Global Forum
Shaping the future 2015

S8 Smart Cities & Communities

11:30 AM – 01:00 PM

Oulu, Tuesday September 29 - 2015

- Chair: Alexey Ershov (IBM)
- Moderator: Hugo Kerschot (IS-practice)
- Mika Rantakokko (Jukka Järvinen) (Six City Strategy Strategy)
- Eric Legale (Issy-les-Moulineaux)
- Nezar Maroof (Bahrein eGov Authority)
- Vaino Olev (Talin)
- Eikazu Niwano (NTT Corporation)
- Hervé Rannou (ITEMS)
- Godfried Smit (European Shippers Council)

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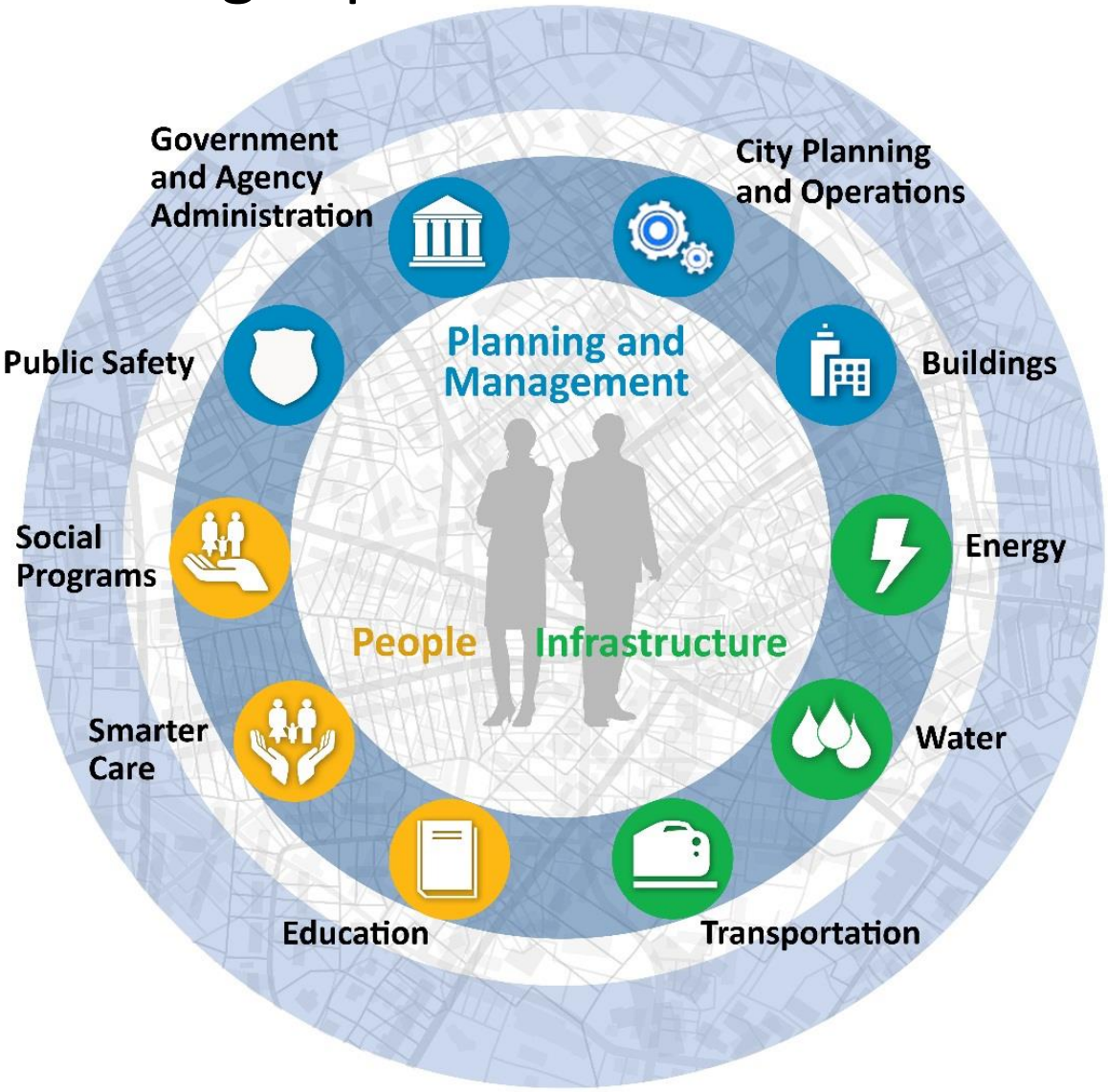
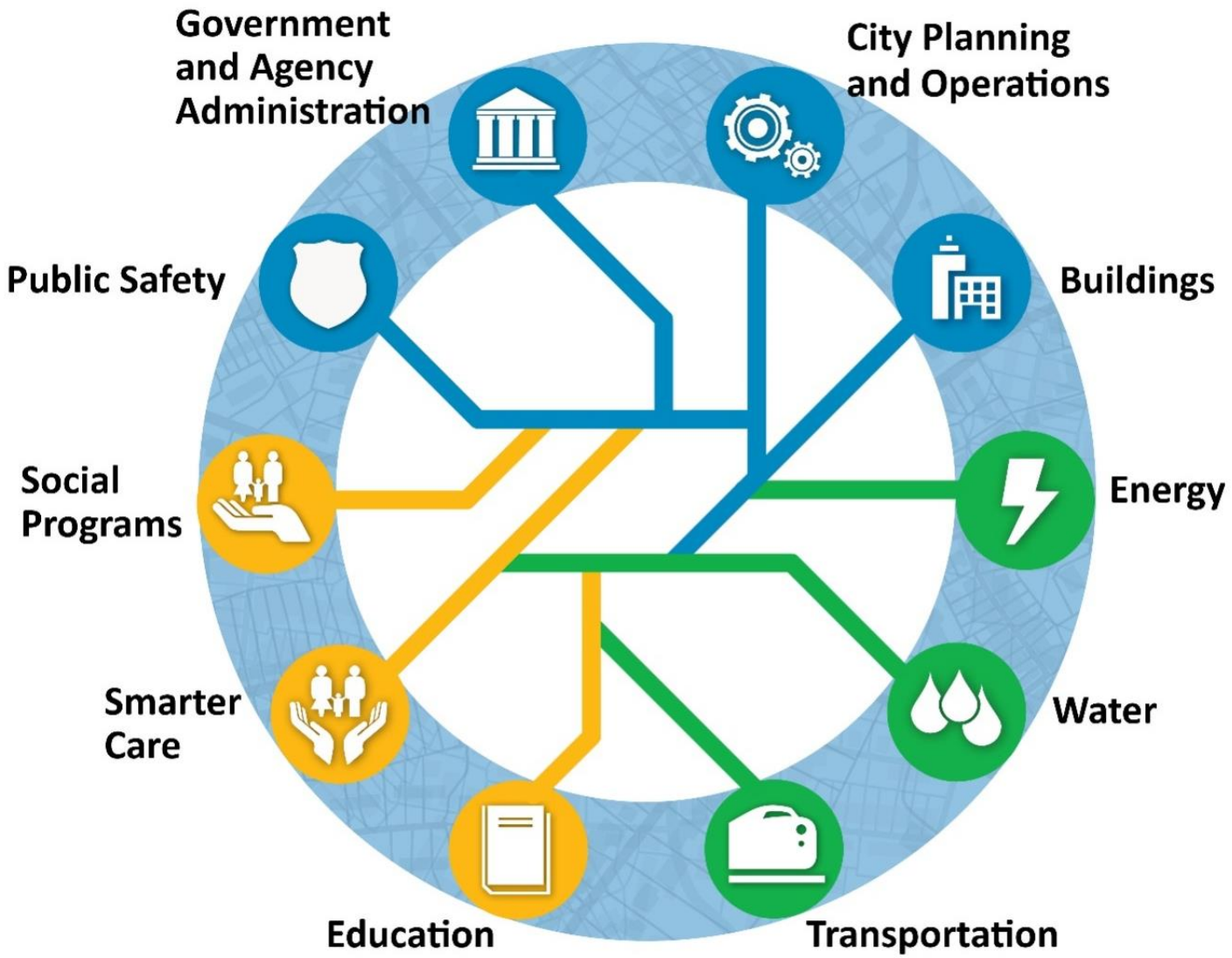
Smart Cities: from disruption to sustainability

Alexey Ershov
Vice President, Smarter Cities Europe,
IBM, Spain
alexey.ershov@es.ibm.com

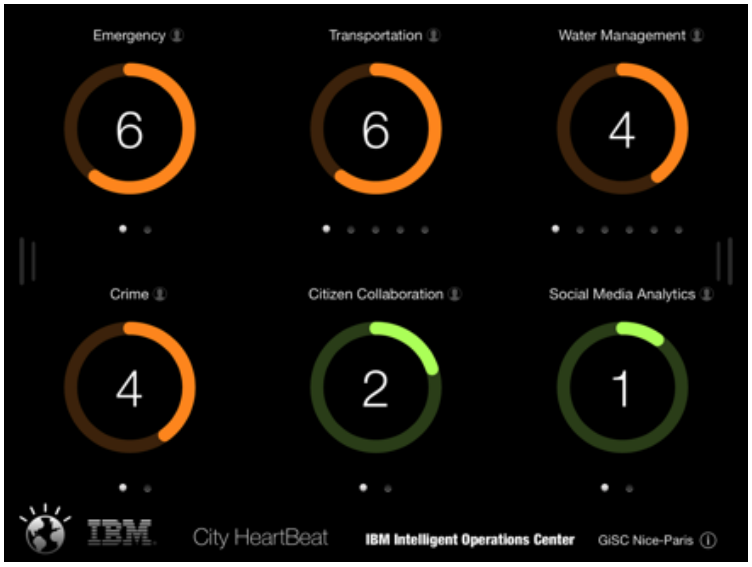
Cities around the world are innovating to meet increasing expectations of citizens

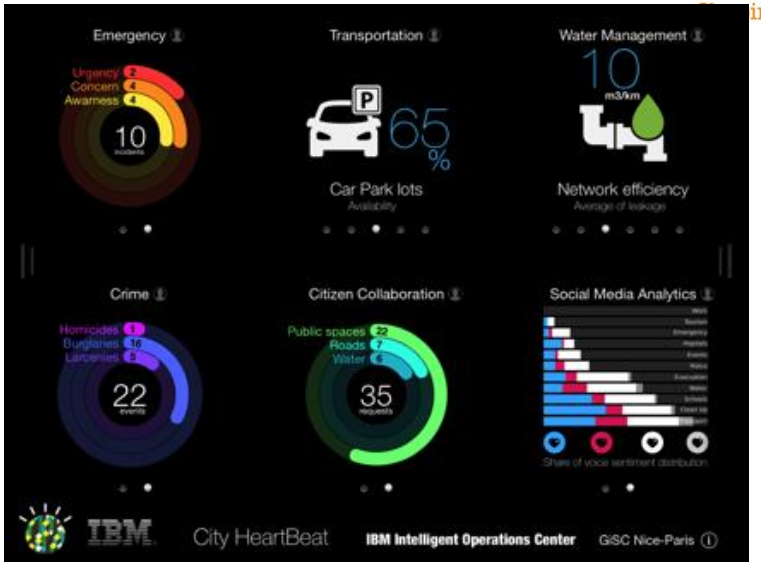


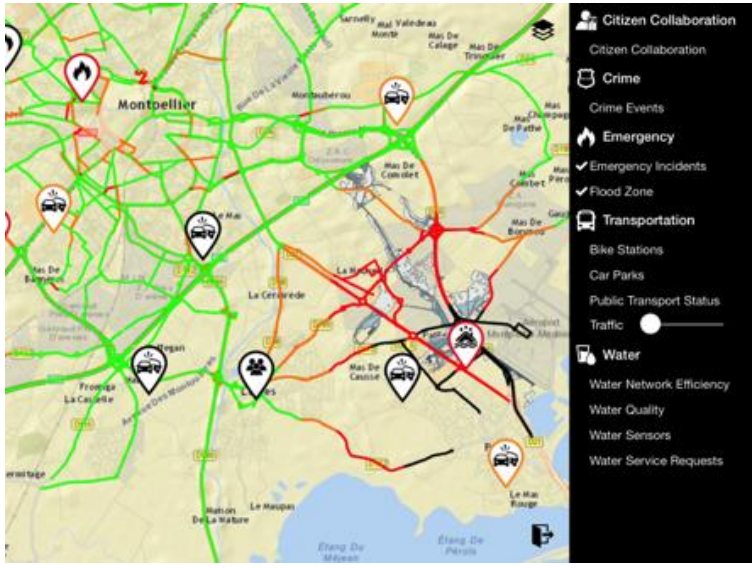
Leading cities integrate across functions, capitalize on new insights, and create system-wide efficiencies



