Digital Services for Smart Citizens - a Platform Approach

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Smart cities: where are the challenges?
a big complex ecosystem

- huge data volumes
- owners?
- lots of IoT networks
- lots of Apps & Solutions
- lots of domains and technologies
a long list of enabling technologies ....
Think Tank – Action Week Lisbon 2017

Participating Cities

Cascais
Liverpool
Nice
Portugal
Porto
St Quentin
Tokyo
Utrecht
Zaragoza

City Needs
- Engage with and serve citizens
- Deliver a safe environment and vital services
- Optimize resources in a sustainable manner

City Focus Areas
- eCitizen
- Environmental Management
- Health Care & Social
The Connected Citizen Story …

Paul Legrand

Paul, and his family – wife (Sophie) and two children Leo (15) and Emma (8) live in Saint-Paul-de-Vence, a village near Nice, not far from his elderly parents.

His needs:
• Improve daily multimodality commute to work
• Medical monitoring for his diabetes
• A health coaching program (food, physical activity...)
• Wants to contribute to the improvement of his community
• Parent care assistance (safety, home monitoring, shopping...).

The Connected Citizens Solution:
• eCitizen - Portal connecting citizens to city activities, services information and environmental conditions
• Healthcare and Social - Provides home monitoring/automation, security and health assistance
• Environment Management - Fosters community engagement and volunteerism
His story

Daily Commute

Paul uses multimode transportation to commute daily to his office in the center of Nice where he has worked for 10 years as a construction engineer.
To get to his workplace, he uses several means of transportation. He uses his rechargeable, hybrid car to get to the train station. He takes a train to Nice and then finishes his commute using a tram or bike ride depending on the weather.
Paul’s multimode commute is complex and affected by traffic, public transportation service disruptions and weather. Understanding the impact of these variable is important for him so he can plan his trip to arrive at work on time.
His story

Family Health Concerns

Because he has diabetes Paul closely monitors his health which requires frequent monitoring of his blood sugar level.
Paul’s father suffers from Mild Cognitive Impairment.
His father is relatively active, but Paul is concerned about his father walking around the city and possibly getting lost due to his condition.
Paul recently subscribed to the Smart Life service offered by the city of Nice to facilitate and simplify his daily life. The Smart Life platform offers connected city services such as information on traffic conditions, available parking locations, public transportation delays and keeps him informed of service delays or safety issues. Availability parking is monitored and sent to him, so he can reserve spaces online. If his EV battery is too low to make it there he is automatically rerouted to a closer space which is available and if accepted reserved. Hence he has a normal EV parking but it can be changed automatically if needed.
Paul and his family are very civic minded and want to support and improve their city. Through the Smart Life platform Paul participates in the "Fix the Town" program set up through the city. As a volunteer in the program, Paul registered his confidential profile with the city in advance so he can easily report problems and collect points from the city for his contribution while creating a better environment. He can report issues that need to be addressed such as: street potholes, defective street lights, malfunctioning traffic signals, graffiti (Vélo Bleu) bicycles that are broken and not usable, leaking water sprinklers in public areas, enable positive feedback back to the citys - Add Positive points in the city – such as special places to go (beautiful gardens)

This localized information will enable the support agencies to schedule prompt repairs ensuring a well-functioning environment while reducing city inspection and repair costs. Paul is rewarded for his community activity and contributions through a point system that tallies his score and ranks him compared to other contributors. He can redeem his points when they reach a prescribed level for benefits (free event tickets, free venue access, etc). This system rewards citizens for their contribution and encourages participation.
To help him maintain his specific diet, Smart Life offers a coaching support program that offers menus and recommends food shopping lists designed to control his blood sugar level. His Smart Life coaching application, allowing him to stay in shape thanks to the suggestions of physical activities like Vélo Bleu option (Nice’s bicycles) for travel in town. At the end of the day when he travels from work back to his home he is automatically rerouted to the store to buy groceries or to complete other activities that are in his calendar, such as picking up the children from sports. Upon arriving at home, the smart house recognizes him and disarms the security alarm.

