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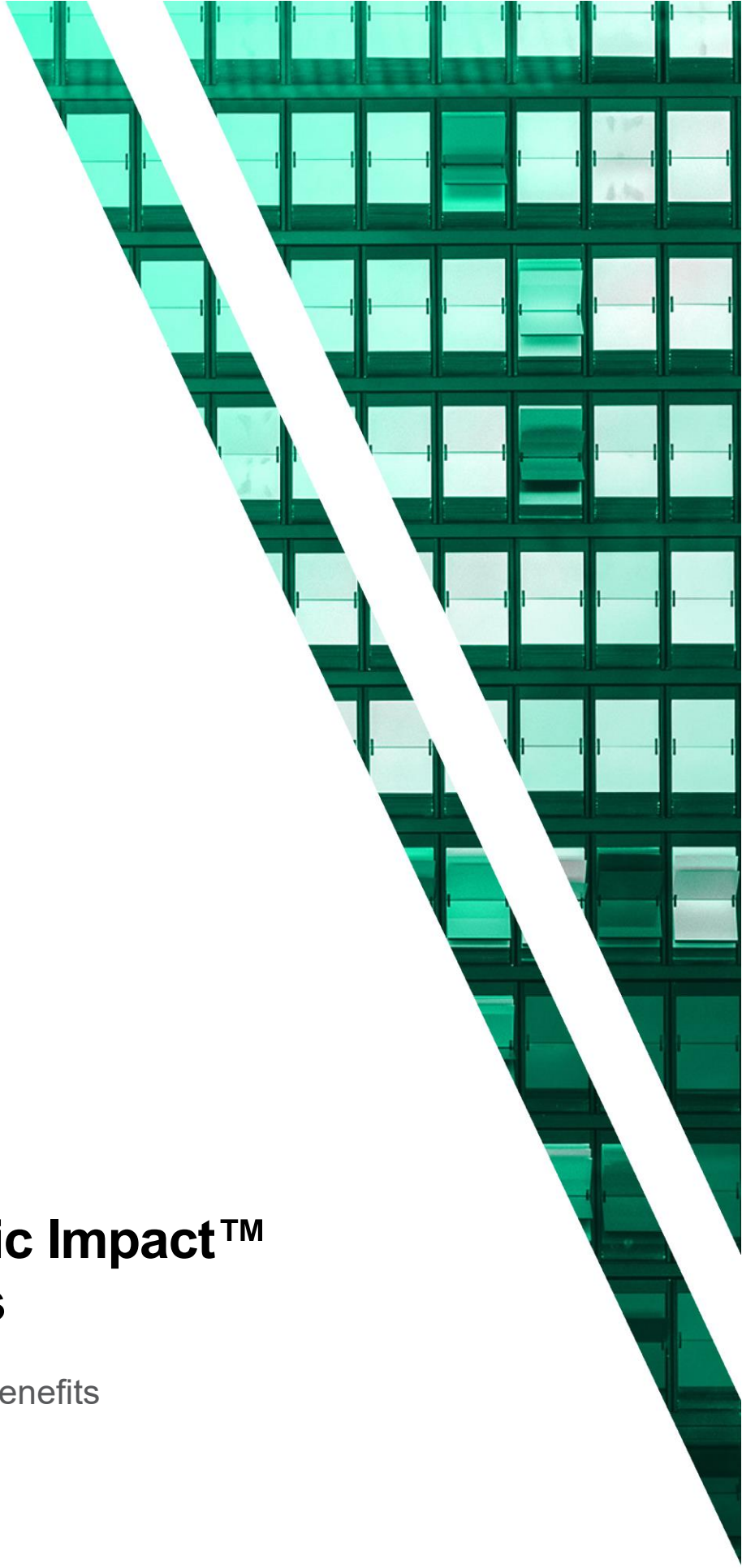

The Total Economic Impact™ Of Dell Peripherals

Cost Savings And Business Benefits Enabled By Dell Peripherals

FEBRUARY 2023

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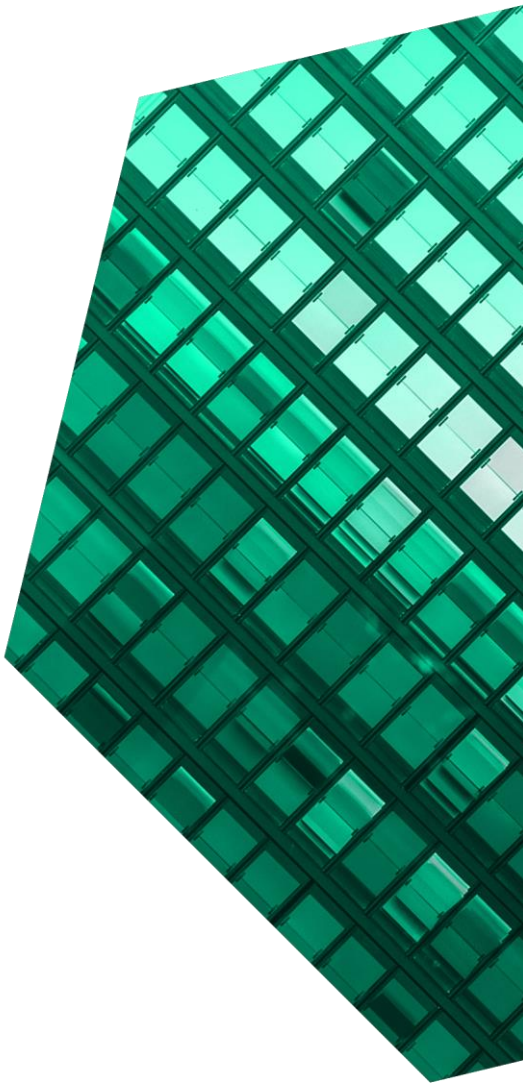


ABOUT FORRESTER CONSULTING

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

Executive Summary

As hybrid work and anywhere work take center stage in workplace design for improved employee experience (EX), more organizations seek to equip their employees with the right hardware and equipment to facilitate productivity. The COVID-19 pandemic led to increased investments in hardware — organizations will continue to invest in this area as they address workforce technology needs to solve new challenges that anywhere work brings.

Dell Peripherals offer a range of options from models that serve broader business use cases to more specific ones. These help employees and IT operations staff work productively, improve collaboration, and support an anywhere-work strategy. The Dell Peripherals in this study refer to keyboards and mice (KBM), external webcams, headsets, speakerphones, docking stations, adapters, and Dell computers parts and upgrades. Parts and upgrades specifically refer to memory (i.e., RAM) and power solutions (e.g., power adapters and replacement batteries).

Dell commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Dell Peripherals.[1] The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Dell Peripherals on their organizations.

