

A Forrester Consulting  
Thought Leadership Paper  
Commissioned By Dell  
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# Evolving From Operating IT To Orchestrating IT

Hint: The Key Is Leveraging A Partner To Get  
You There

# Table Of Contents

- 1** Executive Summary
- 2** Embrace Innovation Now With The Help Of Partners
- 3** Partner-Led Innovation Enables A Faster Shift To Modern PCLM
- 7** Choose A Partner That Offers A Holistic Approach To PCLM Evolution
- 9** Benefits: Partner-Led Innovation Is The Key To PCLM Evolution
- 11** Key Recommendations
- 12** Appendix

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# Executive Summary

Organizations realize the time is now to move to a new deployment model. Digital transformation and proliferation of devices have put IT departments in the spotlight: They must move away from being linear, traditional controllers and evolve into modern transformers that are agile, flexible, and employee-centric. PC-as-a-service (PCaaS) has emerged as the go-to model for IT because of the level of automation, efficiency, and employee empowerment it offers. None of this can be accomplished without a competent business partner that underpins the new customized, deployment model.

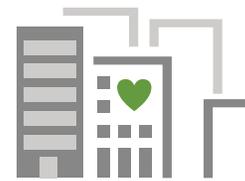
In February 2019, Dell commissioned Forrester Consulting to evaluate employee experience and enterprise computing. Forrester conducted an online survey with 1,186 IT leaders across the globe to understand current PC lifecycle management deployment models.

## KEY FINDINGS

- › **Moving to a new deployment model is top of mind.** Current PC lifecycle management (PCLM) processes are too manual. By utilizing partners, organizations can improve their approaches to PCLM. Embracing technological innovation allows organizations to improve their operational efficiency, as well as the employee experience (EX). Additionally, organizations understand that they need to automate PCLM, and will need a partner.
- › **Organizations must select partners by creating a rigorous assessment process.** It's not easy selecting a partner — nor should it be. Organizations must clearly define their requirements, business goals, and their current technology ecosystems. They must also review past projects by the partner and how successful they've been.
- › **Gain support from the entire organization, including the security department.** Moving to a modern management model is likely to turn heads from the security department, which is why it's important to emphasize Forrester's Zero Trust, securing data wherever it lives, rather than relying on traditional network-based perimeters.

# Embrace Innovation Now With The Help Of Partners

I&O teams admit that their approach to PC lifecycle management (PCLM) is manually intensive and inflexible for employees. Current PCLM strategies no longer fit the needs of the modern business and, are often actively stifling innovation at their firms. When we asked respondents about their attitude toward device management, 50% of business and IT leaders said they are motivated and ready to change, and 47% said they acknowledge that there are better deployment models out there (see Figure 1).



In the past, many organizations would tackle modernization on their own, but in a world of ever-increasing device diversity and faster operating system (OS) upgrade cadences, that's just no longer possible. Today, 51% of organizations are looking to improve their existing approach to PCLM, and they're utilizing partners to help them along the journey. I&O teams recognize they need a partner because doing it on their own:

- › **Leaves key modernization benefits unfulfilled.** Some elements of modernization, such as automating the provisioning of PCs, require a partner. Why? Because the majority of configuration of images like user setting preferences, all happen within factory warehouses. Beyond provisioning =, I&O teams that want a fully automated PC experience for employees will= need a partner for mundane yet important elements of PC delivery, such as asset tagging, etching, and logistics.
- › **Requires too much manual effort.** Key modernization phases — such as group policy modernization (GPO) to creative solutions practice (CSP) conversion — all require manual testing. Forrester's research has found that each of these areas takes a minimum two to three months to complete. Larger IT organizations can occasionally tackle these improvements on their own, but most organizations can't afford to spend that much time on each phase.
- › **Requires firms to organize themselves across multiple stakeholders.** PCLM innovation impacts not just desktop technicians, but app-packaging teams, network teams, security teams, HR, and employees. Coordinating multiple groups and multiple concurrent workstreams can result in a mixed expectations and project delays. For example, Forrester has found that organizations that do not involve security teams early often run into roadblocks, especially when security teams question the rationale of providing access to enterprise resources outside of the firewall.



