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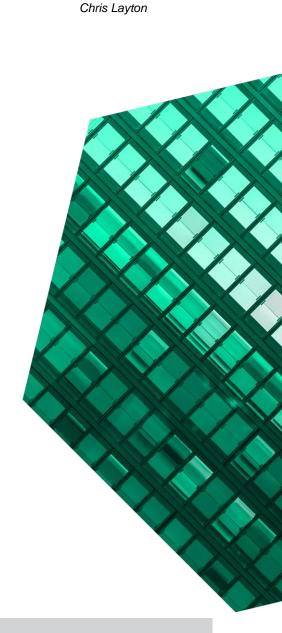
# The Total Economic Impact™ Of Windows 365

Cost Savings And Business Benefits Enabled By Windows 365 Cloud PCs

**MARCH 2023** 

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#### ABOUT FORRESTER CONSULTING

Forrester provides independent and objective research-based consulting to help leaders deliver key transformation outcomes. Fueled by our customer-obsessed research, Forrester's seasoned consultants partner with leaders to execute on their priorities using a unique engagement model that tailors to diverse needs and ensures lasting impact. For more information, visit forrester.com/consulting.

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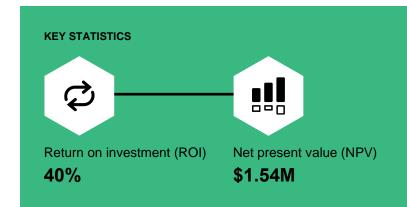
## **Executive Summary**

Enterprises increasingly need a comprehensive digital workplace strategy to address the future of work, increase engagement, drive productivity enhancements, and reduce costs.<sup>1</sup> Organizations that used Windows 365 to securely stream personalized desktops across devices found that it enabled a variety of scenarios for the new world of hybrid work while simplifying IT administration, improving productivity for a variety of end users, and driving cost savings.

Windows 365 is a cloud-based software as a service (SaaS) that securely streams virtual machines, which Microsoft calls Cloud PCs, to end users with simplified IT administration. Cloud PCs enable users to access their personalized desktop, apps, settings, and content from the Microsoft cloud on any device. Windows 365 helps organizations to easily set up and scale Cloud PCs to fit business needs and securely support hybrid workforces; streamline virtual desktop management for IT; improve productivity for employees, contractors, and power users; and drive hardware savings.

Microsoft commissioned Forrester Consulting to conduct a Total Economic Impact<sup>™</sup> (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Windows 365 Cloud PCs.<sup>2</sup> The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Windows 365 on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four representatives with experience using Windows 365. For the purposes of this study, Forrester aggregated the interviewees' experiences and combined the results into a single <u>composite</u> <u>organization</u> that is a global organization with revenue of \$10 billion per year and a distributed workforce that includes contractors, power users, and employees joining through acquisition.



Prior to using Windows 365, interviewees noted how their organizations used laptop computers to enable their contractors, third-party resources, power users, and employees joining through acquisition to access their corporate networks, files, and applications. In addition to physical desktops, they also had tried virtual desktop infrastructure (VDI), which had limitations in meeting users' needs and resulted in unpredictable consumption costs. These prior attempts yielded limited success, leaving them with productivity issues, IT burden, security concerns, and deployment challenges.

After the investment in Windows 365, the interviewees simplified desktop deployment when providing Cloud PCs to employees and third parties. Key results from the investment include reduced IT costs for desktop management during onboarding, maintenance, and offboarding; improved time to value and productivity for users, including contractors and power users; and hardware cost savings.

#### **KEY FINDINGS**

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

- Reduced IT costs by 88% for desktop deployment, 88% for maintenance, and 96% for machine recovery. The composite organization significantly reduces IT efforts during employee onboarding, device maintenance, and offboarding using Windows 365. As a result, the composite saves \$1.1 million in IT labor costs over three years.
- Improved productivity for power users is worth \$2.2 million, over three years. The composite organization provides power users, including graphic designers, developers, and data scientists, with Cloud PCs that are properly configured for their specialized workloads. The Cloud PCs help power users manage large files and workloads much faster than otherwise possible and can be quickly reconfigured as needs change, helping them to avoid downtime.
- Improved time to productivity for merger and acquisition (M&A) employees, recapturing 120 hours per employee. The composite organization enables employees joining through M&A to access corporate desktops, files, and applications three weeks sooner than possible with a physical device, as they avoid waiting for hardware to be procured and delivered. Over three years, the composite recaptures \$719,100 in productivity that was lost in the prior environment.
- Improved user productivity through selfservice is worth \$253,000, over three years.
   Windows 365 users access self-healing capabilities to troubleshoot and fix issues, avoiding the need to submit IT tickets and incur downtime.

 Reduced hardware costs by \$750 per contractor through BYOPC (bring-your-own-PC) programs. The composite organization allows contractors to access Cloud PCs on their own devices, reducing hardware costs. Through the BYOPC program supported by Windows 365, contractors are empowered to purchase the laptop of their choice or utilize existing hardware. Over three years, the avoided hardware and shipping expenses total \$1.1 million for the composite organization.

> "The thing we like about Windows 365 is the "as-a-service model." We have 10,000 employees, but we're a small technology team, especially on the infrastructure and virtualization side. So the fact that I don't have to manage a whole bunch of controllers — it's just: click a button, the machine provisions, and Microsoft manages that infrastructure that's a big win for our team for sure."

Vice president of infrastructure and security

**Unquantified benefits.** Benefits that provide value for the composite organization but that are not quantified in this study include:

• Improved security posture. Windows 365 enables users to securely access corporate data and applications. It also allows the organization to remove employee access instantly when needed as files and data are not stored on local machines. The composite organization mitigates risk and leaks by centralizing data and access in the cloud instead of on devices.

