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WORK 2.0: **The Shift to Virtualization Is On**

As work moves outside traditional boundaries, IT must enable the emerging virtual workforce; on-demand desktops and applications are key to helping business adapt to a dynamic world

As work continues to move beyond traditional settings and across borders and time zones, IT increasingly must ensure that workers can be productive and access corporate information whenever, wherever, and on whatever device is most convenient. This practice of workshifting—moving work to a more optimal place and time—is becoming critical to organizational and individual performance. By centralizing IT resources and delivering virtual desktops and applications as secure, high-definition on-demand services to any user, on any device, at any time, organizations can recruit, retain, and empower an agile, virtual workforce that is ready to respond to business opportunities at any moment.

This executive brief examines how organizations are maximizing their resources and leveraging an increasingly virtual workforce that can function effectively whenever or wherever the work needs to get done—whether that's in a client's office, from home, on the floor of a hospital, in a temporary trailer on a project site, or in a factory site located across an ocean—and gain access to their desktops and applications even if they switch from one device or location to another.

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The Changing Needs of Business and Workers

Work is no longer defined by traditional boundaries, such as conventional workdays and locations, so it is imperative to make the best use of the available time and resources. Stakeholders, whether executive management, governing bodies, or constituents, want their organizations to be resilient and respond quickly to changing business circumstances and opportunities to control costs and grow revenues, as they expand markets and create or improve products and services.

Simultaneously, a more technologically sophisticated workforce demands greater flexibility over how, when, and where they can access corporate applications and data needed to get the job done. The burden falls on IT to make desktops and applications available so that workers can safely take their work with them regardless of location, time, or device.

In this new environment, hardwiring all workers to their desks is no longer a viable option. Organizations are increasingly reliant on geographically dispersed workers, outsourcing agencies, consultants/contractors, and temps, and are seeking tighter integration with partners and closer interaction with customers. Workshifting is a strategy to ensure that information and IT resources flow to workers and locations best suited to accomplish required tasks.

Utilizing virtualized desktops and applications, organizations are empowered to workshift and are able to realize multiple benefits, including:

- Faster expansion in markets near or far and more rapid integration of acquired or merged organizations
- Lower costs, such as real estate, by utilizing telework to reduce fixed space requirements and provide more responsive services
- More flexible work options that ensure greater success in recruiting and retention and the ability to support remote workers
- Nonstop business continuity with workers equipped to perform wherever they're needed

Work Anywhere, Anytime

Telework, or telecommuting, represents the earliest and most familiar flexible workshifting strategy for many organizations and it's becoming more prevalent.

WorldatWork, a nonprofit organization focused on human resource issues, reported in February 2011 that a survey of 537 of its members found that telework on a regular schedule, but not full-time, is offered by more than half of organizations.

According to the survey, the most prevalent flexibility options available to workers are part-time schedules, flextime, and telework on an ad hoc basis. Of those surveyed, 68% said their companies offer all three programs.

Rose Stanley, work-life practice leader for WorldatWork, says the number of organizations allowing full-time telework—37%—was higher than she expected. She says that the organizations may now believe they are able to measure the productivity of workers "through the results they get and not by face time."

A case in point: Brandy Fulton, vice president of human resources with Citrix®, formerly worked in the company's headquarters in Fort Lauderdale, Fla., but now is based from a home office more than 2,000 miles away. "I work from home three weeks each month and then on average hit the road and go to a Citrix office one week a month," she says. "By going remote from headquarters, I now feel like I belong to not just one office, but to every individual and office across the organization."

Full-time teleworkers are clearly still a minority, albeit a growing segment. For many organizations, typically workers will telework part of the week or periodically. At Citrix, which has long offered workshifting options, at least 60% to 70% of workers routinely take advantage one or two days a week or have workshifted their schedule at some point, Fulton says.

