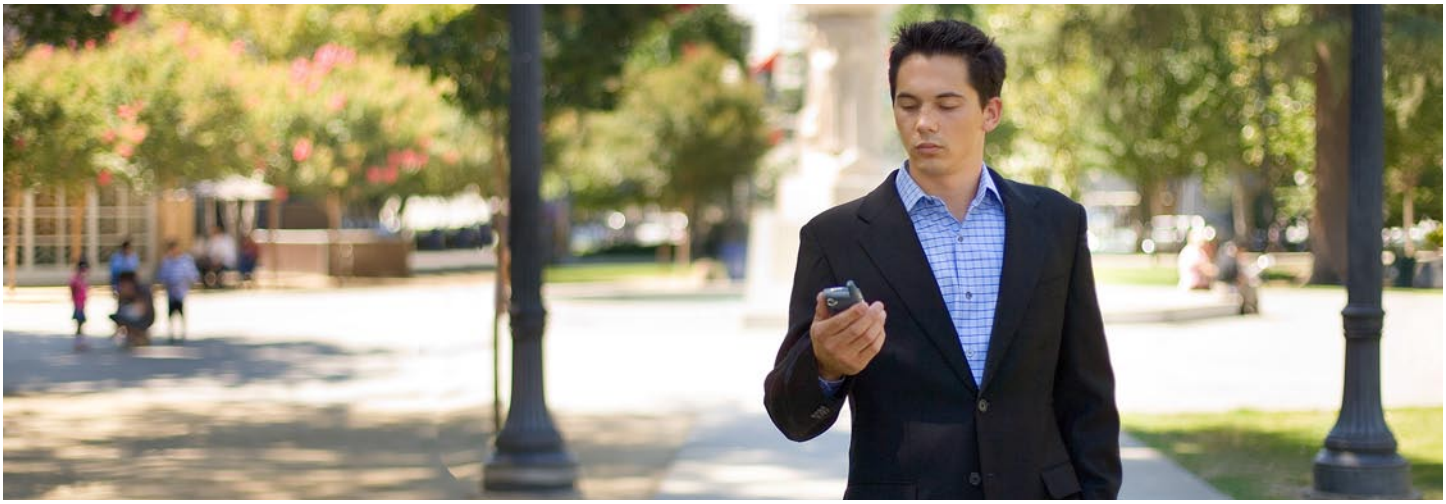

Connecting Communitites with Cisco Unified Communication

Cisco Unified Communications solutions create a human network by connecting employees and citizens to each other and to government services.

Accustomed to 24-hour online and automated voice services from private-sector institutions such as financial institutions and retailers, citizens and local businesses have come to expect the same from their government. Now governments around the world are enhancing service effectiveness by combining voice, video, and data in innovative ways, a technique known as unified communications. Benefits to the community include:

- Enhanced public safety: First responders are more effective when they can communicate and access critical information from anywhere, at any time, and under any circumstances. Important new capabilities include comprehensive communications interoperability, increased situational awareness based on live video from the incident scene, and rapidly deployable communications for emergencies and major events.
- Improved service effectiveness: Citizen satisfaction increases when government services are easier to obtain. Examples include reaching the right person on the first call, receiving a medical consultation with a specialist from a clinic near home, and reserving a public meeting room through an automated voice response system. Service also improves when employees are given tools that help them be more productive and respond more quickly to inquiries, such as the ability to check voicemail, email, and faxes from a single inbox.
- Citizen empowerment and social inclusion: Connected communities enable citizens and businesses to obtain the government information and services they need at any time, even after normal business hours, using self-service voice applications and Web portals. Unified communications also helps government do a better job of including citizens who are disabled, lack transportation, or live far away from government offices.
- Economic development: Employers are attracted to communities that make it easy to do business, are safe, and provide the education and training to cultivate a skilled workforce.

State and local governments around the world are meeting their constituents' heightened service expectations with Cisco® Unified Communications solutions.

Boulder County, Colorado

Challenge: Boulder County, Colorado, has a population of 280,000. Effective, efficient communication among personnel in the field and in offices is essential for all county departments, and especially for the Sheriff's Office, whose staff of 400 is responsible for all search and rescue missions. To improve service effectiveness and public safety, Boulder County executives wanted to extend the reach of the radio network to phones and other devices. The county also wanted to ensure communications interoperability with surrounding counties and Colorado state agencies, which use different types of radio systems.

