

The background image shows a vibrant cityscape at dusk or night. A central skyscraper, possibly the Bank of America Tower in Miami, is brightly lit with purple and pink lights, creating a focal point. The city below is filled with numerous other buildings, streets, and a highway with streaking lights from traffic. The sky is a mix of blue and orange hues.

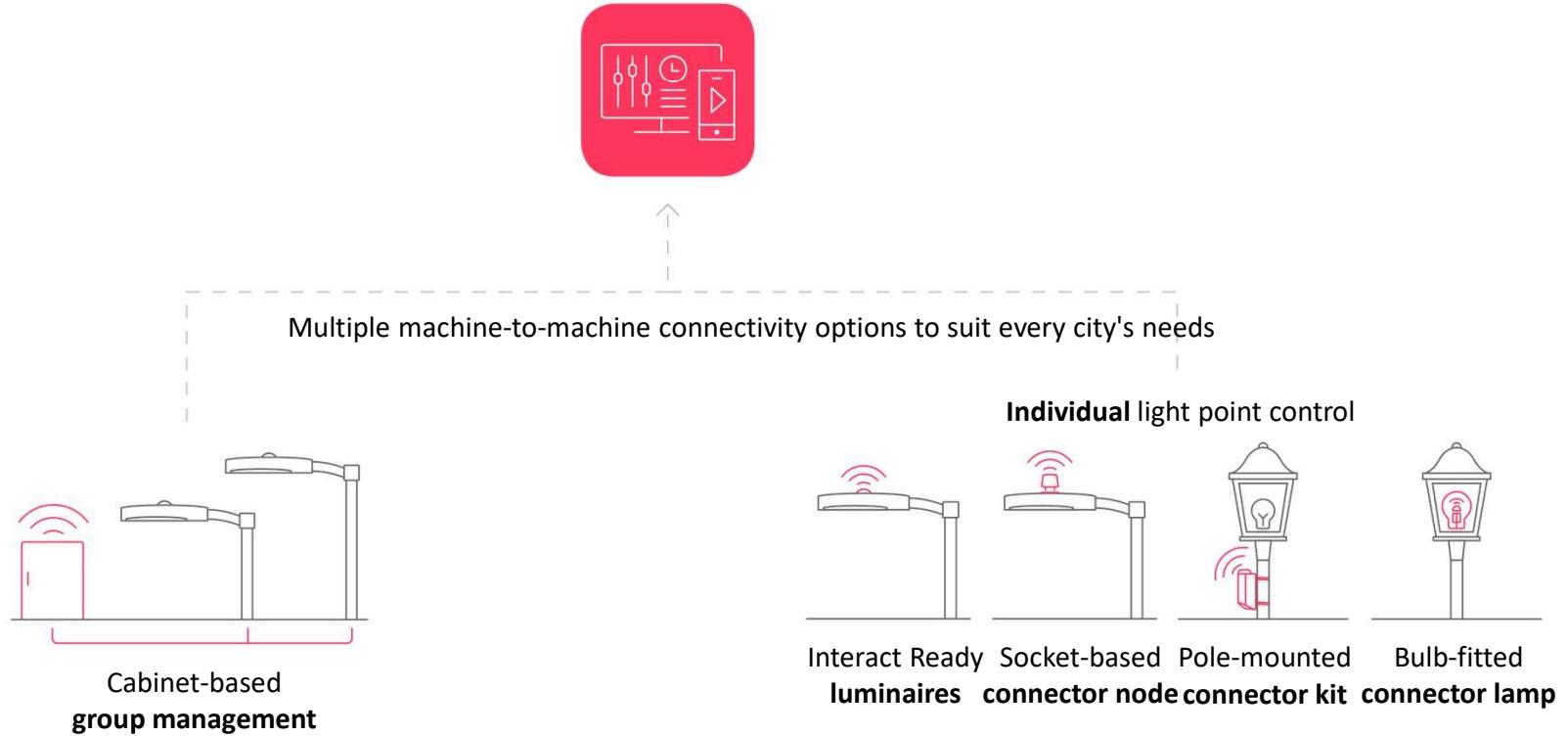
Transforming your City with Connected Lighting

Vivek Jain
8th March, 2019

Slide 1

JS1 Please use Interact template for entire presentation.
Jennifer Schoop, 17-08-2018

Street Lighting Control



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What is a telemanagement System?

