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Desktop Virtualization: Sample Report

Introduction to the Summary Report

This summary report contains sample slides from the three Impact Research Reports:

- **"Desktop Virtualization: A New Desktop Delivery Takes Flight"**
  - Understanding Virtualization on the Desktop
  - Desktop Virtualization Adoption
  - The Future of Desktop Virtualization
- **"Desktop Virtualization: Assessing Organizational Appropriateness"**
  - Key Desktop Virtualization Drivers
  - Desktop Virtualization Appropriateness
  - Challenges of Desktop Virtualization
- **"Desktop Virtualization: Key Implementation Considerations"**
  - Success in Desktop Virtualization
  - Project Planning & Piloting
  - Server Considerations
  - Network & Broker Connection
  - Access Devices
  - Communication Strategy

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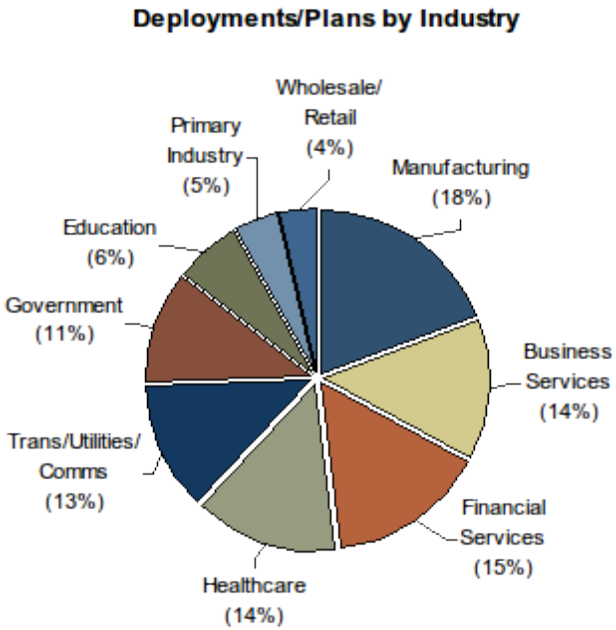
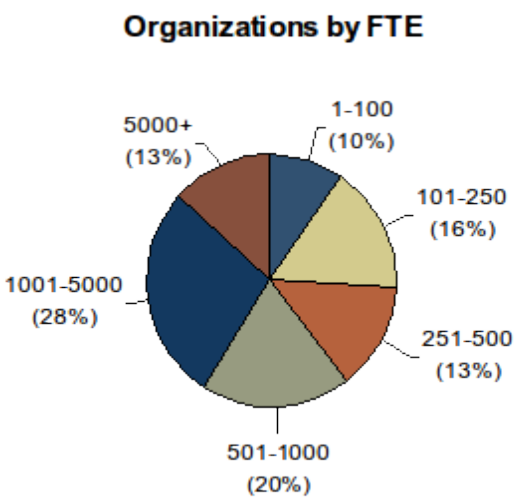
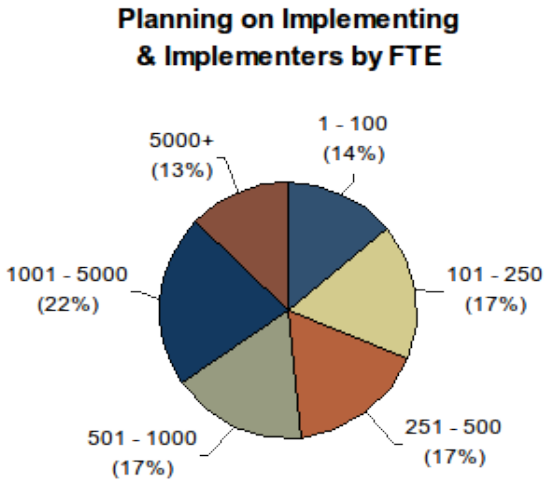
Desktop Virtualization: A New Desktop Delivery Technology Takes Flight

Research Method

- The desktop virtualization Impact Reports are based on results from 204 surveyed IT managers and in-depth interviews with 30 IT leaders.
- All major industry segments, sizes of organizations, and revenue brackets were represented.
- Organizations at all stages of implementation or consideration of desktop virtualization were represented.





