



Wireless Access: Delivering Services to Citizens

Introduction — Market Requirement

The ability to conduct the business of government, anytime and anywhere, has shifted from vision to reality in less than 18 months. Now the capability to connect with stakeholders is in your cell phone, Personal Digital Assistant (PDA), handheld PC and notebook computer. As reliance on mobile technology grows — and as citizens increasingly rely on mobile government services — most professionals will soon require this capability. Unfortunately, beyond the shallow utilization of wireless business applications such as BlackBerry devices, which enable data-format communications, the mission-performance benefits of mobile wireless technologies for government are often less obvious or achieved.

As wireless technologies mature, government Information Technology (IT) purchasers are looking for solutions that meet their mission requirements and demonstrate a tangible return for citizen-stakeholders. Simply put, agencies are not interested in harnessing enterprisewide wireless technologies simply because everybody else is doing so. To drive real value for taxpayers, government agencies need more than tactical wireless solutions.

Rather than just a series of tactical solutions, government agencies need a holistic mobile/wireless strategy that addresses the mission-performance objectives that today's government executives and programs need to achieve:

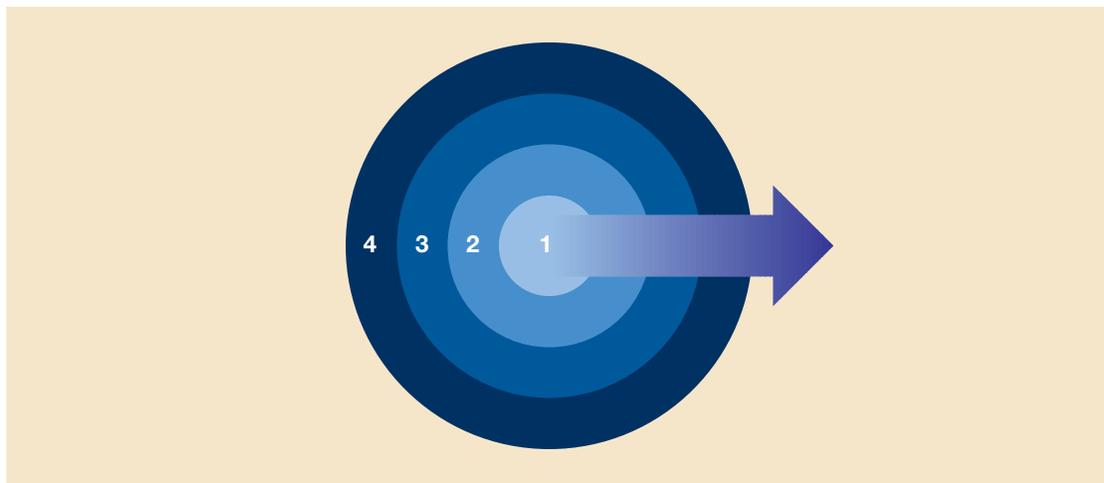
- Streamlined IT management
- IT resource consolidation
- Productivity improvement
- Service improvement
- Cross-agency information sharing
- Cost savings in an era of continuing budget challenges

In addition, government agencies also need a wireless strategy that addresses the most pressing concern for government IT managers today — information security.

The Circle of Service: A Framework for Mobile Strategies

As an enabling technology, seamless wireless connectivity essentially severs the bond between the government employee and the desk, empowering employees to deliver government services at the point of citizen. Importantly, wireless does not enable each employee or agency in the same way, nor does the Return on Investment (ROI) for wireless technologies provide value for all categories of government worker.

Displayed as a series of concentric tiers of value, the Circle of Service highlights the impact of mobile technologies on government workers. Starting at the center and radiating out as employees become more mobile, the Circle of Service focuses on the value not only for government agencies, but also for their stakeholders within the community. The further workers operate from the center, the more value they will deliver using wireless technologies.



Zone 1: Stationary Collaboration — Wireless technologies provide a more robust environment for collaboration and information sharing — even for workers typically stationary at a fixed location. In addition, for new network deployments, wireless technologies can deliver a higher ROI than wired networks by increasing functionality while reducing installation costs.

Zone 2: Perimeter Freedom — Wireless technologies can enable more productive, frequent collaboration among employees whose primary workplace is a single location, with many secondary locations, such as doctors and other medical professionals.

Zone 3: Mobile Service Empowerment — Wireless technologies can also enable mobility for employees who were previously limited by the need for instant access to mission-critical information and communications at multiple sites, such as health inspectors and social workers.