- Greater cost predictability and IT savings compared to VDI. Windows 365's subscriptionbased pricing enables the composite to forecast spend based on number of users, rather than consumption, as is typically the case with VDI. Additionally, Windows 365 offers greater IT management simplicity compared to VDI.
- Improved user experience and accessibility options. The composite organization can support accessibility software for employees and ease of access for remote employees. This allows it to support a greater diversity of employees across functions.
- Flexibility for user-level computing needs. The composite organization can quickly upgrade users to higher-performance computing configurations instead of needing to redeploy machines or build one-off virtual machines.
- Reduced total cost of ownership (TCO) through thin clients and longer laptop depreciation cycles. In the future, the composite organization will leverage thin clients as appropriate and depreciate assets longer over time with Windows 365, reducing TCO.

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

- Windows 365 subscription costs. Over three years, the composite organization incurs \$3.6 million in Windows 365 subscription costs based on the number of monthly users.
- Deployment, ongoing management, and training costs. Two IT resources dedicate a portion of their time to deployment and ongoing management. New Windows 365 users also receive 15 minutes of training. The IT labor and training cost are lower than that of VDI for the

composite organization and total \$219,000 over three years.

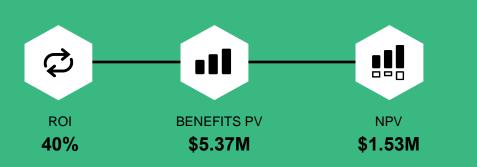
The representative interviews and financial analysis found that a composite organization experiences benefits of \$5.37 million over three years versus costs of \$3.85 million, adding up to a net present value (NPV) of \$1.53 million and an ROI of 40%.

### Forrester's Perspective: End-User Computing Technologies Drive Anywhere And Hybrid Work Success

As of late 2022, 66% of enterprise leaders have adopted anywhere or hybrid work.<sup>3</sup> Forrester's research indicates that this trend will continue as leaders and employees see the benefits of flexible work models.

Throughout the first two years of the COVID-19 pandemic, end-user computing (EUC) technologies, including solutions like Windows 365, were the lifeline connecting employees to their organizations, enabling them to collaborate with colleagues, participate in corporate culture, and maintain strong relationships with customers. In 2023 and beyond, EUC technologies will continue to play a vital foundational role in enabling organizations to maintain productivity, reduce cybersecurity risks, and serve and retain customers.

Forrester's research finds that organizations increasingly see EUC as not just a necessity but as the conduit to a strong digital employee experience and a strategic competitive differentiator in the battle for talent. EUC technologies are an important contributor to employee experience, allowing employees to work productively from anywhere without sacrificing enterprise manageability and security. As companies expand geographically and support various forms of anywhere and hybrid work, EUC is the foundation that enables secure access to task-critical information.<sup>4</sup>



### **Benefits (Three-Year)**



"Windows 365 is safe and secure, and we can issue machines to secure partners a lot easier. That's what hybrid work means to us. Geography is a nonissue."

- Branch manager for ICT services, government

#### **TEI FRAMEWORK AND METHODOLOGY**

From the information provided in the interviews, Forrester constructed a Total Economic Impact<sup>™</sup> framework for those organizations considering an investment in Windows 365.

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 Windows 365 can have on an organization.

#### DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Microsoft 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 Windows 365.

Microsoft 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.

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



#### **DUE DILIGENCE**

Interviewed Microsoft stakeholders and Forrester analysts to gather data relative to Windows 365.



#### INTERVIEWS

Interviewed four representatives at four organizations using Windows 365 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 Windows 365 Customer Journey

Drivers leading to the Windows 365 investment

Interviews									
Role	Industry	Region	Employees	Revenue/Funding					
Branch manager for ICT services	Government	Australia HQ, national operations	14,000	Annual funding: \$50B AUD					
Enterprise architect for digital workplace	Manufacturing	Europe HQ, global operations	43,000	Annual revenue: €11B					
Vice president of infrastructure and security	Financial services	Canada HQ, global operations	10,000	Annual revenue: 3.4B CAD					
President	Media and entertainment	US HQ, US operations	10 FTEs, 17 seasonal workers	Annual revenue: \$2M to \$3M					

#### **KEY CHALLENGES**

Prior to the investment, interviewees provided physical devices to contractors, third-party resources, and employees joining through M&A. Interviewees noted that they had also tried VDI to enable remote desktop access from their devices but found the complexity prohibitive.

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

 Delayed time to productivity for onboarded employees, contractors, and third parties.
 Interviewees shared that the time required to deploy devices impacted productivity.

The enterprise architect for digital workplace at a manufacturing organization noted that the logistical challenges associated with procuring and setting up devices prevented employees joining through acquisition from gaining access to corporate resources in a timely manner.

Similarly, the vice president of infrastructure and security at a financial services organization shared: "In the old world, when we were collaborating with a third party that signed on to do some work with us, it could be three weeks before they had access. This went through access request, account creation, machine provisioning, user logging in, and signing in."

- Inefficient deployment, maintenance, and recovery processes for IT. In the prior environments, IT staff spent a significant amount of time on machine procurement, deployment, and maintenance. Interviewees shared that VDI created additional complexity that would have been unsustainable to manage without additional IT resources. The president at a media and entertainment organization said: "VDI was a challenge that required constant maintenance. It was just a pain. We couldn't have used [a VDI solution] without a full-time IT person on staff [to support it]."
- Cost and logistics challenges around sourcing and shipping devices. Interviewees shared logistical challenges around sourcing and shipping devices to employees, contractors, and third-party resources. For example, a manufacturing organization had a workforce spread across 180 countries, which created issues with customs and vendors being unable to deliver hardware to employees in certain locations. Additionally, the risk team at a financial services organization mandated a cease in shipping hardware to overseas contractors due to cost, logistics, and security issues.

