The Total Economic Impact™ Of Microsoft Windows 10 Pro

Cost Savings And Business Benefits Enabled By Windows 10 Pro Modern Devices

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Table Of Contents

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ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit forrester.com/consulting.

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Benefits
Three-year present value

General user productivity:
**$347,000 or
$238/user each year**

Power user productivity:
**$354,000 or
$1,780/power user
each year**

IT support and provisioning
savings:
**$195,000 or $16 per
contact**

Device provisioning cycle time:
**From two to three
weeks down to
two to three days**

Executive Summary

Successful organizations empower employees with technology that helps them make progress toward their daily goals and increases employee experience (EX) — and accomplishes both goals cost-effectively yet securely. Microsoft provides a variety of desktop, server, and cloud solutions, including the popular Windows operating system with complementary server- and cloud-based device management and security tools. Laptops, desktops, and hybrid devices running Windows 10 Pro, coupled with security and management tools, can increase employee productivity, improve security, and reduce management time — especially for modern laptops and desktops with newer processors, increased battery life, and built-in hardware security and management features.

Microsoft commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by upgrading older Windows 10 Pro devices with newer, modern devices to take advantage of the newest technologies and features. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of upgrading modern devices for all users with Windows 10 Pro devices at their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed five enterprise organizations, with device totals ranging between 450 and 2,500, that have completed or are finishing up modernizing their infrastructure with newer laptops and desktops running Windows 10 Pro. Forrester specifically focused on uncovering benefits organizations experienced when upgrading older desktops and laptops running Windows 10 Pro to new devices. With new devices come improvements and new hardware features now standard on many of today's laptops and desktops — better battery life, a faster processor, better screens, more memory, a solid-state drive (SSD), built-in security, and, for laptops in particular, support for touch, ink, and biometric readers, as well as a variety of flexible form factors. Windows 10 Pro also takes advantage of these newer features and technologies with an operating system that is more responsive and easier to manage and secure.

At present, most interviewees have completed their migration to Windows 10 Pro for all devices, and these organizations have updated their standard refresh rate from a four-year cycle to three years. In addition, seeing benefits enabled for those with new laptops and desktops, these firms have prioritized more key employees for accelerated upgrades to a new laptop or desktop to unlock even more benefits and a faster move to the three-year refresh cycle.

Key Findings

Quantified benefits. The following risk-adjusted present value (PV) quantified benefits of upgrading Windows 10 Pro devices from older to newer laptops and desktops are representative of those experienced by the companies interviewed:

› **End user productivity improvement.** More powerful processors, SSDs, and longer battery life help employees get work done more quickly. In addition, Windows 10 Pro device management tools mean devices are managed and protected effectively, reducing downtime for security or support issues. Employees with new laptops and desktops

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ROI
195%

Benefits PV
$896,000

NPV
$593,000

Results for an organization with 800 employees; it upgrades 400 devices in Year 1 and accelerates from a four- to a three-year refresh rate.

running Windows 10 Pro average a half-hour saved each week, for an average productivity savings of $238 per employee who has been upgraded to modern devices per year, or a three-year PV of $347,000.

› **Power user productivity improvement.** "Power users" — employees in jobs that require management and analysis of large data sets or complex development processes — see even greater benefit from their high-end laptops. Data analysts, accountants, finance managers, and developers previously had regularly scheduled tasks that took several hours, and during that time, they used total computing power, meaning their devices were unusable until the process completed. To combat this, some organizations provided these employees higher-end devices with even more computing power. Employees average 1 hour per week saved from improved computing power because they can complete these tasks more quickly and continue working during. With an estimated 10% of employees in power user roles, this adds up to a three-year PV of $354,000, or $1,780 in productivity savings per power user per year.

› **IT device management and security support time savings.** Windows 10 Pro modern devices are secure by default, now with a number of settings and policies enabled by default. Features such as device encryption and other security policies are turned on, and several organizations took advantage of these technologies for the first time with their Windows 10 Pro modern devices investments. For the first time, enough PCs could support these technologies for IT to effectively manage. Support contacts related to desktop issues have decreased by an estimated 40%, and contacts that do still take place are completed in about half the time. Support contact savings add up to a three-year PV of more than $93,000, or about $16 in resource time savings per device-related support contact.

› **Device deployment and provisioning time savings**. With new Windows 10 Pro laptops and desktops that are managed with Microsoft Intune mobile device management and set up using Windows Autopilot, IT departments can implement a zero-touch, self-service deployment strategy where a new device can be shipped directly to an employee. Windows Autopilot manages the correct installation and settings based on the employee's role and level, and organizations can continue to enforce policies whether the employee is in the office or working remotely. OneDrive and SharePoint also contribute to time savings, as document migrations take much less time — or can be avoided completely — when everyone's documents are saved centrally in the cloud. Overall, this saves several hours per device implementation, adding up to a three-year PV of $102,000, or $137 in time savings per deployment. It also reduces the provisioning cycle time from two to three weeks to two to three days.

Additional benefits. The interviewed organizations reported the following additional benefits, which are not quantified for the financial modeling in this study; some benefits are too new for measurement, are difficult to measure financially, or contribute to such a large benefit category that it is challenging to attribute benefit contribution specifically from new devices.

› **Manageable IT impact with COVID-19.** While the coronavirus has impacted business in many ways, organizations that have a mobile management strategy for laptops have seen minimal impact now that so many employees are working from home (except for at the start with requests for headsets, power adapters, and other help). Remote provisioning with Windows Autopilot alleviates more issues: IT can

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deploy new devices or repurpose existing devices, shipping directly to employees, avoiding delays, and helping employees get upgraded quickly; employees can avoid downtime after PC failure since there's no longer a local IT department to hand over a spare.

