

FORRESTER®

The Total Economic Impact™ Of Dell PC As A Service

Cost Savings And Business Benefits
Enabled By Dell PC As A Service

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Executive Summary

Dell's PC as a Service (PCaaS) enables organizations to save valuable and increasingly scarce IT personnel productivity by reducing the required device lifecycle management tasks while also reducing hardware costs. Users are enabled with the latest devices improving productivity through reduced downtime and better performing applications. Dell PCaaS customers also realize hiring, budget, and project flexibility for the IT organization, enabling better support for an increasingly hybrid workforce.

With an increase in the variety of devices available to organizations and the workstyles of the employees who use them, management of the device lifecycle is more complicated and expensive than it has ever been, especially in light of the recent global trend of remote or flexible work. IT organizations must support a wide range of device and technology options to an increasingly dispersed and mobile workforce while maintaining low user disruption, all amid cost uncertainty. The rise of subscription services for traditional IT categories, such as devices, known to Forrester as device as a service (DaaS), shifts employee device purchasing from a one-time fixed cost to a continuous expenditure, an initiative that can improve digital employee experience while offering budget, hiring, and project flexibility to the IT organization.¹

Dell Technologies commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying [Dell PCaaS](#).² The purpose of this study is

KEY STATISTICS



Return on investment (ROI)
28%



Net present value (NPV)
\$1.8M

to provide readers with a framework to evaluate the potential financial impact of Dell PCaaS on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed twelve representatives with experience using Dell PCaaS. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single [composite organization](#), which is an industry-agnostic organization with 4,000 users and devices.

After the investment in Dell PCaaS, the interviewees highlighted the cost savings their organizations accrued by moving valuable IT talent off of device lifecycle management tasks and onto high-impact IT projects, avoiding labor and hiring costs. Organizations also reported hardware savings, shipping expenditure savings, and user impact. Increasingly hybrid users leverage newer, faster devices and lose less productivity to downtime.

Reduced device lifecycle support costs

33.5%



KEY FINDINGS

Quantified benefits. Three-year risk-adjusted present value (PV) quantified benefits for the composite organization include:

- **Avoided device lifecycle support costs of more than 30%.** The composite organization eliminates IT personnel support and management effort for the organization’s device lifecycle with Dell PCaaS. This saves more than 30% of the required support costs, measured in IT FTE labor.
- **Avoided device acquisition and refresh costs of 4%.** By sourcing a homogenous fleet of devices through Dell PCaaS, the composite organization avoids 4% of the cost of the previous device fleet while reducing vendor management costs and refreshing devices more frequently.
- **Avoided personnel hires of three IT FTEs.** By reducing IT’s burden in managing the device lifecycle, the composite organization reallocates several FTEs previously tasked with these activities to other higher-value IT projects. This avoids hires who would otherwise staff these projects.
- **Avoided user productivity losses (due to device downtime) of three days per incident.** The composite organization’s users benefit from flexible repair or replacement options for devices that experience issues, improving resolution time for critical, productivity-impacting issues by up to

Before and after lifecycle services breakdown

Lifecycle service	Without Dell PCaaS (FTE hours only)	Dell PCaaS (Dell fees and FTE hours)
Procurement	\$102.14	\$71.50
Imaging, Installation, final preparation	\$154.92	\$163.85
Systems management	\$306.42	\$288.04
Support	\$346.70	\$86.90
Retrieval/retirement	\$32.11	\$16.50
Total per device cost (36 months)	\$942.27	\$626.78
Total per device cost (monthly)	\$26.17	\$17.41

three days. Furthermore, users benefit from newer, faster devices that experience fewer minor issues.

- **Reduced shipping costs by 50%.** The composite organization’s users receive their devices imaged and provisioned directly from Dell, reducing one-way shipping costs on both ends of the device lifecycle. In addition, users experience fewer issues requiring repair or replacement (resulting from a newer device fleet), driving down off-cycle shipping costs that are often expensive, expedited options.

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

- **Improved security posture.** On Dell PCaaS, device consistency means there are inherently fewer variables for IT and security operations teams to watch for across the device fleet, improving security posture.
- **Budget flexibility.** Dell PCaaS customers also spoke about the benefit of a monthly payment model versus an upfront capital expenditure on their cash flow.
- **End-user experience.** With Dell PCaaS, users receive their devices faster, receive support

Reduction in device-related support tickets

25%-40%

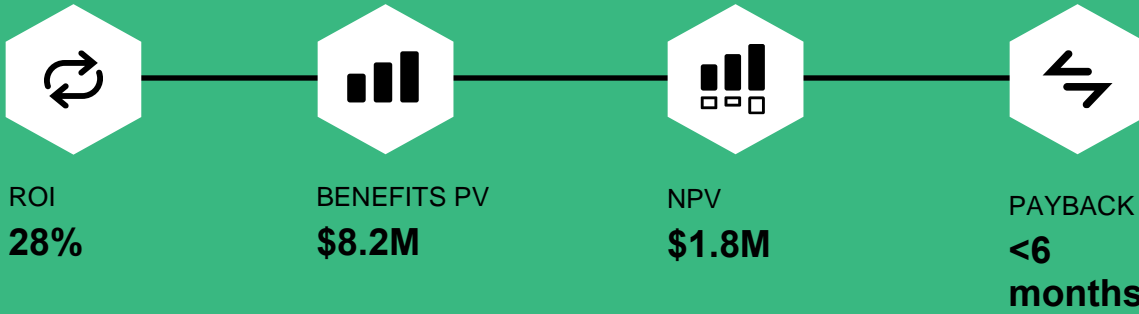


resolution an average of three days more promptly, operate on hardware that is one to two years newer, and can work with Dell to procure the support or devices they need.

