

ECONOMIC VALIDATION

Analyzing the Economic Benefits of Dell Thin Clients

Save 62% of IT Administrator Time While Improving End-user Productivity and Hardening Security

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Economic Validation: Key Findings Summary

Validated Benefits of Using Dell Thin Client Solutions



Improve IT administrator efficiency by 62%



Improve end-user performance by 90% compared to standard PCs



Extend device lifecycles



Reduce exposure to breaches by 25%

- **Improved Productivity and Performance:** Enterprise Strategy Group found that organizations adopting Dell thin client solutions can see improved productivity, both in end users and IT FTEs.
- **Lower IT Costs:** Dell thin client solutions can lower IT management costs and extend device lifecycles.
- **Hardened Security Posture:** Moving to thin clients can reduce many of the attack vectors faced with end-user computing while accelerating recoverability in the event of a disaster.

Introduction

Organizations today are navigating significant change, presenting both opportunities and challenges. To thrive in this dynamic environment, they need efficient, secure, and cost-effective IT solutions that modernize the workplace, accelerate innovation, and prioritize security. Virtual desktop infrastructure (VDI) is established as a powerful technology, enabling businesses to centralize desktop management and enhance data security. A key component of an effective VDI or Desktop-as-a-Service (DaaS) offering is the use of thin client solutions, lightweight computing devices that are purpose-built to connect to virtual environments.

Thin clients simplify IT management and strengthen endpoint security while offering a seamless user experience. However, selecting the right thin client solution is critical to maximizing the benefits of VDI. This Economic Validation from Informa TechTarget's Enterprise Strategy Group focuses on the quantitative and qualitative benefits organizations can expect by using endpoints optimized for virtual environments and, specifically, Dell thin client solutions.

Challenges

Enterprise Strategy Group studied the top priorities that drive endpoint strategy and found improving employee productivity to be the most commonly cited factor, followed by digital transformation initiatives and improved cybersecurity (see Figure 1).¹

Figure 1. Top Drivers of Endpoint Device Strategy

What are the top business priorities or initiatives that are driving or influencing your organization's endpoint device strategy? (Percent of respondents, N=354, multiple responses accepted)



Source: Enterprise Strategy Group, now part of Omdia

¹ Source: Enterprise Strategy Group Research Report, [Endpoint Device Trends](#), February 2024.

We analyzed the challenges in providing end-user computing (EUC) environments and found these to be consistent across most organizations:

- **Proliferation of end-user devices.** 97% of organizations report that their average employee interacts with more than one device daily, with the majority using at least four devices per employee.² This creates a challenge of providing functionality and seamless, secure access across a wide variety of endpoints both in and outside a company's walls and can quickly outstrip an IT team's capabilities.
- **Risk of malware and virus attacks.** The challenge of keeping a consistent security posture across a fluid workforce and a large collection of devices can be daunting to IT staff. According to Enterprise Strategy Group research, 44% of respondents said that fortifying cybersecurity is a top factor influencing their organization's endpoint device strategy.³
- **Users who change locations.** Workers who frequently change locations can be frustrated waiting for their environment to load or, even worse, finding their work state not saved between devices. This hurts efficiency and leads to mistakes. 43% of respondents to Enterprise Strategy Group research noted that an increased number of hybrid or remote workers was responsible for the change in their organization's endpoint strategy.⁴ Additionally, employees who "roam" within a facility or office building (e.g., clinicians within a hospital), moving to different rooms or stations, can lose quite a bit of productivity when they can't quickly pick up where they left off.
- **Cost of IT administration.** Maintaining devices and images can be expensive and can bog down IT teams with low-level tasks.
- **EUC hardware and software costs.** The costs to procure, manage, and protect traditional devices are escalating for multiple reasons, including a shift from traditional offices to hybrid and remote workforces.

To overcome these challenges and meet the needs of a modern workforce, 90% of organizations have adopted some form of desktop or application virtualization.⁵ However, the realized benefits of desktop virtualization can vary widely depending on the endpoint device. Customers using standard PCs for desktop virtualization still find themselves managing their users on a per-client basis and have less IT control over applications and data stored on individual devices, opening the door to greater security risk. While thin clients as a category are optimized for virtual environments and generally offer more value than standard PCs, Dell thin client solutions stand out among alternatives when analyzing performance, security, and manageability benefits.

