

FORRESTER®

The Total Economic Impact™ Of Windows 11 Pro Devices

Cost Savings And Business Benefits
Enabled By Windows 11 Pro Devices

DECEMBER 2022

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Executive Summary

Employee expectations for flexibility in where and how they work have risen, and organizations are working to meet these expectations.¹ In a Forrester global survey, 66% of business and technology professionals said enabling a hybrid or “anywhere work” environment is a high priority during the next 12 months. Yet a hybrid approach poses security and logistical challenges. To meet these challenges, organizations need future-fit devices that empower employee flexibility while protecting business security.

Windows 11 is the latest release of Microsoft’s Windows operating system (OS). Devices running Windows 11 have access to its new features focusing on: 1) security, 2) IT management efficiency, and 3) productivity and collaboration. Windows 11 is what Microsoft calls the most secure version of Windows yet. It leverages the latest hardware-based protections found within Windows 11 Secured-core PC devices, including a trusted module platform (TPM) 2.0 chip and, depending on the device, a Microsoft Pluton security processor. Productivity and collaboration at organizations is enhanced by new silicon chips, up-to-date Bluetooth and Wi-Fi capabilities, enhanced touch screen and screen resolution, extended battery life, better cameras and audio quality, and USB-C connections that support USB 4.0.

Microsoft commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) commercial customers may realize by deploying [Windows 11 devices](#).² The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Windows 11 devices on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed five representatives at five organizations with experience using new Windows 11 Pro devices. For the purposes of this study, Forrester aggregated the interviewees’ experiences and combined the results

KEY STATISTICS



Return on investment (ROI)
250%



Net present value (NPV)
\$1.75M

into a single [composite organization](#) that generates \$1 billion in annual revenue, has 2,000 employees, refreshes hardware on a four-year cycle, and migrates the entirety of its workforce to Windows 11 devices.

Interviewees’ organizations had relied on Windows 10 as their primary OS for work devices. Each planned to migrate to Windows 11 to future-proof their business against any potential setbacks, specifically in regard to security, hybrid work, and integrations with new technology architecture (e.g., cloud services and microservices). Critically, deploying more Windows 11 devices alongside existing Windows 10 devices will help organizations avoid a mass migration that would entail hours of IT and security time all at once, in when Microsoft support for Windows 10 ends in October 2025.³

Interviewed decision-makers said they had to choose between upgrading existing Windows 10 machines that are eligible for Windows 11⁴ or purchasing new

laptops or desktops preinstalled with Windows 11. Key factors that influenced new Windows 11 device purchases were the inclusion of a required chip for TPM 2.0 to meet higher security standards as well as aging devices falling behind in computing power to support Windows 11.

Deployment of Windows 11 Pro devices went smoothly because IT teams did not have to adopt any new device management tools; they could monitor both Windows 10 and Windows 11 devices from the same tool. Employees acclimated quickly to the new OS user interface and continued to collaborate with colleagues who had yet to receive new devices in the same apps without interruption.

Interviewees' organizations saw incremental gains in security protection and productivity improvements across security and IT teams through hardware support for security features. In particular, hybrid workers and power users benefitted from enhanced collaboration and productivity features as well as new device hardware. Buyers also recognized cost savings related to strengthened security features and offloaded legacy security solutions.

KEY FINDINGS

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

- **Improvement in risk profile against security threats.** Windows 11 devices arrive with more modern CPUs and recommended security features turned on by default, they leverage TPM 2.0 for hardware root of trust, they secure boot and BitLocker drive encryption, and they are often further secured by the advanced processor capabilities in Secured-core PCs. This helps security employees ensure reliable protection against security threats. While leveraged alongside third-party security software, the composite organization reduces the risk of a successful security attack by 20% on Windows 11 devices.
- **Increased productivity for security and IT teams.** Security teams eliminate manual work around device management with features like virtualization-based security (VBS), hypervisor-protected code integrity (HVCI), and secure boot built-in and enabled by default. In fact, the composite's security team sees improved performance around VBS work as a result of new hardware and increases its productivity by 20%. In addition, the off-the-shelf nature of Windows 11 devices with security features turned on by default and various self-service features reduces the number of incoming help desk tickets the composite's IT department receives over time by 80%.
- **Accelerated deployment and provisioning of devices.** The IT department spends less time checking on compliance and compatibility of solutions with Windows 11 because it's compliant with an extended list of security solutions and offers the same application compatibility as Windows 10. Meanwhile, hardware checks are forgone because new device hardware doesn't sacrifice performance to support security features that are turned on by default. Deployment of Windows 11 devices at the composite organization is 25% more time-efficient compared to deployment of other devices.
- **Incremental end-user productivity.** The new features in Windows 11 and new hardware increase productivity for employees. Snap layouts for personalized desktop organization increase productivity, multitasking apps in snap custom layouts avoids slowdowns from new PC chips, and AI enhancements for smoother video calls are reinforced by new cameras and speakers. The familiarity of the Windows user interface enables the composite's employees to continue working smoothly without interruptions. Employees there are 15% more productive with Windows 11 devices.

- **Avoided costs of legacy technology.** After adopting Windows 11 devices and experiencing the value of its security features, the composite organization offloads redundant software solutions. While the change takes a few years to implement as device adoption spreads throughout the organization, 4% of security software spend is reduced by Year 3.

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

- **Consistent admin and end-user satisfaction.** Having consistency between Windows 10 and Windows 11 makes for a smooth integration process without surprises for IT employees. Similarly, end users continue working without any surprises or technical setbacks while welcoming application compatibility similar to Windows 10, faster boot-up speeds, and enhanced audio and video quality for improved virtual meetings.
- **Deep integration with the cloud, Microsoft ecosystem, and other solutions.** With organizations operating primarily out of the cloud, IT teams use Microsoft Intune to help avoid custom configurations of all Windows 11 devices so that each device arrives outfitted with access to applications, recent updates and patches, file syncs and registration with Azure Active Directory (AAD) for single sign-on logins. (Microsoft Intune is not part of the Windows 11 Pro license and requires a separate license.) The TPM management console also helps IT employees monitor integrations and identify the root of issues that could cause security events, helping them avoid building APIs or bringing in outside support to keep integrations error-free.
- **Future-proofing technology.** Interviewees said they feel more secure for building toward full-cloud operations and protecting their organizations against phishing scams or security risks. With a significant portion of work taking

place remotely, their organizations' decision-makers felt sure that employees could maintain performance levels for day-to-day work. What's more, migrating to Windows 11 over time will help avoid a mass migration all at once when Microsoft support for Windows 10 ends in 2025.