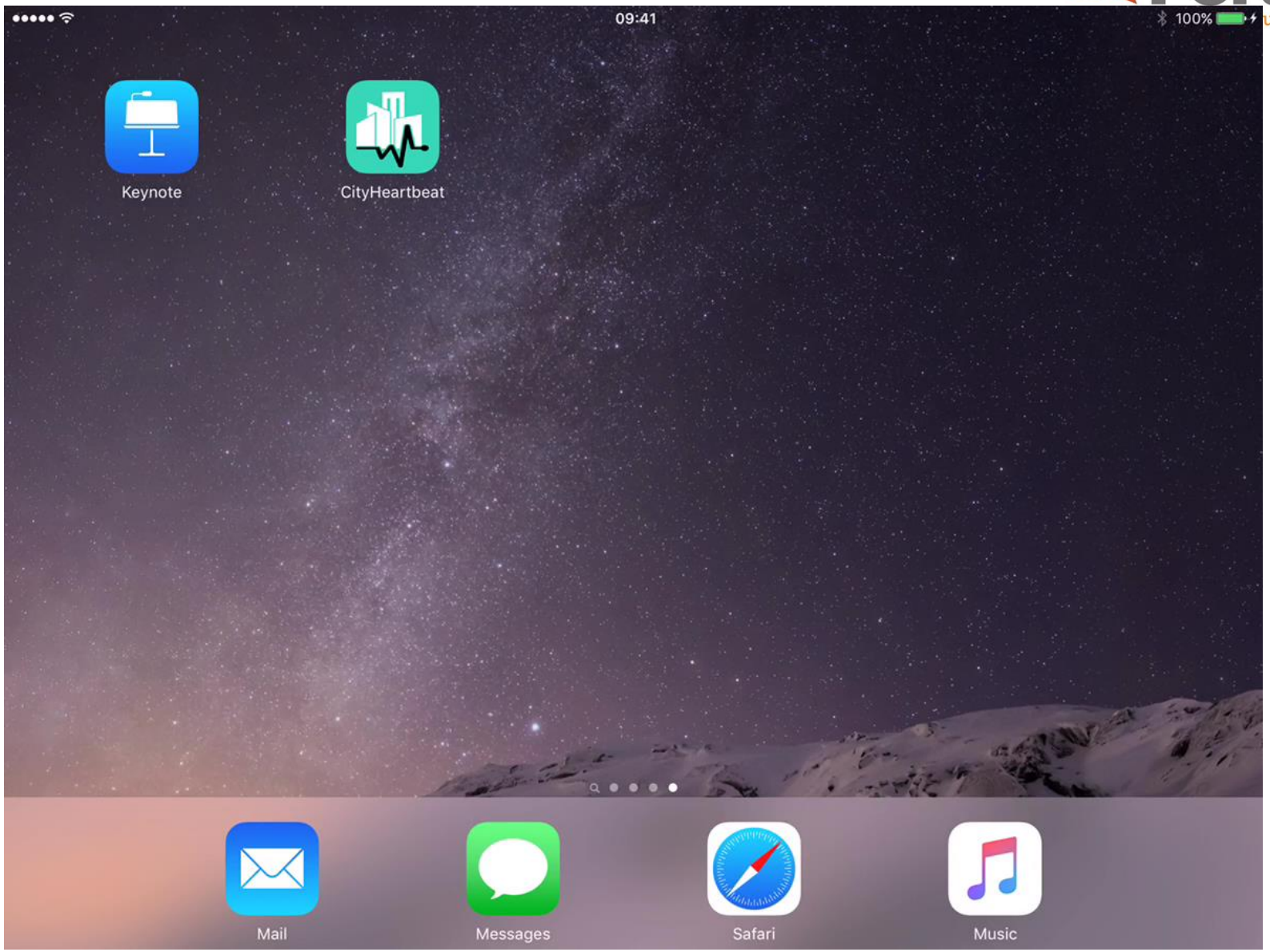
City Heartbeat app live demo





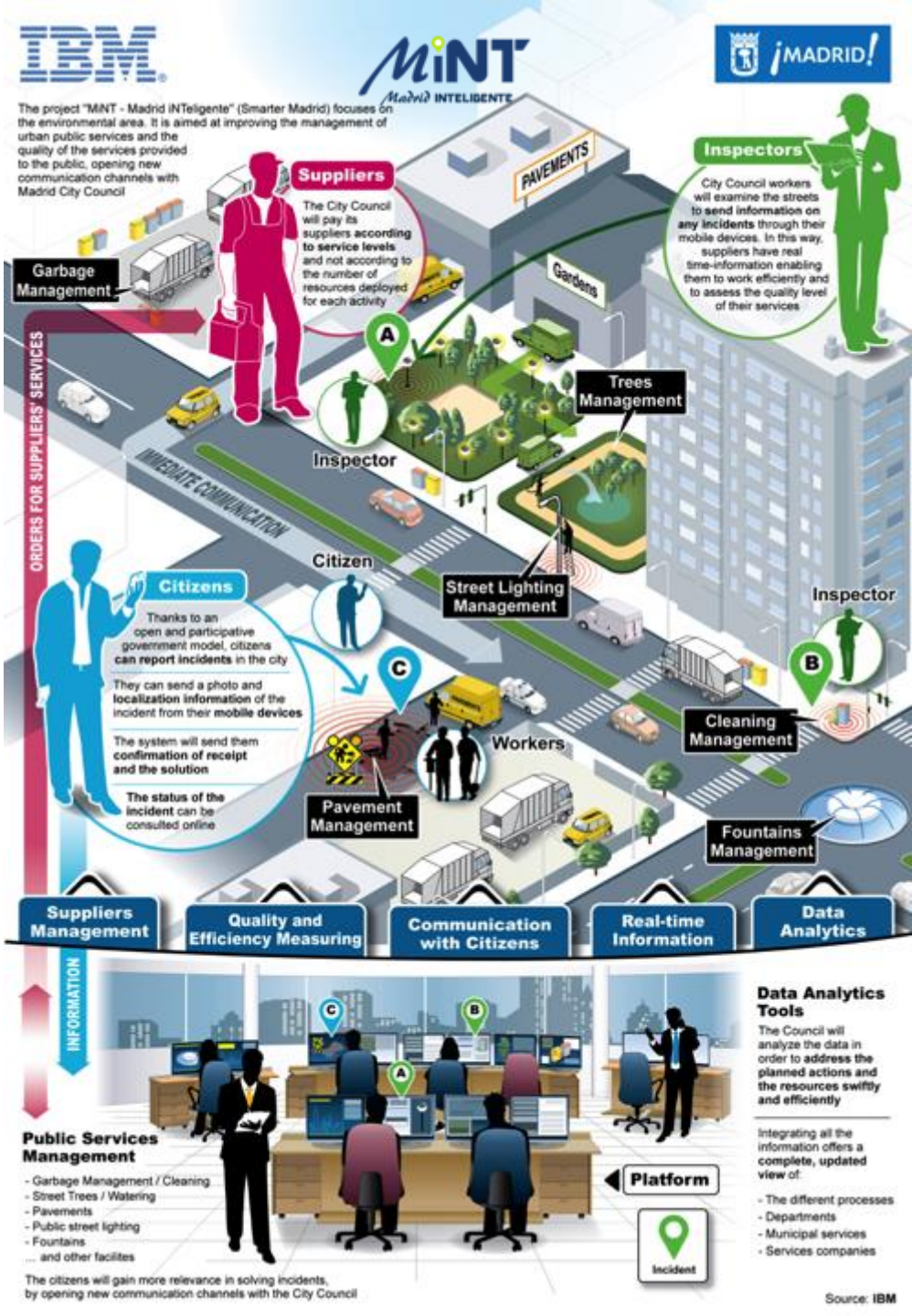


City Heartbeat app live demo



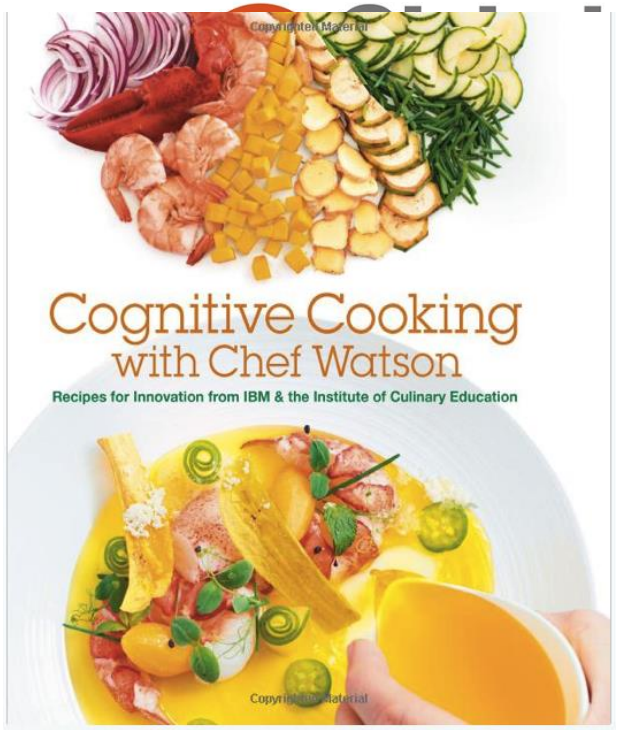
Madrid uses analytics to cut costs and support outcome-based maintenance contracts

- Service providers are paid for quality of services rendered (with KPIs and SLAs) rather than just activities completed
- 6% reduction in cost of city services
- 10-20% reduction in IT costs
- Incentive to innovate and optimize resource deployment
- Enhanced transparency to citizens



In 1997 **IBM Deep Blue** made history by defeating Garry Kasparov in chess

In 2011 **IBM Watson** made history by defeating two all-time best players in Jeopardy!



"In fact, the business plans of the next 10,000 startups are easy to forecast: ***Take X and add AI****.*
This is a big deal, and now it's here."

