Smart+Connected Communities
Changing a City, a Country, the World
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What You Will Learn
As the world grows, leaders are working to improve infrastructure, create scalable systems, and devise processes for economic growth, social development, and environmental sustainability. The network infrastructure will be central in building new urban centers, managing existing communities, and delivering services to citizens. The Cisco® Smart+Connected Communities initiative unites information-sharing and collaboration tools, creating an Urban Services Platform to address the challenges from massive urbanization around the world. It pursues innovative solutions along seven tracks:

- Smart+Connected Real Estate
- Smart+Connected Utilities
- Smart+Connected Transportation
- Smart+Connected Safety & Security
- Smart+Connected Learning
- Smart+Connected Health
- Smart+Connected Government

Urbanization: A Global Trend and New Opportunity
The world is undergoing a major transition as for the first time in history, a majority of its people live in urban areas. Over the next five years, some 500 million people will be added to the world’s cities. By 2050, at least 100 new cities will be inhabited by more than a million residents. Developing the infrastructure of these new cities will require trillions of dollars. The environmental impact of this massive urbanization is significant. The need for all these cities to sustainably balance social, economic, and environmental resources is more critical than ever before.

Previous centuries saw industrial infrastructure such as rail, roads, and telephone lines paving the way for new cities and new connections. This century is about urbanization based on information and the network as the platform: Smart+Connected Communities. Today, urban infrastructures including homes, offices, cars, public transport, hospitals, schools, energy, and appliances are all getting connected to the Internet. The Internet has expanded into an “Internet of Things” beyond traditional computers and mobile devices.

Cities that are built or expanded with the network as the urban services platform will reap significant benefits that include:

- Improved city management
- Continuous economic growth
- Enhanced quality of life for citizens
- Sustainable urbanization
What Are Cisco Smart+Connected Communities?

A couple of decades ago, the development and expansion of the Internet were hampered by disparate networks unable to interoperate with one another. Cisco's multiprotocol router solved this problem by “translating” across networks, paving the way for the development of today's all-encompassing Internet.

Urbanization poses a similar challenge. Today hundreds of different systems and protocols across an urban center are not interoperable. When these systems are converged onto a single open-systems based network, significant opportunities for productivity, growth, and innovation can be unleashed.

The Cisco Smart+Connected Communities initiative brings together a large set of partnerships, products, services, and solutions to address this significant emerging opportunity using the network as the platform. It changes the way cities, towns, and villages are designed, built, managed, and renewed to achieve economic, social, and environmental sustainability.

Smart+Connected Communities services and solutions will be delivered on an Urban Services Platform that will serve all the converged tracks. Mobility is a key component for all the different services to be provided to citizens and for scaling the city infrastructure itself. This will ensure that whether you are on a wired or wireless network, services are delivered seamlessly.

Smart+Connected Real Estate

Cisco Smart+Connected Real Estate solutions enable effective management of a building's resources for increased operating efficiency. They make a building responsive to its users' needs and enable it to adjust quickly to changing requirements, both internal and external. Cisco Connected Workplace and Cisco Smart+Connected Real Estate solutions make new and existing buildings:

- More effective, efficient, and productive work places
- More economical to operate
- Easier to manage with centralized functions
- Environmentally sustainable

Cisco Smart+Connected Real Estate solutions include these solutions:

Radio frequency identification (RFID) and Cisco Digital Signage technology: Cisco RFID solutions deliver the benefits of location-based identification, tracking, and personalization. Employees and visitors can receive targeted, customized content on strategically placed Cisco Digital Signage inside the building. Asset management and tracking is enabled throughout a building, enhancing safety and security. These features also improve utilization of space and technology infrastructure.

Cisco Personal Virtual Office: Most buildings have actual usage levels of 30 to 50 percent. The Cisco Personal Virtual Office solution increases occupancy rate of commercial buildings. The efficiency comes from enabling spaces to be allocated as needed while increasing personalization. The solution allows users to adjust their office environment, set up network services, personalize desktop display, and much more using their IP phone.

