interact City

Make your city smarter and more livable with connected lighting

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Key milestones

2008
First commercial LED
retrofit lamp launched

2016
Philips Lighting separates from
Philips and lists on Amsterdam
Stock Exchange

May 16, 2018
Philips Lighting
becomes Signify

1891
Philips founded and
first to commercialize light
bulbs on mass scale

2012
Philips CityTouch and Philips Hue
systems launched

March, 2018
Interact IoT platform
and LiFi launched

Oct. 2019
Intention to acquire
Cooper Lighting Solutions

Signify markets the best lighting brands in the world

Challenges cities face
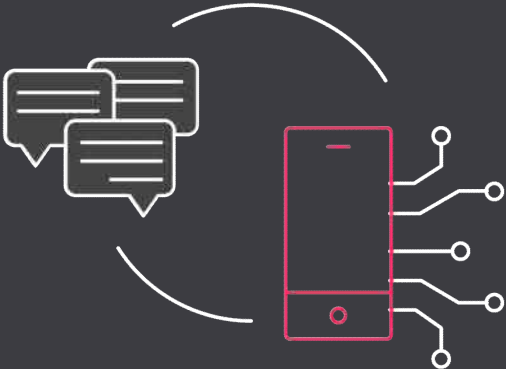
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Our world is changing
Global trends shaping our business

Population growth & urbanization

Resource challenges

Digitization

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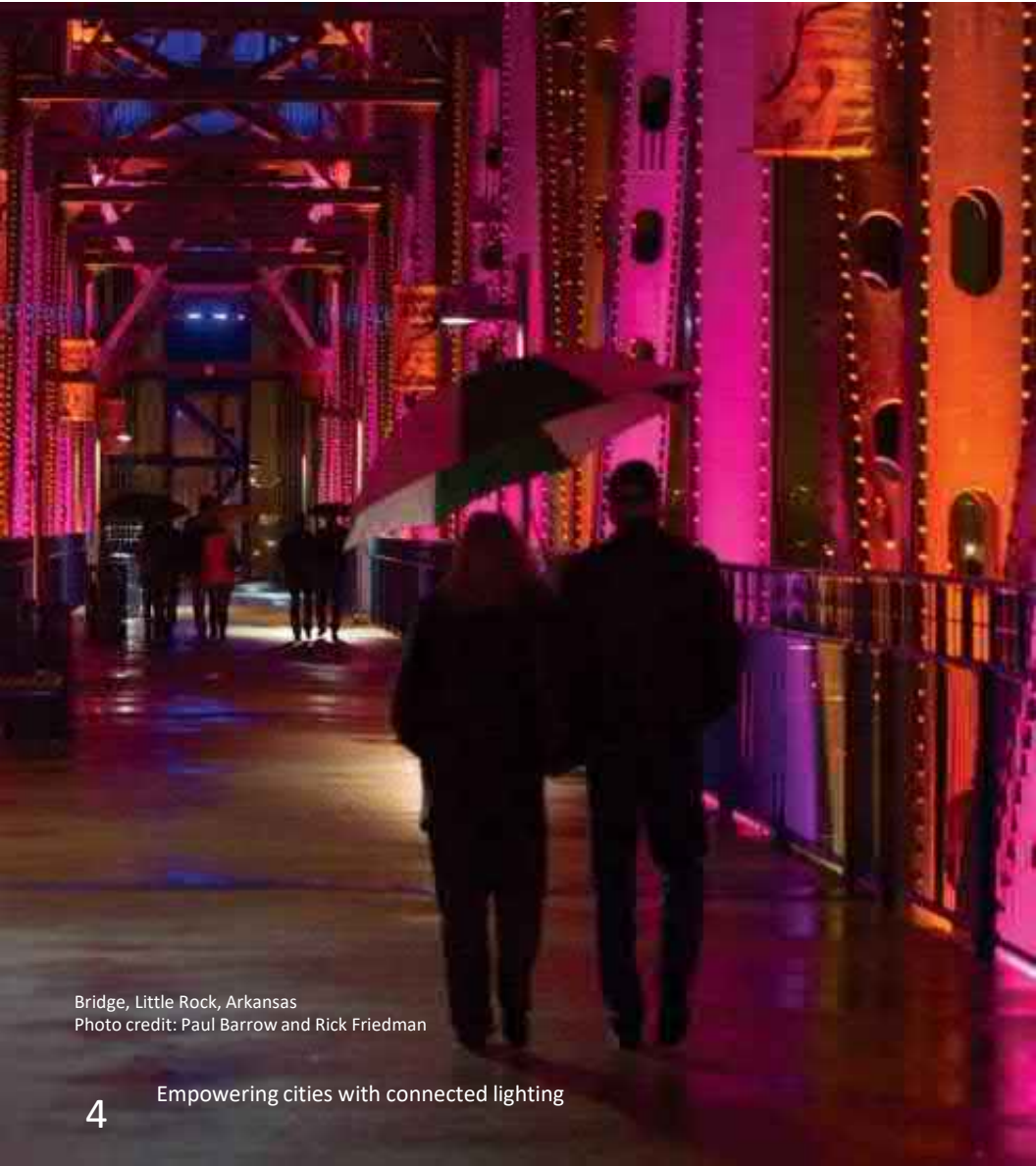
Bridge, Little Rock, Arkansas
Photo credit: Paul Barrow and Rick Friedman

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Population growth & urbanization

Managing a city is a huge juggling act. Administrators are expected to create vibrant, safe public spaces that improve people's quality of life, but at the same time save costs and be more environmentally friendly.