Security issues associated with physical desktops and VPNs. Interviewees shared security concerns around physical devices. Before investing in Windows 365, a manufacturing organization provided VPN licenses to enable third-party resources to access its corporate network. The organization's enterprise architect for digital workplace viewed this as a risk, saying, "By giving those external people a VPN, they had the keys to the kingdom and could access anything they wanted internally." The president at a media and entertainment company had concerns over contractors accessing sensitive data from their personal devices on which security policies could not be enforced.

"We are working with sensitive information and files, but we have people, especially contractors, who are using personal devices that we really can't touch. They wouldn't do any work for us if they thought we were going to put policies in their machines."

## President, media and entertainment

 Lack of support for power users and specialized workloads. In their prior environments, organizations lacked flexibility in supporting power user computing requirements. For example, the vice president of infrastructure and security noted situations in their prior environment in which devices were not effectively configured for developer workloads and had to be shipped back and redeployed, impacting productivity. The branch manager of ICT services at a government organization had challenges supporting power users with its VDI approach: "Power users was another complication for us. If I had somebody in that environment who was a very heavy user on a pooled environment, I had to build them a separate VM, a separate virtual machine or server, just to handle their use case, which is an expensive way to solve a relatively easy problem."

"We're moving a lot of source files and things around in raw recordings. When the team was editing and rendering out videos, their desktop was not available for moving large files."

President, media and entertainment

#### WHY WINDOWS 365

The interviewees' organizations searched for a solution that could:

- Simplify virtual desktop management during employee onboarding and offboarding.
   Interviewees sought a solution that could streamline the process of deploying and managing virtual machines to reduce IT burden and improve time to productivity for new employees, contractors, and third parties.
   Interviewees stated that Windows 365 provided a simple way to deploy Cloud PCs to any device.
- Support power user workloads. Interviewees' organizations required an agile way to meet the computing needs of power users and their specialized workloads. Interviewees highlighted how Windows 365 enabled them to configure their Cloud PCs with the storage and processing

options to meet specific user needs and quickly update configurations as their needs changed.

- Provide employees with access to apps, files, and data while protecting the business.
   Windows 365 offered the interviewees' organizations an approach that could secure organizational and customer data without sacrificing productivity. Through storing information in the cloud instead of on user devices, Windows 365 enabled the organizations to address prior security concerns associated with physical devices and BYOPC scenarios.
- Enable cost predictability and IT efficiencies compared to VDI. Interviewees' organizations invested in Windows 365 to take advantage of the subscription-based pricing, which provided greater cost predictability than VDI's consumption-based pricing. Further, Windows 365 offered greater IT simplicity in desktop deployment and management compared to the interviewees' prior experiences with VDI. The president at the media and entertainment organization said: "From our perspective, it was the simplicity of it all. [Windows 365] was going to save me time and frustration I experienced with VDI."

"The reason we pushed for Windows 365 with Microsoft Managed Desktop is because we didn't have to grow a massive operations team or security operations team."

Vice president of infrastructure and security

#### 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 four 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 global organization has annual revenues of \$10 billion and 10,000 total employees, growing by 5% every year. The organization employs an additional 2,000 contractors. Contractors have an average attrition rate of 25% and must be replaced each year.

The organization also has a group of 500 power users, including graphic designers, video production staff, developers, and data scientists — all with specialized workload needs. The number of power users grows by 5% per year. Power users have an average attrition rate of 20% and must be replaced each year.

The organization is undergoing rapid growth and makes one acquisition per year. The number of employees joining per acquisition grows by 5% each year, with 150, 158, and 166 new employees joining in Years 1, 2, and 3, respectively.

#### **Key Assumptions**

- \$10 billion annual revenue
- 2,000+ contractors
- 1 acquisition per year; incorporating 150+ new employees each year
- 500+ power users

**Deployment characteristics.** In its prior environment, the composite organization deployed laptop computers to contractors and new employees acquired via M&A activity. M&A employees experienced a delay in corporate access until a desktop computer arrived. Power users only had access to local computing resources.

With Windows 365, the organization launches a BYPOC program for contractors, providing them with Cloud PCs that can be accessed on their own device, avoiding the need to provide them with a laptop. Employees joining through acquisition receive a Cloud PC for two months before they are transitioned to a physical computer. Power users are provided Cloud PCs to support their workload needs.

# **Analysis Of Benefits**

Quantified benefit data as applied to the composite

Tota	Total Benefits										
Atr	IT cost savings for employee onboarding, device maintenance, and offboarding	\$414,159	\$434,867	\$456,655	\$1,305,681	\$1,078,994					
Btr	Improved productivity for power users	\$841,500	\$883,575	\$927,333	\$2,652,408	\$2,191,946					
Ctr	Accelerated M&A employee productivity	\$275,400	\$290,088	\$304,776	\$870,264	\$719,089					
Dtr	Improved contractor productivity through self-service	\$97,200	\$102,060	\$107,163	\$306,423	\$253,224					
Etr	Cost savings through BYOPC enablement	\$433,500	\$455,175	\$478,295	\$1,366,970	\$1,129,619					
	Total benefits (risk-adjusted)	\$2,061,759	\$2,165,765	\$2,274,222	\$6,501,746	\$5,372,872					

#### IT COST SAVINGS FOR EMPLOYEE ONBOARDING, DEVICE MAINTENANCE, AND OFFBOARDING

**Evidence and data.** Interviewees using Windows 365 found that it significantly reduced the IT effort required to provide, maintain, and retrieve PCs for employees, including contractors and third-party employees. Windows 365 simplified machine deployment by eliminating the need to procure and ship physical PCs in these situations and reducing deployment processes. Cloud PCs were also easier to maintain and retrieve from contractors. These efficiencies not only drove cost savings associated with device management for IT but also enabled third-party resources to be productive sooner.

 The vice president of infrastructure and security at the financial services organization shared that Windows 365 streamlined the process of providing contractors, such as offshore developers, with PCs, reducing time to access from three weeks to less than a day. They said: "We were shipping contractors a full physical laptop with our corporate image on it and then doing the onboarding, usually through support tickets. With Windows 365, it's really an email, a secure credential share, and people are up and running rapidly." They also noted how the move reduced laptop retrieval efforts.