Organizations that have hardware policies based on employees' needs and roles.

22%

KEY STATISTICS

Return on investment (ROI)
303%

Net present value (NPV)
$37.2M

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four customers with experience using Dell Peripherals, and surveyed 100 business and IT decision-makers responsible for their organization's EX, workplace design, and end-user hardware. For the purposes of this study, Forrester aggregated the experiences of the interviewees and combined the results into a single composite organization that is a large enterprise with $50 billion in annual revenue and 100,000 employees.

Our survey revealed that companies are embracing hybrid work arrangements in the long run. In the next 12 months, only 33% of organizations expected their employees to work four days in the office in a work week, compared to 40% that expected employees to spend only three days in the office. However, their approach to peripherals is still top-down. Only 22% of organizations have hardware policies based on their employees' needs and roles. As organizations

embrace long-term hybrid work arrangements, it is time for a needs-based hardware policy.

Prior to using Dell Peripherals, these interviewees noted their organizations struggled with supply chain issues, employee satisfaction with computer peripherals, and operational challenges with managing a range of peripherals. These created a need to purchase from a reliable brand, peripherals that can improve EX and overcome the operational challenge of managing and maintaining a range of peripherals.

After the investment in Dell Peripherals, the interviewees deployed them to their employees for use at the office, remotely, or at hybrid workspaces. Key results from the investment included time savings from raised productivity and reduced IT resourcing and asset costs.

Our survey revealed that the greatest benefit of an integrated suite of connected peripherals lies in seamless integration. Sixty-two percent of organizations reduced time spent on troubleshooting firmware updates, and 68% improved productivity due to reduced connectivity issues.

KEY FINDINGS

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

- **Productivity gains from reduced setup time and customized shortcuts.** Employees experience a reduction of the average setup time from 25 minutes per week to 20 minutes per week with the use of Dell Peripherals. Customizable button functions available on Dell Peripheral products allow employees to achieve 25 minutes of time savings per week through using them to perform shortcuts. In total, the resulting 30 minutes of time saved per week for each employee allows employees to translate this time into other productive work. As a result, the composite organization achieves a productivity gain worth $21.7 million.
- **Productivity gains from better collaboration.** Dell Peripherals enable better teamwork and more efficient collaboration. Dell's wireless headsets provide employees with good noise cancellation, their external 4K webcams enable clear picture quality, and video call-certified capabilities are available across these and speakerphone products. Employees can thus focus better on meeting agendas, build camaraderie with colleagues in hybrid work settings and feel empowered to contribute to meetings. This enables more effective meetings and reduces the time spent per week in meetings by 3 hours, which can then be reallocated for other productive work. The time savings thus amount to a productivity gain of $27.1 million.
- **Productivity gains from time savings from improved IT operations efficiency.** It is now simpler and more streamlined to manage Dell Peripherals with reliable support from Dell support, Dell Peripheral Manager, Dell-on-Dell ecosystem, and wireless functionalities of Dell Peripheral products. Along with Dell's next-day exchange program, IT staff now spend 33% less time on troubleshooting faulty products. Time savings thus amount to $485,000.

Total productivity gain

$49 million

- **Cost savings from reduced frequency of peripheral replacement.** The superior and longer-lasting battery life of Dell's wireless KBM products prolongs their lifespan from two and a

half years to four years. This offers cost savings of around $221,000.

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

- **Increased employee satisfaction, welfare, and well-being.** High quality, full-featured, and ergonomic wireless peripherals improve employee satisfaction and their well-being. It supports employees' workdays, improves comfort, and integrates seamlessly into their workflow to achieve productive work time.
- **Quality assurance and greater peace of mind.** Dell Peripherals' parts and upgrades instill a strong sense of trust and reliability in customers, allowing customers to have little to no doubt over safety or security.
- **Supply chain reliability.** Dell's supply chain reliability is in stark contrast to other suppliers — they can still support the organization even in economic instability created by the pandemic.
- **Improved security.** Dell's external 4K webcam works seamlessly with Dell ExpressSign-in and other biometric authentication platforms to enable automatic login and logout when it detects user presence or absence. Dell's KBMs also feature 128-bit Advanced Encryption Standard (AES) on the keyboard to help protect data transmission across computer systems.
- **Optimized Dell laptops and computers.** Use of Dell's Parts and Upgrades products such as RAM and batteries in Dell laptops and computers has prolonged their lifespan and optimized performance, which encourages greater efficiency in an employee's typical workday.

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

- **Product costs.** One-time purchase and shipping costs of Dell Peripheral products (e.g., wireless KBMs, wireless headsets, external 4K webcams, docking stations, and multiport adaptor cables) amount to $8.9 million for 50,000 employees, with shipping only for 10,000 remote employees. For the purpose of this study, purchase costs of parts and upgrades will not be quantified. The composite organization will also incur product replacement costs at the end of the products' lifecycles, varying from three to five years depending on usage patterns. As this cost falls outside of our modelling scope from Year 4 onwards, it will not be included.
- **Implementation costs.** An initial setup is done by relevant IT operations personnel. Considering the man hours required, initial implementation costs about $19,000.
- **Ongoing maintenance and management costs.** There is a team of IT staff dedicated to the daily management of peripherals, including work done to address employee enquiries on peripherals, inventory management, and upgrading of peripherals firmware. The costs involved amount to $3.36 million.

The financial analysis which is based on the interviews and survey found that a composite organization experiences benefits of $49.6 million over three years versus costs of $12.3 million, adding up to a net present value (NPV) of $37.2 million and an ROI of 303%.

"[With Dell-on-Dell,] you have a one-stop shop. The user experience is much better. In an office or hybrid environment, at home, it helps deliver a streamlined experience."

