Mobile Collaboration in the Public Sector:

Be Productive from Anywhere

Mobile Collaboration in the Public Sector

Cisco White Paper

Public Safety and Justice: Increase Situational Awareness and Lower Costs

- Public safety: In the city of San Antonio, Texas, detectives who need a search warrant right away use an in-vehicle laptop with Cisco® TelePresence® Movi software to connect to a judge. Obtaining the search warrant at the point of need instead of waiting up to 12 hours helps detectives take advantage of a window of opportunity to execute the warrant.
- Emergency response: In Jefferson County, Alabama, the Emergency Management Agency uses a Cisco TelePresence solution to collaborate with other Jefferson County agencies as well as 14 other counties, gaining a more complete operating picture than possible with voice alone.
- Justice: The city of San Antonio also uses mobile video to eliminate the costs and safety risks of escorting prisoners to and from the courthouse for arraignments. Instead, prisoners can meet with the judge face to face via Cisco TelePresence.

What You Will Learn

To work effectively in the field or at home, public sector workers need access to the same voice, video, and web collaboration tools they would have in the office. But consumer-grade tablets and videoconferencing services lack the security, reliability and interoperability needed for enterprise use.

This white paper, intended for business and IT leaders in government and education, explains mobile collaboration breakthroughs:

- Mobile video endpoints and applications enable field workers and teleworkers to interact with coworkers and citizens face-to-face, building trust and increasing the efficiency of communications.
- Virtual desktops, stored in the organization's data center instead of on hard drives, help prevent loss of information if a laptop or tablet is lost or stolen.
- Medianet technology adds intelligence to the network to help IT teams deliver a high-quality experience and simplify endpoint provisioning and troubleshooting.

Challenge: Collaborating with an Increasingly Mobile Workforce

The public sector's mobile workforce is growing, as teleworkers join traditional field workers such as inspectors, bank examiners, building inspectors, clinicians, caseworkers, researchers, intelligence personnel, and others. In the 2010 Telework report to Congress, the U.S. Office of Personnel Management (OPM) reported that nearly 114,000 federal employees teleworked in 2009. The ranks of teleworkers continue to grow as telework becomes mainstream. State and local governments are also adopting telework, inspired by its benefits for continuity of operations, environmental sustainability, recruitment and retention, and lower real estate costs.

Whether they work at home or in the field, and whatever their role, mobile workers need to be able to collaborate with coworkers in other locations for critical information sharing, team meetings, training, and sharing ideas and best practices. Video enhances collaboration by enabling people to interact as they do naturally, taking cues from facial expressions as well as words. Regularly seeing team members face-to-face helps foster trust.

Video also more accurately conveys visual details than verbal descriptions. For example, police officers and firefighters can transmit video from vehicle-mounted cameras to the command center, increasing situational awareness for commanders. Inspectors can show a crack in a levee to the engineers who are planning the response.

Why Consumer Collaboration Products Fall Short for Government Missions

People have come to appreciate consumer-grade tablets for their personal lives. Similarly, consumer videoconferencing services help people feel closer than they would with a voice-only call. Commercial instant messaging services make it convenient to check in with friends and family. And commercial cloud services make it easy to access information from anywhere.

Consumer solutions are not suitable for the business of government, however, because they lack critical capabilities required for government missions:

- *Securing data in motion:* In public sector organizations from hospitals to schools, and from local government to the Department of Defense, protecting private information is a regulatory requirement. Organizations cannot tolerate the risk of storing sensitive data, such as call records, medical records, bank examiner reports, or military intelligence, on a tablet that could potentially be left behind in a taxi. Similarly, voice, video, and data traffic must be encrypted as it travels over wired or wireless networks, keeping content private even if the stream is intercepted.
- *Interoperability among different video endpoints:* Many consumer smartphones and tablets support video interactions only when both parties have devices from the same vendor. Standards-based endpoints, in contrast, can interoperate with all other standards-based endpoints, extending the life of existing investments while also providing flexibility for future purchases.
- *Enterprise-class reliability:* Video adoption is highest when workers experience consistently good video quality, and regardless of whether they connect with an IP videophone, tablet, laptop, or immersive telepresence system. But IT teams have no control over the reliability of public Internet videoconferencing services, making these services unsuitable for critical decision making during disaster response, or even for weekly team meetings. For use in the public sector, video solutions much be capable of dynamically adjusting quality based on current network conditions, while making sure that quality does not dip below defined thresholds. IT teams need easy-to-use tools for performance monitoring and troubleshooting.
- *Automated provisioning and centralized management:* IT teams do not have time to manually configure the constantly increasing number of collaboration endpoints for the mobile workforce. Scaling mobile collaboration solutions requires automated provisioning of endpoints and the switch ports to which they connect.

