

The Total Economic Impact™ Of Dell's PC As A Service

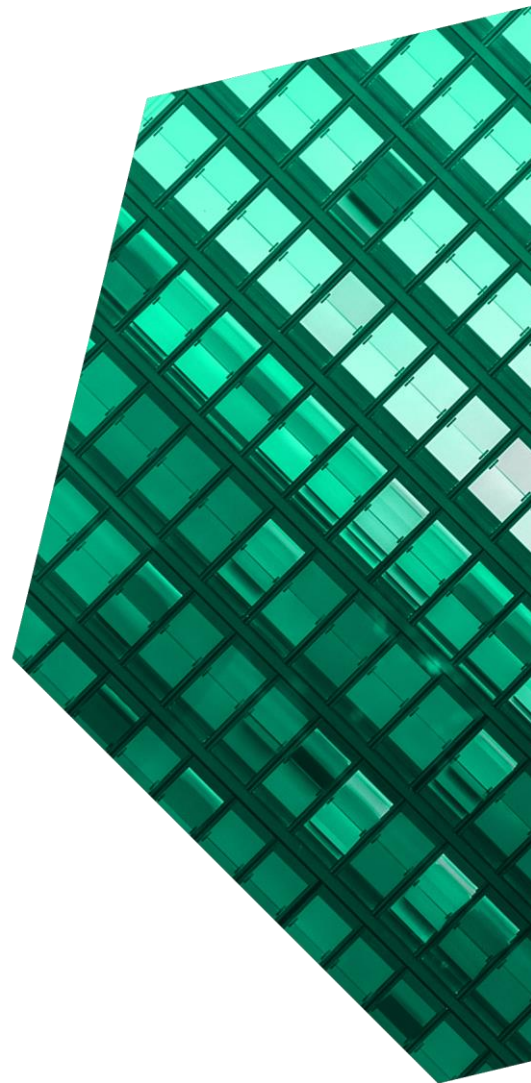
With Dell PC as a Service Customers Reduce Device Lifecycle Services Costs by 20% and Provide Employees with Devices That Are Two Years Newer on Average

DECEMBER 2020

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Executive Summary

Forrester's analysis of four Dell PC as a Service (PCaaS) customers in 2020 and six customers in 2018, supplemented by four interviews (2020) with organizations managing the device lifecycle through other means and a survey of 101 IT decision-makers, found that Dell PCaaS enables organizations to save on IT productivity through avoided device lifecycle tasks while reducing device hardware costs. In addition, PCaaS customers deliver hiring, budget, and project flexibility to the IT organization while modernizing the employee experience. An analysis of a 4,000-user composite organization modeled after the interviewees and survey respondents shows a 20.32% decrease in device lifecycle services costs and a 5% decrease in hardware costs, totaling \$733,000 in savings over three years.

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 and Intel commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Intel vPro-enabled devices with [Dell PC as a Service](#).² The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Dell's PC as a Service on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed 10 Dell PC as a Service customers using Intel vPro-enabled devices and four noncustomers over two years (eight in 2020, six in 2018) and conducted a survey of 101 IT decision-makers (in 2018). For the



Employees use **devices two years newer** on average, improving employee experience, while reducing lifecycle associated costs



Reduction in device lifecycle services costs
20%



Average deployment time saved
Five business days



Annual in-house device lifecycle services hours saved
5 hours



Average improvement to support ticket resolution times
Five business days



Three-year net present value savings per 1,000 devices via reduced lifecycle services costs and hardware expenditure costs
\$183K

“ We moved to Dell’s PC as a Service because we wanted devices managed end to end. Dell is managing everything from providing the devices to managing the security through device recovery and recycling. For the next two years, most of our IT personnel are not going to touch anything to do with laptops, devices, or peripherals. ”

— IT director, financial services

purpose of this study, Forrester aggregated the experiences of the interviewed customers and combined the results into a single [composite organization](#).

KEY FINDINGS

Quantified benefits. Risk-adjusted present value (PV) quantified benefits include:

- **Reduced device lifecycle services costs by 20.32%.** With Dell PCaaS, organizations can realize cost savings in each phase of the PC lifecycle. Based on two years’ worth of interview and survey data, Forrester estimated the average monthly cost per device that the composite organization would incur if it delivered these services with internal resources. These tasks include procurement services, imaging services, physical installation and basic setup, final preparation and migration, system management, support, asset disposition, and retirement.