CISO, public health organization

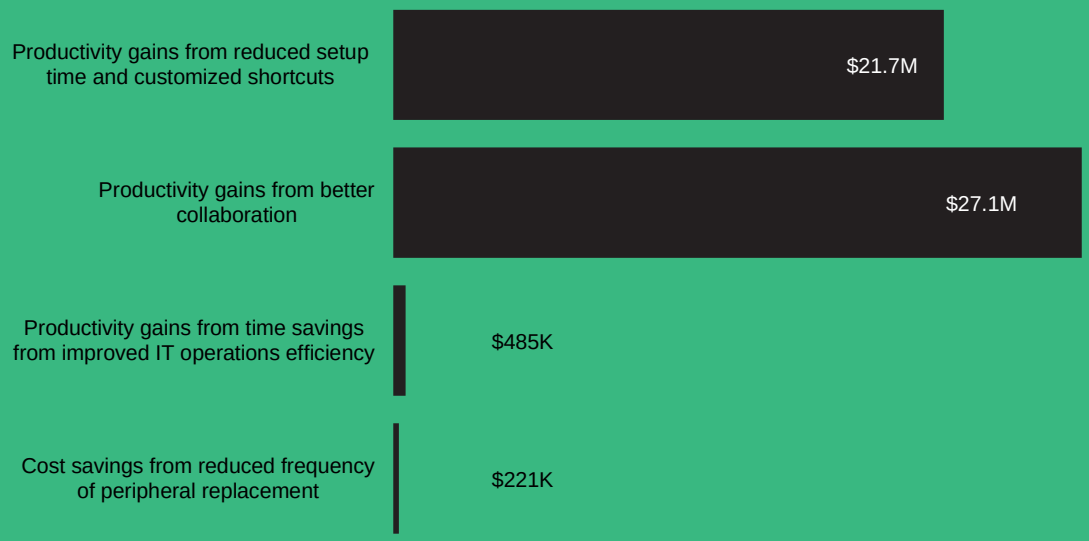
ROI
303%

BENEFITS PV
$49.6M

NPV
$37.2M

PAYBACK
7 months

Benefits (Three-Year)



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 Dell Peripherals.

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 Dell Peripherals can have on an organization.

DUE DILIGENCE

Interviewed Dell stakeholders to gather data relative to Dell Peripherals.

INTERVIEWS AND SURVEY

Interviewed four representatives at organizations using Dell Peripherals to obtain data with respect to costs, benefits, and risks.

COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewees and survey respondents.

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 interviewees and survey respondents.

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 Dell Peripherals Customer Journey

Drivers leading to the Dell Peripherals investment

Interviews

Role	Industry	Region	Organization Size
Chief information officer	Public school administration	North America	100,000
Director of IT strategy	Automobile	Europe, Middle East, and Africa	100,000
IT technology director	Energy	North America	15,000
Chief information security officer	Public health organization	Asia Pacific and Japan	100,000

KEY CHALLENGES

Prior to using Dell Peripherals, interviewees reported supply chain issues during the pandemic, lower employee satisfaction with computer peripherals, and operational challenges with managing a range of peripherals.

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

- **Supply chain issues during the pandemic.** During the pandemic, it was difficult to get equipment for employees to cater to the shift towards working from home. The director of IT strategy in an automobile company said: "Dell was the only brand which could deliver and support the organization of 50,000 people. It improved their reputation as an IT department within the organization."
- **Employee satisfaction with peripherals.** Computer peripherals are an integral part of the workday for a typical employee, which impacts the employees' experience working for the organization. Employees who found the supplied peripherals to be ineffective at helping them complete their work would be dissatisfied. The director of IT strategy in an automobile company said, "Prior to using Dell Peripherals, overall employee satisfaction was low, but this rose by 2.5 points on a scale of 10 after deployment of Dell Peripherals."
- **IT operations complexity.** Left to their own devices, organizations potentially have a dizzying array of peripherals to manage. Business units across the organization and geographies could establish their own account with a vendor or supplier, and purchase what they needed. The variety of peripherals used could make maintenance and management an operational headache. Furthermore, it was nearly impossible to ensure the peripherals have the latest firmware updates or security patches.

SOLUTION REQUIREMENTS/INVESTMENT OBJECTIVES

The interviewees searched for a solution that could:

- Improve employee collaboration.
- Improve employee productivity.
- Improve IT operations productivity.
- Provide quality assurance.
- Offer robust business support and supply chain reliability.

COMPOSITE ORGANIZATION

Based on the interviews and survey, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the four interviewees, and it is used to present the aggregate financial analysis in the next section. The composite organization has the following characteristics:

Description of composite. A large enterprise operating across multiple verticals, headquartered in the US, with main operations in Asia-Pacific, North America, and Europe. The composite organization has a workforce of 100,000 employees, primarily comprising knowledge workers (versus frontline workers). Since the pandemic, it shifted to remote working arrangements and continues to adopt a hybrid working arrangement.

Deployment characteristics. Half of the composite organization uses Dell Peripherals. Of which, 40% use Dell docking stations, 50% use Dell KBMs, 10% use Dell speakerphones, 10% use Dell external 4K webcams, and 10% use Dell wireless headsets. For contingency, the composite organization also purchases an additional 10% of each peripheral as backup devices (i.e., an additional 5% of wireless keyboards and mice). Prior to using Dell Peripherals, the composite organization does not use any wireless peripherals, headsets or speakerphones with noise cancellation or hearing protection features, docking stations, external 4K webcam. The composite organization purchases and transitions half of the organization to Dell Peripherals in Year 0.

Key Assumptions

- **$50B annual revenue**
- **100,000 employees in Year 1**
- **Fifty-percent use Dell Peripherals**

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	Productivity gains from reduced setup time and customized shortcuts	$8,424,000	$8,748,324	$9,075,815	$26,248,139	$21,706,996
Btr	Productivity gains from better collaboration	$10,530,000	$10,935,405	$11,344,320	$32,809,725	$27,133,408
Ctr	Productivity gains from time savings from improved IT operations efficiency	$189,540	$195,226	$202,058	$586,824	$485,462
Dtr	Cost savings from reduced frequency of replacement of keyboard and mouse	$85,750	$88,943	$91,914	$266,606	$220,517
	Total benefits (risk-adjusted)	$19,229,290	$19,967,898	$20,714,107	$59,911,295	$49,546,383

PRODUCTIVITY GAINS FROM REDUCED SETUP TIME AND CUSTOMIZED SHORTCUTS

Evidence and data. With the use of Dell Peripherals, employees spent less time performing certain tasks during the average workday. From the observations of interviewees, there were two key types of time reduction that was enabled by Dell Peripherals products: wireless KBMs, docking stations, multiport adaptor cables, and wireless headsets.

Firstly, time reduction can be achieved with employees spending less time on daily setup. Prior to the organization's switch to Dell Peripherals, employees spent a total of 5 minutes daily on setup. Activities contributing to setup time previously included connecting wired peripheral products to laptops or desktops, and using multiple single port adaptors which led to time spent on untangling cables and plugging into ports. With Dell Peripherals, the wireless connectivity of KBMs and headsets saved time by allowing plug-and-play. Not only that, due to wireless connectivity available in peripherals (e.g., wireless KBMs and wireless headsets), this also meant that employees could easily set up a workstation anywhere they like, instead of being confined to a fixed desk.

Interviewees also felt the significance of this benefit when offices started to adopt hybrid and/or anywhere work arrangements as permanent features of the workplace, which reduced fixed time at desks. Interviewees remarked that the use of Dell's multiport adaptor cables saved time needed to find specific individual adaptors for each type of port conversion, including power delivery to charge devices.