Lighting is one way to ease the pressure. With an energy-efficient infrastructure you can:

- Enjoy immediate savings
- Improve safety
- Create inspiring spaces, day and night
- Enhance 'green credentials'

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Facing up to resource constraints

Cities **consume 78% of the world's energy** and produce more than 60% of all carbon dioxide.*

But we can change that. We can turn cities into innovative '**sustainability** hubs' and tackle climate change head-on.

A more energy-efficient infrastructure:

- **Reduces carbon emissions**
- Improves **quality of life**
- Creates a **more attractive** environment **for businesses**

*Source: UN Habitat (United Nations Human Settlements Program)

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Embracing the digital paradigm

It's an exciting time in the street-lighting world: things are getting connected, cities are becoming smart.

- Many more things around us will be connected

- Citizens are connected and have at least 1 mobile device if not more and they are taking advantage of the connectivity in their daily lives

- By 2020, street lights will be the primary network infrastructure for 80% of Smart cities

- Wireless carriers need to add 10 to 100x more small cells antenna locations to support 5G networks to enable faster connectivity

- Autonomous driving cars will be a standard mode of transportation

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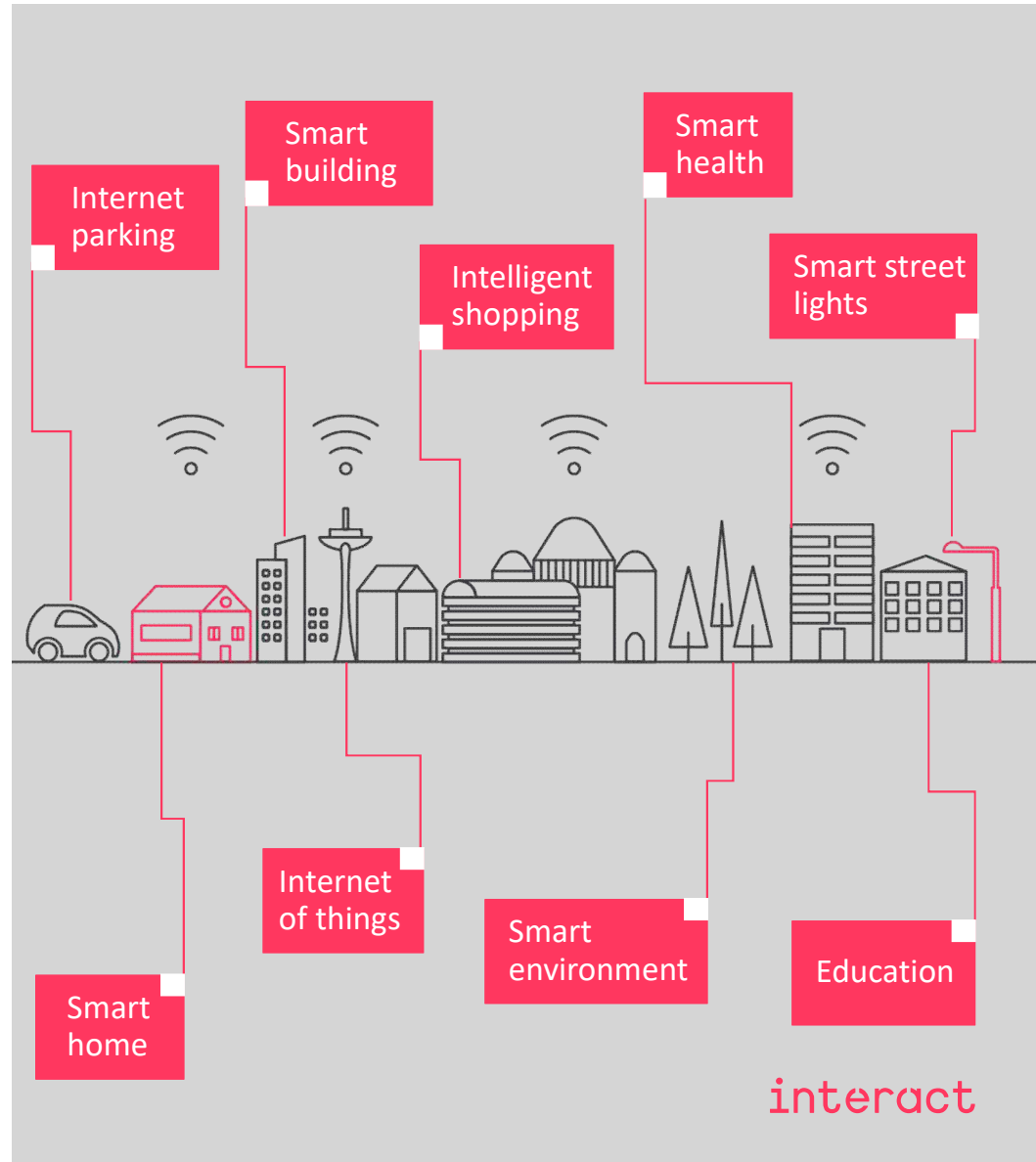37 Billion things will be connected by 2020

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But what is a Smart city?

What's a Smart city for you?

