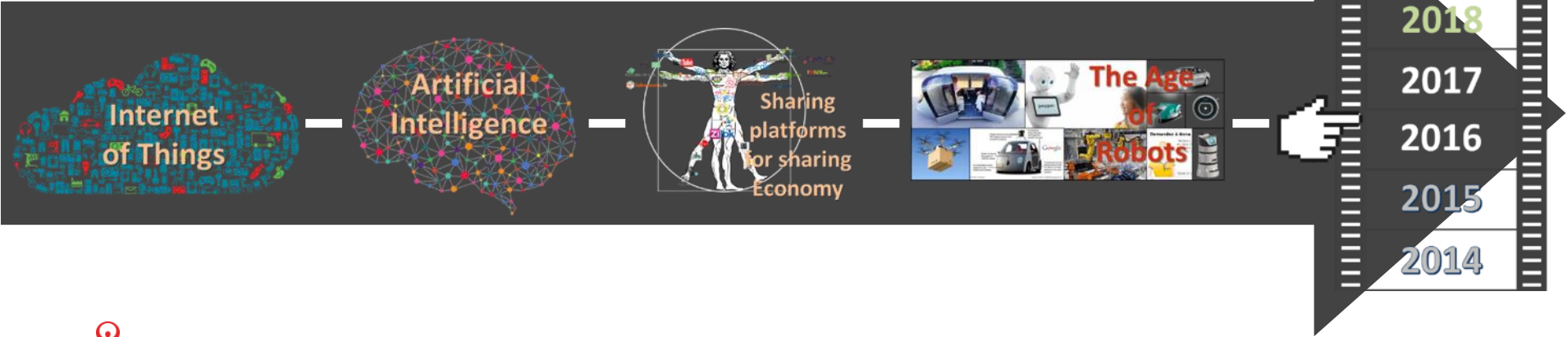


An aerial photograph of Bratislava, Slovakia, taken during the golden hour. The image shows the white Bratislava Castle with its red-roofed towers on a hill in the background. In the foreground, there is a complex highway interchange with multiple lanes of traffic. To the right, a large church with a tall, green spire is visible. The city is densely packed with buildings, and the Danube River is visible at the bottom. The sky is filled with soft, colorful clouds in shades of orange, yellow, and blue.

Targeting cities in their Digital Transformation

Digital technologies that should make us move



Why ?

Competitiveness Attractivity Durability

Efficiency

Quality of life

Co-construction

Optimisation of ressources

Access

Transparency

Optimisation of services

Health

Reactivity

Optimisation of budgets

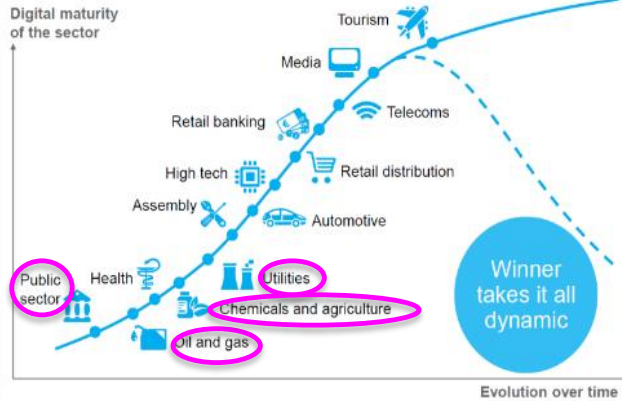
Environment

Participation

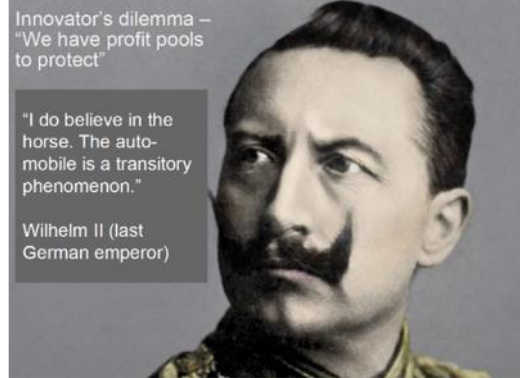


Do we have time? Much lesser than you think...