The CIO in a public school administration said: "We need [Dell's multiport adaptor cables] to improve connectivity and time savings and we can connect to multiple USB devices. We were inefficient without it."

Furthermore, compatibility of Dell-on-Dell products also ensured seamless connectivity with little to no connection interruptions.

The same applies to Dell's docking stations, where a single USB-C cable connected employees' laptops to the docking station, greatly increasing the number and variety of their laptops' connectivity port options.

Secondly, customizable shortcuts available via Dell's wireless KBMs also saved time. Employees can now reduce time spent on performing specific tasks, such as opening specific frequently-used files or excel workbooks, and launching specific software or applications. The director of IT strategy in an automobile company stated: "Everyone, including myself, who uses Dell's wireless KBMs have shortcuts programmed. I, too, configured it to open excel sheets and reporting dashboards."

Modeling and assumptions. Based on the interviewees' experiences, Forrester has the following assumptions about the composite organization:

- Time spent on daily workstation setup is 5 minutes per employee.
- On average, an employee experiences a 20% reduction in setup time daily with the use of Dell Peripherals; namely the wireless KBMs, docking stations, wireless headsets, and multiport adaptor cables.
- Time saved with customizable keyboard and mouse shortcuts is 5 minutes per day.
- In Year 1, 25,000 employees benefit from reduced setup time and customized shortcuts. This increases by 0.5% in the next year due to increases in headcount.
- The average hourly salary of an employee is $30.

Risks. Forrester recognizes that these results may not be representative of all experiences. The impact of this benefit will vary depending on:

- The average hourly salary of an employee.
- The complexity and time taken for setup prior to using Dell Peripherals.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $21.7 million.

"We converted to an open office and reduced capital expenditure, and staff kept their stuff in lockers. Without wireless keyboards and mice, they would have spent more time setting up and getting ready for work in the morning."

Director of IT strategy, automobile

Productivity Gains From Reduced Setup Time And Customized Shortcuts					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
A1	Number of workers who benefit from easy setup and customized shortcuts	Composite	25,000	25,125	25,251
A2	Number of hours saved weekly per worker from ease of setup	Interviews	0.08	0.08	0.08
A3	Number of hours saved yearly per worker from ease of setup	A2*52	4.16	4.16	4.16
A4	Number of hours saved weekly per worker from customized shortcuts	Interviews	0.4	0.4	0.4
A5	Number of hours saved yearly per worker from customized shortcuts	A4*52	20.8	20.8	20.8
A6	Average hourly rate per employee	Composite	$30	$31	$32
A7	Percent captured	Composite	50%	50%	50%
At	Productivity gains from reduced setup time and customized shortcuts	((A3*A1)+(A5*A1)) *A6*A7	$9,360,000	$9,720,360	$10,084,239
	Risk adjustment	↓10%			
Atr	Productivity gains from reduced setup time and customized shortcuts (risk-adjusted)		$8,424,000	$8,748,324	$9,075,815
	Three-year total: $26,248,139			**Three-year present value: $21,706,996**	

PRODUCTIVITY GAINS FROM BETTER COLLABORATION

Evidence and data. Interviewees shared that Dell Peripheral products (e.g., wireless headset, external 4K webcam, and speakerphone), improved virtual, in-person, or hybrid collaboration. Improved collaboration encouraged efficiency of meetings and resulted in substantial time savings for employees, especially for those who regularly spent long hours in meetings.

Dell Peripheral products enabled better collaboration by creating a fuss-free and seamless meeting experience via some of the key product features offered. Active noise cancellation in Dell's wireless headsets creates a clear audio background, enabling employees to be free of audio distractions in calls, improving communication and hence encouraging more productive meetings. The director of IT strategy in an automobile company remarked: "Having an open office means having people talk in your surroundings and it gets difficult to focus. With the use of Dell's wireless headsets, the quality of noise cancelling has improved, and employees' background noise issues were mitigated."

Another feature of Dell's wireless headset, external 4K webcam, and speakerphone is their certification in video-conferencing solutions. This allowed employees to join calls seamlessly with no connectivity issues, leave calls conveniently, and use call controls to manage meetings. The CISO in public healthcare commented: "The compatibility of Dell's speakerphones and external 4K webcam with conferencing solutions saved time during meetings. We had many instances prior where the devices were connected but the audio was not."

Dell's smart features available on wireless headsets also allowed the movement of microphone positioning to unmute or mute on calls, reducing operational hassle as well.

Most importantly, features of these Dell Peripherals products also enabled better collaboration by fostering greater camaraderie amongst employees in a few ways. Dell's external 4K webcam enabled high-definition picture quality, building realistic video conferencing experiences for employees. This allowed for immersive discussions over video calls. The CISO in a public healthcare company said: "Effective collaboration heavily relies on Dell's external 4K webcam, speakerphone, and wireless headset. Prior, we had productivity issues, where employees could not participate in calls effectively, which affected culture too. Once they were comfortable [using Dell Peripherals], it uplifted how they were collaborating."

With a gradual return to office spaces, wireless peripherals created flexibility for employees to be within closer proximity of each other, allowing an informal and friendly working atmosphere. The resulting improvement in collaboration environment thus improves meeting efficiency and time savings.

"Wireless peripherals like the WL7022 or WL5022 headsets take us to the next generation technology for many of our remote workers who engage in a lot of video conferencing. This increases productivity and collaboration."

CIO, public school administration

Modeling and assumptions. Based on the interviewees' experiences, Forrester has the assumptions about the composite organization:

- The average employee spends 5 hours in calls per day.

"Buttons to control active noise cancelling and smart sensors that automatically mute or unmute calls — features like these take operational headache out of the picture. Employees don't need to speak over background noise or ask colleagues to lower their voices. This helps us to achieve operational efficiency and productivity."

IT technology director, energy

- With Dell Peripherals, time spent in meetings per day is reduced by approximately 36 minutes.
- In Year 1, 5,000 employees benefit from better collaboration. This increases by 0.5% in the next year due to increase in headcount.
- The average hourly salary of an employee is $30, and increases by 3% yearly.

Risks. Forrester recognizes that these results may not be representative of all experiences. The impact of this benefit will vary depending on:

- The average hourly salary of an employee.
- How comfortable and adept employees are with utilizing smart features on Dell's wireless headset.
- The brand of the conferencing solution used by the organization.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $$27.1 million.