- Kevin Kelly (founding executive editor of *Wired* magazine)

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THE SIX CITY STRATEGY

Working Together Towards Open and Smart Services

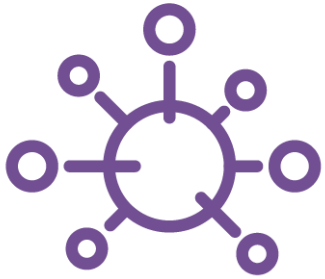
Mika Rantakokko (Jukka Järvinen),
Six City Strategy Steering Group, Finland
Jukka.Jarvinen@tampere.fi

A strategy for sustainable urban development

- Strengthening Finland's competitiveness by using the six largest cities as innovation development and experimentation environments
- Funded by the EU and the six cities (Helsinki, Espoo, Vantaa, Tampere, Turku and Oulu)

Implemented via spearhead and pilot projects in three focus areas

Open innovation platforms



Open data and interfaces

Open participation and customership

Resulting in new know-how, business and jobs

Collaboration is the key to sustainability

- The entire city community participates in the development work
  - Citizens, companies, research and development operators and the authorities -> Quadruple helix
  - Using open operating models
- With the quadruple helix approach, the cities change the way they operate and become more sustainable
- The solutions implemented in the six cities are available for use in all Finnish cities

Examples: Traffic and mobility as a service

- Traffic and transport are enablers in improving employment, the accessibility of services, business life and urban development
- The opening and harmonisation of traffic and environmental data supports the development of renewable energy and energy-efficient solutions
- The solutions created, e.g. in opening real time interfaces in transport and traffic, can be used immediately in other cities

Examples: City district development

1. New city districts that present an experimental innovation platform for co-creating smart urban infrastructure and services
   - Kalasatama (Helsinki)

2. Already existing city districts with focus on renewing the area and its services
   - Tesoma (Tampere)

3. Individual streets: Iso Robertinkatu (Helsinki) as a test bed for climate friendly solutions

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What make Cities Smart?

Eric Legale
Managing Director Issy-Media, City of Issy-les-Moulineaux, France
eric.legale@ville-issy.fr


ISSYGRID
le 1er réseau de quartier intelligent
SEQUANA
298 KWh
150 KWh
GALEO
450 KWh
EOS
Logement A
450 KWh
Logement B
120 KWh
51 00
30 0
Consommation
Consommation
12H10
8h
12h
16h
20h

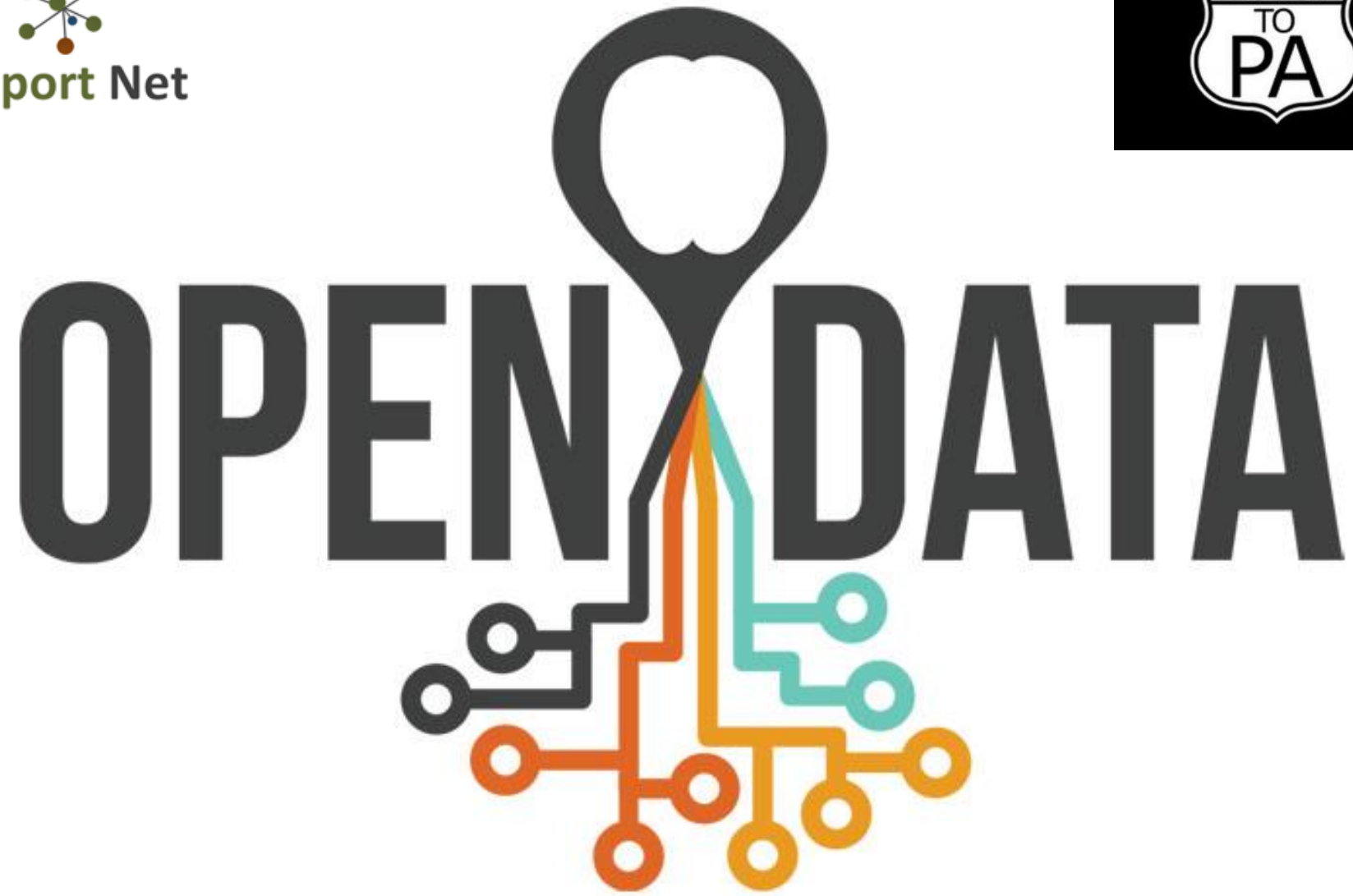
How to Build Smart Mobility Systems to improve Local Transport plans?

ECIM

Open Transport Net

Open Transport Net

ROUTE TO PA



Open data is the fuel of smart cities

In the heart of European Projects

Open Data

Dublin

Aarhus

Birmingham

Culture 2.0

Brussels
Antwerp
Den Hague
Groningen

Liberec

Smart Mobility

Barcelona
Santander
Cantabria

Genoa
Prato

Athens

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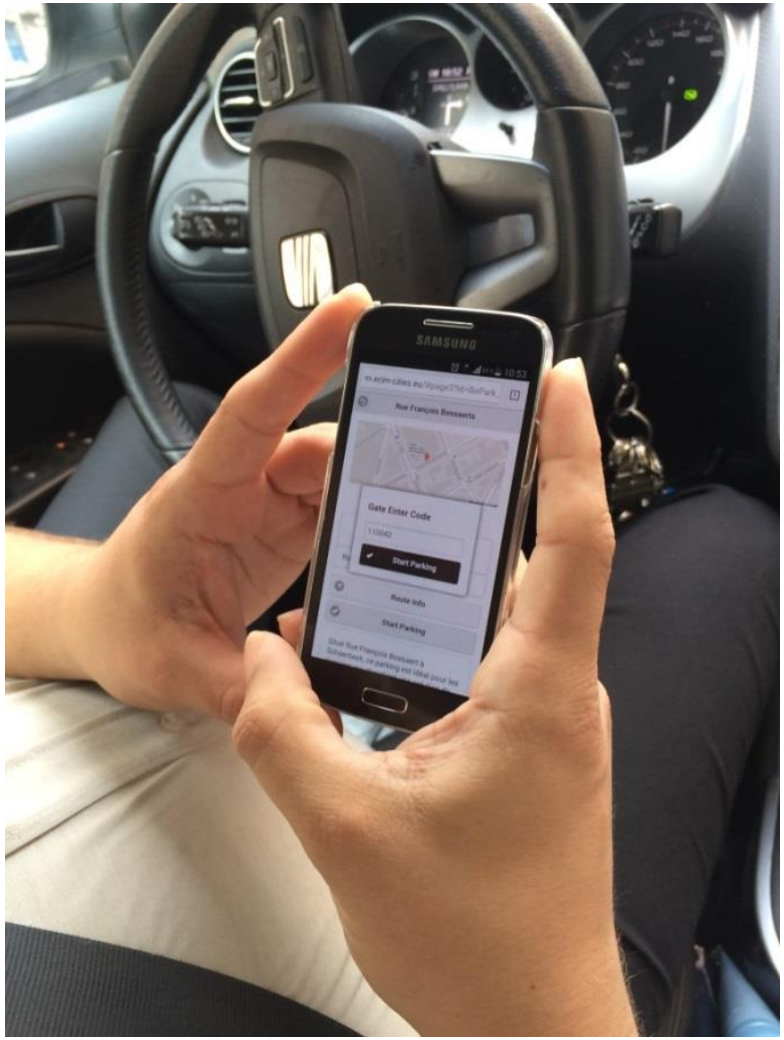
ECIM
European Cloud Marketplace for Intelligent Mobility

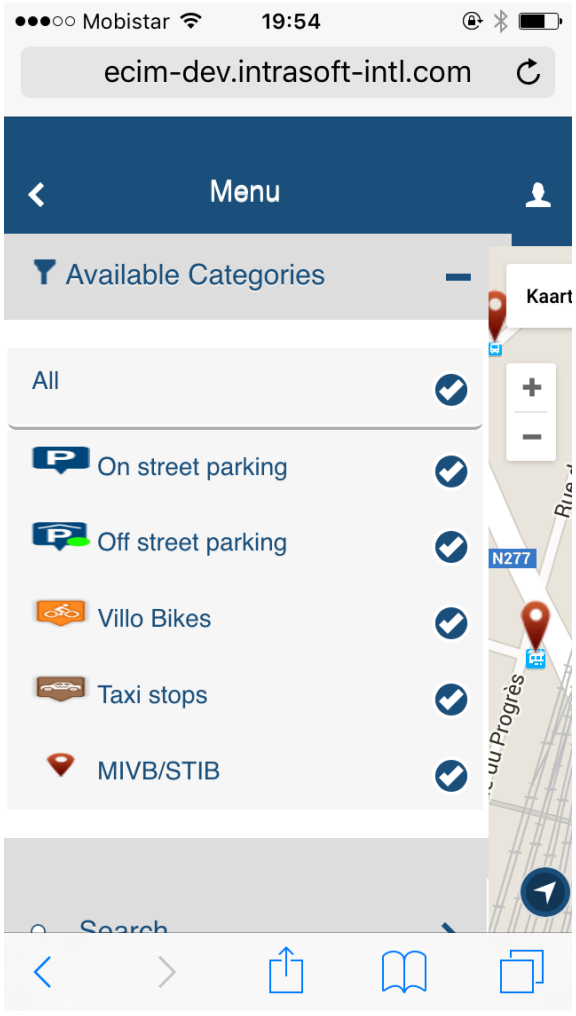
European Cloud marketplace of Intelligent Mobility