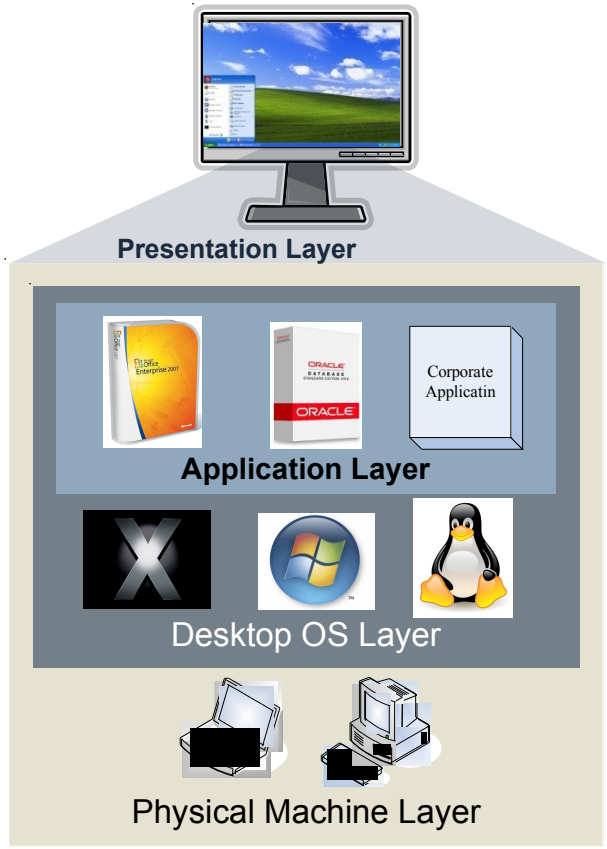


Virtualization is all about layers of abstraction

- A desktop computer is comprised of four system layers:

Physical Machine	The processor, memory, and storage that sits on the desk.
Operating System	Typically Microsoft Windows but could also be a desktop Linux variant or the Mac OS.
Applications	Such as an e-mail client, word processor, spreadsheet, or enterprise application client (example: client side application for a CRM system).
Presentation	The user interface including what is presented on the desktop monitor and interacted with via input devices (keyboard, mouse).

- Virtualization inserts a layer of abstraction between system layers. The system layer above interacts with an abstraction rather than something "real".



Layers of Desktop Computing

Different abstractions for different kinds of virtualization

Presentation Virtualization

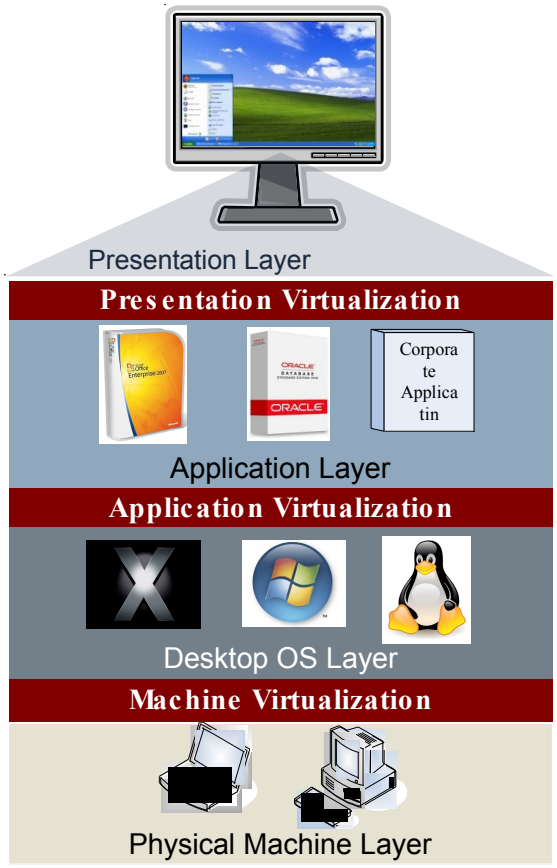
- In traditional remote access of server based applications, (Citrix Presentation Server, Microsoft Terminal Services) only presentation layer virtualization is used.
- Presentation virtualization is also used for remote access of workstation hardware such as a blade PC in the data center.

