

Smart Cities Workshop

BUDAPEST
SEPTEMBER 22ND 2011

Urban Living Labs for Smart Cities

Prof. Álvaro Duarte de Oliveira
Alfamicro

Overview

- Big Challenges of our Cities
- Smart Cities
- Open Innovation and Living Labs
- ENoLL and Globalization
- SAVE ENERGY Project
- PERIPHÈRIA Project
- Sustainable Smart Cities. Connected Smart Cities Network
- Conclusions and Recommendations

Big Challenges for our Cities

- Wellbeing and assisted living. Health and ageing
- Climate change
- Energy sustainability
- Demographic shifts
- Sustainable water and food supplies
- Green mobility
- Sustainable housing
- Waste management
- Security



EU Smart Cities Innovation Policies

- **Bringing together** Future Internet technologies with Living Labs methodologies and practices as a viable way forward.
- **“2020 Strategy”** emphasizes smart, sustainable and inclusive growth driven by innovation.
- The **Digital Agenda** is being implemented through Local Digital Agendas addressing concrete needs.

Dimension of Smart Cities Open Innovation

- In developing collaborative processes between local 'smart citizens', government and developer communities
- In offering a new way for citizens to share not just in the design but also in the delivery of services and contribute their own wisdom and experience in ways that can broaden and strengthen services and make them more effective
- In providing a viable agenda for a smart city system change enabling a better and happier society.

Source: PERIPHÈRIA (Krassimira Paskaleva)

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Smart Cities emerging trends

- **Social interaction is at the heart of the smart city model**, in which the infrastructures and services are jointly and dynamically discovered, invoked and composed by providers and users alike.
- **Creating open ‘digital citizen-developer’ communities and establishing private-public-people partnerships (PPPPs)** to find dynamic and imaginative ways to interact and create, drawing inspiration and experience from open innovation and sustainable urban development.
- **Building new collaborations and networks** so cities can understand innovation, innovators understand cities, citizens become effectively engaged in co-design and co-creation of services addressing their needs and interest .
- **Deploying convergent Future Internet platforms and services** for the promotion of sustainable life and work styles in and across emergent networks of ‘smart’ cities.
- **Creating Smart Open Innovation Urban Ecosystems** –specific urban settings or innovation playgrounds which combine innovation and social and commercial activities to enable open innovation and showcase the benefits for cities growing smarter and more sustainable.

Source: PERIPHÈRIA (Krassimira Paskaleva)

Sustainable Solutions

- Wicked problems call for diverse types of knowledge, resource, participation and collaboration.
- Behaviour change requires the motivation of millions of individuals and their communities; solutions cannot be pushed.
- New, distributed and highly participatory systems imply new roles for public and private spheres: demand/user/citizen driven open RDI enabled by ICT.
- **Living Labs:** open eco-systems engage and motivate stakeholders, stimulate collaboration, create lead markets and enable behavior transformation.

ENoLL and EU Presidencies



**Finish Presidency,
Autumn 2006**

**Portuguese Presidency,
Autumn 2007**

**French Presidency,
Autumn 2008**

**Spanish Presidency,
Spring 2010**

**Hungarian Presidency,
Spring 2011**

**Polish Presidency,
Spring 2011**



**Slovenian Presidency,
Spring 2008**

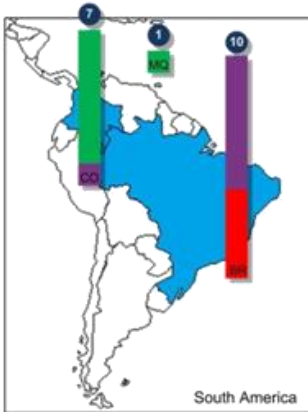
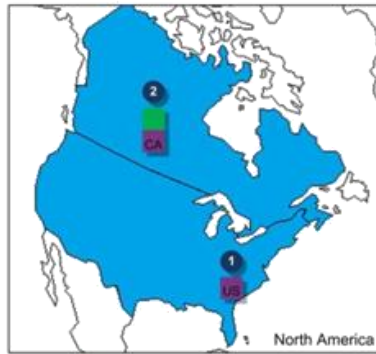
**Swedish Presidency,
Autumn 2009**

