

The emergence of digital economy and the rapid shift in labor demography and preferences are poised to impact the fundamentals (nature and constitution) of work and processes to leverage emerging technologies among companies across the globe. Desktop and application virtualization is one such emerging technology that promises to empower organizations with the desired levels of collaboration, flexibility, agility, and scalability; however, this comes with its own set of challenges, predominantly in performance, user experience, and compliance. Wipro's VirtuaDesk™ envisions to accomplish the requisite business objectives while allaying the challenges effectively.

Reimagining the Future of Work: Boosting Collaboration, Flexibility, Agility, and Security Through Desktop Virtualization

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I. Introduction

Businesses across the globe are grappling with not only expeditious technological transitions but also the brisk evolution of the workforce and their preferences toward the nature of work. The modern workforce is symbolized by the emergence of millennials that demand instantaneous access to apps and data, from anywhere, anytime, using any device (physical or virtual), over any network, and using voice commands in a completely digital virtual workspace where unified apps are decoupled from underlying OSs and devices. Businesses must not only satisfy these dynamic needs but also ensure security and compliance for the workflows and processes.

In such a scenario, desktop and application virtualization promises business outcomes (mentioned above), along with security and compliance. However, actual implementations are long drawn out and are faced with their own sets of challenges, leaving organizations out of the curve wherein the maximum potential of the solution can be realized.

This Technology Spotlight aims to explore the key drivers and challenges related to the implementation of desktop virtualization as well as the approach taken by VirtuaDesk™ to enable organizations to reap maximum business value from the solution.

AT A GLANCE

KEY THEME

Desktop virtualization is a key component of the transformation of the workspace of the future.

WHAT'S IMPORTANT

With proper planning and implementation of virtualization solutions, organizations can reap benefits in the areas of collaboration, flexibility, agility, and security.

KEY TAKEAWAYS

Virtualization technology must ensure flexibility in deployment, user experience, performance, security, and disaster recovery.

II. Understanding the Future of Workspace — The Key Driver for Desktop Virtualization

Globally, millennials already form a significant proportion of the workforce. They profess a completely digital lifestyle and prefer flexibility in their work (independent or project-based) and the place of work. In most parts of the world, especially in developed regions, the gig economy is flourishing as well. This trend is expected to strengthen further in the next three to five years, as organizations step up their talent transformation processes and begin leveraging a contingent workforce to accomplish their business objectives.

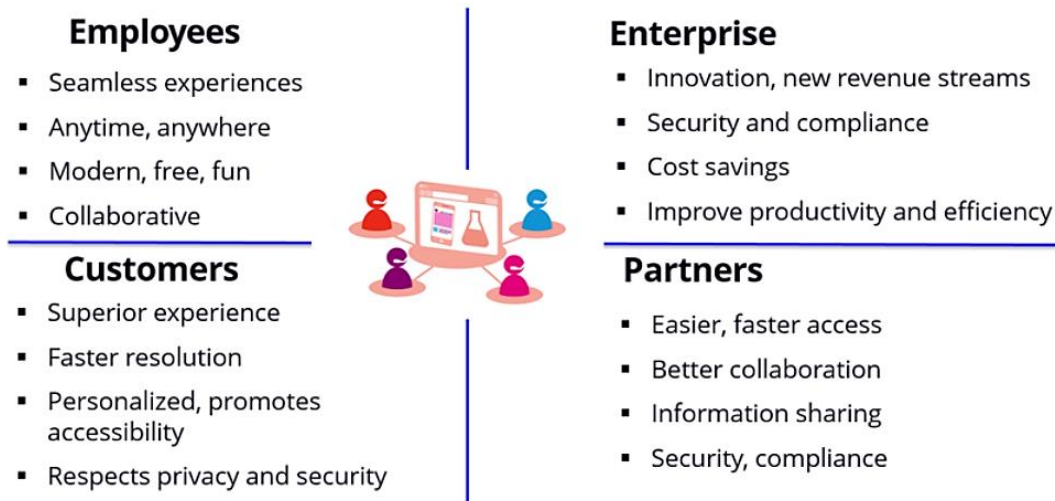
51% of business leaders surveyed globally plan to increase the use of contingent workers in the next three to five years.

