IT'S TIME TO REVISIT VDI

Advanced technology and new business demands make virtual desktops a game changer

Virtual desktops and VDI have come a long way since its disappointing debut more than 15 years ago. Gone are the performance and storage problems, replaced with more robust infrastructure and architecture, superior security, modern features and a changing workforce that demands the flexibility provided by virtual desktops.

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The evolution of technology over recent years has completely changed the way the world works, drastically affecting the modern workforce and business priorities. Advancements in mobile, cloud and security have made it possible for employees to be productive outside the office, leading to a demand for flexible work environments that is forcing a drastic change in the way companies operate – particularly in regards to IT support and security.

To meet new workforce demands and gain access to top talent, more and more organizations are implementing bring your own device (BYOD) and work at home policies to provide the productivity employers want and the flexibility employees now demand. But at the same time, businesses need to ensure these programs are secure and guarantee seamless access to corporate resources from anywhere.

These emerging trends and tech advancements are driving companies to revisit virtual desktops. In its early years, virtual desktop infrastructure (VDI) suffered from performance issues and expensive (and typically failed) deployments. But as technology as a whole has made huge strides in the last 10 years, so too have virtual desktop solutions. Both security and performance have improved, doing away with the old struggles and complaints of early in-house VDI attempts. Virtual desktops as an IT solution are now poised to meet the modern demands of today's business risk climate and shifting workforce trends

The VDI market is forecasted to experience a global compound annual growth rate (CAGR) of over 11% and a domestic CAGR of nearly 40% between 2015 and 2019.

— *TechNavio*

The Initial Struggles

Virtual desktops were initially introduced to the market in the early 2000s, with lots of excitement around the technology and promises made to improve remote access to corporate resources and simplify life for IT teams. Unfortunately, the technology at the time wasn't ready to support those promises.

Performance

The primary cause for concern when virtual desktops were first introduced was persistent poor performance. Early VDI struggled with managing large files and increased network traffic due to a wide variety of factors, including poor storage performance, human error, incorrect or mismatched QoS policies, hardware failure and lack of end-user monitoring.

Desktop workloads are much different than server workloads and many times desktops needed more and/or different infrastructure resources than high performance databases or applications. Storage performance or IOPS (input/outputs per second) was immediately exposed as a major performance bottleneck.

One of the main drivers behind the technology was to improve workforce productivity, but downtime rates were so expensive they outweighed the convenience of remote working. In fact, Enterprise Management Associates determined the cost of application downtime for low mid-tier to large enterprises in 2008 was as much as $45,000 per hour.

On top of that, many end-users found the technology confusing and difficult to use, which defeats the purpose entirely.

Hidden Costs & Complexities

Virtual desktops are intended to be a centrally controlled and administered solution that is more secure and easy to manage – but only if implemented correctly. Back-end infrastructure has to be redundant, expandable and fault tolerant, which is an expensive undertaking typically not taken into consideration when calculating total cost of ownership (TCO) of self-implemented VDI. As the VDI implementation continues to grow, so do the demands on infrastructure, driving up capital investment. There are also added expenses related to application and operating system licensing that companies were unprepared for when dealing with this new technology.

In contrast to the perceived benefits, maintaining VDI actually created an additional onus and resource drain for IT. High density in-house VDI solutions monopolized a lot of resources in the data center and required a great deal of power (and cooling) to remain operational. As the density increased, added network capacity, performance and storage performance (IOPS) also needed to be maintained – all while becoming more complex to operate.

In 2009, desktop virtualization expert Brian Madden noted that for every VDI project a company touches, they should factor in a 15 percent increase in total cost of ownership. This complexity and outsized cost turned many organizations off of the idea of a sustainable virtual desktop program.

VDI 2.0: Advanced Technology

While some may have had bad experiences with insufficient virtual desktop solutions and as such are dubious of the space as a whole, the technology has improved significantly since its inception.

Extensive strides have been made in the supporting technology to ensure that modern virtual desktops offer comparable performance to their physical counterparts. This is due to a number of factors that have changed the way we think about VDI, including advances in technology and a better understanding of crafting high-performance, high-availability VDI.