**Belgium Presidency,
Autumn 2010**

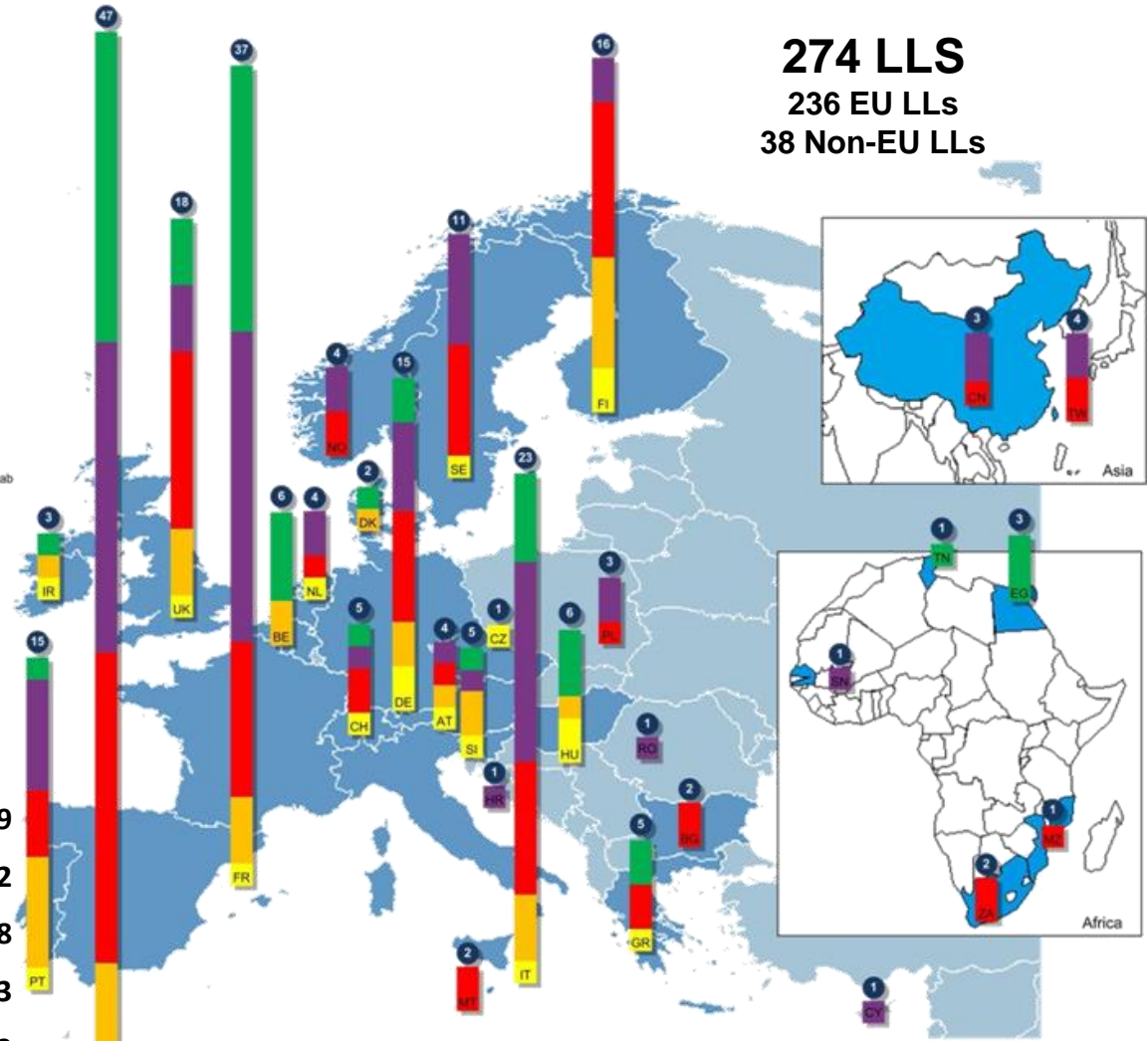
**Polish Presidency,
Autumn 2011**

European Network of Living Labs

274 LLS
 236 EU LLS
 38 Non-EU LLS



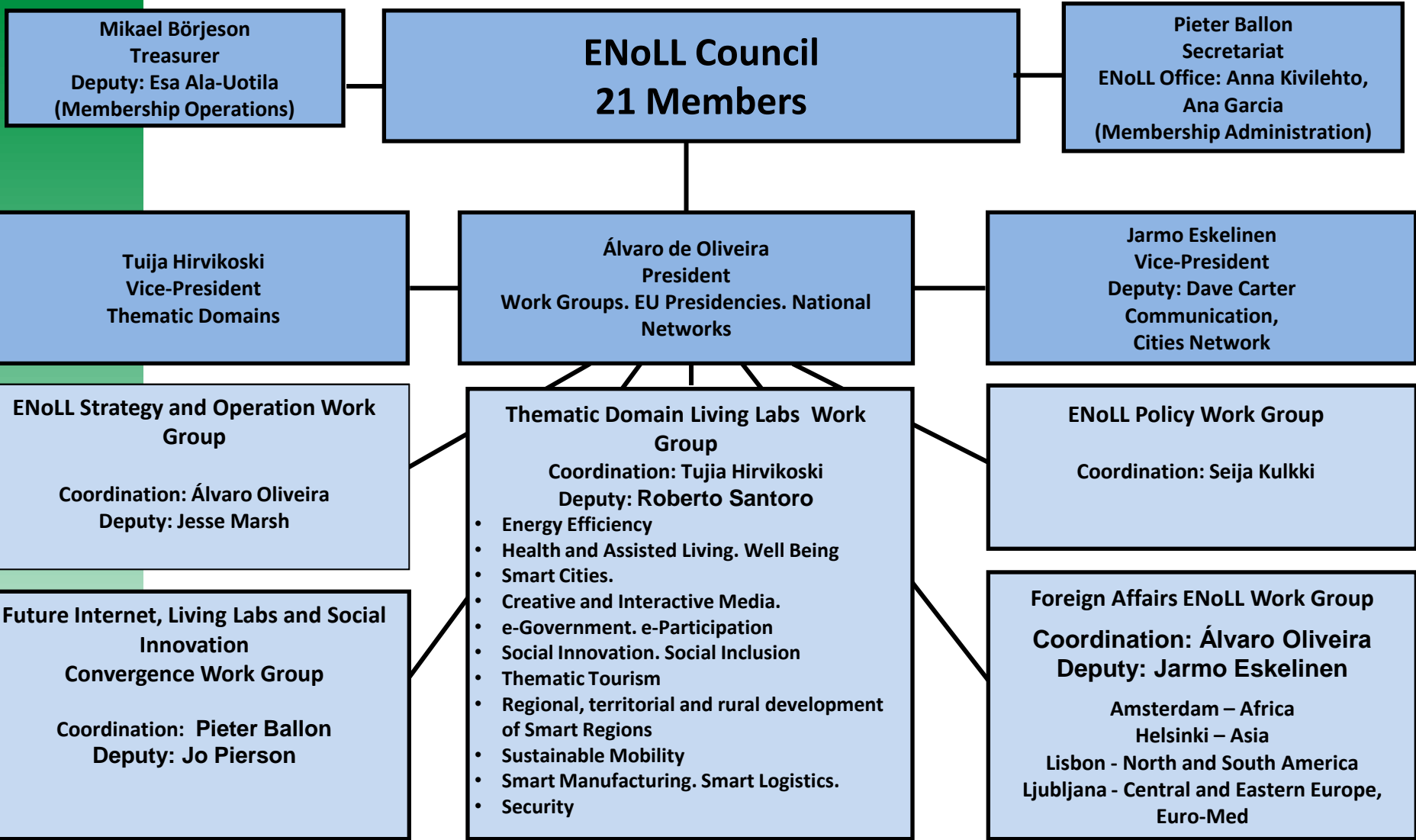
1 st Wave	–	19
2 nd Wave	–	32
3 rd Wave	–	68
4 th Wave	–	93
5 th Wave	–	62
Total		274



