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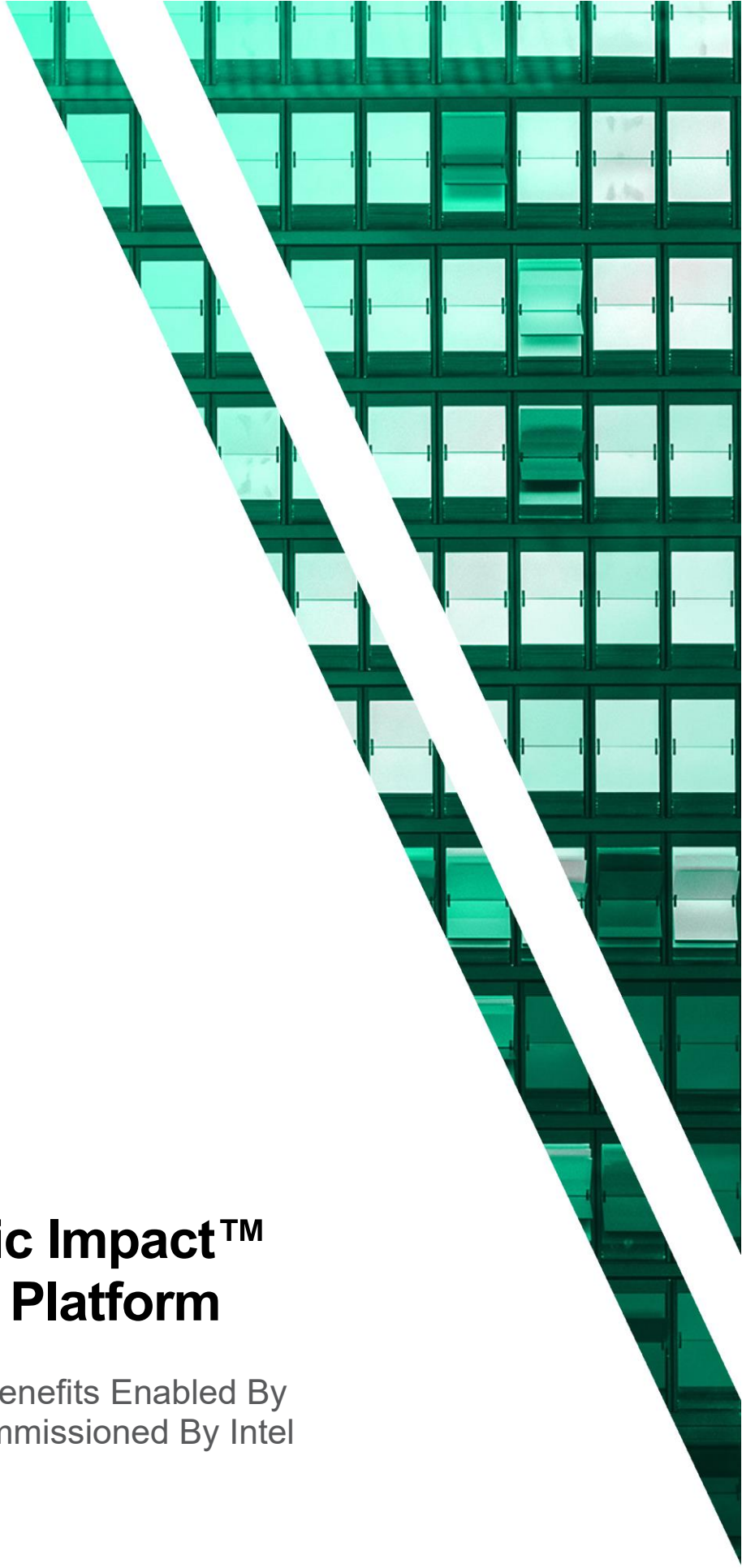

The Total Economic Impact™ Of The Intel vPro® Platform

Cost Savings And Business Benefits Enabled By The Intel vPro® Platform, Commissioned By Intel

JANUARY 2021

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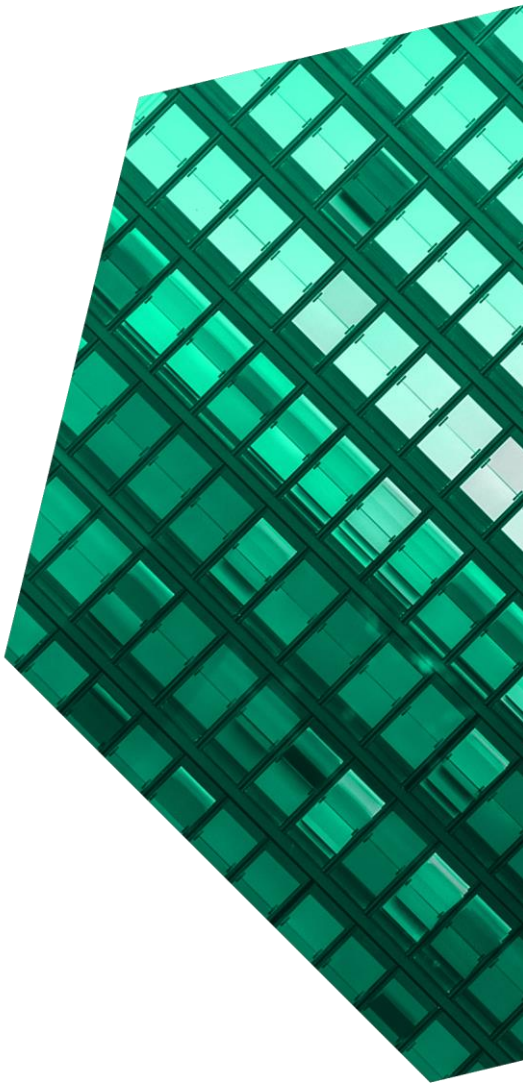


ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. For more information, visit forrester.com/consulting.

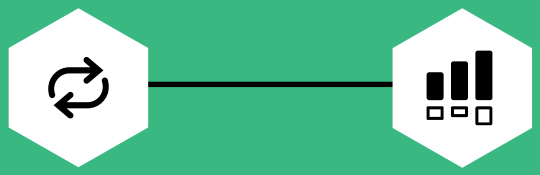
Executive Summary

Intel vPro® platform enables fast and reliable laptops and desktops that IT departments can more efficiently and effectively manage and secure. Analysis is based on six interviews and 416 survey responses from IT managers and administrators at organizations that have adopted the Intel vPro platform. Key benefits include device management cost savings, improved employee experience and efficiency, and a reduction in both time and expensive remediation of imaging and patching failures.

Intel commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying the Intel vPro platform. The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of the Intel vPro platform in business-class laptops and desktops that are deployed to employees by their organizations. They not only come with high-end features such as a fast processor, advanced wireless capabilities, build-in endpoint security, and fast data transfer with Thunderbolt™ technology, but Intel vPro platform devices also provide hardware-based security and management features that business IT departments can enable with management tools such as Intel® Active Management Technology (Intel® AMT).

To better understand the benefits, costs, and risks associated with this investment, Forrester conducted six interviews with, and collected 416 survey responses from representatives at organizations worldwide that have purchased and deployed laptops and desktops powered by the Intel vPro platform. For the purposes of this study, Forrester aggregated the experiences of the interviewed and surveyed customers into a combined composite organization. This composite organization represents a global high-tech firm with a healthcare focus, 100,000 employees, and 100,000 laptops and desktops deployed to employees.[1] In Year 1 of the analysis, 65% of employees have PCs based on the Intel vPro platform running Microsoft Windows 10. By Year 2, this increases to 100% coverage of all employees and devices. The composite organization has 600,000 total support incidents logged by the help desk each year. Additionally, it has a 3.5-year standard device refresh rate. Organizations with Intel vPro platform devices enabled key security, management, and employee benefits by adding Intel management tools and features including Intel Active Management Technology (Intel AMT), Intel® Endpoint Management Assistant (Intel® EMA), the Intel® Stable IT Platform Program (Intel® SIPP), and Intel® Hardware Shield.[2]

KEY STATISTICS



Return on investment (ROI)
198%

Net present value (NPV)
$20.47M

PCs with the Intel vPro Platform are more secure:

92% “agree” or “strongly agree”

Many interviewed and surveyed organizations started purchasing devices several years ago, and they have deployed waves of devices with Intel vPro platform. Many of those organizations have also managed their devices with Intel management tools and features, particularly Intel Active Management Technology (Intel AMT). But whether these interview and survey respondents were experienced with the Intel vPro platform, they nonetheless reported improvements being enabled by their deployments of devices with the newest generation of the Intel vPro platform. Even with higher device costs, interviewee and survey participants reported significant management and security benefits being enabled by the Intel vPro platform with Windows 10 OS.

