

A Forrester Total Economic Impact™  
Study Commissioned By Dell  
April 2019

# Dell Specialized Devices Deliver Workforce Productivity Benefits

Workstations And Rugged Devices Boost  
Productivity And Transform Business  
Processes For The Mid-Market Segment

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## ABOUT FORRESTER CONSULTING

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

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# Executive Summary

Dell provides specialized devices that enable knowledge workers and employees working in extreme environments to be more productive and provide a better customer experience. Dell commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential benefits and costs enterprises may realize by deploying two categories of specialized devices, namely:

- › **Workstations.** High performance systems equipped with server-end processors, high memory capacity, and additional graphics capabilities. They are typically used for technical or scientific applications and are available in desktop, rack-mount, or mobile form factors.
- › **Rugged devices.** Laptops and tablets that are able to withstand use in extreme environments such as high and low temperatures, dust, moisture, humidity, and accidental drops.

Prior to investing into these technologies, the studied organizations' employees were using suboptimal devices. This resulted in low efficiency and low effectiveness due to slow applications and unstable/unreliable devices, e.g., battery life not lasting for longer periods of time — in extreme environments, device life cycles were short. Furthermore, having to support multiple devices and vendors put a high burden on the IT department.

The purpose of this study is to provide readers with a framework to evaluate the potential impact of these specialized devices on their organizations. To better understand the benefits, costs, and risks associated with the investment in these solutions, Forrester interviewed five midsize (100 to 500 employees) customers with years of experience using Dell's specialized devices — this data was supplemented by a survey of over 700 organizations.

Three categories of benefits were identified: 1) user productivity gains; 2) improved customer experience (external); and 3) IT cost savings.

## Summary Of Benefits

USER PRODUCTIVITY GAINS	CUSTOMER EXPERIENCE	IT COST SAVINGS
20% to 60%	Higher availability	IT standardization, better support
Increased device reliability	Faster project completion	Reduced IT management costs

## Benefits And Costs



**Productivity gains:**  
20% to 60%



**Improved customer experience:**  
Higher availability and reduced project completion times



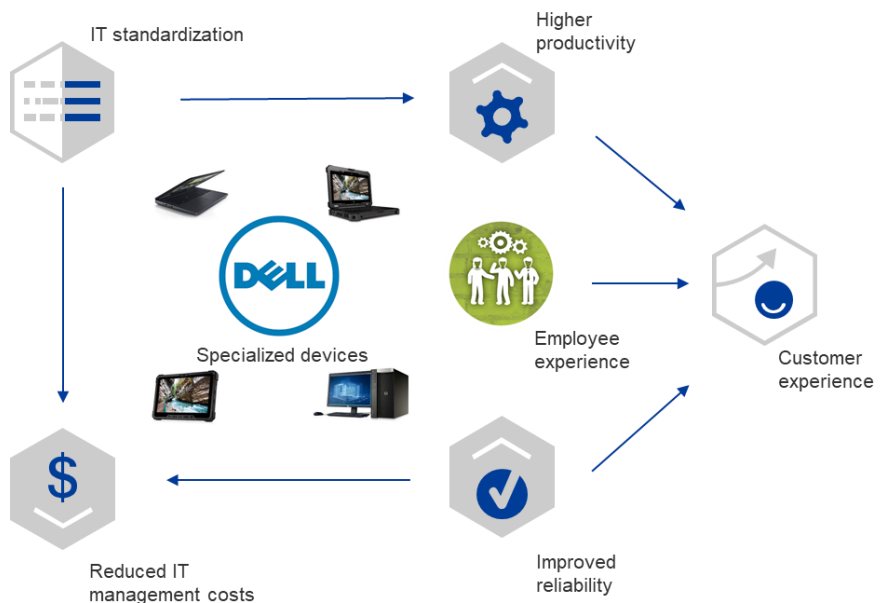
**IT cost savings:**  
Standardization, hardware reliability, and better support



**Cost categories:**  
Higher average device price and shorter refresh cycle

These solutions deliver a productivity gain of 20% (equivalent to 30+ additional working days per year), but in cases where a process is automated or transformed, or when the previous devices have become ineffective, it can be up to a 60% gain. Assuming half of this time is productively re-invested, a US-based knowledge worker on a salary of \$100,000 can expect to deliver \$10,000 worth of additional financial benefits. This is a compelling return when, for instance, reducing hardware refresh rates from four to three years, and increasing average spend per device by 200% (from \$1,000 to \$3,000), incurs an annual incremental cost of \$750 per employee. In the case of rugged devices, device lifetimes can also be increased.

### Multiple Benefits From Dell Specialized Devices



Specialized devices also positively impact the customer experience because employees can typically be on site for more time and project completion times are reduced. There are additional, related benefits in terms of the employee experience, resulting in higher engagement. It has been shown that there is a statistical correlation between employee engagement and revenue growth — a 5% improvement in employee engagement leads to a 3% increase in revenue.<sup>1</sup>

The final category of benefits relates to IT management, which is particularly important for midsize organizations, where IT teams tend to be small (numbering fewer than 10 members) and lack specialization. All of the interviewed customers highlighted that standardizing on Dell hardware frees up time for the IT team.