Digital is fundamentally affecting all industries – with varying speed and scope



View from strategic analysts



View from actors



View from users

Veolia partner of cities' digital transformation



WATERNAMICS

WASTENAMICS

HEATNAMICS

BUILDINGSNAMICS

ENERGYNAMICS



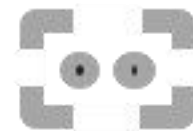
Urban Namics



Urban Board



Urban Pulse



Urban Bots



Urban Lake



URBAN X

5 DIGITAL PRODUCTS FOR CITIES DIGITAL TRANSFORMATION

UrbanNamics: a serie of products dedicated to managing infrastructures

Trucks position

Filling levels

Incinerators

Sorting plants

Citizens behavior

Flood Management

Predictive Maintenance

Leak Detection

Smart Metering

RealTime quality Control



WATERNAMICS
WASTENAMICS
HEATNAMICS
GREENNAMICS

Hypervision systems: 5 layers for 5 benefits

Predictive

S.O.P

Alerts

Data

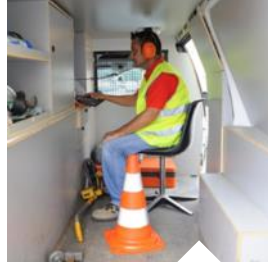
Sensors map



- **Efficiency:** Allow operating assets in an efficient and optimal way
- **Responsiveness:** Access to real time data and ALL the needed data for a more responsive crisis management - breaking silos between tools
- **Closer to users:** Contextualized responses to user requests
- **Transparency:** Automated KPI's and dashboards for greater transparency and targeted decision making
- **Operational improvement:** Benchmarking and operational improvement

References

WATERNAMICS



VEDIF

149 municipalities

Time to get an appointment reduced from 7 to 2 days

Shanghai

3.6 million inhabitants

Service coverage x 2

Work force -20%

Prague

4,279 km

Incidents response time reduced by 30%

Lyon

1.3 million of customers

12 million m³ Water loss reduction commitment

Drinkable Water

- ILEO (Métropole de Lille)
- COBAS (Bassin d'Arcachon)
- Golfe de St Tropez
- Communauté Urbaine Creusot-Montceau
- Agglomération de Toulouse
- IWN (Australie)

