# Cisco Develops Smart City Blueprint

## Cisco campus-as-a-city provides integrated, intelligent office experience to employees in Bangalore

**EXECUTIVE SUMMARY**

- CUSTOMER NAME: Cisco Systems
- INDUSTRY: Networking
- LOCATION: Bangalore, India

**BACKGROUND**

- Create the Cisco Smart City as a blueprint for the future of smart cities in India
- Showcase how IoE is transforming the way cities, companies and citizens create and deliver innovation, energy, healthcare, education and transportation
- Provide a collaborative office experience to employees
- Develop a scalable, sustainable solution that could be replicated at other Cisco campuses globally

**NETWORK SOLUTION**

- Cisco Smart+Connected solution which includes next-generation network technologies for energy management, collaborative workspaces, indoor navigation applications and sign-based information

**BUSINESS RESULTS**

- The Cisco Smart City features networked smart parking, connected cafes, recreation and relaxation rooms, a rooftop solar power system and indoor "neighborhoods" designed for employees to quickly meet (in person or virtually), collaborate, innovate and deliver wherever they are located.
- The Cisco Smart City, with LEED® Platinum Certified buildings, uses intelligent networks as the foundation for managed city and business services and incorporates all manner of mobility, security, cloud computing, virtualization, collaboration, video and other evolving technologies.
- The Cisco Smart City allows employees, customers and partners to experience what's possible when you realize the true potential of the Internet of Everything and connect people, processes, data and things.

## Background

In line with its commitment to collaborate with the government's vision of a Digital India, Cisco announced the 'Cisco Smart City' as a blueprint for the future of smart and connected cities in India. Set in the company's next generation campus in Bangalore, the Cisco Smart City, uses the Internet of Everything, (IoE) to showcase how connected education, connected healthcare, smart buildings, connected transport and smart parking can transform the way cities and communities are designed, built and renewed to ensure economic, social and environmental sustainability.

Spread over two million square feet, and designed as a campus-as-a-city for Cisco employees to work, play and learn, the Cisco Smart City is a spectacular showcase of how a pervasive physical network infrastructure can easily connect to devices (such as sensors, information access points and mobile devices) with a high degree of security. The Cisco Smart City also demonstrates how intelligent networks could enable digitally empowered citizens avail government services in real time, online and via mobile platforms. The fully networked campus, enveloped by artfully designed buildings and collaborative work spaces is a demonstration of how 'connecting the unconnected' creates a more flexible and stimulating work environment, reduces the carbon footprint, lowers costs and provides more sustainable operations.

## Network Solution

Cisco along with its ecosystem of partners has implemented the Cisco Smart+Connected solution which includes next-generation network technologies for energy management, collaborative workspaces, indoor navigation applications and sign-based information. The IoE technologies showcased at the Cisco Smart City include the following:

• **Smart Parking** – The Smart parking system showcases how IoE technology can be used in a future city where sensors in the parking lot, help to monitor the number of vehicles parked and indicate empty space available for parking. Using a mobile phone app, users can check the space available. Users may also pre-book parking slots in malls, cinema multiplexes, etc. Cities can also maximize monetization of parking lots by setting differential pricing based on demand. IoE-based parking solutions that tie in road users, parking data and policies or city laws are estimated to help reduce 30% of the traffic rush caused by motorists who are looking for parking and help drive

revenues for city councils and private parking providers – a clear win-win!  Likewise the Connected Transportation solution showcased at the Cisco Smart City helps to remotely track vehicles carrying Cisco employees based on location, employee count, gender of employees, number of stops and time of arrival and departure. All of this makes travelling a lot safe.



•**Smart Buildings**: Smart buildings like the ones it the Cisco Smart City, are built and operated, monitored and controlled for reduced energy and water consumption, reduced carbon emissions, lower costs and a better work environment. Such Smart building solutions can help cities, companies and citizens reduce the estimated 40% of energy consumed by buildings worldwide.