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- Centralized support of geographically dispersed teams, offices, and individuals
- Security and provisioning of any fixed or mobile devices without having to port applications for each discrete platform

The ability to work anywhere, anytime, on any device is made possible by the delivery of on-demand desktops and applications. Using Citrix XenDesktop™, the market-leading desktop virtualization solution, organizations can instantly and securely deliver an individual's complete desktop, including data, applications, and personalizations—even their familiar wallpaper—to any device.

To the users, the "virtual desktop" looks, feels, and acts like their traditional desktop PC—whether they're accessing it on an iPad over wide-area networks and satellite, from a laptop in a coffee shop or in a hotel room, on an outdated computer in a friend's guest room, or on their personally owned device such as a smartphone. The virtual desktop is provisioned centrally from the data center, simplifying IT management, lowering cost, and ensuring security.

Increase Business Velocity

For many organizations, workshifting enhances the ability to drive growth, broaden their customer base, strengthen partnership links, and enter new markets through rapid site expansion and faster integration of merger and acquisition opportunities.

International law firm SNR Denton (formerly Sonnenschein Nath & Rosenthal LLP) utilizes Citrix technology to provide workers with "Follow Me PC," the firm´s full-fidelity virtualized corporate desktop delivered on-demand to any mobile device over any connection—3G on the road or Wi-Fi in a hotspot. The flexibility of virtualized desktops, apps, and servers also enables SNR Denton to integrate acquisitions in record time, swiftly delivering corporate desktops to new employees without interruptions to client service.

Another company, Ingersoll Rand/Trane, expanded its virtual computing platform to deliver on-demand applications to more than 9,000 users in branch offices, call centers, point-of-sale service centers, traveling salespeople and executives, service techs, and office workers, enabling a truly mobile workforce.

Workshifting accelerates business velocity by moving a process from one location to another—for example, having a sales rep process leads and orders directly from a trade show, placing a dedicated employee on-site at a customer location, or outsourcing tasks and services. At times of peak demand, the ability to share work across additional workers—or move it offshore for round-the-clock productivity— can provide crucial added capacity. Shifting lower-value tasks from highly skilled employees to hourly workers can reduce costs and improve efficiency.

Organizations can quickly set up IT for foreign or domestic operations with devices either shipped in or bought locally but provisioned and supported from the data center without the need for on-site IT support. Virtual desktops and applications ensure that intellectual property is protected and managed according to corporate compliance policy in the data center.

Grow at Lower Cost

Every organization seeks to grow, but that can come at a price when it requires finding places to seat new workers and providing them with new computers, software, and IT support.

Cox Communications, for example, one of the largest cable providers in the United States, was experiencing an enviable growth rate. The expanding demands on its call center required about 15% more agents every year—and that was causing a space problem.

Enlarging its call center was a very expensive proposition, and Cox Communications wanted to find a less costly solution. The cable provider decided the best approach was to give top agents the opportunity to work from home. Cox initially experimented with providing laptops and connecting them to the corporate network with a basic virtual private network (VPN) product. However, the costs of the computers plus licenses for the operating system and applications quickly added up, and the VPN connectivity was slow—creating user dissatisfaction and additional IT support calls.

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Cox chose to implement Citrix virtualization solutions, which it found to be less than half the cost of building additions to the call center facility. It also increased worker satisfaction and retention. Cox employees working from home enjoy secure, anytime application access and call center telephony, saving the company more than $3,300 per agent per year in space, equipment, and operational costs.

Compete for the Best and the Brightest

Organizations can better compete for workers by tapping broader labor and skills pools and by increasing employee satisfaction through flexible work options.

The ability to workshift and support a virtual workforce enables organizations to attract, hire, and retain trained and skilled talent regardless of location, or to leverage the expertise of specialists in a particular field, be they individual contractors or entire outsourcing companies.

"If you have a limited talent pool in areas where your company is physically located, you can expand that with workshifting, potentially in an unlimited fashion, depending on the requirements for the role and what type of company you have," says Brandy Fulton, vice president of human resources with Citrix.