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

- **Initial planning and implementation costs.** A small team at the composite organization pilots Windows 11 devices for a few weeks to make sure they are working correctly while a team assists with planning and deployment of the devices to more employees and ensures that integrations are working correctly and that endpoints are securely encrypted. The cost of Windows 11 devices over the composite's previously budgeted costs for Windows 10 devices are factored into new-device costs.
- **Ongoing deployment costs.** As the organization allocates new devices 25%, the IT team configures settings and OS features to match with other deployed devices. Employees also spend a small amount of time acclimating to Windows 11's new user interface.

The representative interviews and financial analysis found that a composite organization experiences benefits of \$2.45 million over three years versus costs of \$702,000, adding up to a net present value (NPV) of \$1.75 million and an ROI of 250%.

This study primarily analyzes the value of improvements for Windows 11 devices recognized since moving on from devices with Windows 10. Moving to Windows 11 from devices running older Windows OS (including Windows 8 and Windows 7) will likely produce a higher ROI than what is represented for the composite organization due to a greater number of new features (to the adopting organization) being available.



ROI
250%



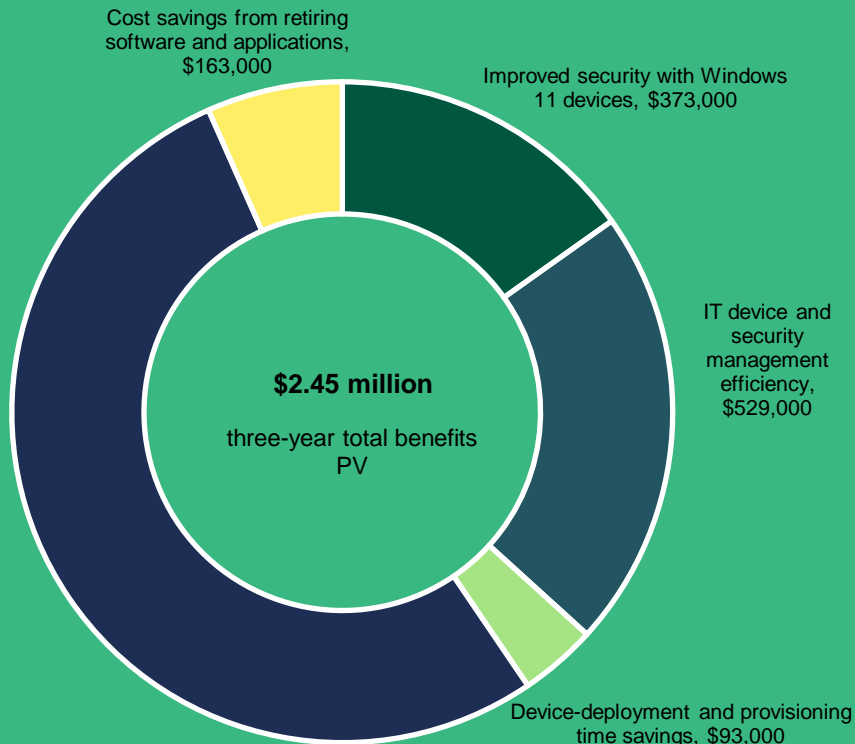
BENEFITS PV
\$2.45M



NPV
\$1.75M



PAYBACK
<6 months



End-user benefits:
53% of total

Security and IT benefits:
47% of total

“From a performance perspective, [Windows 11 has] better computers and a better OS. As we drive more of our work into the cloud, Windows 11 is well-tailored for that environment from both a technical and security standpoint.”

— Chief technology officer, manufacturing

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 Windows 11 Pro devices.

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 11 Pro devices can have on an organization.

Forrester Consulting conducted an online survey of 351 cybersecurity leaders at global enterprises in the US, the UK, Canada, Germany, and Australia. Survey participants included managers, directors, VPs, and C-level executives who are responsible for cybersecurity decision-making, operations, and reporting. Questions provided to the participants sought to evaluate leaders' cybersecurity strategies and any breaches that have occurred within their organizations. Respondents opted into the survey via a third-party research panel, which fielded the survey on behalf of Forrester in November 2020. Data referenced in this study is based on a subset of data for organizations with 5,000 or more employees.

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 11 devices.

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 11 Pro devices.



INTERVIEWS

Interviewed five representatives at organizations using Windows 11 Pro devices 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 11 Pro Devices Customer Journey

Drivers leading to the Windows 11 Pro devices investment

Interviews				
Role	Industry	Region	Number of employees	Refresh rate of Windows devices
Chief technology leader	Technology	HQ in North America, global operations	170,000+	Every 2 years since receiving device
Chief information security officer	IT services	HQ in North America, global operations	5,500+	Every 3 years since receiving device
Director of corporate IT operations	Manufacturing	HQ in North America, global operations	45,000+	25% every year
Head of information system department	Manufacturing	HQ in Asia Pacific	2,000+	25% every year
Chief technology officer	Manufacturing	HQ in North America, global operations	60,000+	Every 3 years since receiving device

KEY CHALLENGES

Prior to adopting Windows 11 Pro devices, interviewees' organizations primarily used Windows 10 devices with only some teams using non-Windows OS devices. They only planned migration to Windows 11 for current Windows users.

The organizations planned to eventually migrate to the new OS by the end of support for Windows 10 in 2025, but they elected to purchase new Windows 11 Pro devices now for the following reasons:

- **Preparedness for future technology compatibility and potential security threats.** Evolving security standards and hardware requirements with cloud services, microservices, and other software necessitated the organizations to upgrade devices to meet compatibility and security goals. While they could leverage several of Windows 10 security features options available in Windows 11 like BitLocker Drive Encryption, Microsoft Defender SmartScreen, and Virtualization-based security (VBS) among others, they were not turned on by default in Windows 10.⁵ An increase in hybrid and remote work and the older age of end users' devices didn't guarantee support to run these features while maintaining performance stability.

“Security was a big reason for us to upgrade. We’ve been putting an emphasis on cybersecurity phishing since we’re working more virtually and remote. Microsoft Defender and BitLocker have driven early benefits for us with the rollout of new devices.”

Chief technology officer, manufacturing

In addition, the organizations looked to be further future-fit by starting their migrations to Windows 11 now to remove the future pressure of a single mass migration that would require hours of maintenance and potential downtime to ensure a smooth transition.

- **Maintaining consistent performance with devices.** As interviewees planned their organizations' investments in Windows 11, they had to choose between updating eligible Windows 10 devices or purchasing new Windows

11 devices. In the past, interviewees successfully helped their organizations navigate updating machines' OS without adopting new hardware. However, while employees could leverage the latest features of an upgraded Windows OS on an older device, there was feedback of slow-computer performance when booting and juggling multiple applications after the change. As a result, interviewees' organizations ended up spending more money purchasing new or expanded memory to enable smooth work experiences and maintain employee productivity levels.