Application Virtualization

- In application virtualization, an application can be downloaded and run locally without special configuration of either the application or the client PC or its OS. The application interacts with an abstraction layer between it and the OS and machine layers.
- Examples of application virtualization solutions include VMware View (ThinView), Citrix XenApp, and Microsoft App-V.

Desktop Virtualization

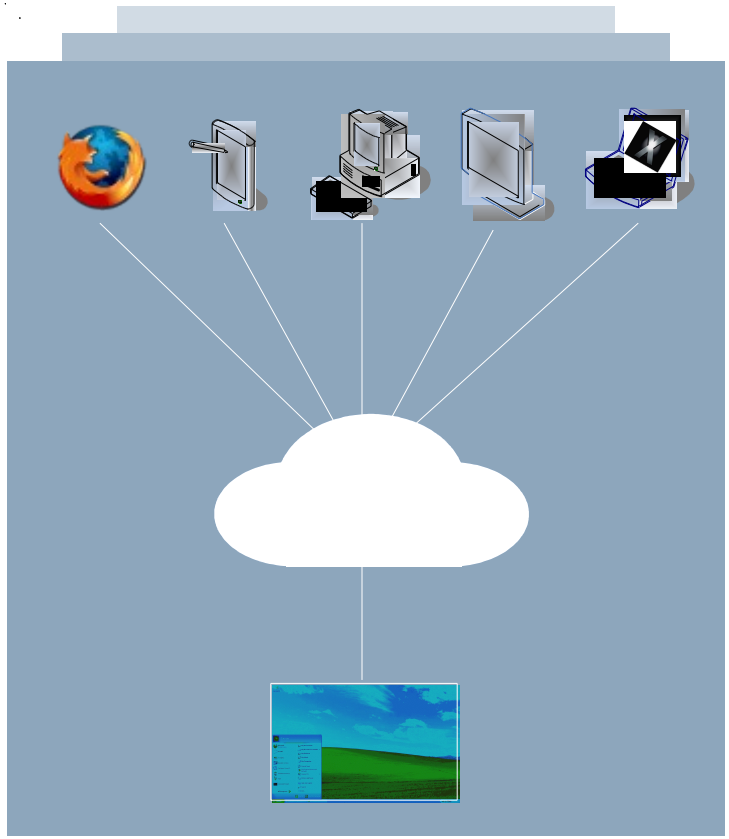
- Desktop Virtualization uses both a Machine Virtualization layer for hosting PC VMs on a server and presentation virtualization for remote access of those virtual machines from the desktop.



Abstraction Layers in Desktop Computing

The future: the ubiquitous desktop

- Though they have different delivery frameworks, most major vendors in enterprise computing have the same vision of the future of the enterprise – the ubiquitous or persistent desktop. Here are some characteristics of this vision:
  - The end user owns a single desktop. That desktop is the same whether accessed on a LAN-based PC, a roaming laptop, an external home office PC, and even a handheld device. This is a continuation of a trend that began with *roaming profiles.*
  - Though this persistent desktop can be accessed from a variety of end points, it is created and managed from a centralized management point.
  - While access to the desktop roams, the desktop image itself is not fixed. The desktop virtual machine can also move from internal hosting servers to external services (the Cloud) and to individual PCs and laptops for offline access or to take advantage of local hardware.