Productivity Gains From Better Collaboration					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
B1	Number of workers who benefit from better collaboration	Composite	5,000	5,025	5,050
B2	Number of hours saved weekly per worker from better collaboration	Interviews	3	3	3
B3	Number of hours saved yearly per worker from better collaboration	B2*52	156	156	156
B4	Average hourly rate per employee	Assumption	$30	$31	$32
B5	Percent captured	Assumption	50%	50%	50%
Bt	Productivity gains from better collaboration	B1*B3*B4*B5	$11,700,000	$12,150,450	$12,604,800
	Risk adjustment	↓ 10%			
Btr	Productivity gains from better collaboration (risk-adjusted)		$10,530,000	$10,935,405	$11,344,320
	Three-year total: $32,809,725			**Three-year present value: $27,133,408**	

PRODUCTIVITY GAINS FROM TIME SAVINGS FROM IMPROVED IT OPERATIONS EFFICIENCY

Evidence and data. Interviewees shared that IT operations staff generally experienced seamless management of Dell Peripherals for their organization due to the support provided by the Dell team, ease of administration and configuration through the Dell Peripheral Manager (i.e., a software that allows users to sync their devices, monitor connectivity and battery status, update to the latest firmware, and program keys and buttons), and ease of management of peripheral products attributed to reduction of clutter with wireless connectivity.

Firstly, a common sentiment amongst interviewees was that the fuss-free service and support offered by the Dell team allows their IT teams to manage peripherals in a streamlined manner. Some key features included how support for faulty parts or products could easily be received through Dell's Advanced Exchange program, which guarantees next-day shipment of a replacement unit for a defective one. The IT technology director in an energy company said: "Employees would have to get in touch with the IT support team for them to come onsite to troubleshoot, taking anywhere from 20 minutes to an hour. IT would then have to check inventory and reach out to the relevant vendor if needed. [With Dell's Advanced Exchange Program], it's a quick 10 to 15 minutes phone call to determine and resolve the issue."

Interviewees also remarked that support was easily accessible through technology deployed on Dell's application. The CIO in a public school administration: said: "My IT department spends lesser time with automation and saves 15 to 20% of their time. They can now seek support via an application, and chat with [Dell Support] for support on the peripherals." Other actions performed on the application include inputting device ID, checking of configuration, and ordering a part if there was an issue.

Some interviewees also remarked that the use of Dell Peripheral Manager resulted in less reliance on the IT operations team to troubleshoot for configuration issues. This freed up time for the IT team that could then directed to other tasks. Interviewees shared that

standardizing to Dell Peripherals empowered employees to do a lot of the troubleshooting and configurations on their own via the Dell Peripheral Manager, resulting in great time savings for the IT operations team.

Finally, the reduction of clutter because of wired peripherals resulted in simpler and more effective management by IT operations staff. Hence, the use of wireless peripherals was valuable from the perspective of IT operations staff, as it offered a more streamlined management experience and greatly reduced the stress created by cable clutter.

Modeling and assumptions. Based on the interviewees' experiences, Forrester has the following assumptions about the composite organization:

- There are 75 IT operations staff managing peripherals. Prior to Dell Peripherals, they spent 12 hours of their time per week managing the their peripherals.
- The 75 IT operations staff now take 4 hours lesser per week to manage Dell-branded peripheral products.
- The average hourly salary of an employee is $27, and increases by 3% yearly.

Risks. Forrester recognizes that these results may not be representative of all experiences. The impact of this benefit will vary depending on:

- Whether IT staff are comfortable with and adept at utilizing Dell Peripheral Manager for management of peripherals.
- Whether employees (i.e., end users) are comfortable with and adept at self-servicing using Dell Peripheral Manager for configuration and customization of peripherals.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of $485,000.

"Because of how deeply the peripherals are integrated with Dell Peripheral Manager, we're able to monitor connectivity, check battery status, update latest firmware, and program keys and buttons to eliminate repeated tasks."

IT technology director, energy

Productivity Gains From Time Savings From Improved IT Operations Efficiency					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
C1	Number of IT operations staff managing peripherals	Composite	75	75	75
C2	Number of hours saved weekly per IT operations staff	Interviews	4	4	4
C3	Number of hours saved yearly per IT operations staff	C2*52	208	208	208
C4	Average hourly salary of one staff	Assumption	$27	$28	$29
C5	Percent captured	Assumption	50%	50%	50%
Ct	Productivity gains from time savings from improved IT operations efficiency	C1*C3*C4*C5	$210,600	$216,918	$224,509
	Risk adjustment	↓10%			
Ctr	Productivity gains from time savings from improved IT operations efficiency (risk-adjusted)		$189,540	$195,226	$202,058
	Three-year total: $586,824			**Three-year present value: $485,462**	

COST SAVINGS FROM REDUCED FREQUENCY OF PERIPHERAL REPLACEMENT

Evidence and data. The superior battery life of Dell's wireless KBM products, which last up to 36 months, allowed for lower asset replacement frequency. The CIO in a public school administration said: "Dell's wireless KBM has improved battery life by 1.5 years. On average, we used to keep KBM for 2.5 years, now we are keeping them for at least 4 years."

Modeling and assumptions. Based on the interviewees' experiences, Forrester has the following assumptions about the composite organization:

- One unit of non-Dell KBM combination product costs $50.
- Yearly replacement costs of KBMs before using Dell's represent the amount the organization incurs on average in a year. This is calculated by dividing the cost per asset by the number of years passed before replacement is needed.
- Yearly replacement cost of KBMs after using Dell's represents the amount the organization incurs on average in a year, while they are using Dell-branded KBMs. This is calculated by dividing the cost per asset by the number of years passed before replacement is needed.
- The cost per asset increases by 3% yearly.

Risks. Forrester recognizes that these results may not be representative of all experiences. The impact of this benefit will vary depending on:

- Whether the organization replaces the whole asset or purchases new batteries to upgrade the assets.
- The cost per KBM prior to the switch to Dell's KBM product.

Results. No risks adjustments are required for this scenario. This benefit yields a three-year total PV of $221,000.

Cost Savings From Reduced Frequency Of Peripheral Replacement					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
D1	Number of keyboard and mouse combo	A1	25,000	25,125	25,251
D2	Cost per asset (non-Dell)	Assumption	$50	$52	$53
D3	Yearly replacement cost per unit (before using Dell)	D2/2.5	$20	$21	$21
D4	Cost per asset (Dell)	Assumption	$66.26	$68.25	$70.30
D5	Yearly replacement cost per unit (after using Dell)	D4/4	$16.57	$17.06	$17.58
D6	Cost savings per unit per year	D3-D5	$3.43	$3.54	$3.64
Dt	Cost savings from lesser frequency of replacement of keyboard and mouse	D1*D6	$85,750	$88,943	$91,914
	Risk adjustment	0%			
Dtr	Cost savings from lesser frequency of replacement of keyboard and mouse (risk-adjusted)		$85,750	$88,943	$91,914
	Three-year total: $266,606			**Three-year present value: $220,517**	

UNQUANTIFIED BENEFITS

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

- **Increased employee satisfaction, welfare, and well-being.** High quality Dell Peripherals notably improved employee satisfaction, welfare, and well-being. Wireless headsets with noise cancellation features enabled employees to stay focused in an open office environment also featured hearing protection against sound levels above 118 decibels A (dBA) and came with comfortable earpads.