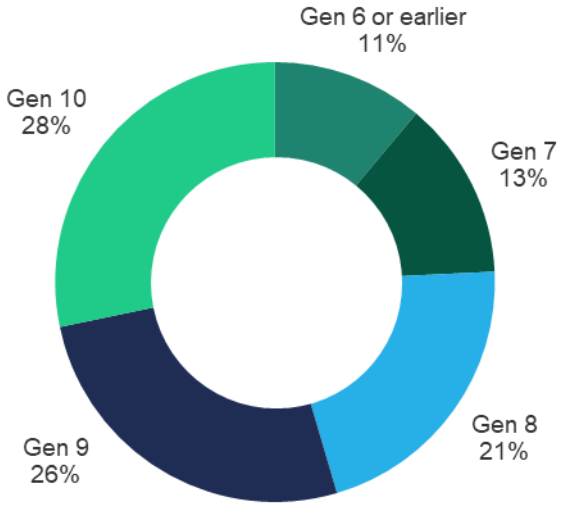
KEY FINDINGS

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

- **Reduced IT device management support costs.** With the Intel vPro platform, organizations report fewer help desk incidents related to desktop management — both from an overall reduction in help desk tickets and a shift to more efficient help desk channels. Incidents that once required escalation no longer do, and the remaining incidents are now resolved with more automated and self-service options. For the composite organization, this adds up to a reduction of between 42,000 and 60,000 fewer help desk incidents per year, for a three-year, risk-adjusted PV of $5.44 million.

> **"vPro pays for itself with our imaging and upgrade process improvements."**
>
> *Endpoint solutions architect, healthcare*

"What percentage of laptops and desktops at your organization with the Intel vPro platform have the following Intel vPro Core processor?"



Base: 416 worldwide IT decision-makers responsible for desktop management
Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021

- **Reduced IT device security support costs.** In addition, organizations identified fewer help desk incidents related to endpoint security — again, many security issues are avoided, and issues that once required personal involvement or escalation are now resolved less intensively. For the composite organization, this is a reduction of between 21,000 and 30,000 more help desk incidents per year, for a three-year, risk-adjusted PV of $5.25 million.
- **Fewer IT in-person escalations of IT support tickets.** Furthermore, in addition to help desk support efficiencies, in-person IT escalations are reduced. Examples of these tasks may include reinstalling a driver, diagnosing and correcting security settings, or resolving other issues that require PC access. With tools including Intel Active Management Technology (Intel AMT) and Intel EMA, remote support can be managed efficiently, even if the user is not at their device and the device is powered off. For the composite

organization, this adds an additional three-year, risk-adjusted PV savings of $1.82 million.

The previous three benefits all fall into the category of help desk support cost savings — with specifics involving improved device management, more effective endpoint security, and reduced escalations. Taken as one category, these benefits add up to a risk-adjusted, three-year PV of $12.4 million.

Additional quantified benefits include:

- **Improved employee productivity.** The avoided help desk incidents and patching issues also impact employees' experience. With Intel vPro platform-based laptops and desktops, interviewed and surveyed organizations see enhanced productivity with the avoidance of support interruptions and improvements to employee work devices, i.e., the modern Intel vPro platform-based devices includes fast processors, long battery life, and other modern device features. Employees save up to 2 hours per month at the composite organization, for a three-year, risk-adjusted PV of $6.97 million.
- **Reduced device patching and upgrade resource costs.** Interviewed and surveyed organizations reported issues deploying device image updates and monthly patches, particularly when user devices are powered off at night. With Intel vPro platform tools and features, devices can be powered on remotely to ensure image refresh and patch update processes, and Intel SIPP adds the assurance of driver compatibility, avoiding further issues. The composite organization significantly reduced the number of failed image and patch processes, adding up to a three-year, risk-adjusted PV of $5.76 million.
- **Reduced desktop management resource requirements.** With other day-to-day task efficiencies with the Intel vPro platform, the composite organization can recognize an additional savings of 15 or 25 FTEs per year, and they are able to allocate these resources to higher-value tasks and avoid additional hires. This adds up to a three-year, risk-adjusted PV of $4.24 million.

Ratio of IT resources to PC devices with a modern Intel vPro platform:

1-to-230 (up from 1-to-200)

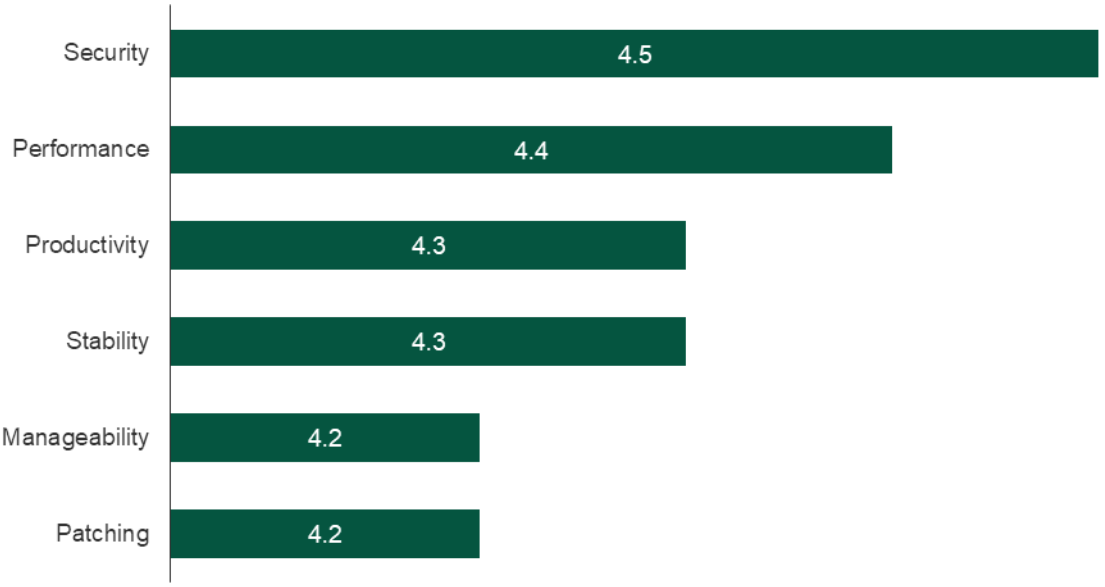
- **Avoided third-party software and hardware costs.** With Intel vPro platform technology and tools such as Intel Active Management Technology (Intel AMT), Intel EMA, and built-in and enabled by default hardware security and management features, the composite organization can reduce and retire third-party software tools that focus on encryption, remote access, and desktop management. The composite organization estimates a savings of up to $650,000 per year in third-party license costs, for a three-year, risk-adjusted PV of $1.32 million.

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

- **Timely response to systemic risk events.** Systemic risks — from wildfires in California and

> **"Once we reached a tipping point for PCs with Intel vPro platform, we wanted to move to KVM [keyboard, video, mouse]. Power management, and the ability to wake machines up for patching and software delivery, is valuable."**
>
> *Senior IT architect, insurance*

"Rate the importance of priorities behind the decision to invest in and deploy newer laptops and desktops on the Intel vPro platform?"



Base: 416 worldwide IT decision-makers responsible for desktop management.
Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021

Australia to trade wars and pandemics — require rapid redeployment of personnel. For example, the COVID-19 crisis necessitated a rapid move to remote work for many organizations. Without the Intel vPro platform, interview and survey respondents believe that their response and recovery back to normal (or near-normal) IT service would have been significantly slower and more costly.

- **Improved employee experience.** Intel vPro platform provides performance improvements that help employees avoid interruptions and maintain positive employee satisfaction, which can also lead to employee recruiting and hiring efficiencies.
- **Reduced security exposure.** In addition to avoiding endpoint security issues, interviewees and survey respondents reported an improvement in their overall security position with improved confidence and reduced risk of issues that might affect the business. As shown in the chart, security was the most important factor leading to the decision to invest in the Intel vPro platform (rated a 4.5 on a scale of 1 to 5, with 1 "not a priority" and 5 "a top priority").

Costs. Risk-adjusted PV costs include:

- **The incremental cost of vPro laptops and desktops.** The composite organization already has a 3.5-year device refresh rate. This means that most PC purchases were already planned, so an investment in the Intel vPro platform includes any additional unplanned device purchases, as well as the typically nominal increase in the cost per device for a laptop or desktop built on the Intel vPro platform. For the composite organization, up-front and ongoing incremental device costs add up to a three-year, risk-adjusted PV of $10.14 million.
- **Incremental management costs.** Learning and using Intel Active Management Technology (Intel AMT), Intel EMA, and other tools and features does add some new resource time requirements, though not as significant when compared to the management and security cost savings benefits

already covered. Costs to maintain Intel EMA management servers are also included, adding up to a three-year risk-adjusted PV of $160,000.

- **Incremental up-front implementation costs.** On top of all the planned annual device refresh and deployment tasks, adding tools such as Intel Active Management Technology (Intel AMT) requires some incremental time: An average of a few hours per IT resource is necessary during the deployment period. This adds up to a risk-adjusted, up-front cost of $12,000.

The financial analysis based on the customer interviews and survey found that a composite organization experiences benefits of $30.80M over three years versus costs of $10.32M, adding up to a net present value (NPV) of $20.47M and an ROI of 198%.