"We can rapidly, securely, and cost-effectively deploy Cloud PCs. If we terminate an employee, we can easily shut down access, the machine is gone, and they can't access it anymore."

Vice president of infrastructure and security

 The enterprise architect for digital workplace at the manufacturing organization noted that Windows 365 provided efficiencies for remote IT support. They said: "If the Cloud PC isn't working properly, we can easily redeploy it. If you have a physical device that you need to remotely reset or redeploy, a lot more things can go wrong, and you have less control from a remote standpoint."

 The branch manager of ICT services at the government organization utilized Windows 365 to enable third-party subcontractors to securely access the organization's files and applications, which had previously required a second physical device to be deployed to the subcontractors. By moving to Windows 365, the organization provided its third parties with virtual desktops instead of physical PCs, reducing associated IT management efforts and enabling desktops to be provided faster. They said, "We see this as an ability to fast-track issue someone a desktop, which is a secure zone to share and collaborate with."

# Reduction in PC procurement and deployment effort for IT:



88%

**Modeling and assumptions.** Based on the interviewees' experiences, Forrester assumes the following for the composite organization:

- The fully burdened hourly cost of an IT resource is \$58, or \$121,500 annually.
- The organization onboards 600 contractors in Year 1. The number of contractors onboarded per year grows by 30% each year, with 630 and 662 contractors onboarded in Year 2 and Year 3, respectively.

- In the prior environment, it took 4 hours of IT time to procure and deploy each new machine for a contractor. With Windows 365, this effort takes 30 minutes — an 88% reduction.
- The composite has a total of 2,000 contractors in Year 1. The total grows by 5% each year, with 2,100 and 2,205 total contractors in Year 2 and Year 3, respectively.
- In the prior environment, IT maintenance effort per machine is 2 hours. With Windows 365, IT maintenance time per Cloud PC is 15 minutes an 88% reduction.
- The composite has a 25% annual attrition rate for contractors, with 500, 525, and 551 offboarded in Years 1, 2, and 3, respectively.
- Device recovery time in the prior environment is 4 hours. With Windows 365, Cloud PCs are recovered in 10 minutes — a 96% reduction.

**Risks.** Forrester recognizes that these results may not be representative of all experiences, and the benefit will vary depending on the following factors:

- The actual fully burdened cost of IT resources.
- The number of contractors employed and their attrition rate.
- The rate of deployment to contractors.
- The use of IT services or tools to aid deployment, support, and management.

**Results.** To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$1.1 million.

Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Fully burdened hourly cost of IT resource	TEI standard	\$58	\$58	\$58
A2	Number of contractors onboarded	Composite	600	630	662
A3	IT procurement and deployment effort in prior environment per machine (hours)	Interviews	4.0	4.0	4.0
A4	IT procurement and deployment effort with Windows 365 per machine (hours)	Interviews	0.5	0.5	0.5
A5	Subtotal: Avoided planning and deployment costs (rounded)	A1*A2*(A3-A4)	\$121,800	\$127,890	\$134,386
A6	Number of contractors	Composite	2,000	2,100	2,205
A7	IT maintenance effort in prior environment per machine (hours)	Interviews	2.0	2.0	2.0
A8	IT maintenance effort with Windows 365 per machine (hours)	Interviews	0.25	0.25	0.25
A9	Subtotal: Avoided maintenance costs (rounded)	A1*A6*(A7-A8)	\$203,000	\$213,150	\$223,808
A10	Number of contractors offboarded	Composite	500	525	551
A11	Device recovery time in prior environment (hours)	Interviews	4.0	4.0	4.0
A12	Device recovery time with Windows 365 (hours)	Interviews	0.17	0.17	0.17
A13	Subtotal: Avoided recovery costs (rounded)	A1*A10*(A11-A12)	\$111,157	\$116,715	\$122,495
At	IT cost savings for employee onboarding, device maintenance, and offboarding	A5+A9+A13	\$435,957	\$457,755	\$480,689
	Risk adjustment	↓5%			
Atr	IT cost savings for contractor onboarding, device maintenance, and offboarding (risk-adjusted)		\$414,159	\$434,867	\$456,655
	Three-year total: \$1,305,681	I	hree-year present v	value: \$1,078,994	

#### IMPROVED PRODUCTIVITY FOR POWER USERS

**Evidence and data.** Windows 365 met the performance needs of power users with specialized workload requirements, such as developers and video editors, reducing productivity issues and downtime incurred in their prior environments.

- The president at the media and entertainment organization shared how Windows 365 saved each video editor a minimum of 2 hours per month on activities including file upload/download and video rendering. In the organization's prior environment, video editing staff lacked compute resources necessary for work involving large file sizes and intensive applications, often rendering their desktops unavailable. Windows 365 enabled the organization to easily configure machines with the CPU, RAM, and storage levels appropriate for its staff's work and upgrade configurations as their needs change. As a result, staff can upload, download, and render video files faster, while also being able to use their desktops for other work in the meantime. The interviewee noted how the performance of the Cloud PCs was especially helpful during a large project with a tight timeline, saving 40 hours in one month alone.
- Similarly, the vice president of infrastructure and security at the financial services organization also noted time savings for developers through Windows 365. They explained: "When our Excel developers run their spreadsheets, their computer is not usable. [With Windows 365], now they can let Excel churn away and can keep emailing, accessing our CRM system, and everything like that. It's going to run faster on the virtual machine, and they're going to have a more productive and enjoyable end-user experience."

**Modeling and assumptions.** Based on the interviewees' experiences, Forrester assumes the following for the composite organization:

- The composite organization has 500, 525, and 551 power users, including video production staff, developers, and data scientists, in Years 1, 2, and 3, respectively.
- Each power user avoids 4 hours of downtime per month, totaling 48 labor hours over a year.
- The fully burdened hourly cost of a power user is \$55, or \$114,750 annually.
- A 75% productivity recapture is included.