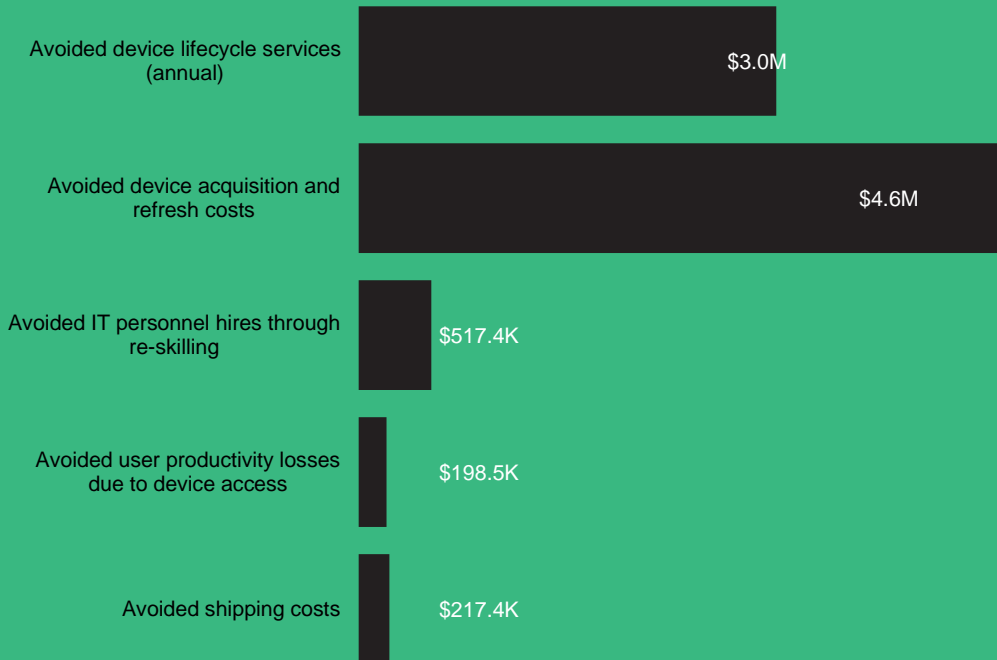
Costs. Three-year risk-adjusted PV costs for the composite organization include:

- **Lifecycle costs with Dell PCaaS.** As part of the monthly per-device fees, the composite organization pays for Dell ProDeploy, ProSupport, and Asset Recovery and Recycling services. In addition, some tasks will still need to be carried out by internal resources, such as the initial Dell procurement process and the creation and management of a central image or systems management.
- **Device financing through Dell.** The composite organization leases 4,000 devices and 8,000 peripherals through Dell on a 36-month term.
- **Switching costs from previous hardware provider.** The composite organization incurs switching costs for other vendors as it transitions its fleet of devices to Dell PCaaS.

The representative interviews and financial analysis found that a composite organization experiences benefits of \$8.5 million over three years versus costs of \$6.7 million, adding up to a net present value (NPV) of \$1.8 million and an ROI of 28%.



Benefits (Three-Year)



“Dell PCaaS means less overall IT management for us. We can standardize our device lifecycle while improving our ability to refresh and change devices out based on current technology needs — all this while giving ourselves cost predictability in monthly pricing.”

— VP of cloud architecture, financial services

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 Dell PCaaS.

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 Dell PCaaS can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Dell Technologies 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 PC as a Service.

Dell 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.

Dell did not participate in the interviews.



DUE DILIGENCE

Interviewed Dell stakeholders and Forrester analysts to gather data relative to PCaaS.



INTERVIEWS

Interviewed six representatives at organizations using Dell PCaaS and six representatives at organizations managing the device lifecycle internally 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 interviewees.



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 Dell PCaaS Customer Journey

■ Drivers leading to the PCaaS investment

Interviews With Dell PCaaS Customers

Role	Industry	Number Of Users/Devices
VP, CIO	Professional services	~17,000
Head of computer architecture	Finance technology	~20,000
CTO	Technology	<100
VP of cloud architecture	Financial services	~25,000
Global CIO	Energy	~1,500
CIO	Healthcare	~1,000

Interviews With Non-Dell PCaaS Customers

Role	Industry	Number Of Users/Devices
CIO	Healthcare	~2,000
CIO	Legal services	~400
VP of IT	CPG	~5,000
CTO	Construction	~1,500
Managing director and CTO	Financial services	~200
CIO	Manufacturing	~11,000

The above set of interviews was conducted in 2022, building off of eight interviews (four PCaaS customers and four non-PCaaS customers) conducted for the 2020 version of this report.

KEY CHALLENGES

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

- **Limited personnel resources.** As IT FTE requirements mounted throughout the device lifecycle, the interviewees noted that their organizations increasingly lacked the resources to manage these tasks. The IT personnel responsible for these activities were increasingly

“We were spending too much time and money having [devices] shipped to headquarters, imaging them, and then shipping them somewhere else, which makes no sense at all. And then, of course, on the support side, we’re trying to troubleshoot device issues remotely, which was next to impossible for us to do effectively.”

CIO and VP, professional services

difficult to hire and retain, yielding inconsistencies in support for the organizations' end users.

- **Costs pertaining to an increasingly mobile workforce.** As working models among the interviewed organizations' users continued to evolve, most interviewees reported that previous device support models no longer suited their users. An increasingly remote or hybrid workforce meant that organizations spent significantly more on shipping of employee devices, especially for expedited shipping. Costs related to employee downtime also magnified in a hybrid work model because remote employees who could not physically retrieve loaner or replaced devices in the case of a device failure were subject to longer periods of time without their primary device.
- **Challenges related to a lack of standardization.** Organizations leveraging Dell PCaaS noted that before their investment with Dell, standardization in their device fleet was impossible. Devices were often mixed and matched between vendors, technical specs, and software versions, which made standardizing the support experience impossible.
- **Support of older devices.** Many of the interviewees (both Dell PCaaS and non-PCaaS customers) reported device refresh cycles in excess of five years for owned devices at their organizations. As a result, device failures were more common as devices aged, putting additional burden on IT support resources while jeopardizing user productivity.