Waste Water

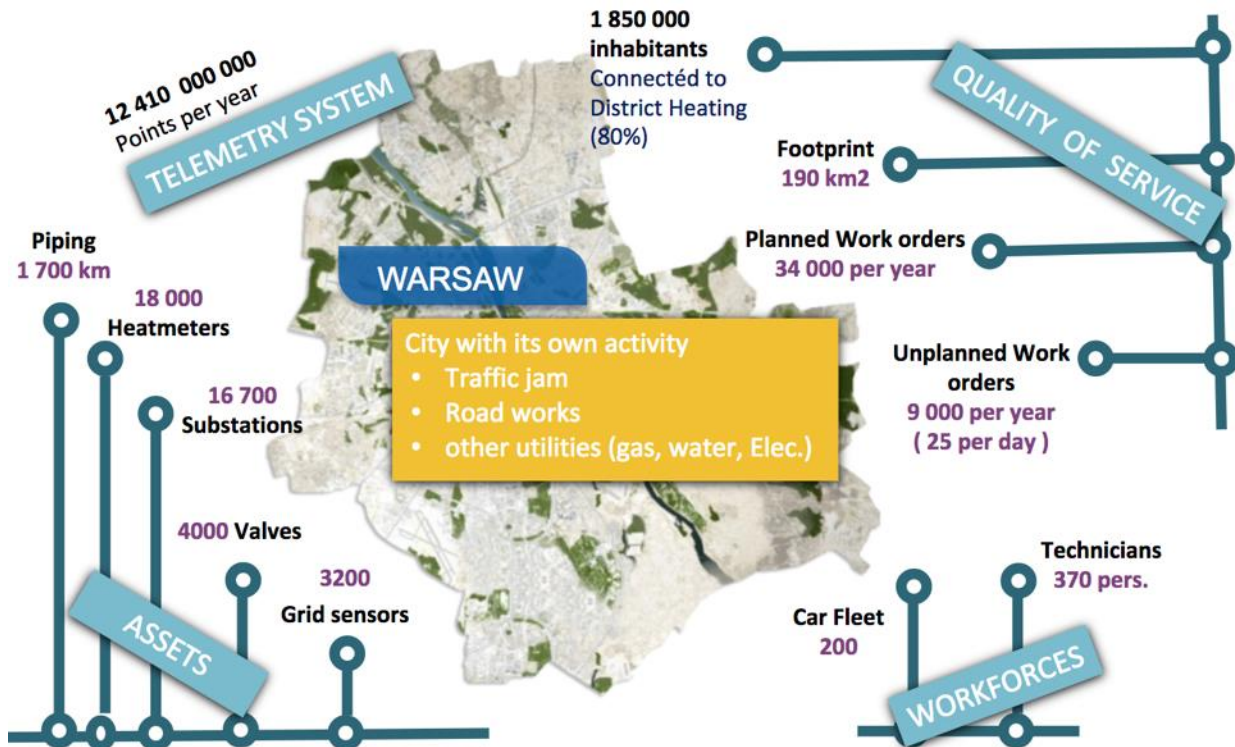
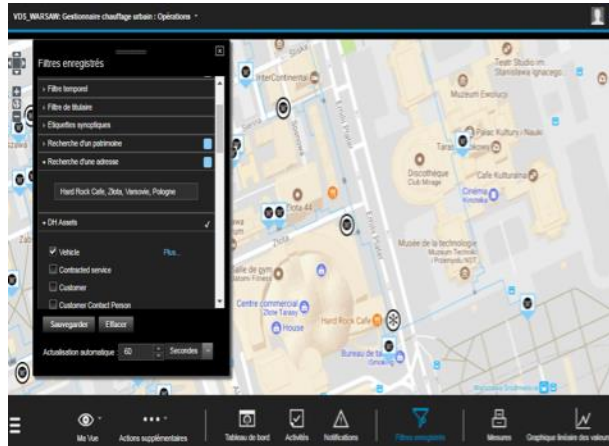
- Cap Atlantique (La Baule)
- Saint Malo

An Hypervision framework for District Energy grid

REFERENCE - WARSAW (Poland)

HEATNAMICS

One screen, one and only one user interface, accessible via web :
 REACTIVITY – OPERATIONNAL PERFORMANCE – QUALITY OF SERVICE



Optimize waste collection

WASTENAMICS

BEFORE...



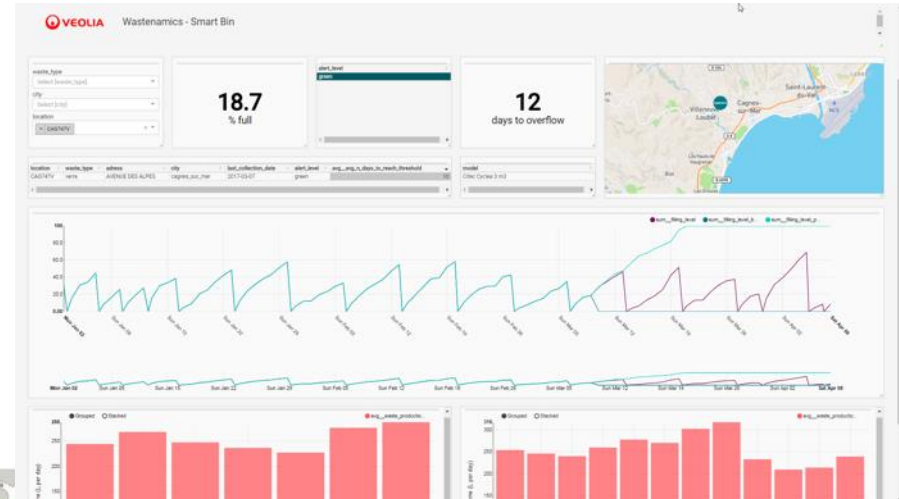
Average filling levels 50%



AFTER...