Software applications



CityTouch software apps are at the heart of the lighting management system, providing the right tools at your fingertips.

Connectivity



CityTouch connects to an existing cellular network, allowing you to manage and monitor the lighting remotely.

Lighting assets



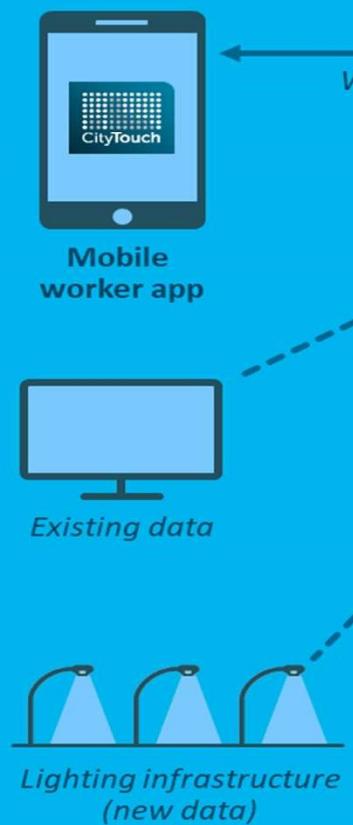
Next to more general solutions, there are specialized systems dedicated to certain kinds of **city assets** available in the market.