- **Hybrid-work technical issues.** Interviewees said their organizations have faced various challenges since adopting hybrid approaches to work in 2020. For example, reliance on virtual meetings meant employees needed better-quality cameras and microphones as well as support for new Wi-Fi standards (e.g., Wi-Fi 6E) to ensure no technical disruptions occurred.

INVESTMENT OBJECTIVES

Interviewees' organizations were looking for Windows 11 devices to help them:

- Provide up-to-date security features that protect devices across hybrid and remote work.
- Support organizational moves to cloud services and other software.
- Accelerate deployment of devices, new features, and patches to end users.
- Equip end users with new devices from original equipment manufacturers (OEM) featuring the latest in hardware features to provide consistent, streamlined performance.
- Avoid mass migration to Windows 11 in 2025 when Microsoft ends support for Windows 10.

“Our company wants to try new features with Windows 11 devices as it will enhance our innovation culture. We’re currently focusing on the new devices adding value to our Zero Trust strategy.”

Head of information system department, manufacturing

COMPOSITE ORGANIZATION

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the five 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. A global organization with \$1 billion in annual revenue and 2,000 total employees. A majority of operations are cloud-based with some teams still migrating to the cloud.

Deployment characteristics. The composite organization migrates Windows 10 users to new desktops and laptops with Windows 11. Its organization refresh rate for devices is four years. Thirty percent of users receive a new device in Year 1, and this doubles to 60% in Year 2 before reaching 80% (1,600 employees) in Year 3. Adoption of Windows 11 Pro devices starts with 2.5% of total employees involved in a pilot phase for less than a month. During the first year, the composite's IT team ensures that its systems are integrated and compatible with Windows 11 Pro devices.

Key Assumptions

- **\$1 billion in annual revenue**
- **2,000 total employees**
- **4-year hardware refresh cycle**
- **Migrates to Windows 11 devices**

Analysis Of Benefits

■ Quantified benefit data as applied to the composite

Total Benefits						
Ref.	Benefit	Year 1	Year 2	Year 3	Total	Present Value
Atr	Improved security with Windows 11 devices	\$81,600	\$163,200	\$217,600	\$462,400	\$372,544
Btr	IT device and security management efficiency	\$205,469	\$213,221	\$221,054	\$639,744	\$529,087
Ctr	Device-deployment and provisioning time savings	\$40,770	\$41,580	\$28,260	\$110,610	\$92,659
Dtr	End-user productivity	\$221,077	\$593,385	\$806,650	\$1,621,112	\$1,297,428
Etr	Cost savings from retiring software and applications	\$44,581	\$66,871	\$89,162	\$200,614	\$162,782
	Total benefits (risk-adjusted)	\$593,497	\$1,078,257	\$1,362,726	\$3,034,480	\$2,454,500

IMPROVED SECURITY WITH WINDOWS 11 DEVICES

Evidence and data. The severity of security breaches can have a longstanding impact. According to a Forrester survey of global security decision-makers, at least 70% of respondents saw their organization’s mean time to detect, respond, eradicate, and recovery to an incident each take longer than seven days on average to complete.⁶ Windows 11 devices are optimized to support the OS’ full suite of security features. Interviewees said they did not see any performance issues when running its security features due to the performance of new silicon chips, and they were able to further strengthen protection of their organizations as a result.

Interviewees emphasized that the unique architecture of Secured-core PCs (the primary type of Windows 11 device purchased) and, in some cases, Secured-core PCs with a Microsoft Pluton security processor added a layer to the security architecture that made their organizations’ devices harder to target thanks to additional protection against firmware attacks. For interviewees at organizations with teams in privacy and sensitive data-related operations (e.g., finance,

“With BitLocker in the context of devices having chips supporting TPM 2.0, the integration works especially better from a security perspective. If you don’t have endpoints encrypted effectively or configured correctly, data attacks could be more successful.”

Chief technology leader, technology

healthcare, and government organizations), this extra layer of protection proved especially valuable.

The security of Windows 11 devices proved itself in a number of ways. The chief technology leader at technology company shared that Windows 11’s HVCI helped ensure the proper binaries were in place to protect memory processes from security attacks. Although features like this are also available on Windows 10, interviewees said they feel that

Windows 11 devices from OEMs are more secure because they are built to support these Windows security features turned on by default in the OS.

The chief technology leader at the technology company said that since Windows 11 devices arrive with chips for TPM 2.0 enabled, it helped on the integration side when encrypting endpoints through BitLocker. Encryption keys are stored securely inside of TPM 2.0 and, when factoring in Windows 11's Secure Boot feature to prevent malicious attacks during PC boot-ups, confidence around the security of devices grew.

“We’re seeing benefits from Windows 11 providing better endpoint protection. It helps us to better understand issues and threats, which then helps us in terms of response time.”

*Chief technology officer,
manufacturing*

The chief information security officer at an IT services company said that third-party security solutions their organization leverages work better with Windows 11. With past Windows OS, third-party security solutions could experience conflicts with OS files and generate false-positive alerts. This required time from security teams to heavily whitelist these files. Interviewees reported that since adopting Windows 11, their organizations' third-party software has not produced false-positive alerts from OS files, enabling teams to avoid whitelisting workarounds. This helped teams focus on areas where there may be real security risks rather than spending time on false positives.

One interviewee who upgraded their organization's Windows 11 Pro subscription to a Windows Enterprise E3 subscription said Windows Autopatch

is key to helping the organization meet its client service-level agreements (SLAs) in regard to protecting the security client's devices.⁷ Windows Autopatch is a cloud service that automates updates to Windows software to support its security and performance. Previously, manual patching could take upward of a month placing the organization at risk of failing SLAs.

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

- The company will experience an average of 1.7 material breaches per year.⁸
- According to a Cybersecurity and Infrastructure Security Agency (CISA) report, eight of the 12 largest breaches in recent reports resulted in financial losses of less than or equal to 0.5% of a company's annual revenue.⁹ These costs would include investigative and remediation work, as well as cost of compromised data or information.
- Using Windows 11 devices reduces the chances of a successful security attack by 20%.
- Windows 11 devices comprise 20% of the organization's overall security posture. The off-the-shelf inclusion of TPM 2.0 removes the need for employees to enable TPM 2.0 by themselves.

Risks. Differences in organizations that may impact the benefit results include:

- The amount and severity of security threats the organization faces in a year.
- The number and types of security solutions in place before using Windows 11.
- The speed with which the organization's decision-makers plan to deploy Windows 11's security features.

Results. To account for these risks, Forrester adjusted this benefit downward by 20%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$373,000.