The Solution: Dell Cloud Client Workspace and Thin Client Solutions

The Dell Cloud Client Workspace portfolio offers a robust suite of endpoint solutions optimized for performance in virtual environments and designed to meet the demanding needs of today's modern workforce. Focused on advanced security, IT management efficiency and delivering superior end user experiences, the portfolio provides a comprehensive pathway for organizations seeking to maximize the value realized from their Virtual Desktop Infrastructure (VDI) and Desktop-as-a-Service (DaaS) environments.

Key Components of a Dell Thin Client Solution

- **Thin Client Operating System.** Dell offers a choice in operating systems designed to ensure secure and efficient access to VDI and DaaS environments through a comprehensive set of built-in software and technology partner components. **Dell ThinOS** offers a quick start for productivity, an intuitive user experience, and local browser options for easy and secure access to modern virtual environments. For organizations wishing to standardize on Windows, Dell offers **Windows IoT Enterprise**, which combines Microsoft's robust tools with customizable capabilities to meet diverse operational needs.

² Source: Enterprise Strategy Group Research Report, [Managing the Endpoint Vulnerability Gap](#), May 2023.

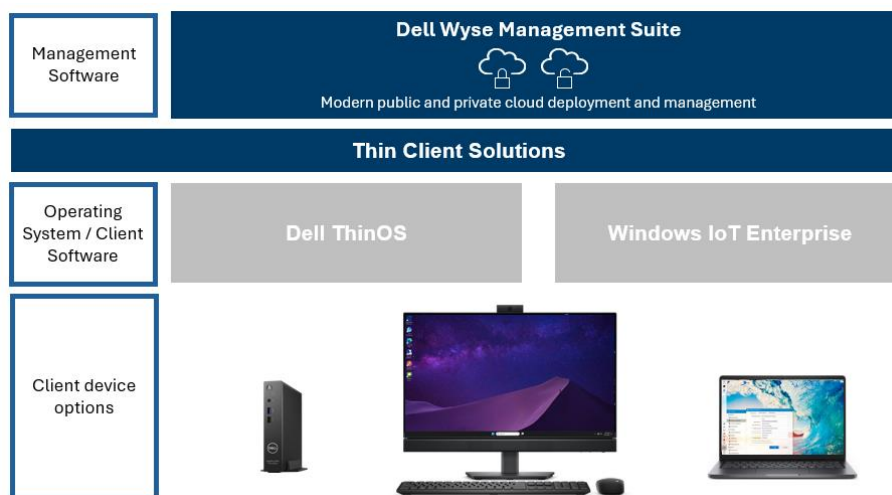
³ Source: Enterprise Strategy Group Research Report, [Endpoint Device Trends](#), February 2024.

⁴ Ibid.

⁵ Source: Enterprise Strategy Group Research Report, [Managing the Endpoint Vulnerability Gap](#), May 2023.

- **Dell Pro Clients.** The OptiPlex 3000 Thin Client, Dell Pro 24 All-in-One, and Dell Pro 14 laptop address a range of performance needs and workloads. These thin client solutions enhance productivity with features like multi-display support, collaboration features, and modern connectivity, all within sustainable, reliable designs that seamlessly merge functionality with innovation.
- **Wyse Management Suite.** This hybrid cloud management tool is tailored to work with Dell thin clients, simplifying deployment, configuration, and management. Day-to-day operations are streamlined with features such as the dynamic dashboard, which provides actionable insights and enables granular control over a distributed fleet from a single pane of glass. For enhanced simplicity and efficiency, the Wyse Management Suite Pro on the public cloud option offers a Dell-managed console that is available on demand and easy to scale.

Figure 2. The Dell Thin Client Solution



Source: Dell

Enhanced Security and IT Efficiency in a Distributed Environment

Managing a geographically distributed fleet, including remote or hybrid workers, comes with challenges that require innovative endpoint solutions. Dell's Cloud Client Workspace portfolio addresses these challenges with secure-by-design endpoint solutions that reduce the attack footprint of individual devices and enable centralized, granular control of the fleet.

The flagship Dell ThinOS offers advanced security through measures such as unpublished APIs, system hardening, and advanced encryption. Combined with centralized security from Wyse Management Suite, organizations can define granular access permission and easily enforce policies. IT teams benefit from the seamless integration of Wyse Management Suite with broader business tools, enabling proactive issue identification and resolution, as well as rapid device recovery to minimize downtime. These elements significantly reduce IT overhead while ensuring continuous operational excellence.