  Ergonomic designs of KBMs, and ambidextrous mice meant employees were more comfortable and more inclusive of left-handed users. External webcams came with a privacy cap that snapped on magnetically, preventing the loss of the lens cover, and greater peace of mind knowing their privacy is protected. The ease of a cable-free workflow offered by docking stations meant less fuss with cables to set up for work, and lesser time to get work done.

- **Improved collaboration.** Wireless peripherals enabled greater mobility — employees could migrate from their desks or hot desks to collaboration spaces seamlessly. It enabled peer programming, as programmers could bring their KBMs and move quickly to a conference room to connect to a larger television screen, huddle and review codes and share ideas. High image quality external webcams with features like image noise reduction, high megapixel, auto-framing, and 4K imagery helped employees see one another clearly during meetings, improving their call experience, and built a stronger sense of collaboration.

- **Quality assurance and greater peace of mind of Dell parts and upgrades.** Interviewed decision-makers noted that they have trust in the quality of Dell's memory upgrades and battery replacements and have little to no doubt about safety or firmware security.

- **Supply chain reliability.** During the pandemic, organizations faced supply chain issues, making supply chain reliability a deciding factor when choosing Dell to supply their peripherals needs. The director of IT strategy in an automobile company said: "During the pandemic, we were hardly getting any equipment. Dell enabled our end users' home offices, and we were the only department in my organization that was alive and working for a full week earlier."
- **Improved security.** Dell's external 4K webcam leverages on the Dell-on-Dell experience, working seamlessly with Dell ExpressSign-in and other biometric authentication platforms to enable automatic detection of the user to login securely. The external 4K webcam automatically locked the system once it detected the absence of the user. The IT technology director in an energy company said, "Dell ExpressSign-in automatically detects presence, and uses Windows hello to log in. As users walk away, it locks. This is in line with our cybersecurity (policies). We have operators or individuals managing sensitive information, and people tend to forget about security. With these features, it helps to strengthen security."
- **Optimized Dell laptops and computers.** Interviewees also remarked that with the use of Dell's parts and upgrades products (e.g., RAM and batteries), the lifespan of Dell laptops and computers has increased — anecdotes mentioned an increase of two years to double the lifespan of laptops and computers. Using parts and upgrades to refresh IT assets also improved efficiency and performance of machines, which noticeably improved employee efficiency and productivity.

> **"Dell's wireless KBM enabled agile development within my organization with the flexibility it provides. Developers no longer have to look at one screen per person. This also helped with informality and team building, leading to friendly atmosphere."**
>
> *Director of IT strategy, automobile*

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer may deploy Dell Peripherals and later realize additional uses and business opportunities, including:

- **Creating a flexible workplace by enabling employees to work productively in hybrid and anywhere work arrangements.** Interviewees shared that the use of wireless peripherals increased mobility of employees as they were no longer bounded by a single workstation. With products such as wireless KBMs and headsets, their organizations could allow employees to work productively anywhere within the same office space. This is in line with the observed trend of moving towards having permanent hybrid work arrangements, where mobility is highly valued at the workplace. Better collaboration enabled by mobility also encouraged greater opportunities for ideation, discussion, and new initiatives for the organization.

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

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	Product Costs	$8,928,195	$0	$0	$0	$8,928,195	$8,928,195
Ftr	Initial implementation costs	$18,954	$0	$0	$0	$18,954	$18,954
Gtr	Ongoing management and maintenance cost	$924,000	$951,720	$980,265	$1,009,668	$3,865,653	$3,357,915
	Total costs (risk-adjusted)	$9,871,149	$951,720	$980,265	$1,009,668	$12,812,802	$12,305,064

DELL PERIPHERALS PRODUCT COSTS

Evidence and data. Interviewees shared that their organizations paid one-time product costs to Dell. For the composite organization, a one-time cost was incurred for a batch of peripheral products for 50,000 employees. This cost covered purchase of five types of peripherals, including: 27,500 units of Dell wireless KBMs, 5,500 units of Dell wireless headsets, 5,500 units of external 4K webcams, 5,500 units of speakerphones, 5,500 units of multiport adaptor cables, and 22,000 units of docking stations. Product costs also included shipment fees incurred for shipping peripherals to 20% of Dell Peripherals users who may be working remotely.

The composite also purchased parts and upgrades from Dell, but this cost will not be quantified in this study. Benefits of using Dell parts and upgrades were explored in the unquantified benefits section.

The composite organization will also incur product replacement costs from Year 4 onwards due to products reaching the end of their lifecycle. Product lifecycles may range from three to five years, depending on usage patterns. However, as this cost will be incurred outside the scope of the modelling for this case study, it will not be included.

Modeling and assumptions. Based on the interviewees' experiences, Forrester has the following assumptions about the composite organization:

The unit costs (inclusive of shipment cost from Dell to the composite organization's headquarters) are:

- Wireless keyboard and mouse: $66.26.
- Wireless headset: $162.30.
- External webcam: $159.50.
- Speakerphone: $72.07.
- Docking station: $163.20.
- Multiport adaptor cable: $67.58.
- After Dell ships out the entire batch of products to the composite organization's headquarters, the composite organization ships some of these peripherals to 20% of the 50,000 employees using Dell Peripherals. The remaining 30,000 employees will collect their peripherals from the office physically.
- Shipment fees from the composite organization's headquarters to remote employees costs $3 per address.

- Pricing may vary according to the number of units purchased and corporate rates provided. Please contact the Dell Peripherals team for additional details.

Risks. Forrester recognizes that these results may not be representative of all experiences. The impact of this benefit will vary depending on:

- The size of the organization (e.g., small and medium businesses, enterprise) and number of units purchased.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $8.9 million.