INVESTMENT OBJECTIVES

The interviewees' organizations searched for a solution that could:

- Support an increasingly hybrid or mobile workforce.
- Offer flexibility in device configuration and refresh windows.

“At any given time, we had three IT people building and shipping machines and three others taking them back, fixing things, or disposing of them.”

CIO and VP, professional services

- Remove the burden of support from limited IT personnel resources.

KEY RESULTS

These include:

- **A reduced burden on IT resources.** Interviewees reduced the involvement of internal IT and other resources in the deployment and support activities for end-user devices. Leveraging Dell's ProDeploy, ProSupport, and Asset Resale and Recycling services, organizations collectively saved more than 6 hours per device per year on the associated procurement, deployment, support, refresh, and recovery tasks.
- **Fewer support tickets and faster resolution times.** Leveraging Dell's ProSupport greatly increased the average support-request resolution time for end users. The interviewed companies collectively reported a decrease in device-related support ticket volume by 25% to 40%, while employees who required a device replacement received them three business days faster.
- **Flexibility for the IT organization.** By reducing the organizations' device-support personnel requirements, the interviewees told Forrester that several IT resources were reallocated to other higher-impact areas of IT, avoiding future hires.

- Newer devices for end users.** With Dell PCaaS, most organizations maintained 36-month refresh cycles, keeping newer, higher-end devices in the hands of users; improving access to the newest features, functionality, and security standards; and driving down support costs for older devices across the organization. Across the interviewee set, organizations leveraging Dell PCaaS's users operated on devices that were 18 months newer, on average.

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 six (Dell PCaaS) interviewees, and it 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 global organization with 4,000 total employees across the user and device profiles noted on the table below. Given the heterogenous industries of the interviewed companies, the composite is an industry-agnostic organization, Before moving to Dell PCaaS, the composite

financed end-user devices from various vendors, with an average refresh cycle of three years. The organization supported its end users' devices with internal IT resources exclusively. In recent years, the organization has been shifting to hybrid work models as more users work remotely or on-the-go more frequently than before.

Key Assumptions

- **Industry agnostic**
- **4,000 users/devices**
- **4 user personas**
- **Increasingly hybrid workforce**

User And Device Profiles				
Worker Type	Description	Number	Primary Device	Peripherals
Builder	Constantly connects via several devices across multiple work spaces; works from office 2 days per week on average	400	Laptop	1 display, 1 docking station
Connector	Assists in sharing and connecting people and information; works from office 2.3 days per week on average	800	Laptop	1 display, 1 docking station
Specialist	Generates focused work and performs detailed analysis; works from office 1.7 days per week on average	600	50% desktop, 50% workstation	2 displays
Producer (mobile and fixed)	Focuses on productivity to deliver desired outcomes; works from office 2.8 days per week on average	2,200 (1,400 mobile; 800 fixed)	Laptop (mobile); desktop (fixed)	1 display, 1 docking station (mobile); 2 displays (fixed)
Total		4,000		

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	Avoided device lifecycle services (annual)	\$1,193,352	\$1,193,352	\$1,193,352	\$3,580,056	\$2,967,690
Btr	Avoided device acquisition and refresh costs	\$1,858,788	\$1,858,788	\$1,858,788	\$5,576,364	\$4,622,531
Ctr	Avoided IT personnel hires through reskilling	\$208,050	\$208,050	\$208,050	\$624,150	\$517,390
Dtr	Avoided user productivity losses due to device access	\$79,800	\$79,800	\$79,800	\$239,400	\$198,451
Etr	Avoided shipping costs	\$87,400	\$87,400	\$87,400	\$262,200	\$217,351
	Total benefits (risk-adjusted)	\$3,427,390	\$3,427,390	\$3,427,390	\$10,282,170	\$8,523,413

AVOIDED DEVICE LIFECYCLE SERVICE COSTS (ANNUAL)

Evidence and data. Interviewees shared several specific results related to elimination of support and management effort for their organization’s device lifecycle with Dell PCaaS:

- The CIO at a healthcare organization noted that Dell PCaaS’s capabilities and devices reduced the burden on IT support staff to manage upgrades by up to 12 hours per week, contributing to a reduction of support ticket volume related to hardware by 22%. The same interviewee also stated that ProDeploy has essentially completely eliminated all labor spent on device imaging tasks, saving up to 14 hours in weekly provisioning tasks.
- For the first time, the VP of cloud architecture in financial services said the organization both reduced the required effort of the IT help desk (by nearly 50%) and provided service-level agreements (SLAs) to users for device-related support-ticket resolution.

“With Dell PCaaS, we’re reducing our [device] lifecycle costs because we have fewer people allocated to solve this problem. And on top of this, we’re constantly getting the newest stuff in terms of devices and updates.”

Head of computer architecture, financial technology

- The CIO at the professional services firm described the organization’s “PC depot” team, who were primarily responsible for provisioning and support of the organization’s devices before Dell PCaaS. Since working with Dell, six of these FTEs who worked on the device lifecycle support tasks full-time were reallocated to other tasks in the IT organization.

On aggregate, by leveraging Dell PCaaS, the interviewed organizations reduced or eliminated the IT FTE labor associated with specific tasks along the device lifecycle. Forrester analyzed the average amount of working time spent on each core device lifecycle activity as reported by interviewees. Forrester used this result to estimate the average monthly device lifecycle costs an organization avoided (measured in internal FTE resource hours) for the delivery of these services once it transitioned to Dell PCaaS.