Solution: Cisco IPICS enables Boulder County to set up virtual talk groups that preauthorized participants can join using a VHF radio system, any other radio system, cell phone, IP phone, traditional phone, or PC with Cisco PTT Management Center Client software. The county's SWAT teams have used Cisco IPICS to facilitate negotiations with suspects. They patch the suspect's phone or cell phone into an operational or tactical radio channel, and the negotiator joins in using either a radio or cell phone.

Benefits: Field personnel now have increased situational awareness. When radio coverage is not available, SWAT teams and bomb squads can communicate using traditional phones, cell phones, and IP devices. Productivity has improved because personnel in the justice department and dispatch center can now join radio channels from anywhere in the building instead of the few areas with radio reception.

A Range of Solutions for Any Size Community

Cisco Unified Communications solutions are as versatile as the communities and agencies that use them:

- Phone systems, unified messaging, and collaboration: Governments around the world are replacing their traditional PBX systems and Centrex services with IP telephony. One motivation is to reduce costs by administering one voice-and-data network rather than separate networks for each. Another is to enhance service effectiveness for citizens and businesses in the ways described in this brochure.
- Advanced call processing and contact centers: When voice travels over the IP network, citizens' calls to individuals, departments, or government-wide contact centers can be intelligently routed to the person with the right skills to satisfy the request.
- Video collaboration and surveillance: With Cisco Unified Communications, video travels over the same network as voice and data. Videoconferencing improves utilization of scarce resources such as translators and counselors, and also facilitates collaboration among employees. Video surveillance, in turn, enhances public safety by deterring crime and increasing situational awareness for first responders.
- Mobile voice and interoperability: Public safety personnel and other mobile employees provide better service to citizens when they can access the same information from the field that they could from the office. Comprehensive communications interoperability facilitates interagency collaboration for emergencies and major events.

Read ahead to find out how connected communities around the world are using these Cisco Unified Communications technologies to meet their goals for public safety, service effectiveness, citizen empowerment and social inclusion, and economic development.

Enhance Public Safety

First responders are more effective when they can communicate and access critical information from anywhere, at any time, and under any circumstances.

Surveillance Video

The ability to see real-time video improves safety for citizens and public safety personnel by increasing their situational awareness. When police officers in the City of Everett, Washington are dispatched to a crime scene, for example, they can plan an effective response by viewing live video from strategically placed surveillance cameras while in their vehicles, which are equipped with Cisco mobile access routers. The Humberside Police Department in the United Kingdom transmits video of major incidents from its helicopters to the departmental intranet for viewing from a Web browser. Agencies can also integrate their cameras with IP-based video analytics and alarms systems—for example, to send an alarm if motion is detected on a video feed from an area where people are not allowed.

Comprehensive Communications Interoperability

The lack of interoperability among different public safety agencies' radio systems hinders interagency collaboration and emergency response by public safety agencies. With Cisco IP Interoperability and Collaboration System (IPICS), agencies can achieve comprehensive communications interoperability using their existing radios and other communications devices. Authorized personnel can join the same radio channel using any push-to-talk (PTT) radio system as well as mobile phones, IP phones, public switched telephone network (PSTN) phones, and PC clients. Based on proven IP standards, Cisco IPICS takes advantage of ubiquitous IP networks to extend the reach of traditional networks and also to provide notification using e-mail, pager notification, and Short Message Service.

Rapidly Deployable Communications

Public safety agencies need the ability to immediately reconstitute communications if the network is unavailable, or to establish communications if there is no infrastructure. With Cisco rapidly deployable communications solutions, a first responder can simply flip a switch to connect to the IP network by satellite. The solution creates an instant network that personnel in the vicinity can use to send and receive voice, video, and data, using wired or wireless devices. The iComm kit is designed for agency-level support, and the suitcase-sized Tactical Communications Kit, from Cisco and its partner CACI, is designed for small groups—both can withstand. Both can withstand harsh conditions.

Multimedia Public Safety Answering Points (PSAPs)

When PSAPs take inbound calls over the government's IP network instead of the PSTN, they can accept video and text messages in addition to voice. They can also quickly transfer nonemergency calls rather than delaying response to emergency calls while they ask callers to hang up and call back.