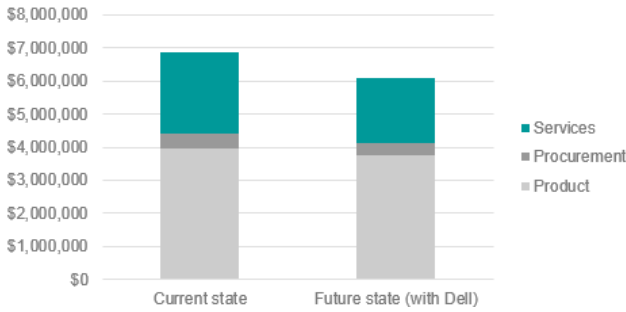
Forrester then also estimated these costs for the composite organization fully leveraging Dell’s PCaaS. Considering a large organization with 4,000 end-user devices, an average hardware refresh cycle of three years, and a given mix of

office, remote, and mobile workers, Forrester estimated that this organization reduces its monthly PC lifecycle services costs per device from \$24.34 to \$19.39 corresponding to a savings of 20.32%, or just over 5 hours (5.26) of support labor per device.

- **Reduced device-related hardware costs by 5%.** Organizations that consolidate device-providing vendors and standardize device offerings can supply their organizations at a lower cost. Based on four Dell PCaaS customer and noncustomer interviews in 2020, Forrester conservatively assumes a 5% reduction of the average prices for Dell devices as compared to prices paid by the composite organization for like-devices from other providers.

This example is specific to the composite organization based on the experiences of those companies interviewed; each organization should explore the potential device cost savings for its specific use cases.

Estimated Three-Year Costs (PV) Including Services And Hardware



Source: "The Total Economic Impact™ of Dell PC As A Service," Forrester Consulting report prepared for Dell Technologies, November 2020.

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

- **Prioritization of other digital transformation activities for the IT organization.** By removing most of the burden of device procurement, support, and retirement off the organizations' IT staff, they can focus on IT projects critical to their organizations' core businesses.
- **Hiring flexibility.** Dell PCaaS customers noted that they have been able to keep IT staff levels consistent or avoid new hires amid uncertain times due to the services received from Dell.

- **Budget flexibility.** Dell PCaaS customers pay for devices on a per-device, per-month basis as opposed to an upfront capital expenditure, alleviating budget constraints and improving cash flow.
- **Improved security posture.** With Dell-provided antivirus and security applications along with Intel vPro at the hardware level, security posture is consistent across each of the interviewed organization's devices.
- **End-user experience.** Interviewees spoke to the improvements to the end-user device experience fostered by improved device procurement and support times and the usage of newer devices. "With Dell PC as a Service, our users always have newer and faster machines," one interviewee noted.

“ Before working with Dell, our service desk was overwhelmed with support tickets without the personnel to manage them all. Resolution could easily take weeks. ”

— Senior operations lead, museum

Costs. Risk-adjusted present value (PV) costs include:

- **Dell PCaaS lifecycle services costs.** As part of their monthly per-device fees, customers pay for their ProDeploy, ProSupport, and Asset Resale and Recycling services.
- **Device financing through Dell.** Dell PCaaS customers acquire their devices through Dell; these costs are factored into the composite analysis.
- **Switching costs from previous hardware provider.** The analysis assumes a switching cost when adopting to Dell PCaaS.