Trusted by Industries Worldwide

From healthcare and government services to finance and retail, organizations leverage Dell thin client solutions to meet compliance standards, drive productivity, and safeguard critical business assets. Dell partners with key VDI and DaaS providers such as Citrix, Microsoft, and Omnicast to ensure that their thin client solutions are validated, supported, and compatible, empowering IT teams to focus on innovation rather than maintenance.

Enterprise Strategy Group Economic Validation

Enterprise Strategy Group completed a quantitative economic analysis to understand the savings and benefits an organization can realize when moving to Dell thin client solutions. Enterprise Strategy Group's economic validation process is a proven method for understanding, validating, quantifying, and modeling the economic value propositions of a product or solution. The process leverages our core competencies in market and industry analysis, forward-looking research, and technical/economic validation.

Enterprise Strategy Group spoke with several Dell thin client customers and reviewed Dell-provided material and case studies, examining customer workflows across healthcare, finance, education, retail, and manufacturing industries. We used this guidance to create a representative sample organization for our economic model.

Enterprise Strategy Group's analysis considered two before-state scenarios: a move from a competitive thin client solution and a migration from using standard PCs for desktop virtualization. Customers were asked, where possible, to quantify the changes they observed in moving from before-state to Dell thin client solutions. If we observed a wide range for a reported metric, we chose a conservative estimate for our model to ensure the value estimate was both realistic and achievable for most companies looking to change their EUC strategy.

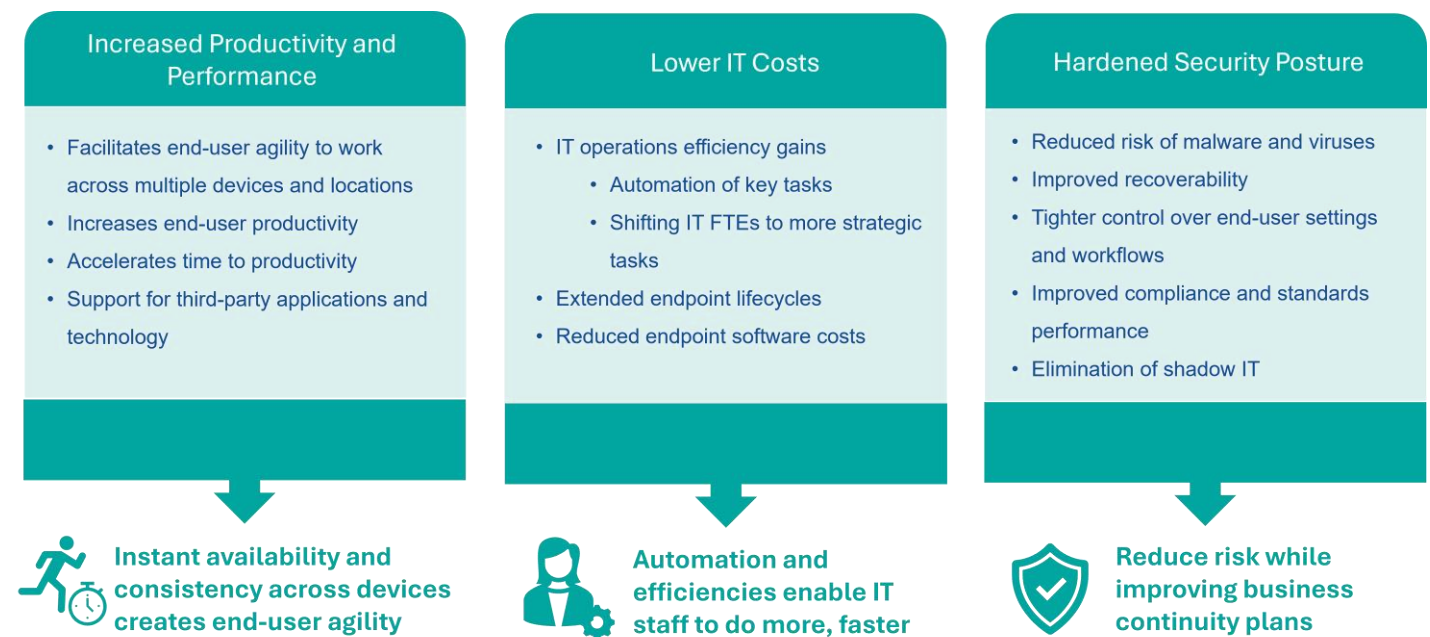
Dell Thin Client Economic Overview

Enterprise Strategy Group's economic analysis revealed that customers who choose Dell thin client solutions can achieve substantial benefits in areas including:

- **Increased productivity and performance.** Enterprise Strategy Group found that Dell thin clients offer the flexibility and performance to address the changing needs of a modern workforce and ensure end-user productivity.
- **Lower IT costs.** Dell thin clients offer both CapEx and OpEx cost savings when considering required hardware specs and firmware support, as well as increased IT management efficiencies.
- **Hardened security posture.** While thin clients are secure by design, the Dell ThinOS operating system is purpose-built to deliver a confident and reliable experience, ensuring highly secure and efficient access to virtual desktops. With a closed architecture that minimizes vulnerabilities and robust built-in protections, it helps businesses safeguard their environments while reducing risks.

Our modeled scenario is based on a financial organization with 15,000 end-users and 12,000 endpoints running in a virtual environment. We built in assumptions for shared-use devices. The modeled organization has 62 global locations, with 23% of workers being remote or work-from-home employees. Our sample company averages 7,560 concurrent VDI sessions during work hours and has 600 supported applications. Each end user generates \$165,000 of revenue per year.

Figure 3. Validated Economic Benefits of Dell Thin Client Solutions



Source: Enterprise Strategy Group, now part of Omdia

Increased Productivity and Performance

We found that Dell thin clients were able to address much of the complexity that can be found in enterprise-level EUC environments. Our analysis found these benefit areas are consistent across most types of organizations.

- Improved performance.** We found that the Dell thin client portfolio with micro desktop, all-in-one, and laptop device options addresses a wide range of workflows and performance needs. Dell's thin client software seamlessly connects with popular virtualization services and is optimized for unified communications and collaboration tools. Additionally, customers whose employees sign in and out of sessions multiple times per day and are often on different machines saw substantial benefits from session roaming capability.
- Increased end-user productivity.** We found that the Dell thin client solution facilitates end-user productivity by providing fast access to employee workspaces, improving collaboration with unified communications support, reducing disruptions in daily tasks with faster IT response times and quicker resolutions, and bringing consistency across all end-user devices. As one customer stated, **"Dell thin clients make it easy to propagate best practices to our entire workforce. Someone comes up with a good idea, and we can quickly spread it to all of our users."**

Customer interviews included examples where they reported a 90% increase in end-user productivity when compared to traditional PCs and 23% when compared to alternative thin client solutions. The largest impacts were for industries that have very mobile workers, often moving from station to station as part of their normal workflow. For our financial model, we chose a conservative metric of a 12% productivity increase and multiplied that by a 50% realization factor to recognize

Recognizing Improved Productivity

We examined the benefits of productivity and performance in multiple ways. Beyond the corporate world, hospitals can care for more patients, schools can support more students, and government agencies can serve additional constituents more efficiently. Each of the organizations interviewed for this project reported an increase in employee output since migrating to the Dell thin client solution, both in IT FTEs and for their end-users.

that not all employee productivity gains are driven back into revenue-producing activities. We built our model on the estimate of the revenue generated per employee, growing from \$165K to \$169K per year, a \$4,125 gain per person and \$44.5M total annual benefit for our 12,000 employee workforce, but we believe many organizations can see productivity gains that are exponentially larger.

- **Accelerated time to productivity.** Rapid employee onboarding is a critical advantage in industries such as retail and hospitality. These competitive sectors often undergo aggressive expansion through mergers and acquisitions, requiring swift operational readiness of new locations to drive revenue growth. Efficient onboarding also simplifies the management of remote employees, temporary workers, and contractors while ensuring compliance with regulatory standards. With Dell's Wyse Management Suite, once a new user connects to a network, they are able to self-service and get up and running within minutes. By comparison, the before-state environments we reviewed for this analysis showed estimates that ranged from eight hours to multiple days. While we didn't quantify this in our model, we believe there is a recognizable benefit in this area for most organizations in moving to Dell thin client solutions.
- **Support for third-party applications and technology.** Dell customers report satisfaction with the third-party applications supported. One area that specifically shined is Dell's support of unified communications applications with out-of-the-box support for popular collaboration software as well as a wide range of hardware peripherals, enhancing the overall user experience.

Lower IT Costs

For nearly 30 years, thin clients have been a trusted choice for IT professionals seeking cost-effective and reliable VDI endpoints. Initially, they featured basic configurations and entry-level processors, offering a low acquisition price and benefits like reduced power consumption, heat emission, and operational noise. Their lack of moving parts also improved reliability, leading to substantial cost savings compared to traditional PCs.