The avoided costs displayed represent each stage of the lifecycle on broken down by average FTE labor cost (active labor) per stage on a per-device basis. These stages include the following.

Procurement (one-time). Tasks on which time was saved by using Dell Premier Connect included vendor and catalog management, negotiations, invoice management, and device search.

Imaging (one-time). This included:

- Creation, testing, and application of the device image.
- Time and costs related to warehouse devices.
- Setup of applications and security.

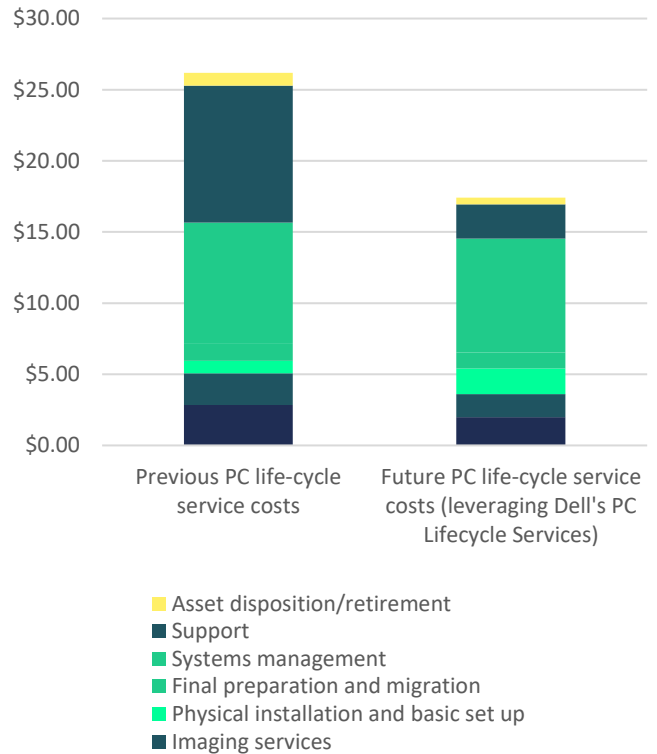
Physical device setup (one-time). This included:

- Physical device unboxing, reboxing, and shipping effort.
- Final preparation and testing.

Support (annual). This included:

- **Management of device-related support tickets.** Dell ProSupport contained proactive and automated case generation, resolutions paths, and communication between users and IT.
- **Upgrades and repairs.** These were both proactive and reactive.
- **Replacement if necessary.** Dell ProSupport delivered resolution for issues requiring repair or

Estimated average monthly service costs per end-user device (risk-adjusted)



replacement three business days faster, on average, than internal support alone based on the interviews.

Retirement/recovery (one-time). This included the following:

- Data was secured and/or wiped.
- Resale of devices (an option to offset costs of the program).
- A self-service customer portal is available to organizations to gauge how much their current device assets are worth.

Modeling and assumptions. For the composite organization, Forrester makes the following assumptions:

- Device lifecycle tasks are managed by internal resources exclusively. The personnel supporting

the device lifecycle earn a fully burdened hourly rate of \$30.25. This weighted rate is based on multiple levels of IT seniority (e.g., PC technician, IT systems manager, procurement administrator) and their relative involvement in the device lifecycle.

- A single device requires \$26.17 in IT FTE labor per year on average.

Risks. These avoided costs can vary among organizations based on:

- The skill and capacity of an organization’s IT resources managing the organization’s device lifecycle.
- The number and breakdown of devices in an organization.

- Organizational specifics that affect lifecycle costs (e.g., legal holds on data in the retirement phase).

Results. To account for these variances, Forrester adjusted this benefit downward by 5%, yielding a three-year risk-adjusted total PV (discounted at 10%) of \$3 million.

A note on device services costs. Future state costs in the preceding bar chart included cost estimations from Dell for PCaaS capabilities and Forrester-sourced calculations for tasks that will still have to be carried out by internal resources. These tasks include initial device procurement processes through Dell, the creation and management of a central image, and systems management. However, these calculations demonstrate an FTE time saves of just over 6 hours per device over the composite organization’s three-year device cycle.

Avoided Device Lifecycle Services Costs (Annual)					
Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Number of users/devices	Composite	4,000	4,000	4,000
A2	Procurement	Interviews & Forrester data	\$2.84	\$2.84	\$2.84
A3	Imaging services	Interviews & Forrester data	\$2.22	\$2.22	\$2.22
A4	Physical installation and basic set up	Interviews & Forrester data	\$0.89	\$0.89	\$0.89
A5	Final preparation and migration	Interviews & Forrester data	\$1.19	\$1.19	\$1.19
A6	Systems management	Interviews & Forrester data	\$8.51	\$8.51	\$8.51
A7	Support	Interviews & Forrester data	\$9.63	\$9.63	\$9.63
A8	Asset retirement/disposal	Interviews & Forrester data	\$0.89	\$0.89	\$0.89
A9	Monthly device lifecycle cost per device	A2+A3+A4+A5+A6+A7+A8	\$26.17	\$26.17	\$26.17
At	Avoided device lifecycle services costs (annual)	A1*A9*12 months	\$1,256,160	\$1,256,160	\$1,256,160
	Risk adjustment	↓5%			
Atr	Avoided device lifecycle services costs (annual) (risk-adjusted)		\$1,193,352	\$1,193,352	\$1,193,352
Three-year total: \$3,580,056			Three-year present value: \$2,967,690		

AVOIDED DEVICE ACQUISITION AND REFRESH COSTS

Evidence and data. Before investing in Dell PCaaS, most interviewed organizations refreshed end-user devices on an ongoing basis every three to five years on average. Some organizations only refreshed devices on an as-needed basis, exceeding five years between device refreshes. Organizations avoided the cost of owned devices as they began to refresh devices with those leased through Dell. This also allowed organizations to move capital expenditure to operating expenditure, better aligning with organizational cost reduction initiatives.