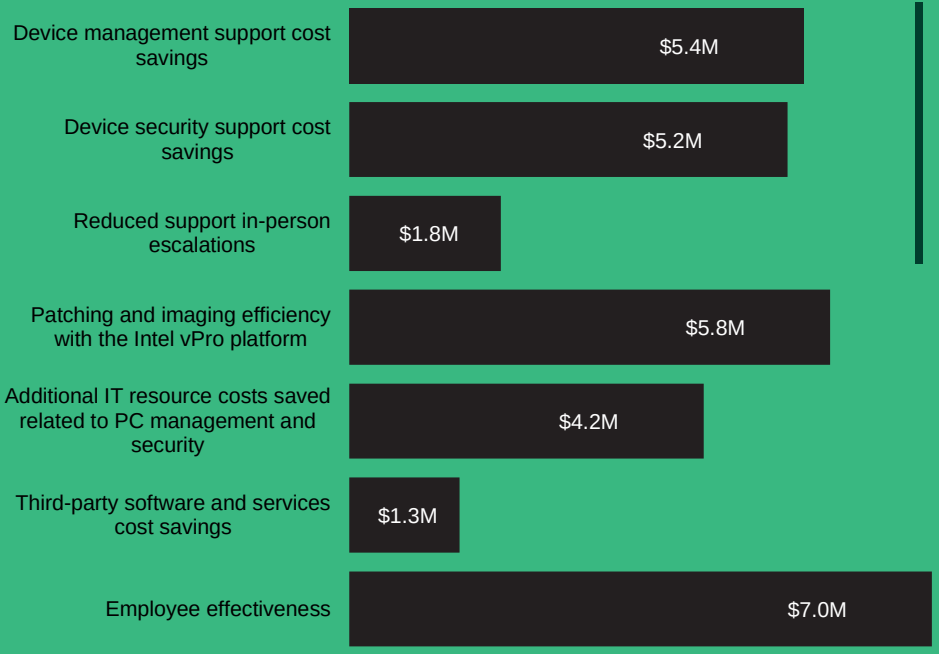
ROI
198%

PRESENT VALUE OF BENEFITS
$30.80M

NET PRESENT VALUE
$20.47M

PAYBACK
8 months

Benefits (Three-Year)



Desktop support including IT escalation benefits add up to a three-year, risk-adjusted present value of $12.4 million.

“Intel vPro is really the standard. It’s the security of the silicon itself, knowing the manufacturing process, and the assurance of consistency.”

— Endpoint solutions architect, healthcare

TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews and survey, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in the Intel vPro® platform.

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 the Intel vPro platform can have on an organization.

DUE DILIGENCE

Interviewed Intel stakeholders and Forrester analysts to gather data relative to the Intel vPro® platform.

CUSTOMER INTERVIEWS AND SURVEY

Interviewed six IT decision-makers and surveyed 416 IT representatives at organizations using the Intel vPro platform to obtain data with respect to costs, benefits, and risks.

COMPOSITE ORGANIZATION

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

FINANCIAL MODEL FRAMEWORK

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

CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

The Intel vPro Platform Customer Journey

Drivers leading to the Intel vPro platform investment

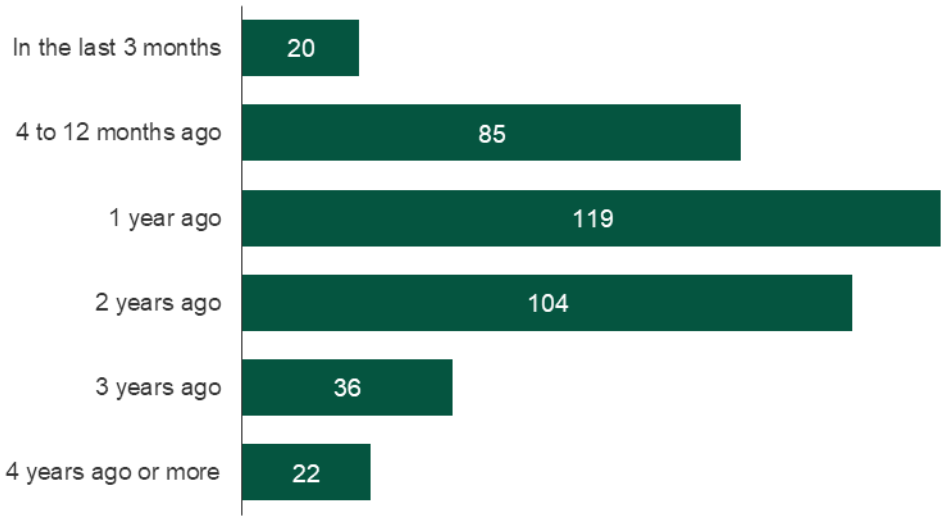
KEY ORGANIZATIONAL CHALLENGES

Forrester interviewed six organizations and surveyed 416 organizations with experience using the Intel vPro® platform. For more details on the organizations that participated in this study, see Appendix B.

Interviewed representatives all have at least two years of experience deploying laptops and desktops with the Intel vPro platform and using tools and features such as Intel Active Management Technology (Intel AMT), and Intel SIPP. Organizations that have deployed more recently, or have kept up on refreshing older devices regularly, can also take advantage of new tools and features, in particular Intel EMA and Intel Hardware Shield. For the interview and survey respondents, adoption of the Intel vPro platform ranged between a few months to 14 years. Interview respondents all adopted the Intel vPro platform at least two years ago; survey respondents were more mixed, with their timeframes ranging from months to years. Additionally, as of two years ago, 32% of survey respondents had either not started their deployments or only deployed the Intel vPro platform-based laptops and desktops to less than half of their employees. Additionally, this same 32% had deployed PCs with the Intel vPro platform without Intel Active Management Technology (Intel AMT) being enabled. Conversely, 68% of survey respondents report that two years ago they had deployed Intel vPro platform-based devices to more than half of all employees and used Intel Active Management Technology (Intel AMT) and other Intel vPro technologies to manage them.[3]

The organizations struggled with common challenges. The figure on the next page shows the average importance of key Intel vPro platform investment drivers. Respondents were asked to answer on a scale of 1 to 5, with 1 being “not important” to 5 being “significantly important.” The most important priorities include:

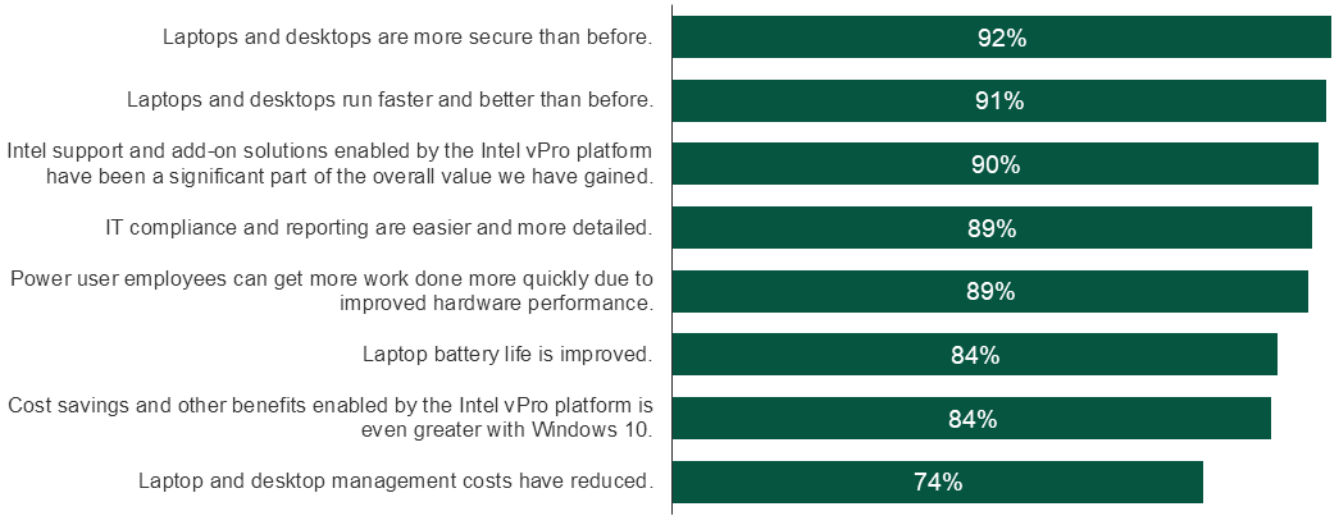
“When did you start managing laptops and desktops with Intel AMT?”