However, as technology has advanced, so have the demands placed on thin clients. Workloads such as video conferencing, enhanced graphic processing, and large data set manipulation require more powerful systems. To keep pace, thin clients have undergone significant advancements, delivering much higher performance and effectively narrowing the gap between thin clients and traditional desktops in terms of user experience and price..

"Thin clients have undergone significant advancements, delivering much higher performance."

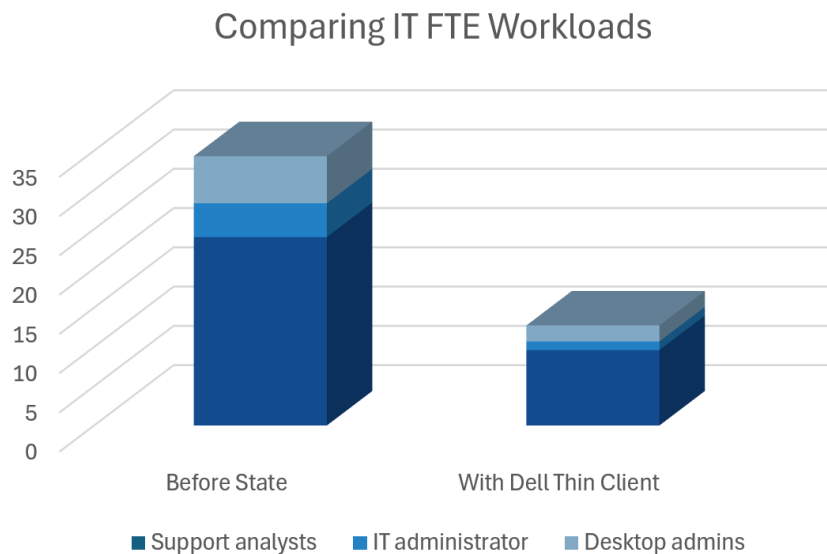
Today, IT professionals must consider where the value of modern thin clients lies. Cost savings can no longer be confined to hardware alone. It's essential to explore metrics such as IT efficiency and business agility, including:

- **IT Operations efficiency gains.** Dell thin client solutions help to reduce operational support needs, and Dell's Wyse Management Suite Pro Edition further enhances efficiency by automating key management tasks. Time spent on hardware setup, software updates, and asset management is drastically reduced, along with application administration and security management.

The efficiency of Dell thin clients enables IT teams to focus on strategic priorities rather than routine maintenance. With traditional desktops, the IT staffing ratio typically ranges from 1 IT staff member for every 50 to 100 users or endpoints. However, customers using Dell thin clients report significantly higher ratios, ranging from 1:500 to 1:1000, with one customer managing 8,000 thin clients across multiple locations with just four admins. These improvements contribute to a stronger, more agile IT infrastructure that aligns with long-term strategic goals.

When studying the impact on IT FTEs, we modeled the IT FTE resources required to manage a standard PC vs. Dell thin client, and the latter saw a 62% improvement in IT FTE efficiency (as seen in Figure 4).

Figure 4. Comparing IT FTE Workloads



Source: Enterprise Strategy Group, now part of Omdia

- Extended endpoint lifecycles.** Customers interviewed stated that Dell thin clients provided benefits in extending their EUC lifecycle strategies. When compared to traditional PCs, they estimate their lifecycles went from 3.3 years to 5 years when moving to Dell thin clients. When compared to alternative thin client solutions they estimated that Dell was able to add at least a year to their lifecycle strategy. One customer mentioned: **“Our old solution was very inconsistent with firmware support. We sometimes had to end of life machines because they went out of support. Then, they got out of hardware altogether. With Dell, we have their guarantee that we will be supported throughout our contract and we can plan for a lifecycle that extends our IT investments.”** Using a conservative estimate of moving from 4 to 5 years in lifecycle, our economic model shows these savings to be \$274 per client over the 5-year lifecycle or an average annual savings of almost \$55 per client per year.
- Reduced endpoint software costs.** Traditional endpoints can require productivity and security software to be installed on the individual device, unlike thin clients which are secure by design. Data and applications are housed and managed from the central server; there is no need to install additional security software. Dell ThinOS clients add an additional control layer in that customers are prevented from installing third-party software that does not come with the package, thereby preventing the proliferation of unauthorized software and associated costs. With Dell, you purchase a complete thin client solution (i.e., the device plus all the software needed already installed), which saves IT admins from having to put together the pieces themselves. Another item to consider is that the built-in perpetual license for Dell ThinOS can be substantially less expensive than subscription-based models.