Three Innovations for Mobile Collaboration in the Public Sector

To increase the efficiency of a mobile workforce, including teleworkers, governments generally start with either virtual desktops or mobile video. The foundation for both is an enterprise medianet, a media-optimized network that reaches everywhere and has the intelligence to deliver an excellent user experience on any device.

Virtual Desktops

Traditionally, the icons on a mobile worker's laptop or tablet have represented applications and files stored on the device itself. With a virtual desktop infrastructure (VDI), the desktop looks the same, but the applications and files are actually stored in the cloud, on a platform such as the Cisco Unified Computing System™. Mobile workers can log in to the departmental network from anywhere, over a secure VPN connection, to work on a virtual desktop for the duration of their session. When they log off, the virtual desktop resources become available for someone else.

Agencies that provide virtual desktops do not need to worry about data leakage from stolen laptops because applications and data are stored in the cloud. They also reduce capital expense because thin clients cost far less than laptops and do not have to be replaced as often. Application licensing costs can also decrease because the organization needs only enough licenses for concurrent users, not all users.

Cisco Virtual Experience Infrastructure (VXI) provides everything needed for virtual desktops. The Cisco Unified Computing System delivers a noticeable performance improvement while reducing the overall server footprint in the data center. The Cisco Cius™ tablet, built for the enterprise and based on the Android operating system, serves as a thin client. WAN optimization and acceleration technology enable mobile workers to access their virtual desktops over the WAN with LAN-like performance.

What's more, unlike other tablets, the Cisco Cius can also be used for telepresence and video on demand. In the Cius, the video compression software is built into the operating system, making it possible for large video files to flow over the network.. But the tablet never stores potentially sensitive information about telepresence sessions, such as the names and numbers of other people in the session. This information stays on the cloud platform in the data center.

Mobile Video

With standards-based video, mobile workers can meet face-to-face with coworkers and citizens from wherever they are. Mobile devices enabled by Cisco collaboration tools include:

- Cisco Cius tablets
- PCs or Macs with Cisco TelePresence Movi software, providing high-definition (720p) video
- Any desktop, laptop, or tablet with any operating system, using a Cisco WebEx® solution in the cloud (Figure 1).

Video for Training a Remote Workforce: Save Travel Time and Costs

The Alabama Department of Transportation uses Cisco TelePresence for employee training. Employees appreciate saving a three- to four-hour drive, and the department saves money by not paying a consultant to teach the same class multiple times. Similarly, in Nampa, Idaho, the fire department uses Cisco TelePresence for training so that firefighters can remain at the station, ready to respond.

Telemedicine: Extend Specialist Care to Rural Areas

By placing Cisco TelePresence units in clinics, government hospitals are enabling remote specialists in post-traumatic stress disorder (PSTD) and other issues to see patients without driving, enabling them to meet with more patients in a day. Similarly, providing a video setup in veterans' homes saves them from having to make arduous trips, and also eliminates the considerable expense of ambulance rides. Used in the California Department of Corrections and Rehabilitation, telehealth saved taxpayers $13 million by eliminating the costs of transporting inmates long distances under guard to see specialists.

Cisco WebEx does not require any special software, and combines video with voice and web collaboration. Meeting participants see each other in high-definition (360p) video windows, and can opt to see the active speaker in full-screen theater mode.

In addition to using the Cisco Cius tablet for videoconferencing, mobile workers can also use it to capture video. Being able to see a spider bite in an emergency room, a manufacturing defect on an assembly line, or the scene near a hazardous materials spill enables remote government experts to make more informed decisions. In education, Cisco Cius tablets can be used to bring outside experts into the classroom, and for professional development without the time and cost of travel.

