



Accelerate business through a cost-efficient virtual workforce



Citrix transforms IT into an on-demand service for virtual workers

The traditional workforce model of permanent employees located in a single or small number of offices has undergone a significant transformation in recent years, accelerated by the effects of the current economic landscape. Drivers of this trend include initiatives to generate growth and expand into new markets, improve customer service, speed new products to market, improve decision-making processes, and increase both worker and overall organizational productivity. The trend is further accelerated by the cost-saving advantages across labor, travel and facility budgets, the desire to tap a broader labor pool, and improving employee satisfaction and thus retention.

While a virtual workforce provides many tangible benefits to organizations, it also increases the complexity of the challenges associated with delivering IT to a variety of user scenarios. The challenges include managing productivity and collaboration across various worker types while securely delivering desktops, applications, data, communications and support to ensure that these workers are as productive as possible, no matter where they are located. These challenges can be easily addressed if the right IT solution is put into place as a foundation for support.

This white paper defines a virtual workforce, describes the challenges and requirements that organizations face when supporting a virtual workforce, and explains how Citrix solutions can address these requirements and scale accordingly to foster and support future growth.

What is a virtual workforce?

The virtual workforce comprises diverse workers distributed across geographic boundaries and between enterprises. A virtual workforce can span any department and role across an organization, including front- and back-office, engineering and line-of-business workers. Essentially, virtual workers are those who don't spend their entire day, every day, working at the same headquarters office on the same desktop computer, in addition to nonpermanent staff and those who might share or use resources on a limited basis.

The virtual worker could be a:

- **Remote or branch office employee** – Remote and branch offices range in size from substantial operations to small regional teams.
- **Remote employee (mobile or teleworker)** – Remote employees consider their office to be anywhere they are currently located, whether that is at a customer site, at home, a lab or exam room, a factory floor or warehouse, a temporary project site, a hotel, a café, a retail store or a kiosk.
- **Partner, independent worker or outsourced resources** – A partner, consultant, contractor, temporary employee or an outsourced team—essentially any non-employee—who provides services for your company.

These workers must have access to all corporate desktops, applications and data needed to do their job efficiently but they are remote from core organizational infrastructure and corporate IT assets, such as applications

and data. The delivery of these services is complicated by the distance between these workers and the central IT department. The problem is compounded by the rapid growth in the number of virtual workers.

According to Forrester Research, “The growth of consumer broadband—56% of US households use it today, up from 10% in 2002—has enabled more employees to work from home.”¹ In fact, according to WorldatWork, over the last 5 years the number of telecommuters in the U.S. has risen by 43 percent.²

Also according to Forrester Research, “As companies streamline their workforces to focus on what differentiates them, they must outsource large chunks of work. And that means that they must form deep partnerships with suppliers, partners, and customers and work in distributed ‘B2B’ teams.”³

Key benefits of a virtual workforce to an organization

A virtual workforce enables organizations to:

- Reduce costs
- Drive growth and better serve customers
- Increase business productivity
- Attract top talent

Reduce costs

A virtual workforce enables organizations to shift labor costs to lower cost resources, slash travel and expense budgets, and consolidate and reduce fixed facility costs.

A virtual workforce gives organizations a greater degree of flexibility to take advantage of lower cost labor regardless of location—and engage workers only when and where the business needs. For example, many workers sourced from outlying areas and offshore locations, such as China, India, the Philippines or even Eastern Europe have significantly lower wages than similarly qualified resources.

Organizations also look to retain their best talent and avoid the costly loop of recruiting, hiring and training qualified replacements. According to the Turnover Cost Calculator from the Corporate Leadership Council (CLC), mid-size organizations spend millions of dollars per year to replace departing employees with new recruits. CLC estimates that a 5,000 person organization with a 14 percent annual attrition rate loses \$21,875 per departing employee assuming an average salary of \$58,500 + 6 percent for the cost of benefits. This is an annual cost of \$15.3 million incurred by the organization.⁴ By improving employee satisfaction and fostering a work-life balance through a virtual worker model, organizations can decrease their attrition rate and lower their related HR costs.

