



# CREATING THE FUTURE OF SUSTAINABLE SMART CITIES

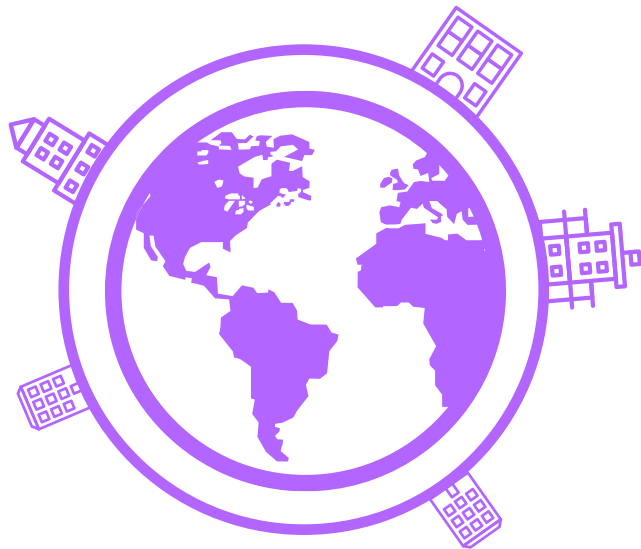
THANASIS KAROUSOS  
JUNE 29, 2022

# 21<sup>ST</sup> CENTURY: THE ONE OF THE CITIES

**MORE THAN 2 BILLION PEOPLE WILL MOVE FROM RURAL AREAS TO URBAN CENTERS IN THE NEXT YEARS**

**1913**

**10% OF THE WORLD'S  
POPULATION LIVED IN CITIES**



**2013**

**50% OF THE WORLD'S  
POPULATION LIVED IN CITIES**

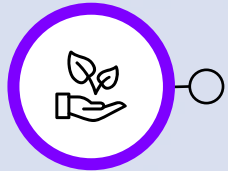


**2050**

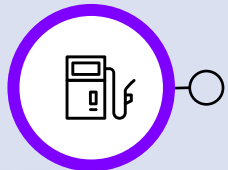
**75% OF THE WORLD'S  
POPULATION WILL LIVE IN CITIES**



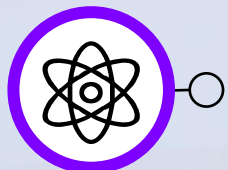
# THE **CASE FOR CHANGE** FOR CITIES HAS NEVER BEEN MORE PERTINENT THAN IN TODAY'S FAST PACED WORLD



## **CLIMATE CHANGE**



## **HIGH AND VOLATILE PRICES FOR CONVENTIONAL FUELS**



## **COVID – 19 PANDEMIC**

### **Modern and Efficient Infrastructure**

Energy Systems need to be revolutionized so that sustainable renewable energy is generated, stored and optimally distributed

### **Escalating citizen needs for energy efficiency and carbon reduction initiatives**

Individuals are seeking ways to reduce their energy consumption in order to decrease their carbon footprint and cut high costs of conventional energy consumption

### **Acceleration of digital processes & solutions**

The pandemic created the need to develop rapidly smart solutions. Citizens showed adaptability in adjusting to new norms and are looking for more solutions and services to accommodate their lives.