**Risks.** Forrester recognizes that these results may not be representative of all experiences, and the benefit will vary depending on the following factors:

- The number of power users.
- The severity of downtime incurred in an organization's prior state.
- The actual fully burdened cost of each power user.

**Results.** To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$2.2 million.

Impr	Improved Productivity For Power Users										
Ref.	Metric	Source	Year 1	Year 2	Year 3						
B1	Power users	Composite	500	525	551						
B2	Avoided downtime per power user (hours)	Interviews	48	48	48						
B3	Fully burdened hourly cost of power user	TEI standard	\$55	\$55	\$55						
B4	Productivity recapture	TEI standard	75%	75%	75%						
Bt	Improved productivity for power users	B1*B2*B3*B4	\$990,000	\$1,039,500	\$1,090,980						
	Risk adjustment	↓15%									
Btr	Improved productivity for power users (risk-adjusted)		\$841,500	\$883,575	\$927,333						
	Three-year total: \$2,652,408		Three-year preser	nt value: \$2,191,946	5						

#### ACCELERATED M&A EMPLOYEE PRODUCTIVITY

**Evidence and data.** The manufacturing organization leveraged Windows 365 during its recent acquisitions to improve time to productivity for new employees. The enterprise architect for digital workplace at that organization noted how employees joining through acquisition experienced a lag of three weeks before they could gain access to corporate resources due to challenges in procuring and shipping hardware. With the move to Windows 365, the organization effectively recaptured lost productivity for newly acquired employees with the ability to deploy Cloud PCs within a few hours.

**Modeling and assumptions.** Based on the interviewees' experiences, Forrester assumes the following for the composite organization:

- The composite organization incorporates 150, 158, and 166 new employees through acquisition in Years 1, 2, and 3, respectively.
- Each employee experiences three weeks, or 120 hours, of additional productivity by gaining access to a Cloud PC instead of waiting for a laptop to be procured, imaged, and shipped to them.
- The fully burdened hourly cost of a general business resource is \$36, or \$74,250 annually.
- Forrester assumes a 50% productivity recapture to account for work that an employee may still be able to execute without a Cloud PC.

"I would definitely say we save a ton of time once an acquisition kicks off. With Windows 365, we can easily deploy the minute it's really needed, and we don't need to take that three weeks' time into account anymore. In some cases, it was up to a few months before the partner could deliver the hardware. So we've seen huge benefits."

Enterprise architect for digital workplace, manufacturing

**Risks.** Forrester recognizes that these results may not be representative of all experiences, and the benefit will vary depending on the following factors:

- The frequency of acquisitions and number of employees incorporated.
- The actual fully burdened cost of employees joining through acquisition.

**Results.** To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$719,000.

Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	New employees from acquisition	Composite	150	158	166
C2	Additional productive hours saved for new employees	Interviews	120	120	120
C3	Fully burdened hourly cost of a general business resource	TEI standard	\$36	\$36	\$36
C4	Productivity recapture	TEI standard	50%	50%	50%
Ct	Accelerated M&A employee productivity	C1*C2*C3*C4	\$324,000	\$341,280	\$358,560
	Risk adjustment	<b>↓15%</b>			
Ctr	Accelerated M&A employee productivity (risk- adjusted)		\$275,400	\$290,088	\$304,776
	Three-year total: \$870,264		Three-year preser	nt value: \$719,089	

#### IMPROVED CONTRACTOR PRODUCTIVITY THROUGH SELF-SERVICE

**Evidence and data.** Interviewees found that resolving issues with Windows 365 was significantly easier than it had been in their prior environments, leading to avoided downtime for users. In particular, self-service tools empowered users to troubleshoot issues and their reset their machines if necessary, helping them to avoid downtime and reducing the need to contact IT for support. The branch manager of ICT services for a government organization said: "Self-help means fewer calls to the service desk and level 2 teams to help troubleshoot or fix hung sessions or virtual desktops. Users restart them quickly themselves. They prefer this approach, and the user experience is much preferred."

**Modeling and assumptions.** Based on the interviewees' experiences, Forrester assumes the following for the composite organization:

• Each contractor avoids 2 hours of downtime per year through Windows 365.

- The composite organization employs 2,000, 2,100, and 2,205 contractors in Years 1, 2, and 3, respectively.
- The fully burdened hourly cost of a contractor is \$36, or \$74,250 annually.
- A 75% productivity recapture is applied to account for other work that may be accomplished while waiting for IT resolution.

**Risks.** Forrester recognizes that these results may not be representative of all experiences, and the benefit will vary depending on the following factors:

- The number of contractors and their fully burdened cost.
- The frequency and severity of downtime in the prior environment.

**Results.** To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$253,000.

Impro	mproved Contractor Productivity Through Self-Service										
Ref.	Metric	Source	Year 1	Year 2	Year 3						
D1	Avoided downtime per contractor per year (hours)	Interviews	2	2	2						
D2	Number of contractors	Composite	2,000	2,100	2,205						
D3	Fully burdened hourly cost of a contractor	TEI standard	\$36	\$36	\$36						
D4	Productivity recapture	TEI standard	75%	75%	75%						
Dt	Improved contractor productivity through self-service	D1*D2*D3*D4	\$108,000	\$113,400	\$119,070						
	Risk adjustment	↓10%									
Dtr	Improved contractor productivity through self-service (risk-adjusted)		\$97,200	\$102,060	\$107,163						
	Three-year total: \$306,423		Three-year present v	alue: \$253,224							

#### COST SAVINGS THROUGH BYOPC ENABLEMENT

**Evidence and data.** Interviewees experienced cost savings with Windows 365 by providing Cloud PCs to contractors instead of physical devices.