Base: 386 worldwide IT decision-makers responsible for desktop management
Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021

- **Security.** Interview and survey respondents identified an opportunity to help reduce endpoint-security support tickets, take advantage of new technologies, and help improve their overall security position. An IT manager for a South American government department said: "We're using Intel Active Management Technology to check security with service packs, in antivirus, and the other software. We collect and analyze that information from AMT so we can improve our security risk awareness."
- **Performance.** With older devices — especially for organizations with refresh rates of up to five or six years — employees struggled to complete tasks.
- **Productivity.** Additionally, task struggles meant slower task completion times and reduced productivity. Task struggles and device issues can also impact employee experience and engagement. Trying to get work done with a slow, problematic device can be demoralizing, and employee experience is an important priority to keep in mind. Forrester Research reports companies with the most engaged employees experience half the employee turnover of their peers, and that employee satisfaction spills over to improved customer satisfaction as well.[4]
- **Stability.** Again, related to device performance, older devices started to break down at a much higher rate. The Intel vPro platform also provides guaranteed firmware updates and support, also contributing to ongoing device stability. Eighty-six percent of survey respondents agreed or strongly agreed that device stability is a key reason for investing in the Intel vPro platform.[5]
- **Manageability.** Interview and survey respondents knew they needed to take advantage of new technologies enabled by Intel Active Management Technology (Intel AMT), Intel EMA, and other Intel vPro platform tools and features to meet the requirements of remote device management, especially responding to employee needs during unforeseen events, such as the COVID-19 pandemic.

"Based on the tools and features associated with the Intel vPro platform, especially for your most recent purchases of laptops and desktops with Intel Core vPro processors, how much do you agree or disagree with the following statements?"



Base: 416 worldwide IT decision-makers responsible for desktop management that responded "agree" or "strongly agree" to each statement.
Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021

- **Patching.** Interview and survey respondents reported patching and imaging devices were a significant problem, as too many failures required in-person remediation. Forrester's data shows this priority is important for many more organizations as well: 72% of survey respondents have adopted a patch management solution, and an additional 12% are planning to adopt one soon.[6]

Other investment priorities that were rated lower by survey respondents but still considered a top priority include: the impact of COVID-19 accelerating modern device deployments, the value of Intel vPro platform features and services (in addition to quality, high-performing laptops and desktops), and a primary focus to reduce IT costs.

Interviewed and surveyed organizations decided to invest in more desktops and laptops on the Intel vPro platform and manage devices with Intel vPro platform technologies and tools, in particular Intel Active Management Technology (Intel AMT), Intel EMA, and Intel SIPP. Compared to the adoption rates highlighted above, today nearly 80% of interview and survey respondent desktops and laptops have Intel vPro platform technology managed with Intel Active Management Technology (Intel AMT), meaning that most if not all interviewed and surveyed organizations will be at 100% Intel vPro platform deployment within a year or two.

"Intel SIPP gives us certainty that the platform will be supported for at least two more generations. That is also very important thing for our infrastructure stability."

IT infrastructure architect, higher education

Key assumptions

- **100,000 employees**
- **100,000 total laptops and desktops**
- **70,000 laptops and desktops are on the Intel vPro platform**
- **6 support incidents initiated per employee per year**
- **60% of employees are working from home**

COMPOSITE ORGANIZATION

Based on the interviews and survey responses, Forrester constructed a TEI framework, a composite company, and a ROI analysis that illustrates the areas financially affected. The composite organization is representative of both the six interviews with Intel vPro platform customers and the 416 survey respondents working at organizations that have enabled the Intel vPro platform across the globe. This composite organization is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. The composite organization is a global enterprise with 100,000 employees and 100,000 devices. It provides information technology software, solutions, and services to businesses and consumers with a health and healthcare focus.

The composite organization's employees each submit six total help desk requests per year, for a total of 600,000 — of which less than half are related

to desktop and laptop device management and security. Overall, the composite organization has deployed and will continue to deploy a mix of 90% laptop and 10% desktop devices.

For its 100,000 employees, at the time of initial investment and the first year of this analysis, 70,000 currently have laptops and desktops with Intel vPro platform technology. And with that critical mass of devices, the composite organization was able to standardize devices management with Intel Active Management Technology (Intel AMT) and Intel EMA. The composite organization has a 3.5-year annual device refresh rate, and it will continue to maintain (or even exceed) that schedule and purchase devices with the Intel vPro platform to ensure it can continue to enable value with the newest Intel vPro features and technologies. The initial investment considered for the composite organization is the incremental cost associated with getting to 100% Intel vPro platform deployment and management.

For the composite organization, two years ago one-third of employees worked a significant amount from home or from other remote locations. At the time of this analysis (with many organizations following disaster response protocols due to COVID-19 restrictions) this amount has increased to nearly 60% of employees working from home. A high work-from-home rate is expected to remain with at least half continuing to work significantly from home, even after COVID-19 restrictions are lifted.[7]

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	Device management support cost savings	$1,720,688	$2,458,125	$2,458,125	$6,636,938	$5,442,595
Btr	Device security support cost savings	$1,658,475	$2,369,250	$2,369,250	$6,396,975	$5,245,815
Ctr	Reduced support in-person escalations	$574,088	$820,125	$820,125	$2,214,338	$1,815,859
Dtr	Employee effectiveness	$2,205,000	$3,150,000	$3,150,000	$8,505,000	$6,974,493
Etr	Patching and imaging efficiency	$1,875,549	$2,568,099	$2,568,099	$7,011,748	$5,756,892
Ftr	Additional IT resource costs savings	$1,198,500	$1,997,500	$1,997,500	$5,193,500	$4,241,123
Gtr	Third-party software and services cost savings	$380,000	$617,500	$617,500	$1,615,000	$1,319,722
	Total benefits (risk-adjusted)	$9,612,299	$13,980,599	$13,980,599	$37,573,498	$30,796,499

DEVICE MANAGEMENT SUPPORT COST SAVINGS

Evidence and data. Interviewed organizations reported several examples of device support cost savings enabled by Intel vPro platform-based devices and managed through Intel vPro platform technology and tools, in particular Intel Active Management Technology (Intel AMT), Intel EMA, and Intel SIPP. When employees are provisioned with Intel vPro platform laptops and desktops, many help desk tasks can be avoided or resolved more quickly. These include quick password resets and the more labor-intensive driver and application compatibility troubleshooting, remote device and user management questions, and other issues. For example, interview respondents reported:

- An health insurance company has nearly everyone working from home during the COVID-19 quarantine periods. Implementing remote support was difficult with current infrastructure restrictions, but with Intel EMA and Intel Active Management Technology (Intel AMT) they can provide full remote support, even if the device is unattended or powered off.
- A US and UK healthcare organization estimates that one-quarter of all support tickets are related to device management. Without Intel Active Management Technology (Intel AMT) and Intel SIPP, that number would be significantly more today as they used to see many more help desk incidents to resolve software, driver, and firmware issues.
- A telecommunications company has identified significant opportunities with Intel EMA. Initially, its Kerberos implementation limited some Intel Active Management Technology (Intel AMT) use cases. However, incorporating Intel EMA in its desktop management toolkit enables them to take full advantage of remote management and remote power features by communicating with devices via secure cloud-based protocols, reducing the time needed to resolve support issues.

With Intel Active Management Technology (Intel AMT), Intel EMA, and Intel SIPP, these organizations can much more quickly manage and resolve most issues for their employees, even if the employee is away and the device is turned off. With Intel SIPP, a significant number of issues can be avoided with the assurance that a new update won't break compatibility with applications and hardware drivers. Finally, the Intel vPro platform includes best practices set by default, which can help avoid many support incidents, such as password reset requests, being made in the first place.

Survey respondents saw a 3% shift from escalated support to more efficient self-service options for device management support requests, in addition to an overall reduction in total requests similar to interview respondents.

Modeling and assumptions. The interview and survey findings are integrated into the composite organization:

- The composite organization records 1.7 device management-related support incidents per employee per year.
- One-third of these calls can be eliminated or resolved with employee self-service options.
- A device-management incident previously took 50 minutes to resolve. Now, resolution only takes 25 minutes.
- A help desk support representative salary is $27 per hour (fully burdened).

Risks. Given the variety of device management help desk channels reported by the surveyed and interviewed representatives, a 5% risk adjustment has been applied to allow for variance in the number of tickets and help desk costs.

To account for these risks, Forrester adjusted this benefit, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $5.44 million.