# A SMART CITY IS A DIGITALLY-ENRICHED, SUSTAINABLE URBAN ENVIRONMENT



A City that **embeds technology** into its design and operation



A City that integrates across **multiple infrastructure layers**

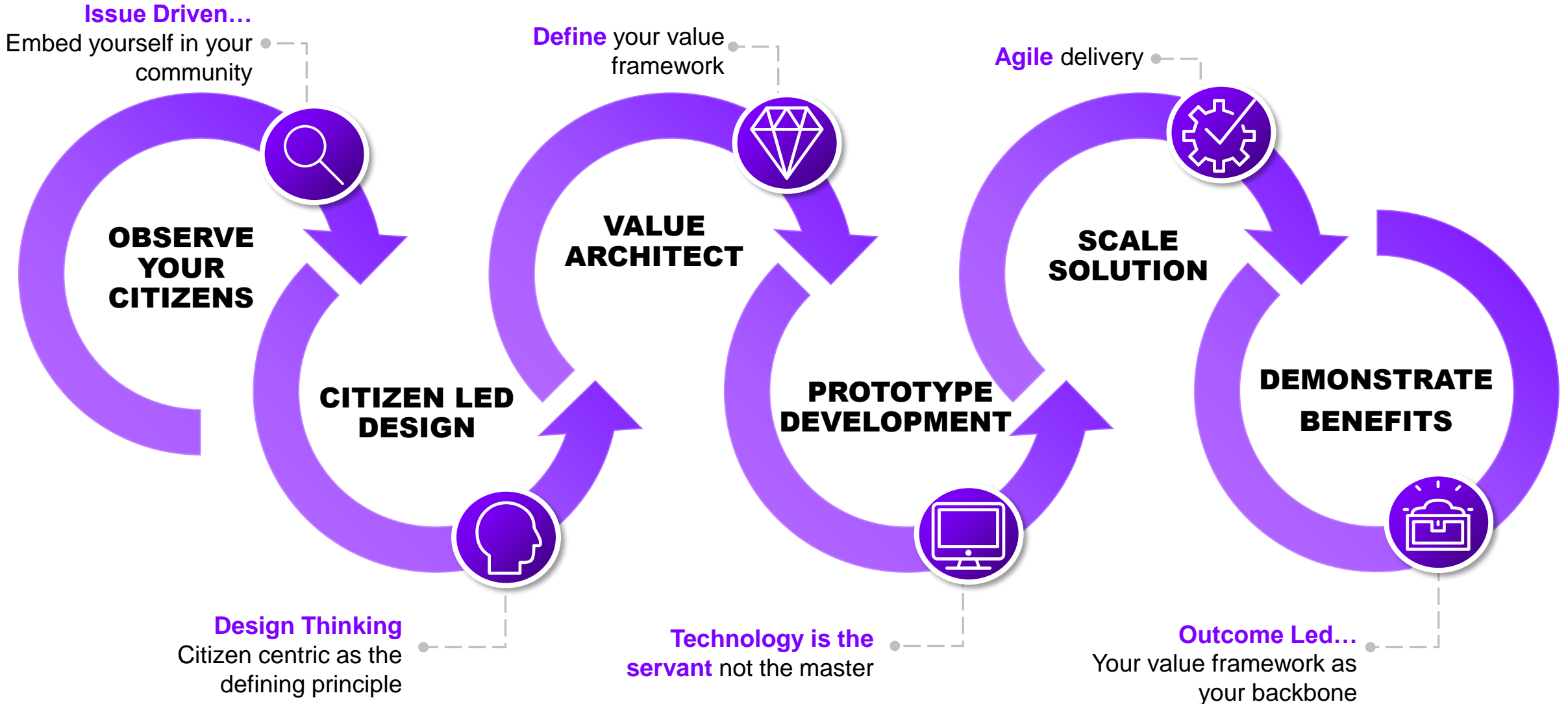


A City that **focuses on service provision** for its citizens and business



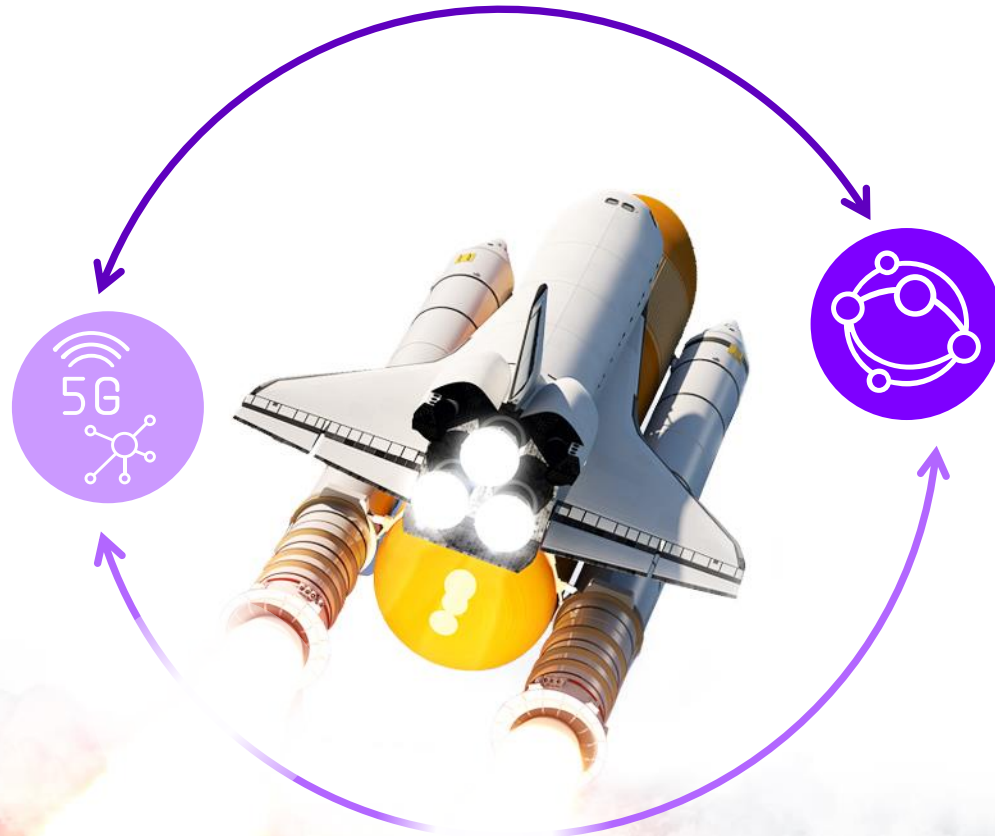
A City using an innovative **public & private sector collaboration model**

# DO YOU KNOW WHAT PROBLEMS YOU'RE TRYING TO SOLVE?



# 2 KEY PILLARS OF CITIES' TRANSFORMATION: 5G & IOT AND DATA & ANALYTICS

**5G NETWORKS  
&  
IOT**



**DATA  
&  
ANALYTICS**

# THE POWER OF DATA & ANALYTICS

## GATHER DATA

from multiple sensors,  
IT systems & other  
sources



## VISUALIZE DATA

Create user-friendly  
and comprehensive  
dashboards



## ASSESS & CATEGORIZE DATA

to allow more accurate  
analysis



## DATA DRIVEN DECISIONS

Generate actionable  
insights &  
recommendations

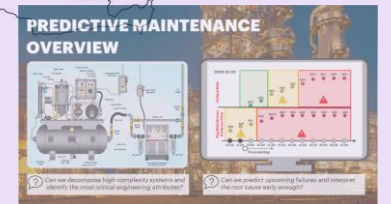
## ACCENTURE GREECE, GLOBAL AI & ADVANCED ANALYTICS CENTERS

focused on research, ideation, experimentation and deployment of cutting-edge AI capabilities.

**100+**

Highly **skilled professionals** are employed by Athens Center for Customer & Industrial Analytics working within a **team-oriented** environment that promotes **continuous learning**

## DEEP EXPERIENCE IN AI & ANALYTICS SERVICES - INDICATIVE USE CASES



# SMART CITY IOT ENABLED USE CASES

Non-Exhaustive

## Environment & Agriculture

- Smart Waste Management
- Smart Farming Solution
- Sustainable Living Dashboard
- Zero Food Waste Platform
- Smart Green Buildings
- Urban flooding solutions

## Utilities

- Smart Water
- Smart Power
- Smart HVAC
- Smart Irrigation
- Smart Streetlights
- Smart Dustbins