High-definition video provides important advantages for a mobile workforce. For example, in meetings, being able to see a skeptical look or someone getting ready to speakcan make the meeting more productive. In healthcare environments, high-definition video supports remote diagnoses.

Figure 1 Mobile Workers Can Join TelePresence Sessions from Anywhere with Cisco Cius Tablets

Medianet, for an Optimized Collaboration Experience

To offer high-definition video over the network, organizations need the technology to optimize available bandwidth, adhere to service-level agreements for video quality, and troubleshoot efficiently. Traditional IP networks lack the intelligence to give priority to video traffic, leading to poor or inconsistent video quality that can hinder adoption.

Creating an excellent video experience for mobile workers requires a strategic approach to the network architecture. That is, public sector organizations can adapt the existing IP network to become a medianet. A medianet is a network optimized to deliver an excellent video experience without affecting the performance of other applications. A medianet also has the intelligence to simplify provisioning and performance monitoring, reducing the total cost of ownership for mobile collaboration programs.

Many networks already support one medianet capability– the quality of service (QoS) that gives priority to video traffic and controls the quality of the experience as measured by packet loss, latency, and jitter (variability of latency). Cisco medianet technology augments QoS with new capabilities for quality of experience and lower operational costs. These capabilities include:

- *Autoprovisioning:* IT teams do not need to spend time configuring tablets, desktop telepresence units, and other video endpoints. Instead, when a mobile worker connects to the medianet with a new device, the medianet configures it automatically and applies the appropriate QoS and security policies.
- *Media monitoring:* Easy-to-use tools help network operators monitor video performance, both overall and for individual telepresence sessions. Validating network performance and configuration before adding new applications or users helps IT teams continue to deliver a consistent quality of experience as the mobile workforce grows.
- *Media Services Interface (MSI):* An API for Cisco endpoints, MSI provides visibility into individual video calls, enabling IT teams to improve the quality of the user experience, simplify management, and more quickly resolve performance issues. For example, Cisco WebEx uses the MSI to monitor bandwidth consumption of video traffic, which previously could not be distinguished from any other web traffic.

Why Cisco for Mobile Collaboration in Government?

End-to-End Solution

Cisco provides end-to-end solutions for mobile collaboration: the underlying medianet, Cisco Unified Computing System as the cloud platform for virtual desktops, video and collaboration applications, and video endpoints ranging from the Cisco Cius tablet to immersive Cisco TelePresence systems. An integrated platform helps IT teams consistently deliver a high-quality user experience, encouraging adoption.

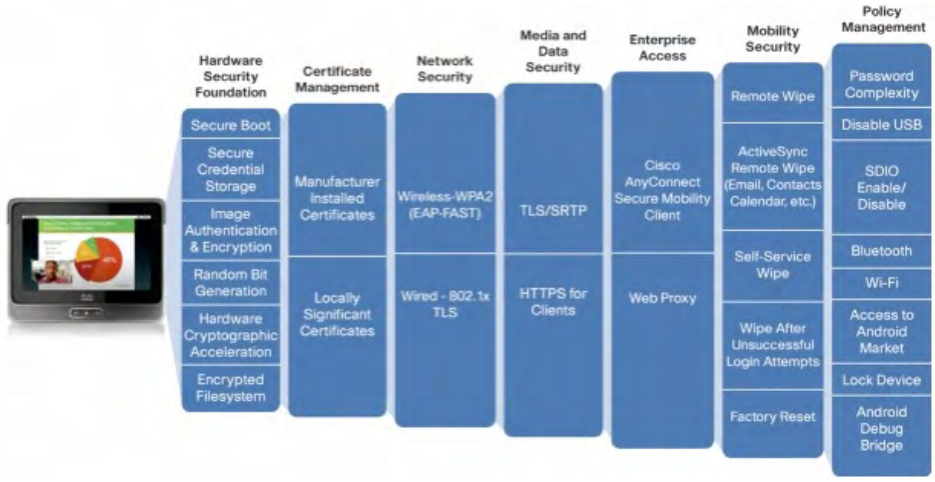
Cisco mobile collaboration solutions also meet stringent government requirements for security, interoperability, low total cost of ownership (TCO), and a consistent user experience.