Modeling and assumptions. For the composite organization, Forrester makes the following assumptions.

- Before Dell PCaaS, devices are financed through various vendors with the following assumptions: residual value of 20%, annual interest rate of 5%, and duration of 36 months. The following prices are paid per device (blended average across regions):
 - Desktop, \$791.
 - Workstation, \$2,049.
 - Laptop, \$1,144.
 - Docking station, \$167.
 - Display, \$250.
- Though the composite organization leases devices from various vendors and therefore lease payments were used in the calculations for this report, some organizations with owned devices may see greater savings. Though not calculated for this report, the annual refresh cost for the

composite organization if the devices were owned would be \$2,081,133, which is just over 10% in additional cost over the leasing assumption calculated for this report.

Risks. This benefit may vary among organizations based on:

- The number of devices in an organization can alter results.
- The average cost per device for an organization (based on procurement method, bulk discounting, etc.) can alter results.
- The refresh cycle for an organization's devices can alter results.

Results. Though variances exist, Forrester did not risk-adjust this benefit because it is matched in the costs section, yielding a three-year total PV of \$4.6 million.

Organizational Device Deployment		
Type Of Device	Number Deployed	Three-Year Cost To Organization
Desktops	1,100	\$870,100
Workstations	300	\$614,700
Laptops	2,600	\$2,974,400
Docking stations	2,600	\$434,200
Displays	5,400	\$1,350,000
Total (devices and peripherals)	12,000 (4,000 devices; 8,000 peripherals)	\$6,243,400

Avoided Device Acquisition And Refresh Costs					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Previous (non-Dell PCaaS) hardware cost of all end-user devices	Composite	\$4,459,200	\$4,459,200	\$4,459,200
B2	Previous hardware costs of all peripherals	Composite	\$1,784,200	\$1,784,200	\$1,784,200
B3	Total previous hardware costs	B1+B2	\$6,243,400	\$6,243,400	\$6,243,400
B4	Average monthly financing costs for end-user devices	Lease formula (Residual value: 20%. Annual interest rate: 5%. Duration: 36 months)	\$154,899	\$154,899	\$154,899
Bt	Avoided device acquisition and refresh costs	B4*12	\$1,858,788	\$1,858,788	\$1,858,788
	Risk adjustment	0%			
Btr	Avoided device acquisition and refresh costs (risk-adjusted)		\$1,858,788	\$1,858,788	\$1,858,788
Three-year total: \$5,576,364			Three-year present value: \$4,622,531		

AVOIDED IT PERSONNEL HIRES THROUGH RESKILLING

Evidence and data. Both Dell PCaaS and non-Dell PCaaS interviewees told Forrester that IT talent was in short supply and high demand in their organizations. Given the business-critical aspect of employee devices, IT resources were assigned to lifecycle management tasks despite their relative tedium. This forced additional hires to complete the other high-impact work for IT. By working with Dell to manage the device lifecycle through PCaaS, interviewees told Forrester that many of these IT resources were allocated to staff other IT projects, saving the organization additional hires and onboarding costs.

- The professional services organization avoided six FTE hires across the IT team by reallocating several IT staff to other value-added projects.
- No longer tasked with device support solely, the financial technology firm’s IT personnel were repurposed to projects that support the organization’s user experience rather than their devices.

Modeling and assumptions. For the composite organization, Forrester makes the following assumptions:

- Three IT FTEs are reallocated from device lifecycle tasks to other value-adding IT projects. This is a conservative assumption for the composite organization.
- An average fully loaded annual salary for an avoided IT FTE hire is \$73,000.

Risks. This benefit will vary among organizations based on:

- Device lifecycle task completion by higher-seniority (and therefore higher-paid) IT personnel.
- The skill and capacity of an organization’s IT personnel.

“Six people were reassigned to other areas of our IT business. We don’t even have the concept of a ‘PC Depot’ anymore.”

CIO, professional services

- The scope and complexity of an organization's fleet of devices as it relates to the magnitude of IT resource avoidance on Dell PCaaS.
- An organization’s need for IT talent as it relates to required hiring.

Results. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year risk-adjusted total PV of just more than \$517,000.

Avoided IT Personnel Hires Through Reskilling					
Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Annual reskilled device support personnel	Composite	3	3	3
C2	Fully loaded annual FTE salary	TEI standard	\$73,000	\$73,000	\$73,000
Ct	Avoided IT personnel hires through reskilling	C1*C2	\$219,000	\$219,000	\$219,000
	Risk adjustment	↓5%			
Ctr	Avoided IT personnel hires through reskilling (risk-adjusted)		\$208,050	\$208,050	\$208,050
Three-year total: \$624,150			Three-year present value: \$517,390		

AVOIDED USER PRODUCTIVITY LOSSES DUE TO DEVICE ACCESS

Evidence and data. Across the organizations interviewed for this report, interviewees spoke to the impact of device issues or failures that required replacement. In many cases, remote users were without their device for several business days as it was sent off for repair or replacement. Interviewees whose organizations migrated to Dell PCaaS noted the user productivity benefit of flexible repair or replacement options for devices that experience issues, the value of improved support, and the avoidance of issues altogether through a newer fleet of devices.

- By providing newer devices (with better support) to the healthcare organization’s users, the

interviewee estimated a more than 25% reduction in tickets submitted by doctors and nurses for poorly performing applications. The interviewee said, “In the past, there’d be a domino effect from the doctor or nurse, which ultimately impacted patient care.” With better-performing applications, patient care can retake priority in more cases.

