes, to manage network segmentation and user and device access. It wants solutions to address the previously described challenges.

Deployment characteristics. The composite organization deploys Cisco ISE in the Initial Period of the study to cover all employees and guest access, along with 10,500 attached devices. The Flexibility section of the study describes the additional benefits that can be achieved if Cisco DNA Center for software-defined access is also implemented.

Key assumptions

- **5,000 employees**
- **\$1.3 billion revenues**
- **10,500 attached devices**
- **Cisco ISE deployment**

Analysis Of Benefits

■ Quantified benefit data as applied to the composite

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Improved security	\$177,880	\$177,880	\$177,880	\$533,639	\$442,361
Btr	Reduced IT costs	\$85,500	\$171,000	\$171,000	\$427,500	\$347,524
Ctr	Improved business outcomes	\$63,444	\$113,095	\$113,095	\$289,633	\$236,113
	Total benefits (risk-adjusted)	\$326,823	\$461,975	\$461,975	\$1,250,773	\$1,025,998

IMPROVED SECURITY

Evidence and data. All interviewees said that moving to Cisco ISE improved their security in terms of seeing fewer realized threats and making life easier for the security organization. The reporting and analytics features also improved compliance. ISE can additionally help with zero-day stop activities for employees leaving a company. Interviewees shared the following ways security improved:

- Greater visibility into everyone and everything connected to the networks helped the security team identify threats and isolate them faster.
- Segmentation was more granular to ensure people only had access to corporate resources they were supposed to, and changes could be made faster and applied at scale through automation.
- The number of breaches from vectors that ISE addresses was significantly reduced. One higher-education organization said that “98% of past big threats were avoided,” and the director at the media organization said that it went from “20 high-risk events per quarter before ISE down to less than one per quarter” with ISE.
- The relevant security teams did more without adding more staff from efficiency gains and fewer

incidents to remediate. The media interviewee said that security tasks took half the time to complete and that the security team would have had to add two FTEs to its team of three without ISE. One of the higher-education interviewees said that it would have needed to double its existing security team if it hadn’t implemented ISE.

- Some interviewees said that compliance was easier. The CIO at the financial services firm said: “Security is our concern, but compliance is the most important thing because we are in a highly regulated industry. ISE makes compliance easier.”

Modeling and assumptions. For the financial analysis, Forrester made the following assumptions:

- The composite organization has 20 security events per quarter that ISE helps address.
- ISE is implemented in the Initial Period, and this reduces the number of events by 50% beginning in Year 1.
- Each security event affects, on average, 0.5% of the 5,000 employees, or 25 users. These are people who may be using the same network resources when someone else’s device infects them.

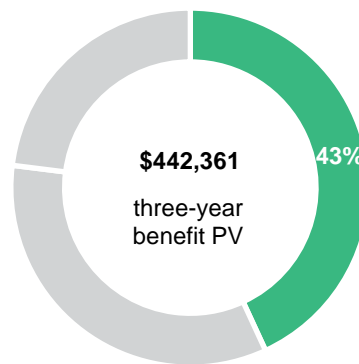
- Forrester’s research has found that the average time to remediate a security breach is 3.8 hours.² During this time, users are 50% less productive because they may lose access to their computer and/or some networks and corporate resources.
- The average fully burdened salary, including benefits and payroll taxes, across all employees is \$85,000.
- The preexisting security team responsible for areas that ISE covers is four FTEs. The addition of ISE means that one additional FTE does not need to be added to deliver comparable additional service.

The financial calculations only include the lost productivity of affected business users and the avoided addition of security staff. There are many other potential costs associated with a breach, but they were excluded from the analysis because the type and severity of security events vary greatly by threat vector, industry, individual company, etc. Forrester’s research has found that a major security event that impacts customer-facing systems and information can result in lost revenues, brand damage, and other related costs of \$170,000 for a 5,000-employee organization.³ The reader is encouraged to consider the types of security events ISE will help prevent and the potential financial impacts to their organization.

Risks. The magnitude of this benefit may vary based on:

- The tools in place before and how much streamlining and automating of IT security functions they enabled.
- The number and type of security events prevented and the number of affected users.
- The salaries of business users and IT security resources.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV (discounted at 10%) of \$442,000.



“We now have better visibility, more granular segmentation, better policy enforcement, and better identity and access management.”

