The Virtual Workspace, the Next Phase of VDI

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Executive Summary

The enterprise workplace continues to change, creating new and more efficient ways of working. As a result, platforms that power productivity must evolve along with worker behavior. The ideal state for IT is to be able to deliver any application or service to any worker on any device, at any location. This goal remains seemingly unreachable for IT. However, the industry sits on the precipice of a new shift in virtual computing, which brings IT closer to this vision than ever. A confluence of forces that will enable this shift includes:

- Maturity of virtualization technology
- Consumerization of the enterprise, or bring-your-own-device (BYOD)
- Evolution of unified communications (UC)
- The rise of cloud computing
- Easy-to-use enterprise video
- Virtual desktop infrastructure (VDI)

The last piece of this puzzle, VDI, has been used to virtualize corporate desktops. As the workplace shifts to a media-rich consumerized environment, VDI must evolve to deliver not just a virtual desktop, but a virtual workspace.

The virtual workspace is the next phase of VDI. It delivers a unified experience that combines virtual desktop applications, voice services and video capabilities. From an IT perspective, the virtual workspace means IT offers an exceptionally flexible, secure workspace with a consistent, high-quality user experience. For the business leader, it provides greater flexibility to access applications, which can lead to better responsiveness and ultimately, raise worker productivity.

Companies that adopt the virtual workspace will realize many benefits including:

- Simplified provisioning of new desktops
- Increased data security
- Faster time-to-market for new applications
- Improved backup and recovery capabilities
- Extended client device lifespan
- Increased user adoption
- Improved productivity
- Improved collaboration capabilities

The virtual workspace is ideally suited for many roles including at-home contact center agents, contractors, BYOD users, or remote workers. Enabling a high-quality, secure, collaborative experience is crucial to a company’s ability to gain a competitive advantage, and it’s important that IT and business leaders make the virtual workspace part of IT strategy.
Section I: Introduction

Enterprise IT has been through several transitions since the birth of computing. The early days of computing revolved around the mainframe; this gave way to client/server computing, which eventually evolved into Internet-based computing. Today, the industry is in the midst of the most significant transformation to date — the shift to virtual computing (see Exhibit 1). With virtual computing, IT resources are decoupled from hardware platforms, and the vision of being able to deliver any content or application to any device over any network is finally realized. The user no longer needs to be tethered to a physical location.

Exhibit 1: The Shift to Virtual Computing

Several forces contribute to the rise of virtualization, including:

- **Maturation of virtualization technology:** Virtualization has been mainstream for the better part of five years. However, it has only been during the past few years that companies are willing to virtualize mission-critical applications (see Exhibit 2). The transition from a predominantly physical data center to a virtual one happened in roughly five years, which demonstrates the technology’s power.

Exhibit 2: What Percent of Your Servers Are Virtualized? (n=1189)

```
<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>75% and up</td>
<td>8%</td>
<td>11%</td>
</tr>
<tr>
<td>50% to 75%</td>
<td>10%</td>
<td>35%</td>
</tr>
<tr>
<td>30% to 50%</td>
<td>14%</td>
<td>24%</td>
</tr>
<tr>
<td>10% to 29%</td>
<td>18%</td>
<td>41%</td>
</tr>
<tr>
<td>0% to 9%</td>
<td>12%</td>
<td>27%</td>
</tr>
</tbody>
</table>
```
• **Evolution of UC:** Legacy communication tools were deployed on silos and tied to specific desktops. UC brings all communications and collaboration tools together under a single interface and makes them accessible from any device, no matter where the worker is.

• **The rise of the cloud:** Cloud computing has been an industry vision for the past five years, but only recently became mainstream within companies of all sizes. ZK Research predicts that over the next five years, SaaS will grow at 7 to 10 times the rate of traditional software.

• **Enterprise video is now easy to use:** Video conferencing is certainly not new to corporate workers. However, legacy systems were very difficult to use, required significant IT time to configure, and were deployed as a shared technology in conference rooms and meeting spaces. In contrast, video systems today are very easy to use — requiring a simple point-and-click to invoke — and can be delivered to each user, making spontaneous use more viable. Workers in disparate locations can now use video to build relationships and collaborate.

While these trends are key pieces of the virtual computing puzzle, one more component must be added to deliver the high-quality consistent user experience: VDI (see Exhibit 3). This technology allows the user interface to be abstracted from the device itself, and enables a consistent user interface no matter where the user is.

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**Exhibit 3: Components of the Virtual Computing Era**

![Exhibit 3: Components of the Virtual Computing Era](source: ZK Research, 2012)
Section II: VDI Defined

VDI is part of the broader desktop virtualization market. Using VDI as a computing model allows the desktop to run as a virtual image on a server in the data center. The user connects to the server from a thin client computing device or remote desktop software on a PC or laptop, over one of the many display protocols available (see Exhibit 4).