- Optimized energy usage?
- Connected citizens?
- A safer city through intelligent decisions?
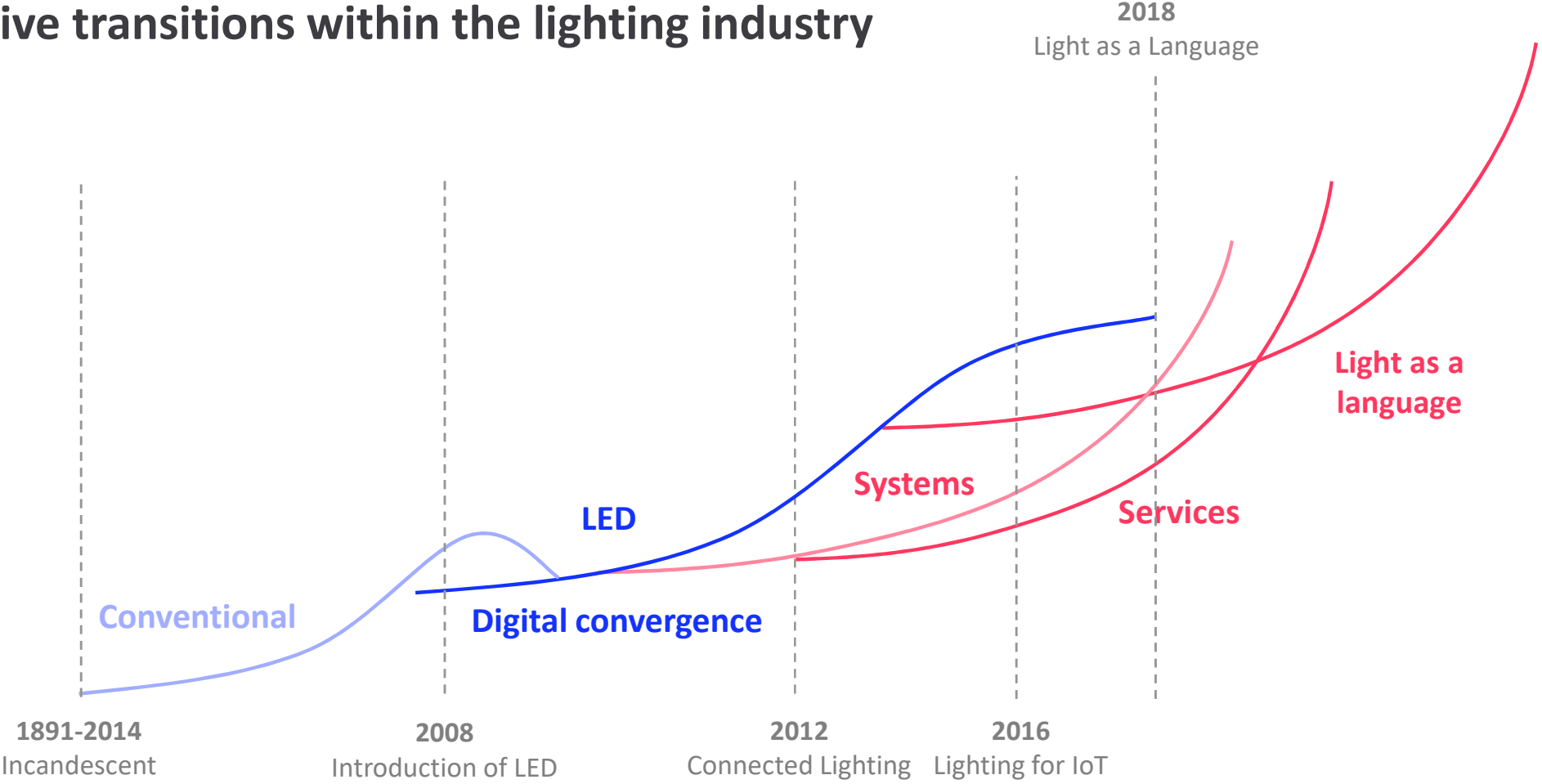- A combination of above or others?

"The term Smart City refers to an urban system aiming at fulfilling efficiency and sustainability criteria with critical domains and application areas. This goal can be achieved by exploiting open and private data (...) in order to make infrastructures and services more accessible and interactive."

IEEE – multiple authors

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Trends in the lighting industry

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Five transitions within the lighting industry

2018
Light as a Language

Light as a language

Systems

Services

LED

Digital convergence

Conventional

1891-2014
Incandescent

2008
Introduction of LED

2012
Connected Lighting

2016
Lighting for IoT

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Experience significant energy savings by upgrading to Connected LED lighting

Connect to leverage extended benefits of LED energy savings. The Climate Group's lightsavers trial investigated pilots with LED and smart lighting in 12 major cities. In 15 trials, with over 500 lights and 27 products, significant energy savings were identified.

50-70% energy savings with LED
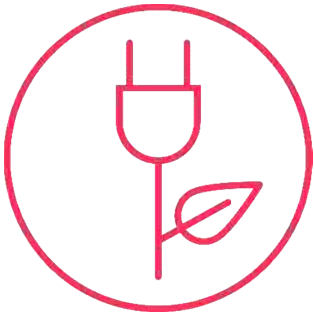
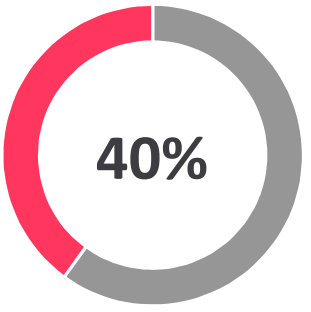**Up to 80%** energy savings when coupled with smart controls

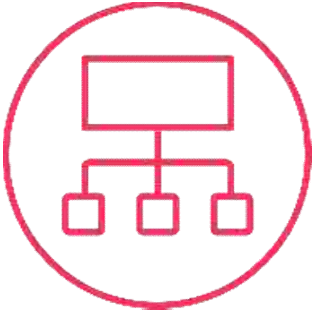interact

Connectivity situation today

~363
million street
lights worldwide[1]

On average, public
lighting is more than
20 years old

40%

Lighting can account for
up to 40% of a city's total
energy consumption[2]

3% of installed systems
are connected, this is
expected to reach **29%** by
2027[1]

[1] Northeast Group, *Global LED and Smart Street Lighting November 2017*
[2] European PPP Expertise Centre (EPEC), European Commission, *Energy Efficient Street Lighting*, 2013

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How connected lighting can help