Product Costs

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Dell Keyboard and mouse (KM7321W)	Dell	$1,822,150	$0	$0	$0
E2	Dell Wireless Headset (equal mix of WL7022 and WL5022)	Dell	$892,788	$0	$0	$0
E3	Dell 4K Webcam (WB7022)	Dell	$877,250	$0	$0	$0
E4	Dell Docks (WD19S)	Dell	$3,590,400	$0	$0	$0
E5	Dell Speakerphones (equal mix of SP3022 and MH3021P	Dell	$532,263	$0	$0	$0
E6	Cables (DA310)	Dell	$371,690	$0	$0	$0
E7	One-time shipping costs	Assumption	$30,000	$0	$0	$0
Et	Product costs	E1+E2+E3+E4 +E5+E6+E7	$8,116,541	$0	$0	$0
	Risk adjustment	↑ 10%				
Etr	Product costs (risk-adjusted)		$8,928,195	$0	$0	$0
	Three-year total: $8,928,195				**Three-year present value: $8,928,195**	

INITIAL IMPLEMENTATION COST

Evidence and data. Interviewees shared that deployment of Dell Peripherals required investment of man hours in a one-time implementation. IT operations staff would spend time in documenting inventory, assigning specific peripherals to certain employees and/or departments, configuring peripherals using Dell Peripheral Manager and developing user guides for employees.

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

- There are eight IT operations staff involved in the initial implementation of Dell Peripherals deployment.
- The time spent on initial implementation is a total of two weeks.

- The average fully loaded salary of IT operations staff involved in implementing use of Dell Peripherals is $56,000 per year.

Risks. Forrester recognizes that these results may not be representative of all experiences. The impact of this benefit will vary depending on:

- Whether employees of the organization would require extra training time to use Dell Peripherals.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $19,000.

Initial Implementation Costs

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
F1	Number of IT staff involved	Assumption	8	0	0	0
F2	Number of weeks spent deploying peripherals	Provided by customer	2	0	0	0
F3	Average fully loaded IT staff weekly salary	Assumption	$1,077	$0	$0	$0
Ft	Initial implementation costs	F1*F2*F3	$17,231	$0	$0	$0
	Risk adjustment	↑10%				
Ftr	Initial implementation costs (risk-adjusted)		$18,954	$0	$0	$0
	Three-year total: $18,954			**Three-year present value: $18,954**		

ONGOING MANAGEMENT AND MAINTENANCE COSTS

Evidence and data. Interviewees shared that the use of Dell Peripherals within their organizations required ongoing and regular maintenance and management. Ongoing management and maintenance required IT staff to be involved in activities such as: Attending to defective or faulty products raised by employees, allocating peripherals to new staff, attending to employee queries on usage mechanism, and using the Dell Peripheral Manager to configure products or update firmware.

Modeling and assumptions. Based on the interviewees' experiences, Forrester has the following assumptions about the composite organization:

- There are 75 IT operations staff involved in ongoing maintenance and management of Dell Peripherals. They spend 20% of their working time managing Dell-branded peripherals.
- The average fully loaded salary of IT operations staff involved in implementing use of Dell Peripherals is $56,000 per year.

Risks. Forrester recognizes that these results may not be representative of all experiences. The impact of this benefit will vary depending on:

- The complexity of employee requests and enquiries directed to the IT operations team, which depends on how comfortable and adept employees are with using high-tech peripheral products.

- The frequency of employee requests and enquiries directed to the IT operations team.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $3.36 million.

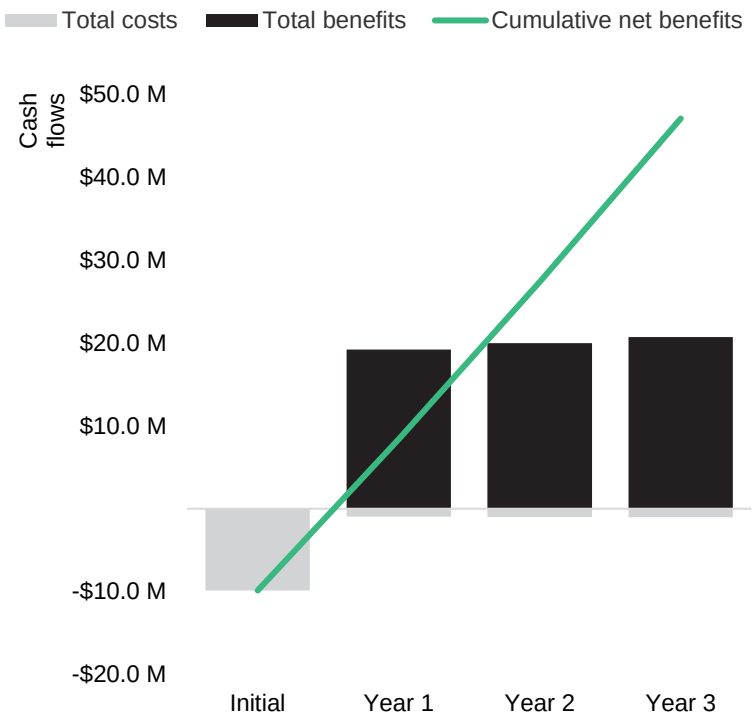
Ongoing Management And Maintenance Costs

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
G1	Number of IT staff	Composite	75	75	75	75
G2	Percentage of time spent managing and maintaining Dell peripherals	Composite	20%	20%	20%	20%
G3	Average fully loaded IT staff annual salary	Assumption (3% yearly wage increment)	$56,000	$57,680	$59,410	$61,192
Gt	Ongoing management and maintenance cost	G1*G2*G3	$840,000	$865,200	$891,150	$917,880
	Risk adjustment	↑10%				
Gtr	Ongoing management and maintenance cost (risk-adjusted)		$924,000	$951,720	$980,265	$1,009,668
	Three-year total: $3,865,653			**Three-year present value: $3,357,915**		

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	($9,871,149)	($951,720)	($980,265)	($1,009,668)	($12,812,802)	($12,305,064)
Total benefits	$0	$19,229,290	$19,967,898	$20,714,107	$59,911,295	$49,546,383
Net benefits	($9,871,149)	$18,277,570	$18,987,633	$19,704,439	$47,098,493	$37,241,319
ROI						303%
Payback period (months)						7

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

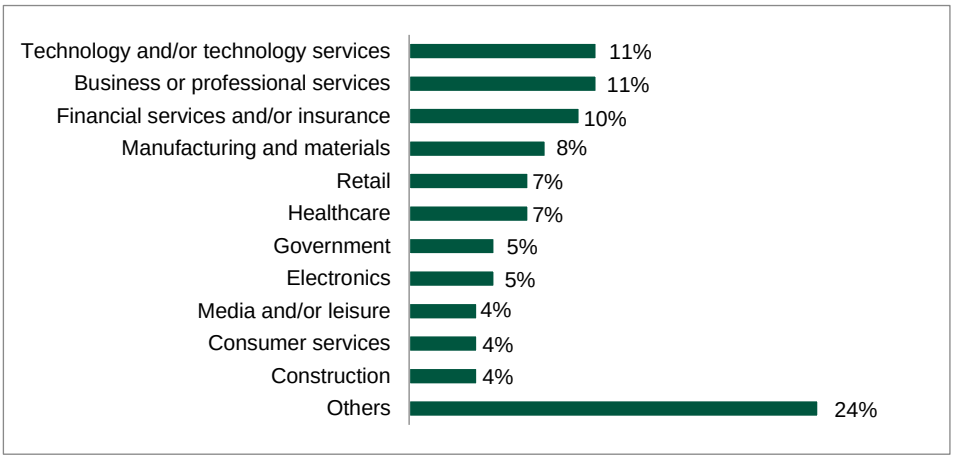
The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.