VDI represents the next wave of virtual computing and promises greater flexibility, scalability, and improved security at a lower cost.

Exhibit 4: VDI Defined

VDI is based on a shared resources model where every end-computing device is completely self-contained, with its own operating system, applications and peripherals. Ultimately hardware expenses diminish as workers share resources and allocate them on an as-needed basis. Virtualization improves the manageability of the data, since it can be backed up and maintained in the data center.

VDI’s primary deployment drivers are desktop maintenance and provisioning times (see Exhibit 5).

Exhibit 5: VDI Drivers

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduces complexity of desktop management</td>
<td>55%</td>
</tr>
<tr>
<td>Reduces desktop provisioning time</td>
<td>45%</td>
</tr>
<tr>
<td>Allows more frequent OS/SW upgrades</td>
<td>39%</td>
</tr>
<tr>
<td>Enables BYOD</td>
<td>29%</td>
</tr>
<tr>
<td>Protects against data theft</td>
<td>14%</td>
</tr>
<tr>
<td>Stops users from deploying personal software</td>
<td>13%</td>
</tr>
</tbody>
</table>

Source: ZK Research, 2012
The current drivers of VDI haven’t changed over the past decade. As a result, the penetration rate of VDI is still in the high single digits for all corporate desktops. However, VDI has the potential to become a much bigger part of user computing and a mainstream technology that can drive user productivity to new heights. For this to happen, VDI must now shift from enabling virtual desktops to enabling the virtual workspace.

Section III: The Virtual Workspace

The virtual workspace is the next phase of VDI. It delivers unified computing for the worker, and combines virtual desktop applications, voice services and video. From an IT perspective, the virtual workspace provides an exceptionally flexible, secure workspace with a consistent, high-quality user experience.

The ability to focus on user experience is critical for IT, as worker expectations around technology continue to grow. ZK Research shows that 52 percent of workers feel they have better technology at home than in the workplace. This is because user experience is the single biggest competitive differentiator for consumer technology, and this expectation is rapidly influencing technology in the business world.

User experience must be front-and-center today as companies shift to desktop virtualization. Exhibit 6 shows the primary barriers to VDI are performance issues and the inability to support multimedia applications. The shift to the virtual workspace addresses these issues. The focus on user experience dictates that the virtual workspace needs to deliver voice and video with VDI.

Exhibit 6: Primary Barriers to VDI

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow performance</td>
<td>49%</td>
</tr>
<tr>
<td>Inability to support voice/video</td>
<td>38%</td>
</tr>
<tr>
<td>Unproven cost benefits</td>
<td>29%</td>
</tr>
<tr>
<td>Not part of our computing plan</td>
<td>21%</td>
</tr>
<tr>
<td>Inadequate LAN bandwidth</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: ZK Research, 2012

The shift to a virtual workspace addresses all of the barriers to VDI, giving companies the best of both worlds — the quality of experience of traditional computing with the security, flexibility and agility of VDI. However, this new approach requires IT and business leaders to think beyond the legacy scope of virtual desktops and consider the implications of the virtual workspace.

Decision-makers for VDI must consider user experience up front at the time of deployment, and not make it an afterthought. While user experience was important for traditional desktop applications, it is mandatory when delivering voice and video to the virtual desktop. If done correctly, organizations will dramatically lower the cost of computing while improving user satisfaction, leading to a higher-performance work force.
Section IV: Business Benefits of the Virtual Workspace

Over and above traditional workplace benefits, advantages associated specifically with VDI include:

- **Simplified provisioning of new desktops:** With VDI the desktop image is stored in a hypervisor in a data center. This means there is no local software to install, tweak or tune. Provisioning time for new desktops can be reduced from the better part of a day to just a few minutes.

- **Increased data security:** Since all of the data is stored in servers in a secure data center, it is much more secure than it was, sitting on endpoints located all over the organization. Additionally, when an employee leaves the company, the IT department can simply remove the user’s access, protecting against theft of sensitive information.

- **Faster time-to-market for new applications:** Deploying new applications with traditional computing can be quite daunting. It often requires IT to touch every machine, which can be time consuming for large organizations and extremely difficult with remote workers. With VDI, the image in the data center is upgraded — and every employee has the new version. This reduces a process that could take months to a few hours.

- **Improved backup and recovery capabilities:** Backing up user data when it’s scattered all over the company on user PCs and laptops is an extremely difficult IT task. Add the increasing presence of consumer devices such as tablets and smart phones, and the ability of IT to back up all user data becomes impossible. VDI centralizes data, allowing users to access it from anywhere, and also allows IT to back it up from a single location.

- **Extend the life of client devices:** Typically PCs and laptops have a maximum lifespan of three years. Since the bulk of processing for VDI is done in the hypervisor in the data center, there is very little overhead on the end points — meaning companies can extend that investment to up to five years. In addition, companies can choose to purchase low-cost VDI-optimized end points that have a small footprint and low power consumption, but still provide a great user experience.