Device Management Support Cost Savings

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
A1	Number of devices with Intel vPro platform	Composite	70,000	100,000	100,000
A2	Number of device management-related support incidents per device per year before Intel vPro platform	Composite	1.7	1.7	1.7
A3	Reduction in device management-related support incidents	Composite	33%	33%	33%
A4	Number of device management-related support incidents per device per year today with the Intel vPro platform	A2*(1-A3)	1.1	1.1	1.1
A5	Help desk device management-related incidents per year before	A1*A2	119,000	170,000	170,000
A6	Help desk device management-related incidents per year today	A1*A4	77,000	110,000	110,000
A7	Reduction in help desk device management-related incidents per year	A5-A6	42,000	60,000	60,000
A8	Resource time to resolve an incident before (minutes)	Composite	50	50	50
A9	Improvement in management support incident resolution resource time	Composite	50%	50%	50%
A10	Resource time-to-resolve an incident today (minutes)	A8*(1-A9)	25	25	25
A11	Support resource hourly salary (fully burdened)	Composite	$27	$27	$27
At	Device management support cost savings	((A5*A8)-(A6*A10)) /60*A11	$1,811,250	$2,587,500	$2,587,500
	Risk adjustment	↓5%			
Atr	Device management support cost savings (risk-adjusted)		$1,720,688	$2,458,125	$2,458,125
	Three-year total: $6,636,938			**Three-year present value: $5,442,595**	

DEVICE SECURITY SUPPORT COST SAVINGS

Evidence and data. Similarly, interview and survey respondents also highlighted support incidents related to endpoint security issues, e.g., malware, data security, access rights, etc. With the Intel vPro platform, in particular Intel Active Management Technology (Intel AMT), Intel EMA, and Intel Hardware Shield, endpoint security help desk tickets can be avoided or resolved more quickly. For example, security endpoint help desk tickets involve issues such as dealing with suspected phishing emails, malware attacks, or data access issues. For interview and survey respondents, examples include:

- Survey respondents report better overall security for their organizations. Looking back to two years ago, only 77% rated their organizations as being "relatively secure" or "very secure," on a scale of "not very secure" to "very secure." Today, 92% of those same respondents rate their organizations "relatively secure" or "very secure."[8]
- Survey respondents attributed an average of 76% of security improvements to the Intel vPro platform security features and tools including Hardware Shield, Intel Active Management Technology (Intel AMT), Intel EMA, and others.[9] One survey respondent commented the Intel vPro platform provided, "greater security against threats and reduced support costs."
- A South American government agency knew they needed to be more secure. Personal IT support meant occasional monitoring, so an antivirus issue might take six months to notice, leading to increased issues and remediation.

Avoided security-related tickets:

Up to 30,000 per year

- Additionally, with Intel Active Management Technology (Intel AMT), Intel EMA, Intel Hardware Shield, and the rest of the Intel vPro platform, interview and survey respondents reported fewer security issues. And any help desk security incidents that did occur were resolved more quickly.

> **"Intel control is at the BIOS and UEFI level, which allows us to control device hardware at a very, very low level."**
>
> *Endpoint solutions architect, healthcare*

Modeling and assumptions. Survey support improvements, based on interview and survey findings, are integrated into the composite organization:

- The composite organization records 1.0 device security-related support incident per employee per year.
- One-third of these calls can be eliminated or resolved with employee self-service options.
- A security help desk incident previously took 90 minutes to resolve. Now, resolution only takes 45 minutes.
- A help desk support representative salary is $27 per hour (fully burdened).

Risks. Given the variety of security maturity levels at organizations reported by the interview and survey respondents, a 10% risk adjustment has been applied to allow for variance in the number of incidents and help desk costs.

To account for these risks, Forrester adjusted this benefit, yielding a three-year, risk-adjusted total PV of $5.25 million.

Device Security Support Cost Savings					
Ref.	**Metric**	**Calculation**	**Year 1**	**Year 2**	**Year 3**
B1	Number of devices with the Intel vPro platform	A1	70,000	100,000	100,000
B2	Number of device security-related support incidents per device per year before the Intel vPro platform	Composite	1.0	1.0	1.0
B3	Reduction in device security-related support calls	Composite	33%	33%	33%
B4	Number of device security-related support incidents per device per year today with the Intel vPro platform (rounded)	B2*(1-B3)	0.70	0.70	0.70
B5	Help desk device security-related incidents per year before	B1*B2	70,000	100,000	100,000
B6	Help desk device security-related incidents per year today	B1*B4	49,000	70,000	70,000
B7	Reduction in help desk device security-related incidents per year	B5-B6	21,000	30,000	30,000
B8	Time-to-resolve an incident before (minutes)	Composite	90	90	90
B9	Improvement in security support incident resolution resource time	Composite	50%	50%	50%
B10	Time-to-resolve an incident today (minutes)	Composite	45	45	45
B11	Security resource hourly salary (fully burdened)	A11	$27	$27	$27
Bt	Device security support cost savings	((B5*B8)-(B6*B10)) /60*B11	$1,842,750	$2,632,500	$2,632,500
	Risk adjustment	↓10%			
Btr	Device security support cost savings (risk-adjusted)		$1,658,475	$2,369,250	$2,369,250
	Three-year total: $6,396,975			**Three-year present value: $5,245,815**	

REDUCED SUPPORT IN-PERSON ESCALATIONS

Evidence and data. Along with fewer help desk tickets with shorter resolutions, support incidents can be resolved more often by the primary help desk representative without escalation. With Intel Active Management Technology (Intel AMT) and Intel EMA, help desk representatives have the remote access tools they need to resolve an issue, even if a person isn't at the device or it is powered off. Interview and survey respondents shared examples, including:

- A South American government agency must support all constituents, even in remote areas. Employees stationed remotely to serve those constituents might not receive complete device support until an IT representative can make their way to town, which could be days or even weeks.
- A Mexican university has provided employees with access to campus computers to access important files and applications, to be able to continue working from home during quarantine. But if a PC on campus freezes, requiring a

Avoided IT help desk escalations

2,385 to 4,050/year

restart, a 50-minute drive each way would be required for someone to push the power button.

- The telecommunications company estimates it avoids 2,000 truck rolls (i.e., a service call at a remote location) related to escalated support issues.

Modeling and assumptions. These examples and other interview and survey respondent feedback inform composite interview assumptions, including:

- For the composite organization, an escalated support issue requiring IT resource time takes about 5 hours on average, including in-depth remediation tasks as well as the time it takes for an IT administrator or manager to get from their office to the employee's desk, which at the time was a regular practice.
- Additionally, during the pandemic an escalated support issue might require multiple calls and added costs as any difficult remediation problems quickly became a device ship and replace, adding time or at least additional costs.
- About 2,835 in-person resolutions are avoided in the first year.
- In Year 2 and Year 3, 4,050 in-person escalations are avoided each year.
- An IT salary of $45 per hour, fully burdened, is assumed.

Risks. An in-person support escalation can vary from organization to organization. Offices closer together and remote workers all in one area can mean a different support experience, compared to a more spread-out organization. A 10% risk adjustment has been applied to allow for some of that variance.

The three-year, risk-adjusted total PV for this benefit is $1.82 million.

Reduced Support In-Person Escalations

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
C1	Avoided IT in-person escalations for both management and security issues with the Intel vPro platform	Composite	2,835	4,050	4,050
C2	Resource time to resolve an escalated incident before (hours)	Composite	5	5	5
C3	IT hourly salary (fully burdened)	Composite	$45	$45	$45
Ct	Reduced support in-person escalations	C1*C2*C3	$637,875	$911,250	$911,250
	Risk adjustment	↓10%			
Ctr	Reduced support in-person escalations (risk-adjusted)		$574,088	$820,125	$820,125
	Three-year total: $2,214,338			**Three-year present value: $1,815,859**	

EMPLOYEE EFFECTIVENESS

Evidence and data. Employees also benefit from fewer help desk tickets, fewer help desk incidents, fewer in-person escalations, and fewer imaging and patching issues. Intel vPro technologies, i.e., Intel EMA, Intel SIPP, Thunderbolt technology, Intel Wi-Fi 6, and Intel Hardware Shield, have helped avoid employee interruptions and support requests. Most support incidents have an employee at the other end of the phone or sitting nearby, waiting for the issue to be resolved. In addition, the Intel vPro platform enables additional employee benefits with modern hardware: most often a fast processor, enhanced wireless capabilities, better endpoint security, and

fast data transfer with Thunderbolt technology. Survey responses quantified the importance of end user productivity improvements:

- Fifty percent of survey respondents identified a significant reduction in employee interruptions with the Intel vPro platform.
- Fifty-nine percent of these respondents identified faster graphics processing as a productivity benefit, enabled by modern processors.
- And 54% reported improved employee experience; productivity benefits enabled by the Intel vPro platform can impact employee focus, creativity, and engagement. This can drive higher rates of productivity and lower rates of attrition.[10]

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

- In Year 1, 70,000 employees have Intel vPro platform-based devices. By Year 2, all 100,000 employees have the full deployment.
- About 10% of employees are in roles where they can take significant advantage of productivity benefits enabled by the Intel vPro platform (developers, highly mobile workers, heavy graphics users, those doing analysis on large spreadsheets, etc.).

Added employee productivity:

2 hours per month

- Each of these employees save an average of 2 hours per month.
- The average employee salary is $35 (fully burdened).
- A standard Forrester 50% productivity realization factor is applied, as not every hour saved is used for continued work tasks.

Risks. Employee productivity benefits cover a large group of people, and Forrester has applied a 25% risk adjustment to account for:

- Variance in the share of employees in a position to take advantage of productivity benefits enabled by the Intel vPro platform.
- Variance in the amount of time employees save.
- And variance in the activities employees do with that time.

The three-year, risk-adjusted total PV for employee effectiveness is $6.97 million.