› **Better communication for everyone with kiosk mode.** For organizations with a large number of skilled workers, such as construction, food, and manufacturing companies, not everyone has regular access to a laptop or desktop. With kiosk mode set up on devices in convenient areas (break rooms, common spaces), all employees can access company information, including HR information, process standards, and job postings. One interviewee reported a 3x increase in internal applications for open positions.

› **Improved quality and reduced waste.** With kiosk mode, easy and convenient access to company information, including changes to manufacturing standards, helped one organization improve quality and reduce waste.
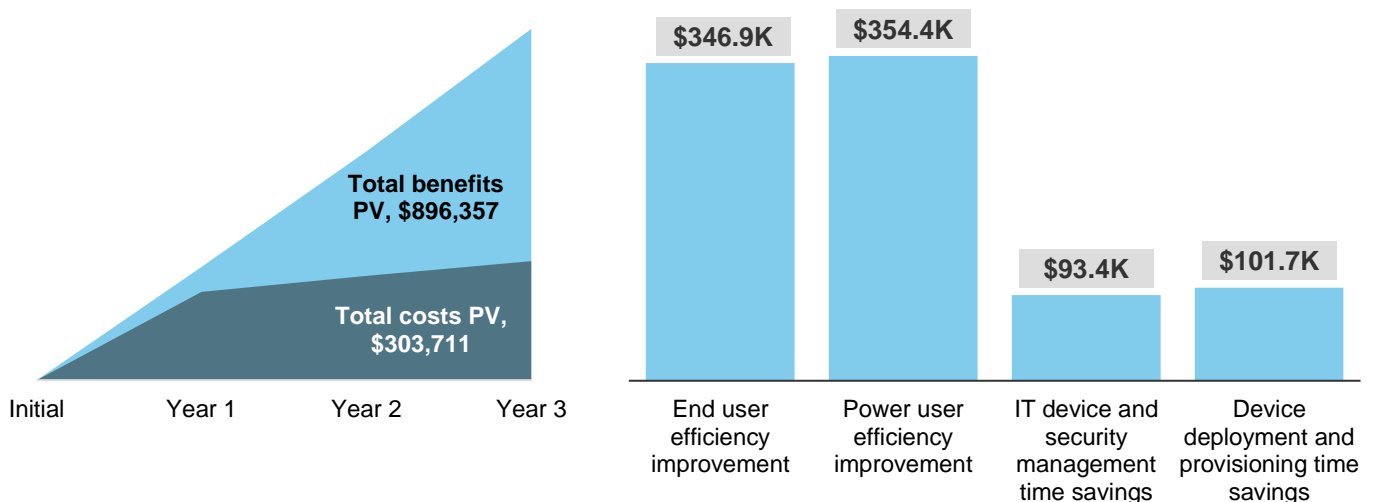
Costs. The interviewed organizations experienced the following risk-adjusted PV costs:

› **Accelerated laptop and desktop purchases.** All interviewed organizations opted to upgrade more devices than their standard refresh rate budgeted. To accelerate to a new three-year refresh cycle, organizations purchased these extra devices earlier than originally budgeted, at an estimated cost between $1,100 to 1,300 per device. These are added as costs for this investment. Because organizations already had IT and help desk departments and have been managing Windows 10 Pro devices for several years, they required no additional training or added resource time. Total costs add up to a three-year present value of $304,000.

Forrester's interviews with five existing customers and subsequent financial analysis found that an organization based on these interviewed organizations experiences benefits of more than $896,000 over three years versus costs of less than $304,000, adding up to a net present value (NPV) of nearly $593,000 and an ROI of 195%.

Financial Summary

(Three-Year)

Total benefits PV, $896,357

Total costs PV, $303,711

Initial | Year 1 | Year 2 | Year 3

$346.9K — End user efficiency improvement

$354.4K — Power user efficiency improvement

$93.4K — IT device and security management time savings

$101.7K — Device deployment and provisioning time savings

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TEI Framework And Methodology

From the information provided in the interviews, Forrester has constructed a Total Economic Impact™ (TEI) framework for those organizations considering upgrading their employees to newer laptops and desktops running Microsoft Windows 10 Pro.

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 modern devices running Microsoft Windows 10 Pro can have on an organization:

DUE DILIGENCE
Interviewed Microsoft stakeholders and Forrester analysts to gather data relative to Windows 10 Pro and modern devices.

CUSTOMER INTERVIEWS
Interviewed five organizations that have recently upgraded employees who had older Windows 10 Pro laptops or desktops to modern devices, to obtain data with respect to costs, benefits, and risks.

COMPOSITE ORGANIZATION
Designed a composite organization based on characteristics of the interviewed organizations.

FINANCIAL MODEL FRAMEWORK
Constructed a financial model representative of the interviews using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the interviewed organizations.

CASE STUDY
Employed four fundamental elements of TEI in modeling the value modern devices add to Microsoft Windows 10 Pro: benefits, costs, flexibility, and risks. Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves to provide a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

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 report to determine the appropriateness of an investment in Microsoft Windows 10 and modern 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.

