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Making A Case For Smart Platform LED Streetlights



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“It would seem counterintuitive but small cities are more willing to adopt LED streetlights as compared to large ones,” says Chintan Shah, chief executive officer at Twilight, an Amsterdam-based company that offers patented light solutions to city governments and large communities.

One of those solutions is being used at Texel, an island off the Dutch coast. The company worked with the municipal government there to install CitySense, a streetlight motion sensor that can be remotely controlled, onto the island’s grid of street lights.

As I wrote earlier, LED streetlights have become popular with cities due to energy savings. Per estimates last year, approximately 10 percent of all cities in the United States had LED streetlights. Twilight mostly works with small and mid-sized cities to install streetlights.

There are several reasons for city governments to install LED streetlights.

The first and most obvious one is saving energy costs. According to Shah, Texel saved up to two-third energy costs from day one. Consumption levels went down by about 40% from previous levels. Shah says installation of smart controls and sensors, which account for 10% of total costs for such a project, can further extend savings to between 60% and 80% of previous costs through features, such as light on demand. While initial installation costs may be steep, savings accrued over a period make up for the original spend. These savings are shared with city governments by systems integrators who work on such projects.

Installation of streetlights also maximizes resource and services efficiency. Shah points to the experience at Texel, where multiple operations for streetlights performed by different employees are now taken care of by an outsourced systems integrator. Of course, that efficiency results in reduced manpower in municipalities. But Shah puts a positive spin on the issue, maintaining that this enables efficient deployment of resources. “They (city employees) can be allocated to other applications, where the city needs them,” he says.

More importantly, a platform on top of streetlights can provide reams of data for its operations. "If one is able to remotely monitor, manage and control light points and its surrounding ecosystem, then one can become more powerful than, say, Google's Android operating system," says Shah, referencing the possibilities of data-centric city management.



Fig. Traffic heatmap for Texel based on streetlight sensor data

For example, open APIs (or, interconnections between applications) enables different smart city verticals to become interoperable with each other. In turn, this enables transformation of such initiatives from being one that is put under costs to one that earns revenue. As an example, Shah refers to the advertising possibilities inherent within such solutions. "For example, you can serve up discounted specials for Starbucks-loving tourists, whenever they near the coffee chain's locations during their travels abroad," he said.

Twilight has between 100-150 projects located across Europe, Asia, and Middle East. Having a broad geographic reach has helped Shah's company customize their approach. For several Asian cities, installing LED streetlights is their first experience of lighting up a specific area. On the other hand, Europe already has advanced city infrastructure; as such, cities in the region are more interested in conserving energy and meeting their targets for renewable energy.

New York City, where I live, was a first mover in this regard when it launched a program to convert its sodium lamps to LED streetlights in 2012. But it is not building a smart platform on top of its streetlights. Given the cost-to-benefit ratio of installing LED streetlights, that decision might seem surprising. Shah clarifies that it is not an uncommon one for large cities. According to him, residential areas, seaports and industrial zones (or, areas where there is not much activity at night) are optimal for installation of platforms with motion sensors. Even in Texel, only 10% of the island's streetlights are installed with CitySense. The remaining lights have WiFi connectivity that enables remote management of light-related operations.



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