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The value of virtualization:
How virtual apps and desktops reduce capital spending while improving remote work

The new work imperative: Keeping remote employees productive while saving time and money

Making the remote-work experience as reliable, secure and user-friendly as possible for your employees can often come with a big hit to your CAPEX costs. But that doesn't have to be the case. With desktop and app virtualization, anything is possible.

Companies are looking increasingly to remote work as a fundamental way of doing business. But, to promote maximum productivity, the off-site experience must be virtually indistinguishable from being in the office. This necessitates providing a secure employee experience that extends beyond the physical confines of a space.

Yet, countless companies struggle to balance such priorities without breaking the bank on the many moving parts that come into play—including such considerations as desktop, application and device provisioning and management, extended cybersecurity protection, help desk support, and more.

It's reasons like these that more organizations are investing in desktop and app virtualization—to enable safe and secure remote work, while saving valuable budget and resources, and building greater long-term business adaptability in the process.

Deliver better employee experiences while cutting back on CAPEX investments

Employees need flexible solutions to work at optimal effectiveness from anywhere, at any time, on any device.

But the main issue is this: If those employees are equipped with traditional desktop and app functionality, they're generating significant costs that, for the most part, are coming out of increasingly scant CAPEX budgets.[4]

Combine these expenditures with the operational costs of doing business using traditional, distributed PCs—line items like increased help desk support—and it's easy to see why IT leaders are having trouble making their budgets each quarter.

Consider the implications of maintaining traditional desktop infrastructure on your time and budgets

With their depth of complexity and many moving parts—not to mention the fact that they require constant upkeep and replacement—traditional desktops and apps are time consuming and expensive to roll out and maintain over time. This, in part, is why a significant portion of every organization's annual CAPEX budget goes into desktop management—specifically, toward technical (help desk) support.[5]

City of Corona, California reduced their hardware expenditures by 72% and cloud costs by 50% by introducing virtualized desktop infrastructure.[1]

"We had about 64 desktop-related incidents that happened every month or so; over a three-year contract period, that costs around $300,000 and on the labor side, it's probably another $220,000," said CIO Chris McMasters.[2] "With Citrix, we were able to reduce our costs,[3] without having that expense of the infrastructure as well," Deputy CIO Kyle Edgeworth concurred.[3]

Help desk resources typically need to be available around the clock and be trained to resolve a wide array of issues, from business-critical hardware failures, OS crashes and application incompatibility, to productivity-zapping password resets and other user-specific issues. In fact, technical support is among the most critical challenges faced by IT professionals when managing traditional, full-featured desktop devices (see chart, below).[6]

Add in the cost of application management—including funds dedicated to licensing, provisioning, required refreshes, maintenance and training—and you're stuck in a never-ending cycle of investing time, money, and resources on keeping traditional PCs running in order to keep remote workers as productive as possible.

Which of the following challenges do you associate with managing traditional, full-featured desktop devices?

	Mentions	% Valid Cases
High cost of procurement	123	35%
Operational costs (e.g., staff, training)	102	29%
Employee downtime associated with desktop refreshes	89	25%
Hard to keep up with rapid pace of technology change	107	30%
Difficult to secure from both internal and external threats	82	23%
Threat of physical device loss/theft	88	25%
Scaling the number of available desktops (e.g., seasonal/temporary workers)	80	23%
Too much time spent troubleshooting issues	103	29%
Too much time spent fielding help desk requests	89	25%
Asset tracking inventory	85	24%
Software licensing inventory and compliance	129	36%
Difficult to manage hardware/software compatibility	87	25%
Too much time spent on patch management/desktop updating	99	28%
Sample Size	**354**	

Source: ESG Research Report, VDI and DaaS Trends Survey, March 2020

This is especially challenging when it comes to distributed devices: Despite IT teams' best efforts to install a common OS image and implement broad-spectrum software distribution, distributed desktops often devolve into hundreds of unique environments due to modifications made by each user. This results in an enterprise full of individual combinations of hardware and software, which further complicates IT team efforts and adds additional costs to the mix. What's more, it leads to increased data security risks—and it's made worse by employees using their own devices for business purposes (a.k.a., BYOD).[5]

CAPEX vs. OPEX

CAPEX or Capital Expenses/Expenditures are incurred when a business uses collateral or takes on debt to buy a new asset or add value to an existing asset (e.g., ongoing hardware and software procurement and refresh; head count to manage the company's technology needs; leasing office, storage and climate-controlled space to house servers and other IT infrastructure).

In contrast, OPEX or Operating Expenses/Expenditures are incurred during the day-to-day functioning of a business (e.g., general and administrative expenses, research and development, the cost of office supplies, utilities, property insurance and taxes).

In running its business, a company can sometimes choose to incur an OPEX or a CAPEX. For instance, if a company needs more storage space for housing its data, it can either invest in new data storage devices as CAPEX or lease space in a datacenter as OPEX.[7]

From cost to value center: Comparing traditional provisioning with cloud-hosted desktops

When you consider the key budgetary inputs necessary to keep remote staff productive—including funds to support desktop and app management and investments to sustain operations, employee experience and real estate holdings—it's clear that a traditional approach is a no-win game for most of today's time- and funding-constrained organizations.