The five customer cases are summarized as follows:

- › **Workstations in construction management services.** Mobile workstations replaced standard laptops enabling employees to stay on the customer site for longer. These devices also increased the productivity of high salary knowledge workers.
- › **Workstations in the chemicals industry.** Engineers avoided having to go back and forth between the manufacturing site and the office with high power mobile workstations, saving 2 hours a day.

- › **Workstations in civil engineering.** Increased reliability and higher performance of workstations boosted user productivity by 60% and enabled onsite customer walk-throughs of 3D plans — this was not previously possible.
- › **Rugged laptops in mining industry software.** Upgrading to Dell's rugged laptops increased onsite engineers' productivity and reduced project delivery times and sales cycles.
- › **Rugged tablets in the oil and gas industry.** Automating a process with Dell's rugged tablets enabled onsite team size to be reduced from five employees, down to three or even two employees.

## Productivity Is At The Heart Of Employee Experience

Dell's specialized devices have been found to impact employees in five main categories:

- › **Improved application performance** directly leads to reduced task completion time, and therefore productivity is increased. Complex drawing and graphics are rendered more quickly, while multitasking with many different applications does not cause any slowdowns.
- › **Increased reliability** also directly results in higher productivity. Devices are less prone to freezing, stalling, or slowing down and there is less of a need to reboot. Battery life is longer and more reliable, and therefore disruptions are reduced. The relative improvement in reliability will depend on the state of the previous devices. One interviewee highlighted that increased reliability alone increased productivity by 20%.
- › **Process transformation** can drastically increase productivity. One organization was able to reduce the size of onsite teams from five employees down to two, in some cases. Process transformations are typically possible in cases where rugged devices can be used when standard devices are not viable. In the case of two organizations which Forrester spoke to, the need for onsite employees to travel back to the office in order to use servers was eliminated by investing into mobile workstations.
- › **Standardization** is not only beneficial to the IT team. Because devices, peripherals, and accessories are interoperable, employees do not lose time if, for instance, they have forgotten a charger or have to look for an appropriate docking station. This can also form part of a best-device policy — further details of which can be found in the commercial workforce enablement TEI commissioned by Dell in January 2019.<sup>2</sup>
- › **Rapid support** helps to improve productivity. Onsite repair and replacement ensures minimal downtime in case of accidents and hardware malfunction.

## Key Findings

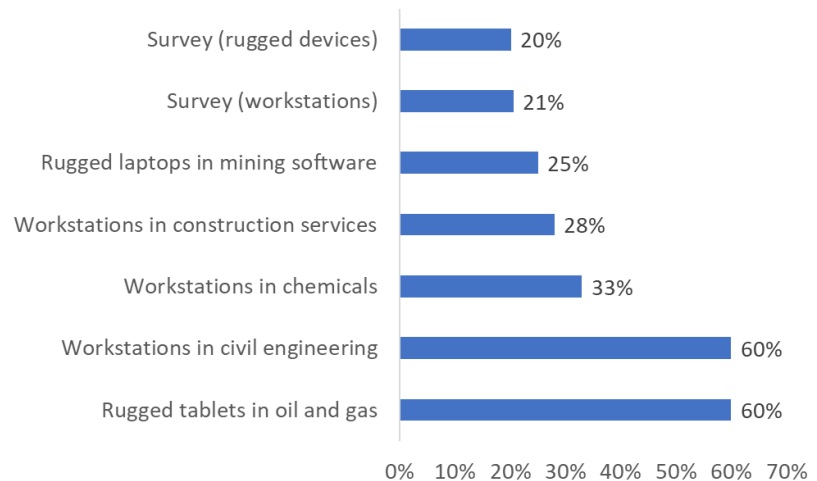
There are three key categories of benefits for specialized devices: productivity gains, improved customer experience, and IT cost savings.

**Quantified benefits.** The points below summarize the key ways in which workstations and rugged devices deliver productivity gains:

- › **Workstations deliver productivity gains of 21%.** Improved application performance and higher reliability are key productivity drivers that together deliver productivity gains of 60% for one of the workstation customers interviewed.
- › **Rugged devices deliver productivity gains of 20%.** Rugged devices can transform business processes to make them much more efficient. One customer was able to automate a process and thus increase productivity by 60% in this way with rugged tablets. Reliability can also be significantly improved if standard devices are used in environments which impact their performance.

The five customer interviews and survey of midsize and large organizations found that the productivity gains to be expected from investing in Dell's specialized devices were shown to be:

### Specialized Device Productivity Gains



Base: 723 workplace technology decision makers

Source: A commissioned study conducted by Forrester on behalf of Dell, September 2018

Each of the five cases is described in more detailed at the end of the relevant sections. Note that these productivity gains have not been risk-adjusted and if you would like to evaluate their financial impact, Forrester recommends a 50% reduction to reflect the risk that all the time gained might not be fully used for productive purposes.