Interact City

Building on more than
1,000 connected street
light management
systems



CityTouch
workflow
portfolio



CityTouch

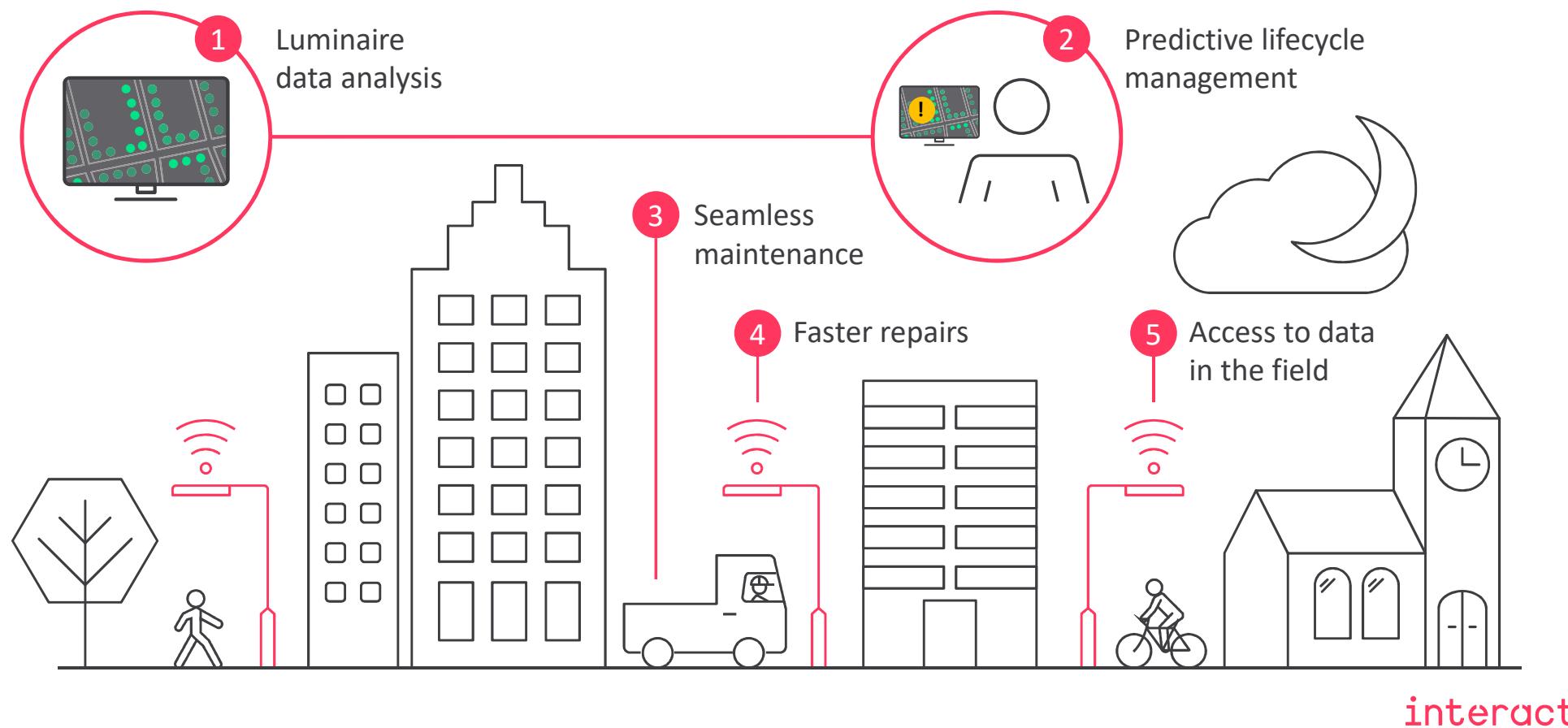
lighting management system

CityTouch
connect
portfolio

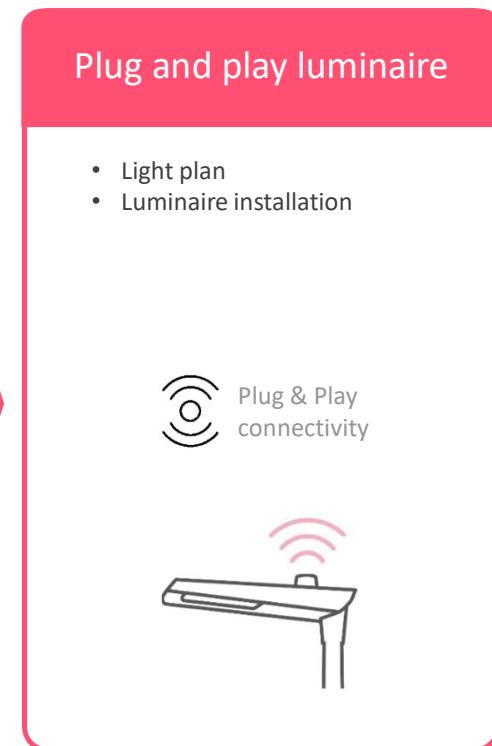
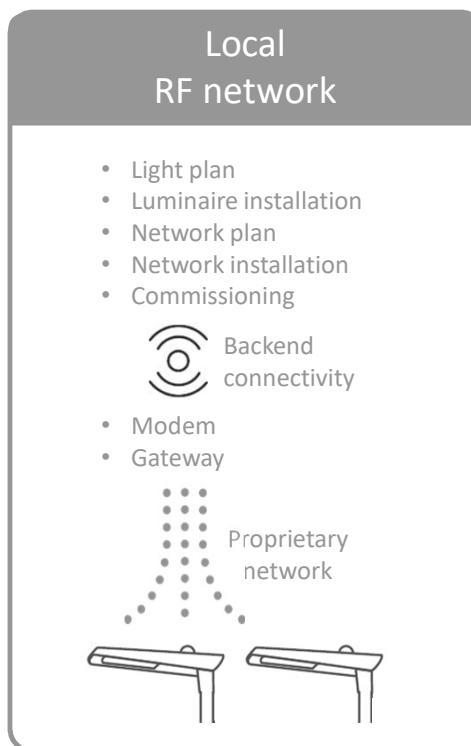
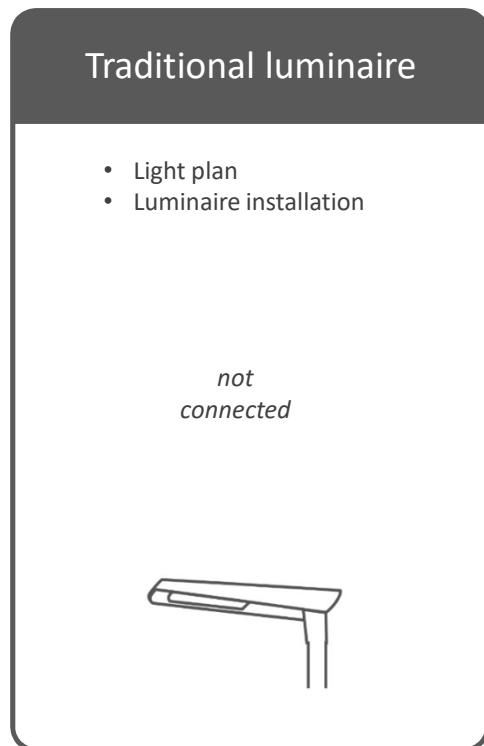


