

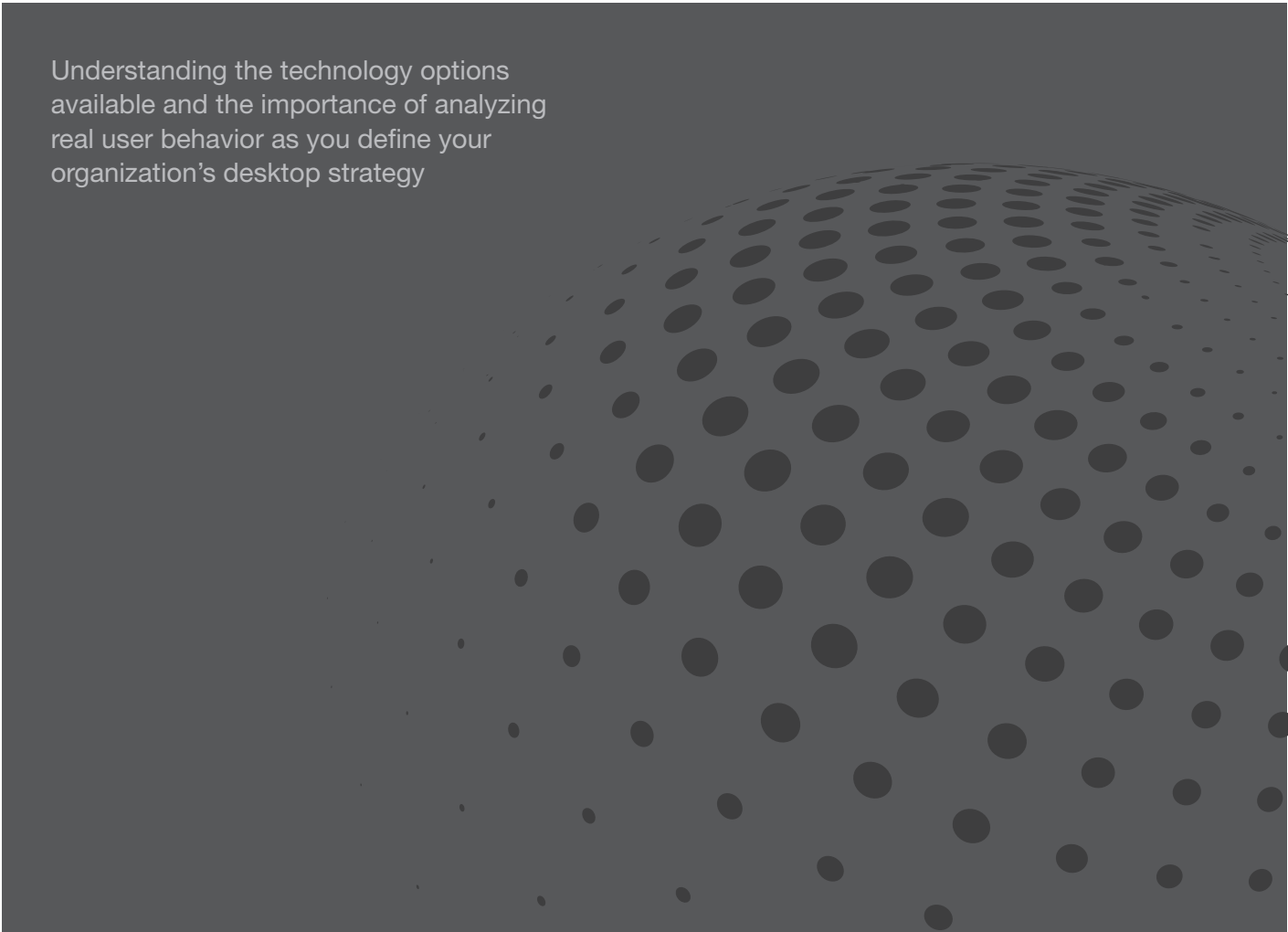


Centrix Software

Unified end-user computing

The Economics of Desktop Transformation

Understanding the technology options available and the importance of analyzing real user behavior as you define your organization's desktop strategy



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Executive Summary

The desktop environment is at the very core of IT service delivery, providing users with access to the services, applications and devices that will increase productivity and boost business performance. For many organizations the desktop has become the business interface. However, IT departments face new challenges in keeping the corporate desktop in tune with the changing demands of their business users.

One of the biggest influences on the traditional corporate desktop environment is the growing consumerization of IT. The pace of change, innovation and simple intuitiveness within consumer-facing technology and solutions (think iPhones, tablets, eBay, Amazon) has accentuated business expectation beyond what many IT departments are able to deliver.