Employee Effectiveness

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
D1	Employee with Intel vPro PCs	Composite	70,000	100,000	100,000
D2	Percentage of employees significantly impacted by PC or performance issues before	Composite	10%	10%	10%
D3	Hours saved each month with PCs with Intel vPro PCs	Composite	2.0	2.0	2.0
D4	Employee average salary	Composite	$35	$35	$35
D5	Productivity realization factor	Composite	50%	50%	50%
Dt	Employee effectiveness	D1*D2*D3*12*D4*D5	$2,940,000	$4,200,000	$4,200,000
	Risk adjustment	↓25%			
Dtr	Employee effectiveness (risk-adjusted)		$2,205,000	$3,150,000	$3,150,000
	Three-year total: $8,505,000			**Three-year present value: $6,974,493**	

PATCHING AND IMAGING EFFICIENCY

Evidence and data. Another significant task that required frequent in-person management is device imaging and patching. Most interviewed organizations have implemented at least remote delivery of patch updates, but many have not had a good solution to ensure consistency and deal with exceptions. With Intel Active Management Technology (Intel AMT) and Intel SIPP, organizations have been able to save significant time by avoiding failures of image and patch processes for remote employees. Interview and survey respondents reported:

- A healthcare company identified significant value from Intel SIPP. Its endpoint solutions architect estimated their patch saturation rate without the Intel vPro platform, "We'd easily be down in the 70s." With so many devices assigned to clinic rooms and not people, a failed patch or reimage would require an IT employee to go onsite, find the right room, and manually apply the update.
- A telecommunications company sees Intel EMA as an enabler of significant benefits. Its endpoint manager said: "When a user calls in and they have a problem, we overnight a replacement machine that we've already imaged. The user transfers all their stuff, we get the problem PC fixed and reimaged. Instead, with EMA we can call our OEM [original equipment manufacturer] to ship a new hard drive under warranty; once installed we can image and set everything up for the employee remotely. That saves us both time and equipment costs."

With the Intel vPro platform, imaging and patching tasks are completed more successfully. Patch saturation rates improved for interviewed organizations. Prior to taking advantage of Intel SIPP, these organizations reported patch saturation rates (within 30 days) of around 70% to 80%. Today, that saturation rate is 90% to 95%.

"We can resolve issues for someone at home that we wouldn't have been able to. They may not be around, or the VPN isn't working. Now we save on shipping costs for the new machines we used to send out."

Senior IT architect, insurance

Modeling and assumptions. For the composite organization, Forrester has assumed:

- Imaging tasks include setting up new devices and wiping and replacing devices which have had issues or major updates. Along with planned new device purchases, the composite organization expects upwards of 50,000 imaging processes each year.
- A number of those image processes fail each year, requiring remediation. With the Intel vPro platform, there is a reduction in image processes requiring remediation of 5 percentage points.
- Each image remediation process takes about 2.5 hours to complete.
- For patching, every device receives regularly monthly operating system and application updates, especially those related to security.

"We would definitely say that there's a lot of value in the Intel vPro platform for us. If imaging and patching tools were all Intel offered, we would still buy it."

Endpoint solutions architect, healthcare

- Some patch processes fail, e.g., there was a driver issue, the PC was turned off, etc. With the Intel vPro platform, the improvement in patch remediation is a reduction of 3 percentage points.
- Each patch remediation takes about 1.5 hours.
- A $45 IT salary, fully burdened, is assumed.

Risks. A 5% risk adjustment has been applied, to allow for variances in the number of image and patch failures and the time to remediate.

The three-year, risk-adjusted total PV for this benefit is $5.76 million.

Patching And Imaging Efficiency

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
E1	Number of new PCs imaged for organization standards, annually	Composite	48,571	48,571	48,571
E2	Percent of imaging failures reduced	Composite	5%	5%	5%
E3	Total imaging processes each year that required rework	E1*E2	2,429	2,429	2,429
E4	Average rework time required to resolve a failed image	Composite	2.5	2.5	2.5
E5	Monthly patch updates pushed out through remote management solution	Once per all devices	70,000	100,000	100,000
E6	Percent of monthly patch failures avoided with the Intel vPro platform	Composite	3%	3%	3%
E7	Total patch processes each year that required rework	E5*E6*12	25,200	36,000	36,000
E8	Average rework time required to resolve a failed patch	Composite	1.5	1.5	1.5
E9	IT device manager hourly salary (fully burdened)	Composite	$45	$45	$45
Et	Patching and imaging efficiency	((E3*E4)+(E7*E8)) *E9	$1,974,263	$2,703,263	$2,703,263
	Risk adjustment	↓5%			
Etr	Patching and imaging efficiency (risk-adjusted)		$1,875,549	$2,568,099	$2,568,099
	Three-year total: $7,011,748			**Three-year present value: $5,756,892**	

ADDITIONAL IT RESOURCE COST SAVINGS

Evidence and data. While some of the previous benefits already include IT resource savings, organizations totaled up even greater people savings beyond help desk escalations, imaging, and patching. The Intel vPro platform, particularly technologies such as Intel Active Management Technology (Intel AMT) and Intel EMA, enables efficiency in even more IT tasks, such as responding to audit, compliance, and reporting needs, planning for future endpoint improvements, supporting other team IT requests, and other day-to-day tasks. Examples from interview and survey respondents include:

- A Chinese automaker has reduced its overall IT-to-employee ratio from 1-to-200 to about 1-to-230, avoiding extra hires and moving employees to higher-value, skilled positions.
- A South American government agency highlighted their resource savings. Its IT manager said, “We are using that time to improve our desktop infrastructure, and [we] can work on

projects that we have wanted to start but haven't had the time."

Modeling and assumptions. With laptops and desktops running the Intel vPro platform managed with Intel Active Management Technology (Intel AMT), Intel EMA, and other Intel vPro technologies, the composite organization has been able to do more with its current IT headcount. It has allocated resources where staffing was short, and it can take on new projects and initiatives without hiring new employees. This benefit is applied to the composite organization assuming:

- Without the Intel vPro platform, the composite organization would need 500 people on the IT team (a 1-to-200 ratio).
- With the Intel vPro platform, that ratio is improved to 1-to-230, which is a difference of 65 FTEs.
- The hours saved from the imaging, patching, and help desk escalation benefits already quantified equate to up to 40 FTEs each year.

"With vPro we can shift IT resources focused on desktop support and management to other duties."

Client devices manager, automotive

- Given that Year 1 is still at only 70,000 Intel vPro platform PCs, that adds up to an additional savings of 15 FTEs, which after full Intel vPro platform deployment, grows to 25 FTEs each year.

Risks. Since these tasks have been described more generally, as compared to other benefits, a 15% downward risk adjustment has been applied to allow for lower-than-expected resource savings.

The three-year, risk-adjusted total PV of IT resource cost savings is $5.85 million.

THIRD-PARTY SOFTWARE AND SERVICES COST SAVINGS

Evidence and data. With the Intel vPro platform, interview and survey respondents have reported significant cost savings by reducing or avoiding the need for redundant third-party software and services. Examples include:

- Sixty-six percent of survey respondents reported they have avoided third-party software costs.
- Sixty-eight percent of survey respondents reported additional third-party services and support costs savings.[11]
- A US insurance company retired multiple applications, including multiple remote access

Additional IT Resource Costs Savings

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
F1	Additional FTEs reallocated to other higher-value tasks	Composite	15	25	25
F2	IT annual salary (fully burdened, rounded from hourly estimate)	Composite	$94,000	$94,000	$94,000
Ft	Additional IT resource costs savings	F1*F2	$1,410,000	$2,350,000	$2,350,000
	Risk adjustment	↓15%			
Ftr	Additional IT resource costs savings (risk-adjusted)		$1,198,500	$1,997,500	$1,997,500
	Three-year total: $5,193,500			**Three-year present value: $4,241,123**	

solutions, desktop management tools, and a power management package.

With Intel Active Management Technology (Intel AMT), Intel EMA, and other Intel vPro solutions, organizations can take advantage of Intel vPro technologies such as desktop management, remote power management, and remote access, instead of having to purchase additional solutions.

Modeling and assumptions. For the composite organization, it is assumed that some solutions can be retired for:

- Savings of $400,000 in Year 1, as full deployment of the Intel vPro platform has not completed, and some licensing may have extended terms.
- Savings of $650,000 in Years 2 and 3, with full deployment of the Intel vPro platform and time to retire legacy applications.

Risks. Given that the total third-party cost savings is already a conservative estimate, only a small 5% risk adjustment has been applied to allow for overestimated savings.

The three-year, risk-adjusted total PV is $1.32 million.