**Unquantified benefits.** The interviewed organizations experienced the following benefits, which are not quantified for this study:

- › **Improved customer experience.** According to the survey results, customer experience is not a key trigger for investment into specialized devices. However, the interviews revealed that in many cases, there were a number of different ways in which the customer experience was improved. Engineers are able to stay on site for longer with high-powered mobile devices, thereby reducing project completion time. Onsite workers are also able to provide demonstrations, walk-throughs, and other updates — in the rugged laptops case this helped reduce sales cycles. In the rugged tablets case, the ability to reduce the number of workers required in on-site teams reduced the risk of accidents which helped the organization to acquire new customers.

- › **Standardization, increased reliability, and better support reduce IT management costs.** Dell provides a wide range of devices and related hardware and infrastructure. And by using a single provider, IT inventory management is made easier; a single point of contact simplifies administration and device onboarding is streamlined. If required, IT teams can use components across different devices and receive less hardware support tickets due to the reliability of Dell devices. Finally, onsite support from Dell ensures rapid repairs and replacements, both minimizing productivity impact and the burden on the IT team.
- › **Improved employee engagement.** Enabling the workforce to get things done by providing them with the right tools is what makes employees happiest. Giving them more control of their work conditions also increases engagement, which, in turn, results in better performance, higher discretionary effort, lower turnover, and a better customer experience.<sup>3</sup>

**Costs.** The interviewed organizations experienced the following costs:

- › **Increased average device prices.** In many cases, specialized devices incur a premium to standard laptops and desktops, perhaps up to 200% higher, e.g., going from \$1,000 to \$3,000. The annual incremental hardware cost per employee, assuming a three-year life cycle will amount to around \$666. However, this is not always the case as one interviewee told us that Dell's rugged laptops cost less than their previous rugged devices and last for a longer period of time.
- › **Shorter device life cycles.** Upgrading to specialized devices can impact costs as devices are on a faster upgrade cycle. For example, moving from a \$1,000 device over a four-year life cycle to a \$3,000 device over a three-year cycle incurs incremental costs of \$750 per year per user.

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

## TEI Framework And Methodology

From the information provided in the interviews and the survey, Forrester has constructed a Total Economic Impact™ (TEI) framework for those organizations considering implementing Dell and its partners' Workforce Enablement Solutions.

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 these Workforce Enablement Solutions can have on an organization:



### **DUE DILIGENCE**

Interviewed Dell stakeholders and Forrester analysts to gather data relative to Workforce Enablement Solutions.



### **CUSTOMER INTERVIEWS**

Interviewed five organizations using Workforce Enablement Solutions to obtain data with respect to costs, benefits, and risks.



### **ONLINE SURVEY**

Conducted an online, global survey of over 700 workplace technology decision makers in large organizations.



### **FINANCIAL MODEL FRAMEWORK**

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



### **CASE STUDY**

Employed four fundamental elements of TEI in modeling Dell Workforce Enablement Solutions' impact: benefits, costs, flexibility, and risks. Given the increasing sophistication that enterprises have regarding ROI analyses related to IT investments, Forrester's TEI methodology serves to provide a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

## DISCLOSURES

Readers should be aware of the following:

This study is commissioned by Dell and delivered by Forrester Consulting. It is not meant to be used as a competitive analysis.

Forrester makes no assumptions as to the potential ROI that other organizations will receive. Forrester strongly advises that readers use their own estimates within the framework provided in the report to determine the appropriateness of an investment in Dell and/or its partners Workforce Enablement Solutions.

Dell reviewed and provided feedback to Forrester, but Forrester maintains editorial control over the study and its findings and does not accept changes to the study that contradict Forrester's findings or obscure the meaning of the study.

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



# Specialized Devices Customer Journey

## BEFORE AND AFTER THE WORKFORCE ENABLEMENT SOLUTIONS INVESTMENT

### Interviewed Organizations

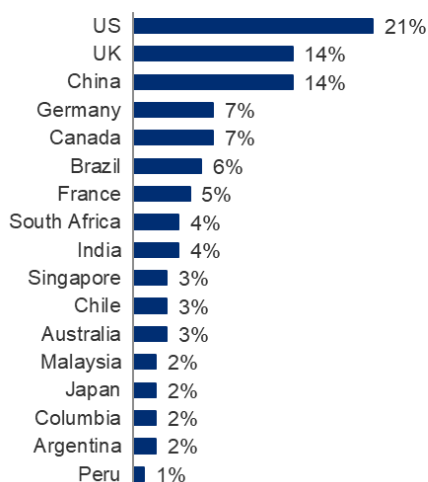
For this study, Forrester conducted five in-depth interviews with Dell specialist device customers of midsize organizations (between 100 and 500 employees). Interviewed customers include the following:

INDUSTRY	REGION	INTERVIEWEE	NUMBER OF EMPLOYEES	DEVICE TYPE
Construction management services	Headquartered in the US	Director of IT	500	Workstations
Chemicals	Headquartered in the US	Head of IT	250	Workstations
Civil engineering	Headquartered in South Africa	Head of IT	500	Workstations
Engineering software	Headquartered in the US	General manager	375	Rugged laptops
Oil and gas	Headquartered in the US	Director of health and safety	300	Rugged tablets

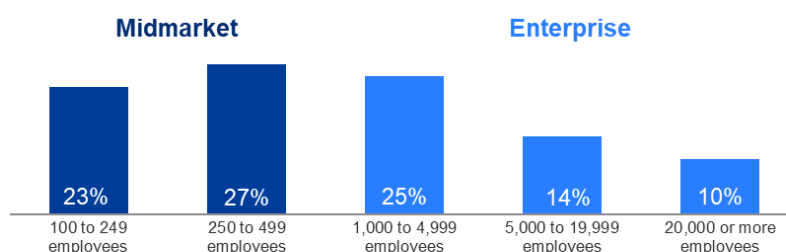
Forrester also undertook an online survey of 732 workplace technology decision makers in midsize and large organizations in order to back up these findings and provide additional data points. The global survey took place in September 2018 and was representative of different industries and regions.

### Survey Demographics By Location, Company Size, And Revenue

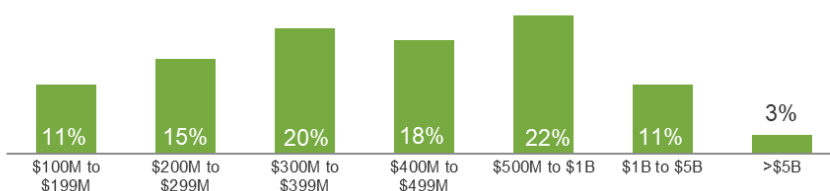
“In which country are you located?”



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



“Using your best estimate, what is your organization’s annual revenue (USD)?”



Base: 723 workplace technology decision makers

Source: A commissioned study conducted by Forrester on behalf of Dell, September 2018

## Key Challenges

- › **Growing revenue is the most important business priority for large organizations, followed closely by improving productivity.** These priorities are followed by product development and addressing customer expectations.
- › **In terms of technology-related initiatives, improving overall efficiency and employee productivity head the list of priorities.** Eighty-four percent of decision makers say that improving employee productivity is a critical or high priority. This priority is followed by improving the customer experience, investing in new technology, and increasing collaboration and knowledge sharing. Seventy-seven percent of decision makers say that improving employee experience is also a critical or high priority.
- › **The challenge of implementing technology is the biggest factor influencing technology purchasing decisions.** The second-most important priority is how newly implemented technology affects employee productivity, while the third-most important priority is the likely cost of maintaining that technology. This is particularly the case for small IT teams in midsize organizations.

“Which of the following initiatives are likely to be your organization’s top business priorities over the next 12 months?”



Base: 723 workplace technology decision makers

Source: A commissioned study conducted by Forrester on behalf of Dell, September 2018

## Key Results

The interviews and survey revealed that key results from the specialized devices investment include:

- › **Productivity improvements of 20% for both rugged devices and workstations.** This benefit comes about from improved applications performance, higher reliability, and process transformation.
- › **Improved customer experience.** Employees were better equipped to provide fast and high-quality responses to customer requirements. With the improved equipment, employees are able to spend more time on site, providing better customer service and interactions.
- › **Engaged employees.** Enabling employees to better do their jobs means that they are more engaged, interested, and motivated. This goes hand-in-hand with increasing productivity and improving the customer experience.
- › **IT cost savings.** Standardization, increased reliability, and improved support reduced the burden on small IT teams, freeing up valuable time for other tasks.

“Supporting 13 different models was a nightmare. Having consolidated to three devices, everything now is standardized and works together. This makes it much easier for IT to ensure employees stay productive.”

*Director of IT, construction management services*



“Thanks to the Dell standardization, the IT team has not had to increase — just six members of the team are now able to support the much larger company.”