Improved Security With Windows 11 Devices					
Ref.	Metric	Source	Year 1	Year 2	Year 3
A1	Number of breaches resulting in exposure or loss of data experienced annually	Forrester research	1.7	1.7	1.7
A2	Average cost of a mega data breach as percentage of annual revenue	CISA	0.5%	0.5%	0.5%
A3	Annual revenue	Composite	\$1,000,000,000	\$1,000,000,000	\$1,000,000,000
A4	Average cost of breach	A1*A2*A3	\$8,500,000	\$8,500,000	\$8,500,000
A5	Reduction in chance of successful security attack on Windows 11 devices	Interview	20%	20%	20%
A6	Percentage attribution to Windows 11 devices	Interview	20%	20%	20%
A7	Percentage of users that fully adopted Windows 11 devices	Interview	30%	60%	80%
At	Improved security with Windows 11 devices	A4*A5*A6*A7	\$102,000	\$204,000	\$272,000
	Risk adjustment	↓20%			
Atr	Improved security with Windows 11 devices (risk-adjusted)		\$81,600	\$163,200	\$217,600
Three-year total: \$462,400			Three-year present value: \$372,544		

IT DEVICE AND SECURITY MANAGEMENT EFFICIENCY

Evidence and data. Interviewees said their organizations saw the most benefit from Windows 11 device security features on the security team productivity front. A small, early improvement came from Windows 11 support for TPM 2.0 and devices arriving with the chips enabled. Security teams were able to avoid relying on a TPM management console to see which devices carried it and automatically initialize devices' TPM chips given Windows' support.

With Windows 11 devices, interviewees' organizations also saw performance improvement around virtualization-based security (VBS) as a result of new hardware. VBS worked in tandem with HVCI to virtualize environments to protect parts of Windows OS from compromised bad drivers and harmful system files, which interviewees noted had occasionally caused bouts of slowdown from struggling hardware performance on older devices.

weeks' worth of time for its security team each month. Teams no longer have to monitor which devices have received patches, which has grown increasingly difficult with hybrid and remote workers working flexible hours while be connected online at odd hours. Now security teams can easily push patches onto machines when connected.

“With BitLocker on Windows 11 devices, we’re able to ingest our encryption settings by default. Without it, for our individual machines, it would have taken hours of manual effort and become a multiyear exercise.”

Chief information security officer, IT services

“VBS definitely runs better on Windows 11. On older devices, there was some sluggishness, particularly when running apps in the background. The new devices help us to be 20% faster on average in accessing and analyzing data more effectively.”

Chief technology officer, manufacturing

One area that drove the most significant time savings in security work, specifically for organizations with Windows Enterprise E3 subscriptions, was the Windows Autopatch feature. The chief information security officer at an IT services company shared that with Autopatch, their organization saved upwards of

IT teams also saw productivity improvements from a reduced number of incoming help desk tickets. Adoption of new Windows 11 devices mitigated the number of help desk tickets that came from installation errors when attempting to update an OS on aging technology (e.g., conflicts with third-party software on devices, lack of hardware space to support features). Interviewees said another helpful feature was self-service password reset (SSPR) through AAD, which enabled users to reset Windows passwords on their own.¹⁰ Using passwordless logins was also made possible with Windows Hello enabling facial recognition and fingerprint matching authentication alongside multifactor authentication services to further streamline the login process for users.

Security and IT teams rededicated freed time toward digital transformation projects, such as identifying automated tools to add for further streamlining work. Multiple interviewees said their organization is

migrating more of its operations to the cloud, and this proved particularly helpful for overseeing a smooth transition.

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

- The full-time equivalent of 10 employees administers patches and oversees device security at the organization.
- Windows 11 security features and devices' abilities to run these features drive a 20% increase in productivity.
- The average fully burdened annual salary of a security user is \$120,000, and this increases at a rate of 2% each year.¹¹
- End users send more than 24,000 help desk requests per year, and 10% of these requests are related to OS/desktop/laptop issues.

- In Year 1, Windows 11 devices helps reduce the number of OS- and device-related questions by 40% because they operate and run as expected for most new users. That reduction increases to 70% in Year 2 and to 90% in Year 3.
- The average cost per ticket is \$6.¹²

Risks. Differences in organizations that may impact the benefit results include:

- The size of the security team at the organization and the security solutions already leveraged.
- The number of employees at the organization.
- The number of help desk requests sent in annually.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$529,000.

IT Device And Security Management Efficiency					
Ref.	Metric	Source	Year 1	Year 2	Year 3
B1	Number of FTEs administering patches and overseeing device security	Composite	10	10	10
B2	Increase in efficiency with Windows 11 devices	Assumption	20%	20%	20%
B3	Average fully burdened annual salary of security users	TEI standard	\$120,000	\$122,400	\$124,848
B4	Subtotal: Security team efficiency value	B1*B2*B3	\$240,000	\$244,800	\$249,696
B5	Number of help desk requests per year	Composite	24,000	24,000	24,000
B6	Percentage related to OS/desktop/laptop	Assumption	10%	10%	10%
B7	Adoption rate of Windows 11 devices	A7	30%	60%	80%
B8	Reduction in help desk requests due to Windows 11 devices	Interviews	40%	70%	90%
B9	Average cost per ticket	Forrester research	\$6	\$6	\$6
B10	Subtotal: Operational efficiency in IT help desk	B5*B6*B7*B8*B9	\$1,728	\$6,048	\$10,368
Bt	IT device and security management efficiency	B4+B10	\$241,728	\$250,848	\$260,064
	Risk adjustment	↓15%			
Btr	IT device and security management efficiency (risk-adjusted)		\$205,469	\$213,221	\$221,054
Three-year total: \$639,744			Three-year present value: \$529,087		

DEVICE-DEPLOYMENT AND PROVISIONING TIME SAVINGS

Evidence and data. With the power of new-device hardware, interviewees said their organizations' IT staffs avoided spending a few minutes on each of the incumbent PCs to check if they were compliant with or capable of running Windows 11 security features. As the organizations navigated the migration, Windows management tools enabled admins to monitor and manage Windows 10 and Windows 11 devices because they coexisted. Having visibility over the entirety of the organizations' devices helped inform who was most ready to receive a new machine, and it made for a smooth transition to Windows 11 devices.

The planning cycle for adoption was further shortened. With security features turned on by default, interviewees said it took less time to elect whether to turn off some features than to identify which features to turn on and pilot. Previously, decision-makers had to review tradeoffs in machine performance to effectively leverage certain security features and to decide which employees would test them. Now the organizations have the assurance of reliable performance from new machines with a consistent system baseline and a broader pool of employees from which to receive feedback on how features are working for them. Early wide deployment of security features helped workers identify and address any potential security risks before they became larger problems.