Third-Party Software And Services Cost Savings

Ref.	Metric	Calculation	Year 1	Year 2	Year 3
F1	Third-party software and services cost savings	Composite	$400,000	$650,000	$650,000
F2	Third-party software and services cost savings	G1	$400,000	$650,000	$650,000
Ft	Risk adjustment	↓5%			
F1	Third-party software and services cost savings (risk-adjusted)		$380,000	$617,500	$617,500
	Three-year total: $1,615,000			**Three-year present value: $1,319,722**	

UNQUANTIFIED BENEFITS

Additional benefits that customers experienced but were not able to quantify include:

- **Disaster and emergency response.** For example, the COVID-19 pandemic required many businesses worldwide to support more employees working from home.
  - Survey respondents reported that 30% of employees worked remotely a year ago. That number is 59% today, and it is expected to remain high a year from now at 55%.[12] When quarantines started and most employees began working from home, 91% of survey respondents agree that having Intel vPro platform laptops and desktops helped them respond to employee needs more quickly — meaning it could have taken a lot more time and been more costly to organizations if they had not had the Intel vPro platform in place.
  - Eighty-nine percent of survey respondents “agree” or “strongly agree” that they have been able to keep IT SLAs consistent or nearly consistent with pre-pandemic levels (this equates to an average agreement of 4.4 on a scale of 1 to 5, as shown in the chart on the next page, with 1 “strongly disagree” and 5 “strongly agree”). And 75% agree that

their security exposure did not change significantly with increased remote work.[13]

- **Employee experience.** The Intel vPro platform reduces performance issues that help employees avoid discouraging interruptions and maintain positive employee satisfaction. For example, for web conferencing, two-thirds of survey respondents identified employee productivity improvements through easier web conferencing connections and better audio and video performance.[14]
- **Employee recruiting and hiring.** Forrester Research has advocated for organizations to find ways to use technology to improve their employee experience.[15] Improved employee experience means employees might more often decide to stay at the company longer, which can help reduce recruiting and hiring needs and costs.
- **Security exposure.** In addition to avoiding security issues, interviewees and survey respondents reported an improvement in their overall security position. On a scale of "not very secure," "somewhat secure," "relatively secure," and "very secure," only 80% of surveyed organizations rated their organization as "relatively secure" or better. Compared to today where 97% of organizations rate themselves "relatively secure" or "very secure."[16]

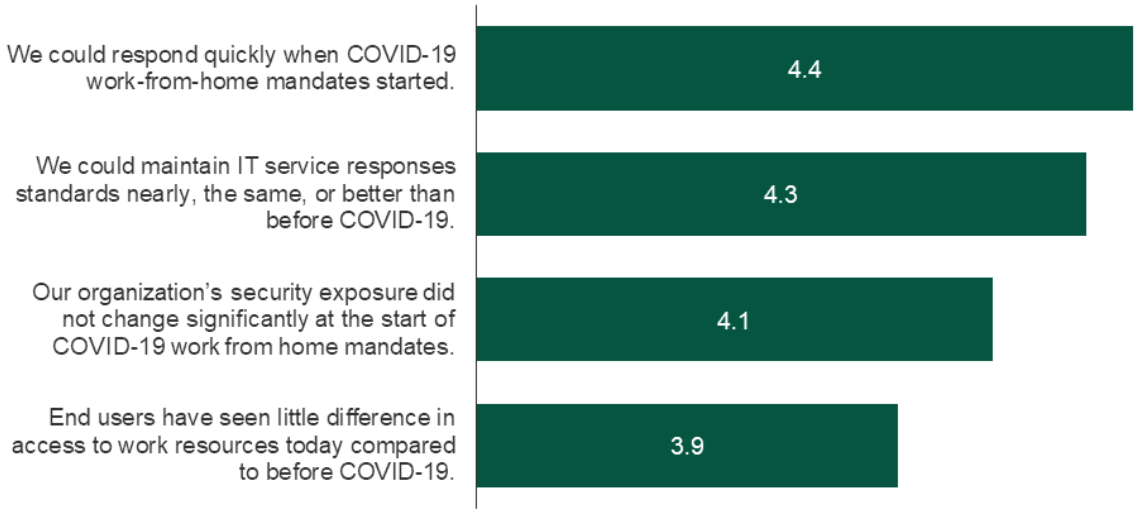
FLEXIBILITY

The value of flexibility is unique to each customer. For organizations that have been purchasing and plan to continue purchasing laptops and desktops with Intel Core™ vPro processors and managing them with Intel vPro platform tools and technologies, a key future flexibility benefit is maintaining a modern Intel vPro environment.

Some survey and interview respondents are considering accelerating their PC refresh cycle. For the composite organization, changing from 3.5 to a 3.0 year refresh cycle would add some investment costs, but it would also allow more employees to take advantage of newer, more powerful PCs. It would also allow IT teams to take advantage of the newest management and security tools more quickly.

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

"Rate your level of agreement with the following statements about remote worker experience with the Intel vPro platform."



Base: 385 worldwide IT decision-makers responsible for desktop management
Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021

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**
Htr	Incremental device costs	$3,706,469	$3,706,469	$3,706,469	$0	$11,119,406	$10,139,182
Itr	Ongoing incremental costs	$0	$64,240	$64,240	$64,240	$192,720	$159,755
Jtr	Initial incremental costs	$25,988	$0	$0	$0	$25,988	$25,988
	Total costs (risk-adjusted)	$3,732,456	$3,770,709	$3,770,709	$64,240	$11,338,113	$10,324,925

INCREMENTAL DEVICE COSTS

Evidence and data. Most businesses have a regular schedule and budget to purchase new PCs. For the composite organization, Forrester assumes:

- About 28,600 laptop and desktop purchases are planned, based on a 3.5-year refresh cycle.
- An additional 1,500 unplanned laptop and desktop purchases are also included, to account for unplanned damages or accelerated refreshes.
- The composite organization deploys 90% of laptop and 10% desktop devices to employees and workstations.
- For the composite organization, the average cost of a new non-Intel vPro platform device is estimated at $950, and a new Intel vPro platform device is $1,020, or an incremental cost of $70 per device.
- Devices are purchased the year before associated benefits are realized.

Risks. Device costs can vary greatly based on device specifications, company size, and location. Forrester adjusted this cost upward by 5% to allow for underestimated device costs.

The three-year, risk-adjusted total PV (discounted at 10%) for device costs is $10.14 million.

Incremental Device Costs						
Ref.	**Metric**	**Calculation**	**Initial**	**Year 1**	**Year 2**	**Year 3**
H1	Device refresh rate		3.5	3.5	3.5	
H2	Number of planned new laptops and desktops provisioned		28,571	28,571	28,571	
H3	Additional, laptops and desktops provisioned to employees		1,500	1,500	1,500	
H4	Average cost of a device with a standard processor		$950	$950	$950	
H5	Average cost of an Intel vPro platform device		$1,020	$1,020	$1,020	
Ht	Incremental device costs	(H2*(H5-H4)) +(H3*H5)	$3,529,970	$3,529,970	$3,529,970	
	Risk adjustment	↑5%				
Htr	Incremental device costs (risk-adjusted)		$3,706,469	$3,706,469	$3,706,469	
	Three-year total: $11,119,406			**Three-year present value: $10,139,182**		

ONGOING INCREMENTAL COSTS

Evidence and data. While IT resources already manage employee PCs, the Intel vPro platform does introduce some new tools, which may require training, and add new tasks. While not significant, these costs are included here to show they are considered for the investment in the Intel vPro platform.

For the composite organization, this includes:

- Ten extra hours per week across the IT department spent analyzing data from Intel Active Management Technology (Intel AMT), using the Intel EMA console, and managing the Intel EMA servers.
- A $45 average IT hourly salary, fully burdened, has been assumed.
- And a $35,000 per year cost has been added for the provisioning and operation of Intel EMA servers (costs are based on cloud subscription estimates).

A 10% risk adjustment has been applied, to allow for variances in the amount of work needed, as well as the Intel EMA server operation costs as costs vary across cloud providers or an on-premises option.

The three-year, risk-adjusted total PV of $160,000.

Ongoing Incremental Costs

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
I1	IT resources managing devices			50	50	50
I2	Hours per week per IT resource, for incremental tasks related to Intel Active Management Technology (Intel AMT) and other tools			0.2	0.2	0.2
I3	IT resource hourly salary (fully burdened)			$45	$45	$45
I4	Subscription costs for EMA management tools (per year)			$35,000	$35,000	$35,000
It	Ongoing incremental costs	I1*I2*I3*52+I4	$0	$58,400	$58,400	$58,400
	Risk adjustment	↑10%				
Itr	Ongoing incremental costs (risk-adjusted)		$0	$64,240	$64,240	$64,240
	Three-year total: $192,720			**Three-year present value: $159,755**		

INITIAL INCREMENTAL COSTS

Evidence and data. Some incremental initial costs have been included to account for new tasks needed because of investing in the Intel vPro platform, including the deployment of some additional devices and the provisioning of Intel EMA servers.

Modeling and assumptions. For the composite organization, assumptions include:

- Fifty IT resources are involved in up-front implementation, each spending an average of 5 added hours over a 10-week deployment.
- A $33 per hour IT resource salary, fully burdened, is assumed.

A 5% risk adjustment has been applied, yielding a three-year, risk-adjusted total PV of less than $26,000.