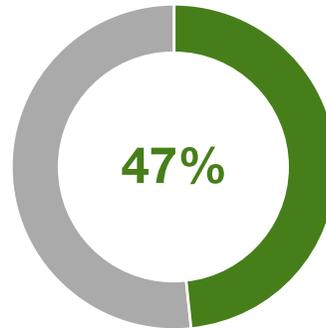
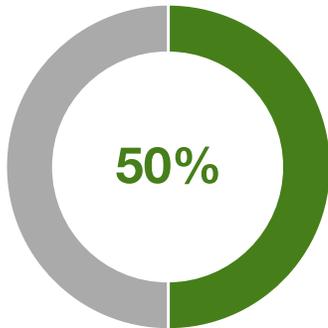
**Figure 1**

**“What is your firm’s general attitude about changing to a new model for device management?”**

(Select all that apply)

■ We know we need to improve and are ready and motivated to change.

■ We acknowledge that there are better models out there that can help us, but we need to do more planning.



Base: 1,186 director or above IT and operations leaders with knowledge of desktop infrastructure environment, the provisioning of laptops and computers and other devices and PC-as-a-Service  
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell, August 2019

## Partner-Led Innovation Enables A Faster Shift To Modern PCLM

Embracing technological innovation is the first step toward increasing competitive differentiation, improving EX, and ultimately driving customer value. Innovation here does not just mean embracing a modern management strategy for employee endpoints. It’s just one element of evolution that also includes increasing usage of mobile devices and apps, greater proliferation of software-as-a-service (SaaS) apps, increasing reliance on cloud-based virtualization, adoption of a Zero Trust security model, and moving from perpetual licensing to subscription-based procurement models (see Figure 2).



Figure 2

**ACTUAL PC MANAGEMENT CHANGES**

Category	Traditional 	Modern 
Provisioning	Manual imaging for all users. Done in-house. User required to pick up device from IT department.	OEM provider images the machine. MDM APIs deliver apps and settings remotely to the user. In-house imaging only occurs when reimaging.
Policies	Domain-joined group policy objects (GPOs). Highly customizable but manually intensive.	Apple MDM APIs or Windows Configuration Service Providers (CSPs). Less customizable but wizard-driven.
Patch management	WSUS or manual patch deployment using scripting. Update every two to three years.	Windows Update for Business (WUfB) or NetSUS OS updates occur every six months (Windows) delivered from the cloud.
App distribution	Application packaging deploying using software distribution points. Primarily focused on EXEs and DMGs.	Self-service app store consisting of legacy and modern applications. Use of MISX as a packaging method. Embrace of UWP.
Security	Perimeter-based. Static. Cert and password-based authentication	Context-based. Continuous. Biometric authentication

**CHANGES WITHIN END USER COMPUTING**

Category	Today 	Future 
Devices	1:1 mostly PCs. More heavy than light OS Input dependent	3:1 or more More light than heavy OS Intermediated
Apps	IT distributed Native client Platform-dependent Virtualized on-prem	Self-service Web-based, SaaS Platform-agnostic Virtualization in cloud
Management	Siloed by OS On-premises Device/application-based Corporate-owned Manual provisioning	Unified Cloud-based User-based BYOD Automated
Security	Third-party proprietary Siloed by technology (network, device, etc.) Static	Embedded in OS Unified and context-based Continuous and dynamic
Licensing	Per device, 1:1 Perpetual	Per user, 1:many Subscription

Source: Forrester Research

With all this change going on, partners are an important factor for ensuring the success of transformation, and quickly. Partners can speed the modernization process by:

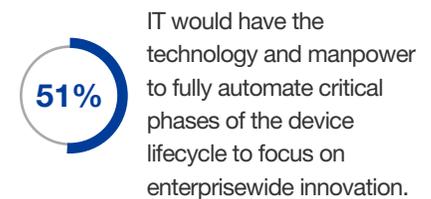
- › **Loading cloud-based management tools in the factory.** Eighty percent of respondents said they're prioritizing cloud-based management over the next 12 months (see Figure 3). However, getting employees to enroll devices in a mobile device management (MDM) platform is often manually intensive. Partners can load these agents in the factory, which means devices are already compliant with conditional access policies before they even arrive to employees. Some partners will even manage OS and application updates as part of a managed service offerings, enabling organizations to reap the benefits of cloud update distribution without the upfront cost of testing.
- › **Delivering full deployment automation.** Thirty-five percent said to compete in the market, they need to improve their automation capabilities. And an ideal device strategy of the future would have the technology and manpower to fully automate critical phases of the device lifecycle to focus on enterprise wide innovation (51%). Yet, simply deploying an agent for device compliance reasons won't fully automate this process. Partners will need to complete the rest, which includes loading a base image, setting GPOs, configuring BIOS, customizing user settings, applying tagging, and physically delivering PCs to your office or directly to an employee's home office; only through partners can full automation of the initial provisioning process occur (see Figure 4).
- › **Training of employees in new modern management techniques.** Seventy-seven percent of respondents said their firms will prioritize retraining desktop technicians in modern management techniques (see Figure 3). Most firms, however, don't know what this entails. Partners can educate desktop technicians on how to approach mobile-aligned PC management, and educate mobile management professionals on desktop management. pPartners can be instrumental in helping shift an organization's mentality from one that focuses on managing devices to one that focuses on managing access.

**Figure 4**

**“What does your organization need to improve with regard to PCLM in order to better compete in the market?”**



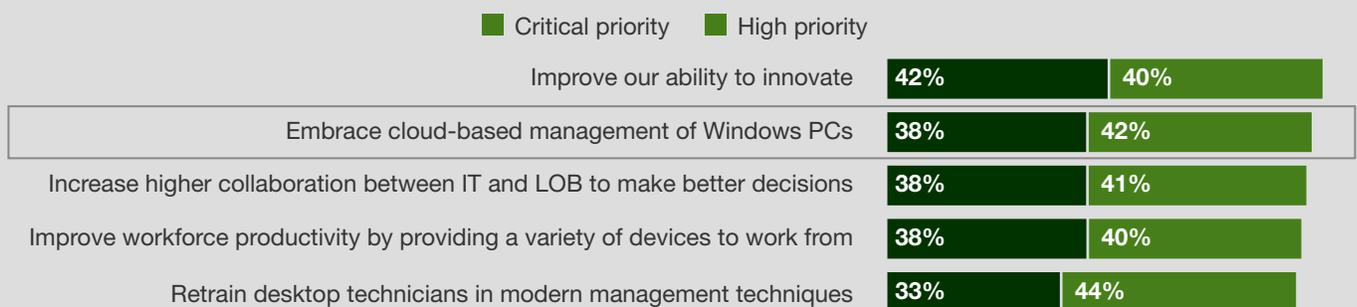
**“In an ideal future, what would your organization’s device strategy look like?”**



Base: 1,186 director or above IT and operations leaders with knowledge of desktop infrastructure environment, the provisioning of laptops and computers and other devices, and PC-as-a-service  
 Source: A commissioned study conducted by Forrester Consulting on behalf of Dell, August 2019

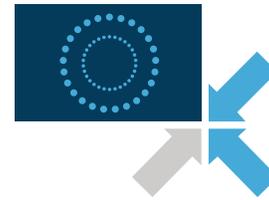
**Figure 3**

**“Which of the following initiatives are likely to be your firm’s/organization’s top PC life cycle priorities over the next 12 months?”** (Showing “Critical” or “High” priority only)



Base: 1,186 director or above IT and operations leaders with knowledge of desktop infrastructure environment, the provisioning of laptops and computers and other devices and PC-as-a-Service  
 Source: A commissioned study conducted by Forrester Consulting on behalf of Dell, August 2019

- › **Establishing a framework for subscription-based services.**  
PC-as-a-service is the go-to model for organizations (54%) because it helps firms deliver devices faster to employees at a more predictable cost (see Figure 5). IT partners can help establish set timelines for as-a-service implementation, delineate key differences between leasing and as-a-service, and enable organizations to scale up and down on demand.
- › **Moving key virtual workloads to the cloud.** Virtual desktops and apps never did replace traditional PCs, but they continue to play an important role for organizations that face challenges with legacy apps and remote access. When we asked organizations what best describes their current device deployment strategies, 64% said they use virtualization in the cloud, and Forrester’s research confirms this trend is continuing (see Figure 6).<sup>1</sup> Even cloud-based virtualization will require upfront implementation costs, such as experience tuning, licensing procurement, image customization and management, and user deployment. Partners have the capacity and expertise to manage the entire virtualization environment, enabling you to focus on other elements of PCLM innovation.