The Smart Life platform also helps Paul ensure the safety and health of his family, especially with his elderly father. The platform allows Paul to monitor his father’s activities and alerts Paul when his father strays outside geographical areas of normal daily activity. During the work day Paul receives a message that his father location is not matching with his father normal behavior patterns, he calls his father and verifies that everything is OK.
Paul participates in a collection and delivery system to serve his parents and other elderly neighbors. It pickup points as well as fruit and vegetable baskets available through local farmers. He is helped by the shared delivery system to manage the logistics. This service tells him the orders to be recovered and the people to be delivered according to different parameters such as the hours and availability at various shops. This collaborative deliveries platform connects isolated populations of the regions and strengthens the social link.
Adoption and Acceptance

- Small percentage of “Digital Natives” ready to adopt
  - Smart devices
  - AI / Machine Learning
  - Ubiquitous sensor networks

- Progression through generations*
  - does not result in higher adoption rates automatically
  - As people age, they also change positions
  - Significant numbers of people change view in their mid-twenties

* Studies found not conclusive
Feedback from Social / Medical Care Sector

- Several feedback rounds conducted with
  - Cities
  - Local governments
  - Healthcare Institutions
  - Social Care Institutions

- Monitoring through sensors, GPS:
  - Not widely accepted
  - Counterproductive when used in dementia circumstances
  - Not acceptable when applied in a clandestine way
Conclusion

▪ More Engagement, Incentives, Promotion of Citizen Activities
  - Incentives for healthier lifestyle
  - Rewards for Citizen Activity
  - Supporting small scale communities

▪ Sensor Data:
  - Best through Open Data
  - Less on personal devices
The Connected Citizens of the Future will be

- Connected in real-world social networks
- Physically active
- Contributing to the community
- Informed and safe
- Inter-connected and operable

Cities need to
- Reward the engaged citizens
- Support the needs of the individual
- Optimize resources in a sustainable manner
- Reuse investments
Open standard and architecture for city platforms

City Platform
Enabling an Economy of Data model bringing all aspects of the city to its citizens

For free services
Paid for services
Connected Citizens Digital ecosystem platform
Enabling the Connected Citizen

City Focus Areas
- eCitizen
- Environmental Management
- Health Care & Social

Platform Capabilities
- Partner onboarding & management
- Real-time geolocation services
- Analytical services
- Security / Data Privacy
- Data management (data hub)
- Marketplace / Developer portal
Enabling the Connected Citizen

Connected Citizens App
- eCitizen
- Smart City Service Management
- Data Hub
- Velo Bleu Bikes
- Smart Parking
- City Events
- Added privacy assurance

Environmental Management
- Citizen Reporting (pot holes, vandalism, trash, etc.)
- Reward Journey

Health Care & Social
- eHealth - Elderly tracking
- Social media integration

Marketplace / Developer Portal App
- Open APIs
- eCommerce

Service Provider & City BSS Apps
- Partner Onboarding
- Service Management
- Customer Management
Multiple methods to connect the Connected Citizens Digital ecosystem platform

Deployment Layer

Flexible Entry

Onboarding Portal

- App Developer
- Service Provider
- Data Provider
- Cities
- Service
- Data Feed
- Services
- Offer
- Data

ecosystem view

integration view

Business Platform View

- Operators (City staff)
- Integration (Existing System)
- Service
- Offer
- Data Feed

Actualisation Platform View

- Data

Connected Citizens Platform

Data

FIWARE

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our ambition:

- Connected Citizens Catalyst becomes an Operational Lab to promote, to educate about TMF standards, about our software environments and about Digital …

- Connected Citizens Lab will allow universities, startup, SMB companies to play, experiment, learn, teach, improve their digital awareness, explore tomorrow’s digital world.

- we are starting discussions for a partnership with Nice, Graz, … for implementations in a network of labs …
Merci

Visit us at Internet of Everything, 2nd floor, stand 26