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Operational benefits



Different Network Architectures



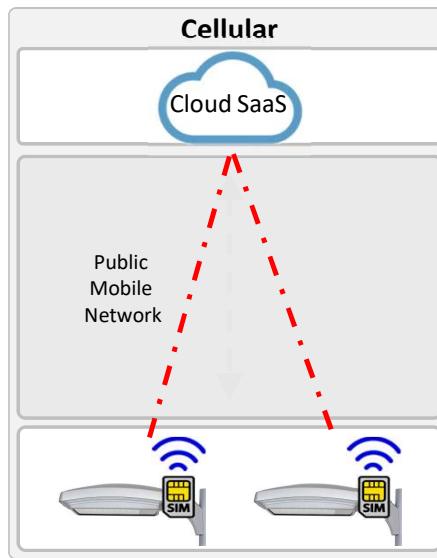
Less project complexity
means lower costs for setup and planning

Much less components
means fewer potential sources of failures

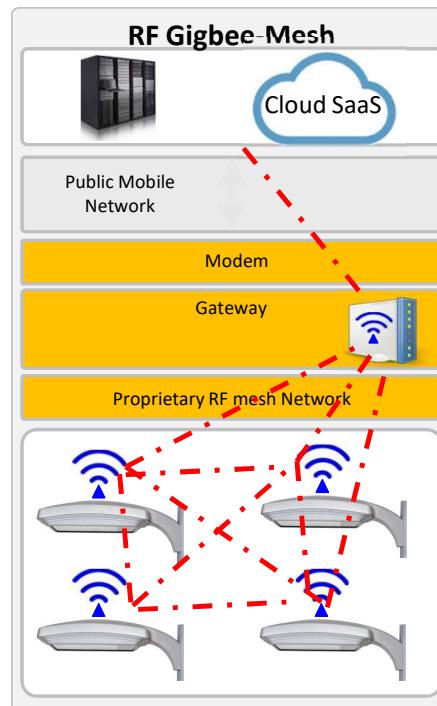
No network topology
means full flexibility during roll out

No field based commissioning
means no risk of mistakes

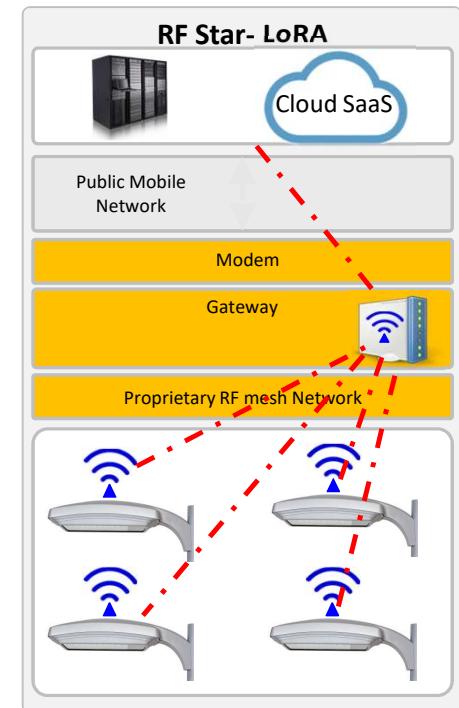
Comparison on RF Technologies



- **Plug'n'play.**
- **No need for network planning.**
- **No network commissioning.**
- **No single point of failure.**
- **Reduced complexity.**
- **Improved reliability.**
- **Network fault is “self healing”.**
- **Predictable performance and TCO**



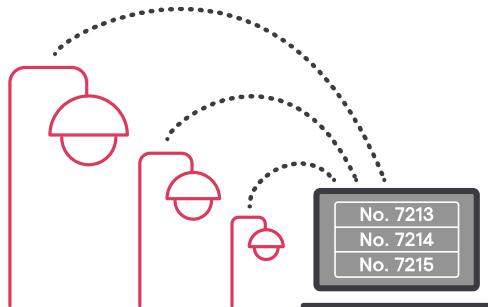
- Tedious network planning and optimization.
- Perceived low CAPEX
- Unpredictable OPEX
- Gateway/modem failure impacts many light points.