ENoLL Today

- 236 EU Living Labs
- 38 Living Labs outside EU
- ENoLL Office headquartered in Brussels with one full time staff member (services to members, project facilitation, events, monthly newsletter, active presence in online and in Social Media, engaging in strategic projects)
- Supporting services including the Living Lab Summer Schools (Paris 2010, Barcelona 2011, Helsinki 2012), Living Lab Prize
- Globalization of ENoLL (in Brazil, in China and in Africa)
- ENoLL PPP Policy initiative
- 6th Call for ENoLL membership during the Polish Presidency

ENoLL Organization



Globalization of ENoLL

Expansion initiatives outside of Europe

- Brazil Network of Living Labs (BNoLL)
- Africa Network of Living Labs (ANoLL)
- China Network of Living Labs (CNoLL)
- Taiwan
- Korea
- USA

Collaboration agreements

- FAO Food and Agricultural Organization of the UN (MoU and Action plan)
- United Forum Ubiquitous Network Industry and technology Development Forum (China)
- Beijing City Administration and Public Service Innovation – Information System and Equipment Center (CAISEC) China
- World Bank (to be signed in September 2011)
- INSME International Network of SMEs (In progress)
- EEN Europe Enterprise Network (In progress)

ENoLL in Brazil

- Amazon Living Lab - Fundação Feitosa (Manaus, Amazonas)
- Espirito Santo Cidadania Digital (Vitoria, Espirito Santo)
- Inova Unicamp Innovation Agency Living Lab (Campinas, São Paulo)
- Living Lab INdT - Well Being and Wealth Care LL (Manaus, Amazonas)
- Amazonas Living Lab (Manaus, Amazonas)
- BBILL (Belo Horizonte, Minas Gerais)
- EDP/Brasil Living Lab (São Paulo, São Paulo)
- Group Inter-Action Living Lab (Manaus, Amazonas)
- Habitat Living Lab (Vitoria, Espirito Santo)
- Rio Living Lab (Rio de Janeiro, Rio de Janeiro)

Amazonia Living Lab

Driven by Nature
Innovation



Partners:

AM State Government

AmazonasTur

SUFRAMA

EMBRAPA

FAPEAM

SEBRAE

CIEAM

FIEAM

UFAM

CETA

INPA

SECT

INDT

UEA

others

- (a) Includes the Living Labs: Biomedicines and Bio cosmetics.
- (a) Includes traditional culture, handcrafts, entrepreneurship, micro businesses, etc.
- (b) Communities Coordination Cooperation.