Hardened Security Posture

While increased performance and lower IT costs were important considerations for most organizations evaluating Dell thin clients, **all** organizations studied cited security improvements as key to their value measurement. We found these following benefits to be achievable:

- Reduced risk of malware and viruses.** Because of their reduced attack surface, thin clients dramatically lower the risk of successful malware and virus attacks. Dell ThinOS is engineered as a closed, appliance-based operating system with rigorous control, reducing the attack surface and providing a foundation for

secure, uninterrupted operations. When asked about reduced risk of data breach, customer consensus was that they are 25% less likely to experience a data breach with Dell thin clients than their before-state, dropping the probability of a breach occurrence down from an average of 11% to 8% per year. Additionally, the agility and recoverability of thin clients reduce the cost of a data breach. For a company of the size and industry used in our modeled organization, this brings the average cost of breach down from \$9.4 to \$6.6M, a 30% reduction. With the 25% decrease in the likelihood of a breach, and 30% reduction in breach cost should one occur, we calculate \$491K of alleviated risk per year for our modeled organization.

- **Improved recoverability.** The ability to quickly restore employee access to IT systems plays a vital role in disaster recovery and business continuity plans. Thin clients have demonstrated their effectiveness, particularly during the pandemic, when rapid adaptation to unplanned disruptions was essential. These solutions remain key as organizations face growing challenges from unforeseen events, such as cyberattacks and natural disasters. Customers interviewed shared examples of dramatically improved recoverability in the event of incidents. One shared a specific example: **“There was a recent global IT outage that brought down all of our clients. Our fleet of Dell thin clients was remediated centrally and back on within an hour. Our PCs had to be individually touched by an administrator. IT took an average of 4 hours per office location to get PCs up, if we were fortunate enough to have the users’ devices onsite. Some remote PCs took days to get back up.”** Enterprise Strategy Group believes that Dell thin client solutions are potential cornerstones for a disaster recovery strategy.
- **Tighter control over end-user settings and workflows.** Dell thin clients are distinctive in that their management software, Wyse Management Suite, facilitates management of both the hardware and software, providing simple yet granular controls by enabling admins to create group policies and assign different levels of access rights to different users. This helps IT admins maintain consistency across the environment.
- **Compliance and standards.** Use of thin clients can support a governance strategy that is required in highly regulated industries such as government, healthcare, and finance. Dell ThinOS offers enhanced protection with built-in security mechanisms, such as Secure Boot and AES flash encryption, which prevent tampering and unauthorized access and maintain system integrity. These robust defenses ensure that businesses can operate with confidence, even in data-sensitive environments. As one customer shared, **“If your business relies on standardization, Dell thin clients are a perfect solution. We have better governance and control than we ever could in our old environment. We are now able to show our leadership and our customers that we have full control over our workflows.”**
- **Avoided shadow IT.** We found that before migrating to Dell thin clients, organizations had a surprising amount of unauthorized software running on their systems. With the Dell thin client solutions running ThinOS, companies are able to ensure that only approved hardware and peripherals are running in their environment.

“Thin clients remove physical access to any storage devices that can create security holes. With Dell, we have full control over where our data resides and can be transferred. If a device is ever lost or in the hands of a terminated remote employee, we can immediately remove access to our platform and our data.”

Conclusion

EUC and fleet management are often considered a cost center by many organizations. Enterprise Strategy Group analyzed the benefits that Dell thin client solutions can have on an organization and found they can help shift the view from a cost-focus to one of business enablement.

We compared Dell thin client solutions to competitive thin client offerings and also to standard PCs being used for desktop virtualization. We found with both comparisons, Dell thin clients offered increased value in terms of performance, end-user productivity, IT costs, and endpoint security. Additionally, we found the positive changes in the attitude toward EUC propagated throughout organizations. One customer interviewed stated it as, **“We have reduced friction throughout our end-user computing environment. Our users are happier and work better, our IT staff has shifted much of their work to more strategic tasks that they enjoy more, and our leaders have the assurance that we are better protected and more secure. Moving to Dell thin clients was a win across the board.”**

While results can vary based on industry and other factors, we believe the benefits described in this paper are achievable by most organizations. If your company is seeking a way to simplify and optimize its desktop virtualization strategy, Enterprise Strategy Group strongly recommends that you explore the value that Dell thin client solutions can offer your organization.

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