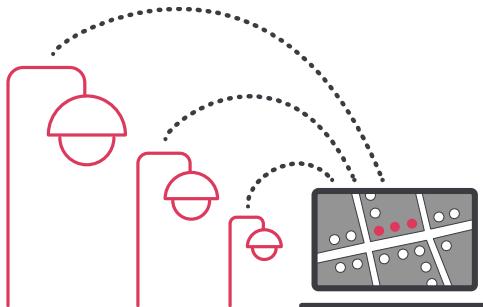
- Relatively simple network planning.
- Perceived low CAPEX
- Unpredictable OPEX
- Gateway/modem failure may impact many light points.

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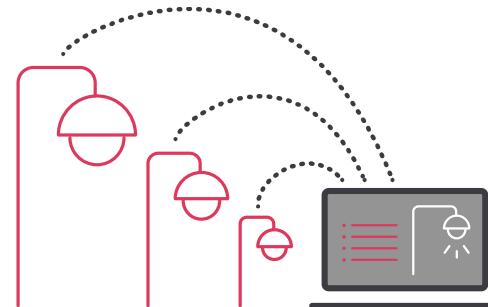
Access benefits instantly



Limited field commissioning
Each node automatically connects to the Interact City software once installed.



Automatic location
Luminaires are auto-located on the map, using the integrated GPS solution, with all asset data in place.



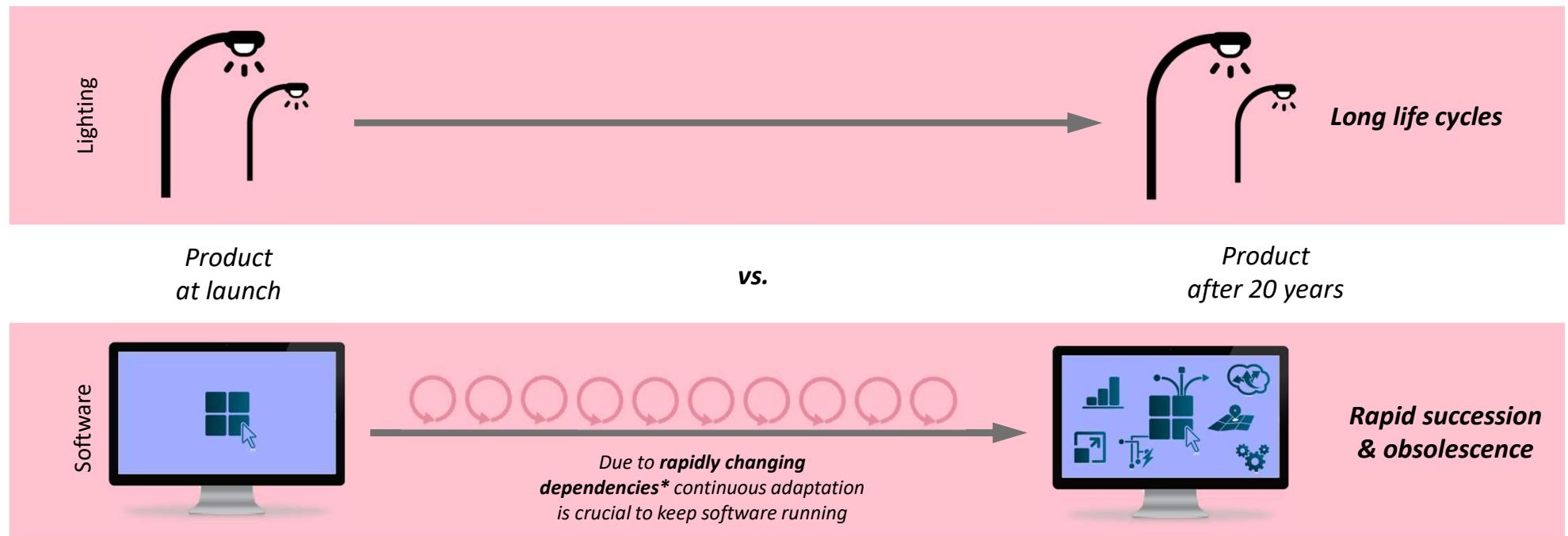
Automatic data upload
All location and status data updates straight to the Interact software.

Class .5 according Ansi C12:20 (0.5% accuracy)

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Outdoor lighting and IT are very different industries

Creating working systems that are part of both worlds is only possible through continuous software adaptation and delivery (a.k.a. SaaS).