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Amazonia Living Lab

Living Lab of Living Labs

- Common vision and mission. More effective realization
- Coordination of platforms and initiatives
- Stimulation and facilitation of synergies
- Reinforcement of fund raising capacity
- Increase capacity of available results
- Wider critical mass

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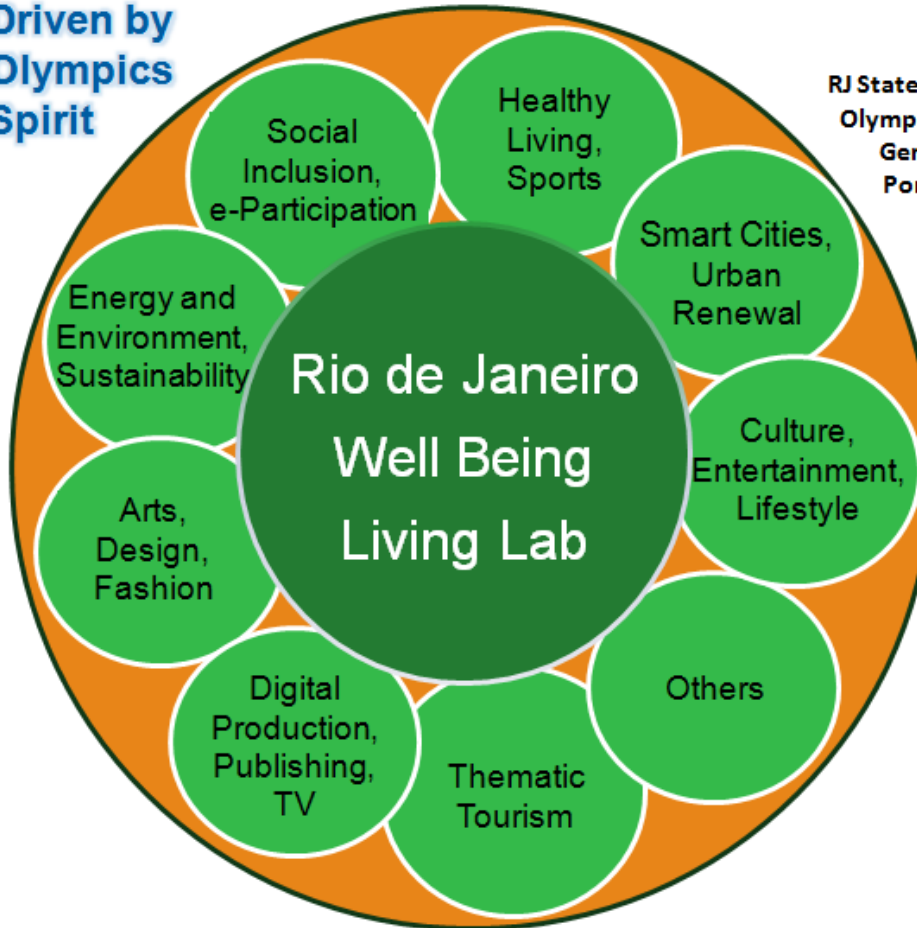
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FIREBALL

Rio de Janeiro Living Lab

Driven by
Olympics
Spirit



Partners:

- RJ State Government
- Olympic Committee
- Genesis Institute
- Porto Maravilha Municipality
- Socio Design
- FUNDARPE
- QuickMind
- Milestone
- EduWeb
- PUC-Rio
- SEBRAE
- RioFilm
- Affero
- Globo
- FINEP
- SECRJ
- others



ENoLL in Africa

- Living Lab Maputo (Mozambique)
- African Living Lab ISEG/UNIDAF (Senegal)
- Siyakhula Living Lab (South Africa)
- Sekhukhune Living Lab (South Africa)
- Egyptian-Dutch Agricultural LL (Egypt)
- Start-Up Systeme Tunisia (Tunisia)
- Egyptian School Education Living Labs (Egypt)
- Egyptian Retail Trade Development, Grocers/ Retail Traders Connection & Empowerment” Living Lab (Egypt)

The Case for African Network of Living labs (ANoLL)

- Agreement on a Task Force (established on May 10th) to draft the white paper for the creation and launching of ANoLL
- ANoLL Task Force is in charge of creating the concept and the action plan and the implementation ensuring a close link between the European Network of Living Labs (ENoLL) and existing African Living Labs namely, LLiSA and the ENoLL African Living Lab Members

Globalization of ENoLL

The Case of China (CNoLL)

Workshops

- Energy Efficiency, Shanghai (13-14/10/2010)
- Beijing Energy Efficiency Workshop (22/11/2010)
- Beijing ENoLL Workshop (25/11/2010)
- Beijing ENoLL Workshop (Oct 2011)

Existing Living Labs

- TianJin-China Living Lab
- China Mobile Research Institute
- Mobile Life Club of China - MC²
- Living Lab of China Mobile Communication Corporation (LLCM)

Globalization of ENoLL

Other Cases

- Korea (Workshop planned for December 2011)
- Taiwan (Action plan in progress)
- Australia (Action plan initiated in 2010)
- Singapore (Action plan to start in 2011)