Video-based Training

Public safety agencies that deliver video-based training over their networks can provide more frequent training, and also reduce the time that personnel spend traveling or in classes. The fire department of Arlington County, Virginia, uses a Cisco video solution to broadcast a weekly training video directly to each fire station, ensuring consistent training.

Improve Service Effectiveness to Citizens and Businesses

Citizen satisfaction increases when government services are easier to obtain. Connected communities help citizens resolve their issues with a single phone call.

Easier Access to Government Services

In many cities, citizens who reach the wrong department must wait while the employee looks up the appropriate number in a paper directory, which might be out of date. The caller might even have to hang up and call back. With Cisco Unified Communications solutions, employees can easily transfer calls by selecting an employee's name from an up-to-date online directory on their Cisco Unified IP Phones.

Easier Access to Mobile Personnel

Caseworkers, inspectors, agency executives, and other mobile personnel typically have separate numbers for their office and cell phones, making them difficult to reach. In addition, they have to check two separate voicemail boxes throughout the day, which can delay response to citizens' calls. Dual-mode phones from Cisco partners replace separate office and cellular phones, connecting over the IP wireless network when in range and over a cellular network otherwise. Mobile employees' presence information, which appears on Cisco Unified Communicator, remains accurate even when they are in the field. Citizens and coworkers can more easily reach mobile personnel, and the government frees up funds for citizen services because it no longer pays per-minute charges for cell phone calls placed or received within the building.

A Single Phone Number for all Government Services

Governments can use Cisco Unified Contact Center to provide a single phone number—either 3-1-1 or a seven-digit phone number—that serves as a portal to all departments. Citizens and businesses can indicate their service need by speaking to an operator, entering a number on their keypad, or using interactive voice response (IVR).

Efficient Contact Centers

Cisco Unified Contact Center routes calls to agents with the skills to meet the citizen's need, improving service effectiveness and reducing call-handling time. In the United Kingdom, Derwent Living, a not-for-profit organization that works with local governments to provide affordable housing for their citizens, uses a Cisco Unified Communications solution to route calls from students to advisers with expertise in student housing. Kane County, Illinois, places callers to the Circuit Clerk of Courts in a queue for the call topic—civil matters, traffic violations, or child support—and routes them to the next available operator. County citizens can use IVR to obtain automated information on child support payments and upcoming court dates, without human assistance. The City of Hamm, Germany used Cisco Unified Contact Center as the basis of an automated notification service to alert maintenance staff about floods or fire.

Spontaneous Conferencing

Meeting a citizen's needs often requires coordinating multiple services from different departments. A parent transitioning out of a welfare program who learns of an abusive situation at the daycare center, for example, may need to contact the Labor agency to get permission for a short absence, the Child Welfare agency to report the abuse, the Daycare agency to find a new provider, and the Transportation agency for bus schedules to get to the new provider. With Cisco Unified Communications solutions, employees can easily initiate a spontaneous conference with all parties by dragging the names of available employees into a collaboration window on their computer screen.

Telemedicine

By sending video over the network, governments can extend medical services to citizens who live far from medical facilities or specialists. The Isle of Man uses a Cisco Unified Videoconferencing system for virtual consultations between hospital patients and specialists in the United Kingdom as well as for sending digital X-rays. Similarly, citizens of the Navajo Nation can visit a local government office to meet with a registered nurse, who uses the Cisco system to establish a videoconference with an appropriate specialist at one of more than 40 hospitals. The doctor and patient can converse while the doctor asks the nurse to direct the video camera as needed.

Telejustice

At the Bernalillo Metropolitan Court in New Mexico, intake officers use a Cisco network to conduct video arraignments while inmates remain in the facility. Remote interviews and arraignments accelerate the justice process, free up staff for other tasks, and reduce the need for inmate transport vehicles and extra security. Similarly, lawyers in the Isle of Man, in the British Commonwealth, use a Cisco Unified Videoconferencing system to meet with their clients in prison, helping them serve more clients, more effectively.

Increase Productivity

The less time that employees spend retrieving their messages and trying to reach their colleagues, the more time they have to provide excellent service to citizens and businesses.

Unified Messaging

Some government agencies still lack voicemail. Others have separate inboxes for voicemail, e-mail, and faxes, which can delay their awareness of urgent messages. With Cisco Unified Messaging, personnel can access all types of messages from one interface: either their PC or voicemail inbox. Responsiveness improves further when employees can access all tools for communication and collaboration—voice, video, instant messaging, Web conferencing, voicemail, and presence information—from a single screen.