CIO, financial services organization

Improved Security					
Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Number of applicable security events prior to ISE	Composite	80	80	80
A2	Reduced number of events	A1*50%	40	40	40
A3	Reduced number of affected users	A2*5,000*0.5%	1,000	1,000	1,000
A4	Lost productivity per user per event	3.8 hours*\$85,000/2,080 hours	\$155.29	\$155.29	\$155.29
A5	Reduction in lost productivity	A3*A4*50%	\$77,644	\$77,644	\$77,644
A6	Existing relevant security team (FTEs)	Composite	4	4	4
A7	Avoided increase in security FTEs	Composite	1	1	1
A8	Avoided additional IT security team costs	A7*\$120,000	\$120,000	\$120,000	\$120,000
At	Improved security	A5+A8	\$197,644	\$197,644	\$197,644
	Risk adjustment	↓10%			
Atr	Improved security (risk-adjusted)		\$177,880	\$177,880	\$177,880
Three-year total: \$533,639			Three-year present value: \$442,361		

REDUCED IT COSTS

Evidence and data. Cisco ISE streamlined and automated activities related to network management and user and device access. All interviewees said that if they had not added ISE, they would have needed to add more people to teams and still not have achieved the same levels of security and service. Interviewees shared the following examples of how IT costs decreased:

- The enterprise architect in EMEA said that the current team of seven would have required five more people without ISE and that would have only covered 9-to-5 support.
- At the North American higher-education organization, the team would have needed to increase from three to nine.
- Contributing factors to the time savings include better automation, less time to diagnose potential

problems, fewer user-access help desk tickets, and fewer security false alerts.

Modeling and assumptions. For the financial analysis, Forrester made the following assumptions:

- The network operations team consists of three FTEs.
- Implementing ISE means that one FTE does not have to be added in Year 1 to achieve the same level of services, this increases to two additional FTEs beginning in Year 2. The increase is because ISE deploys across more networks and there is an ever-increasing number of devices trying to access network resources.
- The fully burdened cost of a network operations team member is \$95,000.

“Without ISE, we would be spending a lot more time helping people connect. Now, we can diagnose 90% of the problems in 10 minutes. Doing it the old-school way would have taken a lot more time.”

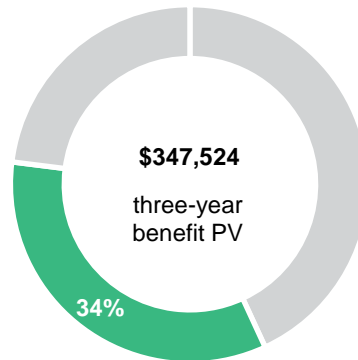
Network engineering services assistant director, higher-education organization

Risks. The magnitude of this benefit may vary based on:

- The existing network operations team and how much process streamlining and automation were in place.

- The salary of a network operations team member.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of \$348,000.



Reduced IT Costs					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Existing number of FTEs	Composite	3	3	3
B2	Number of avoided new hires	Composite	1	2	2
B3	Network operations employee fully burdened annual salary	TEI standard	\$95,000	\$95,000	\$95,000
Bt	Reduced IT costs	B2*B3	\$95,000	\$190,000	\$190,000
	Risk adjustment	↓10%			
Btr	Reduced IT costs (risk-adjusted)		\$85,500	\$171,000	\$171,000
Three-year total: \$427,500			Three-year present value: \$347,524		

IMPROVED BUSINESS OUTCOMES

Evidence and data. Providing better and faster access to corporate resources makes users more productive. This is especially true in the case of new hires. There can also be better collaboration with

guest users, such as customers, partners, and suppliers. This can increase innovation and speed. All of these improvements can deliver various improved business outcomes such as faster time-to-market, increased revenues, and higher

customer satisfaction. Interviewees shared the following examples of how ISE increases user productivity and contributes to improved business outcomes:

- The enterprise architect at the European higher-education organization said that it onboards 45,000 to 55,000 devices per year and that 96% of the time it is a fully self-service and near-instantaneous experience.
- At the North American higher-education organization, all users saved 5 to 10 minutes per day authenticating to different wireless networks.
- The director at the European media organization said that its 7,000 employees were all more productive, which “is extremely important because TV productions are on a tight timeline.”
- The network engineering services assistant director at the higher-education organization said that prior to ISE, each new hire required six to 10 help desk tickets. Now, new hires are automatically preprovisioned if no sign-offs are required or “up and running in a few hours if sign-offs are required. Previously, new hires lost a couple of days of productivity.”