ROI
12%

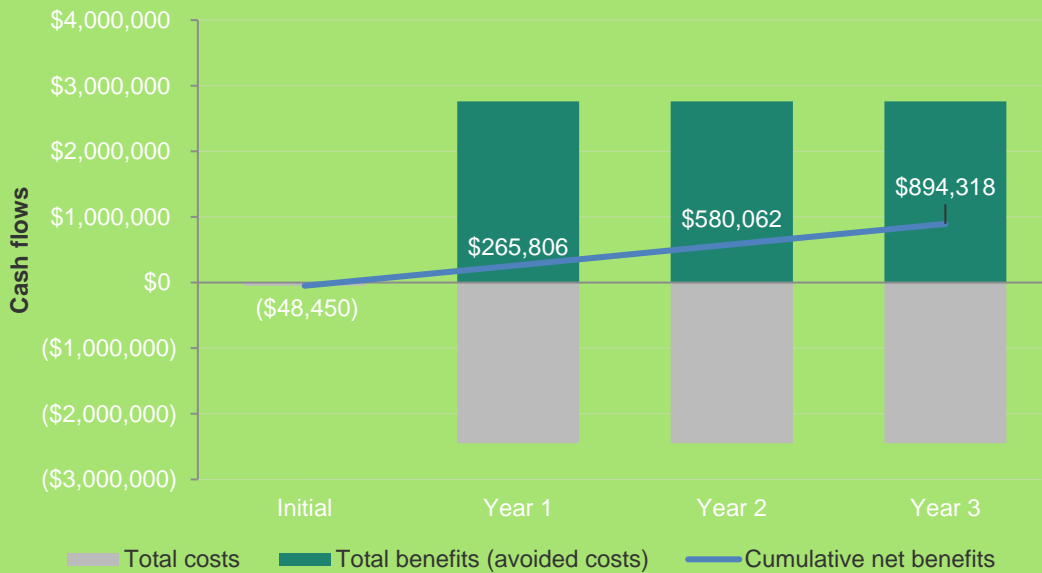


NPV SAVINGS
**\$183K saved per 1,000 devices,
\$733K saved for the 4,000-
device composite organization**



PAYBACK
<6 months

Financial Analysis (risk-adjusted)



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 PC as a Service.

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 PC as a Service can have on an organization.

DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Dell Technologies and Intel and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in Dell PC as a Service.

Dell Technologies 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 Technologies provided the customer names for the interviews but did not participate in the interviews.

Forrester fielded the double-blind survey using a third-party survey partner.



DUE DILIGENCE

Interviewed Dell Technologies stakeholders and Forrester analysts to gather data relative to Dell's PC as a Service.



CUSTOMER INTERVIEWS

Interviewed 10 decision-makers at organizations using Dell's PC as a Service and four decision makers at non-Dell customer organizations, as well as surveyed 101 decision-makers, to obtain data with respect to costs, benefits, and risks.



COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewed and surveyed 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 interviewed organizations.



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 PC As A Service Customer Journey

Drivers leading to the PC As A Service investment

Interviewed Dell PC As A Service Customer Organizations (2020)

Industry	Interviewee	Total number of devices
Professional services	Director of IT	11,000+
Manufacturing	Services and solutions manager	700+
Education	CIO	1,800+
Museum	Senior operations lead	700+

Interviewed Non-Dell Customer Organizations (2020)

Industry	Interviewee	Total number of devices
Financial services	VP of IT	2,600+
Healthcare	VP and COO	2,400+
Security services	CTO	800+
Manufacturing	Director of IT	600+

INTERVIEWED AND SURVEYED ORGANIZATIONS

Forrester refreshed PC lifecycle and cost data from a 2018 online survey among 101 IT decision-makers with knowledge of desktop infrastructure environments with eight interviews in 2020 of the above organizations. Forrester also leveraged data from six interviews conducted in 2018.

All interviewees and previous respondents were significantly involved in the decision-making process for PC and device management and had significant expert-level knowledge about the device lifecycle process. The aim of these interviews and survey was to gather information about the time and effort that organizations spent on the services related to the entire PC lifecycle, from procurement and deployment to support and management to retirement of the end-user devices.

KEY CHALLENGES

Though varied in geography, industry, and sector, the interviewed organizations struggled with common challenges across their device lifecycle, including:

- **Limited FTE resources.** Interviewees repeatedly stated that the deployment and support of end-user devices required a significant amount of time and that they struggled finding and allocating the appropriate resources internally. In addition, this limited the amount of time or resources IT could allocate to business-critical, high-ROI digital transformation projects.
- **Pressure to reduce IT costs.** Among budget uncertainty in 2020, interviewees stressed the importance of optimizing the cost efficiency for

“We had realistically been refreshing our devices every seven years. It’s great now having newer devices, fewer issues, and some standardization across devices and applications.”

Senior operations lead, museum

deploying and supporting end-user devices for their organizations.

- **Technical debt with older, nonstandardized devices.** Inconsistent or longer (more than three years) device refresh cycles meant older devices remained in the field longer and maintaining a standard set of devices was nearly impossible. This drove lifecycle service costs up as hardware aged, affected user productivity, and represented a security risk.
- **Inconsistent support service delivery.** Interviewees noted a differing support experience between primarily on-site employees and “on-the-go” or remote employees. In some cases, support turnaround times for remote workers in instances where devices needed to be serviced were reported as high as 14 business days, with an average of five business days.