 The vice president of infrastructure and security at the financial services organization noted that Windows 365 enabled their organization to cease procuring and shipping laptops to contractors, addressing prior challenges with cost, logistics, and security.

"Our risk organization mandated that we stop shipping hardware overseas, and we needed to come up with a solution. Now, for third parties or contractors, we're not shipping hardware, whether it be overseas or in North America. We're giving them a Windows 365 virtual machine."

Vice president of infrastructure and security

 Similarly, the enterprise architect for digital workplace at the manufacturing organization said: "We don't hand out a physical device to an external consultant anymore. A good business laptop costs about €1,000, which you write off over three years. If you compare that amount of money against the cost of Windows 365, it's costeffective to provide a Cloud PC versus a physical laptop."  The president of a media and entertainment organization also experienced hardware savings. They shared: "We used to have a lab with machines in it to demo recordings, write scripts, and things like that. All those machines are gone, and they're Windows 365 Cloud PCs now. I haven't had to buy a machine in a year now. I would normally have bought probably five or six machines at this point in the year. That's \$10,000 in machines laying around that don't need to be bought anymore."

**Modeling and assumptions.** Based on the interviewees' experiences, Forrester assumes the following for the composite organization:

- The composite organization employs 600, 630, and 662 new contractors in Years 1, 2, and 3.
- The composite organization avoids purchasing a \$1,500 laptop for each new contractor.
- The composite organization provides a \$750 stipend to contractors to purchase a laptop.
- The composite organization avoids \$100 in shipping costs per device.

**Risks.** Forrester recognizes that these results may not be representative of all experiences, and the benefit will vary depending on the following factors:

- The number of contractors joining the organization.
- The cost of a standard laptop and shipping.
- An organization may choose to not provide a stipend to contractors for the purchase of a laptop. In this case, the hardware cost savings would be larger. The financial modeling for this scenario can be referenced in <u>Appendix B</u>.

**Results.** To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$1.1 million.

Ref.	Metric	Source	Year 1	Year 2	Year 3
E1	Avoided laptops for contractors	Composite	600	630	662
E2	Cost of a standard laptop	Interviews	\$1,500	\$1,500	\$1,500
E3	BYOPC budget for contractors	Interviews	\$750	\$750	\$750
E4	Shipping cost per device	Interviews	\$100	\$100	\$100
Et	Cost savings through BYOPC enablement	E1*(E2-E3+E4)	\$510,000	\$535,500	\$562,700
	Risk adjustment	↓15%			
Etr	Cost savings through BYOPC enablement (risk- adjusted)		\$433,500	\$455,175	\$478,295
	Three-year total: \$1,366,970		Three-year presen	t value: \$1,129,619	

#### **UNQUANTIFIED BENEFITS**

Interviewees mentioned the following additional benefits that their organizations experienced but were not able to quantify:

Improved security posture. Interviewees improved security controls and reduced the risk of data leaks with Windows 365 by centralizing data and user access within the cloud versus at the device level. The vice president of infrastructure and security at the financial services organization noted, "It's really a clean separation between corporate and personal or corporate and third-party assets that delineates 'This is us; this is you; they don't talk to each other.'"

Interviewees could also utilize their security tools on employees' Cloud PCs, enabling third-party employees to access data and applications on their personal or corporate devices while ensuring proper security controls. The president at the media and entertainment organization said, "We're able to use all of our security tools because we're targeting Windows 365 Cloud PCs with those tools, whereas before we couldn't target personal devices with them."

"People can access sensitive information through Cloud PCs in a way that protects my business. We can't fail on security."

### President, media and entertainment

 Greater cost predictability and IT savings compared to VDI. Interviewees noted that the subscription-based pricing of Windows 365 provided greater cost predictability compared to past experiences with the consumption-based pricing of VDI solutions. Additionally, interviewees found that Windows 365 was significantly less complex to manage than VDI options.

Describing cost predictability, the branch manager of ICT services at the government agency shared: "The cost control and predictability is awesome. I know what I'm going to spend based on my user accounts rather than trying to guess 100 grand a month here or there. No one likes to be a million dollars out when it comes in the budget year with no explanation. Cost control is a benefit because it's a licensed product with dedicated resources."

The president at a media and entertainment organization noted several IT efficiencies compared to VDI: "If someone was getting a virtual machine through VDI, it's not just the act of provisioning that user that is laborious. It's the ongoing maintenance of these images and these deployments. It's a laborious process to keep all of that updated and current, and with Cloud PC, it's not."

• Improved user experience and accessibility options. Interviewees highlighted several ways in which Windows 365 provided a better user experience than their prior approaches.

The vice president of infrastructure and security at the financial services organization appreciated having the ability to access Cloud PCs on any device through a web browser. They said, "I think the flexibility of the platform to be accessible from really any web browser, anywhere, is a big win for business continuity and a big win for ease of access."

A branch manager of ICT services at the government organization noted that before Windows 365, subcontractors had to use two laptops to accomplish their work. The organization created a more seamless user experience by enabling subcontractors to access their Cloud PCs through their host organization device.

The branch manager also shared how Windows 365 helped support the application requirements of employees with accessibility needs, which had previously been a challenge with VDI. They said: "The ability to use 100% of accessibility software and products because of dedicated resourcing in the way that the product works is the number one benefit. You can't achieve that in the other pooled-resource platforms."

 Flexibility for user-level computing needs. Windows 365 provided interviewees with the ability to configure Cloud PCs with the CPU, RAM, and storage levels required for each user's workload needs and update configurations as needs changed. Interviewees appreciated the flexibility and agility enabled by the configurability.

The enterprise architect for digital workplace at the manufacturing organization shared: "We use two different Cloud PC configurations: one with 2 vCPU and one with 4 vCPU. The four vCPU is for employees that need a lot of computing power, like accounting staff that live and eat Excel for breakfast. Others require less. I myself use the 2 vCPU, and I'm very happy with it."