- The financial services firm estimated a 50% decrease in employee device onboarding time once Dell PCaaS was implemented, which supported IT’s mandate to support users’ experience and productivity.
- Dell PCaaS allowed the professional services organization to improve resolution time for device

replacement/repair issues by four to five days on average versus previous internal efforts.

- Collectively interviewees estimated a 25% to 40% reduction in device-related support tickets, fostering better user productivity through reduced downtime.

Modeling and assumptions. For the composite organization, Forrester makes the following assumptions:

- Of the organization's 4,000 devices, 5% experience a critical issue that requires a physical repair or replacement.
- An end user with device issues goes without the device for four business days on average before Dell PCaaS. This is reduced by 75% with Dell PCaaS.
- To be conservative, Forrester assumes that end users operate at 50% effectiveness without their primary device.
- The average fully loaded daily rate for an end user is \$280.

Risks. This benefit will vary among organizations based on:

- The rate at which an organization's devices experience critical failures.
- An organization's support and/or replacement processes as they relate to the average time to replace a device.
- The effectiveness of a user without a primary device.

Users access devices **18**
months newer on
average.



“[Before PCaaS], IT was running around with device-related support tickets and couldn't support the users' business needs. Now we can all be a little more business-minded. We are developing subject matter experts that support our users' most-used applications. We're really starting to fulfill IT's true purpose — supporting the business. This has been a byproduct of [Dell] PCaaS.”

CIO, healthcare

Results. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year risk-adjusted total PV of nearly \$200,000.

Avoided User Productivity Losses Due To Device Access					
Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	Number of users/devices	Composite	4,000	4,000	4,000
D2	Percentage of users experiencing critical device-related issues (annually)	Composite	5%	5%	5%
D3	Business days without device before Dell PCaaS (annually)	Interviews	4	4	4
D4	Business days without device on Dell PCaaS (annually)	Interviews	1	1	1
D5	Reduction of days without device with Dell PCaaS	D3-D4	3	3	3
D6	Productivity without device	Assumption	50%	50%	50%
D7	Average fully loaded FTE daily rate	TEI standard	\$280	\$280	\$280
Dt	Avoided user productivity losses due to device access	D1*D2*D3*D4*D5	\$84,000	\$84,000	\$84,000
	Risk adjustment	↓5%			
Dtr	Avoided user productivity losses due to device access (risk-adjusted)		\$79,800	\$79,800	\$79,800
Three-year total: \$239,400			Three-year present value: \$198,451		

AVOIDED SHIPPING COSTS

Evidence and data. Prior to adopting Dell PCaaS, organizations faced many situations that drove shipping costs up, including:

- Shipping to and from a central location for provisioning tasks.
- Expedited to and from shipping for devices experiencing critical issues from remote workers.
- An increasing reliance on shipping as more of the workforce transitioned to hybrid roles.

Dell PCaaS (ProDeploy) gave organizations the ability to image and provision devices without a central IT location for device provisioning, reducing at least one shipping instance versus the before state. Fewer issues requiring repair or replacement

“In an emergency, we’d be paying [our shipping vendor] next day. So we’re paying \$200 per device instead of \$75 now.”

CIO, professional services

resulting from a newer device fleet drove additional savings because less was spent on off-cycle shipping.

Modeling and assumptions. For the composite organization, Forrester makes the following assumptions:

- One-third of the organization’s devices ship on-cycle each year as they are refreshed (user receives new device, and old device is retired).
- Two-hundred devices ship off-cycle as they are repaired or replaced (5% of the organization’s 4,000 devices).
- The average two-way shipping cost for a device is \$110. This includes the cost of expedited shipping for devices shipped off-cycle.
- Fifty percent of the per-device shipping cost is avoided with Dell PCaaS because fewer devices ship to and from central IT hubs, different offices, or user addresses. This is a conservative estimate.

Risks. This benefit will vary among organizations based on:

- An organization’s device lifecycle management processes as they relate to the number of times a device ships over its lifecycle.
- The average device failure rate as it relates to repair/replacement and off-cycle shipping.
- Any organizational negotiated shipping terms as it relates to the average shipping rate per device.

Results. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year risk-adjusted total PV of more than \$217,000.

Avoided Shipping Costs					
Ref.	Metric	Source	Year 1	Year 2	Year 3
E1	Number of devices	Composite	4,000	4,000	4,000
E2	Devices refreshed annually (average)	1/3 of total	1,333	1,333	1,333
E3	Devices repaired or replaced via shipping annually (average)	E1*D2	200	200	200
E4	Devices shipped annually	E2+E3	1,533	1,533	1,533
E5	Average annual two-way shipping cost per device	Composite	\$120	\$120	\$120
E6	Shipping avoidance with Dell PCaaS	Interviews	50%	50%	50%
Et	Avoided shipping costs	E1*E2*E3	\$92,000	\$92,000	\$92,000
	Risk adjustment	↓5%			
Etr	Avoided shipping costs (risk-adjusted)		\$87,400	\$87,400	\$87,400
Three-year total: \$262,200			Three-year present value: \$217,351		

UNQUANTIFIED BENEFITS

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

- **Improved security posture.** On Dell PCaaS, device consistency means there are inherently fewer variables for IT and security operations

teams to watch for across the device fleet, improving security posture. With antivirus and security applications included with Dell PCaaS, along with security features at the hardware level on Dell devices, interviewees noted an increase in their security posture on Dell PCaaS. “Having a homogeneous fleet of devices really makes

things better from a security standpoint. Our security teams love this,” summarized the finance technology head of computer architecture.