1 The Sun Never Sets On The Global Workforce, Distributed Teams Need Real-Time Collaboration Tools, Forrester Research, September 2008

2 Telework Trend Lines, WorldatWork, February 2009

3 The Sun Never Sets On The Global Workforce, Distributed Teams Need Real-Time Collaboration Tools, Forrester Research, September 2008

4 Turnover Cost Calculator, Corporate Leadership Council, November 2006



In addition, workers located in the regions where an organization does business minimizes the amount of travel required for each worker to reach prospects and customers when compared to using out-of-region resources. Online collaboration tools further reduce the need for frequent business travel and enable workers to be virtual and still collaborate with peers, managers and customers from anywhere.

Finally, enabling a virtual workforce offers organizations the potential to reduce facility costs—the second largest budget item for a typical organization. Facility costs include the real estate office space and also all related fees, often comprising one-third of the typical facility budget. According to The Real Estate Executive Board, the U.S. average real estate cost per headquarters worker is \$14,795.98.⁵ Therefore, if an organization of 10,000 employees can implement a successful teleworking program for 20 percent of its employee population, the cost savings opportunity is \$29.5 million per year. Similarly, if a company of 5,000 employees mandated teleworking one day a week per employee and instituted a desk-sharing program, the facility cost saving opportunity is \$14.8 million per year.

Drive growth and better serve customers

Organizations must find new ways to do more with less—cut costs while, at the same time, better serve existing customers, expand offerings, broaden the customer base and enter new markets. A virtual workforce solution allows an organization to open branch offices quickly and cost effectively as business growth demands, easily incorporate mergers and acquisitions and, when necessary, manage business contraction smoothly by providing the agility to quickly and easily move resources from less productive areas to new opportunities and initiatives. Especially in competitive markets, organizations often must move closer to the customer, offer more choice, immediate or real-time accurate responses, and off-hour services to both avoid lost sales and build long-term relationships with customers. According to IDC, “Many enterprises see a strategic opportunity to provide value at the branch, as the branch is often the closest point of contact to the customer. IT organizations want to deliver resources to support branch office growth while keeping operational and management costs in check.”⁶ A virtual workforce is key to an organization’s ability to cost-effectively take advantage of opportunity anywhere it exists.

Increase business productivity

Fueled by a move toward more mobility, the modern work force is being forced out of the traditional office model and stepping into a new paradigm—in the field, at home, on a factory floor, at a customer site, from a partner, abroad, wherever. In this paradigm, organizations must ensure real-time access to company information to enable better decision making, to plan, monitor and track operations centrally, and to drive improved business productivity with greater accuracy and at less cost.

In fact, studies have shown that employees who telecommute have an average of 10-20 percent increased productivity than their office-based colleagues. Teleworkers have higher employee satisfaction because teleworking fosters a better work-life balance while, reduces commuting costs and, at the same time, can offers a distraction-free environment where they can be more productive.

⁵ REEB Occupancy Expense and Space Utilization Benchmarking Survey, The Real Estate Executive Board, 2007

⁶ Worldwide Enterprise Remote Branch Network 2008-2012 Forecast IDC, IDC, June 2008

Attract top talent

To tap a broader labor pool—hiring skilled talent from anywhere when needed—organizations must meet growing technological expectations of the workforce. Many of today's virtual workers grew up using technology and have integrated it into every aspect of their personal lives. These workers expect and demand leading-edge technology, including technology that allows a virtual workstyle.

The ability to support a virtual workforce with such technology enables organizations to attract, hire and retain trained and skilled talent regardless of location. According to WorldatWork, 85 percent of companies indicate that teleworking has a moderate to highly favorable impact on employee retention.⁷

Virtual workforce challenges

A virtual workforce can pose challenges to an IT organization accustomed to delivering IT services to permanent employees located in a headquarters office. A virtual workforce adds additional requirements to the IT infrastructure for which it was not originally designed. Simply reengineering the existing infrastructure can result in unnecessary costs, degraded performance and security risks, impacting an organization's traditional workforce without fully meeting the needs of its virtual workforce. By understanding these challenges in more detail, a comprehensive solution can be implemented, leveraging existing infrastructure investments.