For organizations properly licensed for Windows Autopilot, a helpful factor was OEMs automatically registering devices in Intune or mobile device management (MDM) with Windows Autopilot.¹³ This process helped IT staff avoid manual work in creating a back-end database connecting hardware hashes to customer tenants. From there, through an OEM-optimized version of Windows client, interviewees' organizations were able to preconfigure devices before distributing them to employees. IT teams

avoided manual provisioning of the same preinstalled apps, settings, and policies to each employee. Autopilot also assisted with adding devices to AAD to help users log into devices through single sign-on and have access to their OneDrive files, which increased the speed each employee got up and running.

With Windows 11 being more friendly towards additional security solutions, security and IT teams at the interviewees' organizations had less work to do around checking which features to whitelist to avoid false-positive alerts. Windows 11 support for a wide range of solutions also contributed to smooth deployment of the devices.

“A feature that resonates across the board is having TPM 2.0 chips and not having to add those to devices. We also no longer have to actively monitor our TPM management console like [we] had to in Windows 10.”

Chief technology leader, technology

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

- Approximately 30% of the organization's staff (600 employees) will receive a new Windows 11 device in Years 1 and 2 as the organization goes through its refresh cycle. It deploys another 400 devices in Year 3 when 80% of the organization utilizes Windows 11 devices.
- Before using Windows 11 Pro devices, it took four hours of resource time to deploy each device, and that included registering the device with AAD, installing images, updating policy settings, installing any additional software, etc.

Increase in deployment efficiency: **25%**



- With Windows 11 Pro devices, time to deployment accelerates by 25% based on avoided reviews of compliance and capability of incumbent PCs, compatibility with third-party security solutions and with Autopilot-configured devices that arrive to each employee already registered with AAD while including the same set of apps, settings, and policies. The time to deploy each device becomes 3.2 hours.
- The average fully burdened annual salary of an IT employee is \$120,000, and this increases at a rate of 2% each year.

- The average fully burdened salary of an employee at the organization is \$73,000, and this increases at a rate of 2% each year.
- IT teams rededicate all of the time recouped from greater efficiencies, and they put it toward priority work they would have otherwise had to defer. For end users, 50% of their time recouped from efficiencies is rededicated toward productive work while the rest is spent on longer breaks. This makes for a better employee experience.

Risks. Differences in organizations that may impact the benefit results include:

- The number of devices deployed and amount of time spent on each device deployment.
- The assumed salary of IT and end users.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of \$93,000.

Device-Deployment And Provisioning Time Savings

Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Number of new Windows 11 devices deployed each year	Composite	600	600	400
C2	Time spent on device deployment before Windows 11 devices (hours)	Composite	2,400	2,400	1,600
C3	Efficiency in deployment of Windows 11 devices	Interviews	25%	25%	25%
C4	Total time savings on Windows 11 device deployment (hours)	C2*C3	600	600	400
C5	IT salary	Assumption	\$120,000	\$122,400	\$124,800
C6	Subtotal: IT time savings value	C4*(C5/2,080)	\$34,800	\$35,400	\$24,000
C7	End user salary	Assumption	\$73,000	\$74,460	\$75,949
C8	Productivity recapture	TEI standard	50%	50%	50%
C9	Subtotal: End user time savings value	C4*(C7/2,080)*C8	\$10,500	\$10,800	\$7,400
Ct	Device-deployment and provisioning time savings	C6+C9	\$45,300	\$46,200	\$31,400
	Risk adjustment	↓10%			
Ctr	Device-deployment and provisioning time savings (risk-adjusted)		\$40,770	\$41,580	\$28,260
Three-year total: \$110,610			Three-year present value: \$92,659		

END-USER PRODUCTIVITY

Evidence and data. Interviewees said Windows 11 devices afforded incremental productivity improvements to their organizations' end users, particularly hybrid and remote workers. Interviewees noted that virtual meetings were of a higher quality with higher quality cameras and microphones in new devices. Windows 11's Voice Clarity feature further enhanced audio for people to sound clearer when speaking during meetings, which helped them avoid having to repeat themselves. With new cameras, tracking of employees while using virtual backgrounds as their backdrops improved and ensured any real background remained hidden without popping in to create distraction. New processors supported users in smoothly juggling applications and sharing their screens, all while attending video calls, which made for more productive calls.

With work becoming more mobile, employees took advantage of their devices' high screen resolution and, in most cases, the touch screen capability to use Windows 11's snap layouts to group together apps and create personalized screen layouts. This made access to work documents and applications more simplified for touch-screen use, especially when on the go, and created a more pleasing user experience (UX) as a whole. Interviewees said their organizations' employees quickly acclimated to the new interface and on-the-go executives and that they especially appreciated the flexibility of snap layouts.

Interviewees said they noticed employees arranging their screens to help with keeping open and juggling multiple apps at a time. With new performant chips, app performance remained stable, and work productivity increased as a result. In addition, devices remembered settings for screen layouts when undocked and docked in different work locations. This helped users avoid spending time rearranging their screens each time they worked somewhere different.

Meanwhile, support for the latest Bluetooth and Wi-Fi technology, as well as USB-C connections supporting USB 4.0, ensured end users could connect to systems wherever they worked without technical obstacles. Extended battery life on new devices further enabled workers to continue working on the go for lengthy periods of time to complete work.

“Having good Wi-Fi or Bluetooth connectivity is important because we have over half our workers still working hybrid. We’re also piloting edge-based devices across our plants, and having Windows 11 devices with better connectivity has been very valuable.”

Chief technology officer, manufacturing

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

- Among the total employees at the organization, roughly 30% are power users and heavily impacted by the features of Windows 11 devices with their work. Power users include workers in data-intensive or production roles (e.g., finance and software development) who are especially affected when a computing task takes up processor capability.
- 25% of tasks carried out by these employees are directly impacted by Windows 11 devices — primarily tasks that involve managing data and require multiple applications open at a time.
- With Windows 11 devices, employee productivity increases 10% in Year 1 as employees leverage faster processing speeds and other device features while still familiarizing themselves with Windows 11's features. In Year 2, employees are 15% faster due to greater familiarity with Windows 11 and best practices to follow to get the most out of their machines.

- The remaining 70% of end users who receive Windows 11 devices recoup 30 minutes each week (1.25% of their time). This is driven by faster bootup, processing speeds, and snap layouts streamlining operations.

Forrester assumes a productivity recapture rate of 50% for power users to account for time rededicated toward time spent on longer breaks. For end users, a 25% recapture rate is assumed as the broad application of users with devices can influence how likely an employee is to rededicate time toward more work.