> The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

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The Windows 10 Pro Customer Journey To Modern Devices

BEFORE AND AFTER THE INVESTMENT IN MODERN DEVICES FOR WINDOWS 10 PRO

Interviewed Organizations

For this study, Forrester conducted five interviews with Microsoft Windows 10 Pro customers that manage between 450 and 2,500 laptops and desktops and that recently upgraded a significant number of those laptops and desktops to modern devices. Interviewed customers include the following:

INDUSTRY	INTERVIEWEE	PCs*	IMPLEMENTATION HIGHLIGHTS
IT security services	VP services	450 (250)	Memory upgraded from 4GB to 8GB or more, plus SSDs. Support call savings.
Financial services	CTO	575 (350)	New touch-enabled laptops and hybrids. Large reports would take a day, now less than an hour.
Food and beverage	CIO	1,500 (300)	Too-small hard drives replaced with larger SSDs. Dev and test processes would lock PCs for nearly an hour.
Construction	CIO	2,500 (1,500)	New laptops are easy to service even with heavy field use. Significantly better managed and more secure.
Manufacturing	IT/infosec director	1,050 (400)	New devices help standardize mgmt. and security policies. Microsoft Intune and Windows Autopilot enable zero-touch deployment.

* The total number of Windows 10 Pro devices (as a subset of all devices in the organization) at the time of their decision to invest in modern devices is shown in parentheses.

Key Challenges And Opportunities

Even before the increase in remote work during the COVID-19 pandemic, organizations searched for ways to modernize their desktop and laptop hardware to improve productivity, standardize PC management and security policies, and reduce IT support bottlenecks. They saw issues particularly with employees who were using three- or four-year-old laptops and desktops — some even older. Issues included the following:

› **Employee computing tasks ground productivity to a halt.** Heavy data analysis and reporting tasks took over a PC's processing capability for hours — even a full day — leaving the desktop or laptop unavailable for other work. "We had a data warehousing migration project, and data analysis and consolidation tasks would lock computers up. We were at risk of missing our deadline," said the CIO at a food and beverage company. While overnight processing helped avoid some downtime, any errors or crashes meant many reports would need to run during business hours. Even those not requiring heavy data analysis saw inefficiencies.

› **IT support resources were spent on avoidable tasks.** Hard drives crashed on old devices. Batteries and power adapters needed to be replaced. Employees forgot passwords. Every new device had to be reimaged. IT often had to manage these and other individual issues related to older devices on an ad hoc basis.

> "We had a data warehousing migration project, and data analysis and consolidation tasks would lock computers up. We were at risk of missing our deadline."
>
> *CIO, food and beverage*

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> › **Security was at risk.** Older devices did not have the same security features or default settings as today's devices. Device encryption and other settings and policies were often disabled, opening up security risks and sometimes requiring in-person resolution. Adding layers of third-party security applications added cost and undermined device performance and EX.

> › **Device provisioning was a long process.** From request to delivery, it could take three weeks to receive a new laptop or desktop, especially frustrating for everyone when the request was made a day before a new employee started. Every new or reprovisioned PC required IT interaction to reimage and set up account policies. The IT director at the manufacturer said: "We want to be an employer of choice, but these new hires must have thought, 'What have I done? I went to work for a company that can't even figure out how to get me a laptop.'"

> › **End users were commonly frustrated.** Companies with employees such as construction or manufacturing line workers often do not provision all employees with a laptop or desktop device (or any device at all). When company information today is so often distributed electronically, these employees can become frustrated when they aren't provided any convenient way to access it.

Key Results

Interviewed organizations have already deployed Windows 10 Pro or have nearly completed deployment. Ensuring Windows 10 Pro users on older devices have modern laptops and desktops has enabled additional benefits, one of which was an overall increase in device refresh cycles. In Forrester Analytics' Business Technographics® Global Infrastructure Survey, 2019, 65% of IT decision makers reported they replace desktops within three years or less, and 79% replace their laptops that quickly.[1] Still more than half replace laptops if that limit is reduced to 2.5 years.

Interviewed organizations already showed similar habits — or with their recent focus on modernization have decided to start on a three-year (or less) refresh schedule. The VP of services at the IT security services firm said, "We better invest now so that we're not investing in two years because of performance issue." Benefits include:

> › **Employee efficiency.** Employees, especially users in data-intensive roles like finance, accounting, and marketing, have seen significant improvements, compared to before when their PCs would be unusable while preparing an analysis or report. "Once we upgraded our data warehouse migration team and saw what we've gained in just one week, we were able to commit to our original timeline," said the CIO at the food and beverage company. All users have also benefited from efficiencies gained from touch, ink, convenient form factors, longer battery life, and larger monitors — saving time and improving productivity. The CTO at the financial services company said: "A lot of employees like having the ability to hold up their device, and just to be able to use the screen instead of having to show stuff on the monitor or connect to a big screen in the conference room. They can touch things, move things around, make little modifications."

> "So much comes with Windows 10 Pro default security. It makes our job quite a bit easier that Microsoft is leading the charge with security for Windows 10."
>
> *VP services, IT security firm*

› **Improved security.** The VP of services at an IT security consulting firm said: "So much comes with Windows 10 Pro default security. It makes our job quite a bit easier that Microsoft is leading the charge with security for Windows 10." Windows 10 Pro baseline security reduces IT support time with features such as default security policies, drive encryption, and secure boot; while some of these technologies have been around, they may only be implemented now that enough employees have modern devices. Users who handle critical, sensitive data can leverage secured-core PCs, which offer the enhanced protection from highly advanced threats and increasing security risks. Microsoft Intune mobile device management also contributes, as the CTO of the financial services firm added, "With [Microsoft] Intune, when an employee has left the company and they still they have their device, the next time they connect it'll automatically wipe everything off and bring it to like almost a factory install state, so it helps us with security."