•**Cisco Energy Management solution:** Within the Cisco Smart City, the Cisco Energy Management solution helps energy management by monitoring energy spend by each and every device, controlling energy consumption by using a policy based approach and managing entire energy management workflow by providing insights on Energy Consumed, Saved and Spent.  The Solution covers all devices and systems across IT, Office Space, Data Center and Building Systems.  This helps to determine energy consumption/savings on weekdays and measure the same against consumption/saving on weekends. Designed to monitor energy usage of every device connected to the network, this solution is estimated to help cut energy costs by 35%. This concept resonates well with Smart city whereby the solution can help to remotely turn on or off the street lights, Parking, Homes, Offices and workspaces.



•**Remote Expert Solution** –The Remote Expert solution is designed so that local, regional and central government administrations can offer high quality, efficient and cost effective citizen services through an immersive collaboration experience and from a more convenient location, close to the residence or workplace. Within a Smart City citizens can conveniently have face-to-face, cost-

effective access to government representatives and services from remote locations. The virtual pool of experts sitting in a centralized environment helps to maximize the effectiveness and reach of their knowledge base. Quick and easy access to expert government services increases citizen engagement and satisfaction. Cost reduction through real estate consolidation results from centralization of expert resources; reduce carbon footprint and enables better traffic flow management as citizens no longer need to travel long distances to government centers.

•**Connected Learning**: Education is fundamentally a collaborative, interactive endeavor. Cities, companies and educational institutions can use connected learning solutions to improve access to education beyond local resources by using network-based collaboration technologies to improve student outcomes, increase efficiency, enhance safety and security, and expand research capabilities. This solution is a showcase of the latest advancements in remote education and remote healthcare.
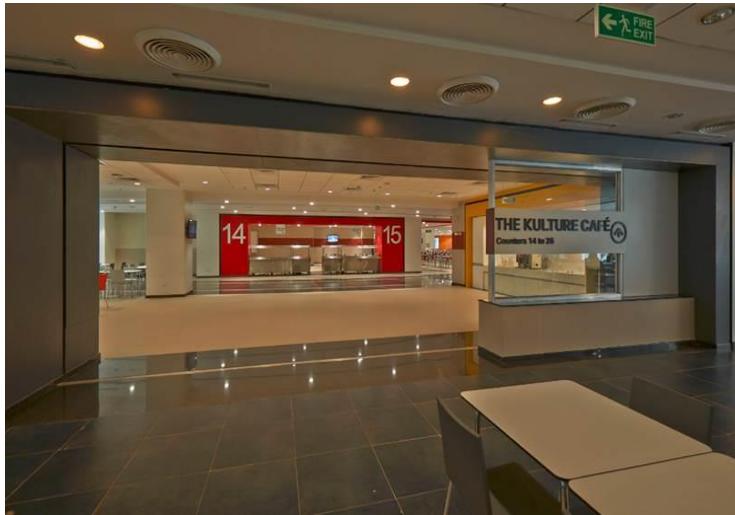
Colleges connected via this solution are able to conduct classes virtually for providing remote education to students across the globe. While it helps teachers connect with more students simultaneously for knowledge transfer, students have easy, convenient access to experts from across the globe. The same concept when applied to healthcare enables remote consultation whereby doctors connect with patients remotely and conduct detailed clinical examination and review all investigation using the internet.

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> **— Wim Elfrink, Cisco Executive Vice President for Industry Solutions and Chief Globalisation Officer**

•**Smart Work Spaces:** The Cisco Smart City has been designed taking into consideration the future of work – a future that is not just about connected devices, but also about when and where people work, and how companies can foster productivity and creativity in the workplace. Smart Meeting Spaces is a solution to enable employees to collaborate together anywhere, anytime instantly through collaboration and mobility tools. The Smart Personalized Spaces solution makes work spaces available for employees when and where they need it, on demand. According to a global industry study by Cisco, 66 percent of employees' desire work flexibility while 60 percent of employees believe they do not need to be in the office to be productive.