**Figure 5**

**“To which of the following device deployment strategies is your organization planning to shift?”**

(Select all that apply)

- 54% PCaaS subscription model — we pay a subscription fee, which includes deployment and support services.
- 53% PC-as-a-service model (PCaaS) leasing only — we buy devices in a leasing-only model.
- 51% PCaaS extensive subscription model — we pay a subscription fee, which includes deployment, support services, and remote PC management.

Base: 1,074 director or above IT and operations leaders with knowledge of desktop infrastructure environment, the provisioning of laptops and computers and other devices, and PC-as-a-service  
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell, August 2019

**Figure 6**

**“Which of the following best describes the device deployment strategies your organization is using today?”**

(Showing “Virtualized” only)

- 64% Virtualized in the cloud — employee desktops are virtualized and available in a private or public cloud, all dev.
- 53% Virtualized on-premises — employee desktops are virtualized but only accessible on-premises.

Base: 1,186 director or above IT and operations leaders with knowledge of desktop infrastructure environment, the provisioning of laptops and computers and other devices, and PC-as-a-service  
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell, August 2019

# Choose A Partner That Offers A Holistic Approach To PCLM Evolution

Selecting a partner is not easy — nor should it be. Organizations must question what it is that they really want to achieve and what goals they actually want to accomplish, and then assess partners based on this. The partner you choose depends on a number of internal variables, including

- › **The business goals of the organization.** Organizations that are overly burdened with legacy applications and outdated processes might opt to partner with a vendor that focuses more explicitly on automation. A company that wants to enable employees with remote access, on the other hand, should seek out a partner that has a strong software component for enabling that flexibility.
- › **Preferences toward outsourcing vs. internally operated.** Organizational size and culture can often influence whether an organization chooses to self-enable with vendor-provided tools or rely heavily on a managed service offering.
- › **Current technology ecosystem.** The breadth of management tools, employee-facing apps, images, and custom client management processes (such as custom scripts) will all influence the partner an organization selects.



## BEST PRACTICES FOR ENSURING YOU PICK A PARTNER THAT ENABLES YOU TO MOVE QUICKLY AND HOLISTICALLY

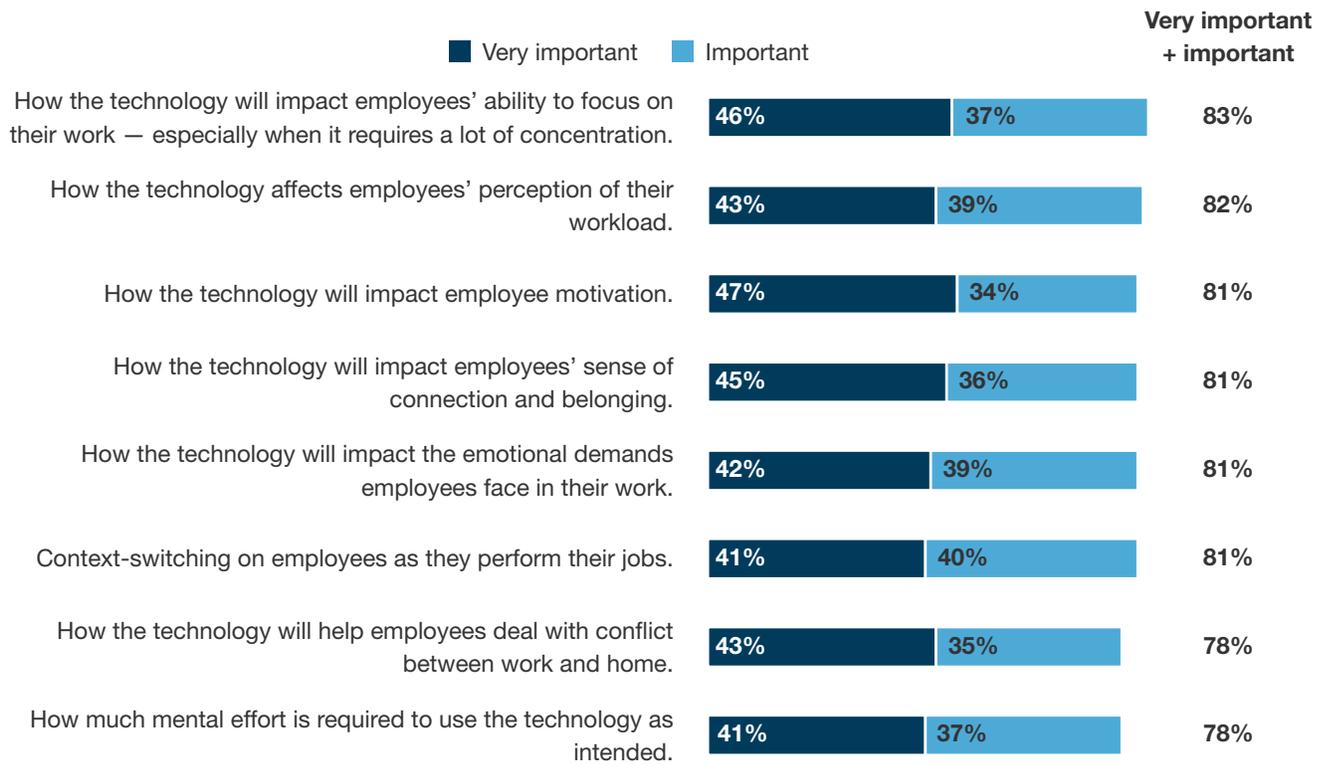
When selecting a partner for workforce transformation, consider their:

- › **Depth of provisioning capabilities.** Not all partners can deliver a fully automated PC deployment experience. . The more advanced vendors will, not only enable a custom image load with basic user settings and common SaaS applications also enable configuration of the BIOS and drivers as well as allow organizations to deploy custom-built apps or legacy Win32 in the factory prior to deployment. Without this capability, administrators will need to customize these settings in the depot, and employees will waste time downloading applications from a cloud distribution point, which can take 3 to 4 hours depending on the size and breadth of apps.
- › **Ability to link its offering to employee experience (EX) outcomes.** Many vendors focus specifically on cost reduction or management simplification as a foundation of their offerings, but research shows EX is more important. When making purchasing decisions, technology leaders consider the ease of use of the technology, how the technology affects employees' perception of their workloads, the impact on their desire to do work, and the ability to separate and create a work/life balance (see Figure 7). Your partner of choice should be able to clearly delineate how its solution enables a better employee experience.



**Figure 7**

**“When considering employee-facing technology purchasing decisions, which of the following do you think is most important?”** (Showing “Very important” and “Important” only)



Base: 1,186 director or above IT and operations leaders with knowledge of desktop infrastructure environment, the provisioning of laptops and computers and other devices, and PC-as-a-service

Source: A commissioned study conducted by Forrester Consulting on behalf of Dell, August 2019

- › **Capabilities to deliver predictive IT support.** Partners that provide continuous support from the help desk, management, and security support offer more flexibility for customers that might not want to conduct all of these activities in-house (see Figure 8). But while managed support services are common offerings across vendors, not all provide tools to enable predictive diagnostics on device and app performance, which are necessary capabilities for continuous improvement of end user experience.
- › **People management expertise.** A successful PCLM change requires organizations to embrace new business processes, roles, and responsibilities, while carefully managing employee experience. Partners that specialize in people management, persona development, and employee journey mapping will soften the culture shock, promote deeper collaboration and drive the need for continuous improvement. Therefore, organizations must seek partners that prepare, execute, and reinforce change.
- › **Geographic reach.** Not all partners are available in different regions; some provide a mishmash of inconsistent solutions. For example, PCaaS might be available in your country, but provisioning automation may not be.
- › **Flexibility of contracts.** If your organization is also considering PCaaS as part of its transformation effort, partner with a vendor that's flexible to support your needs. For example, not all vendors support mid-term upgrades, and others will not let organizations flex down. The ability to flex up or down without additional costs, purchase orders (POs), and minimum unit numbers is important to preserve employee flexibility



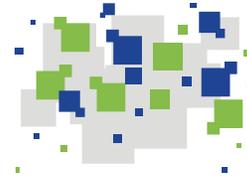
## Benefits: Partner-Led Innovation Is The Key To PCLM Evolution

Embracing a partner ensures your transition to a modern PCLM is realized. Partners: (see Figure 8).