Users are demanding the same experience from their work desktop environments that they have become accustomed to at home. Access from anywhere, management information at the touch of a button, as well as quick and easy access to new services and solutions, are all expected.

The relative ease of accessing ready-to-use software via the internet with new cloud and Software-as-a-Service (SaaS) offerings, is enabling business departments to effectively bypass the corporate IT department to ensure business requirements can be met quickly.

These changing dynamics of the user environment are creating new pressures for corporate IT decision-makers alongside the traditional challenges associated with desktop management. Users expect to be able to download and use what they want, when they want, yet IT has to manage security and compliance, and maintain control.

Many IT departments are evaluating how they can transform the desktop environment to accommodate the need for greater agility without compromising governance and compliance needs.

There are multiple virtual provisioning technologies for end-user IT environments, which promote benefits over the traditional desktop model, these include; hosted virtual desktops (HVDs), application virtualization and application streaming. However, with greater choice comes the challenge of making the right and most appropriate technology selection.

Therefore, a key requirement for any organization assessing its options is to **fully understand the end-user computing environment, in particular how individuals use applications, when they use them, where they access them from etc, in order to make the most informed desktop decisions and the right technology choices.**

This paper will examine new virtual desktop approaches, their benefits and their limitations, and how, with the right intelligence on user behaviors, IT can apply desktop transformation strategies that reduce costs, accelerate service delivery and easily meet new business requirements.

Desktop Transformation

Microsoft will end support for Windows XP in 2014, so many IT departments are now defining their migration strategies to Windows 7. A migration plan gives IT the ideal opportunity to consider other desktop transformation initiatives, either as an integrated part of their Windows 7 migration, or as a separate activity following on from Windows 7 migrations.

In 'Leadership is an Art' Max du Pree stated that "*The first responsibility of a leader is to define reality.*" The same principle applies to desktop planning. Understanding what applications you have and what devices are being used is an important starting point.

However, even more critical than this base information is the understanding of what applications business users are **really using, how often they are using them and where they are accessing them** (i.e. through the corporate network or offline / outside the network).

This information provides the foundation for IT to plan desktop transformation initiatives with a high degree of certainty. It is a vital step for any desktop transformation project and can highlight where new desktop strategies can be deployed effectively and bring tangible benefit.

Hosted Virtual Desktops

Cost reduction is generally not the primary driver for implementing HVDs, and it is likely to be less than for other virtualization technologies. There are other benefits that tend to be stronger drivers for HVDs, including standardization, greater control and reduced complexity to manage and maintain application delivery.

HVDs offer organizations the benefits of a centralized, more standardized infrastructure which can significantly improve IT efficiency. Where groups of users can be provided with a standard set of applications that require no significant local processing power, HVDs can be delivered to thin-clients (this can help to reduce support costs). With no software on the desktop, application interoperability can be tested in fewer, more controlled, more standardized environments.

HVDs will not be suitable for every user or application and this is a key consideration for IT departments. To identify where HVDs will be of benefit, **a detailed understanding of application usage is essential.**

There are several aspects of HVD environments that must be fully considered before rollouts can be contemplated. HVD migrations can result in new and extended storage requirements, which can impact data center planning. This method of application delivery to end-users may also require additional time and resource from server administrators, data center managers, network operations teams, helpdesk staff and IT architects.

If user personalization of the desktop is required, this often results in additional toolsets on top of the hosted virtual desktop software, which increases both the cost and complexity of managing and maintaining HVD environments

Other considerations for IT are potential changes to backup routines and support for peripherals such as printers. HVDs are generally considered to be most appropriate for smaller numbers of users who require very few distinct desktop images between them. As you move beyond this scenario, the infrastructure for HVDs begins to become more costly and complex.

However, in comparison with traditional desktop environments, Gartner estimates the total cost of ownership for hosted virtual desktop environments to be relatively small:

"The TCO of HVDs can range from 2% to 13% lower than comparable desktop deployments."

Total Cost of Ownership Comparison of PCs With Hosted Virtual Desktops, 2011 Update, Gartner Inc., December 2010

Application Virtualization

Of the three primary desktop virtualization technologies, application virtualization has been the most commonly adopted by IT departments to date. With application virtualization, the application installation and configuration is separated from the underlying operating system so that it can more easily be delivered to different devices and operating systems.