Pick up only the fully loaded waste containers



- Maximize collection efficiency
- Avoid container spillage
- Extend container lifetime

Veolia partner of cities' digital transformation



WATERNAMICS

WASTENAMICS

HEATNAMICS

BUILDINGSNAMICS

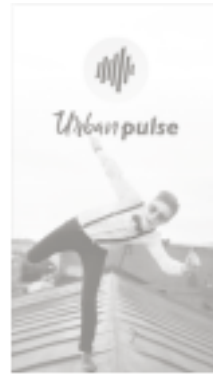
ENERGYNAMICS



Urban Namics



Urban Board



Urban Pulse



Urban Bots



Urban Lake



URBAN X

5 DIGITAL PRODUCTS FOR CITIES DIGITAL TRANSFORMATION

Urban Board, a world first

- Urban Board brings together the main **technical indicators for infrastructure in real time**, while simultaneously monitoring **social networks** for feedback on the key areas affecting cities:

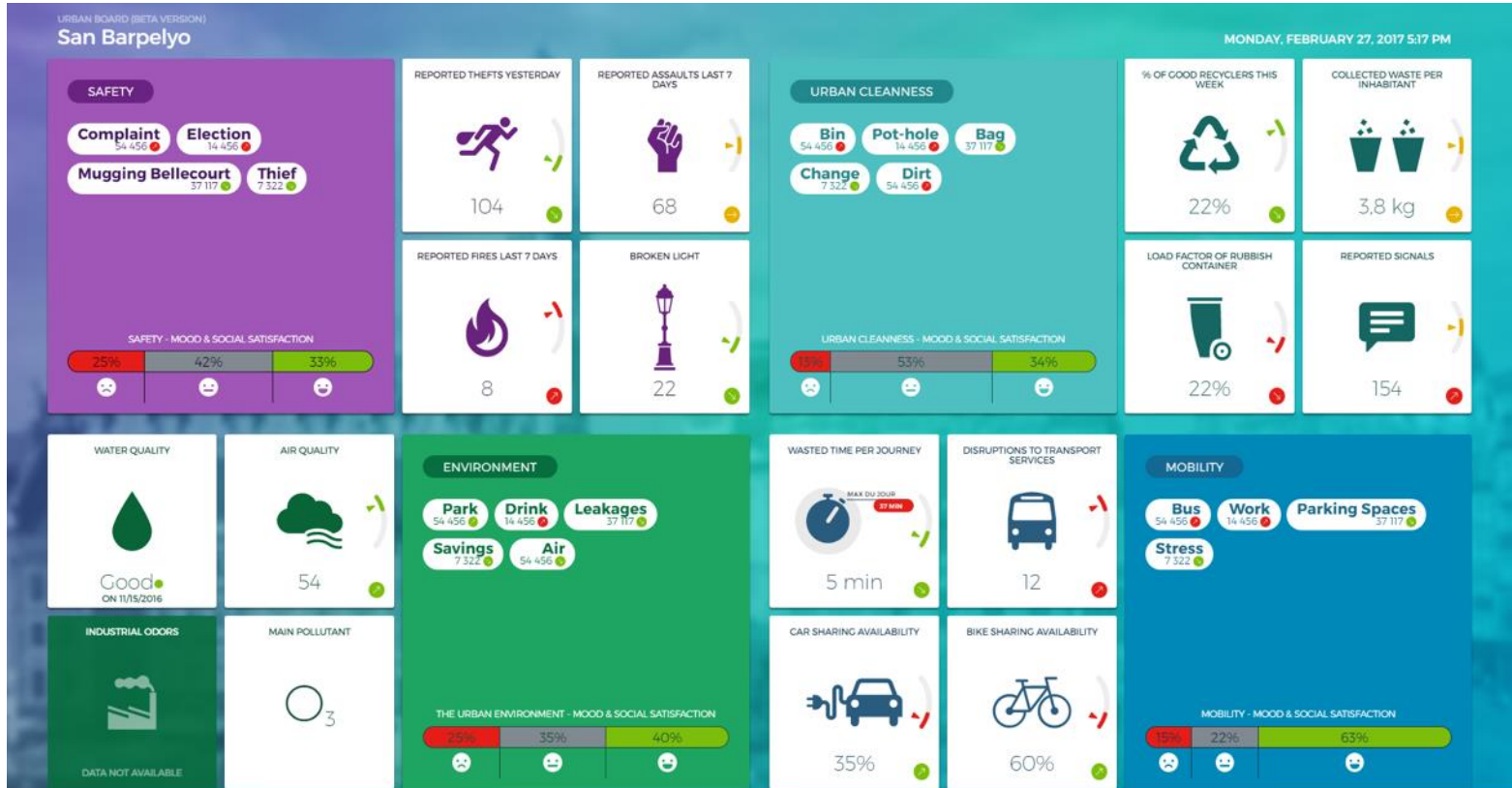
Transport - Security - Cleanliness – Environment - Economics