Another important consideration is the need to compete for the best and brightest, whether recent entrants to the workforce or experienced workers with highly valued skills. "If you can't offer some measure of flexibility like workshifting, you're going to lose some of the smart ones who simply expect this is the way the world works," she says. "They arrive at work completely prepared and completely equipped to work this way."

With increased reliance on external resources such as contractors, consultants, temporary workers, outsourcers, and various agencies, organizations are also adapting their infrastructure to accommodate workers outside of the traditional hierarchy. With virtualized desktops, IT can provide needed access to these workers while protecting data and restricting access to what is required to accomplish the needed tasks.

"Economic constraints and the fluidity of the labor market are increasing the number of contract employees in organizations around the world, and the traditional rules of enterprise IT are very difficult to apply to that group of people," says Mick Hollison, vice president of desktop marketing and strategy for Citrix.

Equip Workers for Business Continuity

Virtualization technology not only enables workshifting for individuals, it plays a key role in shifting organizational workloads and processes to other locations or wherever workers are available in the event of planned or unplanned business interruptions—site unavailability due to fire, utility outages, natural disasters, transit strikes, pandemics and severe weather, planned or unplanned IT outages, and so on.

Independent Bank, an Ionia, Mich.-based bank holding company with total assets of approximately $3 billion and about 1,300 employees, uses a Citrix solution to provide secure application delivery to users in the event of an interruption, and to simplify remote access versus a traditional VPN connection.

"If there's a pandemic and everyone is at home on whatever computer is handy, we can deliver a desktop securely over Citrix and allow them to function [productively]," says Ben Kohn, senior system architect.

Self-Service IT

With centralized desktops and applications, IT can now shift from a device focus to a service focus, enabling greater self-service by workers and a reduction in overhead for supporting workers and offices. Instead of having to send support staff to an office or retain a third-party service provider, IT can increase its efficiency and cut costs by consolidating servers and centralizing maintenance and updates of desktops and applications. New or replacement devices can be shipped to non-IT staff at remote locations and automatically have their desktops provisioned from the data center.

Other capital and operating cost reductions can be realized by encouraging workers to use their own devices for work, with corporate data running in a virtual machine that protects it from any security flaws. Citrix saves 18% to 20% on average by providing workers with a stipend to "Bring Your Own Computer (BYOC)" according to Citrix CIO and Corporate Vice President of Operations Paul Martine.

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Many workers are already overtly or covertly using personal devices for work-related tasks. The availability, affordability, and impact of high-powered consumer technology often drives workers— from the executive suite to the lowest levels—to acquire devices that match or exceed what IT currently endorses, regardless of security policies.

With virtualization technology, IT is no longer forced to restrict adoption of new technology, and can more quickly and effectively respond to business unit and individual worker demands for new productivity solutions. Now, workers can get fast, simple, and on-demand access to corporate resources from any device they choose, but IT is still responsible for ensuring compliance and security within a scalable infrastructure that can manage greater diversity of user devices.

The prospect of porting applications to an unending stream of new devices is a nightmare for most IT departments. Citrix solved that issue by developing Citrix Receiver™, a high-performance, universal client technology that optimizes delivery of virtual desktops, applications, and IT and business services as an on-demand service to any user on any device.

Optimally Provision, or Terminate, Services

Desktop virtualization lets organizations focus on the optimal way to meet their business goals and customer needs, confident that they'll be able to put people and workloads exactly where and when they need to be, quickly and easily.

Since desktop virtualization relies on computing resources that are run, managed, and secured centrally, complete virtual desktops, applications, and data can be made available instantly to any number of users in any location on any device, with no need for physical shipments or specialized local IT resources. Just as easily, IT can accommodate transferred or departed employees, contractors, and temps by adjusting or terminating access.