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Our world is changing …
See how connected lighting can make a difference

Population growth & urbanization

Resource challenges
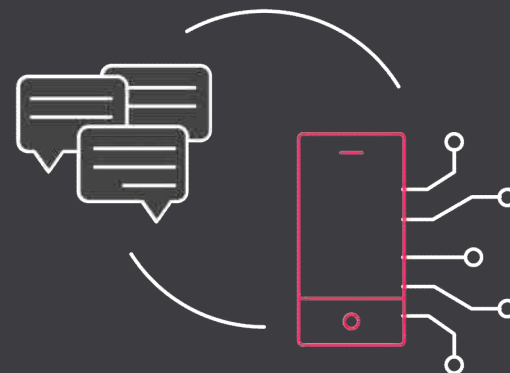
Digitization

- Right light and safety

- Energy efficiency with performance
- Sustainable resource constraint

- Mobility
- New applications beyond illumination

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How do we deliver benefits?
1. Interact IoT Platform

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Lighting is everywhere….

The areas we play in….

Office

Industry

Retail chain

Shopping mall

Hotel

Healthcare

Home

Transportation

Sports

Road & Street

Park & plazas

Landmark

Tunnel

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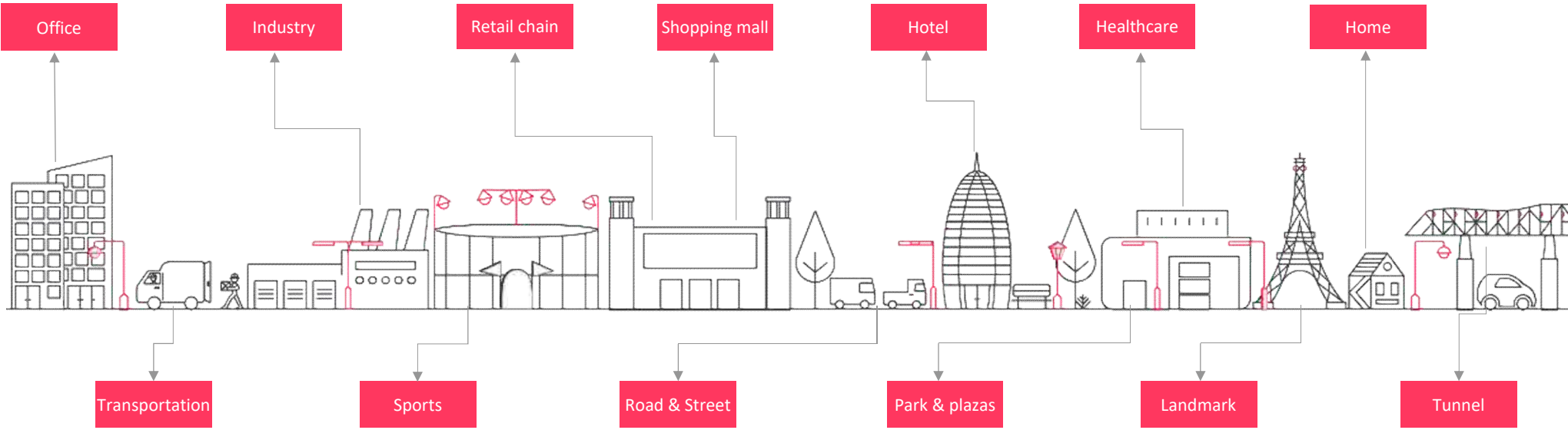
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The connected lighting offer

Interact
Systems

Interact
City

Interact
Landmark

Interact
Sports

Interact
Retail

Interact
Office

Interact
Industry

Interact
Hospitality

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How do we deliver benefits?
2. Interact City

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Interact City
What is it?

Interact City is a connected lighting system and management application that enables you to remotely manage, monitor and control all your city lighting including:

- Roads and streets
- Pedestrian sidewalks and crossings
- Bridges
- Parks and plazas

1. Improve operational efficiency
2. Broader integration to other applications
3. Data based proactive services
4. Support ongoing optimization to save costs and reinvest

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Interact City
What are the benefits?

Interact City is the application for all your city's outdoor lighting needs which will improve citizen's life and make the city more sustainable.

It helps you:

- Make people feel safer
- Beautify public spaces
- Engage citizens
- Boost quality of life and civic pride

At the same time, you can:

- Reduce your energy costs
- Run your city more efficiently

And it's ready to facilitate integrations with other systems and software.

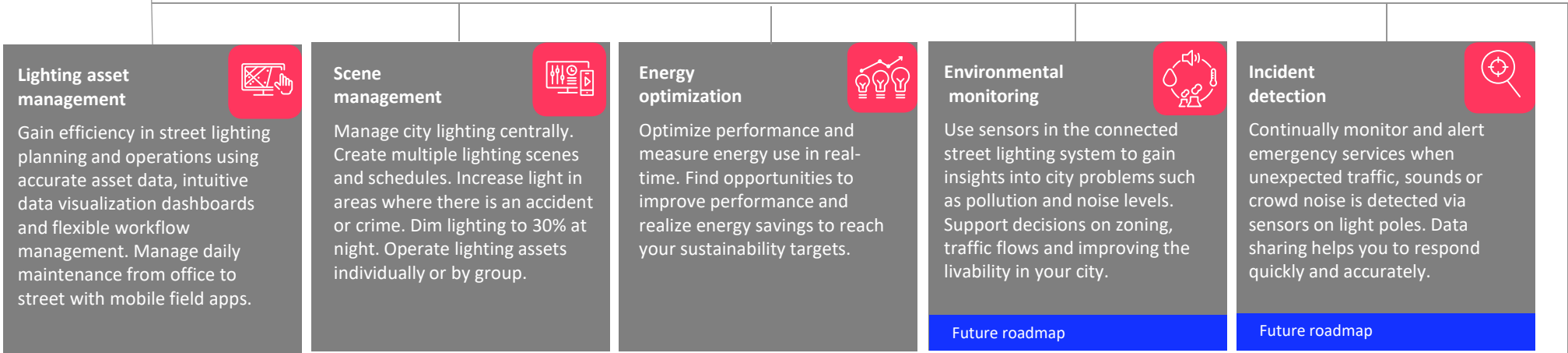interact

Interact City
What can it do?