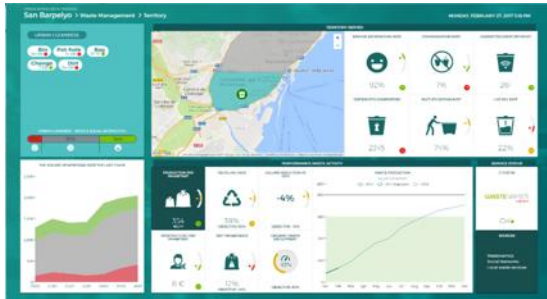
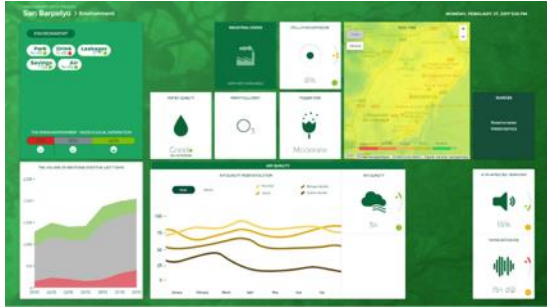
- It allows for an objective assessment of how **citizens' perceive** measures taken by the municipality based on **performance indicators for urban services**.



All subjects of interest for the city management



Water Board



ECOUTE RÉSEAUX SOCIAUX LE EN10/10/2017

- toulouse 6
- #toulouse 5
- @actutoulouse 4
- heures 4
- a-t 3
- il 3
- canalisations 3
- station 3
- eau 3
- exposé 3

SERVICE PERFORMANCE

DRINKING WATER BILLED 5 055 000 m³	DETECTED LEAKS 2 TODAY	ENERGY CONSUMPTION 250 mWh THIS MONTH	DRINKING WATER BILLED <small>2016 2017</small>
NETWORK YIELD 92%	CLOSED INTERVENTIONS 0	MAIN PROJECTS 75%	

THE VOLUME OF MENTIONS OVER THE LAST 30

■ Negative
 ■ Neutral
 ■ Positive

Wed 20/09 Fri 29/09 Sun 08/10 Tue 17/10

CUSTOMER SERVICE		RISK MANAGEMENT		
ISSUED BILLS 200 000 THIS QUARTER	RECEIVED MAILS 45 THIS MONTH	NUMBER OF DICT 3793	WATER BACKFLOW 0	WATER QUALITY Good ON 19/10/2017
DRINKING WATER BILLED 4 526 000 m³ SERVED	COMPLAINTS 10 THIS WEEK	HYDRANTS OUF OF WATER 324	FIRE HYDRANTS WARNINGS 9	IT STATUS OK