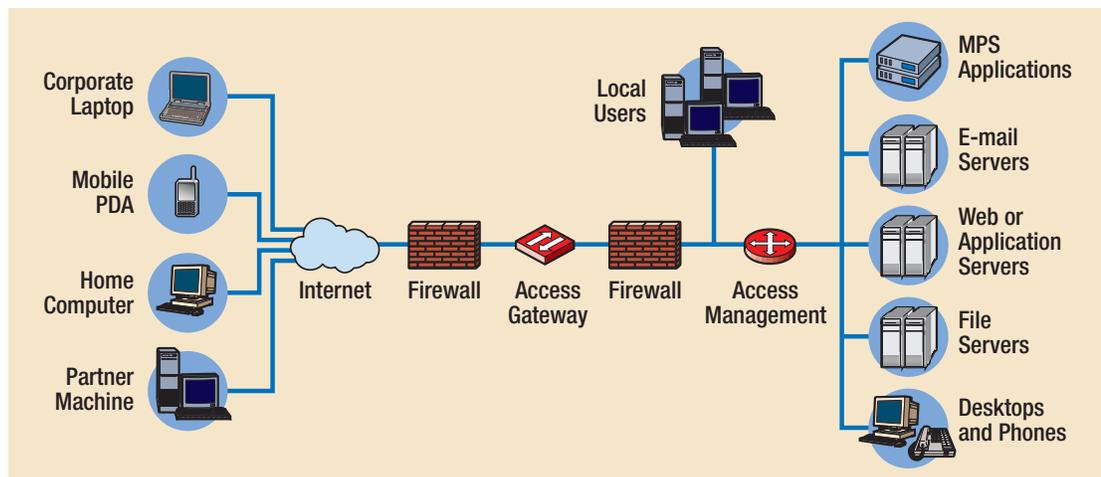
Zone 4: Mobility Force Multiplier — Wireless technologies can amplify the tools that are already available to government agents who are constantly mobile, such as federal, state and local law enforcement officers. These front-line personnel need a full complement of secure IT tools, any time and anywhere — from radios to laptops that provide access to critical applications and information.

IT staff currently utilize a different set of access tactics to deliver applications and information to each concentric circle. In many cases, access tactics are not even standardized within the same circle of service, requiring IT managers to use different tactics to deploy service even within the same building. A well-thought-out access strategy allows the IT staff to jettison multifaceted access tactics in favor of a unified access strategy. Operating from a consolidated infrastructure, Citrix Access Suite™ enables an access strategy that delivers data and applications to users within each circle using the same fundamental approach — regardless of network connectivity, operating platform or geographic location.

As a component of a mobile strategy across the zones, mobile professionals need security that is built in, not added on as an afterthought. With the number of accountability and privacy regulations multiplying by the day, “bolted on” security solutions often leave critical gaps in wireless security schemes. Such gaps, exploited by increasingly sophisticated hackers, put performance-critical and sensitive information in jeopardy. In more catastrophic cases, gaps in wireless security enable malicious actors to bring down entire networks at critical junctures — impeding the ability of emergency responders to act. Consider the following scenarios:

- Caseworkers in the field need access to database applications containing confidential financial and personal information about welfare recipients. How can you be sure that this data is kept private?
- Police officers, who are encouraged to spend more time on the street, need wireless laptops to file reports and consult databases from their cruisers. How can you safeguard information stored on these portable devices?
- With many school locations, the school district struggles to keep each computer updated with the latest security software versions. How do you ensure that each machine is protected against viruses and other threats?

The Citrix Access Suite provides this built-in security. The suite is a system of products that works by centralizing business-critical applications and information shares, transforming them into virtualized subscription-based services that can be delivered to any device or connection. Next, applications and information are protected with single sign-on and password policy controls that force users to create and manage strong passwords while preserving access simplicity. Finally, secure access to the network and virtualized services is ensured via a hardened Secure Sockets Layer Virtual Private Network (SSL VPN). The SSL VPN appliance, called Citrix Access Gateway Enterprise™, is the only SSL VPN that provides dynamic and discriminatory access based on each connecting user’s access scenario — a combination of device, location and connection.



With the access platform created by the components of the Citrix Access Suite, no applications are hosted on client-side devices, removing the individual burden of security assurance and maintenance. Rather, applications are hosted at a central location and pushed out to users via their wireless network. The applications are maintained by IT specialists at the central location, who update antivirus software and software patches, ensuring end-user security protections.

Mission Value

Effective mobile wireless technologies bring government services to the point of citizen or event, while helping government workers to accomplish more tasks with fewer resources. The Citrix Access Suite contains the world's most widely deployed presentation server, which centralizes and controls access to applications and information and enables IT staffs to deliver, manage, monitor and measure enterprise resources on demand. The components of the Access Suite — including Citrix Presentation Server™ and Citrix Password Manager™ — work together seamlessly to power the on-demand enterprise and provide a total workforce mobility solution. Here are a few examples of enterprisewide mobile wireless implementations, which can all be powered by the Access Suite.