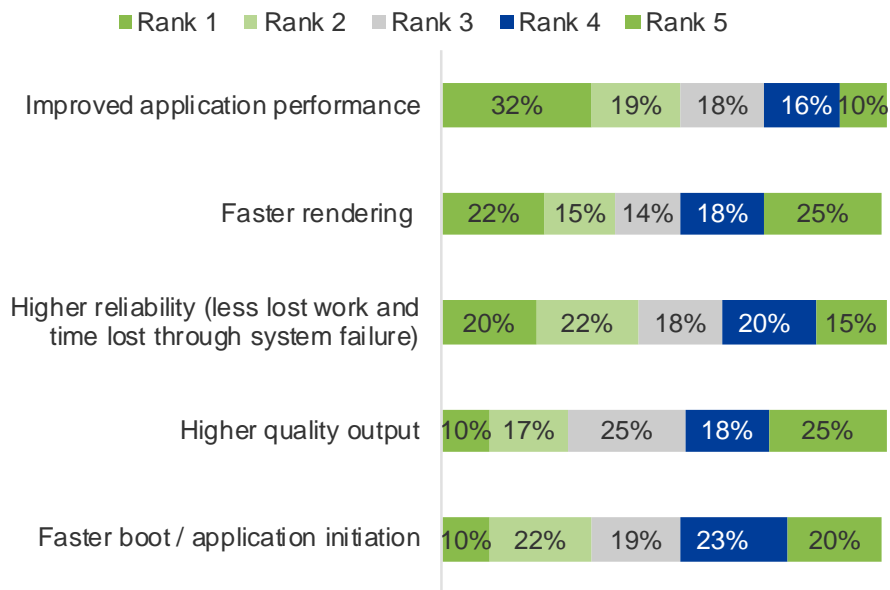
*Head of IT, civil engineering*



# Power Users And Workstations: Analysis Of Benefits

Dell's workstations are high-performing systems with server-end processors, high memory capacity, and additional graphics capabilities. They are typically used for technical or scientific applications and are available in desktop, rack-mount, or mobile form factors.

**“How have workstations impacted productivity?”** (numbers have been rounded and may not add up to 100)



Base: 723 workplace technology decision makers  
Source: A commissioned study conducted by Forrester on behalf of Dell, September 2018

## SUMMARY OF BENEFITS

Workstations Benefits Summary		
BENEFIT	KEY OUTCOME	OTHER OUTCOMES
Productivity gain	21% gain, ~34 days/user	Increased availability
Higher reliability	Lower downtime	Reduced IT management, reduced employee frustration
Customer experience	Faster turnaround	Increased time on site

## Productivity Benefits

While the survey data shows that workstations typically increase productivity by 21%, the three customers that Forrester spoke to invested in high-end workstations and experienced up to 60% higher gains.

Workstation productivity gains come about in a number of ways:

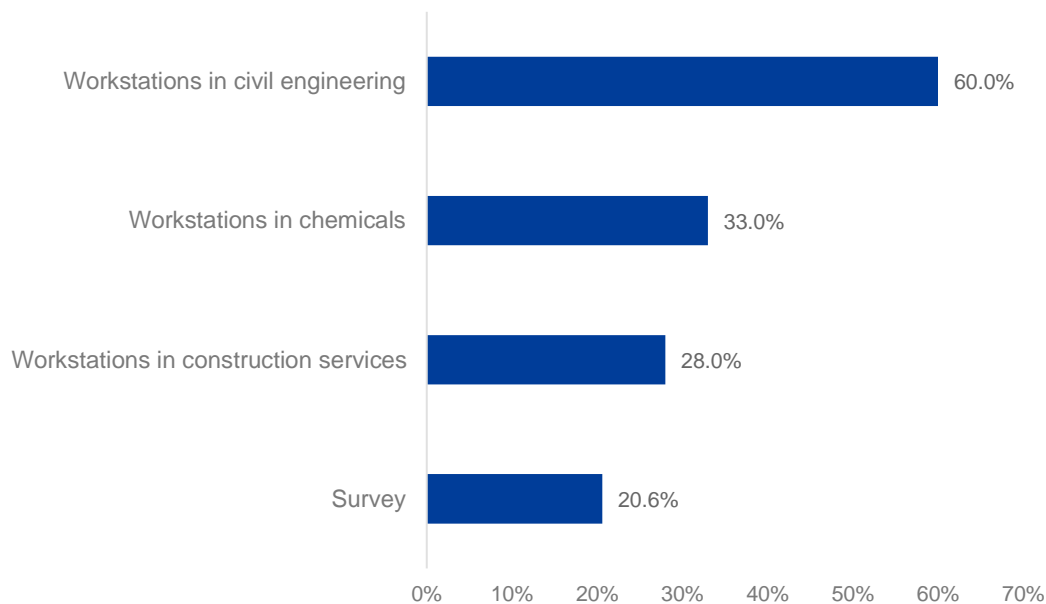
- › **Improved application performance.** The most important element is the faster rendering of graphics such as 3D drawings, augmented/virtual reality, and complex modelling. Task times can be drastically reduced, depending on the previous device used.
- › **Mobility increases onsite availability.** For two of the customers that Forrester interviewed, a mobile workstation eliminated the need of onsite workers to go back to the office and update applications on servers — they are able to stay on site for longer.
- › **Increased reliability reduces downtime.** While old devices can suffer from freezes, stalls, and slow task completion, when using complex applications such instances tend to happen even more often. Eliminating downtime further increases productivity and also reduces employee frustration.
- › **Higher employee engagement.** Technology is an important element in improving workforce satisfaction, especially for the growing number of millennials in the workforce. High performance devices not only reduce employee frustration, but they can also help attract talent. One interviewee provides the best in-house equipment to interns, as it helps to promote a positive image of the organization's technology suite and increases the odds of attracting the best talent.

“Uptime increased overall by 60%, of which 25% to 40% is the pure productivity gain from the better machine, the rest is increased reliability. The devices are super stable.”

