Trilliant IIoT & Smart Street Lighting

For both environmental and economic reasons, many municipalities and utilities are investigating ways to improve lighting efficiency for the public realm. Innovations in street light controller management software offer a clear view on ROI (return on investment) for customers and can help them realize energy and cost savings, reduce their carbon footprint, and increase use of public spaces.

For the last half-century, many cities were – and are still – illuminated by both high-pressure sodium (HPS) and metal halide fixtures that by today's standards are very inefficient. To reduce energy use, cities are exploring Light Emitting Diode (LED) and networked street lighting technology as a new beginning. Because cost per light is significantly reduced, the conversion of HPS to LED is viewed as a must have for many cities to improve city wide services and customer satisfaction. According to a 2022 report by Northeast Group, for the forecast period of 2017-2027:

- Across 125 countries, 264M LED streetlights will be added, reaching a penetration rate of 89%
- Decorative streetlights will have a value of $14B
- Cities and utilities will network an estimated 95M streetlights

Additionally, street light poles are an increasingly valuable piece of vertical real estate that can be monetized. Pole owners (municipalities, utilities, or telcos) can charge pole attachment and other fees for hosting Smart City applications like sensor platforms, video surveillance, digital signage, small cells, and other services. Monetization of these smart city applications is accomplished via Trilliant SecureReach® or Trilliant SecureMesh® connectivity and Industrial Internet of Things (IIoT) technologies, where metered power, edge processing, and data communications are available through smart data hubs mounted on the light pole.

The Trilliant platform addresses evolving smart Grid, Smart city and IIoT solutions on a single, scalable, and secure platform. Our ubiquitous, high-capacity communication network is positioned to deliver connectivity-driven

Well-lit streets are vital to pedestrian and vehicle safety. Broad use of street lighting also helps facilitate evening use of parks, plazas, and other areas for outdoor activities, creating vibrant community spaces. As a result, lighting is becoming increasingly important to municipalities looking to implement smart city programs.

outcomes, enabling Smart Grid or the Smart City. This core connectivity solution delivers:

- **Value Today.** Provides products and services to customers with quick ROI, including energy savings, repairs and maintenance savings, quality of lighting services, and connected city applications
- **Device Independence.** Lets you create multi-vendor solutions
- **Modular Approach.** Protects today's investments while building "plug & play" modules that are compatible with existing installations
- **Open Architecture/APIs.** Enables third-party, "best-in-class" solutions to join the street lighting network; takes advantage of an extensive development community and wide variety of sensors and other devices
- **Partner Ecosystem.** Utilizes a go-to-market and development strategy that leverages key partner strengths

Trilliant enables outcomes that are focused on improving ultimate customer satisfaction to the most important stakeholders – citizens! Cities today are working towards solving problems surrounding the environment, mobility, crime prevention, and economic growth while also generating revenue. Cities can have effective and efficient data management by using Trilliant's hybrid wireless connectivity solution. And understanding the data from demand, consumption, activities, and behavior drives real time and predictive responses, operational efficiency, optimized revenue generation, and ultimately citizen satisfaction and engagement.

Managed Services

Today's cities need easily adoptable technology solutions backed by financial and world class service management. There are many service models available under the managed services options such as Platform as a Service (PaaS), Network as a Service (NaaS) and Lighting as a Service (LaaS). Managed services facilitate increased organizational efficiency and improved operations. Cities can leverage managed services to reap benefits such as cost reduction, increased uptime, profitability, 24x7x365 coverage, and mission critical security. With managed services, cities can not only focus on citizen engagement but also efficiently monitor the health of the city or the city's mobility.

As one example, interaction monitors can allow traffic engineers to move from electromagnetic controllers to a system that is completely integrated with its own IT system. With an integrated system, an entire intersection won't become impacted if a single push-button goes down. The integrated approach allows each part to remain on track even if there are disturbances in other areas of the system.

With a managed services model, however, agencies no longer have to operate and maintain the equipment or ensure the accuracy of the data. The monitoring can be accomplished by a multipurpose network creating a flawless integration of smart mobility into a Smart City.

The future is here. Connected things have moved beyond concept and cities are embracing and adopting smart solutions with ever evolving city-centric applications. Cost savings are a key driver and incentive for many smart city technology deployments. The scope of efficiency improvements across all urban sectors and segment is staggering and amounts to more than US $5T in yearly cost savings globally (ABI Research, 2017).

With a high concentration of people and enterprises across a rapidly increasing number of mega cities, the shift toward urbanization is unlocking a whole new world of opportunity. With the power of services and sharing paradigms, cities can achieve higher asset utilization rates, obtain economics of scale, and ultimately enable a more sustainable environment on a level never seen before.

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