Enterprise-Class Security

Every hardware and software element of Cisco mobility solutions has security built in. Hackers and insiders cannot turn off or remove security, either deliberately or unintentionally. Examples include:

- The underlying Cisco medianet recognizes voice and video traffic, isolating it on its own VLAN.
- All endpoints—Cisco TelePresence solutions, Cisco Cius tablets, and Cisco Unified IP Phones— encrypt voice and video, using trusted, open standards.
- Endpoints authenticate to the network, preventing someone from connecting an unauthorized IP phone or wireless access point.
- Cisco TelePresence Video Communication Server (VCS) provides secure firewall traversal for standards-based video traffic. This enables public sector organizations to offer video collaboration services for mobile workers without opening a firewall port or otherwise altering security policy.
- The Cisco Cius tablet also represents a breakthrough in secure mobile collaboration. Unlike commercial tablets, the Cisco Cius tablet provides the security required for use in civilian and Department of Defense agency missions ranging from citizen interactions to bank inspection and intelligence (Figure 2). All data on the tablets is encrypted, in motion and at rest.
- Government IT teams control whether the built-in camera is operational, and can lock USB ports to prevent copying of data. Employees cannot add software to the tablet, reducing the risk from malware that could threaten the agency network or data. What's more, multiple people can share the same tablet without seeing each other's data. This helps agencies minimize capital costs by providing a shared pool of tablets that mobile workers can check out.

Figure 2 Cisco Cius Tablets Provide the End-to-End Security Needed in Government



Interoperability with Other Standards-Based Endpoints

Cisco provides a range of endpoints to support different job roles and ways of working. Highly mobile workers can carry Cius tablets. Employees who work in branches or temporary outposts can transform their Windows or Mac laptops or desktops into telepresence systems using Cisco TelePresence Movi software. Teleworkers and branch office workers needing an immersive experience, with life-size, ultra-high-quality video and audio, can use personal Cisco TelePresence 500 Systems.

The public sector can also continue to use existing video endpoints, extending investment life, because Cisco mobile collaboration applications work with Windows and Mac OS, as well as iPhone, Android, and BlackBerry smartphones and tablets. These applications include Cisco Show and Share for video sharing, Cisco Jabber for enterprise presence or instant messaging, and Cisco Quad for secure online communities.

Low Total Cost of Ownership

TCO provides a more accurate picture of costs than capital expense alone. Labor, for example, constitutes 50 percent of TCO for networks, according to McKinsey in a 2011 study. Factors contributing to low TCO for Cisco mobile collaboration solutions include:

- Cisco Medianet auto provisioning, management. and troubleshooting tools.
- Interoperability with all standards-based video endpoints, extending the life of existing investments
- Built-in security, helping to avoid costs of downtime and repairing damage.
- Single call-control system. All Cisco collaboration applications, including voice, Cisco TelePresence, and Jabber instant messaging use Cisco Unified Communications Manager for call control. A single call control system costs less to purchase, manage and maintain than multiple call control systems.
- World-class services offer government agencies dynamic, new communications experiences.

Leverage these services to help provide a dynamic collaboration experience:

- The innovative Cisco Cius tablet together with services, offer dynamic, new communications experiences. Word class service expertise providing worry-free hardware and ease of deployment, enhanced plan and design services, and a Mobility Readiness Assessment to successfully extend rich voice, video, and data communications across diverse mobile applications, devices, and networks.

Conclusion

Work is no longer a place, but what you do. Mobile government personnel can work as productively as their peers at headquarters when they have equal access to information and people. Collaboration is now about technology adapting to provide a user experience that is consistent, seamless and transparent to the end user, such that users are always able to access the services and functionality they need, regardless of where they are or what device they're using.

Optimizing the productivity of a growing mobile workforce requires a strategic approach. The first step for most public sector organizations is transforming the underlying IP network into a network capable of delivering a consistent quality of experience while minimizing management burden.

With the medianet in place, the public sector can empower mobile workers by introducing virtual desktops and mobile video. Able to connect with information and people as easily as their peers at headquarters, mobile workers are empowered to work productively from anywhere, over a borderless network.

For More Information

To learn more about Cisco collaboration solutions for a mobile workforce, visit: www.cisco.com/go/mobilecollabgov.

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