The workspace of the future will no longer be defined by the usual norm of a physical office - this would ideally be a combination of physical and virtual workspaces, replete with the concept of working anytime and anywhere.

In the next five years, 30% of European enterprises will move from traditional talent sourcing strategies and models toward virtual, borderless, and task-oriented approaches, integrating online communities and platforms to acquire skills and temporary staff.

Mobility, as-a-service technology, interactive workspaces with augmented/virtual reality, and security (and compliance) are slated to form the broader pillars of the changing face of the workspace of the future.

FIGURE 1: Different Stakeholders, Different Expectations



Source: IDC, 2018

To account for diverse sets of expectations, companies are increasingly turning to desktop virtualization as the panacea to such problems. The benefits to the employees and the IT departments of companies are numerous and are represented in Figure 2.

FIGURE 2: Promise of Desktop Virtualization



Source: IDC, 2018

III. Challenges Galore in Desktop Virtualization Implementations

Appreciating the benefits that the virtualization technology has to offer, a significant proportion of organizations globally have implemented the same. The shift to an as-a-service model is also permeating further, as many device vendors have launched device-as-a-service (DaaS) bundles that include devices, management, and services as pay-as-you-go monthly price schemes.

IDC predicts that by 2019, 35% of Fortune 1000 companies will have a DaaS agreement in place, and 1% will be completely transitioned to DaaS.

The as-a-service model provides organizations with the much-needed agility, flexibility, and cost efficiencies, which are all critical for success in the digital era.

However, desktop virtualization projects have been saddled with several challenges that have lowered the accomplishment of business value for organizations.

Hidden storage costs. This is an area that is mostly overlooked in most implementations. Around 35–40% of the cost of virtual desktop implementation is accounted for by enterprise storage requirements, and in many cases, the storage needs of the users pile up to an unmanageable extent, leading to an increase in the project cost.

Performance. Corollary to the above-mentioned point around spiraling storage requirements, there mounts an additional stress factor on the systems when multiple VMs share the same resources that ultimately leads to a dent in their performance. In addition, storage area network (SAN) can also be a major bottleneck in virtual desktop infrastructure (VDI) implementations.

User experience. This also takes a hit as the VDI end-user experience falls below that of the desktop experience (because of a lack in personalization), ultimately leading to low acceptance rates and higher probabilities of failure of such projects.

Uncertain ROI and longer deployment cycles. More often than not, desktop virtualization projects are poorly planned, and as such, the ROI is uncertain or very low to be justified. Extended implementation cycles also lead to unjustified investments in most of the projects. Additionally, setting up a virtualized environment can be a complex and highly expensive affair for most organizations, considering the types and quantum of hardware and software investments that need to be made. Complex licensing/pricing models of different hardware and software vendors simply add to the woes of the customers implementing this solution.

Lack of management of virtualized environments. This is yet another major challenge that most of the organizations face post implementation. The service provider or the internal IT department lacks the skills and resources for effective day-to-day management of the environment.