Smart Work Space solutions accommodate and attract a new generation of workers, facilitate creativity and collaboration, and enhance overall effectiveness and efficiency. Tools like Cisco Maps (navigation applications and sign-based information) make it easier for employees to locate meeting rooms and book them through their device of choice (Extension Mobility) because the user can get information pertaining to occupancy status of each room, by floor , time, as well as the devices available in the room like  a/c,  internet, signboards  etc.

Going a step further, cubicles inside the new buildings of the Cisco Smart City carry QR codes which the user can scan to log in and personalize the workspace. Security is also built-in to such borderless offices where privilege-

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— Dinesh Malkani, President and Country Manager, India and SAARC

based network access is provided to users based on their role and access specific content. Such tools can be used by the hotel industry for check-in and customize guest rooms. Likewise hospitals can use the tools to customize rooms for their patients.

High definition video solutions are enabling Cisco employees to collaborate through any device of choice from any location at any time. Tools like Cisco Jabber, Cisco AnyConnect provide employees the luxury of being able to connect to the corporate network irrespective of physical location even while on travel through the internet. Within a Smart City such collaboration solutions - integrated video sharing platforms - allow various government and private agencies to easily and quickly communicate, collaborate and share resources to enhance overall city-wide operations for public safety and transportation besides enabling situational awareness through real-time collaboration for improved decision making. This in turn helps improve services levels, resource

utilization, and response times.

• In addition to the above, other solutions like **CiscoServiceGrid** which is designed to automate and manage all Tech Operations in a Smart City leverages heavy on Technology solutions by integrating Multi-vendor management with Support process flow and SLA.

According to Wim Elfrink, Cisco Executive Vice President for Industry Solutions and Chief Globalisation Officer, "Cities are growing at the rate of 10,000 people per hour even as we accelerate toward a world with more connected devices. For every two people connected around the globe, there are 5 others who soon will be. And for every device connected to the internet, 10 more will join it in the near future. Through the Internet of Everything, we can help countries, cities and communities embrace sustainable urban development and enable economic, social and environmental sustainability. We believe that the Cisco Smart City in Bangalore can be a model for smart cities not just in India but around the world. For government leaders thinking about the delivery of citizen services or for companies thinking about how to be ready for the future of work, the Cisco Smart City presents a blueprint on how to be relevant.

Agreeing with him is Dinesh Malkani, President, Cisco India and SAARC who says, "We are very excited about the government's vision of a Digital India and the creation of smart cities. We want to collaborate with the government on its vision of digitally empowered citizens and believe that the Cisco Smart City is a great showcase of how the government can deliver governance and services to citizens digitally, build broadband highways, enable digital inclusion and deliver information for all. The foundation for a Digital India will be intelligent networks which will transform the delivery of citizen services from transportation, utilities and security to entertainment, education, and healthcare. The Cisco Smart City and the announcement of the next phase of our expansion of the Cisco India site underline our commitment to deepening our presence in India and helping transform the way citizens in a Digital India will live, work, play and learn."

## Business Results

• A fully networked campus in Bangalore - The Cisco Smart City features  networked smart parking, connected cafes, recreation and relaxation rooms, a rooftop solar power system and indoor "neighborhoods" designed for employees to quickly meet (in person or virtually), collaborate, innovate and deliver wherever they are located.

• A work environment that helps reduce carbon footprint, lower costs and provide more sustainable operations. The Cisco Smart City, with LEED® Platinum Certified buildings, uses intelligent networks as the foundation for managed city and business services and incorporates all manner of mobility, security, cloud computing, virtualization, collaboration, video and other evolving technologies.

• The Cisco Smart City allows employees, customers and partners to experience what's possible when you realize the true potential of the Internet of Everything and connect people, processes, data and things.

• Cisco's S+CC solution enables the utilization of various value-added services over the network, thereby minimizing human intervention for routine facilities requirements.

## For More Information

To find out more about the Cisco Smart+Connected solutions, go to:
http://www.cisco.com/web/strategy/smart_connected_communities.html

To find out more about Cisco connected Wokplace go to:
http://www.cisco.com/assets/sol/ciscoitatwork/business_of_it/ccwi/