With Interact City, you can:

- Control & Monitor lighting remotely

- Set lighting schedules

- Override schedules manually in case of accidents or crime to increase alertness and support the work of the police

- Identify lighting failures through real time fault notifications

- Support a selection of sensors that collect data on both lighting and non-lighting related information. This data can be used to improve city operations and the quality of life of citizens

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Software and hardware building blocks

Interact City
software

Lighting asset management

Gain efficiency in street lighting planning and operations using accurate asset data, intuitive data visualization dashboards and flexible workflow management. Manage daily maintenance from office to street with mobile field apps.

Scene management

Manage city lighting centrally. Create multiple lighting scenes and schedules. Increase light in areas where there is an accident or crime. Dim lighting to 30% at night. Operate lighting assets individually or by group.

Energy optimization

Optimize performance and measure energy use in real-time. Find opportunities to improve performance and realize energy savings to reach your sustainability targets.

Environmental monitoring

Use sensors in the connected street lighting system to gain insights into city problems such as pollution and noise levels. Support decisions on zoning, traffic flows and improving the livability in your city.

Future roadmap

Incident detection

Continually monitor and alert emergency services when unexpected traffic, sounds or crowd noise is detected via sensors on light poles. Data sharing helps you to respond quickly and accurately.

Future roadmap

Open data interface

Interact City uses standardized data interfaces to feed public lighting asset data into city management systems and smart city dashboards.
Connect existing Smart city applications with remote lighting management to optimize safety and efficiency. For example; allow a police control room access to your city data and even permission to control some of your city lighting to streamline operations and improve citizen services.
Enable access to rich city data sets through open API to encourage innovation from your in-house developer team, other city partner organizations or third-party developers via the Interact Developer Portal.

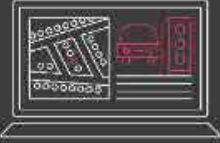interact

We make use of open platform

City dashboard/Data analytics

Exchanges information with other city management systems

Smart City applications

Enables information from other systems to interact with the lighting infrastructure via Interact City
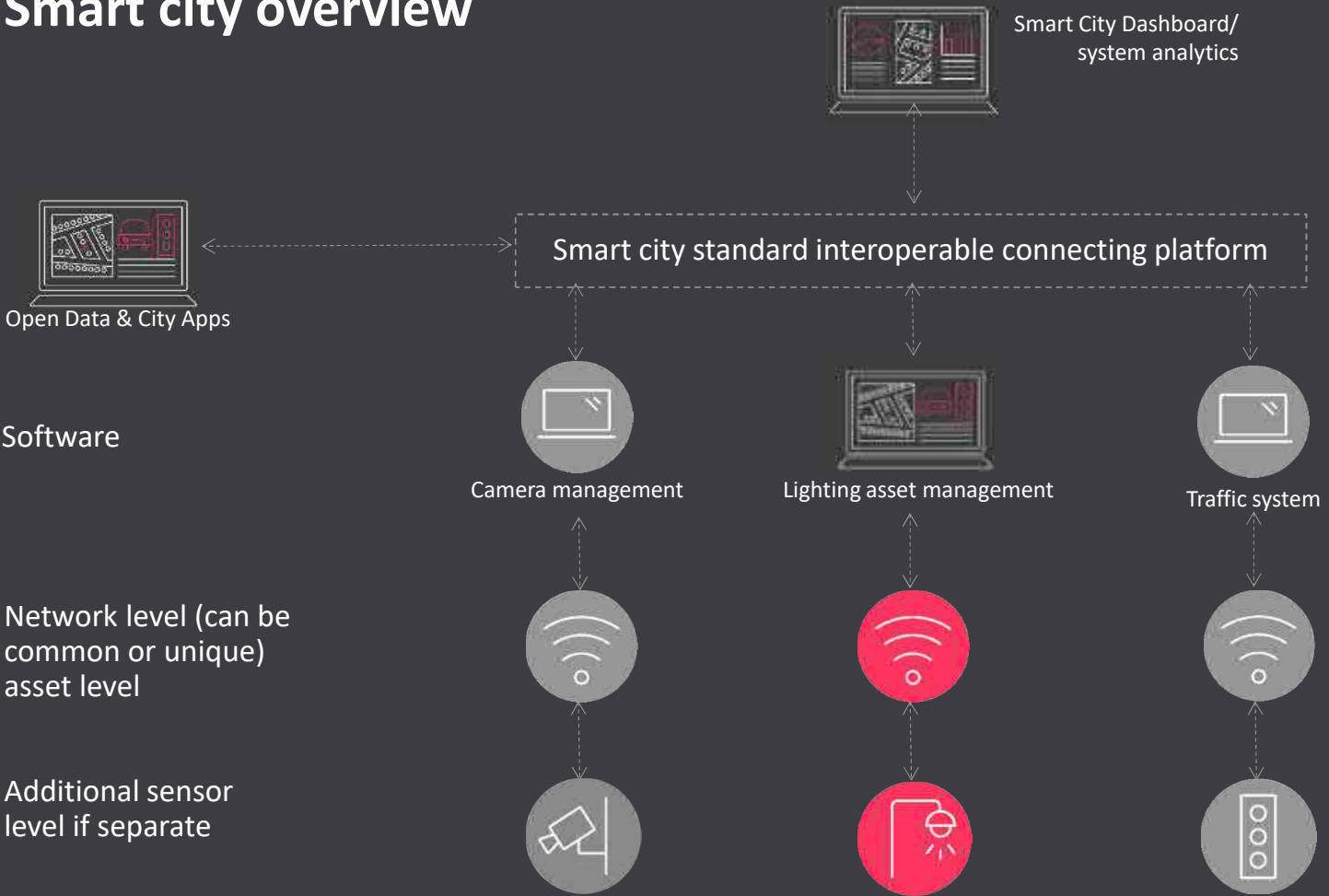
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Scene management