Modeling and assumptions. For the financial analysis, Forrester made the following assumptions:

- Reduction in lost productivity is a proxy for improved business outcomes because the value an employee generates should be, at a minimum, equal to her compensation.
- Each employee registers 1.5 new devices per year. Prior to ISE, there was a 3-hour period for registration-related activities when employees were 25% less productive. Now, in 96% of the cases, registration is completed near-instantaneously using a self-registration page. Half of this benefit is realized in Year 1 because of user change management and learning curve considerations.

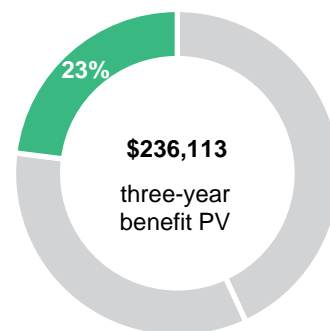
- The composite organization size is held constant for simplicity. However, there is 5% employee churn per year. Each new hire is now fully productive 1.5 days faster than prior to ISE. The daily fully burdened cost is based on an annual rate of \$85,000.
- A 50% productivity capture is applied to all time savings because not all freed-up time translates into additional work being completed.

“We can produce digital content faster and collaborate better because we have eliminated almost all access issues.”
Director, media organization

Risks. The magnitude of this benefit may vary based on:

- The number of devices being registered and/or other ways in which employees become more productive.
- Existing efficient zero-day start processes and systems for new hires.
- The average fully burdened cost of an employee.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year risk-adjusted total PV of \$236,000.



Improved Business Outcomes					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Reduced downtime registering new devices (hours)	5,000 employees*1.5 devices*3 hours*96% success rate*25% reduction in productivity	5,400	5,400	5,400
C2	Downtime due to registering devices (only 50% realized in Year 1)	C1*\$85,000/2,080 hours	\$110,337	\$220,673	\$220,673
C3	Number of new hires	5,000*5%	250	250	250
C4	Reduced downtime per new hire	1.5 days*\$326.92*25% reduction in productivity	\$122.60	\$122.60	\$122.60
C5	Reduced downtime onboarding new hires	C3*C4	\$30,649	\$30,649	\$30,649
Ct	Improved business outcomes	C2+C5	\$70,493	\$125,661	\$125,661
	Risk adjustment	↓10%			
Ctr	Improved business outcomes (risk-adjusted)		\$63,444	\$113,095	\$113,095
Three-year total: \$289,633			Three-year present value: \$236,113		

UNQUANTIFIED BENEFITS

Additional benefits that customers experienced but were not able to quantify include:

- Increased employee satisfaction.** Employees expect their work-related technology experiences to be as seamless as their personal ones. Interviewees said that difficulties associated with accessing networks and corporate resources were a major source of frustration for users prior to implementing ISE. By providing self-service tools, automating processes, and largely eliminating access and security problems, users became happier. This can translate into increased productivity and higher retention. With regard to IT and security teams, eliminating manual low-value tasks and providing access to cutting-edge tools increases satisfaction.
- Increased value from other security solutions.** All interviewees used a wide range of Cisco and other vendor solutions in their security stack. Interviewees all said that using ISE in conjunction

with their other solutions improved security and generated additional benefits from past investments. With regard to Cisco, other security solutions mentioned included AnyConnect, Secure Firewall, SecureX Platform, TrustSec, and Umbrella. Cisco networking solutions covered the entire stack for both wired and wireless networking and remote access.

“Leveraging the Cisco equipment we have with ISE makes our environment easier to operate, improves security, and provides better reporting.”