City of Thornton, Colorado

Challenge: The City of Thornton, Colorado, is home to 117,000 residents, served by 1000 employees in 17 locations. The city previously relied on nine separate PBX phone systems, and IT staff spent hours each week moving, adding, or changing extensions.

Solution: For less than the cost of new PBXs, the city rebuilt its data network and also purchased the servers and Cisco Unified IP Phones needed to adopt voice over IP. The fire department uses Berbee InformaCast, a third-party product, to send audio messages through the built-in speaker of selected employees' Cisco Unified IP Phones, eliminating the disruption of overhead paging throughout the building.

Benefits: City employees can respond quickly to callers with Cisco Unified Communications features such as four-digit dialing and transferring, call parking, and voicemail retrieval from any office. Departments with high call volumes—utility billing, recreation registration, building-code compliance, and help desk—can better manage their call queues, and provide faster service, with Cisco Unified Contact Center Express. In addition, the city freed up money to invest in the local economy because it now purchases equipment for just one network rather than separate voice and data networks.

Figure 1: Reach the Right Person, the First Time

Enhanced Mobility

Traditionally, mobile personnel using cell phones have had to forgo many services available from their office phones, such as office voicemail and presence information. With Cisco Unified Mobile Communicator, field employees remain fully accessible to citizens and coworkers. They can use their phones to access the online directory, view colleagues' presence information to see if they are available, review and selectively play back and forward office voicemail messages, and receive Cisco Unified MeetingPlace notifications. Government employees who need the flexibility to work from any desk become more productive with the extension mobility feature of Cisco Unified Communications, which enables them to log into any Cisco Unified IP Phone to personalize it with their own phone number, speed-dial numbers, and other preferences.

Workplace Transformation

Many government agencies provide permanent desks to mobile employees who rarely work in the office. Cisco Unified Communications solutions enable desk sharing, which reduces real estate costs and is environmentally responsible. Mobile employees can work at any available desk, making and receiving phone calls either by logging into a Cisco Unified IP Phone or using Cisco Unified Personal Communicator software on a PC.

Convenient Information Collection and Dissemination

Because Cisco Unified IP Phones connect to the IP network, they can also be used to collect information such as time and attendance and distribute information such as alerts. Employees in the Arizona Department of Commerce use their Cisco Unified IP Phones to look up each other's travel itineraries, which improves service to businesses that want to know when an agency representative will be in their area. The Town of Herndon, Virginia, sends Amber alerts about missing children, including their color photos, to the screens of employees' Cisco Unified IP Phones, thereby increasing the number of people watching for the children.

Texas Health and Human Services Commission 2-1-1 Service

Challenge: The Texas Health and Human Services Commission wanted to help the state's 21 million citizens locate critical social services, such as financial assistance, food, shelter, childcare, jobs, or mental health support. The 25 Area Information Centers (AICs) had separate phone systems, making it difficult to share agents and resources.

Solution: The commission consolidated the AICs into a single virtual 2-1-1 contact center using Cisco Unified Contact Center Express, which intelligently routes calls to agents with the appropriate skills. For example, if the Amarillo center receives a call from someone who speaks Mandarin Chinese, the agent can quickly conference in the Mandarin-speaking agent at the Houston center. Similarly, when the closest AIC is closed, its calls are automatically routed to a 24-hour center.

Benefits: Now the commission provides convenient access to services for all citizens, 24 hours a day. Toll costs are US$400,000 lower than they would be with a traditional contact-center system. In addition, the 2-1-1 center has become an authorized site for disseminating information, a vital requirement for homeland security. Agents can quickly access information about more than 200,000 health and human services from integrated databases, including scripts for accurately handling different types of calls.

Empower Citizens and Increase Social Inclusion

In connected communities, citizens and businesses can obtain the government information and services they need, at any time, using self-service voice applications and Web portals. Video solutions bring government resources to all citizens, including those who are disabled, lack transportation, or live far away from government offices.

Citizen Self Service

Citizens and businesses can check their application status or pay fees and fines by phone, without any involvement from an employee, when agencies integrate their Cisco Unified Communications system with their databases and applications.