SOURCES

Waternamics
Aquavista



HOTEL BOARD

Site

Nom & Logo de l'entreprise

TAUX D'OCCUPATION PRÉVISIONNEL HIER

 87% **+77%** PAR RAPPORT À AOÛT 2016

NOMBRE DE CLIENTS PRÉVISIONNEL HIER

 330 **+79%** PAR RAPPORT À AOÛT 2016

Consommation énergétique par chambre disponible



Planet 21

PERFORMANCE ÉNERGIE

 5.7%

par rapport à 2016

CONSUMMATION ÉNERGÉTIQUE PAR CHAMBRE

 20 kWh  /ch dispo (hier)

CONSUMMATION ÉNERGÉTIQUE PAR REPAS

 4 kWh  /couvert (hier)

CONSUMMATION ÉLECTRICITÉ

 737012 kWh en 2017

CONSUMMATION GAZ

 1082998 kWh en 2017

PUISSANCE ÉLECTRICITÉ APPELÉE

 144 kW

Confort

TEMPÉRATURE LOBBY

 24 °C 

Hygiène &

TEMPÉRATURE EAU CHAUDE SANITAIRE

 59 °C

PERFORMANCE EAU

 -5.7%

par rapport à 2016

CONSUMMATION D'EAU PAR NUITÉE

 0.1583 m³  /nuitée (hier)

CONSUMMATION EAU

 10371 m³ en 2017

MÉTÉO

 23 °C

 Pas d'alerte en cours

Veolia partner of cities' digital transformation



WATERNAMICS
WASTENAMICS
HEATNAMICS
BUILDINGSNAMICS
ENERGYNAMICS



Urban Namics



Directeur de cabinet



Maire



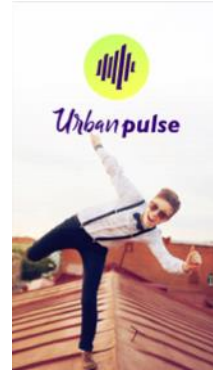
Urban Board



Directeurs des services techniques



Community Manager



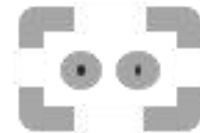
Urban Pulse



Urban Bots



Urban Lake



URBAN X

5 DIGITAL PRODUCTS FOR CITIES DIGITAL TRANSFORMATION



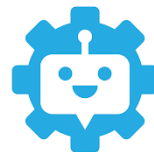
The mobile app that empowers citizens



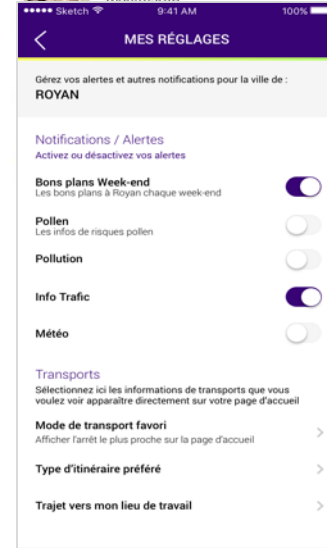
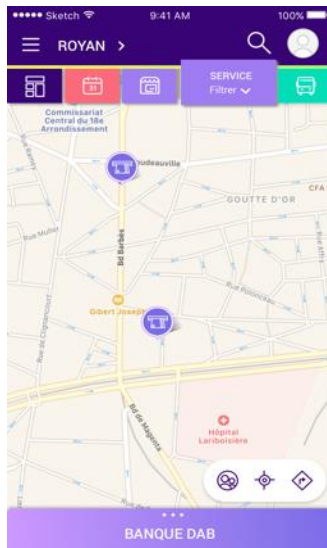
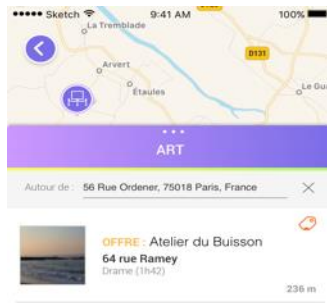
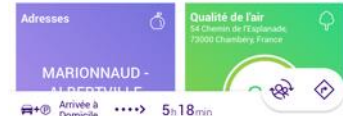
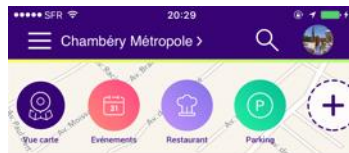
Citizen Platform