IV. VirtuaDesk™ as the Solution of Choice for Desktop and Application Virtualization

Introducing VirtuaDesk™

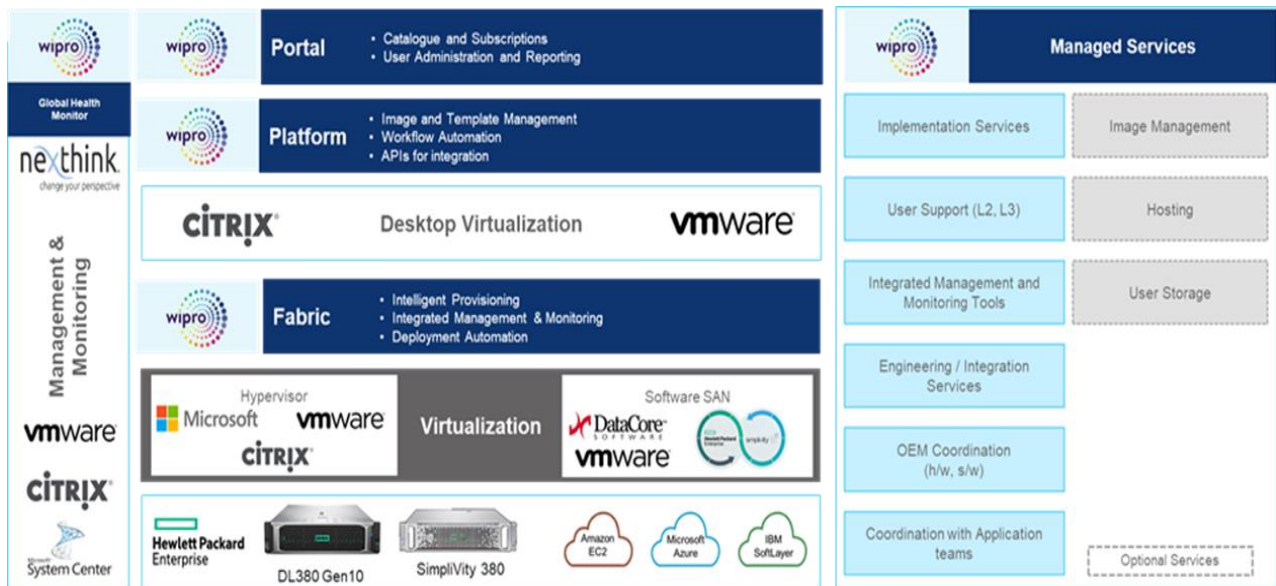
Wipro's VirtuaDesk™ is an end-to-end packaged desktop virtualization solution that promises to tackle the major challenges enumerated in the section above.

This is a one-of-its-kind packaged IP-led solution which is replete with a comprehensive set of features that not only enable fast and secure deployments across several VM environments but also ensure that adequate services are provided for effective implementation, ongoing cadence, and maintenance.

Figure 3 shows the solution capabilities of the VirtuaDesk™ platform.

End-user organizations have the advantage of deploying the VirtuaDesk™ appliance (that hosts industry standard hardware powered by HPE) and the hosted version.

FIGURE 3: VirtuaDesk™ Super Stack: Solution Capabilities



Source: Wipro, 2018

Considering the Distinctive Capabilities of VirtuaDesk™

A. Solution-Related Advantages

1. Rapid and flexible deployment. The platform is designed to enable the rapid deployment of the desktop virtualization solution among organizations and reduce implementation cycles by instantly deploying virtual desktops and applications to authorized users and quickly provisioning Microsoft Windows 7 and other desktop images.

The solution is available as an on-premise or offsite private cloud deployment. **For on-premise deployments, organizations can implement VirtuaDesk™ through a cost-effective pre-configured appliance that comes with fully integrated hardware and software powered by HPE.** For hosted offerings, companies receive desktops, applications, and data as a private cloud. Importantly, all deployments include implementation and ongoing operations support from Wipro and their chosen partners.

- **The VirtuaDesk™ appliance has been observed to reduce implementation costs (TCO) by almost 25%, thus boosting the ROI of such deployments.**
- **In addition, scalability is a big bonus (by adding servers or appliances) for organizations. This has the potential to reduce capex by up to 25%.**

2. Comprehensive desktop virtualization solution. The VirtuaDesk™ platform has powered more than 400,000 desktops till date in larger enterprises across several industry verticals, such as BFSI, manufacturing, retail, telecommunications, and others. It can work with and support industry-grade virtualization technologies, such as VMware, Microsoft, and Citrix, that provide a rich graphics protocol and comprehensive management toolset and ensure easy upgradability.

3. Self-service capabilities. The platform provides a self-service environment that includes an application store and administrative portal. This helps authorized users improve productivity and greatly simplifies the operations for the IT department.

4. Automation platform. Automated configuration are in-built into the platform and helps simplify implementation and deployment. Key features of the automation platform include a knowledge base, self-healing tools, and troubleshooting tools. Standard operating procedures have also been defined for optimization of processes and achieving efficiency.

5. Business continuity and disaster recovery. The platform provides support for appliance clustering as well as burst to cloud during a disaster recovery situation. This enables large-scale and multi-geography deployments, high availability, and disaster recovery.