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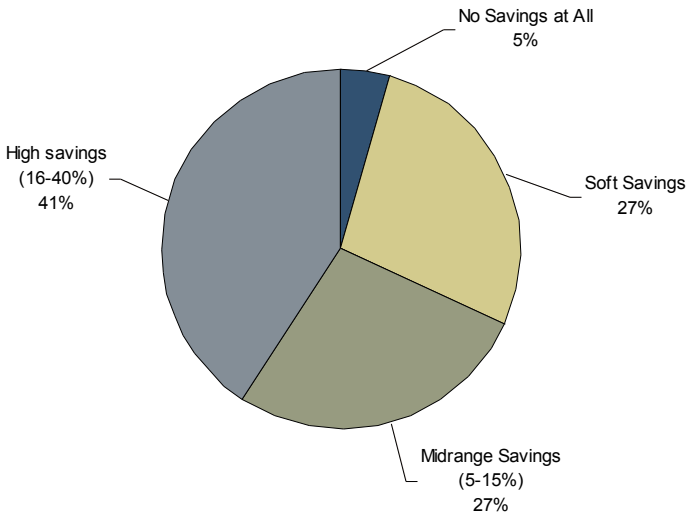
Desktop Virtualization: Assessing Organizational Appropriateness

Implementing desktop virtualization can reduce desk-side support costs by as much as 40%

- **Reducing desk side support can reduce total IT spending by 5%.**
  - Workstation management and desk side support takes up to 12% of IT expenses.
  - Over 40% of implementers reduced desk side support costs by as much as 16-40%.

Reduced Deskside Support Costs



Traditional Desktop Model

Distributed PCs impose asset maintenance and support costs. Deployment and configuration of the hardware, as well as management of application and OS configurations and trouble shooting, typically happen at the desk side.

Virtual Desktop Model

With desktop virtualization, a new desktop – and new or upgraded application stacks – can be delivered to the end user without a need to individually deploy or configure new desktop hardware at the desk side.

Desktop virtualization can solve the age old IT problem

The age old IT problem:

Deploying and managing personal computers is a pain for most IT departments.

Why? Because distributing applications and data across a large number of distributed processors is difficult to manage and support.

The solution:

Centralize all the applications and data in the data center (or server room) and have users remote access it. Benefits of doing this include:

- ✓ Reduction in desk side support costs
- ✓ Streamlined application deployment and management
- ✓ Improved data security and user-proofing

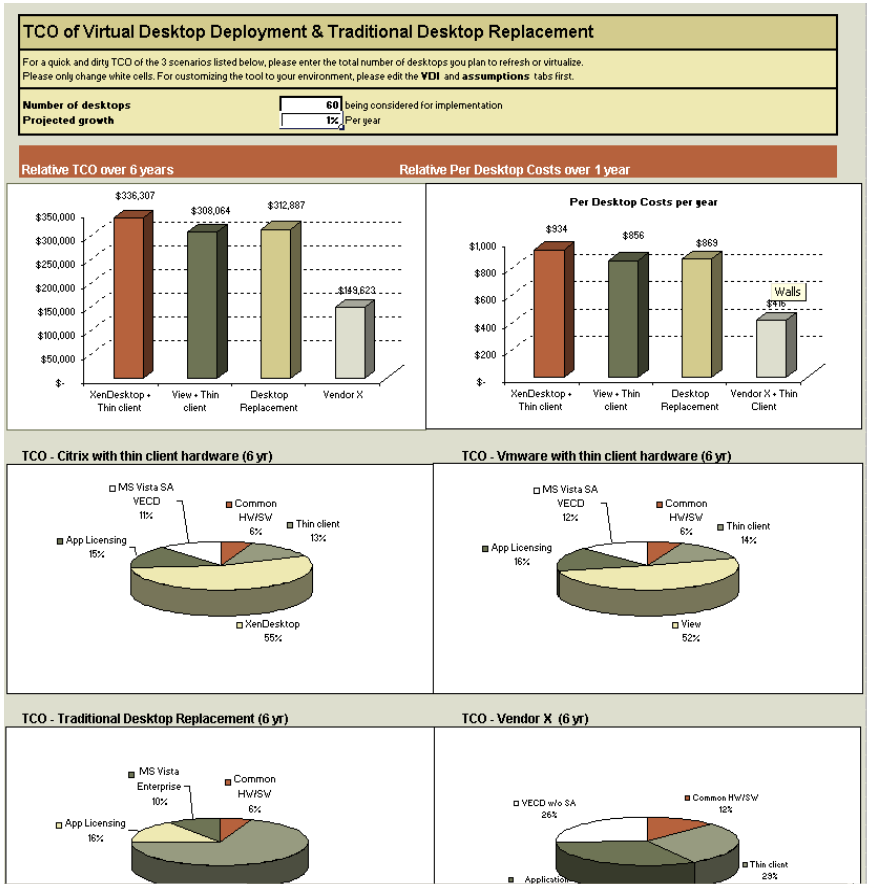
Organizations that could benefit from the above should evaluate desktop virtualization. The end result should be more efficient desktop deployment and management while providing improved desktop service to end users.