CIO, financial services organization

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer

might implement ISE and later realize additional uses and business opportunities, including:

- Continually updating security policies and practices.** Once ISE is in place, the networking operations and security teams have an enhanced toolset and more flexibility in improving network management and user security and access. These teams are constantly evolving their approaches to meet new business and security challenges.
- Upgrading to Cisco ISE 3.1.** Interviewees either were in the process of upgrading to 3.1 or had it on their short-term roadmap. They cited several benefits of moving to 3.1, including better management of public-cloud resources, more streamlined management activities, and improved policy automation.
- Layering on DNA Center for software-defined access.** Some interviewees used ISE in conjunction with a software-defined access (SDA) environment to amplify the benefits of ISE. To do so, they added DNA Center, which made policy creation and enforcement more efficient

and effective. Forrester modeled what the additional benefits would look like based on the customers' experiences and expectations.

The additional benefits attributed to SDA appear include 1) reducing applicable threats by 40%; 2) reducing business user downtime (by reducing applicable threats); 3) avoiding the addition of one FTE to the security team; 4) avoiding the addition of two FTEs to the IT operations team; and 5) eliminating part of the ongoing maintenance and support costs for prior solutions by providing SDA capabilities.

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in [Appendix A](#)).

Additional Benefits Attributed To Software-Defined Access					
Ref.	Metric	Source	Year 1	Year 2	Year 3
XX1	Reduced number of events attributed to SDA	A1*40%	32	32	32
XX2	Reduction in lost productivity attributed to SDA	XX1*25 users*A4*50% productivity capture	\$62,115	\$62,115	\$62,115
XX3	Avoided additional IT security team costs attributed to SDA	1 FTE*A8	\$120,000	\$120,000	\$120,000
XX4	Avoided additional IT operations costs attributed to SDA (only 50% in Year 1)	2 FTEs*B3	\$95,000	\$190,000	\$190,000
XX5	Hardware savings attributed to SDA	\$225,000*30%	\$67,500	\$67,500	\$67,500
XXt	Additional benefits attributed to layering on SDA	XX2+XX3+XX4+XX5+XX6	\$344,615	\$439,615	\$439,615
	Risk adjustment	↓10%			
XXtr	Additional benefits attributed to layering on SDA (risk-adjusted)		\$310,154	\$395,654	\$395,654
Three-year total: \$1,101,462			Three-year present value: \$906,205		

Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Dtr	Internal costs	\$55,000	\$33,000	\$33,000	\$33,000	\$154,000	\$137,066
Etr	External costs	\$198,000	\$7,013	\$7,013	\$7,013	\$219,038	\$215,439
	Total costs (risk-adjusted)	\$253,000	\$40,013	\$40,013	\$40,013	\$373,038	\$352,505

INTERNAL COSTS

Evidence and data. Internal costs included the initial implementation effort and ongoing management of ISE. Interviewees all said that these efforts were relatively simple and minor, especially compared with the benefits they received.

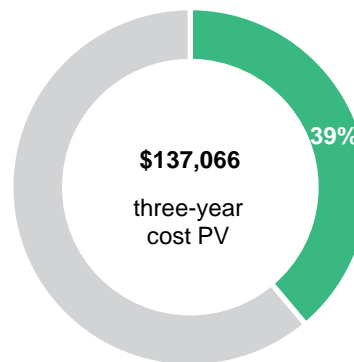
Modeling and assumptions. For the financial analysis, Forrester made the following assumptions:

- The Cisco ISE implementation takes 2.5 FTEs two months to complete.
- One-quarter of an FTE is required for the ongoing management of ISE. This includes making updates to the solutions, training on the latest features, and providing necessary information to others on the network operations and security teams.
- The fully burdened costs for these resources are \$120,000 per year.

Risks. The magnitude of this cost may vary based on:

- Possession of the necessary skills and availability internally.
- The size and complexity of the deployment.
- The fully burdened cost of these resources.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year risk-adjusted total PV (discounted at 10%) of \$137,000.



Internal Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
D1	Number of months	Composite	2.0			
D2	Number of FTEs	Composite	2.5			
D3	Internal implementation costs	$D1 \times D2 \times (\$120,000 / 12 \text{ months})$	\$50,000			
D4	Ongoing management effort	0.25 FTEs *\$120,000		\$30,000	\$30,000	\$30,000
Dt	Internal costs	$D3 + D4 + D5$	\$50,000	\$30,000	\$30,000	\$30,000
	Risk adjustment	↑10%				
Dtr	Internal costs (risk-adjusted)		\$55,000	\$33,000	\$33,000	\$33,000
Three-year total: \$154,000			Three-year present value: \$137,066			

EXTERNAL COSTS

Evidence and data. External costs included licenses and service fees paid to Cisco and any additional professional services. Interviewees all said that the amount of professional services required was low, compared with similar projects.