› **IT management time savings.** With standard device management practices, IT departments can streamline processes and reduce support needs when more people are using Windows 10 Pro running on newer laptops and desktops. The CIO at the construction company said: "You can know exactly what a user needs to click on or look for because it's the same for everyone. And we continue to look for opportunities to optimize so that we can continue to support the company as it grows."

› **Reduced deployment time.** With Microsoft Intune and Windows Autopilot, zero-touch deployment is possible when all management tasks can be handled even outside the office, and firms can completely avoid in-person deployment and imaging tasks. This leads to faster provisioning and greater device standardization and helps organizations have useful tools to support shorter device refresh cycles. IT managers and employees benefit; the IT director at the manufacturer said, "We went from an average of 15 business days to provision an asset to two and a half days."

› **Mitigated impact on business continuity during events like the COVID-19 pandemic.** The IT director continued, "We were able to move into a very chaotic time without skipping a beat because we knew we could provision assets if there were issues." The manufacturer found it was much more prepared than it would have been a year ago after standardizing on Microsoft Intune for device management, and Windows Autopilot enables the company to have new PCs sent directly to employees for automated setup.

› **Improved employee morale.** When a device for each employee isn't cost-effective, kiosk mode in Windows 10 Pro in common spaces can give employees who don't normally work at a desk access to email and company information, including updates to benefits or new internal job postings, improving employee morale.

"We continue to look for opportunities to optimize [desktop management processes] so that we can continue to support the company as it grows."

CIO, construction

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› **Improved quality and reduced waste.** In addition, kiosk mode can provide easier access to job- and task-related information, such as updates to manufacturing standards. This investment can reduce waste and improve product quality.

Composite Organization

Based on the interviews, Forrester constructed a TEI framework, a composite company, and an associated ROI analysis that illustrates the areas financially affected. The composite organization is a small enterprise with 800 employees, is representative of the five companies that Forrester interviewed, and is used to present the aggregate financial analysis in the next section.

Description of composite. The composite organization is a US-based company with 800 employees and manages roughly one laptop or desktop per employee. Windows 10 Pro deployment started several years ago and followed a standard four-year refresh cycle, so by a year before the analysis, all employees had been upgraded to Windows 10 Pro. But many of those users are on devices that are three, four, or five years old, if not older.

Deployment characteristics. The organization elects to upgrade 400 old Windows 10 Pro devices to new laptops and desktops, which includes devices already planned for upgrade within the standard refresh cycle, as well as some extra. The organization provisions devices leveraging IT involvement (as Windows Autopilot is not yet implemented) and ensures standard management and security features are enabled. Additionally, the organization opts to speed up its refresh cycle to three years (even shorter for some employees, such as those in data-intensive roles).

> "We went from an average of 15 business days to provision an asset to two and a half days."
>
> *IT director, manufacturing*

Key assumptions
800 employees
400 devices planned for upgrade
Old devices with a four-year refresh rate
Windows 10 Pro

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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	End user efficiency improvement	$95,000	$142,500	$190,000	$427,500	$346,882
Btr	Power user efficiency improvement	$142,500	$142,500	$142,500	$427,500	$354,376
Ctr	IT device and security management time savings	$25,577	$38,366	$51,154	$115,096	$93,391
Dtr	Device deployment and provisioning time savings	$54,807	$32,884	$32,884	$120,576	$101,708
	Total benefits (risk-adjusted)	$317,884	$356,250	$416,538	$1,090,672	$896,357

End User Efficiency Improvement

With new laptops and desktops, employees at interviewed organizations could work more efficiently, saving an average of 30 minutes per week. Specific examples of savings enabled by new devices running Windows 10 Pro include:

› New standard connections such as HDMI, preventing delays when trying to find the right connector to a conference room screen (or even more time-consuming — calling the help desk for assistance). The IT director at the manufacturer explained, "People always had problems trying to figure out how to connect their laptop in the conference room."

› Customizable form factors, along with touch and ink, that make it easy to pick up a screen, show colleagues, and even make small edits while talking. "Our accounting team really likes being able to quickly show things to others on the team on the screen without having to find a conference room. They can just hold the screen, touch things, move things around, make small modifications," said the CTO of the financial services organization.

› More reliable devices with less failures (such as a broken screen or hard drive), not only because they are newer, but because they have newer standard technologies. The VP of services at the IT security firm said: "I definitely have seen a drop in hardware issues. Why? SSDs. Otherwise, after two and a half to three years, users would start seeing hard drive issues."

› Better battery life, reducing interruptions, such as the sudden need to find a power source.

› A faster processor that means applications respond more quickly. "The thing our employees notice most is the performance increase," said the CIO of the food and beverage company.

For the analysis, Forrester assumes the composite organization provisions 400 users with new devices in Year 1. The composite provisions 200 more devices in Year 2 (for a total of 600 total users with modern devices) and 200 more in Year 3 (for a total of 800). Thus, by Year 3, all employees have modern devices running Windows 10 Pro. Each employee with a modern device saves half an hour per week, at an average fully burdened annual salary of $80,000.

The table above shows the total of all benefits across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total benefits to be a PV of more than $896,000.

30 minutes saved per week for every employee with a Windows 10 Pro modern laptop or desktop

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Forrester applies a productivity adjustment factor: Employees do not always use time recovered for additional work tasks; this is especially difficult to gauge across whole organizations. Thus, Forrester assumes that only 25% of work time is recovered for productive work tasks.