- Brings together **all** information in real time to help residents get the most out of their city.
- **Encourages citizens to get more involved** in their city and raises their awareness of **environmental issues**.
- Supports **local ecosystems**.

Mobile App / Chatbot



The mobile app that empowers citizens



Veolia partner of cities' digital transformation



WATERNAMICS
WASTENAMICS
HEATNAMICS
BUILDINGSNAMICS
ENERGYNAMICS



Urban Namics



Directeur de cabinet



Maire



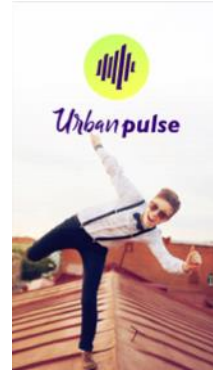
Directeurs des services techniques



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Urban Board



Urban Pulse



Urban Bots



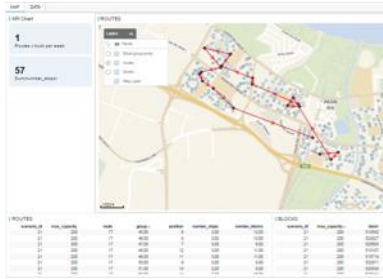
Urban Lake

SOON



URBAN X
5 DIGITAL PRODUCTS FOR CITIES DIGITAL TRANSFORMATION

Veolia partner of industries' digital transformation



Green Namics



Green Board



Green Pulse



Green Bots



Green Lake



GREEN X, FOR INDUSTRIES DIGITAL TRANSFORMATION

An aerial photograph of Bratislava, Slovakia, taken during the golden hour. The image shows the white Bratislava Castle with its red-roofed towers on a hill in the background. In the foreground, there is a complex highway interchange with multiple lanes and overpasses. To the right, a large church with a tall, green-roofed spire is visible. The city is densely packed with buildings, and a river flows through the bottom left corner. The sky is filled with soft, colorful clouds in shades of orange, yellow, and blue.

**SMART CITIES
REFERENCE
in FRANCE**

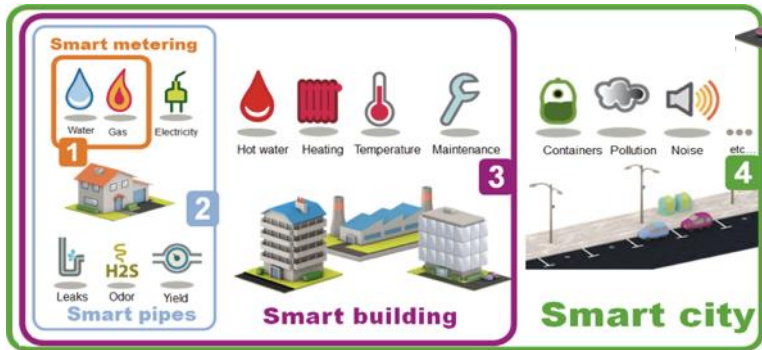
Saint Amant Montrond - 10 000 inhabitants



Solutions

- Smart Metering
- Fluid Management
- Smart Building : 21 sensors on 9 buildings
- Smart Parking
- Field Monitoring digital Services

Data visualization and citizens services



Benefits

- consumption is significantly reduced.
- cost saving : 15 000 euros in 2015

The Nice Environmental Urban Monitoring Demonstrator

CAPTEURS MÉTROPOLE NICE CÔTE D'AZUR



Sensors

Fundings from the national Ecocity program
3000 smart sensors
15 new services in experimentation

MÉTROPOLE
NICE CÔTE D'AZUR

Networks /
Platforms

DONNÉES

Réseau fédérateur
(3G, UHF, FO...)