Optimizing performance and productivity

A virtual worker must be as productive as workers in the headquarters office. They should have identical service performance and availability levels. However, this is often not the case due to the degradation of performance over wide area, wireless or residential networks. Virtual workers lose productivity as a result.

In addition, business continuity disruptions affect a virtual workforce, due to the number of additional infrastructure components between the worker and their desktops, applications and data that may fail during a planned or unplanned outage. The resulting loss of productivity can have a great impact on an organization's profitability.

Maintaining communication and collaboration

Providing communication and collaboration tools to virtual workers also produces difficulties for IT departments. Isolation and non-standard hardware affect the ability for virtual workers to productively collaborate with coworkers. Aside from being out of sight, out of mind, they can have limitations to communication, such as being excluded from the corporate telephone network. Without transparent inclusion in an organization's corporate communications infrastructure that supports online collaboration, virtual workforce productivity is diminished.

Providing ongoing training to the workforce enables productivity and agility. IT must ensure that virtual workers receive training for their roles when they are unable to attend training sessions in person.

Unable to provide desk-side support to virtual workers, Tech Support teams must rely on second-hand diagnosis, which slows productivity for both parties. Another challenge is to provide support to non-employee desktops that are not part of the organization's standard operating environment (SOE).

⁷ Attraction and Retention: The Impact and Prevalence of Work-Life and Benefits Programs, WorldatWork, October 2007



Maintaining security and compliance while managing risk

Enforcing security policies without limiting the productivity of virtual workers is essential to business success.

Organizations must ensure that intellectual property is protected, network threats are avoided and compliance regulations and data privacy requirements are met. IT organizations must address concerns about who has access to corporate data, when, from where and from which device.

Organizations must ensure the integrity and confidentiality of resources transmitted over public networks. Organizations must protect corporate resources against viruses, worms and other threats in spite of the wide variety of devices used by virtual workers, not all of which are subject to corporate policies and control.

Intellectual property and client data accessed by virtual workers must be protected against data loss, including from virtual workers who have completed their assignment, are reassigned or leave the organization, and from laptops that are lost or stolen.

Organizations must also ensure that compliance policy and regulations can be met. Maintaining a consolidated audit facility across users remains a requirement, even when the workforce is comprised of virtual workers.

Providing flexibility

The benefits of the rapid engagement and disengagement of many virtual workers can be reduced if IT infrastructure cannot be made available, or provisioned and de-provisioned at the same pace. New hire provisioning lead times are based on assumptions for permanent employees, such as a four week notice period from the time of offer plus a number of days for an initial indoctrination period. For remote offices, especially those overseas, there is the additional lead time for shipment. Once the equipment arrives, a lack of trained or dedicated IT personnel can result in additional provisioning time. For new branch offices, even longer lead times are incurred, as the shipment of equipment needs to be coordinated with the availability of IT project implementation teams.

Lack of flexible provisioning has a cost factor, as the time between a virtual worker commencing work and the completion of her IT provisioning is generally less productive. At the end of an engagement, the de-provisioning of infrastructure creates a management overhead, plus redundant hardware left over after the virtual worker has left.

Keeping infrastructure costs low

The cost-effectiveness of a virtual workforce may be minimized if IT services are delivered using traditional methods and additional investment in IT infrastructure is required. A common mistake made by organizations faced with a new virtual workforce model is to duplicate backend infrastructure for this purpose. An example of this is installing desktops, applications and data at an outsourced and offshore service provider's facility to avoid security or latency issues. This increases the overall total cost of operations of the outsourced service due to initial capital investment and the need for ongoing maintenance and upgrades.

An additional overhead occurs with the need to ensure the level of security and compliance for a virtual workforce, as detailed earlier in this white paper. Additional costs are incurred for firewalls and VPNs, as well as funding the manpower required for auditing and remediation.

How Citrix solutions address the needs of a virtual workforce

Faced with the multiple challenges posed by supporting a virtual workforce, many IT departments initially respond with unnecessary duplication of infrastructure or attempt to redesign their existing infrastructure. These methods can be time-consuming and cost-intensive, and may not adequately address all of these challenges and requirements.