Calculate the cost per desktop to compare a virtualization solution to standard deployment

Use the "Desktop Virtualization TCO Tool" to calculate a TCO for your organization.

	TCO Methodology
Rationale	▶ Use Info-Tech's VDI TCO tool to gain a deeper understanding of the costs involved in a virtual desktop implementation.
Assumptions	▶ Only variable needed to get an instant snapshot based on default assumptions is number of desktops being virtualized. ▶ While default assumptions are pre-entered, all variables can be adjusted to user environment.
Cautions	▶ The tool is not meant to provide definitive guidance on which VDI vendor to deploy. ▶ Assumptions are based on industry standards and will differ greatly on a case by case basis. ▶ Conservative estimates of vendors analyzed are not significantly different.

Screen Shot of Info-Tech's TCO Tool:



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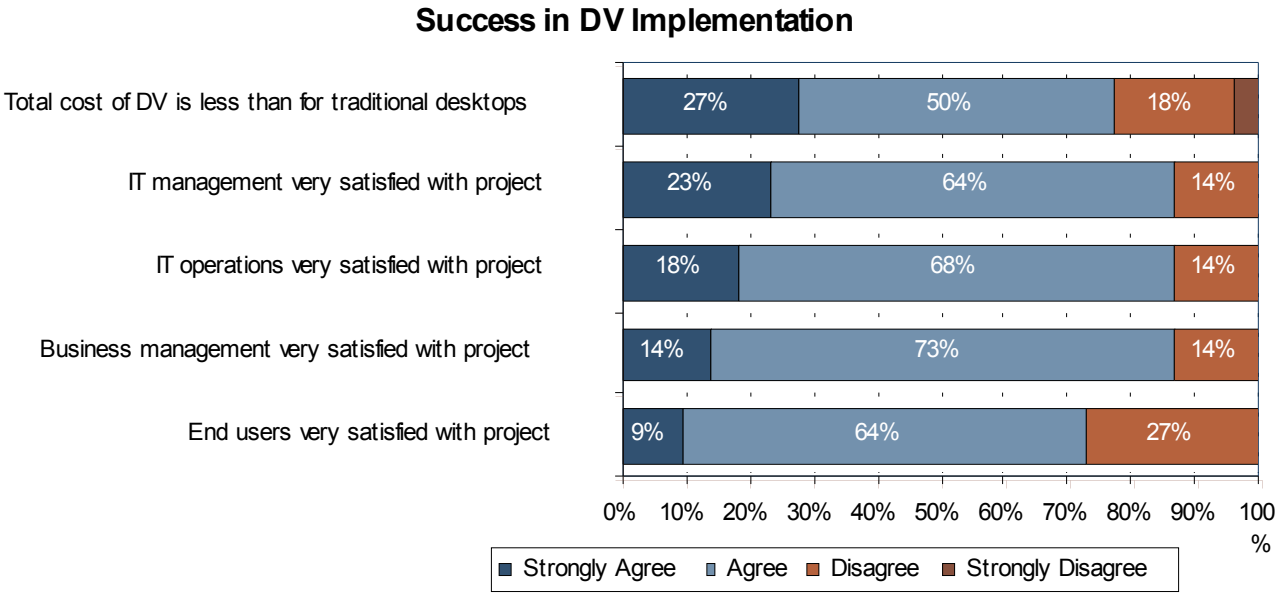
Desktop Virtualization: Key Implementation Considerations

Majority of stakeholders satisfied with desktop virtualization implementation

- The majority of stakeholders achieved satisfactory success with their desktop
- Ideally end users should see a slight improvement in performance of their desktops or



"Overall I would rate the implementation successful. The most pleasing thing to me is that customers are happy. When they are happy, I am happy."