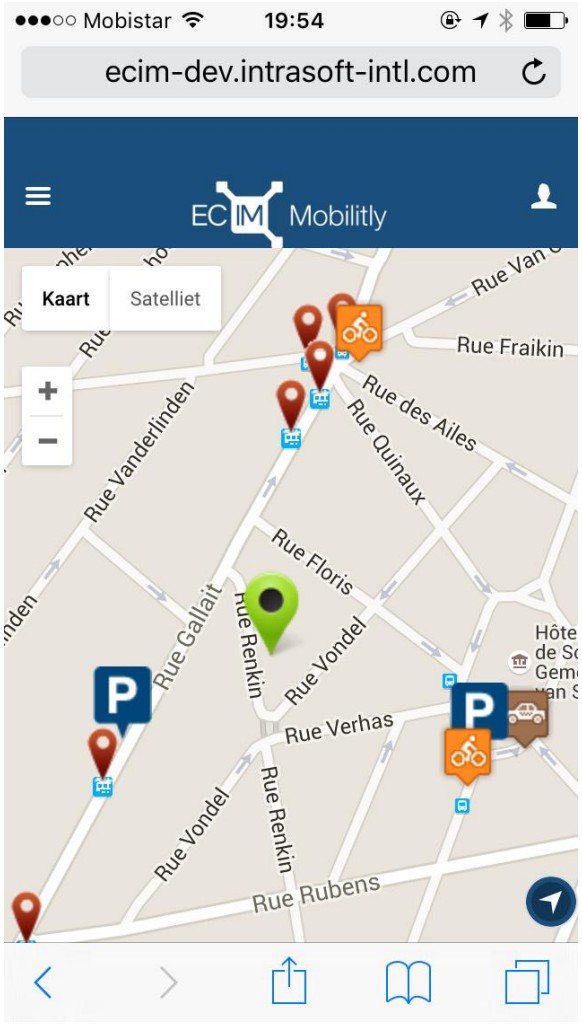
Hugo Kerschot
Managing Director IS-practice
Hugo.kerschot@is-practice.eu

SMART MOBILITY APP (Brussels)