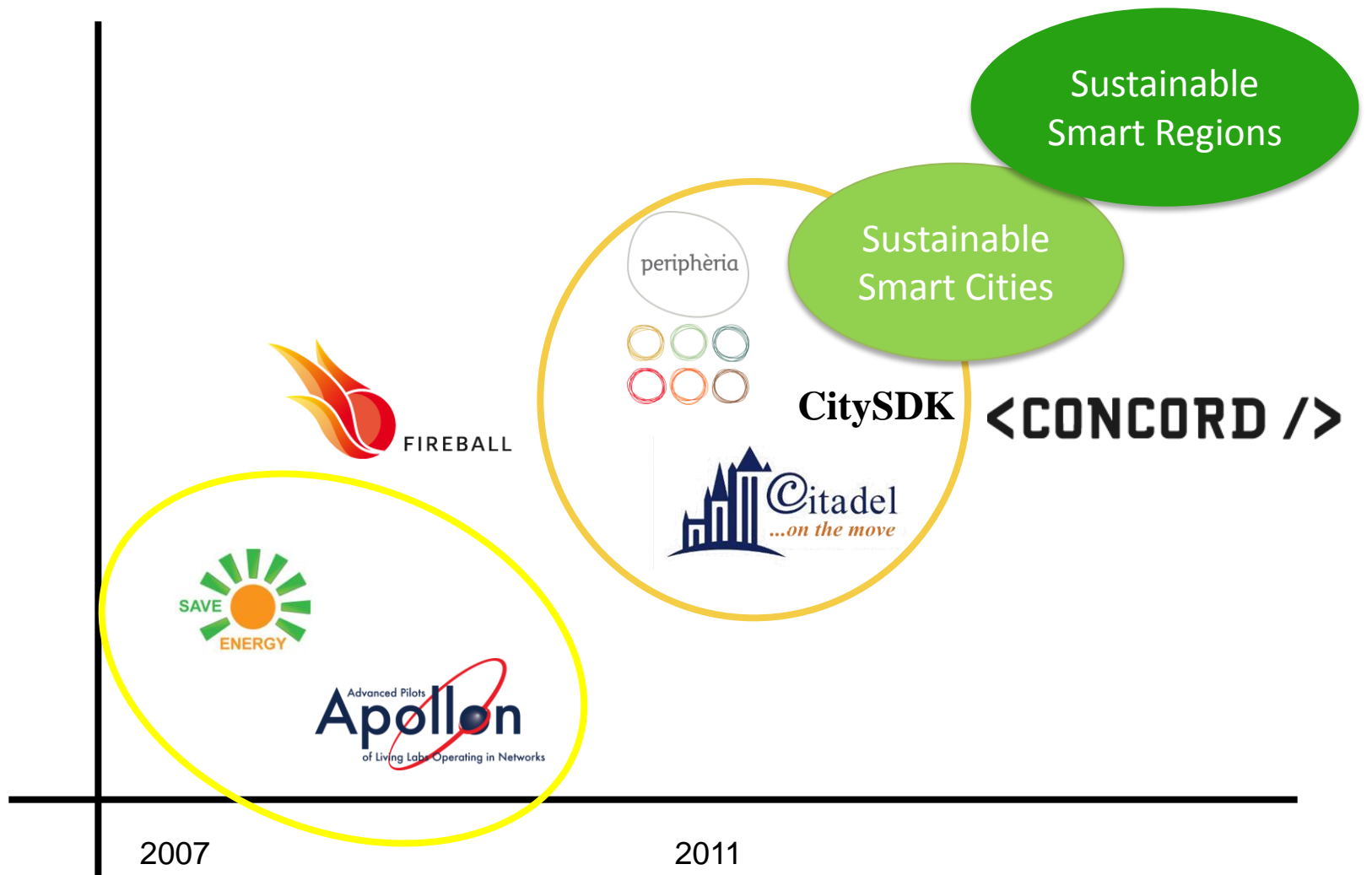
ENoLL PPP Initiative

- **ENoLL PPP initiative** concept developed during 2010 and publicly announced in Ghent (Dec 2010). ENoLL Council core group developing initial policy paper (Launched end of January 2011) followed by open and wide consultation. Initiative already supported by the European Commission and the European Parliament
- **New global Higher Education and Research** network addressing Living Lab needs in particular the facilitation of open user-driven innovation. Training and coaching on LL learning
- **Living Labs as Open Access Platforms for Large Scale pilot** projects with a focus on the social aspects of technology applications. Sustainable Smart Cities and Regions
- **Alliance** with Local, Regional, National Authorities to integrate Living Lab innovation and sustainability policies
- **Cross-border and cross-thematic collaboration** addressing the key challenges and business opportunities at a global scale
- Large-scale user behaviour transformation through **social and societal innovation**