SOLUTION REQUIREMENTS

In our online survey, we learned that:

- Seventy-eight percent of respondents would like to be able to deploy and manage their Windows 10-based devices faster and more efficiently than in the past.
- Fifty-eight percent of the respondents are open to having their PC vendors handle all of the PC imaging and deployment processes for them.
- Fifty percent of the respondents would like to move to a PC-as-a-service model.

When looking for an outside vendor for client solutions and services, survey respondents indicated that they found the following characteristics either important or very important:

- High level of expertise (89%).
- A vendor that helps them **minimize end-user downtime** (83%).
- A vendor that helps **cut down deployment time** (78%).
- A vendor that helps **free up internal IT resources** for other activities (77%).
- **Consistency of services** across all countries they do business in (74%).

KEY RESULTS

The interviewed Dell customers highlighted several key results of the PCaaS investment.

- **A reduced burden on IT resources.** Interviewees have 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 save over 5 hours per device per year on the associated procurement, deployment, support, refresh, and recovery tasks.
- **Faster support resolution times for user.** Leveraging Dell’s ProSupport greatly increases the average support request resolution time for end users. The interviewed companies reported an improvement of ticket resolution times by up to six business days through a more streamlined and consistent support experience.
- **Flexibility for the IT organization.** By reducing the organizations’ device lifecycle personnel requirements, the interviewees noted an increased ability to execute business-critical digital transformation projects. The manager at the manufacturing Dell PCaaS customer

organization explained to Forrester, “Our IT team has been able to focus on transformation projects more critical to our bottom line, such as a revamp of our website’s product catalog.” In addition, interviewees discussed the benefit of a flat, monthly fee per device rather than an upfront investment, especially pivotal during the 2020 pandemic.

- **End users have newer devices and get them faster.** With Dell PCaaS, organizations can adhere to a best-device policy: Most organizations maintain 36-month refresh cycle, which keeps newer, higher-end devices in the hands of its users, improving access to the newest features, functionality, and security standards while driving lifecycle service costs for older devices down across the organization. In addition, with Dell PCaaS, deployment times shrunk by an average of five business days – a marked improvement from their prior state.

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and a ROI analysis that illustrates the areas financially affected. The composite organization is representative of the eight companies that Forrester interviewed in 2020

and is used to present the aggregate financial analysis in the next section.

The composite organization has the following characteristics:

Description of composite. The organization is a global manufacturing company with 4,000 total employees across multiple user profiles noted on the table below. Before moving to Dell’s PCaaS offering, 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. Over time, the organization anticipates a shift to more remote workers or flexible location employees.

Key assumptions

- **Global manufacturer**
- **4,000 employees**
- **Employee base shifting to more work location flexibility**

CATEGORY OF WORKER	DEFINITION	NUMBER	PRIMARY DEVICE	PERIPHERALS
Desk-centric task worker	Most of the time at a desk, working on simple tasks, e.g., call centers, sales, manufacturing, data input	350	Desktop	2 displays
Desk-centric knowledge worker	Over 50% time spent at desk, working on complex tasks, e.g., marketing, finance, creative professionals, engineers	1,150	Laptop	1 display, 1 docking station
Corridor warrior	Over 50% time on the move on corporate facility, e.g., management, facility, security, warehouse managers	1,200	Laptop	1 display, 1 docking station
Remote worker	Over 50% working from customer, public locations or home, e.g., consultants	750	Laptop	None
On-the-go professional	Over 50% spent mobile, visiting customers or remote locations, e.g., sales, field technicians, delivery, logistics	450	Convertible	None
Specialized worker	Most of the time in an office environment at a desk, e.g., creatives, power workers, engineers, analysts with specific requirements	100	Workstation	2 displays
TOTAL		4,000		

Avoided Costs (Benefits)

■ Quantified benefits to the composite organization in avoided device hardware and lifecycle management costs

Total Avoided Costs (Benefits)						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Avoided device lifecycle services costs	\$1,168,474	\$1,168,474	\$1,168,474	\$3,505,421	\$2,905,821
Btr	Avoided device acquisition and refresh costs	\$1,593,024	\$1,593,024	\$1,593,024	\$4,779,072	\$3,961,615
	Total benefits (risk-adjusted)	\$2,761,498	\$2,761,498	\$2,761,498	\$8,284,493	\$6,867,436

AVOIDED DEVICE LIFECYCLE SERVICES COSTS

The true per-device cost organizations incur for the entire lifecycle, from procurement and deployment to support and management to retirement and disposal of end-user devices, is often unclear.