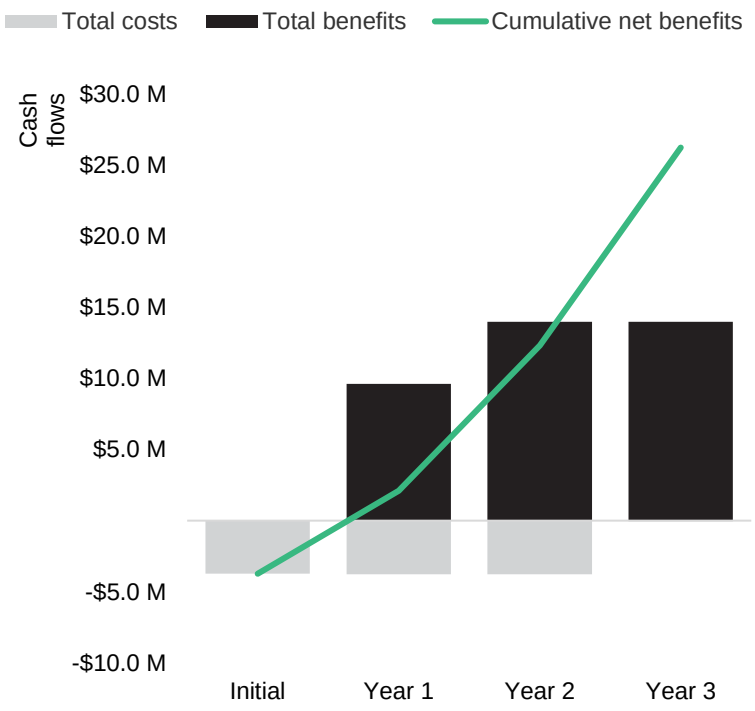
Initial Incremental Costs

Ref.	Metric	Calculation	Initial	Year 1	Year 2	Year 3
J1	IT resources involved in vPro refresh		150			
J2	Hours per week per IT resource, for incremental implementation tasks related to the Intel vPro platform		0.5			
J3	Weeks for vPro deployment planning		10			
J4	IT resource hourly salary (fully burdened)		$33			
Jt	Initial incremental costs	J1*J2*J3*J4	$24,750	$0	$0	$0
	Risk adjustment	↑5%				
Jtr	Initial incremental costs (risk-adjusted)		$25,988	$0	$0	$0
	Three-year total: $25,988			**Three-year present value: $25,988**		

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	($3,732,456)	($3,770,709)	($3,770,709)	($64,240)	($11,338,113)	($10,324,925)
Total benefits	$0	$9,612,299	$13,980,599	$13,980,599	$37,573,498	$30,796,499
Net benefits	($3,732,456)	$5,841,591	$10,209,891	$13,916,359	$26,235,385	$20,471,574
ROI						198%
Payback						8 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.

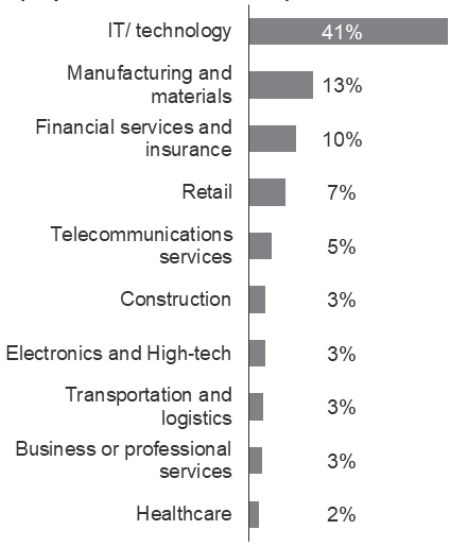
Appendix B: Interview And Survey Demographics

Interviewed Organizations

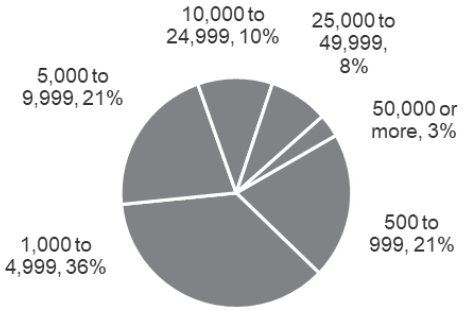
Industry	Region	Interviewee	Employees	Intel vPro desktops and laptops
Telecommunications	US with global reach	Senior manager endpoint planning/engineering	135,000	25,000
Healthcare	US and UK	Endpoint solutions architect	275,000	250,000
Insurance	US	Senior IT architect	100,000	90,000
Higher education	Mexico	IT infrastructure architect	20,000	11,500
Federal government department	South America	IT manager	3,000	1,500
Automotive	China	Client devices manager	12,000	2,400

Survey Demographics

"Which of the following best describes the industry to which your company belongs?" (Top 10 industries shown)



"Using your best estimate, how many employees work for your firm/organization worldwide?"



"What is your level of knowledge when it comes to Intel vPro processors at your organization?"

"I am knowledgeable about the IT management, support, and other efficiencies that Intel vPro processors have enabled."

"In which country are you located?"

Survey responses were collected from each of the following countries:

Australia, Brazil, Canada, China, France, Germany, Italy, Japan, Korea, Mexico, Spain, United Kingdom, United States

Base: 416 worldwide IT decision-makers responsible for desktop management
Note: Percentages may not total 100 because of rounding.
Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021

Appendix C: Endnotes

[1] For the purposes of this TEI analysis, there are two assumptions being made to simplify analysis and explanation: 1) The composite organization assumes 100% laptop use — this helps simplify having to break out secondary inputs of device type counts and costs, which readers can do for their own business case analyses; 2) The composite organization assumes no growth to avoid attributing organic growth with value gains attributable to vPro, or complex explanation to subtract those gains from the ROI that is specific to the Intel vPro platform investment.

[2] The information in the callout at the bottom of this page is based on 416 worldwide IT decision-makers with desktop management responsibility. A combined 92% of these respondents replied with "agree" or "strongly agree" to the following question: "Based on the tools and features associated with the Intel vPro platform, especially for your most recent purchases of laptops and desktops with the Intel vPro platform, how much do you agree or disagree with the following statement? Laptops and desktops are more secure than before." Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[3] The percentage referenced in this sentence is based on 416 worldwide IT decision-makers with desktop management responsibility responding to the following question, "How would you characterize your overall Intel vPro platform investment two years ago?" Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[4] Source: "The CIO's Guide To Employee Experience," David Johnson, Forrester Research, April 2019.

[5] The percentage referenced in this sentence is based on 414 worldwide IT decision-makers with desktop management responsibility that selected "device stability" among other options for the following question, "What were the main priorities behind the decision to invest in and deploy newer laptops and desktops with Intel vPro processors?" Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[6] The percentages in this sentence are based on 1,231 security decision-makers with client/endpoint, data, or mobile security responsibilities responding to the question, "What are your organization's plans to adopt the following client security (desktop/laptop NOT mobile/tablet) technologies?" Source: Forrester Analytics Business Technographics® Security Survey, 2020.

[7] The percentages referenced in this paragraph are based on 385 worldwide IT decision-makers with desktop management responsibility responding to the question, "What percentage of employees worked remotely two years ago, are working remotely today, and that you estimate will be working remotely a year from now?" Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[8] The percentages referenced in this sentence is based on 416 worldwide IT decision-makers with desktop management responsibility responding to the question, "How would you characterize your risk of security exposure two years ago, as well as today with more modern vPro laptops and desktops?" Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[9] The percentage referenced in this sentence is based on 398 worldwide IT decision-makers with desktop management responsibility responding to the question, "How much would you attribute your overall security improvements to the Intel vPro platform tools including Hardware Shield, Intel Active Management Technology (Intel AMT), Intel EMA, and others?" Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[10] The percentage referenced in this sentence is based on 407 worldwide IT decision-makers with desktop management responsibility responding to the question, "Please select any specific employee improvements enabled by laptops and desktops with Intel vPro technology that you or your colleagues have noted." Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[11] The percentage referenced in this sentence is based on 398 worldwide IT decision-makers with desktop management responsibility responding "yes" to the question, "Have you avoided or eliminated any other hardware or software costs?" Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[12] The percentages referenced in this sentence are based on 385 worldwide IT decision-makers with desktop management responsibility responding to the question, "What percentage of employees worked remotely two years ago, are working remotely today, and that you estimate will be working remotely a year from now?" Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[13] The percentage referenced in this sentence is based on 385 worldwide IT decision-makers with desktop management responsibility selecting "agree" or "strongly agree" to the following statements: "Laptops and desktops with Intel vPro platform technology, with management using Intel AMT, helped us respond quickly when COVID-19 work-from-home mandates started"; "The Intel vPro platform and Intel AMT have helped maintain IT service responses standards at nearly the same level, the same level, or better compared to before COVID-19"; and "With the Intel vPro platform and Intel AMT, our organization's security exposure did not change significantly at the start of COVID-19 work from home mandates." Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[14] The percentages referenced in this sentence is based on 407 worldwide IT decision-makers with desktop management responsibility responding to the question, “Please select any specific employee improvements enabled by laptops and desktops with Intel vPro technology that you or your colleagues have noted.” Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.

[15] Source: “Transform Data Into Insights To Improve The Anywhere-Work Technology Experience,” Forrester (https://www.forrester.com/fn/4zRzkx6H77IZ1zfkKMoaOq).

[16] The percentages referenced in this paragraph are based on 401 worldwide IT decision-makers with desktop management responsibility responding to the question, “How would you characterize your risk of security exposure two years ago, as well as today with more modern Intel vPro platform laptops and desktops?” Source: A commissioned study conducted by Forrester Consulting on behalf of Intel, January 2021.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