SECURING THE HOMELAND

In Dane County, Wisconsin, the sheriff and police use Citrix Presentation Server to access Spillman Inc.'s Summit Jail System and Dynamic Imaging, Inc.'s PictureLink photo imaging system, which includes digital pictures, background information, mug shots and electronic fingerprints of suspected criminals. Officers have real-time access to critical crime-fighting data via the Internet when and where they need it — on the streets of the 60 communities in Dane County.

Secure, timely access to data on the street is critical to increasing the force's productivity without increasing officers' workloads. The Citrix solution decreases the time it takes to access information, as officers no longer need to consume radio time to check criminal databases. Enquiries come back within seconds and provide more critical data than could be transmitted over the radio in the same time frame.

Furthermore, unlike other mobile wireless solutions, Citrix allows mobile users to access applications and data in their original, familiar format — not with limited functionality. The Citrix SmoothRoaming™ capability ensures a consistent user experience as users change devices, locations, connections and printers, by automatically reformatting the application presentation for the form factors of new devices. It also ensures continuous access as users move between wired and wireless networks, even across wireless dead zones. Passwords remain protected and the user access experience secure.

This capability encourages productivity, rather than frustration at a slow, incomplete, unfamiliar data picture.

SERVING THE CITIZEN

Using the Citrix access platform, health inspectors making site visits and social workers visiting foster children in their homes can access IT applications on site via a mobile device, such as a laptop or a handheld device. Health inspectors can easily access historical data for review as they conduct site inspections, and social workers can input new data directly into record-keeping applications as they interview foster parents and children. These professionals no longer need to return to the office to file reports, which means they can visit more sites, more often. Because of this mobile wireless capability, the welfare of foster children can be more frequently monitored, and the safety at hospitals, nursing homes, restaurants and other facilities that serve the public will ultimately improve.

Because Citrix is platform agnostic, social workers, health inspectors and other mobile users can quickly access network files and core applications from any location and over any type of connection. They benefit from the same functionality and ease as if they are working from their own desktops in the office, regardless of their job function or application requirements.

IMPROVED COLLABORATION

For medical personnel in federal, state and local organizations, the Citrix Access Suite allows fuller interaction with colleagues and patients. It allows personnel to create, access and update patient records and forward information to colleagues directly from the bedside — or out in the field, as they aid citizens on an emergency basis or provide follow-up care. And when documents need to be printed, the Citrix access platform makes it easy. The proximity printing capability enabled by Citrix SmoothRoaming automatically connects users to the printer nearest them — no matter whether they are in a hospital office, at home or at another remote location.

Giving doctors, nurses and other medical personnel the means to step away from their desks more frequently enables them to visit patients and consult with colleagues more often. The net result of more frequent exchange of vital diagnostic and treatment information is improved operational efficiency, better medical care and greater patient satisfaction.

The Citrix access platform can also improve cross-agency information sharing. A number of federal, state and local agencies working to improve border security, for example, could use Citrix Access Suite to access criminal databases, share information on border inspections and collaborate on joint initiatives — all with comprehensive security based on user roles and access devices.

In all cases, the mobile wireless capability is part of a holistic strategy to improve business operations, not an add-on designed for the communications convenience of relatively few people. The secure Citrix mobile wireless solution in all instances benefits thousands of people — from the police officers and health inspectors on the streets to the citizens who benefit from increased protection, and from the doctors and other medical professionals to the thousands of patients they serve.

DIGITAL DIVIDE

Besides improving worker productivity and the quality of citizen services and safety, the Citrix access platform also helps government organizations work toward a greater public good — closing the digital divide. In Cuyahoga County, Ohio, for example, the library system wanted to support the OneCleveland initiative to provide free, citywide wireless Internet access to the public, and turned to a Citrix access solution to provide browser-based, mobile application access to customers using wireless tablets provided by the library.

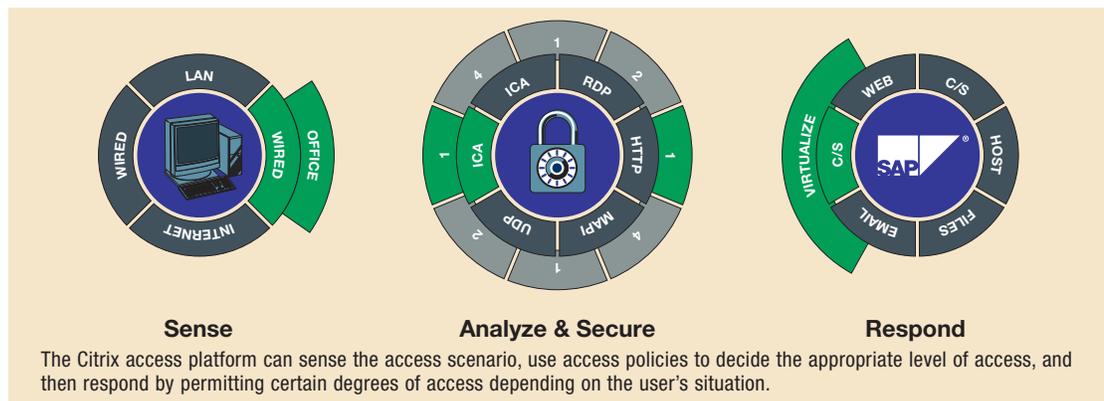
The library set up a pilot project at one branch, which was so successful that it was expanded to two other branches. The library system is now moving to provide wireless access to most of its 29 locations by the end of 2005. Library patrons can use the tablet to look up a book in the library catalog and take the device along as they locate the book. Or they can find a comfortable chair and surf the Internet. Many patrons use the library's online subscription databases to do research. At story hours, each child receives a tablet so they can follow along as a staff member reads a book via the Internet.