To understand the true costs associated with the device lifecycle, Forrester analyzed the average amount of time and effort spent on each of the core device lifecycle activities as reported by interviewees and survey respondents. Forrester used this result to estimate the average monthly device lifecycle cost for an organization that uses internal resources for the delivery of these services. The following costs represent savings and financial benefit to the composite organization once migrated to Dell PCaaS.

Select cost drivers from the interviews include:

- **A cumbersome and inconsistent device procurement process.** Negotiations with multiple vendors and multiple levels of required approvals drove a reported \$48 per device personnel cost average at the beginning of a device's lifecycle on procurement tasks alone.
- **A lengthy support ticketing process.** One interviewee reported an average of three IT FTE hours spent per ticket with over 2,000 yearly support ticket requests across the organization.

- **Initial provisioning and setup tasks.** These totaled nearly 2 hours per device, on average.
- **Complicated device recovery and retirement processes, especially at the interviewed organizations in regulated industries.** One interviewee noted: "We pay a premium for retirement services. It's probably the largest effort for us."

Modeling and assumptions. For the composite organization, Forrester assumes that:

- Just over 37% of the organization's users are working in an office and spend most of their time at a desk; 30% are also working in an office but spend more than 50% of their time on the move. Just under 19% percent are remote workers who spend most of their time at a desk, and 11% of the users are remote and highly mobile.
- Supporting the lifecycle activities of remote and mobile users is on average more expensive than supporting in-office users. Data from Forrester's survey indicates that supporting a remote user is 10.4% more expensive than supporting an office-based user.
- The personnel supporting the device lifecycle earn a burdened hourly rate of \$30.25. This is a weighted rate calculated based on multiple levels of IT seniority (PC technician, IT systems

manager, procurement administrator) and their relative involvement in the device lifecycle.



Pre-Dell personnel support hours per device per year

9.85 hours

“The vast majority of our users engage with our own help desk for device support. I would estimate about ten hours per user per year.”

VP of IT, financial services

In this business case, the estimated previous device lifecycle services costs represent the avoided service costs after having adopted Dell’s PCaaS. To account for uncertainty in the above assumptions and estimations, Forrester adjusted these avoided service costs downward by 2%, yielding a three-year risk adjusted total PV (discounted at 10%) of \$2.9 million.

Avoided Device Lifecycle Services Costs					
Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Number of end users		4,000	4,000	4,000
A2	Rounded three-year per device (average across all device types)		\$894.24	\$894.24	\$894.24
A3	Rounded average monthly device lifecycle service cost avoided per device	A2/36 months	\$24.84	\$24.84	\$24.84
At	Avoided device lifecycle services costs	(A1*A3) *12	\$1,192,320	\$1,192,320	\$1,192,320
	Risk adjustment	↓2%			
Atr	Avoided device lifecycle services costs (risk-adjusted)		\$1,168,474	\$1,168,474	\$1,168,474
Three-year total: \$3,505,421			Three-year present value: \$2,905,821		

AVOIDED DEVICE ACQUISITION AND REFRESH COSTS

Most of the interviewed organizations were refreshing 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. The composite organization avoids the following device costs as it begins to procure hardware through Dell.

Modeling and assumptions. For the composite organization, Forrester assumes that:

- Devices were previously financed from various vendors with the following assumptions: residual value of 20%, annual interest rate of 5%, and duration of 36 months. The following prices were paid per device:
 - Desktop, \$845.
 - Workstation, \$1,775.
 - Laptop, \$1,070.
 - Convertible, \$1,146.
 - Docking station, \$168.
 - Display, \$200.

TYPE OF DEVICE	NUMBER DEPLOYED	3-YEAR COST TO ORGANIZATION
Desktops	350	\$295,750
Workstations	100	\$177,500
Laptops	3,100	\$3,317,000
Convertibles	450	\$515,700
Docking stations	2,350	\$394,800
Displays	3,250	\$650,000
Total (Devices and peripherals)	9,600	\$5,305,750

On an annual basis, the composite organization previously spent \$1.6 million on device leasing fees. When moving to Dell hardware with PCaaS, these fees represent avoided hardware refresh costs.