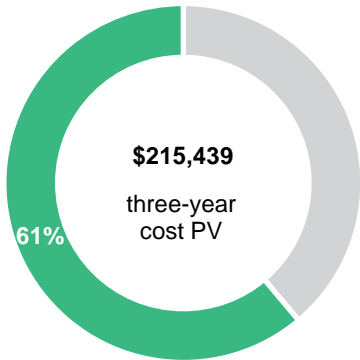
Modeling and assumptions. For the financial analysis, Forrester made the following assumptions:

- Cisco ISE licenses are paid at the time implementation as a prepaid three-year contract. It includes some professional services from Cisco.
- In Year 1, there is a small ongoing incremental ISE license cost to account for adding devices associated with new hires.
- There is a small amount of professional services from a Cisco partner as part of each implementation in addition to what is included in the licenses.

Risks. The magnitude of this cost may vary based on:

- The size, complexity, and timing of the implementation.
- A lack of internal resources to work on the implementation that requires additional professional resources.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year risk-adjusted total PV of \$215,000.

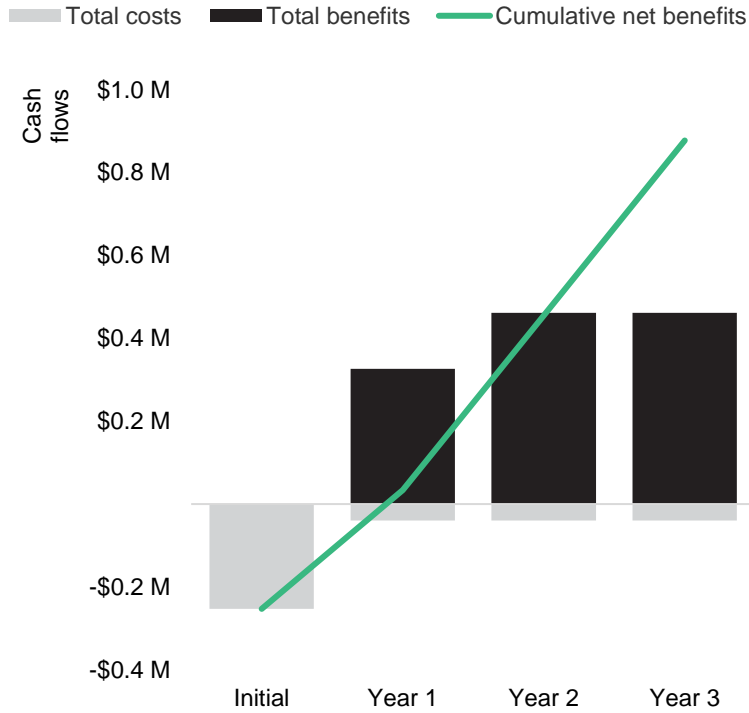


External Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Cisco licenses and services	Cisco	\$150,000	\$6,375	\$6,375	\$6,375
E2	Professional services	Assumption	\$30,000		\$0	\$0
Et	External costs	E1+E2	\$180,000	\$6,375	\$6,375	\$6,375
	Risk adjustment	↑10%				
Etr	External costs (risk-adjusted)		\$198,000	\$7,013	\$7,013	\$7,013
Three-year total: \$219,038			Three-year present value: \$215,439			

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



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. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash Flow Analysis (Risk-Adjusted Estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	(\$253,000)	(\$40,013)	(\$40,013)	(\$40,013)	(\$373,038)	(\$352,505)
Total benefits	\$0	\$326,823	\$461,975	\$461,975	\$1,250,773	\$1,025,998
Net benefits	(\$253,000)	\$286,811	\$421,962	\$421,962	\$877,735	\$673,493
ROI						191%
Payback (months)						11

Appendix A: Total Economic Impact

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.

TOTAL ECONOMIC IMPACT APPROACH

Benefits represent the value delivered to the business by the product. The TEI methodology places 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.

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in 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.



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.



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.



RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.



DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.



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.

Appendix B: Endnotes

¹ 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.

² Source: Forrester Consulting Cost Of A Cybersecurity Breach Survey, Q4 2020.

³ Ibid.

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