BUS D'ÉCHANGE



Entrepôt de données



Plate-forme d'hypervision

SERVICES

VEOLIA



Plates-formes de services



Citoyens



Entreprises,
Université, Collectivités...

Services

Experience completed in 2017:

- Reduce Individual Consumption
- Connected beaches
- Pollen monitoring in real time
- Monitoring of air quality in nurseries and schools
- Smart watering of green spaces
- Real-time network performance
- Automated monitoring of biodiversity
- Monitoring of noise
- Street lighting optimization



Smart citizens experience in Nice

Pollen measurement
24-hour integration



Newsletter Production
Daily advice



MÉTROPOLE
NICE CÔTE D'AZUR



Newsletter edition
Every day at 2 p.m.



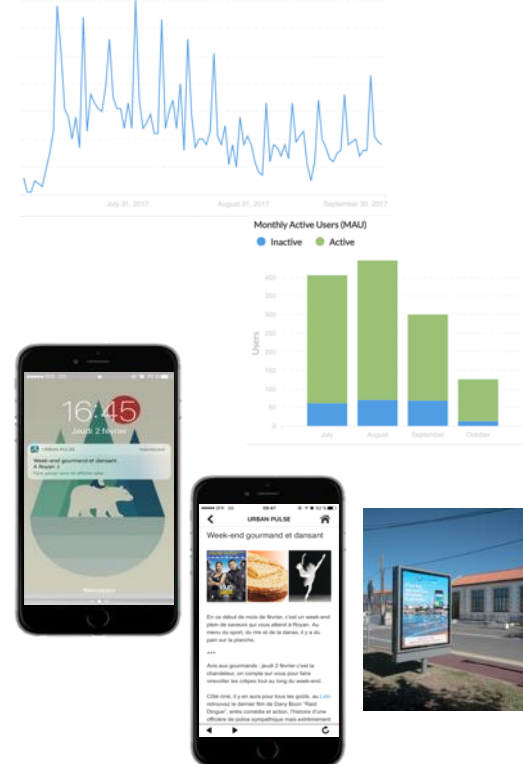
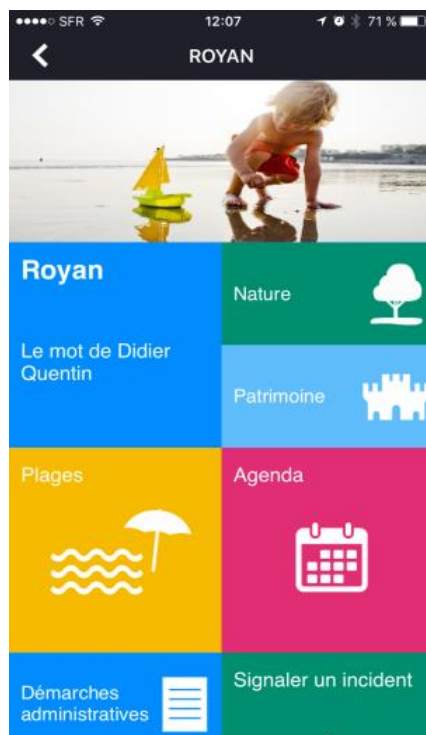
Outcome 2016 :

- 80% of users indicate that Metropollen has been useful to them
- 50% of users say that Metropollen has enabled them to adapt their treatment
- Improving the quality of life for people with allergies
- Reduced health care costs



Smart citizens experience in Royan

The unique application of territory => **4% of the population** use the application each month



CONTACT



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Twitter : @grecocl