These capabilities help the organization protect and verify the security of its valuable assets and information. IT can utilize desktop virtualization to make sure the right people have the right level of access to confidential or sensitive data, even if it is stored in a public or private cloud. Similarly, it provides verifiable policy and improved regulatory compliance and protection against data loss by ensuring full logging, reporting, and auditing.

Leveraging the Virtualized Desktop

Desktop virtualization transforms a traditional, distributed desktop management environment into a centrally delivered desktop environment, but that doesn't mean each worker gets a uniform workspace. IT can differentiate what is provided to workers: Some benefit from simplicity and standardization, while others require high performance and personalization.

Secure the Environment

Centralized desktop and application delivery provides an inherently secure architecture, simplifies management, and enhances IT's ability to deliver corporate resources as a service.

With desktop and application virtualization, data remains in the data center while only screen updates, mouse clicks, and keystrokes cross the network; in cases where some local data is needed, it can be easily encrypted on the endpoint device.

IT can control device drivers to ensure that workers who are provided data access can also be prevented, if desired, from printing information or copying data to removable or shared media.

Centralized password control, multifactor authentication, encrypted delivery, and a hardened SSL VPN appliance eliminate the chance for loss or theft of data. Antivirus protection can be assured by resetting the virtual desktop to a pristine state on each subsequent login.

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Using Citrix XenDesktop with FlexCast™ technology, IT can deliver a complete on-demand desktop that is specifically designed to meet the needs of each worker. When using virtual desktops in combination with XenDesktop's on-demand application capabilities, applications are either streamed for offline use or run centrally in the data center and delivered via a high-speed delivery protocol to any client device, thereby reducing costs and delivering instant and secure shared access to applications over any network with the best performance.

XenDesktop with FlexCast technology provides IT with the ability to deliver every type of virtual desktop, including local VM, streamed VHD, hosted VDI, and hosted shared desktops—each specifically tailored to meet the performance, security, and flexibility requirements of the individual user and devices that are utilized.

IT must also deal with the challenges of optimizing the user experience across disparate network connections. Citrix addressed this issue by delivering HDX technology, which incorporates a set of capabilities to provide a "high definition" user experience by balancing performance with bandwidth.

To fully support the workshifting environment, organizations also need to provide technology to ensure virtual access to collaboration tools that are taken for granted in the physical office, such as presentations, training, demonstrations, and real-time person-to-person and person-to-group meetings. Citrix provides these types of tools with GoToMeeting®, GoToWebinar®, and GoToTraining®, for presentations, demonstrations, meetings, and training. IT can provide virtual support with GoToManage®, the Citrix online remote support tool.

Reinvent Work to Achieve Goals

Arming a rapidly changing workforce with the ability to be productive anywhere, anytime, and on any device makes a business more agile and better positioned to grow and improve services, while controlling costs. It also positions organizations to better compete for the right workers, which can be a key element in making business agility a reality.

Work itself is being reinvented—enabling employees and businesses to work wherever, whenever, and on whatever device. This is a powerful and prevailing vision that leads to enhanced corporate flexibility, recruiting, employee engagement, and retention—while lowering facility overhead and other costs. But it hinges on having a computing platform that supports the needs of workers who utilize different types of devices—smartphone, tablet, PC—and likely alternate their use depending on where they are, what they are doing, and what's easiest to access.

Achieving this vision requires IT as an on-demand service that puts people—not data centers—at the center of gravity. In today's fast-moving world, IT can't be slowed or deterred by the complexity required to integrate and manage point solutions and infrastructure for different parts of the organization. With virtual desktops and applications from Citrix, IT won't have to build new infrastructure to handle more projects and new business requirements such as compliance, expansion, and improved services.

For more information on tailoring desktop delivery to meet the needs of workers and enable a workshifting environment, visit www.citrix.com/workshifting and take advantage of these additional resources:

- Survey on Workplace Flexibility, WorldatWork. February 2011.
  http://www.worldatwork.org/waw/research/flex.jsp
- www.workshifting.com, a Worldwide Workplace Council comprising the top minds in Web commuting.

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