6. Storage boost leading to reduction in TCO. VirtuaDesk™ utilizes an advanced storage architecture (enabled by HPE SimpliVity that provides hyperconverged infrastructure) that employs local server capabilities with direct-attached hard drives, avoiding performance bottlenecks found within traditional SAN storage-based architectures. In addition, an intelligent, desktop image management approach enhances performance and reduces the required storage capacity.

The solution has the potential to reduce IOPS by 5x and improve user experience by 2x.

HPE SimpliVity promises the following advantages for large-scale enterprise-wide virtualization implementations:

- Effective compression and deduplication mechanisms that optimize all data globally, improve performance, and provide storage and backup capacity savings of up to 90%
- Highly resilient and comprehensive backup and recovery infrastructure to support Wipro's VirtuaDesk™
- Simplified, policy-based management that enables data mobility and increases productivity
- Simplified deployment with HPE ProLiant DL380 building blocks
- Highly flexible and scalable solution for enterprises, with the ability to start small and scale as required
- Excellent VDI performance, data efficiency, and protection

7. Risk, compliance, and security management. Adequate provisions have been made to enforce role-based access and with menu-driven ease. Applications and data are managed centrally, and a multitiered security infrastructure ensures round-the-clock prevention of threats.

100% security and compliance is ensured through the VirtuaDesk™ platform.

8. Implementation services. The solution comes with strong implementation services provided by Wipro and a slew of partners, such as HPE. A well-defined step-by-step methodology ensures fast, optimized appliance installation, configuration, and integration with the organization's infrastructure.

9. Support services. Wipro and partners have skilled 24x7 customer support, and a self-help knowledge base, based on best practices, provides the right level of support. Currently, the platform can boast of support from 500+ Citrix experts and 400+VMware specialists. In all, 70% of the support personnel working on the platform are certified specialists.

10. Production operations. VirtuaDesk™ includes production operation services that cover ongoing hardware and software fixes, updates, and upgrades, ensuring optimal performance.

B. Business-Related Factors

1. Thought leadership. VirtuaDesk™ was co-created with strategic partners, such as HPE, Microsoft, and Citrix, and launched in 2013. Since then, this has benefited several organizations. Over the years, Wipro has augmented its position in this market through several solution improvements (innovation) and by building alliances with other leading vendors (such as Microsoft, HPE, Citrix, DataCore, and others) in the infrastructure and allied services segments. This has ensured that the end-user organizations are able to leverage the best-of-breed technology and derive maximum advantage from these solutions.

2. "Solution" provider. A key distinguishing factor with VirtuaDesk™ is that it not only encompasses a myriad of virtualization solutions (as per an organization's needs), but there is adequate provision of consulting, implementation, integration, and support capabilities. These services, when tightly knit into the solution, can lead to successful business outcomes.

3. Flexible commercial/engagement models. VirtuaDesk™ ensures that organizations across all revenue sizes, locations, and unique requirements (with regard to compliance, internal control, and so forth) can benefit from the solution. This has been made possible through flexible deployment models — from an appliance to a hosted model. The resultant pricing and commercial models available to the end users add to the attraction of the solution.

V. VirtuaDesk™ — Demonstrated Implementations

Case Study 1:

Business Scenario and Objective

A European FMCG company implemented Wipro VirtuaDesk™ and Citrix XenApp Service. The company had more than a thousand servers across the Americas, Europe, and Asia, which it wanted to centralize. It had a user base of more than 42,000 users who were using more than 3,800 legacy XenApp 4.5 and XenApp 6.5 applications.

Impact

- The implementation of VDI helped the company centralize its datacenter and migrate to a newer version of XenApp.
- The implementation of Wipro VirtuaDesk™ resulted in a 25% reduction in operational expenses and a 35% reduction in server footprint.

Case Study 2:

Business Scenario and Objective

A leading U.K.-based electricity and gas company had a legacy environment based on Windows XP virtual desktop, and which was for only 3,000 users. Its existing solution was being decommissioned by Microsoft. The operations were complex with over 75 different desktop images. The energy company wanted to migrate additional 1,000 users (a total of 4,000 users) in three months to the new VDI and scale up to 7,000 users in a year's time.