The benefits of application virtualization have been significant – organizations have seen the costs associated with packaging, install, testing and supporting applications reduce significantly:

“Virtualized applications can reduce the cost of testing, packaging and support of an application by 60%, and can reduce overall PC TCO by up to 7%.”

Total Cost of Ownership of Traditional Software Distribution vs Application Virtualization, 2011 Update, Gartner Inc., March 2011

For organizations with significant IT infrastructures, and therefore costs, that saving can equate to many millions of dollars.

In addition to the cost benefits, organizations who have deployed application virtualization have reported reduced calls into their service desks. It obviously also still takes time to virtualize an application, but organizations have experienced the time taken to package an application for deployment reduce by up to 25% using application virtualization.

Application virtualization assists greatly in reducing conflict between different applications. This is a significant benefit to IT organizations, but it does also create drawbacks. It works most effectively with stand-alone applications – applications that can be configured and delivered independently of other business systems. It becomes less attractive, and more challenging, when integration with other systems is a vital function that needs to be maintained. Therefore, not every business system will be suited to application virtualization.

A key pre-requisite in understanding where application virtualization will be of business benefit is, again, understanding not only what applications are being used within the organization today, **but who is using them and how they are using them.** As an example, it may be considered that the Microsoft Office suite is a prime candidate for application virtualization and in many organizations this may be the case.

However, if your business users are more sophisticated users of Microsoft Office, incorporating integration with data held in external databases, then application virtualization may not be as suitable. Options still exist – it may be appropriate to virtualize several applications together in one image, but without the detailed knowledge of how organizations are using applications, **that kind of informed decision-making is virtually impossible.**

In the March 2011 report, Gartner estimates that “around 75% to 80% of applications can be virtualized”, and therefore “adding application virtualization capabilities to your PC management repertoire can help reduce costs significantly.” But how do you know which applications to virtualize? Reducing costs is an important goal for IT departments to have, but it has to be done without impact to business users. That can only happen with the right application usage information, utilized in an informed manner to assist with planning desktop transformation projects.

Application Streaming

Application streaming delivers technology that allows business users to execute the application as it is delivered, significantly improving the speed of delivery. IT is increasingly looking to minimize impact on PC environments and avoid application integration issues. Streaming can help to provide this, as well as providing technology that enables easier application updating, with just the data between older and newer versions needing to be delivered to the user when upgrades are applied.

However, as with the other virtualization technologies that have been discussed, there are challenges with application streaming. Where users may be demanding a number of applications at one time, network performance can be affected. The technology of application streaming also needs to be considered if users are expecting offline access to applications. As such, certain applications lend themselves to application streaming better than others.

Again, it is vital to have the empirical application usage data to identify which applications could be streamed. Typically those with higher licence costs (enabling greater TCO) and flexible licencing models are among those that should be considered for streaming. In addition, applications that are more for occasional or for temporary use and those that are frequently updated are ideal applications.

Virtualization Technologies – Better Together?

The three virtualization technologies discussed in this paper all have individual merits, and can help IT reduce the cost of providing applications to business users.

However, no one technology will be suitable for every application – and every user – in every scenario and therefore it is recommended that organizations consider all of these technologies as part of desktop transformation and Windows 7 migration projects, employing the most appropriate technology in the most appropriate scenario.

Many organizations are therefore combining virtualization technologies together as part of desktop transformation

projects. It is not uncommon to find companies who have just employed application virtualization, but it is less common to find IT departments who have just utilized hosted virtual desktops or application streaming. These technologies are more commonly integrated with application virtualization, where benefits can be accentuated and increased.

The Importance of Planning Desktop Transformations

Desktop transformation projects, the use of virtualization technology and cloud-based application delivery offer IT departments the opportunity to achieve significant business benefits from more streamlined, controlled application delivery.

It is fair to state that organizations with relatively immature desktop management processes currently have the most to gain but even organizations with well-managed physical desktop environments can benefit significantly from desktop transformation.

In order to fully consider desktop transformation options, access to real application usage is essential. Different types of applications suit different delivery vehicles. An understanding of how end-users utilize applications, when they use them and where they use them from is essential. Without this information making informed decisions on which virtualization technology is appropriate for which users and which applications is almost impossible. Planning is therefore vital.

Firstly, organizations need to establish a view of what applications are being used today, and how they are being used. This requires a lot more than just counting and tracking inventory and knowing what is installed where, this requires **real understanding of application usage**.

This leads directly to one of the benefits that desktop transformation can often enable – far more efficient license management. This can significantly reduce costs, either in reducing the number of licenses going forward or in enabling true-down of existing contracts.