The vice president of infrastructure and security at the financial services organization said: "In the past, we have sent assets that were specced for what employees were working on, but we'd find out they need more computing power. We'd have to ship back the machine and then procure and image a new machine to fit their requirements. With Windows 365, it's a button in the portal, and we can say, 'Let's upgrade these to a power profile." • Remote worker productivity. The president at the media and entertainment organization shared that Windows 365 enabled remote workers to be productive from a variety of locations. They said: "One of the great things that employees like about working for us is we are remote. We do have people that don't have a home that they're at every day of the year and don't have the best internet connections in the world. And so, for them, Windows 365 Cloud PC was the only way they were going to move these files around."

> "Previously, subcontractors had two laptops: one from us and one from the host organization. Now instead of having two laptops, we can now just provide them with a Cloud PC."

Branch manager for ICT services, government

#### FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Windows 365 and later realize additional uses and business opportunities, including:

 Reduced TCO through thin clients and longer laptop depreciation. The vice president of infrastructure and security at the financial services organization saw an opportunity to utilize Cloud PCs on thin clients to reduce costs. They shared: "In the future, I'll be able to give everyone a thin client that can do basic things and won't have a lot of power, but the real work is going to happen on the Cloud PC. So I can depreciate assets hopefully over a longer period of time. Number one, my total cost of ownership on devices will be far less. Also, my user experience when hardware failures occur will be substantially better because I can easily give them another one."

 Added M&A use cases. The enterprise architect for digital workplace at the manufacturing organization planned to use Windows 365 to enable employees to access resources held on the networks of its acquired entities. They explained: "The company we bought had such a bad infrastructure because they've been eating other companies themselves, and we were not going to connect to it. Instead, we are going to give employees access to a Cloud PC on the old network so they can still access whatever information they need there."

Flexibility would also be quantified when evaluated as part of a specific project (described in more detail in <u>Appendix A</u>).

# **Analysis Of Costs**

Quantified cost data as applied to the composite

#### **Total Costs**

Ftr	Windows 365 subscription costs	\$0	\$1,392,300	\$1,461,956	\$1,534,864	\$4,389,120	\$3,627,121
Gtr	Deployment, ongoing management, and training costs	\$12,758	\$134,699	\$52,627	\$53,091	\$253,175	\$218,593
	Total costs (risk-adjusted)	\$12,758	\$1,526,999	\$1,514,583	\$1,587,955	\$4,642,295	\$3,845,714

#### WINDOWS 365 SUBSCRIPTION COSTS

**Evidence and data.** Windows 365 includes several offerings, with multiple Cloud PC configurations based on performance needs at varying price points. The interviewees' organizations purchased Windows 365 as a separate license per user for a fixed monthly fee to access and use each Cloud PC.

- The branch manager of ICT services at the government organization primarily provided Cloud PCs to 5,000 subcontractors.
- The vice president of infrastructure and security provided Cloud PCs to contractor resources and internal power users.
- The enterprise architect for digital workplace
  purchased

2 vCPU Cloud PC configurations for standard users and 4 vCPU configurations for power users with greater computing needs.

 The president at the media and entertainment organization provided Cloud PCs to internal power users and contractors.

**Modeling and assumptions.** Based on the interviewees' experiences, Forrester assumes the following for the composite organization:

 The composite organization provides Windows 365 licenses to each contractor and power user during each month of the year. Employees joining the organization through acquisition receive Windows 365 licenses for two months before being transferred to a local PC.

- The organization's contractors and acquired employees receive standard Windows 365 licenses. Power users receive premium licenses at a higher monthly cost.
- In total, the composite organization spends \$3.6 million in Windows 365 licensing costs over three years. Forrester has modeled a detailed breakdown of subscription costs, including user cost per month, which can be referenced in <u>Appendix B</u>.
- Pricing may vary. Contact Microsoft for additional details.

**Risks.** Forrester recognizes that these results may not be representative of all experiences, and the benefit will vary depending on the following factors:

- The number of Cloud PC users and rate of deployment.
- The performance needs of users and the Cloud PC configuration chosen.

**Results.** Due to the limited number of risks identified, Forrester assigned a risk adjustment of 0% and did not adjust this cost upward, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$3.6 million.

Winc	Windows 365 Subscription Costs									
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3				
F1	Windows 365 subscription costs	Interviews		\$1,392,300	\$1,461,956	\$1,534,864				
Ft	Windows 365 subscription costs	F1		\$1,392,300	\$1,461,956	\$1,534,864				
	Risk adjustment	0%								
Ftr	Windows 365 subscription costs (risk-adjusted)		\$0	\$1,392,300	\$1,461,956	\$1,534,864				
	Three-year total: \$4,389,120		Three-y	ear present valu	ie: \$3,627,121					

# DEPLOYMENT, ONGOING MANAGEMENT, AND TRAINING COSTS

**Evidence and data.** The interviewees noted that the initial deployment process and ongoing management for Windows 365 required minimal IT effort. Additionally, new users required minimal training.

- The enterprise architect for digital workplace at the manufacturing organization noted that the organization's initial proof of concept took three weeks to get up and running. The majority of the effort included administrative work to provide users with access rights.
- Interviewees highlighted that Windows 365 could be deployed to a new user within hours, reducing costs for ongoing management. The enterprise architect for digital workplace shared that they had two IT support FTEs responsible for ongoing management, while the vice president of infrastructure and security at the financial services organization allocated 50% of an IT support FTE's time for ongoing management.
- The branch manager for ICT services at the government organization said that each new Windows 365 user required less than 15 minutes of training.

Training time per new user:

15 minutes



**Modeling and assumptions.** Based on the interviewees' experiences, Forrester assumes the following for the composite organization:

- One IT resource dedicates 10% of their time to an initial proof of concept.
- Two IT resources dedicate 40% of their time to planning and deployment in Year 1. The time

dedicated to planning and deployment drops to 15% for each FTE in Years 2 and 3. The two IT resources also spend 2% of their time on user support each year.