To fully address these challenges in a cost-effective way without duplication, Citrix offers a virtual computing infrastructure that transforms IT by centralizing the management and delivery of desktops and applications in the datacenter and broadcasting them to virtual workers over any network as an on-demand service. The Citrix virtual workforce solution is built on virtualization technologies—separating virtual images of desktop, application and server components from the hardware and operating system and storing them and all associated data in the datacenter under the control of the IT department. This enables workers to interact with the updated data, applications and interfaces they need to do their job in any location, at any time and over any network or device. Corporate data never leaves the datacenter. Citrix products also empower simple online collaboration and allow for fast remote support to distributed employees.

Citrix simplifies desktop management by centrally managing a single copy of all desktops and applications in the datacenter rather than on hundreds or thousands of user devices spread over the enterprise. In the same way, it reduces server management complexity by managing a single instance of server workload images and delivering it to all servers—physical and virtual—throughout the datacenter. This simplified desktop and server management can reduce IT operations costs up to 40 percent and cut storage costs up to 90 percent. Intelligent network optimization technologies from Citrix improve application performance up to five times, reducing response times and providing a familiar, easy-to-use experience no matter where or how applications are used—in the office, at home or when travelling. For branch office users, Citrix WAN optimization products ensure optimal user experience by dynamically caching and staging desktops and applications, which reduces bandwidth usage up to 75 percent and accelerates user performance up to 15 times. Citrix virtualization technology enables IT to securely and cost effectively deliver desktops and applications to users virtually anywhere. IT can quickly mobilize for business-driven cost reduction programs, such as facility consolidation or leveraging lower cost labor pools or, just as quickly, shift gears to enable business growth programs, such as M&A, branch office expansion or the need to leverage scarce highly skilled and widely distributed talent. Business continuity, workforce continuity and compliance are also easier and less expensive to implement. Citrix enables organizations with a virtual workforce to save costs and increase productivity in the following ways.



Maintaining a high level of performance and productivity

Citrix technologies optimize delivery of desktops, applications and data through the use of highly tuned protocols and technologies that reduce the effects of network latency, bandwidth and LAN optimized protocols. Virtual workers experience performance similar to the performance within the headquarters or main office. For example:

- Remote workers are able to use application, applications and data as if they were running locally, even those applications that are graphics-intensive, such as CAD and GIS.
- Mobile workers can use corporate application, applications and data both online and offline.
- Teleworkers can use a consistent desktop and applications, no matter where they are located.
- Branch office workers are able to work with data stored centrally in the datacenter, without the commonly experienced problems caused by WAN latency and bandwidth limitations.
- End-to-end application performance monitoring assists IT support in identifying performance bottlenecks for faster remediation.

Enabling effective and efficient collaboration and communication

According to Gartner, “By 2011, Web conferencing will be available to 75% of corporate users as a standard facility, alongside e-mail, presence, calendaring, IM and collaborative deployments.”⁸ Citrix products enable more effective web conferencing and support across virtual teams to increase productivity, communication and collaboration. For example:

- Productive meetings can be held across locations around the world with presentations, whiteboards and voice over IP capabilities available from each attendee’s desktop.
- Virtual webinar tools enable training and other organizational communications to reach all workers globally.
- Effective training and support can be provided remotely through online support tools.
- Organizations can drastically reduce travel requirements, because online collaboration and support tools make travel unnecessary.

Increasing security and control

With Citrix virtualization, desktops, applications and data remain centralized, so they are easy to manage and secure. This enables organizations to deliver the same set of applications and data to virtual workers regardless of location, while maintaining security standards and regulatory compliance.

Citrix technologies enable an organization to maintain high levels of security and compliance, while expanding service to the new user scenarios brought by a virtual workforce. This is accomplished through the centralization of desktops, applications and data, as well as the use of monitoring and management tools. For example:

- Centralizing all desktops, applications and data ensures that full control remains in the hands of the organization, while remaining accessible to all required users, despite having a global user base.