*Head of IT, civil engineering*



### Workstation Productivity Gains



Base: 723 workplace technology decision makers

Source: A commissioned study conducted by Forrester on behalf of Dell, September 2018

The impact of these productivity gains might be less for a number of reasons:

- › The impact of workstations on reducing task completion time and increasing reliability may be less than expected.
- › Not all of the new time available might be put to productive use.

To account for these risks, Forrester adjusted this benefit downward by 50%, bringing the productivity gain for the average organization down from 21% to 10%.

## Customer Experience Benefits

Customer satisfaction is the second most important metric that organizations use to track the impact of their workstation's investments. There are many ways in which powerful devices can improve the customer experience, including:

- › **Shorter project completion times.** Since sophisticated application-based tasks, such as 3D drawing, animation, video-related content, and augmented/virtual reality can be completed faster, customer projects can be delivered sooner.
- › **Increased onsite availability.** When engineers and consultants are able to work on sophisticated applications on mobile workstations, they no longer have to return to the office, and are therefore able to spend more time on site with their customers.
- › **Improved onsite capability.** Onsite workers with mobile workstations are also able to provide better customer service by providing software demonstrations to customers. In the workstations for civil engineering case, engineers could provide 3D customer walk-throughs on site — this was not previously possible.
- › **Improved/upgraded software.** Higher performance devices can also enable better software to be used. This might include an upgraded version of software that is already in use or it's a new application/capability, such as virtual reality, that can provide better products and services.

"The workstation enables us to provide full 3D walk-throughs on site with the customer. This was not previously possible."

*Head of IT, civil engineering*



## Workstations In Construction Management Services

A US-based construction management services company is using high-end devices for both specialized, onsite employees and knowledge workers that have high performance application and multitasking requirements. Previously, the company supported 13 different device models for its 500 employees, but after moving to a simplified system, the company began to offer only three device models in order to ease IT management.

Consultants were not able to access and run applications such as RealWorks and Revit on site, and in order to input new photos or measurements into their 3D models and drawings they would have to return to their offices to access the appropriate device that allowed such work to be done. They had also started using augmented reality applications such as Sketch-Up. Investing in mobile workstations not only reduced the need to constantly travel back to the office to update power hungry applications, but also enabled site workers to complete projects in a shorter time. This is crucial in a competitive industry as

"They are happier with stable working machines. If there is a component failure, they know it will be fixed within a day, there are no agitated users, there is less frustration."

*Head of IT, civil engineering*



repeat business makes up 75% of sales.

Productivity was also improved for other knowledge workers, both for sophisticated accounting and analytics software such as SAS, as well as those needing to multitask. The latter includes the IT team, with just five members, who connect up to five displays each and need to be able to track servers, log reviews, analyze firewalls, and provide employee support all at the same time.

## Workstations In The Chemicals Industry

The manufacturer produces specialist chemicals for large oil and gas customers. They employ a team of 10 mechanical and electrical engineers who develop and manage custom manufacturing processes. Prior to investing in Dell Precision workstations, they used a different vendor that provided standard PCs. The laptops, however, were not powerful enough to run key applications such as AutoCAD and SolidWorks and so, the engineers had to take measurements from the manufacturing floor back to the office in order to input the data onto desktops and servers to run the 3D models and drawings. The loss of time, inherent to such a manual process, was a daily occurrence with workers moving between their offices and the manufacturing sites.

Following an investment into 10 Dell Precision 7000 workstations, not only was this travel time eliminated for the 10 engineers involved, but rendering time was also reduced and, there was an improvement in reliability. Overall the manufacturer saw a daily 2-hour time saving for each of these engineers, equivalent to a productivity increase of a third.

## Workstations In Civil Engineering

A civil engineering consultancy in South Africa increased the productivity of its engineers by 60% with Dell's Precision Workstations. The consultancy uses AutoCAD as its main application for rendering 3D modelling, scans of plants, and 3D drawing conversions — RTOS is also used. Previously, other various suppliers were used, resulting in complex IT management, high downtime, and low reliability.