ENoLL PPP domains

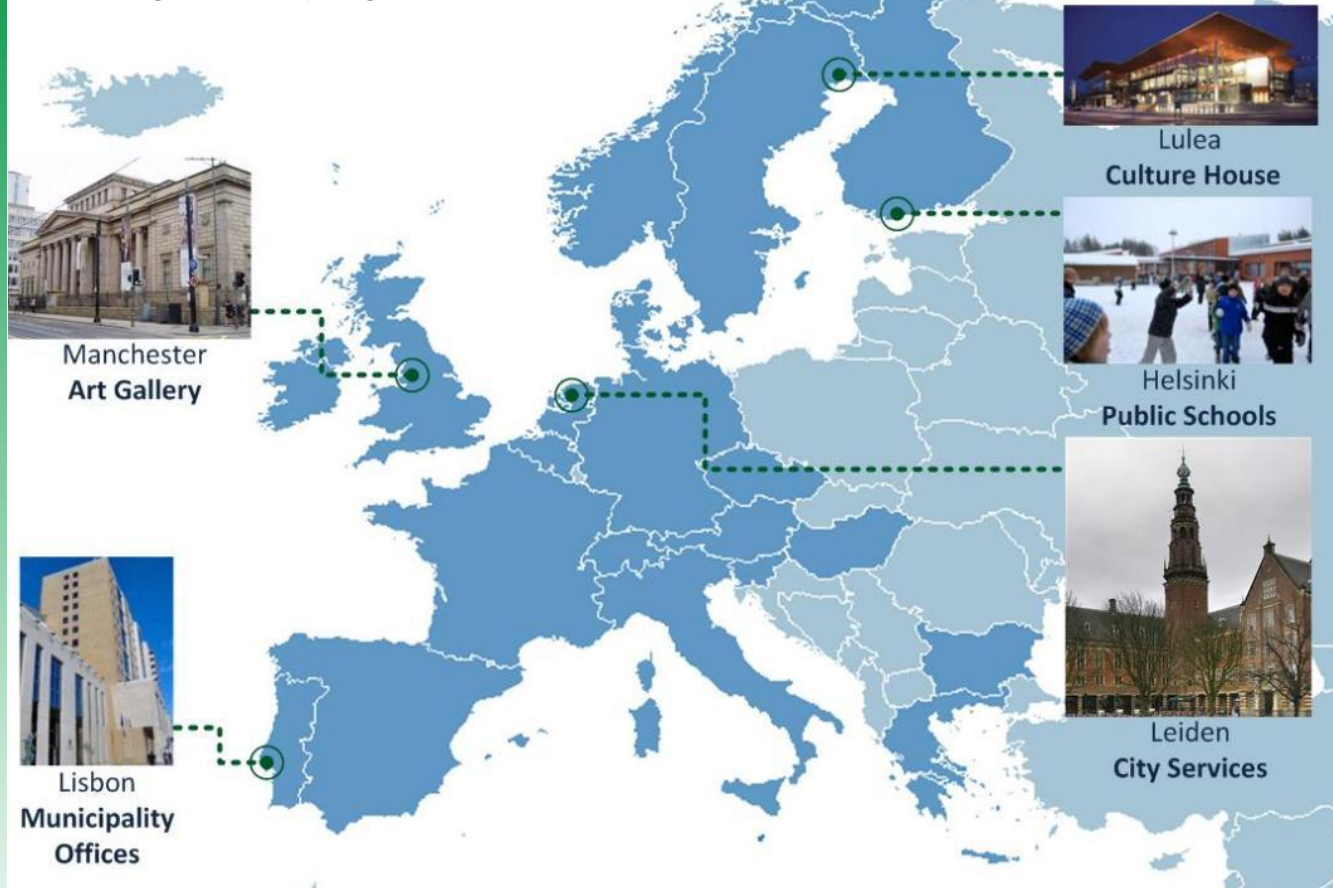
- **Research Projects and knowledge creation** (Seija Kulkki, Tuija Hirvikoski, Álvaro de Oliveira)
 - Social and societal innovation methods and processes
 - ICT tools and infrastructures to support user-driven innovation
 - Large scale user/citizen/consumer behaviour transformation
 - European Institute of Social and Societal Innovation
- **Education and Learning System** (Tuija Hirvikoski, Seija Kulkki, Artur Serra)
 - Distributed Masters programme focused on Living Labs, Summer Schools, People Exchanges, Study visits, SME innovation schools, Open Innovation Entrepreneurship etc.
- **Large-scale Pilots focused on social aspects of technologies and services applications** (Tuija Hirvikoski, Álvaro de Oliveira, Roberto Santoro)
 - Addressing challenges and business opportunities
- **Co-funding mechanisms** (Jesse Marsh, Álvaro de Oliveira)
 - Understand, encourage, experiment and support project cofunding, ERDF Regional funds, National programmes, International agencies
- **International collaboration** (Álvaro de Oliveira, Petra Turkama, Tuija Hirvikoski, Daan Velthausz, Ivani Pilati)
 - Big challenges of our time: Energy, health, food, water, education, climate...

Smart Cities Projects Roadmap



SAVE ENERGY Pilots and Goals

5 Energy Efficiency Pilots located at public buildings supplying services to the public



Goals:

- 20% of Energy Savings
- Smart ICT Energy Efficiency model and platform
- Serious Game focused on Energy Efficiency at Public Spaces
- User behavior transformation
- Living Lab methodology
- Pilots committed to extend results beyond project completion
- European wide dissemination of results
- Policy Recommendations at Regional, National and European levels

