



Humanizing Our Smart Cities, One Light at a Time

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When you think about smart street lights, what's the first thing that comes to mind? Is it energy savings? Smart grid integration? Reduced carbon emissions? For Dutch entrepreneur, Chintan Shah, it starts with people. As the CEO of a young and fast-growing high-tech company that has grown from 1 to 22 employees over the past few years, Chintan's vision for smart street lighting goes beyond the next installation. You see, his company, [Twilight](#), provides something most other smart street light solutions don't--human-centered design and interactivity.

Tvilight's patented smart technology isn't exactly about lights -- it's about sensors. Simple units containing a unique combination of 8 different sensors communicate wirelessly through a mesh network, connecting to and intelligently dimming existing lighting to 20 percent of full power when people are not in the area. But as soon as a person or car is detected, the lights glow with full power, literally lighting up ahead of the traveler. What results is a unique and interactive experience between people and lights. And that is what human-centered smart street lighting is all about. Oh, and this simple model reduces energy consumption by up to 80 percent. With about 3 million street lights in Holland alone, the potential savings are huge.



Currently, Tvilight has about 1,000 installations around the world and will have about 5,000 by end of this year. Clearly, Tvilight has just scratched the surface of the market. With a multi-billion dollar market in outdoor lighting, there's plenty of room to grow. And with an audacious goal of being the best outdoor lighting solution and capturing one percent of the outdoor lighting market (think parking, residential and street lighting) within five years, Tvilight stays focused on the people part of the equation.

First of all, Tvilight takes an individual's privacy seriously, using no cameras to detect objects or motion. Instead, the team focuses on cleverly combining sensors and software to determine what kind of object is entering the lighting area.

And right now, Tvilight is focused on growing its business responsibly. By near-shoring its manufacturing to simplify the supply chain and minimize logistics costs, it directly supports job growth in the regions where its products are sold. With most of its installations in Holland, Germany and Ireland, it currently manufactures its units in Holland. But as the company expands across Europe and into Asia, Africa and the U.S., it plans to follow this same model -- even for service and repair. Designed for simplicity, maintenance can be done by local contractors with no special training. But because Tvilight has joined the Internet of Things, engineers in Holland can remotely update or troubleshoot systems anywhere in the world through software.

So, what does Tvilight plan for its future? Again, the team focuses on simplicity, designing an even simpler sensor module that can be built right into lights. Plus, it is looking at adding new sensors to monitor things like pollution and weather. Combined with dashboard software, Tvilight wants to be a city's end-to-end solution for managing its lighting. But serious challenges remain. Even though Tvilight promises a return on investment in 3 to 5 years and reduced maintenance costs, cities notoriously invest slowly and incrementally, meaning that it may take several years to get an entire city converted. Once cities commit to widespread installations, Tvilight will need mass production. And scaling up production means finding new partners that can meet the demand cost-effectively. Then there is the challenge of demand outstripping company growth. Right now, Tvilight's sales force struggles to address the flood of inquiries.

Building a reliable, secure, scalable, economic and accessible smart city starts with a focus on people. Putting people in a circle of light as they stroll down the street at night might not be the first thing that comes to mind when you think about a smart city, but it's the thing that matters most. Just like we enjoy a gentle breeze through our hair or the scent of fresh bread as we stroll past the bakery, we'll appreciate lights that anticipate our next step, illuminating a path just for us. And just like we don't leave our house lights on when we go out for the evening, we'll expect the same from our street lights. We can't imagine a world without mobile phones or Google. Perhaps soon we'll feel the same way about smart street lights.

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