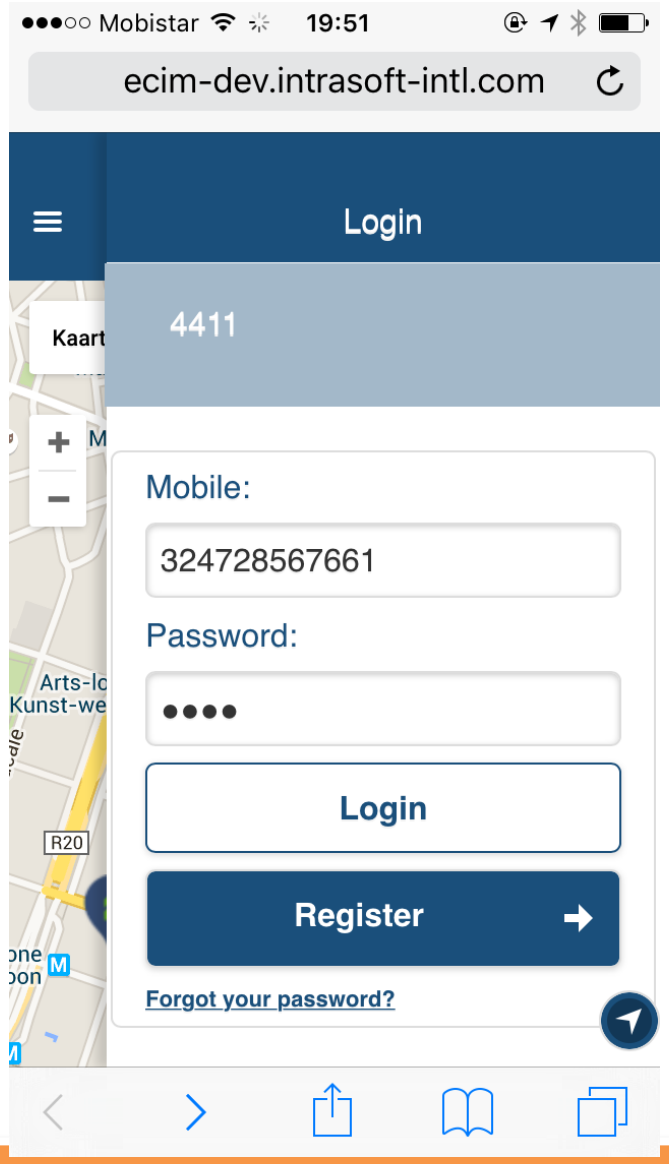


MULTI Mobility solutions

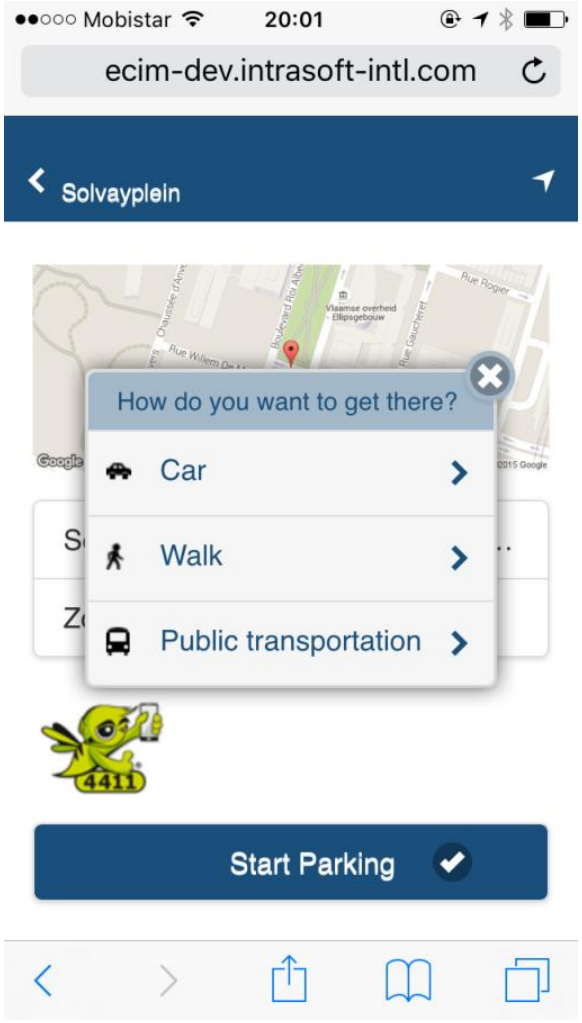


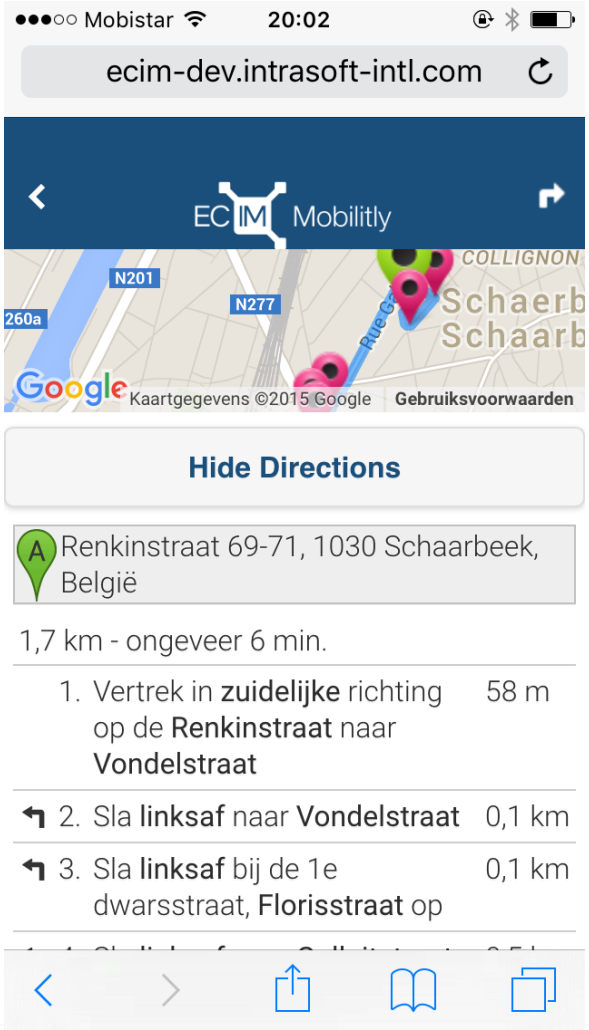


Single sign-on

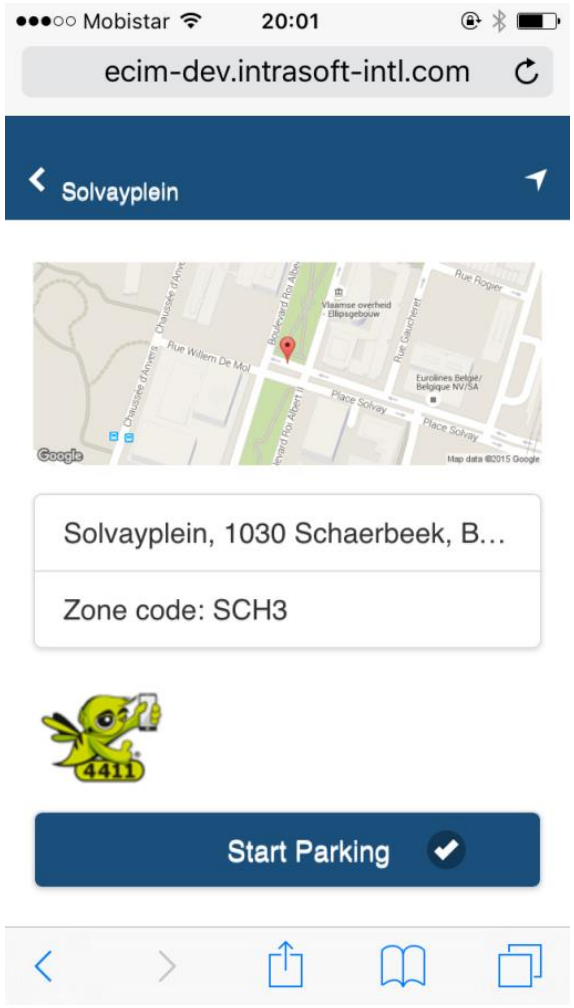


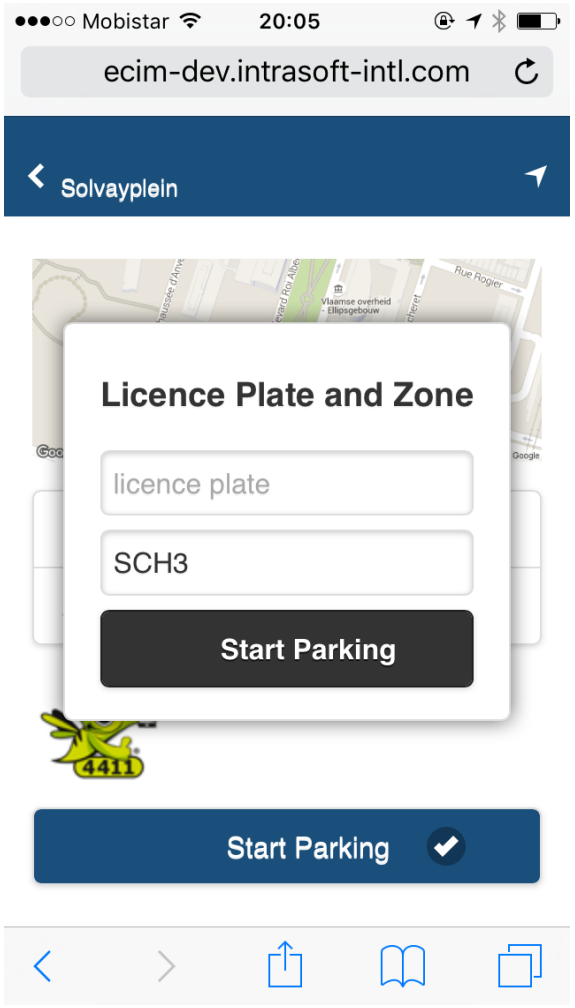
Choose your journey



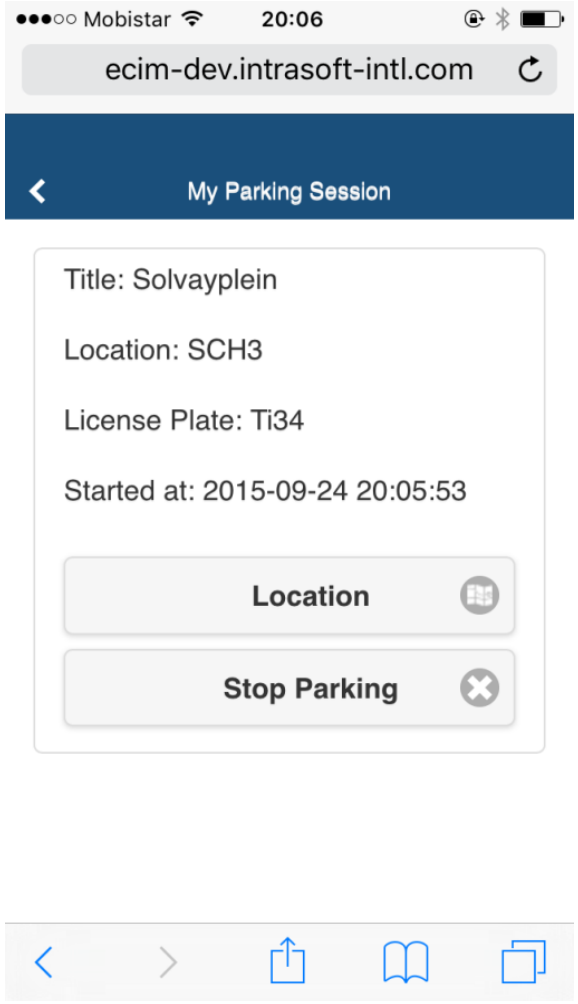


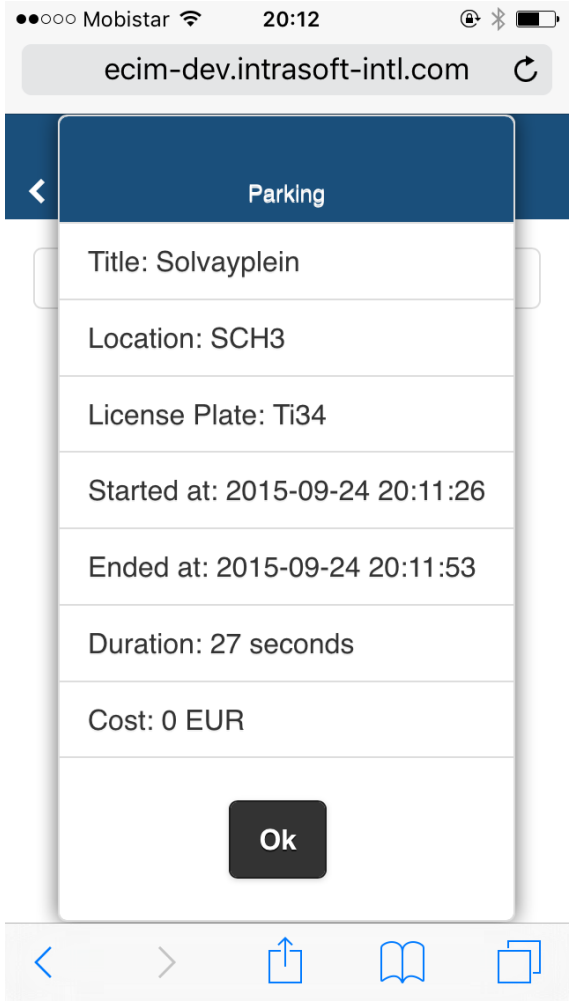
Start parking session





Single payment solution





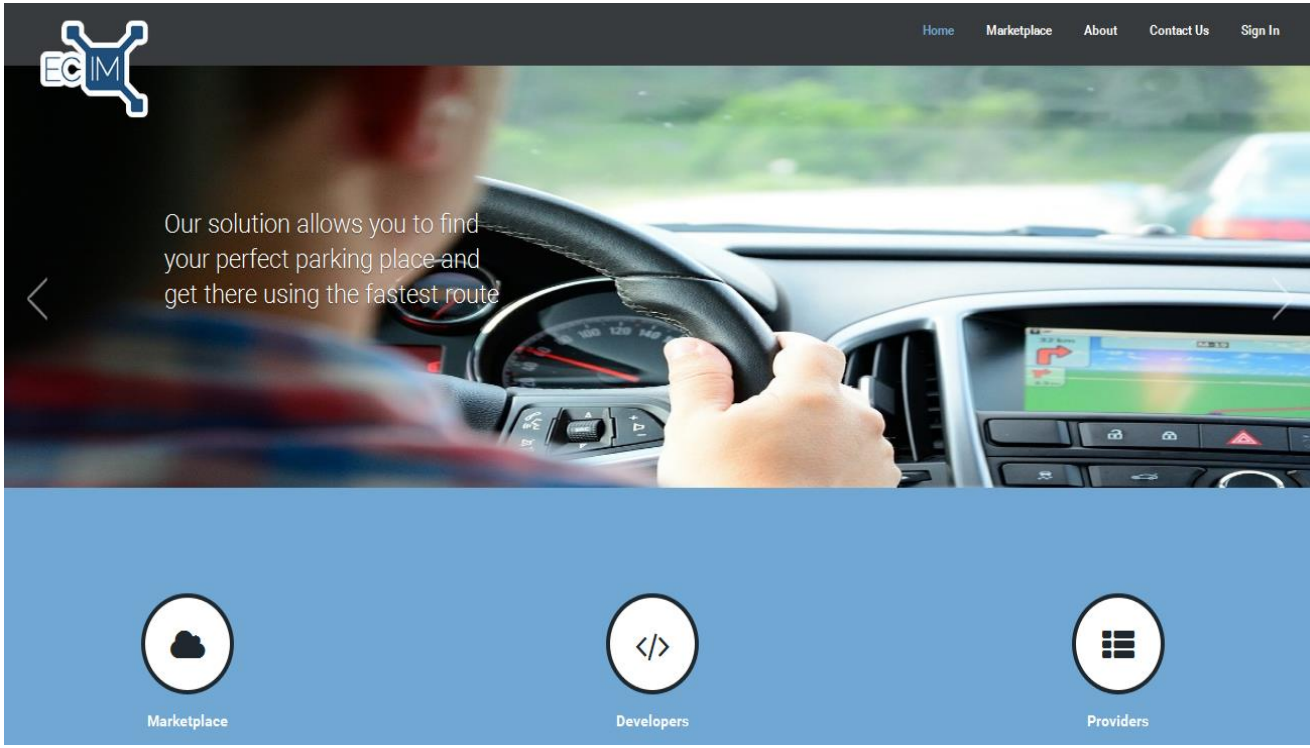
ECIM platform = mobility service marketplace

Brings together:

Service providers

Data providers

Developers



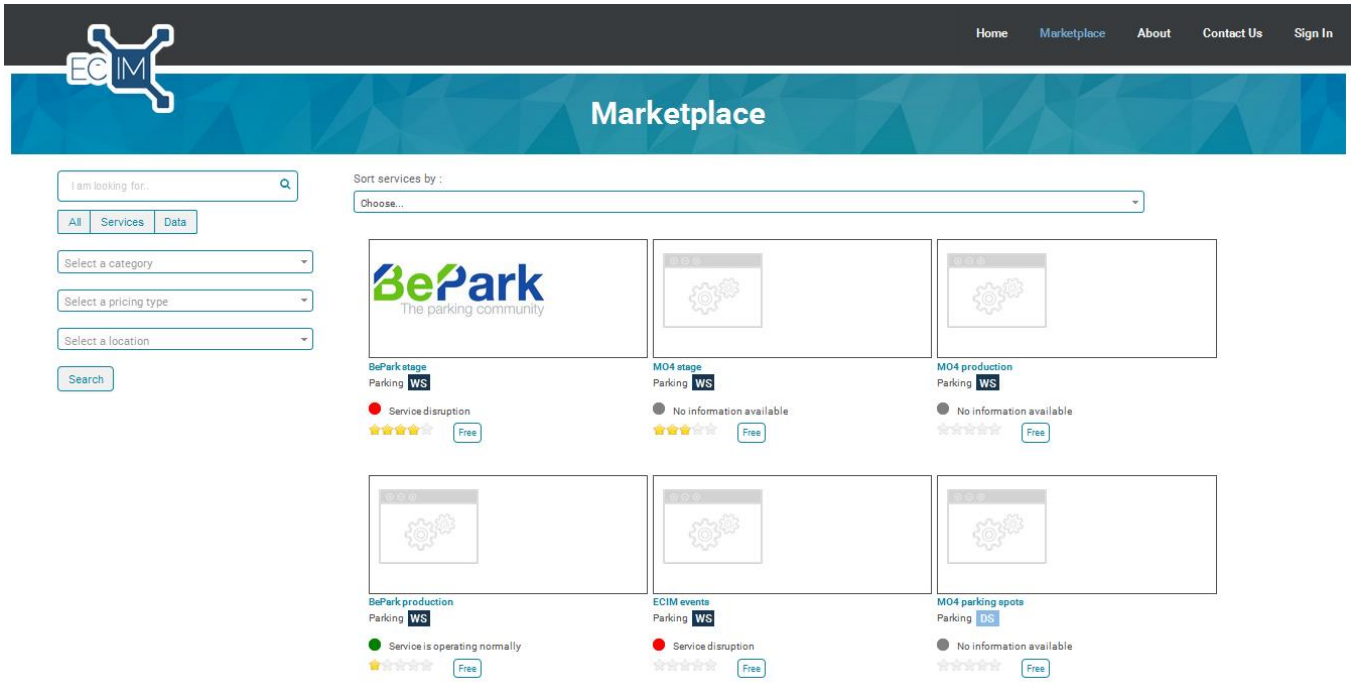
Service catalogue

Integrates different services:

Parking

Payment

Login



www.smartmobility.io

API's for Smart Mobility

European Cloud Marketplace for Intelligent Mobility

ECIM is an online platform where service providers, city managers and developers can come together and co-create innovative mobility related services for citizens. The platform will soon start accepting calls to its APIs. All you need to do to have access to them is register on the marketplace by clicking on the button to your right. Please note that because the platform is compliant only with RESTful web service architecture all body parameters must be in JSON format.

Go to Marketplace

Parking

Parking API allows you to discover and use parking services in a particular city. Through this API users can view a list of parking places, their details and availability, calculate a parking price, start, stop and extend a parking session, to name just a few.

Single Sign-on

Single sign-on API makes everything accessible with just one app, including payment transactions. Users will only need to enter one name and password in order to be able to access multiple applications.

Payment

Payment API allows you to easily request payment authorisation, payment transaction, a list of user's transactions, user's credit card registration and user's credit card validation, as well as get information on payment status.