## Travel & Tourism

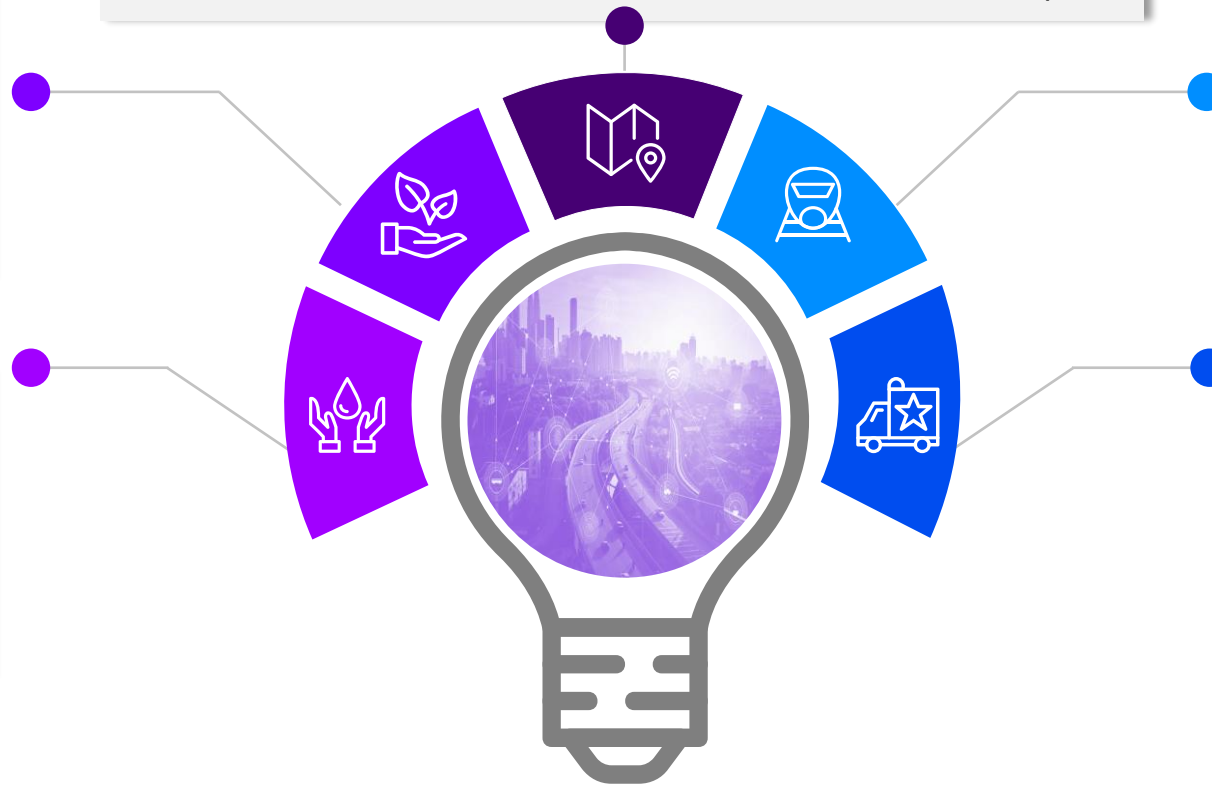
- City1Tap App
- Connected Traveler
- City Living Museum
- Advanced Way finder
- Responsive Crowd Management
- Digitally Augmented Hosts
- Digital Libraries
- Urban Information marketplace

## Transportation & Mobility

- Smartways
- Fleet Management
- Smart Parking Systems
- Urban Micro-Mobility Solutions
- City EV Digital Hub
- Car-Pooling & Sharing Platform
- Integrated Transit Hubs

## Healthcare & Wellbeing

- Connected Ambulance
- Doctors Digital Assistant
- Health Directory
- Mobile Deployable Clinics & Kiosks
- Patient Companion App