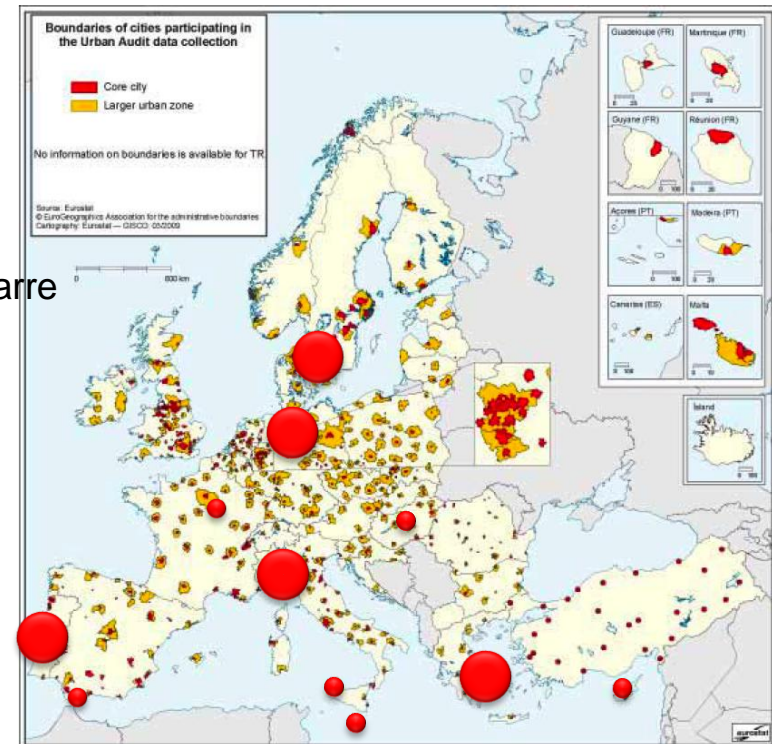
Periphèria Objective

Deploy convergent Future Internet (FI) platforms and services for the promotion and implementation of sustainable lifestyles in and across emergent networks of “smart” peripheral cities in Europe.

Participating Cities

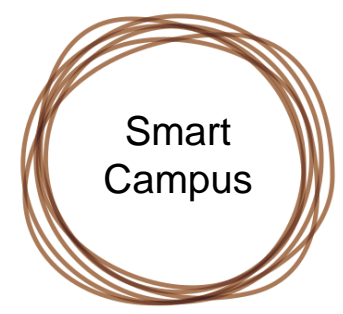
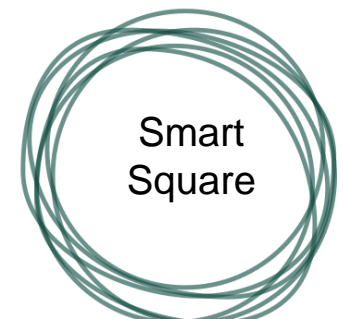
Pilot Cities

	Network Cities	Sponsoring Cities
Malmö	Helsinki	Budapest
Bremen	Lisbon	La-Ferté-Sous-Jarre
Athens	Rio de Janeiro	Larnaca
Genoa		Malta
Palmela		Malaga
	Strategic Partner	Palermo
	World Bank	Dar es Salaam
		Vitória
		Monterey