Interact City software

Lighting asset management

Connected assets

Luminaires

Sensors

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Smart city overview

Smart City Dashboard/
system analytics

Smart city standard interoperable connecting platform

Open Data & City Apps

Software

Camera management

Lighting asset management

Traffic system

Network level (can be
common or unique)
asset level

Additional sensor
level if separate

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Are you wondering if we can we prove it? Yes, we can!

We are lighting, systems, services and sensor specialists

We have tested and verified our designs with over 1,000 city installations

We use a wide range of connectivity network technologies

Our OEM partners are making Interact Ready lamps and luminaires

Just ask us for details and review our case studies
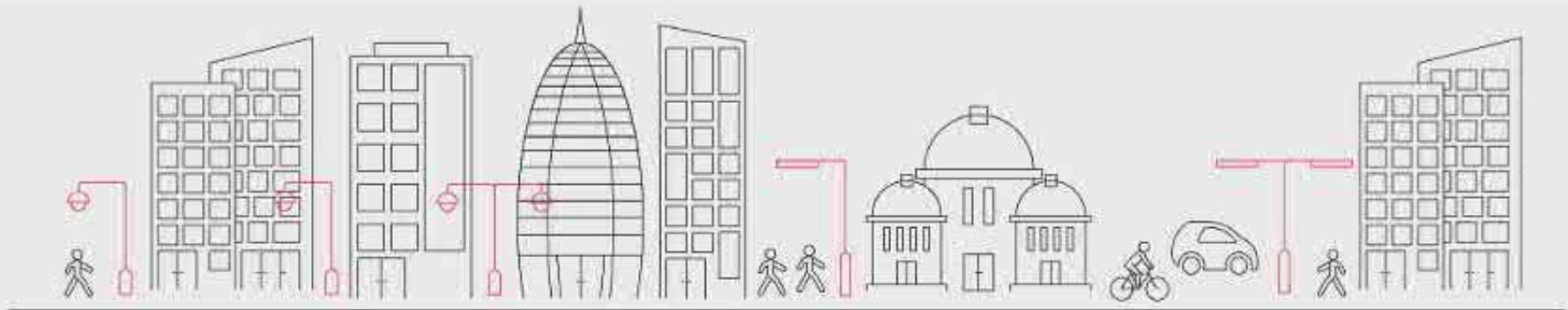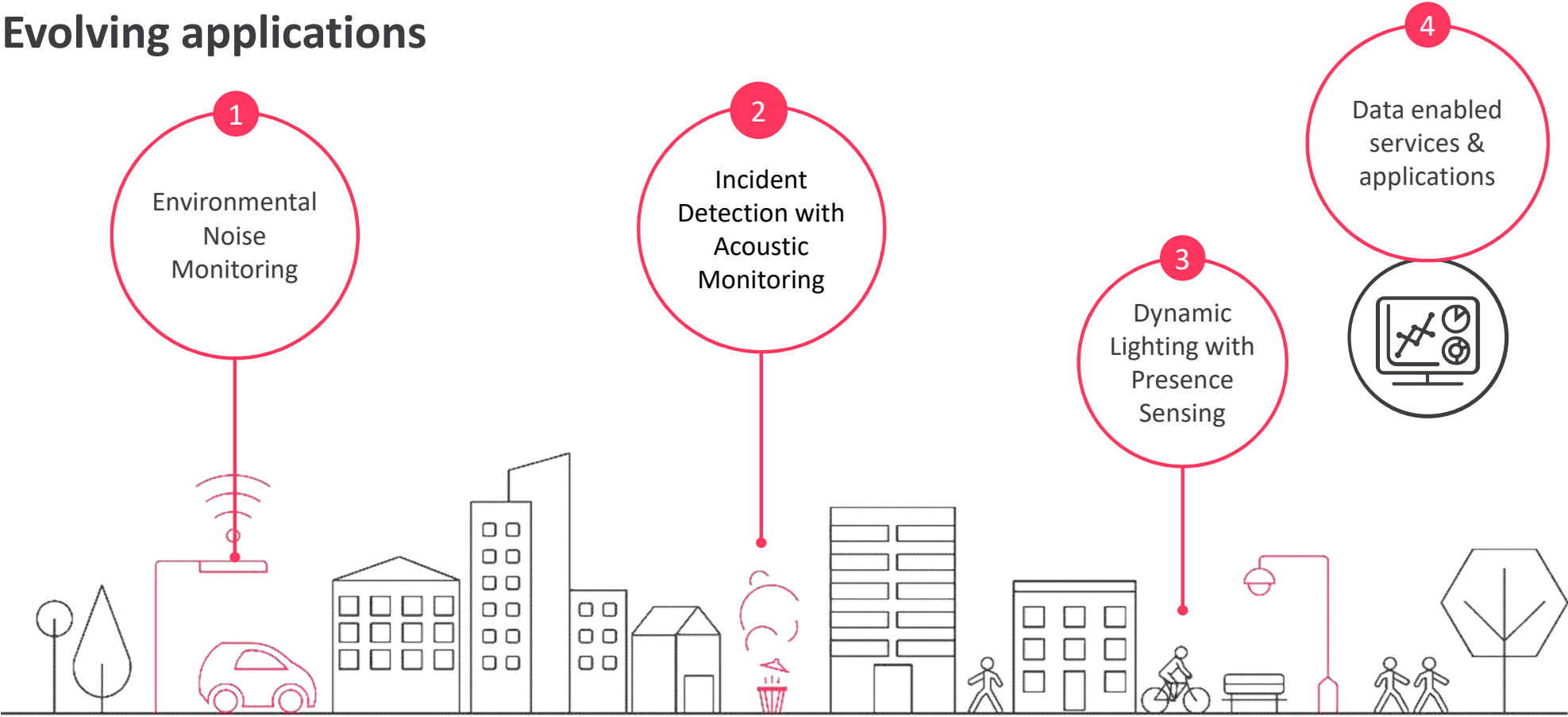
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Connected operations,
have taken off