Avoided Device Acquisition And Refresh Costs

Ref.	Metric	Assumption/ Calculation	Year 1	Year 2	Year 3
B1	Previous (non-Dell PCaaS) hardware cost of all end-user devices		\$4,305,950	\$4,305,950	\$4,305,950
B2	Previous hardware cost of all peripherals		\$1,044,800	\$1,044,800	\$1,044,800
B3	Total previous hardware cost	B1+B2	\$5,350,750	\$5,350,750	\$5,350,750
B4	Average monthly financing costs for end-user devices	Lease formula (Residual value: 20%. Annual interest rate: 5%. Duration: 36 months.)	\$132,752	\$132,752	\$132,752
Bt	Avoided device acquisition and refresh costs	B4*12	\$1,593,024	\$1,593,024	\$1,593,024
Btr	Avoided device acquisition and refresh costs (risk-adjusted)		\$1,593,024	\$1,593,024	\$1,593,024
Three-year total: \$4,779,072			Three-year present value: \$3,961,615		

UNQUANTIFIED BENEFITS

Interviewed organizations experienced other benefits that Forrester did not quantify for this analysis, including:

- **Prioritization of other digital transformation activities for the IT organization.** Dell PCaaS customers described to Forrester a multitude of high-value IT projects that would have been extremely difficult to execute given limited IT personnel and their responsibilities supporting the organization’s device lifecycles. Some of these projects include:
 - A revamp of the manufacturing organization’s customer-facing online catalog.
 - Migration of business-critical on-premises workloads to multiple public clouds to ensure future consistency.
 - High-sensitivity infrastructure upgrades.
- **Hiring flexibility.** Interviewees discussed the benefits of a reduced IT burden to support user devices on their hiring requirements. During periods of budget uncertainty amid events like the 2020 pandemic, interviewees noted that Dell PCaaS allowed them to continue to provide excellent device support to users with static or reduced headcount. One interviewee summarized: “We are not hiring like we used to, and probably won’t until, or if, we come out of this pandemic. If we hadn’t signed on with Dell, we would have been in a bind.”
- **Budget flexibility.** Dell PCaaS customers also spoke to the benefit of a monthly payment model as opposed to an upfront capital expenditure on their cash flow. The interviewee at the public sector museum noted: “Spreading the cost and support of the devices out makes a big difference for us as it flattens the curve for overall spending

for the museum. This has really helped us these past few months when we haven’t been open.”

- **Improved security posture.** With antivirus and security applications included with Dell PCaaS, along with security at the hardware level with Intel vPro, interviewees noted an across-the-board increase in their security posture given this consistency across devices. One Dell PCaaS customer told Forrester, “Consistent security across all of our devices reduces the angst of our IT team.”
- **End-user experience.** With Dell PCaaS, end users receive their devices on average five days faster, receive support resolution an average of five days more promptly, operate on hardware that is one to two years newer, and can fluidly work with Dell to procure the support or devices they need. This allows organizations to implement a best-device policy, enabling users with high-end devices, refreshed every three years, with a higher support standard from Dell.

“If our users want access to additional peripherals, hardware devices, the ball is in their court. With Dell PCaaS, we are empowering our employees to be ‘self-service’ with device-related decisions. This is one of the areas that our leadership is working really hard on because as a traditional financial services organization, we are known to be quite process oriented,” one interviewee summarized.

This insight is consistent with Forrester’s research into the employee experience benefits of device as a service, which suggests DaaS offerings such as Dell’s PCaaS may improve the employee onboarding, reduce the frustration associated with device breakdowns, and pave the way to additional experience innovations, assuming a 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, including:

Scalability and customization of deployment over time. Organizations may start deploying end-user devices, leveraging Dell PCaaS for a specific department or group of users and then extend or change the scope over time.