- **Budget flexibility.** Dell PCaaS customers spoke about the benefit of a monthly payment model as opposed to an upfront capital expenditure on their cash flow.
- **End-user experience.** With Dell PCaaS, users receive their devices faster, receive support resolution an average of three days faster, operate on hardware that is one to two years newer, and can work with Dell to procure the support or devices they need. This allows organizations to enable users with high-end devices refreshed more often with a higher support standard from Dell. Beyond the productivity implications quantified for this report, interviewees highlighted the improvements to user experience through access to better-performing devices that cause fewer issues over their lifespan. This insight is consistent with Forrester’s research into the employee experience benefits of device as a service (DaaS). It suggests that DaaS offerings such as Dell PCaaS may improve employee onboarding, reduce frustration associated with device breakdowns, and enable additional experience innovations, assuming successful deployment.³

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Dell PCaaS and later realize additional uses and business opportunities.

Continuous customization of deployment to better serve the business’s users.

As organizations refresh devices on Dell PCaaS, they have the option to choose device type(s) for their users that best match the current working needs of those users. As hybrid work continues to evolve, the device needs of users will evolve as well.

Interviewees expressed optimism at the ability to

evaluate their device choices every few years as opposed to becoming locked into an owned fleet of devices or a longer-term lease. This may positively affect user effectiveness and therefore business results down the road as working models continue to change.

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

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
Ftr	Lifecycle service costs	\$0	\$877,464	\$877,464	\$877,464	\$2,632,392	\$2,182,123
Gtr	Leasing of devices	\$0	\$1,786,020	\$1,786,020	\$1,786,020	\$5,358,060	\$4,441,567
Htr	Switching costs	\$56,018	\$0	\$0	\$0	\$56,018	\$56,018
	Total costs (risk-adjusted)	\$56,018	\$2,663,484	\$2,663,484	\$2,663,484	\$8,046,470	\$6,679,708

LIFECYCLE SERVICE COSTS WITH DELL PCAAS

Evidence and data. Interviewees reported that they leveraged Dell PCaaS to reduce the burden on IT personnel with respect to the device lifecycle, while reducing costs and providing a better support experience to users.

Dell ProDeploy is an end-to-end service to get new devices from the factory to the user up and running. Dell provides 24/7 onsite installation; migration of data to the new system, wiping it from the legacy system; and 30-day post-deployment support. Dell ProSupport enables priority access to support, damage repair, and proactive monitoring for automatic issue prevention and resolution. Dell ProDeploy and ProSupport are paid on a per-user per-month basis of the term of the device lease/refresh cycle.

Modeling and assumptions. For the composite organization, Forrester makes the following assumptions:

- The organization leverages the full scope of Dell's PCaaS.
- The composite organization adheres to a 36-month device refresh cycle.

Per device lifecycle services breakdown (monthly)

Lifecycle service	Without Dell PCaaS (FTE hours only)	Dell PCaaS (Dell fees and FTE hours)
Procurement	\$2.84	\$1.99
Imaging services	\$2.22	\$1.62
Physical installation and basic set up	\$0.89	\$1.79
Final preparation and migration	\$1.19	\$1.13
Systems management	\$8.51	\$8.01
Support	\$9.63	\$2.41
Asset retirement/disposal	\$0.89	\$0.46
Total per device cost (monthly)	\$26.17	\$17.41

- The average monthly PC service and support cost is \$17.41, given the distribution of user personas for the composite organization. These costs include cost estimations from Dell (for Dell PCaaS capabilities) that have been complemented by Forrester-sourced cost calculations regarding tasks that will still have to be carried out by internal resources, such as the initial Dell procurement process and the creation and management of a central image or systems

management. These calculations (and the chart above) demonstrate that the composite saves over 6 FTEs hours per device over the three-year device cycle, as before Dell PCaaS all tasks were completed with IT personnel exclusively.

Risks. This cost will vary based on:

- The number of devices in an organization and the factors that influence the cost per Dell PCaaS offering (e.g., device type, service SLAs).

- The skill and capacity of an organization’s IT personnel to manage device lifecycle tasks outside the scope of Dell PCaaS capabilities.

Results. To account for these variances, Forrester adjusted this cost upward by 5%, yielding a three-year risk-adjusted total PV (discounted at 10%) of \$2.2 million.

Lifecycle Service Costs With Dell PC As A Service						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
F1	Number of users	Composite		4,000	4,000	4,000
F2	Dell PCaaS cost per user per month	Blended average of Dell service prices on a per-device, per-month basis		\$17.41	\$17.41	\$17.41
Ft	Lifecycle service costs with Dell PC as a Service	F1*F2*12 months	\$0	\$835,680	\$835,680	\$835,680
	Risk adjustment	↑5%				
Ftr	Lifecycle service costs with Dell PC as a Service) (risk-adjusted)		\$0	\$877,464	\$877,464	\$877,464
Three-year total: \$2,632,392			Three-year present value: \$2,182,123			

LEASING OF DEVICES THROUGH DELL

Evidence and data. Most of the organizations interviewed for this report (both the non-Dell PCaaS organizations as well as the “before state” of the Dell PCaaS customers) multi-sourced devices for their organizations from several device vendors or resellers. This required vendor relationships with several different organizations and often limited the scope of bulk discounting. Based on conversations with all 12 interviewees, Forrester conservatively assumed that the average prices for Dell-leased devices were roughly 4% lower than the average per-device spend for the incumbent devices. Some interviewees reported per-device spending that was higher than 4% of the Dell leasing price for comparable hardware.