**AUGMENT REVENUE FOR GOVERNMENTS BODIES**



**DRIVE EFFICIENCY IN MCITY OPERATIONS**

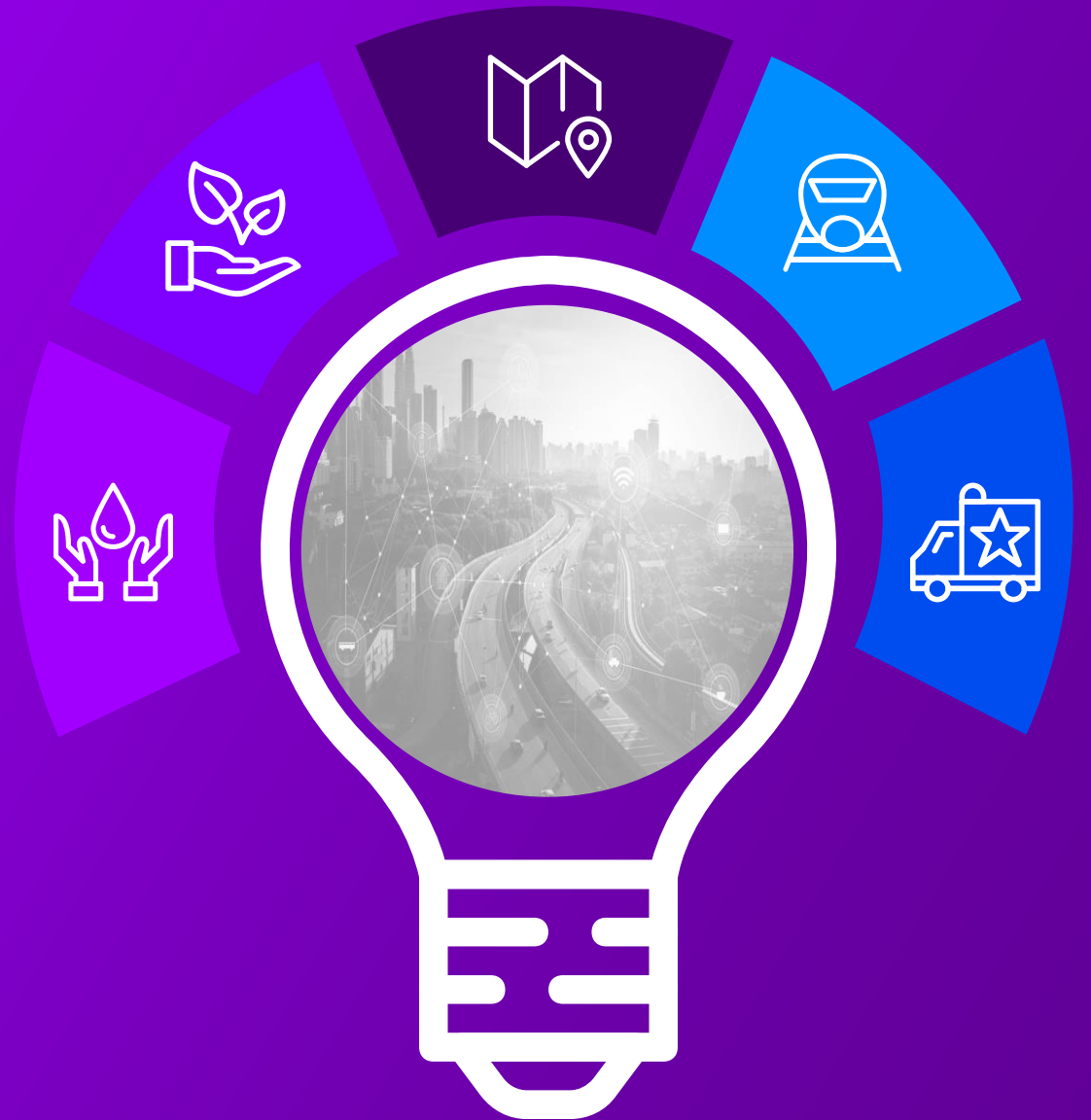


**ENHANCE SUSTAINABILITY & QUALITY OF LIFE**

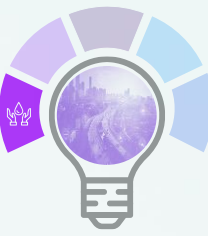


# OUR

# EXPERIENCE



# SMART WATER



## Challenge

- Water distributions are unable to diagnose leakages
- Water shortage gives rise to the need of intelligent decision making



## DEVELOPMENT OF A COMPREHENSIVE ANALYTICS SOLUTION ENABLING WATER UTILITIES TO UNDERSTAND AND MANAGE PERFORMANCE OF THEIR ASSETS



**Collection of data from sensors across multiple parts of the network and IT systems**



**Detection of leaks and monitoring of water distribution across network**



**Intelligent decision making**



Based on Accenture engagement in **London, UK** with Utilities Stakeholder. First year results:

**10%**

**Reduction in unplanned outages**

**10**

**Flooding and pollution events avoided**

**5%**

**Reduction in number of supply interruptions that are >12hrs**

**8%**

**Reduction in energy usage**

**10%**

**Reduction in customer calls**

# SMART WASTE MANAGEMENT



## Challenge

- Waste bins overload & unauthorised dumping of building rubble, household refuse or other waste
- Inefficient use of waste collection resources



Data visualization platforms

Network infrastructure

Sensors & Cameras

## DEVELOPMENT OF SMART WASTE MANAGEMENT SOLUTION

Cloud based application gathered data from sensors placed on bins and provided dashboard for monitoring & scheduling waste collection

## FLY TIPPING DETECTION SOLUTION

Detection tool using AI driven CCTV cameras. Set up a control room to monitor visual analytics dashboards drawing data from specific GIS layers, Traffic cameras, and open police data



**London Borough of Newham:** 4 week fly-tipping detection PoC:

- 4 incidents were detected with the support of 2 dashboards
- 8 Newham staff trained in the new tool

## BENEFITS

**Reduction collection cost** and **efficient allocation of resources**

**Reduction** in unnecessary **fuel consumption** and **emissions**

## Additional Experience in Waste Management Analytics



**Barcelona, Spain:** Development of analytical data model allowing City Hall to review and correct the way cleaning service is delivered



**Rio De Janeiro, Brazil:** Development KPIS for managing the state of cleanliness of streets & beaches

# CITY1TAP - APPLICATION



## Challenge

- Create a mobile application that would be just a 'tap' on relevant content to **make life easier for citizens and tourists in a city**
- Offer **infotainment** and perform as a **revenue driver**



## DEVELOPMENT OF CITY1APP | AN INNOVATIVE MOBILE CITY GUIDE THAT TRANSFORMS THE WAY PEOPLE ACCESS INFORMATION



**Location based coupons/ads**



**Finding nearby restaurants & reviews**



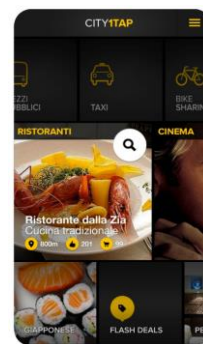
**Looking for nearby attractions**  
(tourist sights, theatres, cinemas etc)



**Ordering a taxi and finding public transportation options**

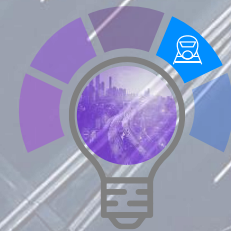
Accenture engagement with **RCS MediaGroup S.p.A, Milan, Italy**

- Deployed mobile app features as a **web console for coupons / ads upload for RCS's partner network**
- Provided **system integration and service integration of 3rd party services**
- Provided **aggregated information on local utility services and entertainment avenues to its users**



Award for  
**'Best Mobile Innovation for Smart Cities'**  
GSMA Global Mobile Awards