Through the OneCleveland initiative, citizens can access the Internet at more than 1,400 hot spots throughout that city. Many other municipalities are implementing their own wireless networks to bring low- or no-cost Internet access to every citizen. Going forward, these municipalities can bring services closer to citizens by enabling access to government applications and information anytime and anywhere through the Citrix access platform. For example, a resident accessing the public Internet could complete a vehicle registration form from his neighborhood coffee shop or register his children for city day camp from outside the school as he waited for the final bell.

The ubiquitous access to information and applications made possible by mobile wireless IT is neither practical nor possible without comprehensive security. Federal, state and local agencies seeking productivity and IT management improvements through mobile wireless capabilities must ensure that as they provide access they also tailor that access to job function as well as computing device and connection method. These comprehensive security processes will ensure that the right people have access to the right information at the right time, and will rigorously protect against security breaches.

Citrix Value

The Citrix access platform provides secure access through a multi-disciplinary approach. First, the application infrastructure is centrally managed, which allows IT managers to manage and restrict who gets access to what information and when. The Citrix Access Suite effectively transforms the IT infrastructure into a sense-and-respond system that automatically adjusts access based on the user's specific computing profile. For example, an agency attorney accessing documents over the network via her government-issued laptop could be allowed to access and modify those documents but not be permitted to save those documents to her hard drive. All changes to the documents would be securely transmitted across the network to the central server.



In another access scenario, a government personnel manager accessing the network via a personal wireless device could be allowed to access applications but not record any changes or cut and paste from documents. The Citrix® SmartAccess capability ensures adherence to pre-determined security policies while providing users with the most optimal experience for their access scenario.

Second, the access platform efficiently guards the front door of any application or information repository through effective management of the authentication process. Citrix is compatible with a large number of biometric and token authentication systems and is widely used by the intelligence community for the management of confidential information. Because Citrix can require users to store information on the agency's secure servers, not on end-user devices, IT managers no longer need to worry about security breaches when laptops are lost, employees leave or Internet connections are compromised.

Third, the access platform transmits only keystrokes over the network, rather than the entire document, as is the case in a client-server environment. This capability effectively eliminates the possibility that critical data could be intercepted over potentially non-secure connections. Further, the access platform scrambles and encodes the transmission of all data, allowing secure use of the public Internet for connectivity.

Finally, the centralized management that enables this robust security also saves time and money by enabling application upgrades and patch management from one location. Previously, IT managers had to implement upgrades at many locations, and frequently on each individual machine for each individual software program. This meant that on-the-fly updates to protect client devices from new security breaches were virtually impossible. Previously, it could take days or weeks to install protections on all devices, particularly for state agencies maintaining offices statewide. With a Citrix mobile wireless solution, new protections are implemented centrally, so every user gets the most up-to-date protections right away.

The Citrix access platform frees IT staff from these time-consuming tasks so they can focus on improving the delivery of IT services to their stakeholders — an important benefit at a time when IT administrators are under pressure to cut costs and reduce risk while simultaneously improving services to their clients and delivering higher and faster returns on IT investments. To do this, they must keep information resources flowing to more people, more places, more networks and more devices, without adding IT staff.

The Citrix access platform also facilitates the consolidation of IT resources in a few central locations, resulting in a longer technology refreshment cycle. Citrix allows administrators at these central locations to view applications, servers and zones in multiple farms, manage sessions across multiple farms and view and manage licenses across the Citrix access platform, saving still more time and IT resources. The savings that are achieved by maintaining fewer IT systems at fewer locations means that IT staff are better able to focus on their core mission — improving the productivity of government operations and bringing better and more services to citizens.

For all of the new functionality and service delivery options that wireless technology provides to the government agency, the reality is that application and information deployment does not have to be vastly different to secure the benefits of mobile technology. With a holistic access strategy, linking information supply to information demand across the circle of service is no different from deploying an application inside of the same building. For agencies looking to improve performance with a wireless solution, the Citrix Access Suite can unify and simplify the process — delivering real wireless performance on an agency budget.

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