Risks. Differences in organizations that may impact the benefit results include:

- The number of employees impacted by devices.
- Whether features were already turned on in Windows 10, which might mitigate further gains experienced.
- The age of the devices replaced and the capabilities of previous hardware.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$1.3 million.

End-User Productivity					
Ref.	Metric	Source	Year 1	Year 2	Year 3
D1	Total employees receiving a Windows 11 device	Composite	2,000	2,000	2,000
D2	Percentage of users that fully adopted Windows 11 devices	A7	30%	60%	80%
D3	Percentage of power users of Windows 11 devices	Assumption	30%	30%	30%
D4	Number of power users	D1*D2*D3	180	360	480
D5	Percentage of tasks that could be impacted by Windows 11 devices	Assumption	25%	25%	25%
D6	Percentage faster with Windows 11 devices	Interviews	10%	15%	15%
D7	Productivity recapture	TEI standard	50%	50%	50%
D8	Subtotal: Increased productivity among power users	D4*D5*D6*D7* 2,080 hours	4,680	14,040	18,720
D9	Percentage of nonpower users of Windows 11 devices	Assumption	70%	70%	70%
D10	Number of nonpower users	D1*D3*D9	420	840	1,120
D11	Percentage faster with Windows 11 devices	Interviews	1.25%	1.25%	1.25%
D12	Productivity recapture	TEI standard	25%	25%	25%
D13	Subtotal: Increased productivity among non-power users	D10*D11*D12	2,730	5,460	7,280
D14	Average fully burdened hourly rate of end user	TEI standard	\$35.10	\$35.80	\$36.50
Dt	End-user productivity	(D8+D13)*D14	\$260,091	\$698,100	\$949,000
	Risk adjustment	↓15%			
Dtr	End-user productivity (risk-adjusted)		\$221,077	\$593,385	\$806,650
Three-year total: \$1,621,112			Three-year present value: \$1,297,428		

COST SAVINGS FROM RETIRING SOFTWARE AND APPLICATIONS

Evidence and data. Decision-makers said since adopting Windows 11 devices and leveraging security features that were not turned on with Windows 10, their organizations identified areas for cost efficiency. Specifically, they could offload solutions with duplicative features to those offered in the OS like endpoint encryption and remote logins to devices.

Each security solution carries its own unique set of capabilities, so decision-makers elected to pilot Windows 11 features and migrate devices as each proved its success. In the case of remote logins, an interviewee reported that their organization saved \$500,000 on the technology within Year 1 by relying on Windows AAD for logins. They said they expect their organizations to save as much as \$2 million by the end of the three years by moving on from the service.

Several interviewees' organizations had recently adopted new solutions as part of refreshes that took place during full remote work during 2020 and 2021. They had yet to identify areas of overlap on features, but they planned to review it. Decision-makers interviewed in the Microsoft commissioned Forrester study, "[New Technology: The Projected Total Economic Impact of Windows 11](#)," spoke to higher benefits in costs resulting from their migration to the new OS.

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

- The IT spend is 3.8% of the annual revenue.¹⁴

- The percentage of IT budget spent on security is 35.39%.¹⁵
- The percentage of security spend that is devoted to software is 19.5%.¹⁶
- The organization begins to migrate from a piece of software in Year 1, and this saves 2% on the budget. As the organization decreases usage of the software, savings reach 3% in Year 2 and 4% in Year 3.

Risks. Differences in organizations that may impact the benefit results include:

- The size and scale of budget dedicated to software and applications.
- The recency of the organization's refresh cycle and the types of solutions adopted during the refresh that are similar to Windows 11 features.

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV of \$163,000.

“We will eventually be able to retire software we use for remote logins because that capability is built into Windows. Once we’re fully migrated over to Windows 11, we’ll see the full savings.”

Chief information security officer, IT services

Cost Savings From Retiring Software And Applications					
Ref.	Metric	Source	Year 1	Year 2	Year 3
E1	Percentage of IT spend on revenue	Forrester research	3.8%	3.8%	3.8%
E2	Percentage of IT budget spent on security	Forrester research	35.39%	35.39%	35.39%
E3	Percentage of spend that is software	Forrester research	19.5%	19.5%	19.5%
E4	Total security and productivity application licensing costs	$A3 * E1 * E2 * E3$	\$2,622,399	\$2,622,399	\$2,622,399
E5	Percentage of cost savings due to Windows 11	Interviews	2%	3%	4%
Et	Cost savings from retiring software and applications	$E4 * E5$	\$52,448	\$78,672	\$104,896
	Risk adjustment	↓15%			
Etr	Cost savings from retiring software and applications (risk-adjusted)		\$44,581	\$66,871	\$89,162
Three-year total: \$200,614			Three-year present value: \$162,782		

UNQUANTIFIED BENEFITS

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

- **Consistent admin and end-user satisfaction.** Interviewees' organizations maintained consistency in their system integrations and end-user experiences by migrating from Windows 10 to Windows 11. Being familiar with Windows 11 code and infrastructure meant IT teams could easily integrate the operating system alongside Windows 10 devices and with other software and technology without any technical surprises. Staying within the Windows ecosystem also meant IT teams didn't need to adopt and test new endpoint management solutions they might have needed for an alternative OS.

When upgrading software or adding technology, it was reassuring for IT teams to use devices with new processors and support for USB-C connections supporting USB 4.0 because they knew the devices could support it. End users welcomed faster boot-up speeds and quality-of-life features, particularly when engaging with clients or third-party individuals to ensure meetings went smoothly from a technical perspective. The familiarity of the user interface also meant they avoided learning how to navigate and effectively leverage a new OS.

- **Deep integration with the cloud, Microsoft ecosystem, and other solutions.** Interviewees' organizations adopting Windows 11 devices were in the process of fully moving operations to the cloud, and they looked to the OS to assist with streamlining the migrations. IT teams avoided custom configuration work with Microsoft Intune helping to configure Windows 11 devices to receive the latest patches and updates, be granted application access, sync files from the cloud, and register for with AAD for single sign-on logins. In regard to security around integrations with third-party software, the TPM management console helped employees to monitor integrations and see the root of issues. This helped employees avoid work dedicated toward building APIs or looping in outside support to ensure integrations went error-free.

“USB 4.0 enables faster access to data. Some of our teams in Eastern Europe have to bring in terabytes of data through external drives that would take hours. We’ve seen significant improvement on that front.”

Chief information security officer, IT services

“Windows 11 is well-tailored for the cloud environment, from formats for processing to security integrations, etc. Having devices that are going to secure accessible data and analyze it quickly is important.”

