

SMART COMMUNITIES DELIVERING A 3-DIMENSIONAL ROI

A great deal is expected of our cities and communities, both today and in the decades ahead, as their infrastructures come under continual pressure from expanding populations. Cities have an opportunity to improve quality of life by addressing major local issues such as air and water quality, resource scarcity, traffic congestion, public health and safety.

Objectives for Modernisation

Communities worldwide are facing a variety of economic, environmental and social challenges to modernise operations—and technology providers offer a wide range of solutions that drive economic efficiencies, conserve precious environmental resources and enhance quality of life. So where can we find the immediate returns on investment?

1

DELIVER ECONOMIC BENEFIT

Funding smart city programs requires a hyper-focus on driving **operational efficiencies**. IoT-enabled solutions automate existing business processes and deliver remote services to eliminate truck rolls and reduce the cost of service for taxpayers.

- Legacy streetlights consume **20 – 50% of a municipal energy budget**
- €80B/year of water lost** through leaky pipes in Europe
- 70-80% of parking fees** are unpaid
- >€208B annual cost** of road congestion delays in Europe

2

IMPROVE QUALITY OF LIFE

Rapid urbanization is increasingly straining critical services and can negatively impact livability. Smart solutions can create a better quality of life by **improving public health, mobility and safety**.

- 42% of citizens say public safety is the most important benefit** of smart street lighting
- Up to 30% of traffic** is caused by drivers searching for parking
- Drivers stuck at traffic lights **are exposed to up to 29x more harmful pollution** than drivers in free-flowing traffic
- >13,000 European water bodies** are contaminated by urban wastewater treatment plants

3

ESTABLISH ENVIRONMENTAL STEWARDSHIP

Preserving the health of our environment goes hand-in-hand with protecting public health. **Conserving energy and water and eliminating pollution** in our natural ecosystems is an essential pillar of any smart city strategy.

- Up to 70% energy wasted** from inefficient legacy lighting systems
- Up to 50% of water resources are lost** before they reach the tap
- More than 650,000** combined sewer overflows in Europe
- €79.8B annual cost** of road traffic-related air pollution

A Recipe for Smart Communities

Multi-purpose IoT platforms provide a foundation for cities to deploy a variety of smart solutions to modernize operations and become more efficient, sustainable and equitable, providing a three-dimensional return on investment (ROI).



ECONOMIC VIABILITY

QUALITY OF LIFE

ENVIRONMENT

| | | | |
|--|---|---|--|
| <p>SMART STREET LIGHTING Energy-efficient LEDs connected through smart controls help cities:</p> | Drive operational efficiencies and lower municipal energy bills | Address crime and improve safety | Reduce energy waste |
| <p>WASTEWATER MANAGEMENT Transform utility instrumentation into active sensor nodes to manage wastewater levels and flow patterns:</p> | Reduce operational costs and avoid fines for illegal discharge | Improve public health | Avoid pollution to local ecosystems and reduce truck rolls |
| <p>AIR QUALITY MANAGEMENT Monitor a range of environmental data to help communities precisely identify the patterns and sources of pollution:</p> | Increase Productivity | Reduce the impact of air quality related health issues | Reduce GHGs and other pollutants |
| <p>WATER LEAK DETECTION Pinpoint high flow rates, continuous flow and other leakage indicators:</p> | Reduce the cost of service delivery through proactive maintenance and eliminating non-revenue water | Help consumers manage usage and save money | Conserve water and reduce chemicals used for treatment |
| <p>SMART PARKING Monitor available parking spaces and guide drivers to their ideal parking location:</p> | Increase enforcement revenue, increase traffic to retail | Minimize search times and improve the experience for drivers | Reduce traffic and vehicle emissions |
| <p>TRAFFIC MANAGEMENT Keep people and goods moving quickly, safely and efficiently on the roadways:</p> | Drive traffic to local businesses and provide data to retailers | Avoid congestion, reduce commute times, and monitor social distancing when required | Reduce emissions and optimise traffic flow based on pedestrian density |

Where's the Three Dimensional ROI?

ECONOMIC BENEFIT

- €1.9 billion** per year potential energy savings
- +10-20% operational savings** from networked lighting controllers
- €7,000: estimated revenue potential** per parking space
- Avoid financial penalties and **reduce truck rolls by 60%**

QUALITY OF LIFE

- 30% faster navigation** to available parking
- 36% reduction in index crimes** by upgrading to LED street lighting
- Increase GDP by **up to 10%**
- Reduce traffic stops** for cyclists by 10%

ENVIRONMENTAL STEWARDSHIP

- 5B gallons saved** by using AMI data for automated leak detection
- GHG equivalent of having **2.6M fewer cars on the road**
- Up to 50x ROI** from pollution control measures
- Reduce chemicals, carbon emissions and energy **used for treatment**

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