Infrastructure & Architecture

The virtual desktop user experience is based on three key factors – software, hardware and design. In the past, the software technology was decent but the other two thirds of the equation were lacking. VDI solutions of the past were considered to be far too infrastructure-intensive and often required that organizations build their own infrastructure to support the deployment. This only served to add to both the complexity and the cost.

Fortunately, as with many other technologies over the past decade, each dominant piece of VDI has drastically advanced and become more broadly viable.

One of the major changes that has rendered virtual desktops much more practical is the segmentation of functions not directly correlated to end user performance. Secondary and even tertiary networks are now used and network speed and protocols are matched to the function being performed by the system. This has been aided by an advancement in network port speeds and the reduced cost and added reliability of a per-port or per-GB cost ratio.

Years ago there were only one or two choices for VDI elements as foundational as hypervisors and desktop delivery systems. Today, there are multiple choices for almost every tool from virtualization to persona/end user management.

Storage

Storage performance (IOPS) has improved greatly and become far less expensive in recent years. Historically, virtual desktop deployments suffered from egregious performance issues due to a storage-generated bottleneck effect – for instance, when too many users simultaneously log on at the beginning of the work day.

Since the early 2000s, storage capacities and performance metrics have drastically improved and the price per GB has decreased. Though offset slightly by the growth of data, technologies to duplicate and store data more efficiently have also matured. New developments in file access have emerged since early iterations of VDI, spawning new storage design and file systems that cater to end user experience.

Many of today's cloud based virtual desktop solutions incorporate a tiered storage infrastructure, including SSD drives for caching and HDD for archival storage. This provides the IOPS necessary to ensure an optimal user experience.

Security

Security is a major impetus for many organizations adopting virtual desktops. The most secure VDI solutions offer multi-tiered security that stretches from the data center and network through to the endpoint and end user.

Modern virtual desktop solutions support the added user and group level controls often implemented on traditional desktop setups, allowing IT teams to disable select actions such as copy/paste, USB access and saving to unauthorized applications or locations. Virtual desktops further the promise of security since no data is stored on the local device, minimizing the chance of a data breach caused by a lost or stolen device – a threat that is more real now than when the technology first emerged.

As an added bonus, today's VDI can help organizations more easily achieve and maintain compliance standards. Implementing independently audited and verified PCI or HIPAA HITECH compliant virtual desktops (an option that was originally cost prohibitive) can make auditing functions much simpler and less costly.

New Features

Poor performance was the resounding complaint regarding early iterations of VDI technology, negating the promise of improved productivity and leading many end users (and subsequently IT teams and companies) to reject the technology. Just as technology has advanced over the years, so too have our expectations for functionality and support. Virtual desktop technology needed to not only catch up to the original expectations, but keep up with advancements to achieve and maintain the status of a viable solution. And it has succeeded.

What was once unfathomable over VDI is now a reality, including softphones, video streaming and web conferencing delivered consistently and at scale. Features like these allow for video training of remote agents, communicating with customers and hosting webinars, all from a virtual desktop.

Next Gen VDI: Desktop as a Service

As virtual desktop technology has evolved, an enhanced solution has emerged to further reduce the clunky, difficult-to-manage reputation of VDI – fully managed, cloud delivered desktop as a service (DaaS).

This new generation of virtual desktop solutions makes it easier than ever for businesses to implement a virtual desktop initiative while also enabling fast and easy scaling and reduced in-house support. DaaS extends virtual desktops to today's popular "as a service" model, making it more accessible to organizations of all sizes and reducing additional burdens.

Infrastructure Maintenance

One of the biggest challenges organizations face when attempting to implement in-house VDI is maintaining and scaling the virtual desktop infrastructure. While technology had advanced to a point that makes virtual desktops meet performance and storage expectations, supporting the infrastructure required for these initiatives is still a major challenge.