Multimedia Nonemergency Contact Centers

Enabling citizens to report problems such as potholes and abandoned vehicles by phone, e-mail, or Web increases citizen satisfaction. When the London Borough of Hillingdon introduced a multimedia contact center based on Cisco Unified Contact Center, satisfaction with the service increased from 30 percent to 90 percent in the first year.

Distance Learning

Citizens who live far away from government offices or find it difficult to obtain daycare and transportation can receive video-based job or skills training over the network. Citizens without PCs can use public PCs in nearby human services offices and libraries, and those without broadband connections can take advantage of free or low-cost wireless access made possible by Cisco municipal wireless solutions.

Greater Access to Scarce Human Resources

Citizens can meet with social workers, child psychologists, and other human resources in distant offices by using Cisco video telephony and Cisco TelePresence in nearby government offices. Citizens who live in rural areas can participate in videoconferences by using video kiosks in libraries or other public buildings. In the United Kingdom, deaf citizens who visit government facilities can access sign language interpreters, another scarce resource, using a Cisco Unified Videoconferencing system managed by SignVideo, which is part of Significan't, the nation's only video contact center for people who are deaf.

Stimulate Economic Development

Connected communities are attractive to potential employers. They make it easy to do business, are safe, and offer education and training to cultivate a skilled workforce.

Ease of Doing Business

Employers prefer business-friendly communities. With Cisco IVR solutions and online Web portals, governments can provide 24-hour, secure services for tax payments as well as license and permit filing and status.

Workforce skills development

Citizens can receive video-based training for high-demand skills over the network, either from home or using public PCs. Ft. Bragg Union School District, in Mendocino, California, enhances educational excellence—another draw for employers—by delivering interactive and video-based instruction in the classroom. The state-of-the-art network also helps the district attract and retain qualified teachers, traditionally a challenge in rural districts.

City of Istanbul, Turkey Police Department

Challenge: The City of Istanbul, Turkey fosters economic development by making itself attractive to businesses and as a venue for cultural and sports events. Public safety is an important strategy—both for its own sake and for economic growth.

Solution: Istanbul deployed a Cisco foundation network that connects 950 neighborhood authority offices as well as 117 fixed and mobile police stations. Seven hundred surveillance cameras transmit video for central monitoring, including analysis by license-plate recognition and police-vehicle tracking applications. When citizens call the police department, which uses Cisco Unified Contact Center, dispatchers can also view live video images from the incident scene.

Benefits: The city's crime rate decreased when the solution was deployed, demonstrating that video surveillance serves as an effective crime deterrent. Numerous stolen vehicles have been traced with the license-plate recognition system. When crimes do occur, police officers have greater situational awareness because they can view live video as they drive to the scene.

Parity for Rural Regions

Remote areas face unique economic challenges. The Province of Turin, Italy, is stimulating economic development in its remote regions by providing cost-effective, secure Internet access. This encourages private IT companies to expand their focus to areas outside the main cities, creating new jobs.

Enhanced Public Safety

Safe communities attract residents, employers, events organizers, and tourists, all of which contribute to a thriving economy. Public safety agencies can better protect and serve using Cisco solutions for comprehensive communications interoperability, rapidly deployable communications, and video surveillance.

The Network Foundation: Prerequisite for Unified Communications

When government uses the same network for voice that it uses for data, the underlying network foundation must be reliable, adaptable, and secure. Cisco foundation networks provide reliable communications by protecting the network from outages, service degradation during peak traffic times, and security threats. Based on IP standards, Cisco networks can easily be adapted to support new voice, video, and data services. Finally, they are highly secure, protecting against unauthorized access, infection, or theft of information using Cisco Self-Defending Network technologies.

Conclusion

Cisco Unified Communications solutions help bridge the gap between needed services and available resources. They create the foundation for connected communities that satisfy citizen and business demands for public safety, service effectiveness, citizen empowerment and social inclusion, and thriving economies. Communities of all sizes can benefit from Cisco Unified Communications solutions that meet a wide range of needs, from enhanced collaboration and efficient contact centers to video surveillance and communications interoperability.

For More Information

To find out more, visit:

Cisco solutions for state and local government: http://www.cisco.com/go/localgov

Cisco Unified Communications: http://www.cisco.com/go/unifiedcommunications

Cisco IPICS: http://www.cisco.com/go/ipics

Cisco Rapidly Deployable Communications: http://www.cisco.com/go/rdc

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **www.cisco.com/go/offices.**