- › **Ensure a holistic experience across all the devices employees uses.** Partners ensure that innovations in PCLM occur not just when it comes to Windows devices, but also macOS, Android, and iOS devices as well. Partners serve as a platform for digitally transforming across a wide array of device types.
- › **Identify key areas to automate first.** There's no better place to begin automation than in the factory itself. Partners serve as that first step and remove the heavy lifting associated with traditional client management.



- › **Enable transformation faster than doing it alone.** To begin the transition to a new deployment model, organizations must go through planning, preparation, and the chain of command — consuming a lot of time. However, partners can provide a much easier and faster way of managing the process (35%).
- › **Embed security without extra work.** Keeping up with regulatory changes is no easy task, especially with many moving parts within the organization. Hence, it makes a lot more sense to seek the help of partners that will be able to help stay compliant (29%) as well as provide increased security through integrations they may already have.



**Figure 8**

**“You said your organization is considering, planning, or implementing a shift to a new device deployment model. What benefits have you seen as a result of the new model?” (Select all that apply)**



Base: 1,186 director or above IT and operations leaders with knowledge of desktop infrastructure environment, the provisioning of laptops and computers and other devices, and PC-as-a-service  
 Source: A commissioned study conducted by Forrester Consulting on behalf of Dell, August 2019

# Key Recommendations

Insight without action is worthless. Firms must convert knowledge of underlying factors gained to improve and embrace PCLM innovation. Otherwise, those that don't will watch their competitors that do surpass them. To act:



## **Examine the depth of partnerships underlying your vendor's offering.**

The key to full automation of the PC provisioning process is a robust tool that can configure down to the BIOS level. While certain vendors will have partnerships with software solutions that technically have that capability, the commercial relationship might not include the capability. I&O teams should also ask what underlying third-party security products are powering the vendor's offering overall and vet the strength of those products internally and externally. Beware of market partnerships. Focus on capabilities instead.



## **Be clear on services vs. tools.**

Vendor offerings vary greatly across the PCLM landscape, with some vendors heavily favoring a managed service approach whereas others prefer a self-service tool approach. Survey vendors on what tools they provide to do PCLM innovation yourself as well as any fully managed services they provide on top. Typically, most vendors will provide a tool for uploading images to a factory, customizing settings, and doing end user diagnostics, while services will focus more on delivery of devices, ongoing security and management services, and asset recovery services.



## **Focus on attack surface reduction when attempting to gain the support of security teams.**

The move to modern management is likely to gain attention from security pros who will question the inherent security of remote management capabilities. Successful modern management deployments focus less on EX benefits when in conversations with security and risk pros and more on attack surface reduction as a main benefit. For example, moving to modern management means that devices are no longer domain-joined and don't have full access to the corporate network, reducing the risks of compromised device from accessing sensitive resources.



## **Follow a road map for modern management.**

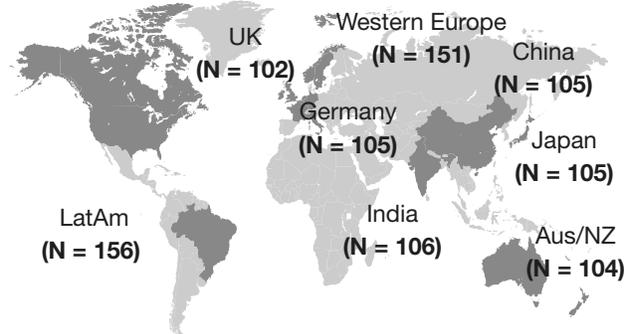
While every organization will have unique needs for PCLM, there's a commonality in the road map for modernization. Focus on gaining visibility and compliance first by deploying MDM agents. GPO migration and patching come second, followed by patch management modernization. Leave end user experience-focused elements such as virtual private network-replacement (VPN-replacement) with per-app VPN toward the end as they will have the biggest disruption to the end user experience.