By opting for DaaS, the heavy lifting is taken care of. The VDI design, architecture, maintenance and upgrades are in place and consistently managed. As DaaS providers service more than one company, they are better able to dedicate the time and resources to focusing on innovation and improvements to ensure the VDI they supply is not only sufficient, but superior.

This method frees up internal IT teams to focus on business-driving initiatives and shift from a CAPEX to predictably and scalable OPEX.

Access to Experts

Building and maintaining VDI is not a simple task and requires an expert. As the ability to attract and retain talent becomes the No. 1 concern and struggle within the IT profession, the prospect of adding a VDI expert to an in-house teams becomes increasingly challenging and costly.

- 97.5% of organizations using DaaS are satisfied
- 1 in 3 businesses not currently using a VDI solution said they plan to implement one in the next three years

– *IDC Research*

By outsourcing VDI, organizations gain access to virtual desktop and security experts without the need for additional full time employees. The solution provider becomes an extension of the in-house team, working together to ensure that each DaaS implementation meets requirements and expectations. They also stay current on trends and threats to help keep DaaS environments secure and current with market needs.

It's Time for Virtual Desktops

As the working world shifts, traditional desktops are becoming a bottleneck that needs to be addressed. Modern virtual desktops – and DaaS in particular – give organizations the opportunity to adjust to support increasingly remote workforces and device sprawl without sacrificing resources, productivity or security.

VDI technology has caught up to the point where old complaints are no longer an issue and virtual desktops are poised to be the solution to emerging trends and challenges. Today's DaaS providers are making the original promise of virtual desktops a reality while continuing to push the envelope on innovation to help modern, agile businesses stay competitive in today's fast paced economy. The winning organizations won't let old biases hold them back from making the right business decision where virtual desktops are a logical solution.

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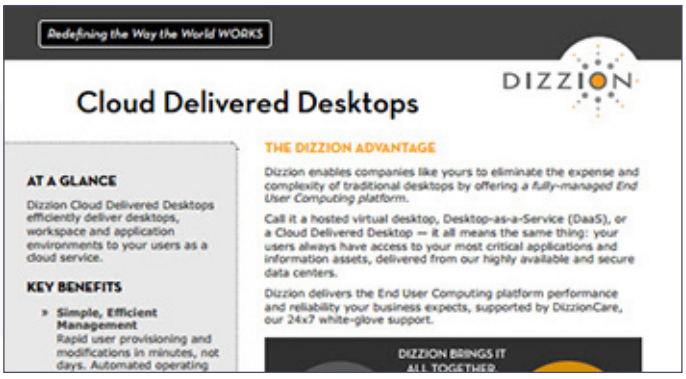

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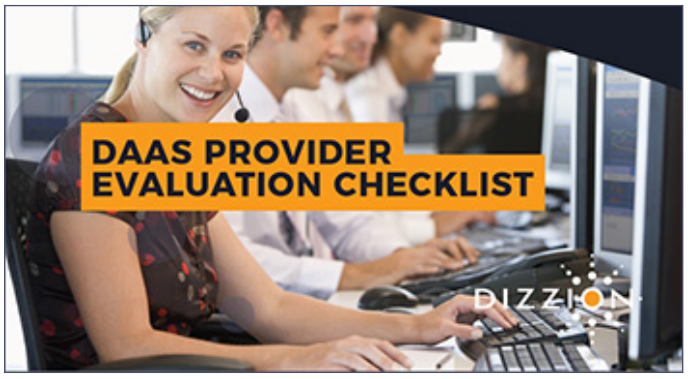

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ABOUT DIZZION

Established in 2011, Dizzion, Inc. is a global provider of end-user computing services, including cloud-delivered Desktops as a Service (DaaS), paired with complementary offerings like secure endpoints, application delivery and storage. The company is delivering the next generation of virtual desktop solutions to meet the demands of a remote global workforce in industries with stringent security and compliance needs, including business process outsourcing, financial services, healthcare and insurance. Dizzion's mission is to enable users to securely access applications and data from any device, anywhere increasing mobility and productivity. To learn more about Dizzion, visit **www.dizzion.com**.

Learn more about Dizzion's desktop as a service solutions.

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