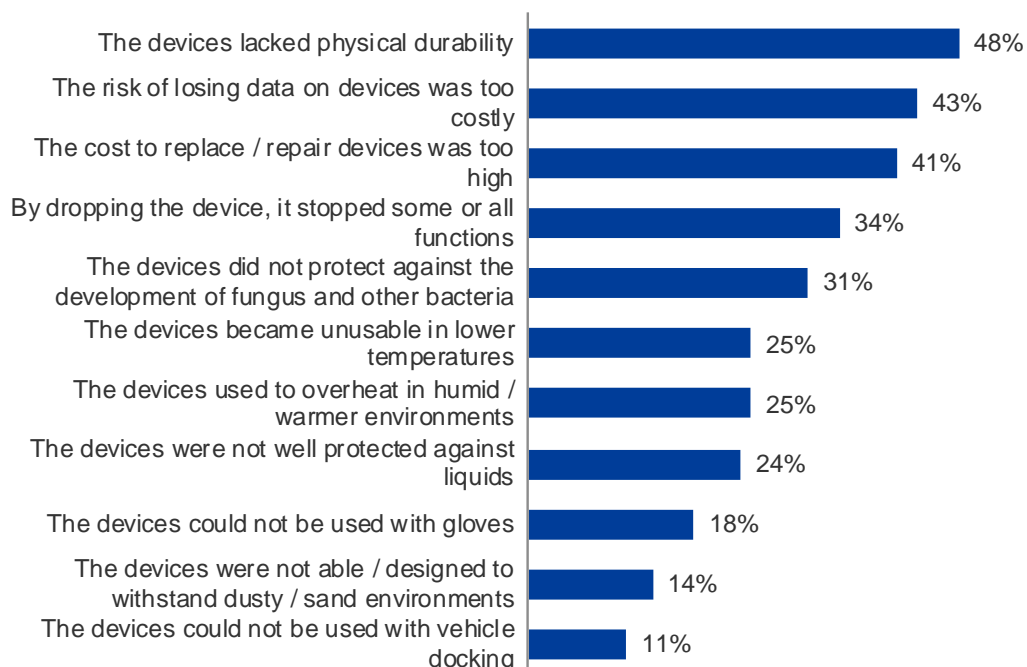
By upgrading to the latest workstations, the consultancy experienced a productivity improvement of 60%, largely through application rendering. Improved reliability and more stability followed this improvement, resulting in the avoidance of reboots and reloads. Subjective evidence (from the Head of IT) also suggests that the workforce is happier and less frustrated with the limitations of its tools, resulting in customer experience benefits. Onsite workers are now able to provide a full customer walk-through on 3D applications, speeding up the decision-making process and delivering projects at a faster pace.

# Rugged Devices: Analysis Of Benefits

Dell's rugged devices include laptops and tablets that are able to withstand use in extreme environments such as high and low temperatures, dust, moisture, humidity, and accidental drops. There are two broad scenarios in which such devices are used:

- › In cases where standard devices cannot be used.
- › In cases when standard devices break down too often for viable use.

## “What were the main reasons for replacing non-rugged devices with rugged devices?”



Base: 723 workplace technology decision makers  
 Source: A commissioned study conducted by Forrester on behalf of Dell, September 2018

## RUGGED DEVICE BENEFITS SUMMARY

Rugged Device Benefits Summary		
BENEFIT	KEY OUTCOME	OTHER OUTCOMES
Productivity gain	20% gain, ~33 days/user	Process transformation, better employee experience
Higher reliability	Lower downtime	Reduced IT management
Improved customer experience	Faster turnaround	Shorter sales cycle



## Productivity And Reliability Benefits

While the survey data shows typical productivity gains of 20% per user, the customer interviews reported gains of up to 60%. There are several different aspects to these gains:

- › **Process transformation.** In situations where standard devices cannot be used, rugged laptops and tablets are able to fundamentally change a particular business process. In the case of the interviewed customers, one customer was able to automate a process with the use of rugged tablets, reducing the size of site teams from five employees down to two, in some cases. More importantly, this enabled the company to reduce accidents and risks, thus lowering costs and attracting more customers.
- › **Increased efficiency.** By upgrading to Dell's rugged laptops, one of the interviewed customers was able to drastically increase productivity because of the higher specifications, enabling applications and tasks to be completed faster. The ability to use hot-swap batteries further contributed to increases in worker efficiency.
- › **Higher reliability.** Increased stability, less glitches/freezing, and longer battery life contributed to increased uptime and reduced disruption.
- › **Improved employee experience.** Providing the right tools makes employees happy which tends to result in increased productivity, through better performance, higher discretionary effort, and lower turnover.

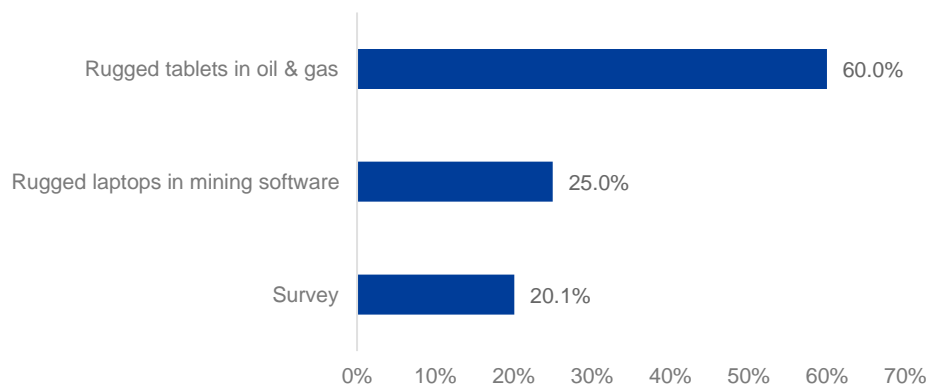
“Overall, we’ve seen a 25% productivity gain all in all — that’s the CPU, reliability, downtime avoided, and battery performance.”