Green Aware: This solution gathers, analyzes, and displays real-time energy usage and resource consumption data in a building. By showing power consumption, carbon dioxide emissions, water usage, and other information on Cisco Digital Signage, it helps people to become environmentally aware and ready to contribute to the sustainability of their surroundings.
Cisco Business Center: This solution can transform any real estate into a virtual office environment. The solution gives a complete office experience including cubicle-style work environments, office rooms, meeting rooms, boardrooms, and a Cisco TelePresence room, supported by an operator. Time is precious for the new generation workforce, and this solution helps them break from the being tied to an office location. Now work can happen anywhere, seamlessly.

Cisco Mall Media: This solution enables mall operators to deploy a highly secure Smart+Connected Media Distribution Network right at the mall or at a central location serving multiple sites. Its robust middleware and user-friendly interface enable easy creation, distribution, management, and tracking of digital content.

Smart+Connected Utilities
Cisco Smart+Connected Utilities solutions use the intelligent IP-based network platform to address energy, water, and gas management and consumption. By enabling the delivery of utility management services over a converged IP architecture, Cisco Smart+Connected Utilities solutions:

- Make more utilities available for more people
- Lower energy costs
- Raise operational and energy efficiencies
- Reduce carbon emissions

Cisco’s Smart+Connected Utilities solutions currently include:

Smart Grid Monitoring: Cisco’s solution provides two-way communication across the grid to enhance information management on electricity metering. The security architecture for energy systems enables host security, threat detection, and access and authorization systems that protect the network and provide physical monitoring.

Intelligent policies for managing energy consumption: Building managers can plan and manage energy consumption based on real-time information and policy configurations. They can zoom in and display energy maps of any building floor, interact with building management systems (such as HVAC, elevators, IP phones, and lighting), view location-based energy consumption on that floor, and identify ways to save energy. Multiple policies can manage energy consumption in different scenarios, for instance specifying that lighting, IP phones, and wireless access points only power on when an employee is physically detected in a specified part of the building.

Intelligent, automated control of energy consumption: This solution integrates central energy management systems with HVAC, sensors, lighting, elevators, security, and other building management systems across the existing IP network. Managers can set power consumption thresholds to impose demand-limiting measures. The solution can receive input from an infrastructure-enabled smart grid, then raise or lower limits and thresholds based on real-time energy production and consumption data of a whole city or urban area. This demand-pruning scenario allows Smart+Connected Real Estate to participate in larger-scale Smart+Connected Utilities management for the benefit of the city.
Smart+Connected Transportation

Cisco Smart+Connected Transportation solutions make use of an IP enabled Urban Services Platform to comprehensively manage traffic flows and integrate multiple modes of transportation. Smart+Connected Transportation integrates workplaces, residential buildings, travel service providers, airlines, and hotels onto a single platform promoting a seamless transportation experience to increase sustainability and productivity. A variety of wireless technologies such as Wi-Fi Mesh, WiMAX, satellite, and 3G/4G can enable connectivity on any mode of transport. These solutions enable communities to:

- Increase productivity during commutes
- Improve sustainability and reduce environmental impact
- Optimize city transportation and logistics
- Deliver key citizen services anytime, anywhere

Cisco Smart+Connected Transportation solutions have a number of integrated applications including:

**Mobile command centers:** Cisco Mobile Security Center includes IP-based video surveillance cameras, electronic access control, and technology to bring voice, video, and data to mobile platforms. The ability to quickly set up a command center and receive real-time information en route to a disaster zone reduces response times and enables better-informed decision making.

**Mobile productivity:** Cisco Mobile Education provides a dynamic and interactive learning environment to students in remote locations using a Cisco WebEx™ hosted online training solution integrated with a bus or a van. Mobile Concierge and Information Kiosk can be used for applications that allow commuters to book tickets or research routes and services on an interactive touch screen.