*For example: Database technology, networking protocols, security advances, UI & web technology

Security Standards – Which ones?

Confidentiality

- **Dedicated user roles** | Every user is granted exactly the access rights needed
- **Strong password and two-factor authentication**
- **Forward secrecy** | User logout automatically in case of potential threats



Integrity

- **Full encryption** | All network communication is encrypted from the end point to the central server
- **Tamperproof** | Traffic is monitored closely to automatically detect any possible attack
- **Input validation** | Pre-defined data types to ensure accurate data format
- **Reliable communication** | Using the most reliable wireless network (cellular IP network)
- **Regular updates** | Mature software development and release procedures guarantee the high quality of the software



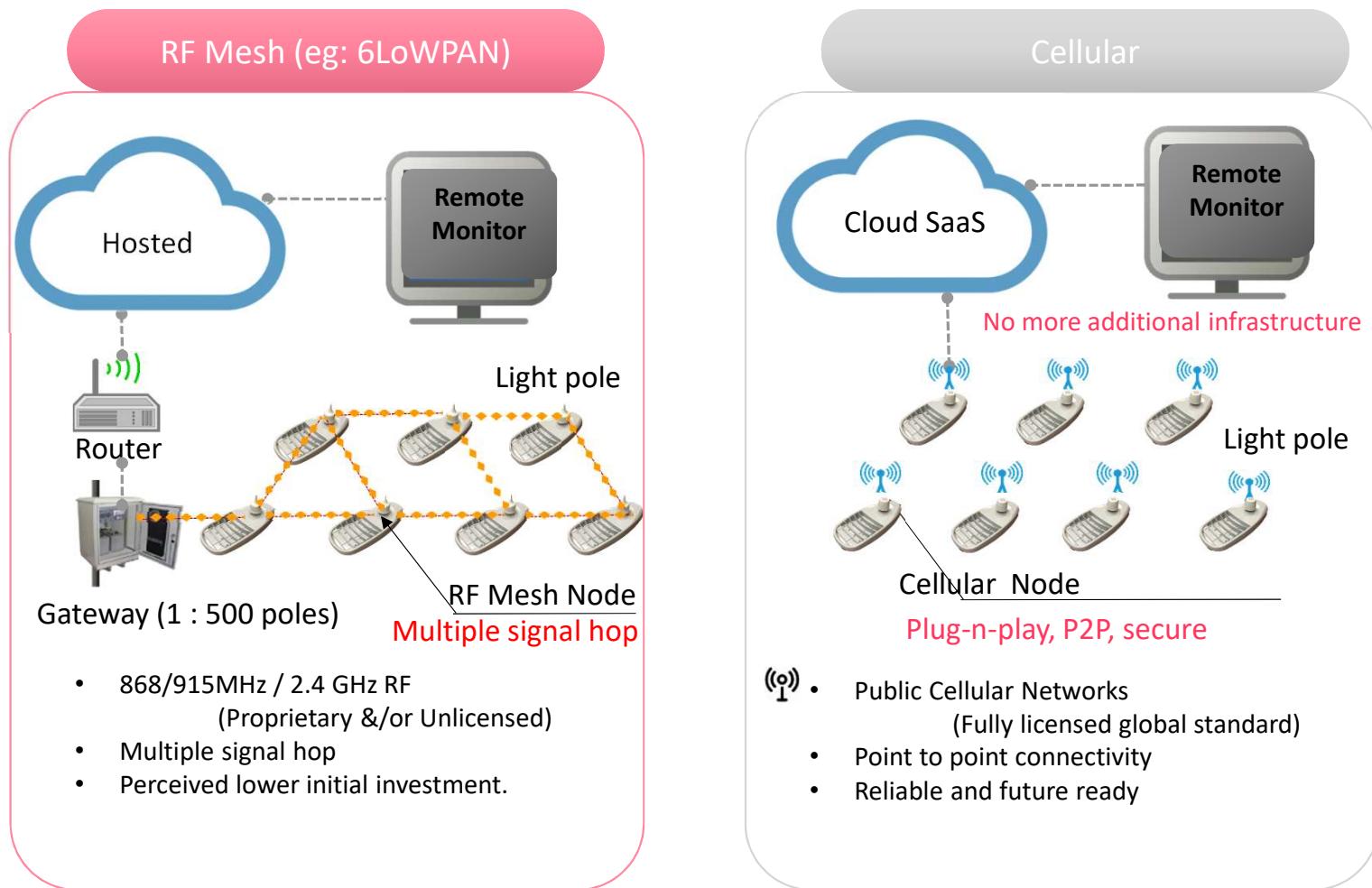
Availability

- **Avoidance of downtime** | In case of a failure, redundant standby systems kept ready
- **Highly robust** | Failure or temporary non-availability of a device that is connected to CityTouch does not block or degrade the service
- **Fail-safe-operation** | Lighting in the street is not affected by the non-availability of CityTouch
- **Constant reviews** | CityTouch reviews its security procedures-including the support of external support