*General manager, mining software*



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

### Rugged Device Productivity Gains



Base: 723 workplace technology decision makers

Source: A commissioned study conducted by Forrester on behalf of Dell, September 2018

The impact of these productivity gains might be less for a number of reasons:

- › The impact of rugged devices on reducing task completion time and increasing reliability may be less than expected.
- › Not all the new time available might be put to productive use.

To account for these risks, Forrester adjusted this benefit downward by 50%, bringing the productivity gain for the average organization down from 20% to 10%.

## Customer Experience Benefits

Although an improved customer experience is not always the primary driver for investments into rugged devices, it can prove to become a key benefit. As was the case for the two organizations that had invested in Dell's rugged devices.

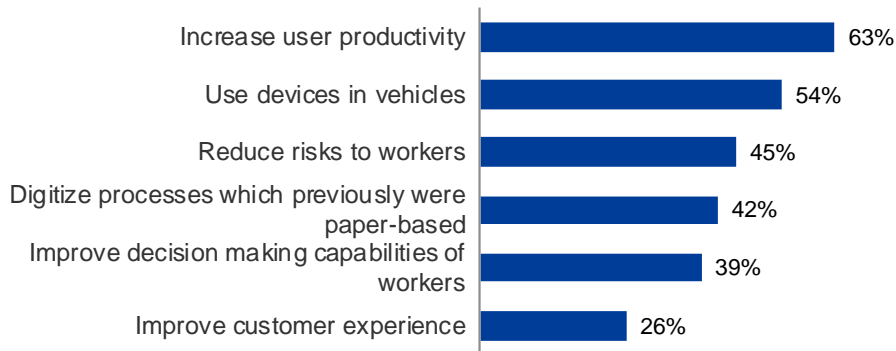
- › In the case of the oil and gas organization, the automation of the onsite process reduced the number of accidents and the number of people on site. This helped to reduce risks and to make the organization more attractive to customers.
- › In the case of the mining industry software developers, rugged laptops enabled advisors and consultants to complete projects more quickly. Furthermore, software demonstrations performed better and were more reliable, which in turn reduced the sales cycle and thus the time-to-revenue.

“Customers want to move toward automation. There's less risk with less people on site — this has helped us to win at least two new contracts.”

*Environmental health and safety director, oil and gas*



### “Which of the following has ruggedized devices enabled your organization to do?”



Base: 366 workplace technology decision makers  
Source: A commissioned study conducted by Forrester on behalf of Dell, September 2018

## Rugged Laptops In Mining Industry Software

This US-based software developer creates, installs, and operates specialist applications such as asset management, financial modelling, analytics, and site planning for the mining industry. Related advisory services are an important part of the business. Devices have to be able to be used in vehicles, on the surface in office spaces, and below the ground at excavation sites (these sites can be wet, dusty, cold, or hot).

Two years ago, the software developer started upgrading to Dell's Latitude rugged extreme laptops, having previously used a different vendor of ruggedized devices. Today, the developer uses around fifty of these devices globally. Productivity of onsite engineers improved by 25% as Dell's rugged laptops provided:

- › Faster processing time.
- › Longer and more reliable battery life.
- › Reduced downtime.
- › Faster repair and replacement (the devices are used more or less continuously and the life cycle has increased from 11 to 18 months).

The hardware supports the performance of the software, and therefore, the customer can see its software performing optimally on an initial small rollout, enabling software developers to make decisions more quickly. This, in turn, brings the following step of the sale closer, shortening the sales cycle. It also makes the onsite engineers much more confident when using and demonstrating the software.

## Rugged Tablets In The Oil And Gas Industry

This company provides water supply services to oil and gas organizations. Onsite teams have to carefully monitor the continuous and constant supply of water. Previously, this required five members per site, including a supervisor, who had the responsibility of monitoring water levels from the trailer. Having developed proprietary software, it was found that they could reduce the onsite team to two or three members since the supervisor could be mobile and monitor fluid levels using a tablet. However, the standard tablets being used before the device upgrade were not able to withstand the cold and wet conditions these devices are used in cold and wet conditions and have to withstand accidental drops; standard tablets were not up to the job. Dell's Latitude Extreme Tablet is able to survive in such conditions and supports battery hot-swapping, eliminating any downtime. The size reduction of onsite teams is equivalent to a productivity increase between 40% and 60%.

An additional benefit has been found in customer acquisition. Not only have accidental spillages been reduced by 80% through better water level management, but customers also prefer the automated process because there is lower risk with less people on site, which, in turn has attracted new customers.

# 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: Endnotes

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<sup>1</sup> Source: “2017 Trends in Global Employee Engagement,” Aon Hewitt, 2017 (<http://www.modernsurvey.com/wp-content/uploads/2017/04/2017-Trends-in-Global-Employee-Engagement.pdf>).

<sup>2</sup> Source: “The Total Economic Impact™ of Dell And Partners Workforce Productivity Benefits,” Forrester Consulting report prepared for Dell, January 2019.

<sup>3</sup> Source: “The Employee Experience Imperative,” Forrester Research, Inc., December 15, 2017.