PAYBACK PERIOD

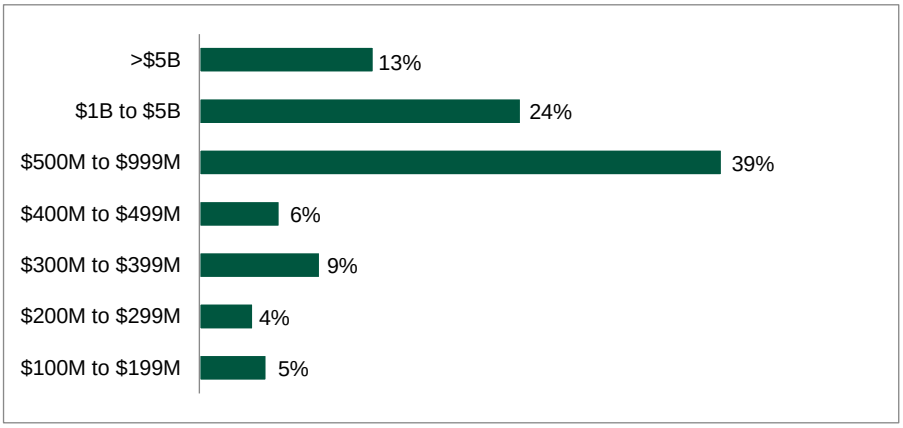
The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

Appendix B: Survey Demographic

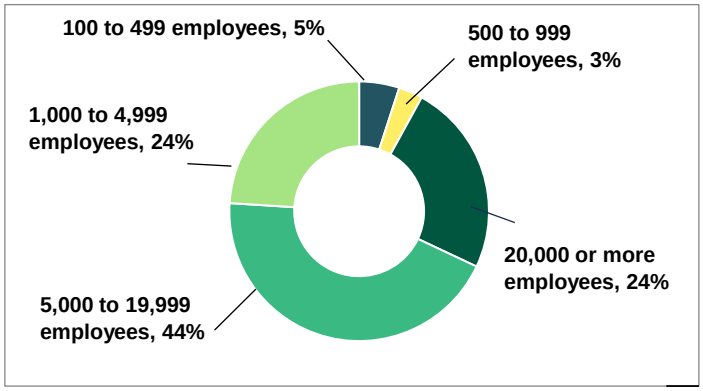
"Which of the following best describes the industry to which your company belongs?"



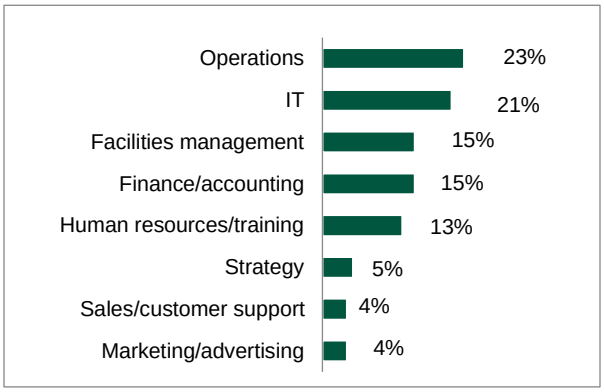
"Using your best estimate, what is your organization's annual revenue?"



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



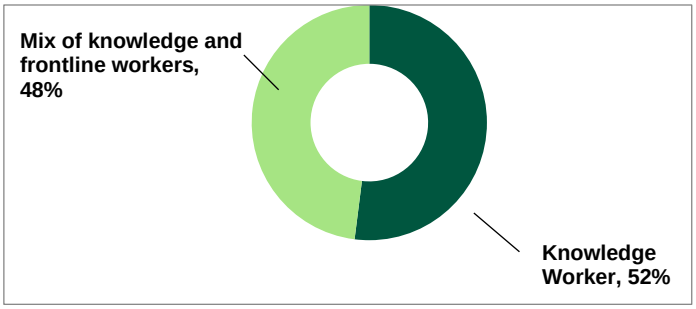
"Which of the following best describes your current position/department?"



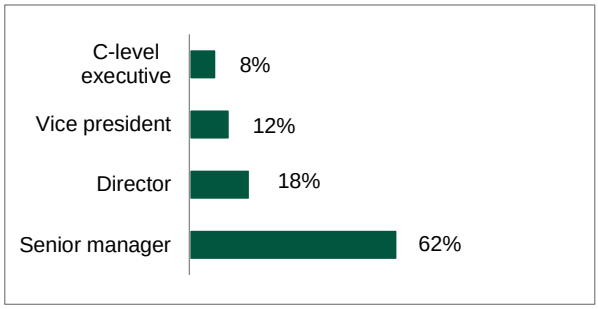
Base: 100 business and IT decision-makers responsible for their organization's employee experience, workplace design, and end user hardware.
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell Technologies, October 2022.

Appendix B: Survey Demographics (Continued)

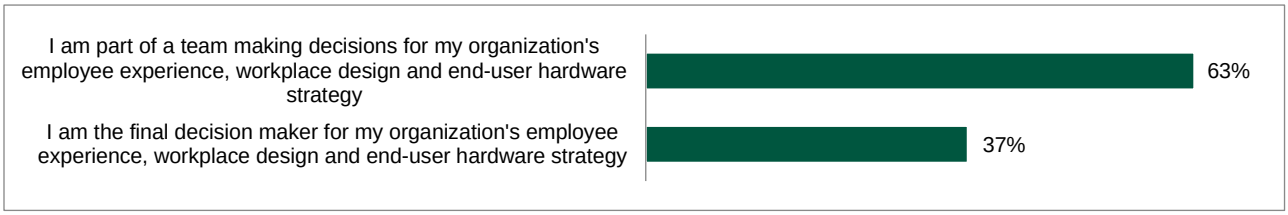
"What is your primary workforce type in your company?"



"Which title best describes your position in your organization?"



"What is your level of responsibility when it comes to employee experience, workplace design and end-user hardware at your organization?"



Base: 100 business and IT decision-makers responsible for their organization's employee experience, workplace design, and end user hardware.
Source: A commissioned study conducted by Forrester Consulting on behalf of Dell Technologies, October 2022.

Appendix C: Endnotes

[1] 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.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