Chief technology officer, manufacturing

FLEXIBILITY

The value of flexibility is unique to each customer. There are scenarios in which a customer might implement Windows 11 devices and later realize additional uses and business opportunities, including:

- **Future-proofing the organization's technology.** Interviewed decision-makers shared that by opting for Windows 11 devices, their organizations are building toward full-cloud operations and securing themselves against phishing scams or security risks. With a large amount of work taking place outside of physical offices, the organizations could securely support hybrid work and provide employees with the most up-to-date software for day-to-day business no matter where they worked. Interviewees also said they appreciate the option of having a variety of OEMs from which to source PCs for employees, which helped them pick devices that would be most cost-effective for their organizations and helpful to the workforces.

Interviewees knew their organizations would upgrade their systems to Windows 11 before support ended for Windows 10 in 2025. Gradually migrating employees to Windows 11 devices now will help the organizations avoid any hiccups from mass migrations later on.

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

“You definitely want to have a chip for TPM 2.0 in your PC from the beginning to have a tight technology integration. In the next three to five years, we expect to see a lot of devices addressing cryptography to protect against sophisticated hackers. If you don't have [a TPM 2.0 chip], you will be impacted by this.”

Chief technology leader, technology

“We're upgrading to the most recent version of Windows 11 for proper support. But it ties into data cybersecurity, data access, and identification. We want to be using platforms that support those priorities for us.”

Chief technology officer, manufacturing

Analysis Of Costs

■ Quantified cost data as applied to the composite

Total Costs							
Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Ftr	Implementation and deployment costs	\$60,766	\$0	\$0	\$0	\$60,766	\$60,766
Gtr	Ongoing deployment costs	\$0	\$272,740	\$298,810	\$194,480	\$766,030	\$641,011
	Total costs (risk-adjusted)	\$60,766	\$272,740	\$298,810	\$194,480	\$826,796	\$701,777

IMPLEMENTATION AND DEPLOYMENT COSTS

Evidence and data. Interviewees said when planning their organization’s move to Windows 11, they recognized there wouldn’t be any additional costs paid to Microsoft if the organization updated from Windows 10 to the Windows 11 OS. Yet, when refreshing devices, there would be a higher cost for new Windows 11 devices than for new devices carrying Windows 10. Interviewed decision-makers still elected to purchase Windows 11 devices to remain up to date with hardware and software and to achieve the full benefits of Windows 11 devices.

Aside from the higher cost of new devices, the organizations incurred small costs in configuring Windows 11 devices with their existing Microsoft ecosystems, which ensured security endpoints were secured, and devices were ready for end users. A small number of users who are primarily power users (e.g., those in data-intensive roles or those that heavily travel) ran pilot programs with the solutions to test features for a little more than a month before rolling out devices to more staff.

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

- Among the 600 employees who will receive a new Windows 11 device, 50 receive it up to six weeks ahead of others to participate in a pilot program.

- Each Windows 11 device purchased costs \$250 more than a Windows 10 device that would have otherwise been purchased during the refresh cycle.
- With Windows 11 devices, each piece of hardware takes 3.2 hours to deploy as IT ensures they are outfitted with organizationwide applications and settings, and that they are tested to confirm they work correctly.
- The average fully burdened hourly rate for an IT employee is \$58.
- Four full-time employees support planning and implementation for Windows 11 devices. Specifically, they analyze IT infrastructure to determine hardware that needs to be updated and which 50 users to include as part of the pilot.
- Planning and implementation takes six weeks.
- The average fully burdened salary of an employee involved in the planning and implementation effort (e.g., managers, directors, and other senior-level employees) is \$145,000.
- IT employees dedicate 50% of their time to the effort.

Risks. The exact costs incurred by an organization related to initial planning and implementation will depend on:

- The number of users involved in the pilot.
- Organizational hardware that should be upgraded to meet Windows 11's technology requirements.
- The skills and capability of the organization's IT team and the number of staff involved in migrating and implementing Windows 11.

- The salaries of the employees involved with the implementation.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of \$61,000.

Implementation And Deployment Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
F1	Number of Windows 11 devices purchased	Composite	50			
F2	Average cost difference above Windows 10 device purchase	Interviews	\$250			
F3	Hardware upgrade time (hours)	Interviews	160			
F4	IT admin hourly salary	TEI standard	\$58			
F5	Subtotal: Total cost related to upgrading hardware	$(F1 * F2) + (F3 * F4)$	\$21,780			
F6	Planning and implementation FTEs	Interviews	4			
F7	Planning and implementation time (weeks)	Composite	6			
F8	Planning and implementation FTE annual fully burdened salary	TEI standard	\$145,000			
F9	Percentage of time dedicated	Interviews	50%			
F10	Subtotal: Total cost related to planning and implementation	$F6 * F7 * (F8 / 52 \text{ weeks}) * F9$	\$33,462			
Ft	Implementation and deployment costs	F5+F10	\$55,242			
	Risk adjustment	↑10%				
Ftr	Implementation and deployment costs (risk-adjusted)		\$60,766			
Three-year total: \$60,766			Three-year present value: \$60,766			

ONGOING DEPLOYMENT COSTS

Evidence and data. Interviewees said organizational device refresh rates varied depending on the age of the devices used, the teams selected to receive upgrades and whether or not there was an annual rolling deployment of devices, regardless of device age or usage. Each interviewee indicated that adoption of Windows 11 devices was expected to be completed at their organization within four years based on its gradual adoption rate.

Before end users received devices, they were configured to match settings and OS features with other deployed devices at the organizations. While streamlined with Windows Autopilot and Intune, time to deployment still required some testing from employees to make sure devices were ready to go. Meanwhile, end users spent some time optimizing their home screens with Windows 11's snap layouts, as well as adjusting device settings (e.g., camera, audio, screen settings, etc.) to their liking.

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

- The device refresh cycle is four years, which leads to 30% of devices replaced in Year 1 (600 devices excluding 50 in the initial phase). The organization replaces another 30% of devices (600) in Year 2 and 400 devices in Year 3, reaching 80% of users with Windows 11 devices.
- Each device purchased is a Windows 11 device and costs at least \$250 more than a Windows 10 device.
- Each device takes a little more than 3 hours to deploy.
- The average fully burdened hourly rate for an IT employee is \$58.
- Planning and implementation of new Windows 11 devices is carried over. However, with a majority of work completed during the initial phase, the efforts require two FTEs and three weeks of time

in Year 1 and Year 2, or just 50% of that of the initial phase. By Year 3, with more than half of employees on Windows 11 devices, no more planning and implementation effort is required.

- The average fully burdened salary of an employee involved in the planning and implementation effort (e.g., managers, directors, and other senior-level employees) is \$145,000.
- IT employees dedicate 50% of their time to the effort.
- Ongoing management of Windows 11 is no different than that with Windows 10, so costs accounting for that are not included.