- The CIO at the interviewed college noted an opportunity to reimagine the college's computer labs, as desktops that sit unused may not be the most optimal way to deliver computing power to students. With Dell PCaaS, the college is not fully invested into its desktops and can explore additional options for computer labs or students' computing needs with each refresh cycle.
- Most of the interviewed customers and noncustomers expect a significant shift to flexible or remote work among their employees. Dell PCaaS customers will be well-positioned to equip and support users with the devices they need to accommodate this shift.
- These insights are consistent with Forrester's published research, noting that DaaS allows organizations to increase or decrease the number of devices in their fleets as needed. This is useful when companies have to support a higher volume of employees quickly, such as after a hiring sprint or during seasonal spikes.⁴

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

LIFECYCLE SERVICES COSTS WITH DELL PCAAS

Total Costs With Dell PC As A Service							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Ctr	Lifecycle services costs with Dell PC as a Service	\$0	\$930,730	\$930,730	\$930,730	\$2,792,189	\$2,314,587
Dtr	Financing of devices through Dell	\$0	\$1,516,512	\$1,516,512	\$1,516,512	\$4,549,536	\$3,771,341
Etr	Switching cost from incumbent provider(s)	\$48,450	\$0	\$0	\$0	\$48,450	\$48,450
	Total costs (risk-adjusted)	\$48,450	\$2,447,242	\$2,447,242	\$2,447,242	\$7,390,175	\$6,134,378

Interviewees reported that they leveraged Dell PCaaS to help their IT departments save time and money.

Dell ProDeploy is an end-to-end service including every task required 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 is a complete support service offering that combines priority access to expert support, damage repair, and proactive monitoring for automatic issue prevention and resolution.

Interviewees also noted that antivirus and data security applications came as part of their PCaaS subscriptions. At the hardware level, Intel vPro capabilities help organizations proactively protect PCs against malicious software attacks, diagnose and repair systems remotely (even if the system is powered off), and actively reduce power usage.

Modeling and assumptions. For the composite organization, Forrester assumes that:

- The organization leverages the full scope of Dell's PCaaS with its Intel vPro-enabled devices.
- The composite organization adheres to a 36-month device refresh cycle.
- The average monthly PC lifecycle service cost is \$19.01, given the variance of workers for the composite organization (office workers vs. remote users, users who are mainly at a desk vs. mobile workers). 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. Forrester calculates a savings of 5.26 hours per device per year in internal IT support labor.

To account for uncertainty in the assumptions and estimations above, Forrester adjusted these future PC lifecycle service costs upward by 2%, yielding a three-year risk adjusted total PV just over \$2.3 million.

Lifecycle Services Costs With Dell PC As A Service						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
C1	Number of end-user devices			4,000	4,000	4,000
C2	Average monthly lifecycle services cost per device with Dell PCaaS			\$19.01	\$19.01	\$19.01
Ct	Lifecycle services costs with Dell PC as a Service	$C1 \times C2 \times 12$	\$0	\$912,480	\$912,480	\$912,480
	Risk adjustment	↑2%				
Ctr	Lifecycle services costs with Dell PC as a Service (risk-adjusted)		\$0	\$930,730	\$930,730	\$930,730
Three-year total: \$2,792,189			Three-year present value: \$2,314,587			

FINANCING OF DEVICES THROUGH DELL

When consolidating the number of vendors and standardizing on a few types of end-user devices, organizations might be able to better negotiate volume discounts.

Based on conversations with eight Dell PCaaS customers and noncustomers around device procurement and costs, Forrester conservatively assumes that — for the composite organization — the average prices for the Dell devices are roughly 5% lower than the average per-device spend for the incumbent devices. Multiple interviewees reported per-device spending of over 10% the Dell PCaaS price for comparable hardware.

Modeling and assumptions. For this analysis, Forrester has estimated the total value of all Dell hardware (same type and number of devices as indicated in the Avoided Device Acquisition And Refresh Costs section), including end-user devices and peripherals, at \$5,093,750, resulting in an annual

TYPE OF DEVICE	NUMBER DEPLOYED	3-YEAR COST TO ORGANIZATION
Desktops	350	\$281,400
Workstations	100	\$169,000
Laptops	3,100	\$3,158,900
Convertibles	450	\$490,950
Docking stations	2,350	\$376,000
Displays	3,250	\$617,500
Total (Devices and peripherals)	9,600	\$5,093,750

expenditure of just over \$1.5 million. Forrester makes the same financing assumptions from the composite organization's pre-Dell PCaaS state, though better options may be available through Dell Financial Services. Please contact Dell for specific rates.