More information

The project

www.ecim-cities.eu

The marketplace http://platform.ecim-cities.eu

The Open API webpage

www.smartmobility.io

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National eGovernment Strategy 2016

Mr. Nezar Maroof
Director of Strategy and eBusiness Process Reengineering
nmaroof@ega.gov.bh

مرحبا
здравей
zdravo
Hello
მიესალმები
Hei
Halo
Olá
bok
您好
안녕하세요
Χαίρετε
ಹಲೋ
Hola
ہیلو
ahoj
hodi
hej
سلام
Labas
Hallo
שלום
Ciao
Merhaba
こんにちは
హలో
zdravo
Hallå
здраво
tere
Bonjour
Сәлеметсіз бе
হ্যালো
kumusta
sveiki
नमस्ते
Dia duit
Здравствуйте
Sawubona

Land Area of Oulu

Oulu / Land area

369.4 km²

Feedback

Oulu - Wikipedia, the free encyclopedia
https://en.wikipedia.org/wiki/**Oulu**
Oulu (Finnish pronunciation: [ˈoulu] (listen); Swedish: Uleåborg [ˌʉːleɔˈbɔrj]) is a city and municipality of 196,828 inhabitants (30 June 2015) in the region ...
Oulu Cathedral - Oulujoki Church - Oulunsalo Church - St. Luke's Chapel, Oulu

Oulu, Wisconsin - Wikipedia, the free encyclopedia
https://en.wikipedia.org/wiki/**Oulu**,_Wisconsin
Oulu (/ˈuːluː/ OO-loo) is a town in Bayfield County, Wisconsin, United States. ... The average household **size** was 2.81 and the average family **size** was 3.46.

Size and shape of particles measurement equipment - Oulu
www.**oulu**.fi/pyokuiopetus/tiedostot/laitteet/measurement.html
Size and shape of particles measurement equipment available in fibre and particle engineering laboratory, University of **Oulu**.

Oulu

City in Finland

Oulu is a city and municipality of 196,828 inhabitants in the region of Northern Ostrobothnia, Finland. It is the most populous city in Northern Finland and the fifth most populous city in the country. Wikipedia

Land area: 369.4 km²

Weather: 10°C, Wind S at 14 km/h, 94% Humidity

Getting there: 13 h 25 min flight. View flights

Population: 189,481 (2012) UNdata

Local time: Wednesday 11:01 AM

Region: Northern Ostrobothnia

Colleges and Universities: University of Oulu, Oulu University of Applied Sciences

Feedback

Land Area of Bahrain

Bahrain / Area

765.3 km²

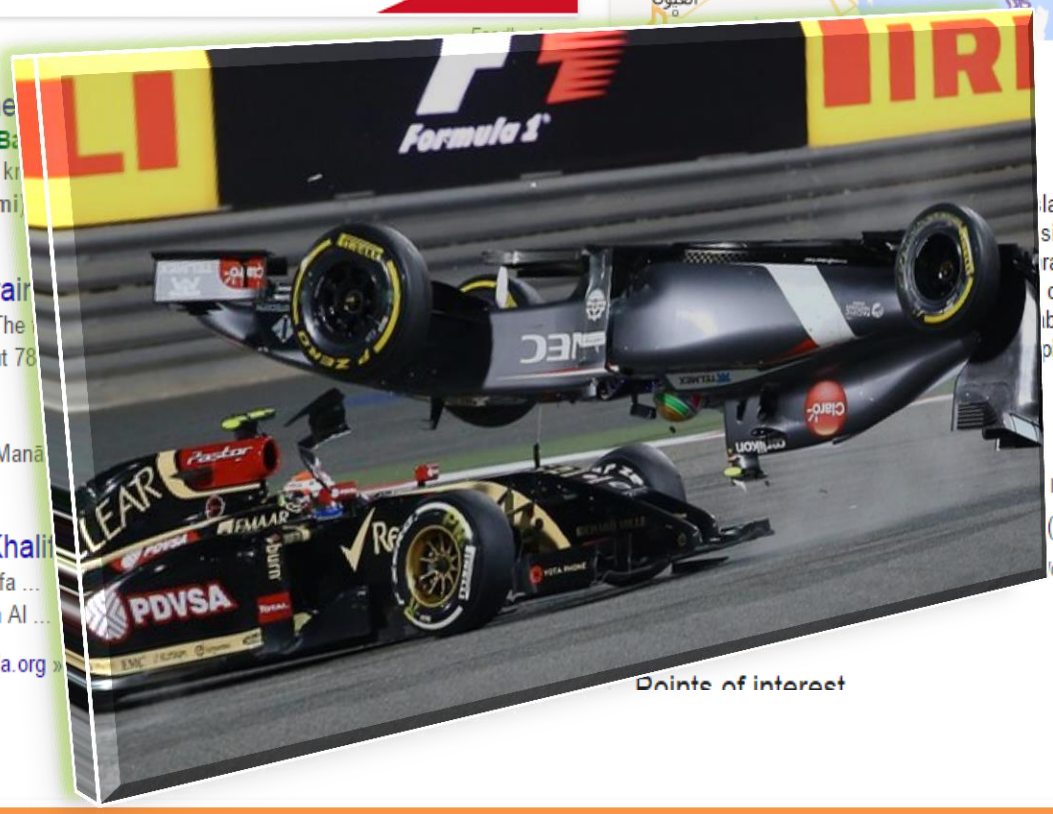
Bahrain - Wikipedia, the
https://en.wikipedia.org/wiki/Ba
Bahrain had a total area of 665 k
increased to 765 km² (295 sq mi)
Man.

Geography of Bahrain
Geography of Bahrain ... The
area of the islands is about 78

Manama
Manama (Arabic: المنامة Al Manā
the capital and ...

Hamad bin Isa Al Khalif
Khalid bin Hamad Al Khalifa ...
Hamad bin Isa bin Salman Al ...

More results from wikipedia.org »



lands in the Persian Gulf,
since antiquity. In its
rain National Museum
civilization that flourished in
b el-Bahrain souk offers
pices to pearls.

Bank
(2013) World Bank
orld Bank

Points of interest

About Bahrain - Demographics

- The word Bahrain means 'two seas' in Arabic
- Collection of 33 Islands
- Land area: 770 sq km
- Population (2011 est.): 1.195 million ; Birth rate: 17.0/1000; Infant mortality rate: 15.2/1000; Life expectancy: 75.4; Density per sq km: 1,080; Literacy : 91.5 % of the total Population.
- Capital and largest city (2003 est.): Manama, 527,000 (metro area), 149,900 (city proper)

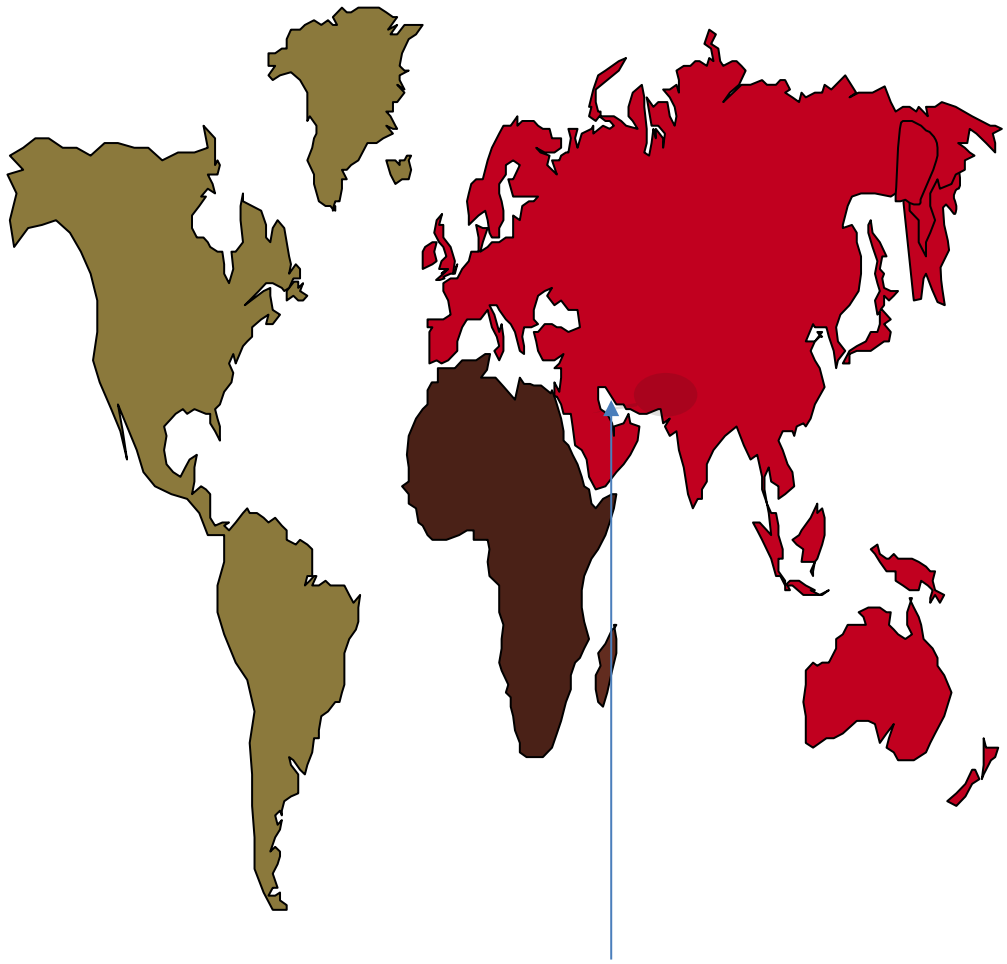
Before eGovernment Program

Challenges

Kingdom of Bahrain was Ranked 53 in 2005 UN Survey

After eGovernment Program

(Started in 2007)



Achievements
• Smart Services with Over 300 electronic Services available on multi Channels • Integrated G to G backbone