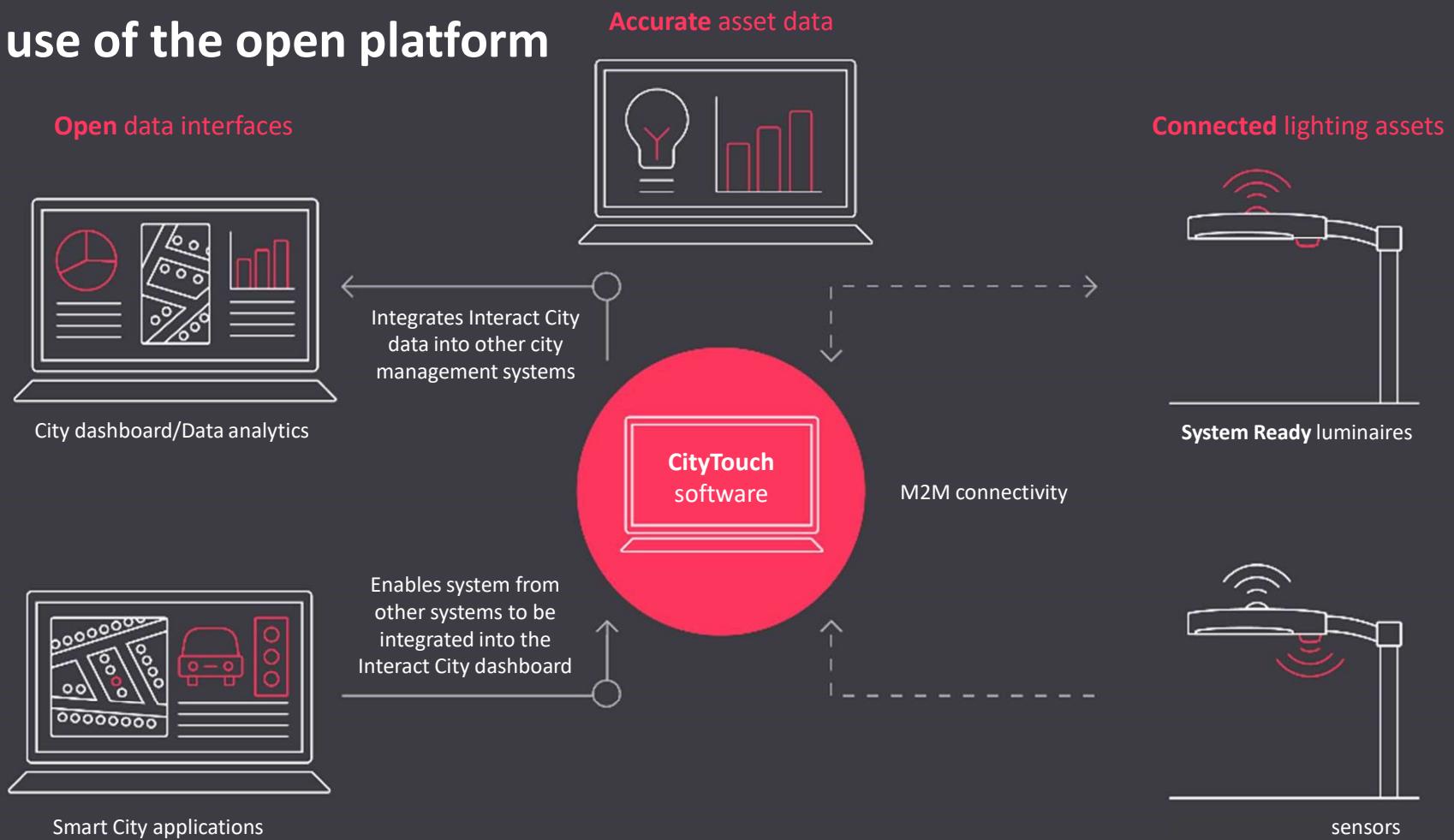


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Why Cellular?