Risks. The exact costs incurred by an organization related to initial planning and implementation will depend on:

- The size of the organization and the refresh rate of devices scheduled for each year.
- The skills and capability of the organization's IT team to plan the migration and implementation of Windows 11 devices.

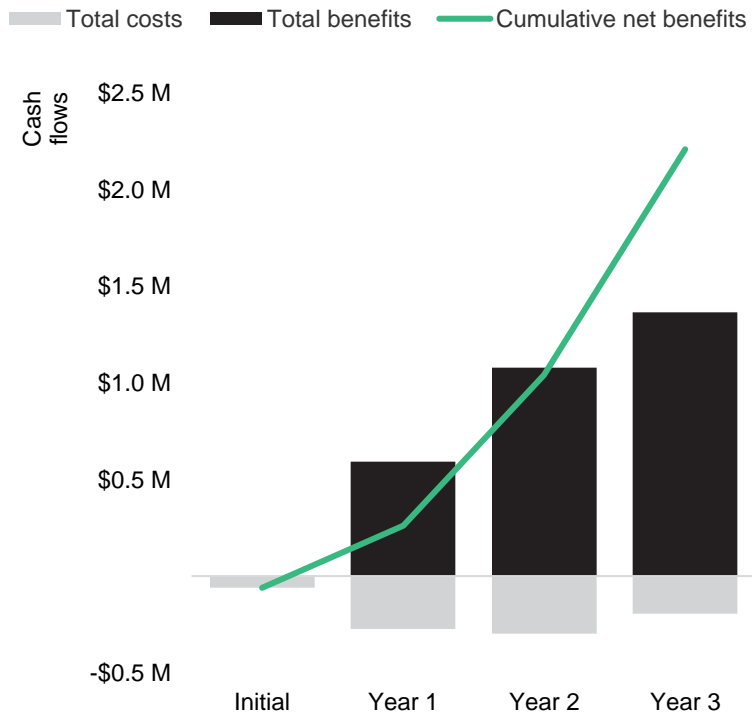
Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of \$641,000.

Ongoing Deployment Costs						
Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
G1	Number of Windows 11 devices purchased	Composite		550	600	400
G2	Average cost difference above Windows 10 device purchase	Interviews		\$250	\$250	\$250
G3	Hardware upgrade time (hours)	Interviews		1,760	1,920	1,280
G4	IT admin hourly salary	TEI standard		\$58	\$59	\$60
G5	Subtotal: Total cost related to upgrading hardware	$(G1*G2)+(G3*G4)$		\$239,580	\$263,280	\$176,800
G6	Planning and implementation FTEs	Interviews		2	2	0
G7	Planning and implementation time (weeks)	Composite		3	3	0
G8	Planning and implementation FTE annual fully burdened salary	TEI standard		\$145,000	\$145,000	\$145,000
G9	Percentage of time dedicated	Interviews		50%	50%	50%
G10	Subtotal: Total cost related to planning and implementation	$G6*G7*(G8/52\text{ weeks})*G9$		\$8,365	\$8,365	\$0
Gt	Ongoing deployment costs	$G5+G10$		\$247,945	\$271,645	\$176,800
	Risk adjustment	↑10%				
Gtr	Ongoing deployment costs (risk-adjusted)			\$272,740	\$298,810	\$194,480
Three-year total: \$766,030				Three-year present value: \$641,011		

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	(\$60,766)	(\$272,740)	(\$298,810)	(\$194,480)	(\$826,796)	(\$701,777)
Total benefits	\$0	\$593,497	\$1,078,257	\$1,362,726	\$3,034,480	\$2,454,500
Net benefits	(\$60,766)	\$320,757	\$779,447	\$1,168,246	\$2,207,684	\$1,752,723
ROI						250%
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."

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

Related Forrester Research

“New Technology: The Projected Total Economic Impact Of Windows 11,” a commissioned study conducted by Forrester Consulting on behalf of Microsoft, September 2022

“Forrester’s Guide To Windows 11,” Forrester Research, Inc., October 24, 2022

Online Resources

[“Windows 10 Home and Pro support dates,”](#) Microsoft, December 2022

[“How to check if your device meets Windows 11 system requirements after changing device hardware,”](#) Microsoft, December 8, 2022

[“Microsoft Intune licensing,”](#) Microsoft, September 19, 2022

[“Windows Autopatch prerequisites,”](#) Microsoft, November 18, 2022

[“Licensing requirements for Azure Active Directory self-service password reset,”](#) Microsoft, August 25, 2022

[“Windows Autopilot licensing requirements,”](#) Microsoft, November 18, 2022

Appendix C: Endnotes

¹ Source: Forrester’s Future Fit Survey, 2022.

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: “Windows 10 Home and Pro – Microsoft Lifecycle,” Microsoft.

⁴ Device requirements for Windows 11. See Appendix B “How to check if your device meets Windows 11 system requirements after changing device hardware” link for more information.

⁵ Bitlocker can be on modern devices by default after going through Out of Box Experience (OOBE) and registering with an AAD account.

⁶ Source: Forrester’s Security Survey, 2022.

⁷ Windows Autopatch is not included in the Windows Pro license and requires Windows 10/11 Enterprise E3 or above to be assigned to users. Windows Enterprise requires Windows Pro. Additionally, Azure Active Directory Premium and Microsoft Intune are required.

⁸ Data represented is based on a data from a subset of organizations with 5,000 or more employees. Source: Forrester Consulting Cost Of A Cybersecurity Breach Survey, Q1 2021.

⁹ Source: “Cost Of A Cyber Incident: Systematic Review And Cross-Validation,” Cybersecurity & Infrastructure Security Agency, October 26, 2020.

¹⁰ A standard Microsoft 365 Business license or above is required for Azure Active Directory self-service password reset.

¹¹ Fully burdened salary includes both the direct wages and indirect costs of hiring and employment. Burden rate refers to indirect costs of employment beyond direct compensation including but not limited to hiring costs, training costs, financial services, paid time off, sick leave, expenses, retirement contributions, payroll taxes, and incremental technology and workplace costs for the employee.

¹² Source: “The UX ROI For B2B Tech Vendors,” Forrester Research, Inc., December 10, 2021.

¹³ Windows AutoPilot is a collection of services, and it requires a license that includes Azure Active Directory and Windows Mobile Device Management.

¹⁴ Source: “2022 IT And Digital Budget Benchmarks, North America,” Forrester Research, Inc., March 16, 2022.

¹⁵ Source: Forrester Analytics Business Technographics Security Survey, 2021.

¹⁶ Source: “2022 IT And Digital Budget Benchmarks, North America,” Forrester Research, Inc., March 16, 2022.

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