Solution

The solution brought in VirtuaDesk™ that consolidated over 75 XP images into a single Windows 7 SOE and deployed them in the virtual environment, virtualized over 200 applications and deployed them on the Wipro VirtuaDesk™ platform, managed the VDI for the existing 4,000 users and implemented VDI for 7,000+ users, and managed the mailbox for VDI users.

Business Impact



- 25% reduction in operational expenses
- 35% decrease in server footprint

The Wipro VirtuaDesk™ platform also provided datacenter hosting and management for VDI as well as distributed server support and network and security support. Storage technologies were also built into the Wipro VirtuaDesk™ application.

The solution came packaged with a per user-per month pricing model for additional users. Additionally, operations were streamlined to reduce complexity. Overall, end-to-end managed services were delivered, which also included a maintenance and upgrade plan.

Impact

- Wipro's solution led to a reduction in the total cost of ownership of the VDI by 25%.
- Other benefits included a reduction in implementation time of 6–8 months to 10 weeks, and reduction in time required to provision new VDI to users from 1–2 weeks to 1–2 hours.
- The company witnessed a two times improvement in stability and performance of desktops, resulting in lower number of support calls.

Business Impact



- VDI TCO reduction by 25%
- Reduction in implementation time from 6–8 months to 10 weeks
- Better desktop stability and performance

Case Study 3

Business Scenario and Objective

A leading Europe-based media and digital company wanted to migrate its multiple datacenters managed by Citrix farms to a central location. It was using a legacy environment based on Windows 2003 server, which was soon going to be decommissioned by Microsoft.

Solution

Wipro built the Wipro VirtuaDesk™ solution based on software-defined storage based on DataCore and a virtualization platform based on Citrix. To improve stability, performance, and scalability, storage technologies were additionally built into the VirtuaDesk™. The solution modernized the operations related to the different app stacks attached to a single golden image. Apart from these, the solution included an upgrade road map to maintain the VDI technology. The solution enabled the media group to build a collaborative and mobile workforce by securing, provisioning, and sharing applications and data.

For providing the solution to an increased user base, beyond the 4,000 users, the per user-per month pricing model was introduced.

The hyperconverged appliance was factory-assembled and shipped to the datacenter. Wipro deployed and provisioned the solution within three months, and further added a layer of automation to reduce the administrative burden.

Impact

- **The solution migrated 4,000 users in multiple farms to one farm spread across two datacenters in a time frame of three months.**
- With the solution, the media group benefited from a reduction in the total cost of ownership of the VDI by 25%.
- The time to provision new VDI to contractors reduced from 1–2 weeks to 1–2 hours. There was a two times improvement in desktop stability and performance, resulting in better productivity and lower number of support calls.
- The media group also benefited from 100% business continuity and security as well as compliance adherence.

Business Impact



- Time to provision VDI reduced to 1–2 hours only
- 100% business continuity, security, and compliance
- VDI TCO reduction by 25%

Case Study 4:

Business Scenario and Objective

A European pharmaceutical company implemented Wipro VirtuaDesk™ and Desktop as a Service. Its datacenters were spread across the Americas, Europe, and Asia. The company had 12,000 users using more than 100 applications. 65% of the applications were XenApp, and 35% were XenDesktop.

Impact

With the implementation of Desktop as a Service, the company benefited from anywhere, anytime, and any device access. Wipro VirtuaDesk™ resulted in improved operational efficiencies.

VI. Conclusion

Desktop virtualization is slated to become a significant contributor to the way companies transform their talent management processes in the next three to five years. The benefits of

this solution are established; however, organizations must ensure the following before selecting a solution and a vendor:

- As the starting point, formulate the key objectives and results expected from a desktop virtualization implementation.
- Planning is critical to successful deployment — detailed tactics and steps must be thought out.
- Solutions must be selected based on their technology relevance and the impact on the overall business objectives — it must cater to the unique needs of the organization w.r.t. storage, performance, compliance, user experience, security, and value.
- Implementation and support capabilities of the vendors must be carefully evaluated before finalization.



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