Kingdom of Bahrain was Ranked 18 in 2014 UN Survey

eGov Journey Success Factors

Political Endorsement & Support

eGov Journey Success Factors .. Continued

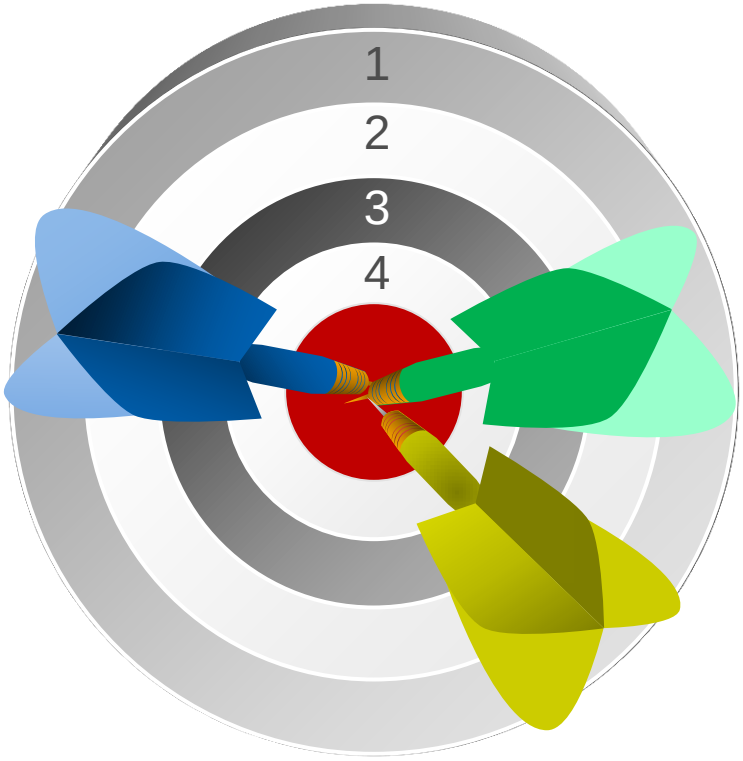
Government Ministries and Entities

Private Sector

NGOs

Partnerships with All Stakeholder

eGov Journey Success Factors .. Continued



Clear

Vision

Strategic objectives

Transparency

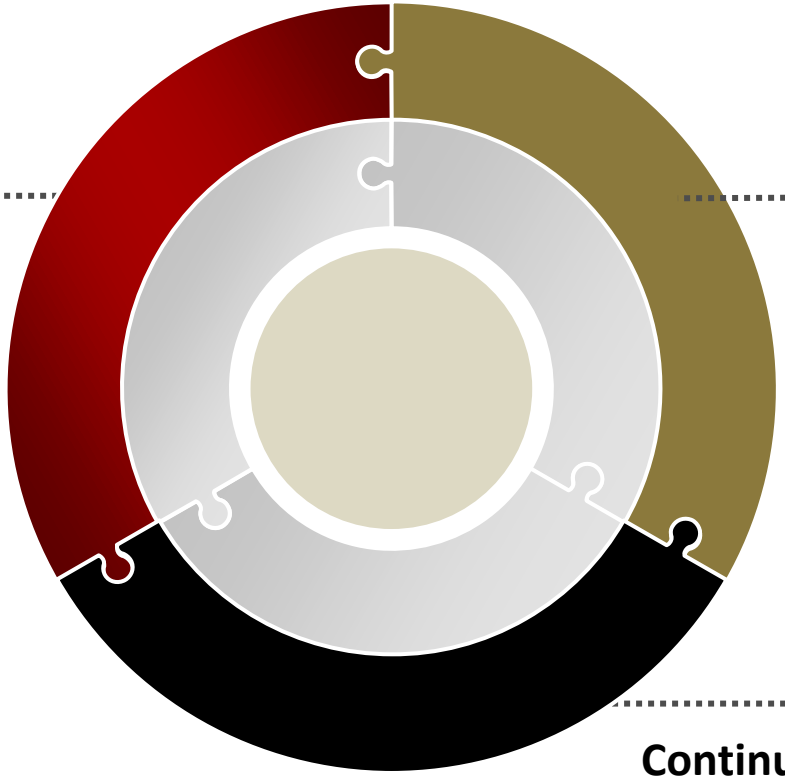
In Execution Deadlines

Commitment

In Execution Phases and Challenges

eGov Journey Success Factors .. Continued

Focus Groups about the **eServices** and **eChannels** and how to **continuously improve**



Research and development along with **field Studies and Surveys**

Continuous measurement of the **Customer Satisfaction** through **CSI**

Key Strategic Initiative targeted 2016

Enhance commercial registration system, process and service delivery align the Kingdom of Bahrain with its National Economic Vision 2030

BLIS

- One-Stop-Shop
- Single System
- Seamless
- User-Oriented

Background

Business	Ministry	Kingdom of Bahrain
Reduce overall time (registration/ processing)	Streamline business process	Attract foreign investment
Multiple channels	Increase utilization	Facilitate economic growth
Information hub	Easy access to information	Strengthen eGov. program
Interface with respective entities	Scalable in size and performance	More efficient and transparent

Key Strategic Initiative targeted 2016

bahrain.bh

bahrain.bh/apps

أجهـزة الخدمة الذاتية
Kiosks

مراكز الخدمات الإلكترونية
eServices Centers

مركز الاتصال الوطني
National Contact Centre
8000 8001

eGovernment Portal

- Main Delivery channel with over 320 e-services
- Over 80 million Bahrain Dinars collected
- Over 75 million page views

Mobile

- Provides support for multiple mobile platforms
  - iPhone
  - Android
  - Windows
  - J2M
  - Symbian
  - Blackberry
- Provides mobile guidelines for mobile app development
- Establish mobile apps research & development lab

eKiosks

- 35 kiosk machines across the country in government offices and public places such as shopping malls.
- Based on a PPP model with a local bank.

eServices Centers

- Provides all portal services
- Some centers equipped with kiosks
- Downscaling as demand decreases & population is more tech savy

National Contact Center

- Single Toll Free number 80008001 to avail government services
- State of the Art center with multi medium support
- Voice, Video, IVR, chat, email, fax.

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From Disruptive technologies to Sustainable use of Smart devices

Vaino Olev
CIO City of Tallinn, Estonia
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Foreword

The only limit to our realization of tomorrow will be our doubts of today.

Franklin D. Roosewelt

Disruptive technologies

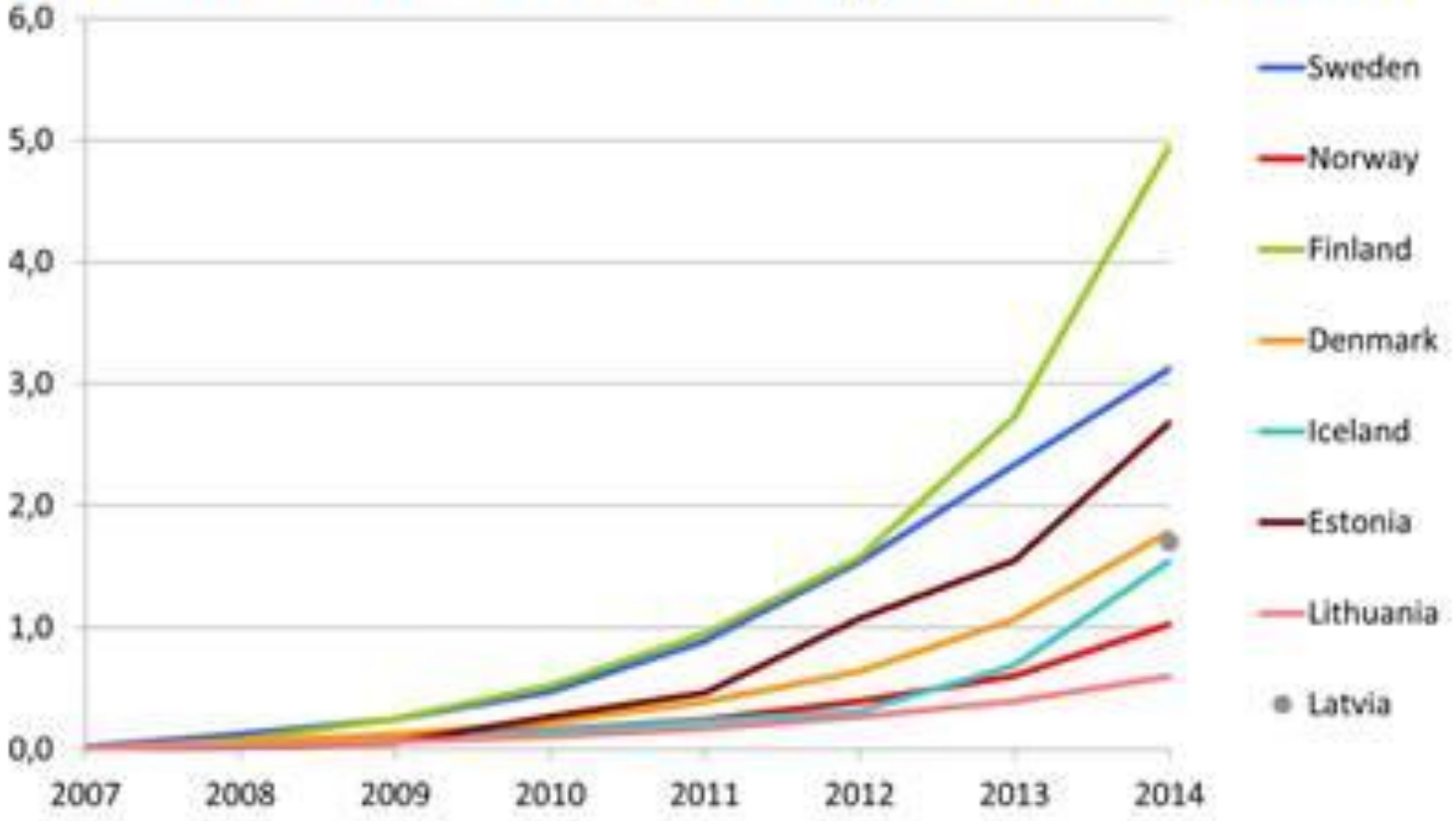
- Sustaining technologies corresponds to well-known technologies that undergo successive improvements.
- Disruptive technologies means new technologies that
  - still lack refinement,
  - often have performance problems,
  - are just known to a limited public,
  - might not yet have a proven practical application.

Mobile Internet Research Report

- Use of Mobile Internet in Scandinavian and Baltic States in 2014:
  - Finland 5GB/month
  - Sweden >3 GB/month
  - Estonia 2.7 GB/month
- Significant rise from 2012:
  - Finland >3 times
  - Estonia 3 times
  - Sweden 1.5 times

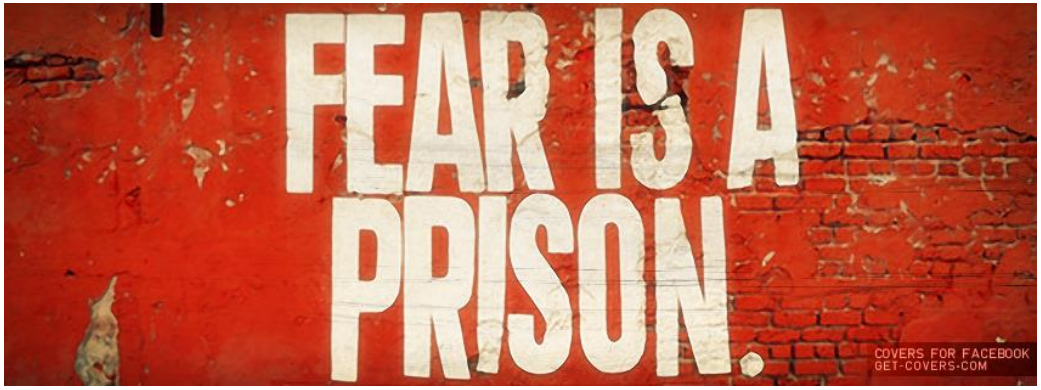
http://www.goodnews.ee

1.4 Gbytes of data transferred over mobile networks per capita in a month



People and new technology

- Smart City means also Smart citizen.
- How to cut down on peoples fears?



Estonia puts focus on smart device security

- The overall aim of **Nutikaitse 2017** (SmartDefence 2017) project is to raise security awareness among mobile smart device users, developers and retailers.
- The project **will promote the safe use of mobile smart devices** and also aims **to ensure that secure software solutions are easily accessible and user-friendly**.
- The agreement was signed on 5 November 2013 by Certification Centre, the Estonian Information Systems Authority, Swedbank, SEB, TeliaSonera, EMT, Elisa and Tele2.
  - The project co-ordinator is Look@World Foundation.

The Goal of The Project

- The goal of the project is to ensure that **70% of mobile smart device owners in Estonia** use their devices in a secure way by the end of 2017.
- With the help of Nutikaitse 2017, **at least 300,000 people in Estonia** will use the secure Mobile-ID for electronic authentication and digital signatures.
- The vision is also that 80% of Estonian e-service providers, developers and Estonian Association of Information and Technology members will have joined the initiative.