Because annual salaries and time savings may vary, Forrester applies a 5% risk adjustment, resulting in annual benefits of $95,000 in Year 1, $142,500 in Year 2, and $190,000 in Year 3. This equates to about $238 in benefits per employee with a new Windows 10 modern device each year.

For the analysis period, the three-year risk adjusted present value (PV) adds up to nearly $347,000.

> Impact risk is the risk that the business or technology needs of the organization may not be met by the investment, resulting in lower overall total benefits. The greater the uncertainty, the wider the potential range of outcomes for benefit estimates.

REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
**End User Efficiency Improvement: Calculation Table**					
A1	Total users with Windows 10 Pro modern devices (cumulative)	Composite	400	600	800
A2	Average hours saved per user per week	Composite	0.5	0.5	0.5
A3	Average annual user salary	Fully burdened	$80,000	$80,000	$80,000
A4	Productivity adjustment factor	Assumption	25%	25%	25%
At	End user efficiency improvement	A1*A2*A3/ 2,080*52*A4	$100,000	$150,000	$200,000
	Risk adjustment	↓5%			
Atr	**End user efficiency improvement (risk-adjusted)**		**$95,000**	**$142,500**	**$190,000**

Power User Efficiency Improvement

More specific than general user efficiency, interviewed organizations identified specific tasks that employees can complete much more quickly with Windows 10 Pro modern devices. "Our super users are significantly more productive," said the CIO of the food and beverage company.

Employees in data-intensive or production roles, such as finance and software development, were particularly affected when a computing task would completely use up processor capability, meaning the device was unusable until the task was completed. Specific examples include the following:

> One hour saved on average per week per power user with a Windows 10 Pro modern laptop or desktop

› Several organizations shared similar pains trying to prepare a series of monthly or quarterly spreadsheets for management financial and operations reporting. They collected data from multiple sources and combined it using spreadsheet functionality and scripting. This process could take as long as 8 hours — and while typically done overnight, frequent report failures meant having to run the report during work hours, effectively taking away a user's device. The CTO of the financial services company said: "It took our business analysts over a week to complete the monthly portfolio review. With a new laptop along with some template improvements, it now takes about three days."

› Another organization reported frequent software development test builds, which were necessary multiple times each day but typically consumed all processing functionality for the 30 minutes it took to complete. The CIO of the food and beverage company added an

example: "Our developers would test code and run deployment scripts on our cloud servers; laptops were unresponsive for 35 to 45 minutes."

For the composite organization, Forrester assumes power users save an average of 1 hour each week; and they recover more of this time (50%) for productive use than general users. Forrester estimates a higher annual salary of $150,000, as these power users are in more senior and/or skilled positions. While general user productivity includes year-over-year growth as more users were upgraded from their three-, four-, or five-year-old devices, all power users receive Windows 10 modern devices right away and are prioritized for device refreshes if there are any performance issues.

Forrester applies an additional 5% risk adjustment to account for similar variances in salaries and time savings as with general users. Annual benefits add up to $142,500, or $1,780 per power user per year, yielding a three-year risk-adjusted total PV of more than $354,000.

Power User Efficiency Improvement: Calculation Table					
REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
B1	Total power users with modern devices (subset of total users)	Composite	80	80	80
B2	Average hours saved per user per week	Composite	1	1	1
B3	Average annual power user salary	Fully burdened	$150,000	$150,000	$150,000
B4	Productivity adjustment factor	Assumption	50%	50%	50%
Bt	Power user efficiency improvement	B1*B2*52* B3/2,080*52*B4	$150,000	$150,000	$150,000
	Risk adjustment	↓5%			
Btr	**Power user efficiency improvement (risk-adjusted)**		**$142,500**	**$142,500**	**$142,500**

IT Device And Security Management Time Savings

Modern devices with the latest standard connectors result in fewer issues for users. This means the help desk doesn't have to field trivial calls, like every time an employee can't find the right cable.

Organizations have reported fewer and faster help desk calls due to:

› **Reduced device connection questions.** As previously highlighted, interviewed organizations reported receiving dozens of support contacts each month asking for last-minute help connecting to the (HDMI-compliant) conference room monitor.

› **Improved hardware.** Not only are new parts on modern devices less likely to have problems, but these modern devices also typically come with newer, more reliable technologies such as SSDs. "We've seen a 70% reduction in the number of tickets related to asset problems," said the IT director at the manufacturer.

› **Reduced risk and support time from misplaced, lost, or stolen devices.** If a device was lost or stolen, firms can remotely wipe Windows 10 modern devices, in conjunction with Microsoft Intune, thus reducing support and remediation time as well as reducing the risk of security breaches.

For the composite organization, Forrester assumes:

o 40% reduction in device-related support contacts

o 50% reduction in remaining device support contact resolution time

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- Previously, there were four support contacts per employee per year related to desktop and laptop issues, so for employees who have received Windows 10 Pro modern devices, that is 1,600 contacts in Year 1, 2,400 in Year 2, and 3,200 in Year 3.

- Forty percent of these device-related contacts are avoided once they have new laptops or desktops.

- Support contacts used to take 60 minutes on average to resolve a device-related issue, such as a compatibility question, a failed hard drive or broken screen, or a security issue.

- With improvements in hardware, security, and management, even contacts that are still made are resolved more quickly.