- Through centralization, security and malware protection can be applied and patched across the entire organization using a single process.
- Having a granular approach to providing the appropriate levels of access based on each virtual user profile enables unique access scenarios based on individual role, device and location.
- Monitoring and tracking features and policies enable organizations to meet complete compliance regulations by protecting intellectual property and ensuring data privacy. Policies can be created to encrypt information during delivery, prohibit data from being saved locally and even control when printing is allowed or disallowed.

Providing and maintaining a flexible, low-cost IT infrastructure

The infrastructure agility provided by Citrix enables flexibility for the virtual workforce, enabling IT support for all virtual workers. Citrix products enable organizations to reduce the costs involved with replicating infrastructure when supporting new remote workers, building out new parts of the business, or integrating or combining business systems during initiatives such as outsourcing and offshoring. In addition, Citrix enables organizations to easily and quickly handle mergers and acquisitions, so that all workers from both organizations can be using the same sets of systems, applications and data within twenty-four hours. In addition, Citrix enables IT teams to:

- Centralize and optimize existing datacenter infrastructure to reduce overall hardware, real estate, power and cooling requirements, providing green IT and cost benefits.
- Easily provision (and even self-provision) applications and desktops, enabling the rapid expansion of remote and branch offices.
- Deliver a standard desktop environment from images in the datacenter to new users in any location. No install time means that new users can be fully provisioned within minutes, and safely de-provisioned even faster.
- Provide a single, standard desktop to all devices, whether they are corporate standard hardware or belong to a third-party organization such as an outsourcer, a contractor-owned laptop or a home worker's personal computer.
- Lower desktop TCO by allowing organizations to use existing desktop hardware, as well as personal laptops and PCs for teleworkers, contractors and other virtual workers.
- Pool applications for use by all workers, whether they are employees or non-employees.
- Provision entire virtual offices without requiring IT staff to be available on site, providing flexibility and travel cost benefits.
- Lower infrastructure replication and support costs by centralizing desktop lifecycle management and extending the life of PCs.



- Perform and apply company-wide updates and patches to desktops and applications from a central location, so there is no need for support staff to visit each office to maintain each individual device. In addition, support staff can roll out or roll back these updates efficiently, and as quickly and frequently as the business requires.
- Reuse existing infrastructure for new ventures or outsourcing arrangements, removing the need, cost and complexity of managing duplicate infrastructure.
- Use an optimized delivery protocol to reduce network costs and complexity.

Providing business continuity

The combination of centralized application, applications and data, and optimized delivery provides a solid foundation for virtual workforce business continuity, in combination with regular backup schedules and a disaster recovery plan. Because secure application, applications and data, and virtual collaboration and support tools are available from any location, normal business operations can be maintained in the event that a virtual office or even the main office is unavailable for any length of time. For example:

- In the event of a natural disaster or other event that prevents workers from reaching their office, desktops, applications and data can still be accessed remotely through any device.
- Business continuity plans that include the provisioning of temporary working facilities can be accelerated, as desktop computers do not require any installation apart from a small footprint client installation.
- Collaboration tools allow workers to remain in touch with managers and coworkers during disruptions, and technical support can still be provided as necessary.

Summary

Organizations that leverage and adequately support a virtual workforce experience a variety of benefits that can help them grow, prosper and lower costs across labor, travel and facilities. Supporting a virtual workforce means having a comprehensive IT solution in place to meet the application, application and data delivery needs of virtual workers across the organization.

Citrix products work together to provide organizations with the tools and services they need to successfully support a virtual workforce and meet all of the IT requirements and challenges that these workers bring to the organization. With Citrix, organizations can reap all of the benefits that a virtual workforce provides, giving them a competitive advance and putting them ahead of their most strategic competitors.



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About Citrix

Citrix Systems, Inc. (NASDAQ:CTXS) is a leading provider of virtual computing solutions that help companies deliver IT as an on-demand service. Founded in 1989, Citrix combines virtualization, networking, and cloud computing technologies into a full portfolio of products that enable virtual workstyles for users and virtual datacenters for IT. More than 230,000 organizations worldwide rely on Citrix to help them build simpler and more cost-effective IT environments. Citrix partners with over 10,000 companies in more than 100 countries. Annual revenue in 2009 was \$1.61 billion.

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