Cisco Kinetic for Cities Lighting

Introduction

Electric street lights are an essential element of municipal environments. They affect residents' sense of safety and place while influencing a city's ability to create an inviting environment for business and tourism. Unfortunately, outdoor lights are also a major energy user. To reduce electrical demand, cities are moving toward LED technology. Over the next 10 to 15 years, a large percentage of the world's 4 billion outdoor lighting fixtures will be upgraded to LEDs. With energy-saving initiatives budgeted for and already under way, this global transition is an opportunity for much more than a replacement of lighting technology: it can become a gateway to adopting a common platform on which to launch a number of critical smart-city solutions.

[1] "Free Parking or Free Markets," Access magazine, Spring 2011.

Benefits

By using the Cisco Kinetic for Cities Lighting solution, municipalities can:

- **Remotely adjust lighting** according to the outside environment. Lighting dims during low-traffic hours, or brightens to enhance safety.

- **Make changes** according to ambient light in the vicinity, due to factors such as weather conditions. When needed, lighting from different sources can be combined to illuminate an area.

- **Improve response** to emergencies, with faster identification of crisis scenes.

- **Save electricity** by using alternative lighting sources and/or rerouting power away from a source when mechanical failures are recorded.

Benefits

- **Streamline the billing process** to appropriate parties through a meter that measures electricity use per customer.

- **Provide information** for other apps (via the network) about conditions near lighting sources.

- **Improve maintenance** through central monitoring.

- **Facilitate monitoring** of cross-domain sensors and device deployments.

Beyond safety, controlled costs, and integrated city services, Cisco Kinetic for Cities Lighting creates the opportunity for new revenue streams. The smart lighting control node on the lighting source can host other sensors too.

Simple lighting poles are now prime real estate that supports the digitization of your city. They have the power, backbone, and connectivity required for other smart city initiatives. And they are located approximately every 80 feet (25 meters).

Value proposition

Cisco® Kinetic for Cities Lighting helps municipalities create a platform across multiple LED deployments from multiple vendors. The system:

- Allows unified lighting control policies with multi-LED technologies and deployments.

- Helps reduce electricity costs significantly, by up to 70 percent over traditional lighting and by 20 to 30 percent over LED lights.

- Allows for secure policy implementations across domains and sensor deployments, including environmental, traffic, security, flow of cycles and pedestrians, and so on.

- Is compatible with other smart solutions.

Cisco Kinetic for Cities Lighting goes beyond LED lighting. It is a converged network comprising LED, dynamic lighting controls and a software platform. The network is connected to the Cisco Kinetics for Cities infrastructure and can benefit and enable other Cisco Kinetics for Cities solutions.

Using the Cisco Kinetics for Cities Lighting solution, municipalities can:

- Drastically reduce city energy consumption, costs, and maintenance using LED technology combined with dynamic, per-light controls.

- Improve citizen vehicle compliance and increase violation capture and city revenues.

- Enhance situational awareness, real-time collaboration, and decision making across city agencies, helping optimize urban planning.

- Add intelligent, sensor-based Internet of Everything (IoE) innovations to transportation, utilities, public safety, and environmental monitoring without adding significantly more physical infrastructure.

Solution overview

The Cisco Kinetic for Cities Lighting solution transforms LED light fixtures into sensor-equipped smart devices that are capable of capturing and transmitting data in near real time. This capability provides unprecedented actionable insight and helps to enable an array of applications and services for cities, citizens, and businesses.

Next steps

For more details, visit:

- Website: cs.co/cities
- Blogs: blogs.cisco.com/government
- Digital transformation map: cisco.com/go/digitalmap
- Digital city white paper: cs.co/digitalcity
- Follow the conversation: @CiscoGovt

Questions? Contact scc-global@cisco.com.

Solution component	Description
Light pole infrastructure	Usually an existing city asset that provides power to both the LED and core node.
LED light	An energy-efficient light that drastically reduces energy costs while extending the maintenance cycle.
Light control node	A node with an IoT communication module.
Smart city network	A robust network able to support all communication protocols, including RF and LoRaWAN gateways.
Cisco Kinetic for Cities platform and its applications	A centralized cloud platform connecting device data to APIs and enabling cross-domain use cases.

Cisco lighting advantage

Cisco is leading the next step in the evolution of the Internet—the Internet of Things (IoT)—that integrates people, processes, data, and things. The IoT is expanding our understanding and enriching our experiences. Our goal is to connect the remaining everything. And not just to connect, but to change everything for the better.

Cisco Kinetic for Cities Lighting is a robust, scalable platform that can serve as the foundation for many unforeseen solutions. This solution works for you, now and into the future.

Our converged-solutions approach can provide more benefits at the same cost or lower than other solutions. Because our solution is wireless, we eliminate the need for cables and reduce bandwidth requirements. All power, equipment, and labor costs are contained; one asset's power source supplies multiple sensors. We rely on a convergence of sensors and networks, enabling cross-domain collaboration within city infrastructure.