As of today, we have more than 1500+ Customer Project Sites and 1.5 million Light Points connected in 50+ countries.

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Evolving applications

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Evolving applications

1 Environmental Noise Monitoring

2 Incident Detection with Acoustic Monitoring

3 Dynamic Lighting with Presence Sensing

4 Data enabled services & applications

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Blazing the trail to a smart, sustainable future
Los Angeles, California, USA

The vision
Los Angeles city officials wanted to upgrade its lighting to make the city more livable and pedestrian-friendly. They wanted a system that would increase street light uptimes, shorten repair cycles, and improve system monitoring and maintenance, all while minimizing initial and ongoing costs and making the city more sustainable.

The solution
Los Angeles converted more than half of its 215,000 street lights to LED, over 110,000 of which are connected to and managed by Interact City. The software has greatly simplified lighting asset management and helps the city to be more responsive to the needs of its citizens in different locations.

Scene management

Lighting asset management

Energy optimization

165,000 street lights converted to LED

63% energy savings

48,000 tons of CO_2 emissions saved annually

"The fact that Los Angeles has selected Interact City sends a very positive signal to other cities. It validates connected lighting as a solution that can deliver really substantial benefits."

Ben Ferrari, Director of Partnerships, The Climate Group

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Environmental monitoring: pilot; Los Angeles, USA

Another application that is growing is the acoustic monitoring of the city…

Generate continuous and dense data on urban noise (sound pressure, spectral composition, dynamics)

Support regulatory compliance and city-wide planning decisions like traffic planning or school placement

Inform and monitor public health initiatives related to environmental conditions

Handle noise nuisance complaints (e.g. local councils, housing associations and environmental health officers)

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Air Quality Sensing

Leveraging the lighting infrastructure, measuring air quality attributes with higher granularity generates valuable information to bring Air Quality insights to another level.

For cities

- Urban planning
- Policy assessment and validation
- Pollution control and mitigation
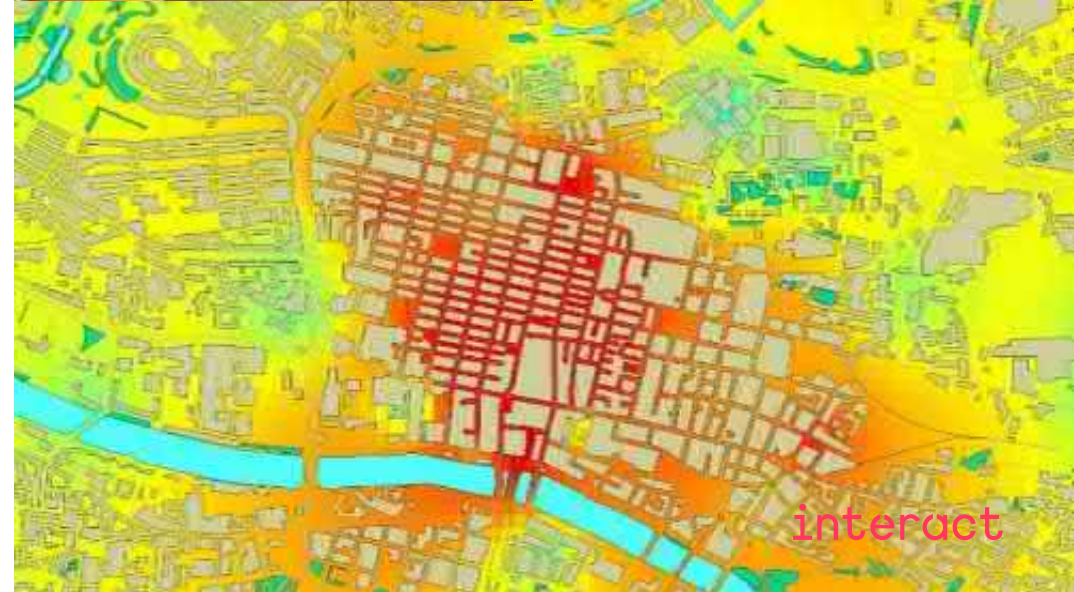- Nuisance monitoring and complaint handling

For Citizens

- Personal pollutant exposure reporting
- Personal route and activity planning

The US Environmental Protection Agency (EPA) declared **Air Pollution as one of the highest environmental risks of the 21st century.**

Cost for the OECD is estimated to be a staggering **$1.7 trillion.**

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Facilitating a safer, smarter city
Buenos Aires, Argentina

The vision
With a growing population, Buenos Aires has seen increasing energy consumption and CO2 emissions. 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. Interact City works with SAP HANA to provide city officials with a 360-degree view of data. The solution is scalable, meaning it can adapt to meet the changing needs of the city in the future.