Forrester applies a $50,000 fully burdened average help desk agent salary and has adjusted the benefit downward based on variability in the number of help desk contacts and resolution times. A 5% risk adjustment yields annual benefits of $26,000 in Year 1, $38,000 in Year 2, and $51,000 in Year 3, equating to about $16 in resource time saving per device-related support contact. This adds up to a three-year risk-adjusted total PV of more than $93,000.

REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
IT Device And Security Management Time Savings: Calculation Table					
C1	Support contacts per year, related to device issues before Windows 10 modern devices (from users now provisioned with new devices)	A1*4	1,600	2,400	3,200
C2	Reduction in calls from users with Windows 10 Pro modern devices	Composite	40%	40%	40%
C3	Time-to-resolve each call before modernization (hours)	Composite	1.0	1.0	1.0
C4	Time-to-resolve each call today (hours)	Composite	0.5	0.5	0.5
C5	Average annual help desk support agent salary	Fully burdened	$50,000	$50,000	$50,000
Ct	IT device and security management time savings	((C1*C2*C3)+ (C1*(1-C2)*(C3-C4)))*C5/2,080	$26,923	$40,385	$53,846
	Risk adjustment	↓5%			
Ctr	**IT device and security management time savings (risk-adjusted)**		**$25,577**	**$38,366**	**$51,154**

Device Deployment And Provisioning Time Savings

IT departments identified significant time savings deploying new laptops and desktops and provisioning updated devices to employees, especially welcome as organizations moved to faster refresh cycles, meaning they needed to plan to annually provision more new devices than in previous years.

Before the investment in modern devices (and the complementary investment in mobile management), organizations reported time-consuming and drawn-out deployment and provisioning processes. "If you ordered an asset for a new hire or refresh, somebody in the user support team would call their manager, and their manager would go direct to our vendor to order the asset. It would be shipped to IT, who would spend a day installing the image, additional software, installing VPN, configuring everything, and finally ship it out," said the IT director

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for the manufacturer. "It could take weeks before the employee received their new device."

In addition to the Windows 10 Pro modern device investment, organizations invested in Microsoft Intune and Windows Autopilot device management and deployment tools, which pair even better with new laptops and desktops. IT departments were able to implement a zero-touch strategy for new Windows 10 modern devices, where policies and roles are set by the IT department once for all devices to assign using Windows Autopilot, and management is handled with a hybrid implementation of Active Directory and Microsoft Intune, meaning policies and security standards are managed and monitored whether the employee and their laptop is in the office or working from home. The IT director explained, "With [Windows] Autopilot, my staff never touches the device. The user can authenticate to our network for the first time, get fully configured and secured, and set up with [Microsoft] Intune. We save several days a month in the user support team."

For the composite organization, Forrester assumes:

› Windows 10 modern device deployment is scheduled for each year. A few additional devices are added in Years 2 and 3 to replace devices that are damaged or fail and for power users who may require a new device more quickly than others.

› The average salary for device administrators is $75,000.

› Without Microsoft Intune and Windows Autopilot, it took about 4 hours of resource time to prepare a device for delivery to an employee, including image installation, additional software, policy settings, etc.

› In addition, while the work to prepare a device may take several hours, it could take two to three weeks from the time it was ordered from the vendor or reseller until the employee receives their device. With Microsoft Intune and Windows Autopilot, employees can receive new devices in as little as two or three days by eliminating all the delays due to extra shipping, IT backlogs, and any interruptions.

With a 5% risk adjustment for variability in salaries or resource time requirements, benefits add up to $55,000 in Year 1 and $33,000 each in Years 2 and 3, or $137 in time savings per deployment. The three-year risk-adjusted total PV is $102,000.

Four hours of provisioning and deployment time saved per device

Device Deployment And Provisioning Time Savings: Calculation Table					
REF.	METRIC	CALCULATION	YEAR 1	YEAR 2	YEAR 3
D1	Refresh rate for new Windows 10 Pro modern laptops and desktops	Composite	3	3	3
D2	New Windows 10 Pro modern devices provisioned each year (Years 2 and 3 include 20% extra for power user and other accelerated refreshes)	Composite	400	240	240
D3	IT resource time required to deploy or provision each device	Composite	4	4	4
D4	Average annual IT admin salary	Fully burdened	$75,000	$75,000	$75,000
Dt	Device deployment and provisioning time savings	D2*D3*D4/2,080	$57,692	$34,615	$34,615
	Risk adjustment	↓5%			
Dtr	**Device deployment and provisioning time savings (risk-adjusted)**		**$54,807**	**$32,884**	**$32,884**

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Additional Benefits

Interviewed organizations reported benefits that are too recent for measurement, affect too broad a result to attribute properly, or are nonfinancial in nature. Windows 10 modern devices can unlock a variety of benefits; examples reported by interviewees include kiosk mode for Windows 10, running on a new laptop and desktop. It helps organizations provide tools for employees who are not typically provisioned their own laptops or desktops, such as manufacturing production line workers. Access to fast computing devices allows these employees to be able to check email, communicate with colleagues, and find company information. It also assures managers that when a change in production standards is instituted, everyone will see the latest information in a timely manner. One organization reported key benefits of kiosk mode, including:

› A 3x increase in applications for internal open positions. Employees who previously had to use a home, library, or borrowed device to view work information (or received information via hardcopy) were able to check for open positions regularly and be able to submit an application by the deadline.

› Significant quality improvements that have enabled a visible (but not yet measured) drop in waste.