# Appendix A: Methodology

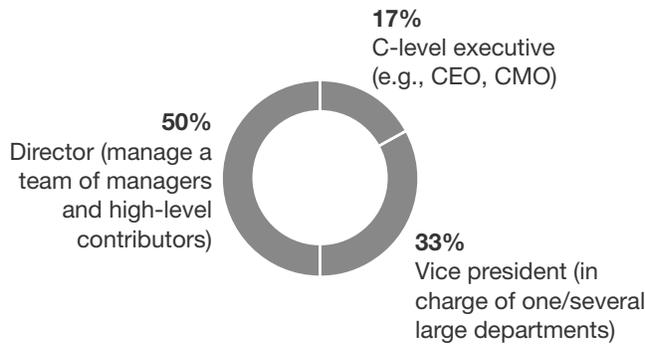
In this study, Forrester conducted an online survey of 1,186 organizations across the globe to evaluate current PC lifecycle management deployment models and how they plan to see it evolve over the next 12 to 24 months. Survey participants included decision makers from the director level, VPs, and C-level executives. Questions provided to the participants asked about their technology strategy initiatives, current PC deployment models, and their PC lifecycle management priorities. The study began in February 2019 and this paper was completed in August 2019.

# Appendix B: Demographics

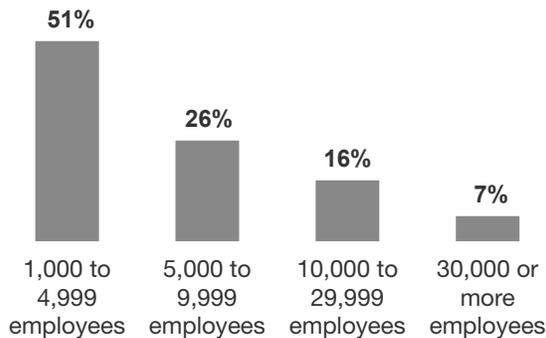
North America (N = 252)



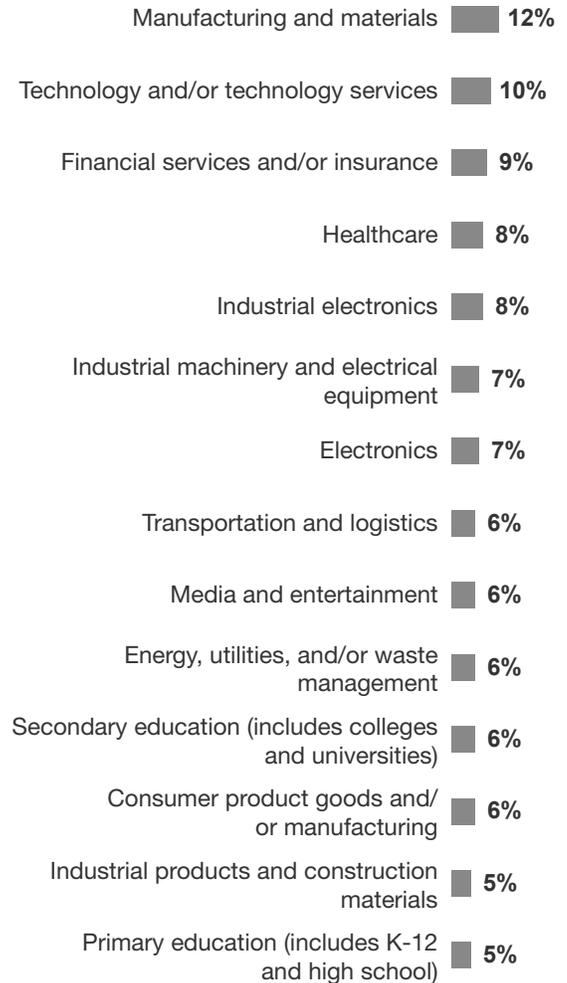
### RESPONDENT TITLE



### COMPANY SIZE



### INDUSTRY



Base: 1,186 director or above IT and operations leaders with knowledge of desktop infrastructure environment, the provisioning of laptops and computers and other devices and PC-as-a-Service  
 Source: A commissioned study conducted by Forrester Consulting on behalf of Dell, August 2019

# Appendix C: Endnotes

<sup>1</sup> Source: "The Future Of Digital Workspaces Is Cloud," Forrester Research, Inc., July 31, 2019.