Scene management

Lighting asset management

Energy optimization

75% of city lighting upgraded: 91,000 new street lights

Significantly reduced CO_2 emissions

50% reduction in operational costs

"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

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Interact City powers Jakarta's smart transformation
Jakarta, Indonesia

The vision

The project – a significant milestone in Jakarta's ongoing transformation into a smart city – involved upgrading nearly 90,000 street lights with energy-efficient LED lighting connected by Interact City lighting asset management software. The project's timescale was just seven months, with approximately 430 street lights being connected each day.

The solution

The Interact City software installation meant Jakarta could upgrade approximately 50% of its lighting by replacing inefficient mercury-vapor lamps with high quality, energy-efficient LEDs. It was also able to control and monitor its new street lights remotely and generate new insight into the operation and optimization of a key city resource.

Scene management

Lighting asset management

Energy optimization

Nearly 90,000 connected LED street lights

Supports Jakarta's transformation into a smart city

The world's fastest street lighting retrofit and remote management project to date

"We are convinced that smart connected lighting and Interact City software will help us reduce our energy expenses and improve public services."

DKI Jakarta, Government Office

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Incident Detection with Acoustic Monitoring - pilot; Rotterdam, NL Application Examples

Sound data presents a multi-faceted and powerful tool with applications beyond environmental noise analysis and mitigation.

Smart microphones with advanced pattern recognition SW can detect diverse safety-related incidents:

- Aggressive behavior

- Distressed citizens

- Gunshots

- Breaking glass

- Car alarm

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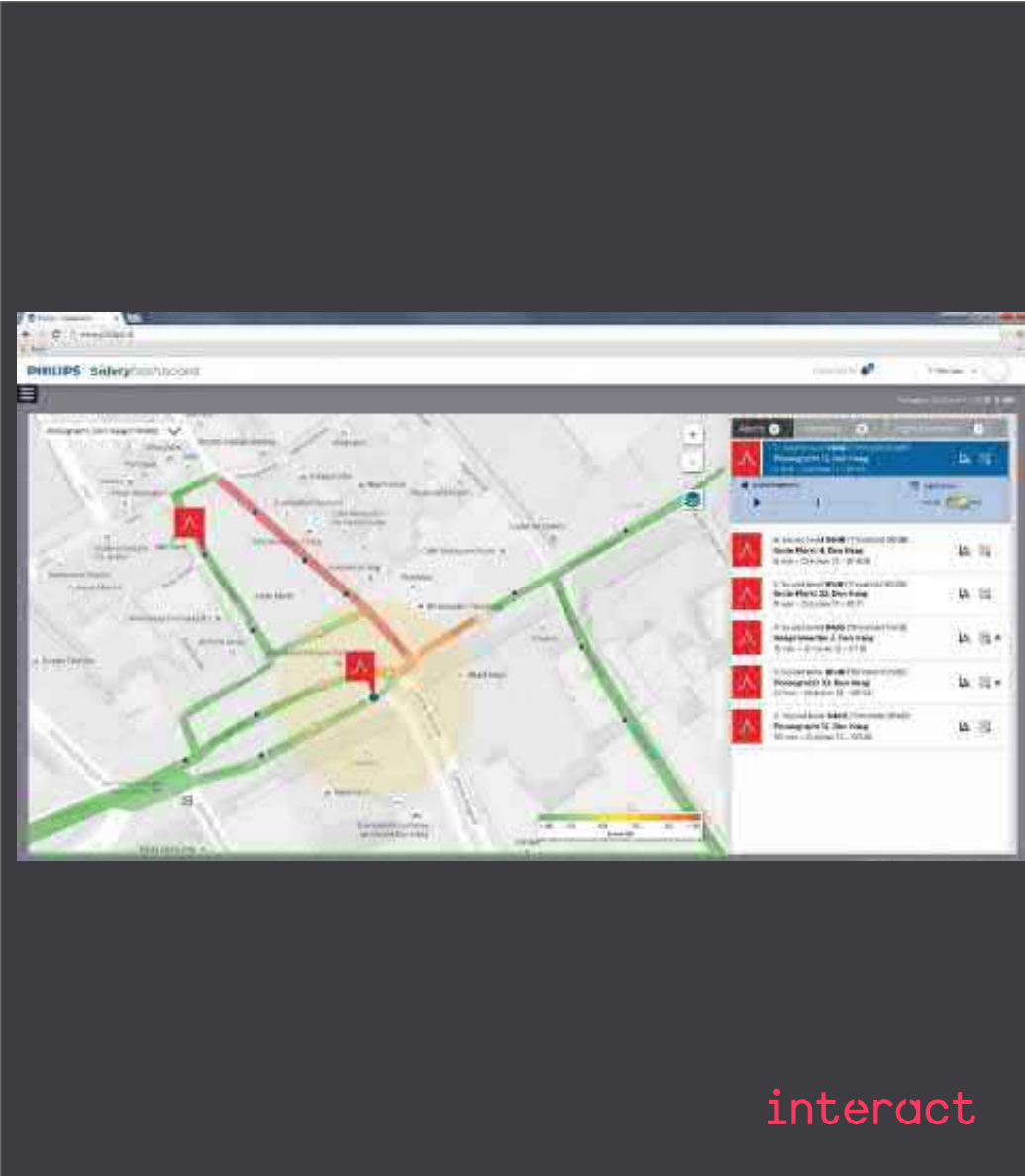
Public Safety with Acoustic Monitoring Integration with other systems - pilot; Eindhoven, NL

Collaborate with surveillance camera experts and system integrators

Acoustic monitoring data supports the operation of video surveillance systems by assisting staff to focus on most relevant information.

Make relevant information streams (incidents, sound clips, etc.) accessible via APIs

Application development and integration into existing systems and workflows

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