Smart+Connected Safety & Security

Cisco Smart+Connected Safety & Security solutions enhance the capabilities of emergency and security personnel with prevention, automated detection, analysis, and coordinated response to incidents. Cisco Smart+Connected Safety & Security solutions lead to:

- Automatic and unobtrusive detection and prevention
- Informed assessment and coordinated response
- Reduced human error and time lag
- Increased effectiveness of response

These solutions include:

**Smart+Connected Urban Surveillance solution:** The Smart+Connected Urban Surveillance solution is a systems-based approach to automatically detect and respond to any situation, to deliver the right information to the right person in the right format, at the right time. It integrates multiple sensors, video feeds, analytics, emergency call systems, and command and control, providing a platform for communications and collaboration to effectively manage safety and security situations.

**Citizens to Authority Interaction:** This is an emergency call management system (911 type of system) that integrates to the command and control system of the Smart+Connected Urban Surveillance solution. It also includes a web portal and digital signage for communication with citizens and within the law enforcement and emergency medical departments.
Empowered Mobile Workforce: This solution empowers mobile emergency response personnel (from police to firefighters) wherever they are and makes them as effective on the street as they would be in the office.

Emergency Grade Network: This Cisco solution creates a robust, highly available, and highly secure network infrastructure for safety and security.

Smart+Connected Learning
At Cisco, we’re helping schools, colleges, and universities create a connected way of living and learning. Cisco solutions help educational institutions build an on-demand learning environment that:

- Removes barriers to communications
- Facilitates real-time interactions
- Expands access to resources and information

Cisco Smart+Connected Learning solutions include:

Cisco Connected Learning Center: This solution enables a city to provide students with a 21st century learning environment and help them develop skills needed for tomorrow’s jobs.

Smart+Connected Health
Cisco Smart+Connected Health solutions can achieve a collaborative, responsive, and highly secure communications system where information can flow directly to the point of care. Connected Health, supported by the Cisco Medical Grade Network, helps communities:

- Respond to patients more efficiently
- Expand preventive healthcare initiatives
- Boost the overall health of communities

Cisco Smart+Connected Heath solutions include:

Cisco HealthPresence™: This telemedicine solution, delivered on a Cisco Medical Grade Network, extends the reach and availability of health services for citizens. It creates a realistic experience for clinicians and patients bringing physical and diagnostic information from medical devices to bring the patient as close as possible to a physical visit to the doctor.

Smart+Connected Government
Smart+Connected Government solutions embed IT infrastructure and connectivity into the governance mechanisms of a city’s administration. Cisco solutions give government agencies the ability to be more connected, contain costs, and better serve the needs of an on-demand culture by:

- Increasing the effectiveness of public safety, justice, and corrections agencies
- Helping the government workforce increase productivity and better serve constituents
- Improving citizen experience and quality of life

The Cisco Smart+Connected Government solution portfolio includes:

Cisco TelePresence™: This solution delivers life-size, immersive face-to-face experiences over the Internet. Other citizen-facing technologies like Cisco Unified Communications and Cisco WebEx™ provide collaboration between citizens and city officials.
Egovernance embeds IT infrastructure and connectivity into the governance mechanisms of a city administration and the elected body of officials, creating operating efficiencies, much needed for sustainable urban development.

With its foundation in Smart+Connected Communities, Cisco is supporting a growing industry and business “ecosystem.” Coming developments will include academic programs focused on Smart+Connected Communities, global partnerships, and many innovative products, solutions, and services built and delivered around the globe.

Why Cisco?
Cisco is well positioned to help cities bring sustainability, economic development, and a better quality of life for their citizens. Cisco’s products, solutions, services, and a wide network of partners building upon the Urban Services Platform can support the entire lifecycle of building an urbanized center from planning to execution. The solutions across different tracks such as real estate, utility distribution and management, transportation, safety and security, education, health, and government help ensure that the needs of urban and rural citizens as well as the infrastructure are addressed. Cisco’s proven experience of working with governments and industries is demonstrated in the maturity of our solutions and services.

For More Information
To learn more about Cisco Smart+Connected Communities, contact your Cisco representative or visit:

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.