Organizational Device Deployment		
Type Of Device	Number Deployed	Three-Year Cost To Organization
Desktops	1,00	\$836,000
Workstations	300	\$591,000
Laptops	2,600	\$2,860,000
Docking stations	2,600	\$416,200
Displays	5,400	\$1,296,000
Total (devices and peripherals)	12,000	\$5,999,000

Modeling and assumptions. For the composite organization, Forrester makes the following assumptions:

- The composite organization leases devices from Dell that are similar in specification to pre-Dell device acquisitions and refreshes. Including end-user devices and peripherals, this results in an annual expenditure of \$1.8 million.
- The specific breakdown of devices for the composite organization is dictated by the user-persona breakdown. (See aforementioned assumptions around specific devices for personas.)
- The composite organization leases devices through Dell on a three-year device refresh cycle, but purchase options are available.

Risks. This cost can vary among organizations based on:

- The number and types of devices leased or purchased by an organization through Dell.
- The length of the contract/refresh cycle and discounting specifics on an organization-to-organization basis.

Results. Though variances may exist, blended Dell-list pricing was used for this analysis. Therefore, Forrester did not risk-adjust this cost upward, yielding a three-year total PV of \$4.4 million.

Leasing Of Devices Through Dell						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
G1	Total costs for end-user devices	Composite	\$0	\$4,287,000		
G2	Total costs for peripherals	Composite	\$0	\$1,712,000		
G3	Total hardware costs	G1+G2	\$0	\$5,999,000		
G4	Average monthly device costs for end-user devices with Dell PCaaS	Lease formula (Residual value: 20%. Annual interest rate: 5%. Duration: 36 months.)	\$0	\$148,835	\$148,835	\$148,835
Gt	Financing of devices through Dell PCaaS	G4*12	\$0	\$1,786,020	\$1,786,020	\$1,786,020
	Risk adjustment	0%				
Gtr	Leasing of devices (risk-adjusted)		\$0	\$1,786,020	\$1,786,020	\$1,786,020
Three-year total: \$5,358,060			Three-year present value: \$4,441,567			

SWITCHING COSTS

Evidence and data. Switching a B2B provider is rarely cost-neutral — organizations must create new processes and build new relationships. Interviewees indicated that their IT staff needed to invest time to maximize effectiveness of the Dell PCaaS tools within their organizations. In addition, companies may need to continue contracts with incumbent device

and/or support providers in the short term to medium term before completely discontinuing service.

Modeling and assumptions. For the composite organization, Forrester makes the following assumptions:

- A one-time switching cost of \$53,350 based on an average of \$11.34 per device. This estimated switching cost does not include any costs of

learning to deploy, manage, or administer a new operating system or business application that might be rolled out at the same time as the new devices.

Risks. This cost may vary among organizations based on:

- Contracts currently in place for an organization’s devices and/or support.

- An organization’s device refresh cycles as they relate to the cadence of a potential Dell PCaaS rollout.

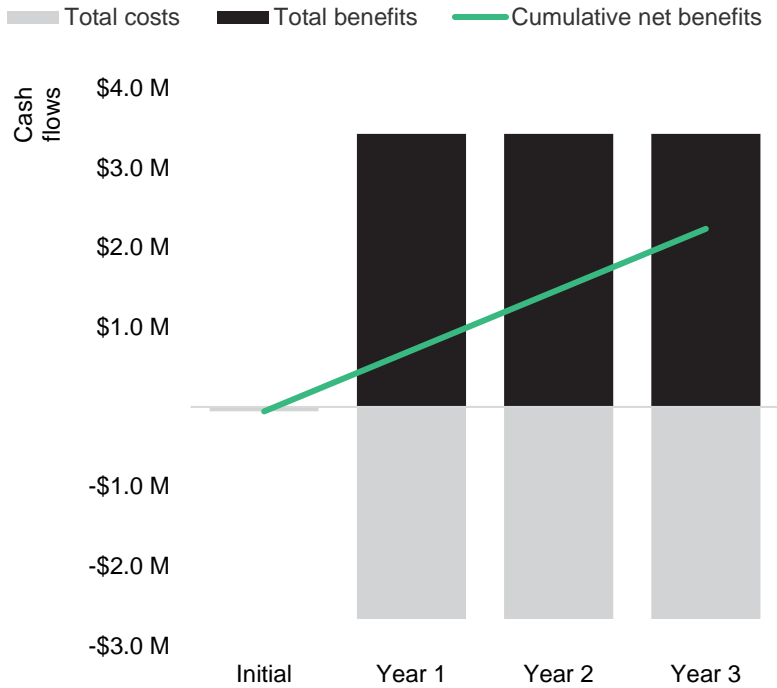
Results. To account for these variances, Forrester adjusted this cost upward by 5%, yielding a three-year risk-adjusted total PV of \$56,000.

Switching Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
H1	Number of devices	Composite	4,000			
H2	Assumed switching cost per 100 devices	100 * \$11.34 (rounded)	\$1,133.75			
Ht	Switching costs	H1*(H2/100)	\$53,350			
	Risk adjustment	5%				
Htr	Switching costs (risk-adjusted)		\$56,018			
Three-year total: \$56,018			Three-year present value: \$56,018			

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	(\$56,018)	(\$2,663,484)	(\$2,663,484)	(\$2,663,484)	(\$8,046,470)	(\$6,679,708)
Total benefits	\$0	\$3,427,390	\$3,427,390	\$3,427,390	\$10,282,170	\$8,523,413
Net benefits	(\$56,018)	\$763,906	\$763,906	\$763,906	\$2,235,701	\$1,843,705
ROI						28%
Payback period (months)						Less than 6 months

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 Source: “Research Overview: Modern Technology Operations,” Forrester Research, Inc., August 3, 2020.

² 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.

³ Source: “Enhance Digital Employee Experience With Device-As-A-Service (DaaS),” Forrester Research, Inc., January 23, 2020.

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