- Each new Windows 365 user receives 15 minutes of training.
- The composite organization trains 2,000, 630, and 662 contractors in Years 1, 2, and 3, respectively.
- The composite organization trains 150, 158, and 166 acquired employees in Years 1, 2, and 3, respectively.
- The composite organization trains 500, 525, and 551 power users in Years 1, 2, and 3, respectively.

**Risks.** Forrester recognizes that these results may not be representative of all experiences, and the benefit will vary depending on the following factors:

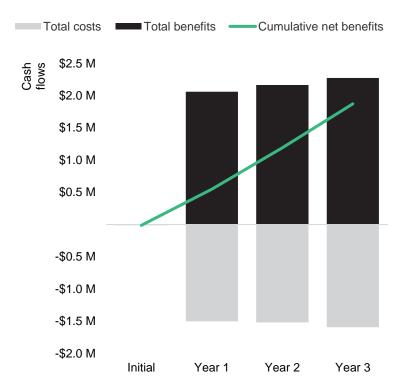
- The complexity and length of the deployment.
- The number and costs of FTE efforts dedicated to deployment and ongoing management.
- User training requirements.
- Actual fully burdened costs of users.

**Results.** To account for these risks, Forrester adjusted this cost upward by 5%, yielding a three-year, risk-adjusted total PV of \$219,000.

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
G1	Number of FTEs managing Windows 365	Interviews	1	2	2	2
G2	Percentage of time spent on planning and deployment	Interviews	10%	40%	15%	15%
G3	Percentage of time spent on user support	Interviews		2%	2%	2%
G4	Fully burdened annual cost of IT resource	TEI standard	\$121,500	\$121,500	\$121,500	\$121,500
G5	Subtotal: Deployment and support costs	G1*(G2+G3)*G4	\$12,150	\$102,060	\$41,310	\$41,310
G6	Training time per new user (hours)	Interview		0.25	0.25	0.25
G7	Contractors receiving training	Composite		2,000	630	662
G8	Newly acquired employees receiving training	Composite		150	158	166
G9	Fully burdened hourly cost of a contractor or newly acquired employee (rounded)	TEI standard		\$36	\$36	\$36
G10	Power users receiving training	Composite		500	125	131
G11	Hourly burdened cost of power user (rounded)	TEI standard		\$55	\$55	\$55
G12	Subtotal: Training costs	G6*((G7+G8)*G9+ G10*G11)		\$26,225	\$8,811	\$9,253
Gt	Deployment, ongoing management, and training costs	G5+G12	\$12,150	\$128,285	\$50,121	\$50,563
	Risk adjustment	<u></u> †5%				
Gtr	Deployment, ongoing management, and training costs (risk-adjusted)		\$12,758	\$134,699	\$52,627	\$53,091
	Three-year total: \$253,175		Three-ye	ar present valu	ıe: \$218,593	

# **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	(\$12,758)	(\$1,526,999)	(\$1,514,583)	(\$1,587,955)	(\$4,642,295)	(\$3,845,714)
Total benefits	\$0	\$2,061,759	\$2,165,765	\$2,274,222	\$6,501,746	\$5,372,872
Net benefits	(\$12,758)	\$534,760	\$651,182	\$686,266	\$1,859,451	\$1,527,158
ROI						40%
Payback period (months)						<6

# 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: Supplemental Material

Cost Savings Through BYOPC Enablement (No Stipend)											
Ref.	Metric	Source	Year 1	Year 2	Year 3						
XX1	Avoided laptops for contractors	Composite	600	630	662						
XX2	Cost of standard laptop	Interviews	\$1,500	\$1,500	\$1,500						
XX3	Shipping cost per device	Interviews	\$100	\$100	\$100						
XXt	Cost savings through BYOPC enablement (no stipend)	XX1*(XX2+XX3)	\$960,000	\$1,008,000	\$1,059,200						
	Risk adjustment	<b>↓15%</b>									
XXtr	Cost savings through BYOPC enablement (No stipend) (risk-adjusted)		\$816,000	\$856,000	\$900,320						
	Three-year total: \$2,573,120		Three-year present value: \$2,126,341								

Windows 365 Subscription Costs									
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3			
XX1	Standard user cost per month	Interviews		\$41	\$41	\$41			
XX2	Premium user cost per month	Interviews		\$66	\$66	\$66			
XX3	Contractors using Windows 365	Composite		2,000	2,100	2,205			
XX4	Subtotal: Annual Windows 365 licensing costs for contractors	12*XX1*XX3		\$984,000	\$1,033,200	\$1,084,860			
XX5	Employees acquired each year	Composite		150	158	166			
XX6	Subtotal: Windows 365 licensing costs for acquired employees	2*XX1*XX5		\$12,300	\$12,956	\$13,612			
XX7	Power users	Composite		500	525	551			
XX8	Subtotal: Improved contractor productivity through self-service	12*XX2*XX7	•	\$396,000	\$415,800	\$456,392			
XXt	Windows 365 subscription costs	XX4+XX6+XX8	\$0	\$1,392,300	\$1,461,956	\$1,534,864			
	Risk adjustment	0%							
XXtr	Windows 365 subscription costs (risk-adjusted)		\$0	\$1,392,300	\$1,461,956	\$1,534,864			
	Three-year total: \$4,389,120	Thre	Three-year present value: \$3,627,121						

# **Appendix C: Endnotes**

<sup>1</sup> Source: "Tackle Your Digital Workplace Challenges With Forrester's Scenario Quick Start Cards," Forrester Research, Inc., December 22, 2022

<sup>2</sup> 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.

<sup>3</sup> Source: "Master The Messy Middle Of Hybrid," Forrester Research, Inc., September 28, 2022

<sup>4</sup> Source: "The Forrester Tech Tide™: End-User Computing, Q1 2023," January 27, 2023

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