Flexibility

The value of flexibility is clearly unique to each customer, and the measure of its value varies from organization to organization. There are multiple scenarios in which a customer might choose to implement Windows 10 Pro modern devices and later realize additional uses and business opportunities, including:

› Leveraging Secured Core PCs. While interviewed customers had not yet purchased Secured Core PC devices, they were considering them in the future, especially for employees who more often manage sensitive company data. With Secured Core PCs organizations expect to be able to save even more time on security management tasks and

> Flexibility, as defined by TEI, represents an investment in additional capacity or capability that could be turned into business benefit for a future additional investment. This provides an organization with the "right" or the ability to engage in future initiatives but not the obligation to do so.

Business In The Era Of COVID-19

The IT director for the manufacturer shared how Windows 10 modern devices deployed with Windows Autopilot and managed with Microsoft Intune have helped the company be responsive during the COVID-19 pandemic. The manufacturer is considered an essential business based on the products it produces, meaning most everyone continued working, though many now work from home. Other than an immediate bump in support contacts early on (with questions about home conferencing, headsets, etc.), the IT support department has been able to keep up with requests — and a large part of that is because the process to support employees receiving new and refreshed devices is largely unchanged: Windows Autopilot and Microsoft Intune can support employees working from home as well as in the office.

The IT/Infosec manger said: "We were able to move into a very chaotic time without skipping a beat because we knew we could provision assets if they broke. Employees were not having issues working remotely, and 100% of that is related to automating the provisioning process, automating the management process, and that we're keeping these assets protected while they're in the field. That has allowed us to continue normally, and we've literally had zero issues in the last 90 days even as our employees are in much riskier positions."

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remediation, as well as reduce their overall risk of sensitive information exposure.

› **Broader adoption of Windows Autopilot and Microsoft Intune.** Not every organization had invested in this strategy yet, and for those that haven't, adding mobile management and automated deployment could provide significant value.

› **Upgrading to modern devices more quickly.** The faster modern devices are deployed, the faster more users can take advantage of the benefits. This may depend on how devices budgeted for annual refresh are allocated, but investing in devices for everyone in Year 1 and spending much less than expected (if anything) in Years 2 and 3 can lead to even more positive results.

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

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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
Etr	Incremental device costs	$0	$248,000	$49,600	$49,600	$347,200	$303,711
	Total costs (risk-adjusted)	$0	$248,000	$49,600	$49,600	$347,200	$303,711

Incremental Device Costs

The composite organization already planned and budgeted for the purchase of some devices each year as part of its four-year refresh schedule. That means the investment needed for the organization to provision all employees more quickly with Windows 10 modern devices is only for any additional device purchases, beyond what was already planned.

The composite organization has 800 devices and already had plans to replace 200 devices each year as part of its four-year refresh cycle. With the modern devices project and a new three-year refresh cycle, it actually replaces 400 devices in Year 1, 240 in Year 2, and 240 again in Year 3. (Years 2 and 3 include a few extra refreshed devices to ensure power users always have the latest hardware.)

Investment costs for this project include the purchase of 200 additional devices in Year 1, 40 additional devices in Year 2, and 40 additional devices in Year 3.

Laptops at the composite organization make up about 70% of total devices. A laptop is estimated at $1,300, and a desktop at $1,100.

With Microsoft Intune and Windows Autopilot, IT deployment and provisioning time is minimized significantly and not considered a significant added cost for the existing desktop administration team. The three-year risk-adjusted total PV for this cost is less than $304,000.

> The table above shows the total of all costs across the areas listed below, as well as present values (PVs) discounted at 10%. Over three years, the composite organization expects risk-adjusted total costs to be a PV of less than $304,000.

> Implementation risk is the risk that a proposed investment may deviate from the original or expected requirements, resulting in higher costs than anticipated. The greater the uncertainty, the wider the potential range of outcomes for cost estimates.

Incremental Device Costs: Calculation Table

REF.	METRIC	CALCULATION	INITIAL	YEAR 1	YEAR 2	YEAR 3
E1	Average refresh rate before (years)	User input		4.0	4.0	4.0
E2	Expected (budgeted) laptop and desktop upgrades per year	User input		200	200	200
E3	Actual number of devices replaced	D2		400	240	240
E4	Additional devices purchased for modern PC upgrade	E3-E2		200	40	40
E5	Percentage of laptops versus desktops	User input		70%	70%	70%
E6	Average cost per laptop	User input		$1,300	$1,300	$1,300
E7	Average cost per desktop	User input		$1,100	$1,100	$1,100
Et	Incremental devices costs	E4*(E5*E6+(1-E5)*E7)		$248,000	$49,600	$49,600
	Risk adjustment	0%				
Etr	**Incremental devices costs (risk-adjusted)**		**$0**	**$248,000**	**$49,600**	**$49,600**