The solution: Shift a proportion of desktop and app management fees (along with associated operations, employee experience, and other budgetary investments) into a modern virtualization solution like Citrix Virtual Apps and Desktops™, which enables cloud-hosted desktop and hybrid scenarios.

This way, stakeholders from across your organization will feel the benefits of a virtualized approach. Your IT team will spend less time on desktop and app provisioning and you'll invest less money on hardware and software updates, refreshes, and the support to keep it all running smoothly and efficiently. And, in streamlining your app and desktop provisioning and management, you'll build a more resilient organization, improving operational efficiencies and reducing long-term investments in real estate, head count, and security to support legacy processes—all while giving remote employees the tools they need to be productive, from anywhere. (See chart, next page, for a more complete list of benefits achievable from VDI.)[8]

Which of the following benefits has your organization achieved, or would you expect it to achieve, due to its use of VDI?

	Mentions	% Valid Cases
Simplified desktop provisioning	111	32%
Simplified user profile transfers (i.e., user moves to different location or department)	89	26%
Outsourced OS deployments/patching	57	17%
Outsourced app deployments/upgrades	69	20%
Improved security by keeping sensitive data off devices	135	39%
Reduced CAPEX associated with traditional desktop/laptop PCs	85	25%
Reduced unauthorized app usage or configuration changes by end-users	76	22%
Improved support for remote/mobile users	107	31%
Simplified OS and app licensing	105	31%
Reduced end-user support calls	72	21%
Increased employee productivity gains	125	36%
Improved availability/business continuity (i.e., centralized backups of desktops)	101	29%
Reduced IT operational expenses from outsourced end-user support	129	38%
Improved control through centralized management of desktop and app delivery	104	30%
Simplified desktop decommissioning	94	27%
Ability to support legacy apps with current (i.e., supported) operating system(s)	85	25%
Improved employee collaboration	107	31%
Sample Size	**354**	

Reduce expenses while streamlining management: The value of virtualization for an increasingly distributed workforce

The structure of work continues to change rapidly before our eyes. With more employees than ever before opting to work from home or other off-site locations, many organizations are playing catch-up, sinking escalating amounts of time and money into IT infrastructure that's neither scalable nor sustainable over the long term. This is why more forward-thinking and cost-conscious IT leaders are shifting funds they had earmarked for traditional desktop and app management and provisioning into virtualization technology.

By doing so, they're not only better equipped to meet the evolving needs of their dispersed workforce; they're also saving valuable time, budget, and other resources—upwards of 11% or more[9]—which can be redirected to meet the strategic needs of the business. At the same time, they're building greater business adaptability and resiliency over the long term.

To the best of your knowledge, how much TIME does your organization save by using VDI vs. traditional desktop models?

Time Savings	% of Respondents
0–10%	15%
11–20%	47%
21–30%	21%
31+%	14%
Don't know/have not quantified	4%

To the best of your knowledge, how much BUDGET does your organization save by using VDI vs. traditional desktop models?

Budget Savings	% of Respondents
0–10%	15%
11–20%	53%
21–30%	14%
31+%	14%
Don't know/have not quantified	4%

Source: ESG Research Report, VDI and DaaS Trends Survey, March 2020

Delivering savings and better patient care: An American hospital under COVID-19 restrictions

A leading New England–based hospital recently equipped employees with cloud-enabled Raspberry Pi's instead of laptops. This strategy allowed them to turn a local conference center into a medical unit in record time, further enabling employees to extend healthcare availability and essential services during the COVID-19 pandemic.

In their specific case, desktop virtualization and the use of cloud-hosted thin clients delivered substantial value, including:

- Significant cost savings from purchasing and provisioning thin clients, at around $70 each (vs. the typical cost of laptops, at around $800–1000 each)
- Speed to deployment: A makeshift hospital was created in just 2–3 days (vs. the typical stand-up process, which can take weeks or months). This was made possible, in part, because the thin clients referred to the cloud host for virtualized app and desktop imaging, instead of using thin clients as endpoints.
- Greater security protection and compliance: Security controls were provisioned by the cloud host, so there was no need to worry about the security of each individual thin client.
- Greater IT efficiency: Thin clients running on cloud-hosted systems don't require the same updating and patching as laptops.
- Extended hardware lifecycle: Because the Pi's plug into any compatible hardware, it extends the life of previously provisioned hardware, which precludes the need to purchase and provision new hardware (a major CAPEX cost savings).

With more people shifting to remote work every day, enterprise IT leaders are facing a remarkable challenge—balancing employee productivity with the financial, technical and operational demands of the business as a whole.

If you're struggling with increasingly tight CAPEX budgets, while also striving to deliver fool-proof, yet flexible desktop and app functionality to your distributed workforce, consider desktop and app virtualization— for more secure remote work that saves you valuable budget and resources, while building greater business adaptability over time.

Learn more about Citrix's market-leading solutions for virtual app and desktop delivery in a hybrid and multi-cloud world.

Check out Citrix Virtual Apps and Desktops today

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7. Adapted from this Investopedia post

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