

Smart innovations enabling more liveable cities

Smart lights, smart poles

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Bright ideas

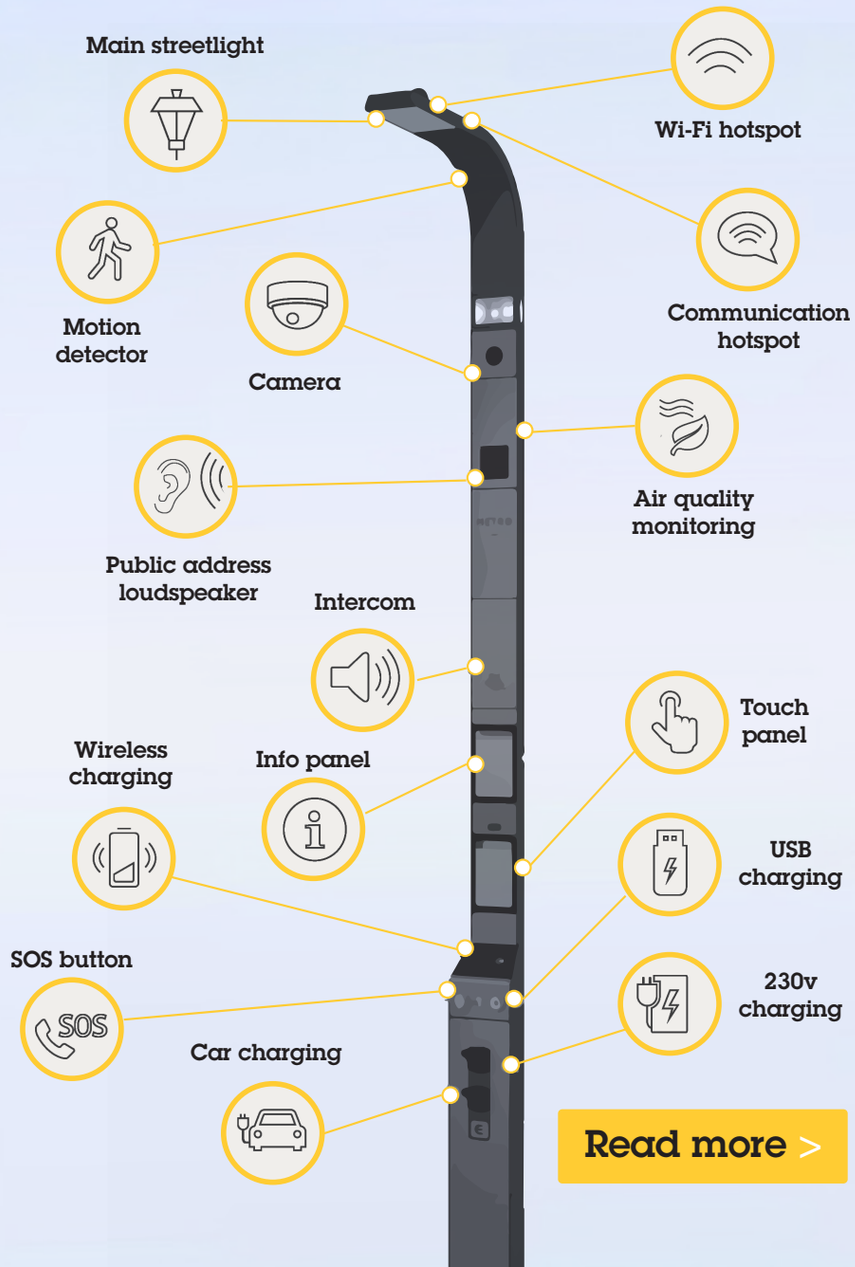
Public lighting is an essential and ever-present part of urban life, illuminating our streets and city skylines. And how our roads, pavements and highways are lit helps define how a city is perceived on many levels, from ambience and design to ease-of-movement and a sense of well-being and security. But what if a light were more than just a source of illumination? What if a light pole could be used as a 'smart pole': a conduit for a vast array of smart city solutions, channelled through IoT, sensors, detectors, cameras and Wi-Fi?

With the advent of LED, the public outdoor lighting industry is undergoing a tremendous transformation, with legacy streetlights being replaced with new and more efficient LED – or solid-state – lighting technology. By mounting IoT sensors and network cameras on poles, these new LED solutions can be networked together, enabling them to communicate across a city's entire ecosystem and thus transforming them from simple streetlights into 'smart poles.'

Increasingly, Smart Poles are now being seen as the vanguard for smart cities, accelerating smart city development and paving the way for new smarter ways of working.

> **"Smart poles can be seen as the optimal smart city enabler, boosting collaborations and cross-sensor insights.**
>
> Tricia Sim
> Business Development Manager, Smart Cities,
> Axis Communications

The anatomy of a smart pole



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Smart lights, smart poles, smart cities

In every city, town and megacity, there are hundreds – if not thousands – of streetlights. Today, there are over 300 million light poles worldwide, with that number expected to grow to 325 million by 2025.