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Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)
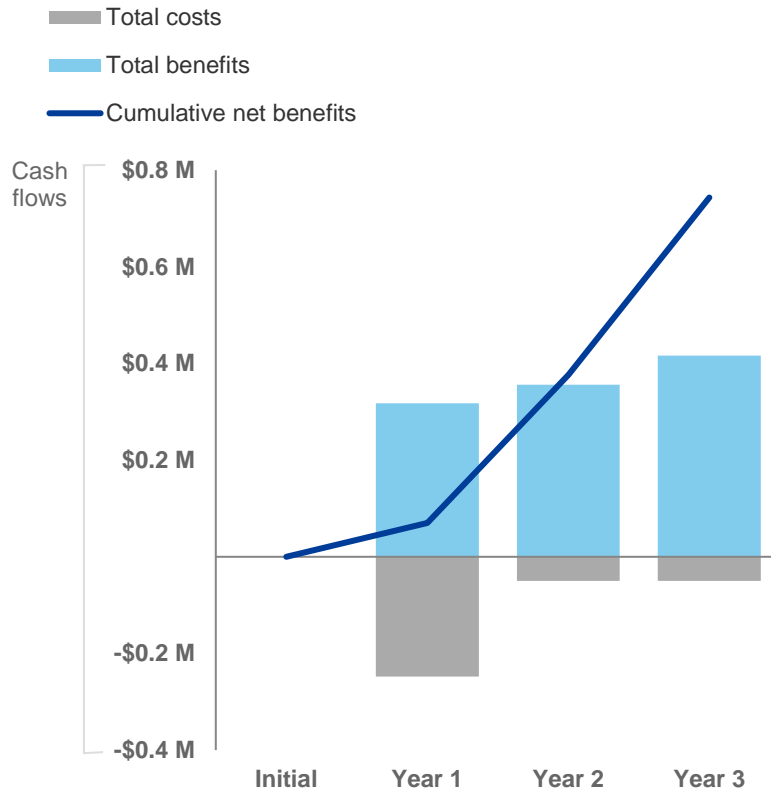
The financial results calculated in the Benefits and Costs sections can be used to determine the ROI and NPV for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

- Total costs
- Total benefits
- Cumulative net benefits

These risk-adjusted ROI and NPV 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	$0	($248,000)	($49,600)	($49,600)	($347,200)	($303,711)
Total benefits	$0	$317,884	$356,250	$416,538	$1,090,672	$896,357
Net benefits	$0	$69,884	$306,650	$366,938	$743,472	$592,646
ROI						195%

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Microsoft Windows 10 Pro On Modern Devices: In Brief

The following information is provided by Microsoft. Forrester has not validated any claims and does not endorse Microsoft or its offerings.

Windows 10 Pro is designed to give teams the power to do more, without just working more. With comprehensive security, business-class tools, flexible management, and the freedom to choose your own hardware, Windows 10 Pro is the foundation of the modern workplace. Windows 10 Pro is not only designed for how you work now — it's ready for how you'll work tomorrow.

WINDOWS 10 PRO DELIVERS FOUR KEY BENEFITS TO THE ORGANIZATION:

Powerful protections you can trust	Works how you work	Simple, flexible management	The best devices in the world run Windows 10 Pro

POWERFUL PROTECTION YOU CAN TRUST

Windows 10 is the most secure Windows ever. Windows 10 Pro includes built-in protections for your data, equipment, and people, securing business information and personal identities even on lost or stolen devices. Business essentials like firewall, secure boot, and file-level information-loss protection come standard on every device.

› Powered by Microsoft
  Included Windows Security provides complete data protection that only Microsoft can offer.

› Driven by intelligence
  Attacks on business information grow more sophisticated every day. Rest easy knowing you have modern defenses in place.

› Advanced biometrics
  Unlock your devices more securely using your face or fingerprint.[ii]

WORKS HOW YOU WORK

Windows 10 Pro is designed for how you work now — and ready for how you'll work tomorrow. Collaboration starts here, with shareable notebooks and whiteboarding available to every device. Whether you're working on your own or with a team, it's that feeling of getting in the zone and staying there. Additional services and free trusted downloads mean you can add what you want when you need it.

› Business-class tools
  Seamless integration with best-in-class software, from business fundamentals to industry-specific applications.

› Start fast, stay focused
  Whether you're powering through your to-do list, multitasking, or focusing deeply, Windows 10 Pro keeps you moving efficiently.

› Creativity welcome
  Let your ideas flow with powerful creative tools, from writing directly in presentations to designing in 3D.

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SIMPLE, FLEXIBLE MANAGEMENT

Windows 10 Pro simplifies identity, device, and application management so you can focus on your business. In a fast-changing business environment, success is defined by your ability to adapt. Flexible management capabilities let you see the big picture and make changes on your schedule. With intuitive control over your IT infrastructure, your business can be ready for anything.

› **Simplified updates**
More control over when and how updates roll out on your devices.

› **Streamlined management**
Intuitive dashboards and zero-touch provisioning reduce busy-work, freeing your IT department to work on high-value priorities.

› **Ready to go, out of the box**
Configure devices before they ship, so your team doesn't miss a beat.

THE BEST DEVICES IN THE WORLD RUN WINDOWS 10 PRO

Windows 10 Pro comes preinstalled on the world's largest selection of business devices, from the world's leading manufacturers. If you're in business, you know that one size doesn't fit all. From premium 2-in-1s to powerful workstations, the Windows 10 Pro device ecosystem is second to none.

› **Return on investment**
Whether you're just starting out or equipping a global workforce, Windows devices always make bottom-line sense.

› **Every shape, size, and spec**
From the boardroom to the factory floor, from retail to data analysis, find purpose-built devices for every business need.

› **Designed for any workstyle**
With so many devices to choose from, you can satisfy your team's work needs with devices as beautiful as they are reliable.

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.

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Appendix B: Endnotes

[1] Source: Forrester Analytics Business Technographics® Global Infrastructure Survey, 2019.
[ii] Windows Hello with biometrics specialized hardware, a fingerprint reader, illuminated IR sensor, or other biometric sensor is required. Hardware-based protection of the Windows Hello credential/keys requires TPM 1.2 or greater. If no TPM exists or is configured, credentials/keys protection will be software-based.

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