All organizations spend significantly on software licensing. Ensuring that the right users are using the right devices with applications delivered using the right technology is an essential step in ensuring licenses are correctly allocated at minimum cost. The investment in time and resource to understand application usage is far outweighed by this benefit alone but there are also many other benefits that real application usage understanding allows.

Armed with the right information, organizations can reduce their application portfolio by establishing which applications are not being used, which are duplicated and which could be rationalized.

By reducing the number of applications within the portfolio, and the associated costs, IT can also release more time and resource for more innovative projects. This also serves to significantly simplify the footprint of PC environments, which can have a dramatic effect on reducing the costs of managing and maintaining desktop environment. Gartner estimates that significant IT and business support cost can currently be attributed to PC issues.

“Our TCO models indicate that users’ lost productivity costs can be between \$1586 (for a locked and well-managed desktop) and \$7232 (for an unmanaged notebook user) per year due to PC downtime or the time required to fix system problems. For an organization with 2500 employees, this equals \$3.97million to \$18.08million per year in lost end-user productivity.”

Managing the Next Generation of Client Computing,
Gartner Inc., February 2011

Other further benefits exist as well from desktop transformation projects and virtualization technology. IT can deliver greater application reliability as application resources become more contained, resulting in far fewer compatibility issues. With a smaller application portfolio, the required IT management effort can be reduced.

Table 1 below emphasizes the difference between installed and used applications for two different organizations. Firstly, these organizations benefitted from capabilities that automatically classified unique applications and, importantly, were able to track how many applications are actually used

The benefits of this data are then obvious. Combined with hardware and software inventory, application usage information enables organizations to plan their desktop transformation projects with a high degree of confidence. Consider the decisions that would likely be made based on application installed data. With this data only, 15% and 30% of applications respectively would not be appropriate for a Windows 7 migration. The organizations have a major headache on their hands.

However, data based on used applications paints a wholly different story. Now the percentages of applications that need to be strategically considered as part of a Windows 7 migration are greatly reduced – from 15% to 2% and from 30% to 1.5%.

This emphasizes strongly the benefits of understanding true application usage in planning desktop transformation projects.

Table 1

Client Example	Total Devices	Number of Unique Applications		Challenge (remediation required) i.e. not Win7 compatible	Number of problem devices – not readily transitioned to Windows 7	
		Installed	Used		Based on Install	Based on Used
Customer A (Retail) All matched software	2,400	1,676	785	14	372 (15%)	48 (2%)
Customer B (Healthcare) Example All matched software	1,450	1,000	541	9	438 (30%)	23 (1.5%)

Conclusion

Increasing numbers of business users are cutting IT out of the loop when determining appropriate business solutions today, yet expecting IT to continue to support and ensure reliability and performance for their chosen solutions. Many senior business users are finding IT to be too rigid, too inflexible and too slow to respond to dynamically changing business requirements. Transformation is essential.

IT departments therefore need to enable greater flexibility, reduce infrastructure costs, improve application delivery and improve user experience, driving greater business productivity and efficiency. Desktop transformation projects can significantly reduce the costs of managing and maintaining end-user computing environments. They can also derive the greatest benefit from various virtualization technologies, creating the opportunity for IT to transform into a modern, service provider valued by business users.

IT departments are encouraged to consider the following recommendations as next steps:

- Consider desktop transformation projects now, using Windows 7 migration as the driver where appropriate
- Invest in capturing real application usage information
- Use this information to plan:
 - Which applications can be virtualized
 - Which applications can be streamed
 - Where thin-client machines could be used
 - Group users into templates for easy desktop virtualization images
- Continue to monitor and optimize the desktop environment after a desktop transformation project has been completed. The environment, user requirements, will continue to change.

There are a number of desktop transformation options available to any organization. Understanding which option is most appropriate and can deliver greatest economic benefit requires deep, accurate insight into how individuals use and consume applications. With this insight, IT can achieve greater alignment with their business users by providing a user-centric approach, while also delivering lower ongoing desktop total cost of ownership.

About Centrix Software

Centrix Software helps organizations extract more value from their IT choices.

Its solutions for Unified End-User Computing optimize the way IT infrastructures deliver applications and content provisioned from physical, virtual, web and Cloud platforms, by providing a user-centric approach to service delivery.

Headquartered in Newbury, UK, Centrix Software works with leading organizations in banking and securities, insurance, telecommunications, retail, manufacturing, pharmaceutical, energy and utilities, and within the public sector.

Centrix Software's solutions are available through a network of value-add partners. For more information please visit www.centrixsoftware.com

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