As legacy streetlights continue to be replaced by LED solutions, city authorities are looking into how to utilize lamp posts in a more efficient way, both when it comes to optimizing energy consumption but also how they can be used as a power source. Moreover, however, major lamp and streetlight manufacturers are driving future development with a focus on not just power, but also on network connections. Creating networked lampposts that will open up the pathway to the integration of a vast array of smart city IoT solutions.

A network of connected lampposts

Smart lighting is an ideal starting point for many smart city projects, creating a grid of connected sensors on every street and thoroughfare. With this network of thousands of light poles connected to power, cities have a platform for other IoT devices to become connected. They can install sensors, and additional smart applications and harness already-existing network surveillance cameras to "link up" the light grid and pave the way for solutions that, in essence, transform smart lights into smart poles.

"Today, cameras are already seen as a key sensor to integrate in these future smart poles," says Epko van Nisselrooij, Business Development Manager, Smart Cities, Axis. "These cameras can be used for a vast array of use cases and can also be networked together with other sensors in the smart pole to add visual data. Consequently, the camera can be utilized for for traditional surveillance and for collecting mobility data, or can support other devices to, for example, manage light levels, analyse sound levels and air quality or verify payment for vehicle charging."

One cohesive unit

Smart poles can also enable city authorities to work smarter together, rather than in separate department silos. This is because one device (the smart pole) can generate data and insights for many different use cases and for several different city authorities. For example, one smart pole can collect traffic insights to assist with urban mobility and at the same time analyze the air quality to improve efficiency in environmental monitoring.

"We can look at the smart pole as one cohesive unit that can also provide other smart city applications, such as EV charging, digital signage, noise monitoring, two-way communication with security control centers, public address loudspeakers and panic buttons," says Epko.

Intelligent city governance

Needless to say, the possibilities are endless, and it's up to the varying city departments to work together to define what smart solutions work best for their town. Major lamp and streetlight manufacturers have smart lighting solutions installed on every continent. By coupling our network cameras to these solutions, we have enabled city governments, utilities, transportation and other ecosystem industry partners to govern intelligently using real-time data and insights.

A real game changer

"The benefit of having a network camera and other IoT sensors in the lamppost is a real game changer for smart cities, and especially for those who have been working in pre-existing silos," says Epko. "A lamppost including both power and a network connection, opens up a new world to cities with a smart agenda. What we often hear, however, is how do we make this happen?"

The answer? The right technology, collaboration within city authorities and by working with the right partner.

"Collaboration is key to for this kind of project to be a success. The different city authorities and several different solution providers need to work together to create one smart pole solution where everything is integrated and where different applications to work together," says Epko van Nisselrooij. "Our cameras are built on a scalable, open and flexible platform and with the kind of high-quality imaging that make them the ideal conduit for this kind of project. We've seen this in the smart pole projects we have facilitated already,"

Contact us to find out more on how we can help you transform a simple light pole into intelligent, integrated smart poles.



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> Business Development Manager,
> Smart Cities, Axis Communications

Public safety

People counting on streetlights in Okazaki City

Axis cameras with people counting applications were installed on streetlights to get an accurate understanding of the changes in people flows.

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Cameras to combat crime and improve emergency

The city of Atlanta deployed Axis cameras with low light sensitivity at busy intersections and on-street poles.

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2N emergency intercoms secure San Borja District

To ensure immediate contact of a person in need with the Supervision Centre, the Municipality of San Borja decided to use 2N® Helios IP Safety Intercoms. The emergency buttons are installed in orange modules with exceptional external protection against moisture and dust.

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2N SOS intercom protects Budapest

The Budapest Safe City reconstruction project launched in 2014 with the aim to get the city under permanent safety control. It sought a line of highly visible anti-vandal SOS poles that would immediately call for emergency assistance with the press of a single button.

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2N® IP Safety
Sturdy IP intercom for emergency situations



Why Axis?

Almost all cities have a smart city agenda. And although their priorities will differ according to the unique challenges they face, they all have the same goals: to create ways to use data and resources more efficiently and make cities more livable.

Axis is innovating for a smarter, safer world. We play a vital role in the transition to smarter cities by providing scalable and innovative Internet of Things (IoT) solutions for public safety, urban mobility and environmental monitoring.

>>> Click here to book a meeting with Axis representatives.

About Axis Communications

Axis enables a smarter and safer world by creating solutions for improving security and business performance. As a network technology company and industry leader, Axis offers solutions in video surveillance, access control, intercom, and audio systems. They are enhanced by intelligent analytics applications and supported by high-quality training.

Axis has around 4,000 dedicated employees in over 50 countries and collaborates with technology and system integration partners worldwide to deliver customer solutions. Axis was founded in 1984, and the headquarters are in Lund, Sweden.

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