Make use of the open platform



Other application examples

Innovation that makes sense



Environmental monitoring

Pollution. Noise. Ice. They can all make city life unpleasant. Even shorten life expectancy. Environmental monitoring uses sensors in the connected street lighting system to gain insights into problems in the city and support decisions on zoning, traffic flows and improving the livability in your city.

Incident detection

Turn every lamppost into a city sentinel. Incident detection uses sensors on light poles to continually monitor and alert emergency services when unexpected traffic, sounds or crowd noise is detected. Data is shared over the connected lighting system so you respond more quickly and accurately. While long-term data collection supports predictive analytics so you can anticipate and reduce incidents.



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Facilitating a safer, smarter city

NDMC, New Delhi, India

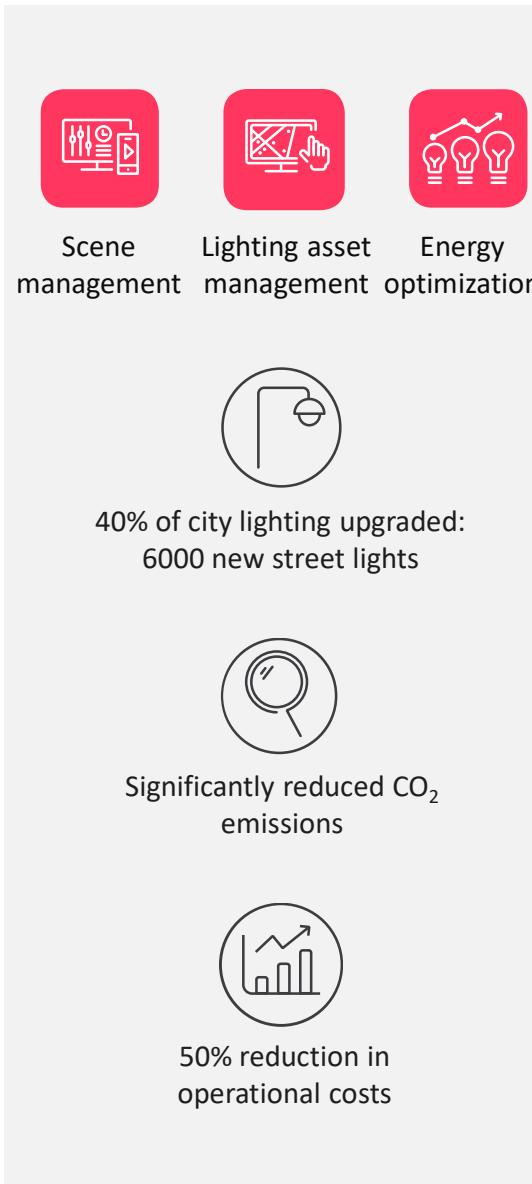
The vision

Authorities wanted to make the city a safer, smarter, more energy-efficient place to live and work.

The solution

The installation of a high-quality LED street lighting system helped to reduce costs, thanks to Interact City cloud-based lighting management software that drove new efficiencies.

The solution is scalable, meaning it can adapt to meet the changing needs of the city in the future.



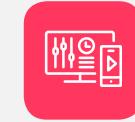
"In addition to enabling energy savings with LED lighting, Interact City provides our customers with integrated lighting management software that is flexible and sustainable."

Gustavo Verna, CEO of Philips Argentina



Facilitating a safer, smarter city

NDMC, New Delhi, India



The screenshot shows a desktop computer displaying the CityTouch software interface. The main window is a satellite map of New Delhi, India, with a complex network of yellow dots overlaid, representing the locations of various assets. The map is divided into four quadrants. The top-left quadrant shows a large area with many yellow dots, including a prominent circular pattern. The top-right quadrant shows a more dense urban area with a grid-like pattern. The bottom-left quadrant shows a mix of urban and rural areas. The bottom-right quadrant shows a large river and surrounding urban areas. The software interface includes a toolbar at the top with various icons, a search bar, and a status bar at the bottom indicating the date and time (22-02-2019, 18:06). The URL in the address bar is https://www.citytouch.com/.

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