In addition to the benefits of VDI, organizations that shift to a virtual workspace will realize the following benefits:

- **Increased user adoption:** Voice, video, collaborative applications and desktop applications are a powerful combination that will increase the appeal and usability of virtual desktops to a broader audience than VDI alone. Traditional desktop virtualization is used by approximately 8 percent to 10 percent of the overall workforce. ZK Research estimates the virtual desktop will appeal to at least twice that number, possibly reaching 25 percent of the overall workforce.

- **Improved user productivity:** The virtual workspace will enable a worker to take the entire in-office experience with them as they move to new locations. Users will have exactly the same set of applications, resources and capabilities, whether they are in the office at their desk, at a different location in the company, or working remotely. This consistency of user experience is one of the keys to increased user productivity.

- **Improved collaboration capabilities:** Virtualizing voice, video and other collaborative applications means workers no longer have to use a specific set of collaboration tools when in the office and another set when out of the office or working remotely. This enables much better collaboration between coworkers, customers and partners. Make the virtual workspace part of the company’s overall strategy to deliver any application to any device, including consumer devices, over any network. This will help companies fulfill on the vision of virtual computing.

The virtual workspace will ultimately enable companies to adapt to competitive situations faster, respond to market changes more rapidly and raise user productivity to new heights.
There are a variety of use cases for the virtual workspace that spans task workers, information workers, power information workers and remote employees. This is a stark difference between old and new technology for this specific set of workers. The following are examples of worker types that can benefit from a virtual workspace:

- **At-home contact-center agents**: Companies have been looking to utilize contact centers more efficiently for the past decade. One of the key strategies for organizations has been to augment the existing contact center with at-home agents. This allows companies to rapidly scale up and down the number of contact center agents as the business dictates. A virtual workspace can give at-home agents the same applications as in-house agents as well as the collaborative applications that are becoming increasingly common in advanced call centers.

- **Remote workers**: The ubiquity of high-speed broadband makes remote work not only an option, but a preferred method of working for many employees. The virtual workspace enables workers to have a complete set of collaborative applications, including connection to corporate telephony service and video capabilities. The high-quality experience of the virtual workspace means similar productivity gains for home workers.

- **Contractors**: Using contractors poses unique challenges. Contractors generally need access to a subset of corporate applications and data, but not everything. The virtual workplace can be customized to give contractors access to only the information and services required for them to perform the tasks they are paid for, and then turn off access when the contractor is finished. This will allow companies to be aggressive with use of contractors, but provides the highest levels of security to protect the organization.

- **More BYOD users**: Consumer technology is rampant within companies today. Exhibit 7 shows that only 18 percent of companies have no plans to allow the use of consumer devices. While the problem of onboarding devices has, for the most part, been solved, the big challenge now is giving workers secure access to the information they need, while protecting the company against threats posed by lost devices. The virtual workspace is the optimal solution, as all of the company data remains in the data center and the user has the ability to access it on demand.

![Exhibit 7: Company Attitudes About Use of Consumer Technologies](source: ZK Research, 2012)

There are other roles — such as campus workers, corporate executives, and field service personnel that can benefit from the virtual workspace. Any company that has the desire to use company resources more efficiently, enable consumerization and raise productivity should look at the virtual workspace as a way of enabling the next wave of computing.
Section V: Conclusion and Recommendations

IT has been through many waves of change in the past and the industry sits on the precipice of the next major change in IT — the shift to virtual computing. While virtualization in the data center is well established, virtualization of the desktop is still in its infancy. VDI is poised to enable more workers to access more information in more places. However, legacy VDI itself isn’t enough to usher in this new era of client computing. The virtual workspace — VDI combined with real-time collaborative services such as voice and video — can deliver a consistent user experience across the physical and virtual workspace.

Deploying a virtual workspace must ultimately support the company’s strategy toward unifying the user workspace across physical and virtual platforms, across company-owned and user-owned devices, and across campus and mobile use.

The variety of workers means IT leaders need to deal with a number of different workspaces depending on who a worker is, where they are accessing information from and what device is being used. However, in every case, the experience does need to remain the same. With this understanding, ZK Research makes the following recommendations:

- Make the virtual workspace part of the company’s overall strategy to deliver any application to any device, including consumer devices, over any network. This will help companies fulfill the vision of virtual computing.

- Expand the use of the virtual workspace past traditional task workers. The primary use case for legacy VDI was to enable task-oriented workers to perform their jobs efficiently. While a virtual workspace can do this, it can also expand virtualization to knowledge workers, including campus workers, remote employees and anyone looking to use a consumer device in the workspace.

- Take a no-compromises approach to virtual computing. Companies deploying VDI often have to make a decision and trade off between security, ease-of-use and a high-quality user experience. A virtual workspace means that IT leaders no longer need to make these tradeoffs and should expect the highest levels of security with the best possible user experience, and with a low TCO.