IT Director, State Government

Look for low hanging fruit for pilot project

For early stage pilot projects, look for the low hanging fruit scenarios. These will provide proof of concept while also achieving short term cost savings. Some of these scenarios include:

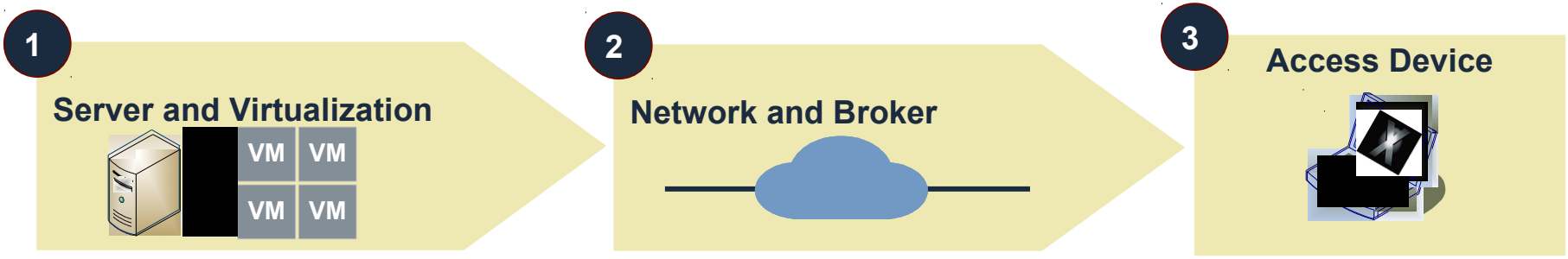
- **Virtual test lab.** Create a test lab of server-hosted virtual PC's to test a new application or an operating system upgrade. By doing so, a separate set of test PC's is not required. This is especially useful if the test requires memory and processing capacity greater than that of the testers' machines.
- **Alternative for laptops for remote desktop deployment.** Instead of deploying company laptops to secure remote computing end points, provide remote users access to virtual desktops from their own device, such as a home PC
- **Pilot with users ready for a hardware refresh.** These users will likely be more willing to participate in the pilot, and may see a performance boost which will increase user buy-in.

"The 15 people for the pilot were folks who were due for a new computer, so some of their PCs were considerably old. The performance boost that they felt on the VDI was enough for them to buy in. The feedback was 'sign me up.'"

IT Director, Financial Services

Build the desktop virtualization deployment back to front

- Traditional desktop implementation begins with what hardware and software will be required on the desktop followed by what network services the desktop will require for accessing additional back end services (such as an e-mail server and shared network storage).
- Desktop virtualization deployment begins at the server. The required desktop OS and software are implemented on virtual machines hosted on the server.
- Next up is the network assets and the brokering software that will connect the end user to their desktop computing environment.
- Finally there is the access device. This could be a desktop computer, laptop, or thin client device.



Case Studies

Consultant used for implementation to resolve peripheral device issues and ROI calculation

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"We're very happy with the VDI environment. We have drank the VMware Kool-Aid and we're certainly on side with that product. Working with the consultant, as well as with VMware, has just been a fantastic relationship and they've done a wonderful job."

OUTCOME		OVERALL EXPERIENCE
Top Benefits	▶ Centralized management. ▶ Improved performance for users.	Started with a focus on the higher performance users and piloted for 6 months to work out issues. Acknowledged high performance users with GPU processing would not be suited for initial deployment. The key success enabler for the organization was the relationship with their consultant and support from VMware. Peripheral device support issues were resolved by consultant. Consultant designed an objective ROI/TCO tool for the client to get budget approval.
Top Challenges	▶ Supporting peripheral devices was very difficult due to specialized environment. ▶ Gaining a true understanding of costs involved. ROI and TCO calculators from vendors had obvious biases.	