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From Secure to Trusted Smart Cities

Eikazu Niwano
Producer R&D Planning Department, NTT Corporation, Japan
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Issue of Sustainability

- **"2020"-"Vitalizing Region" - Increasing needs for city-wide efforts in Japan**
  - 2020 - Olympic Game, Tokyo; scope is over many regions and sectors for tourists etc
  - Vitalizing region; Japanese government strongly promote the project "vitalizing citizen, town and work", officially called "**Overcoming Population Decline** and Vitalizing Local Economy in Japan" in English.
  - It means sustainability is important issue for regions and also for continuity even after above projects.
- **It is proposed that eSelf-government capability with cross-sectorial federated life support services with social trust might be important for sustainable smart cities*1,2**
  - From a point of view of autonomy and spontaneity through citizen-oriented approaches
- **In order to realize such federation, security issues are important for reducing unsafety, but in addition social trust will become important.**
- **CSA(Community Supported Agriculture) and crowdfunding model with some compensation will be appropriate solution for sustainability, then what is the issue to expand the model to others and to accelerate the usage?**

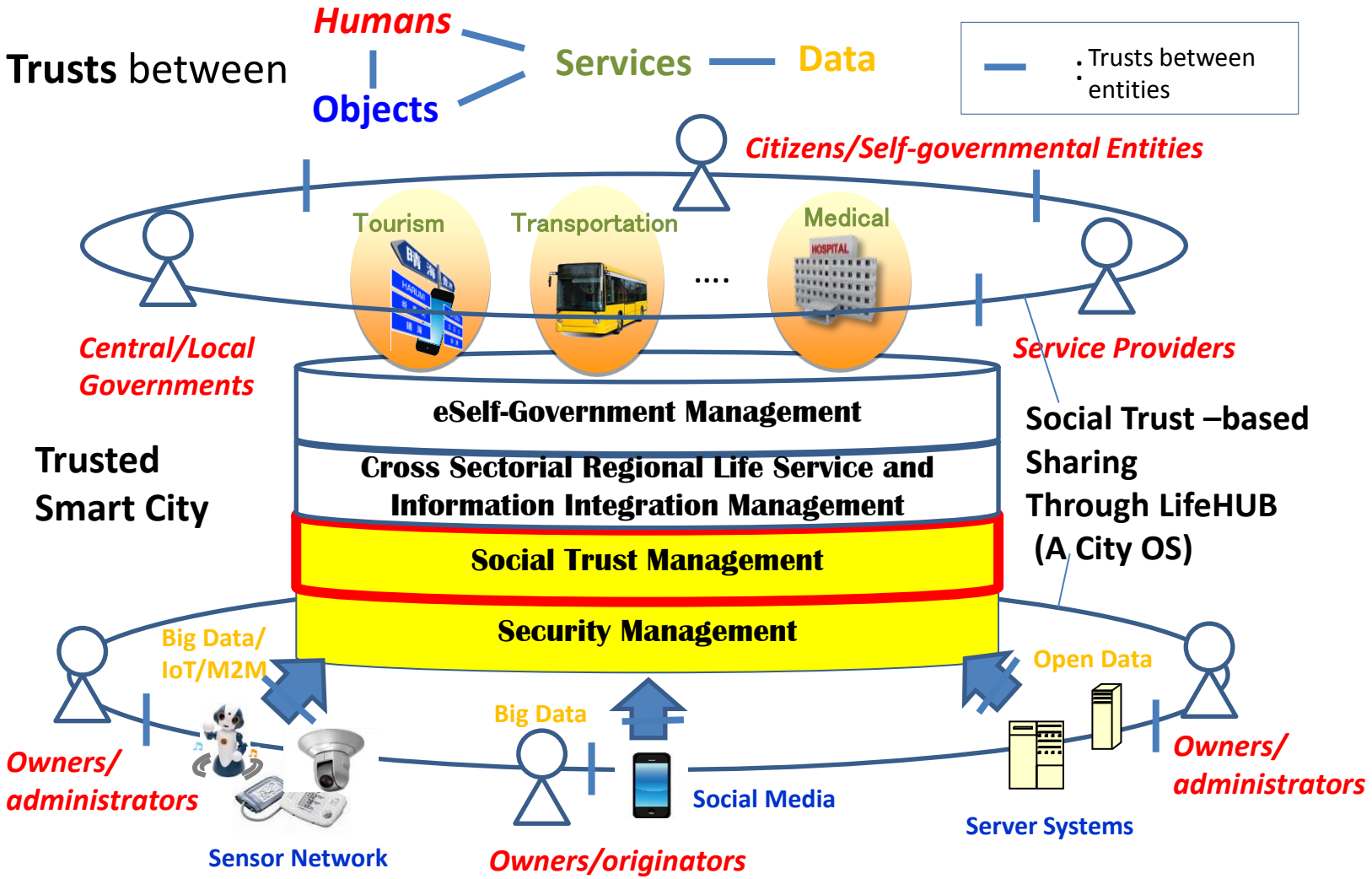
Why social trust and what is it?

*1. E.Niwano, "Social Trust, Cross-Sectorial Integrated Services and eSelf-Governments for Citizen-oriented Smart Cities", Proc. of Global Forum 2014
*2. E.Niwano, "eSelf-Government as a next issue of eParticipation", Proc. of Global Forum 2013

Trust – Sharing – Resilience

- **In the environment of "Internet of Everything(IoE)", we need guarantee more for socially *who is who* or *what by* whom etc, correspond to real entities in the world**
  - It is in the case we connect to unknown or well-known but uncertain human/objects.
  - Security is just computing issue basically.
- ***Social trust/reliability* (not as performance issue, also) will be some kind of guarantee and the basis of relief in IoE environment.**
  - Until now, trust is discussed in such fields as TPM (Trusted Platform Module), trust circle in SSO (Single Sign On) environment, but more upper layered human social aspects may have to be discussed more.
  - In IoE environment, services and data that humans-objects own/administrate/utilize may have to be shared based on social trust; ***Self Trust - Mutual Trust - Cooperative Trust - Public Trust***
  - One of important thing is because those values changes dynamically based on social trust and social trust itself also changes dynamically according to many occasions and human view.
- ***Sharing model* like CSA and crowdfunding *based on social trust* will be one of important concept for sustainability.**
- **Because it might give city-community dynamic resilience by every citizen and any other stakeholders by increasing chance and reducing risk of sharing.**
  - In case of electronic decision making/communication/commerce/donation on "Social Trust"
- ***Extended CSA(Community Supported Agriculture) model* to other sectors and *crowd funding* based on Social Trust will become important.**

Trusted Smart Cities



-> How to evaluate and guarantee many types of social trusts in city?

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Open Data & Big Data in Smart Cities

Herve Rannou

ITEMS PROPOSITION

Cityzen Data

Static data

Agregated data

Non real time data

Raw data from sensors and meters

Accounting data

Real time Quality of Service

Usages

OPEN DATA

OPEN DATA IN DEBATE

BIG DATA

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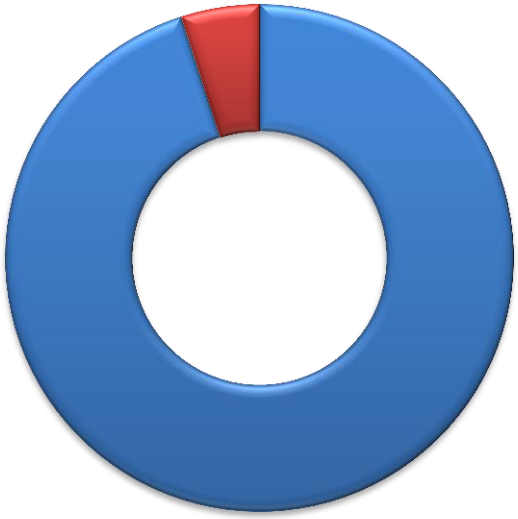
2015 → 2020

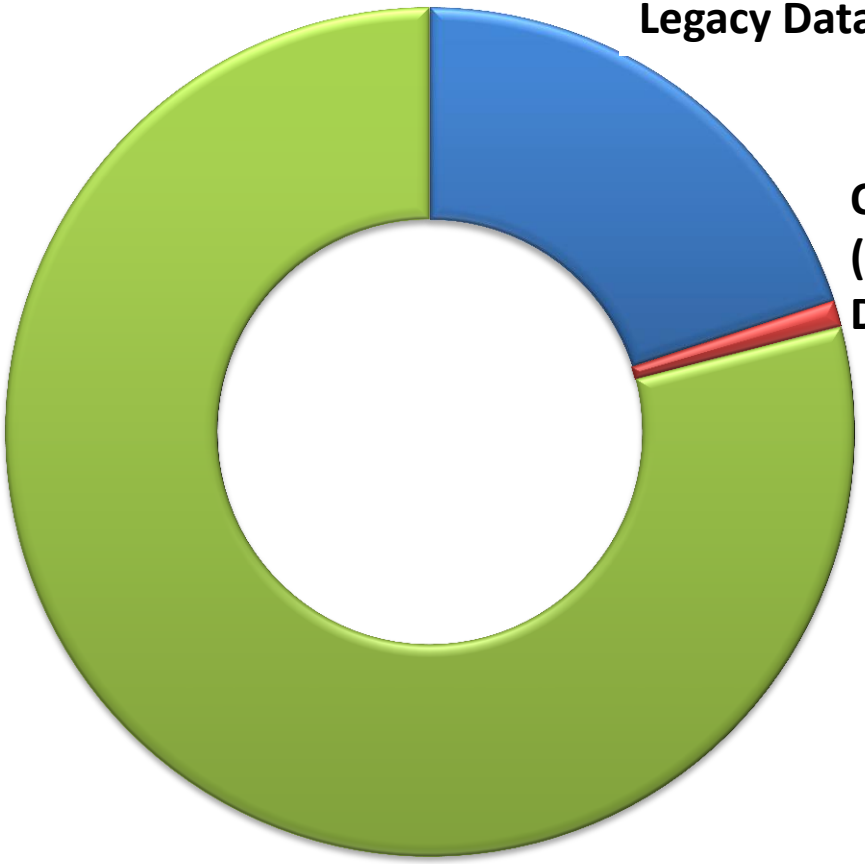
Open Data / (1 to 5%)



Legacy Data / 95 to 99%

Legacy Data / 19%

Open Data (Static Data) / 1%



Big Data / 80%

ITEMS International

Sensors in the City

Electricity	Meters, Home / Building efficiency
Gaz	Meters
Water	Meters, leaks
Waste	Smart containers
Car & Traffic	Car park presence detection, traffic measurement, traffic management
Transports	Traffic, real time information, quality of service
Bike & car-sharing	Availability, optimization
Public lighting	Control command
Video security	Real time analysis
Environment	CO2, gaz detection, water pollution detection
Public building	Monitoring
Others	Trees monitoring, toilets monitoring, sewers …

Open Data / Big Data

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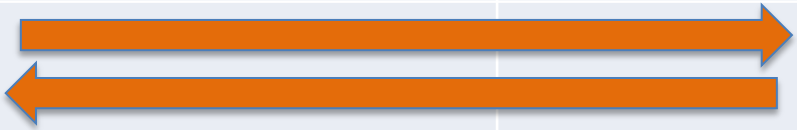
	Open Data	Big Data
Data	Static Data	Dynamic Data
Objectives	Information, Democracy, Services	Monitoring, Analazing, Cros-sing data, Improving the city
Volume	Small	Big
Flow	Low	High
Architecture	SQL	No-SQL
Rights	Medium complexity	High level complexity
Business Model	Costs	Costs / Balanced (Services)
Trends		

A European Project in this scope

- **B**uilding an **IoT** **OP**en innovation **E**cosystem for connected smart objects

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HOLONIX PRODUCT LIFECYCLE KNOWLEDGE

ControlThings

enervent

CSIRO

IS-practice Program Management in Information Society

IRISNET

Cityzen Data

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Trends in urban logistics (tips and trucks)

Godfried Smit
International Policy Director, ESC - European Shippers Council, Belgium
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ESC

Transport-challenges

- Noise, pollution and congestion
- Electronic ordering
- Empty running
- High costs
- No coordinated policy

Enablers

- Make best practices available (transparency)
- More standardization
- Better coordination

Drivers

- Better and reliable service
- Cost benefits
- Image

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Q&A