Financing Of Devices Through Dell						
Ref.	Metric	Assumption/ Calculation	Initial	Year 1	Year 2	Year 3
D1	Total costs for end-user devices			\$4,100,250	\$4,100,250	\$4,100,250
D2	Total costs for peripherals			\$993,500	\$993,500	\$993,500
D3	Total hardware cost	D1+D2		\$5,093,750	\$5,093,750	\$5,093,750
D4	Average monthly device costs for end-user devices with Dell PCaaS	Lease formula (Residual value: 20%. Annual interest rate: 5%. Duration: 36 months.)	\$0	\$126,376	\$126,376	\$126,376
Dt	Financing of devices through Dell PCaaS	D4*12	\$0	\$1,516,512	\$1,516,512	\$1,516,512
Dtr	Financing of devices through Dell PCaaS (risk-adjusted)		\$0	\$1,516,512	\$1,516,512	\$1,516,512
Three-year total: \$4,549,536			Three-year present value: \$3,771,341			

SWITCHING COST FROM INCUMBENT PROVIDER(S)

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 support or service providers in the short term before completely discontinuing them. For the composite analysis, Forrester assumes a one-time switching cost of \$47,500 based on an average

of \$1,187.50 per 100 devices. This estimated switching cost does not include any costs of learning to roll out, manage, or administer a new operating system or a new business application that might be rolled out at the same time as the new devices

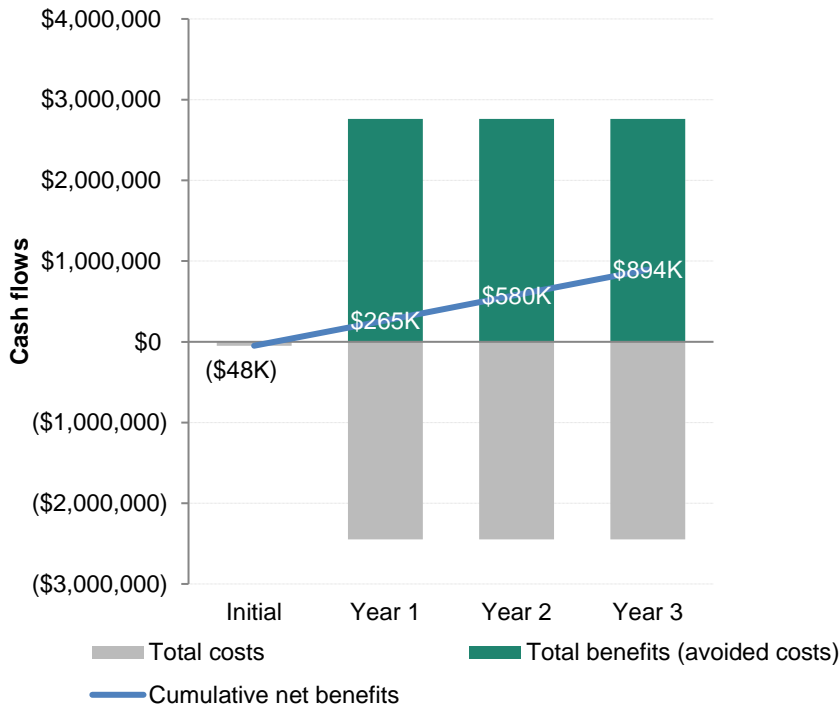
The switching may vary by company based on factors such as the current contracts in place with incumbent device or support providers and has only been estimated for the composite organization. To account for the uncertainty of the assumptions made, Forrester risk-adjusted this cost upward by 2% to \$48,450 at the initial Dell PCaaS switch.

Switching Cost From Incumbent Provider(s)						
Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
E1	Assumed switching cost per 100 devices		\$1,187.50			
E2	Number of devices		4,000			
Et	Switching cost from incumbent providers	E1*(E2/100)	\$47,500	\$0	\$0	\$0
	Risk adjustment	↑2%				
Etr	Switching cost from incumbent providers (risk-adjusted)		\$48,450	\$0	\$0	\$0

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Financial Analysis (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	(\$48,450)	(\$2,447,242)	(\$2,447,242)	(\$2,447,242)	(\$7,390,175)	(\$6,134,378)
Total benefits	\$0	\$2,761,498	\$2,761,498	\$2,761,498	\$8,284,493	\$6,867,436
Net benefits	(\$48,450)	\$314,256	\$314,256	\$314,256	\$894,318	\$733,058
ROI						12%
Payback						<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."



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: Supplemental Material

Related Forrester Research

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

“Enhance Digital Employee Experience With Device-As-A-Service,” Forrester Research, Inc., January 23, 2020.

Appendix C: 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.

⁴ Ibid.

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