# SMARTWAYS FOR SAFETY

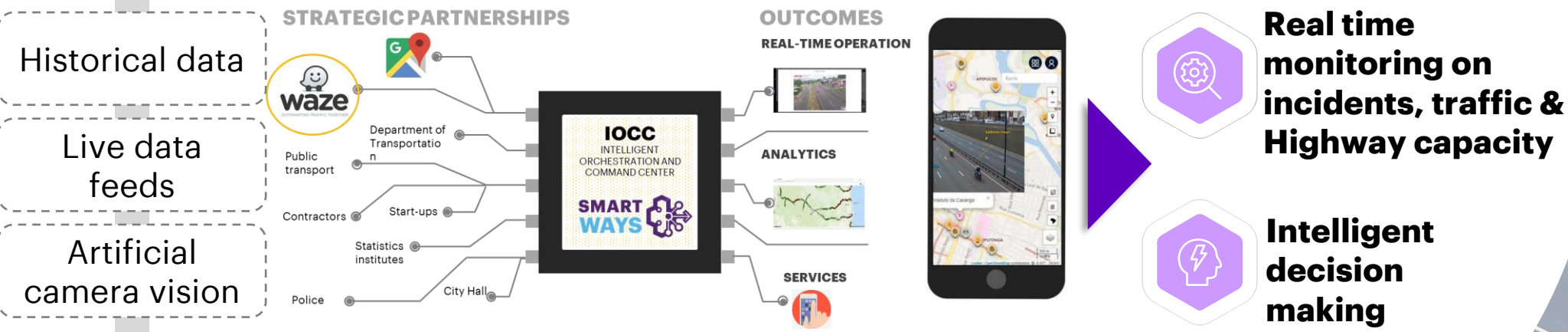


## Challenge

Reduction of the number of accidents and deaths on federal highways



## DEVELOPMENT OF SMARTWAYS - AN INTELLIGENT ORCHESTRATION AND COMMAND CENTRE

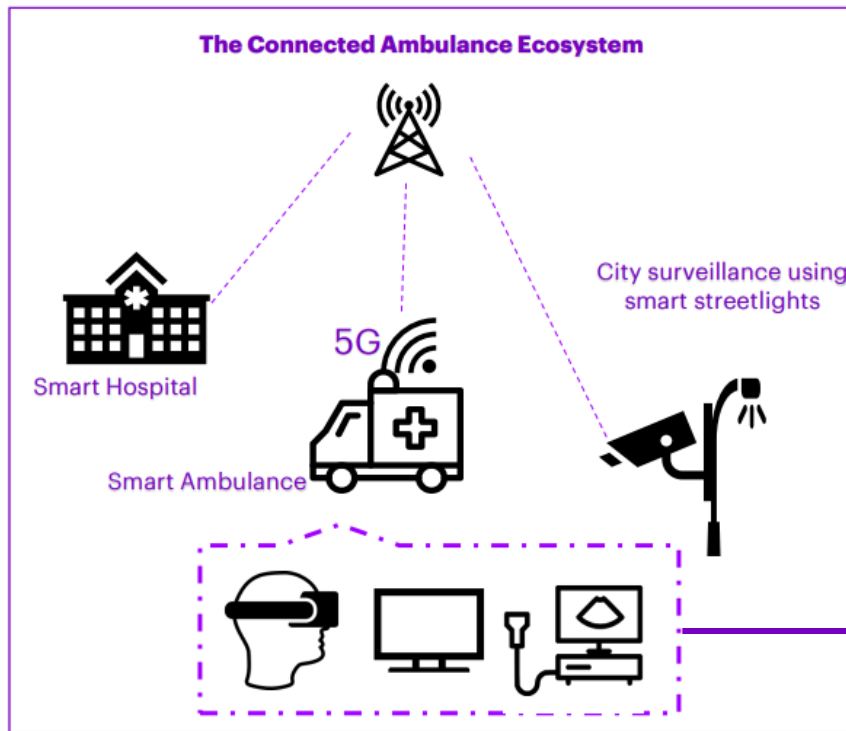
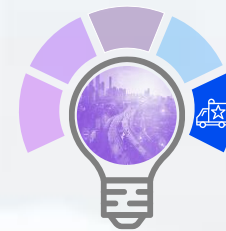


 Based on Accenture engagement with **National Department of Transport Infrastructure of Brazil**

**50%** More incidents identified VS those registered to the authorities

**12** Low-cost countermeasures in place targeting over 58% incidents

# CONNECTED AMBULANCE



## 360 DEGREE CAMERA

The doctor can have a 360 degree view of the ambulance and view the screens monitoring the vitals of the patient



## VOICE ENABLED AR

The doctor can get a clear view of the patient's injuries / medical condition



## REAL TIME VITALS MONITORING

5G enabled wireless sensors can transmit the real-time vitals of the patient for the doctor to communicate appropriate actions required to the paramedic



## HAPTIC GLOVE CONTROLLED ULTRASOUND

The transit time in the ambulance can be used to conduct the initial diagnostic tests like ultrasound via haptic controlled feedback



According to Accenture's "Fuel for Innovation" paper focusing on the city of **Ontario, Canada** - enhanced treatment in the ambulance could lead to

**20%** Reduction in average length of hospital stay for **10% of patients** transported in an ambulance

**\$140M** Savings to the healthcare system

**THANK YOU**

**THANASIS KAROUSOS**  
**SENIOR MANAGER**  
**MANAGEMENT CONSULTING @ ACCENTURE**