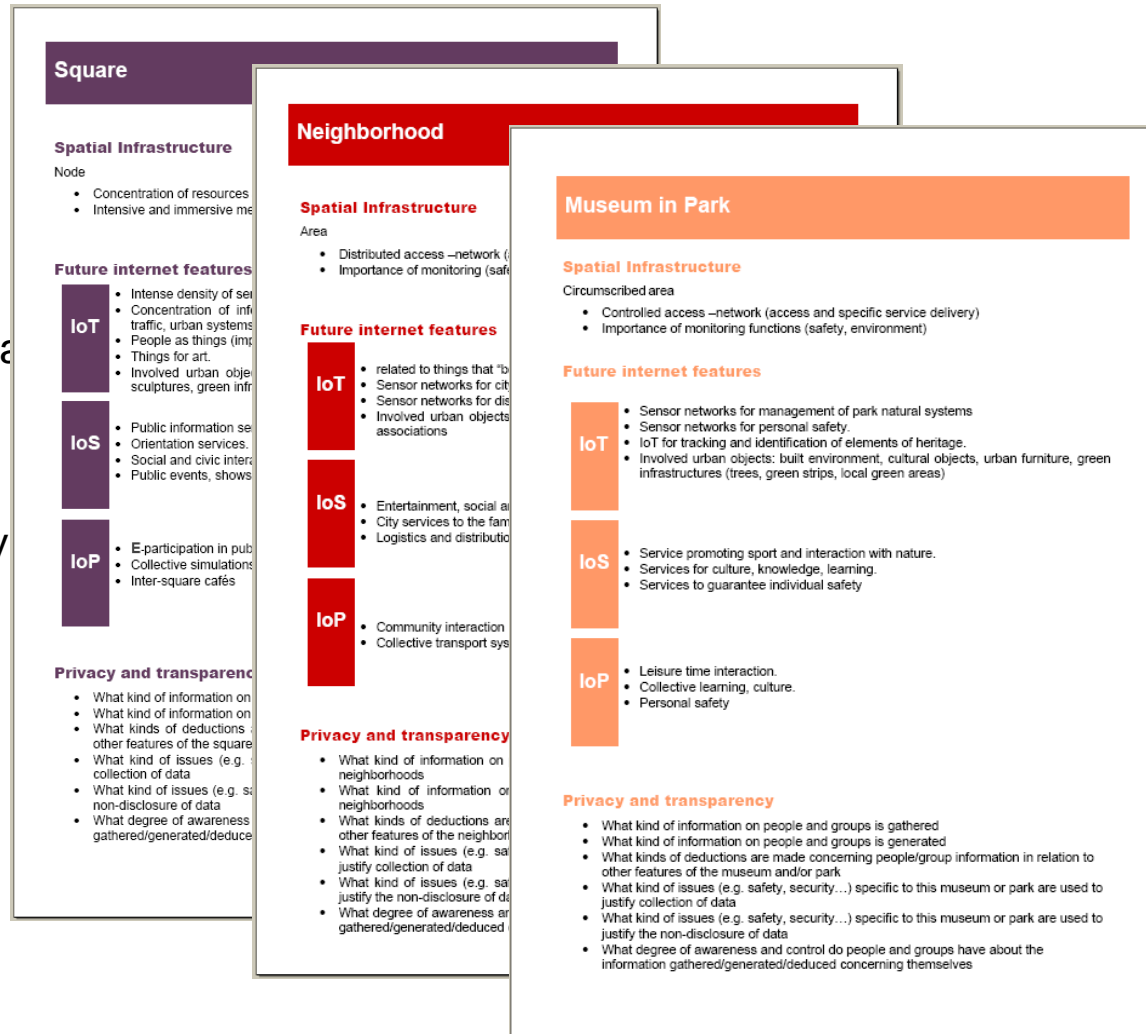
Living Lab Arenas

Archetypal urban settings in which Living Lab stakeholders co-design and co-create sustainable new ways of living

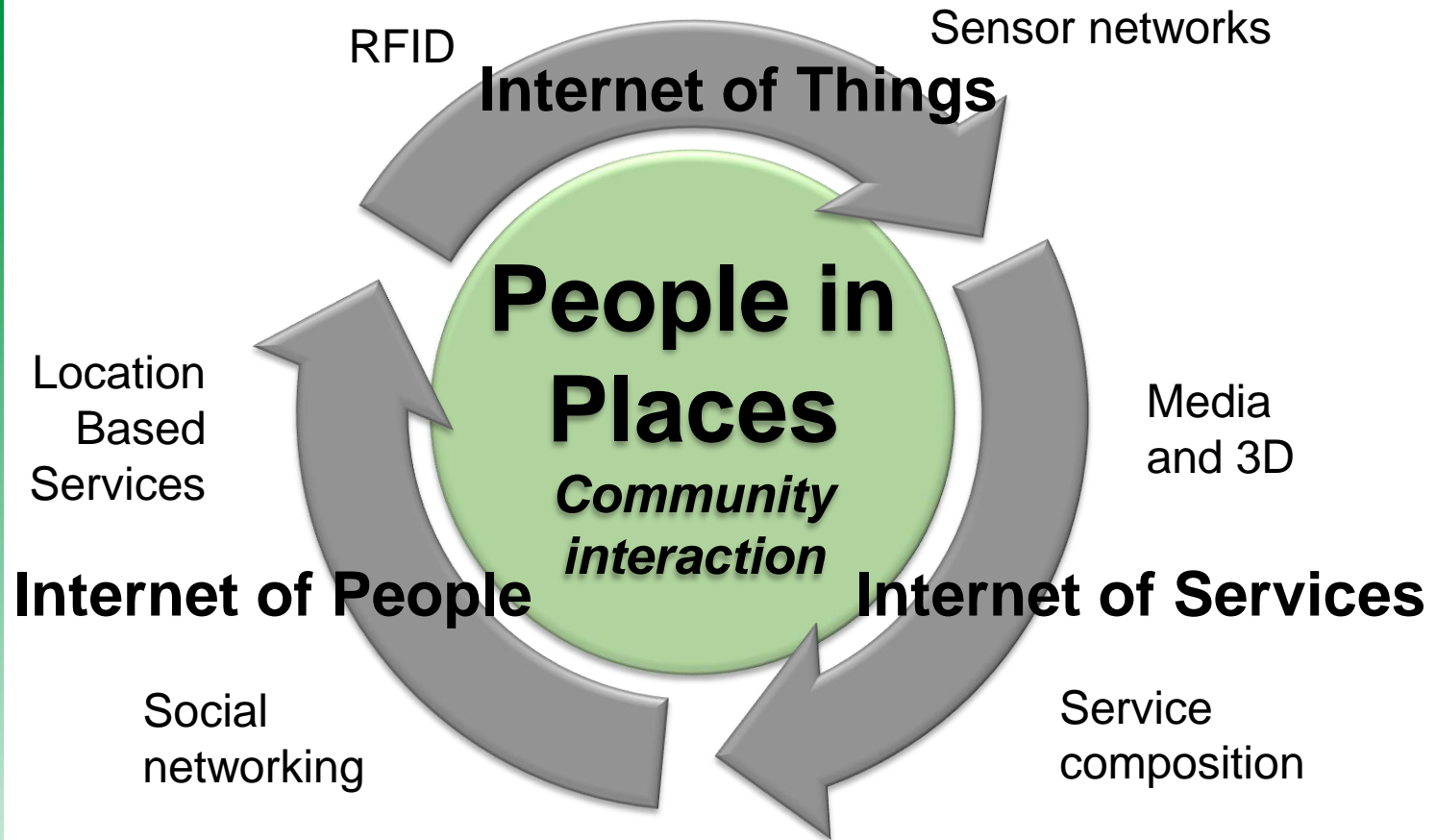


Arena Models

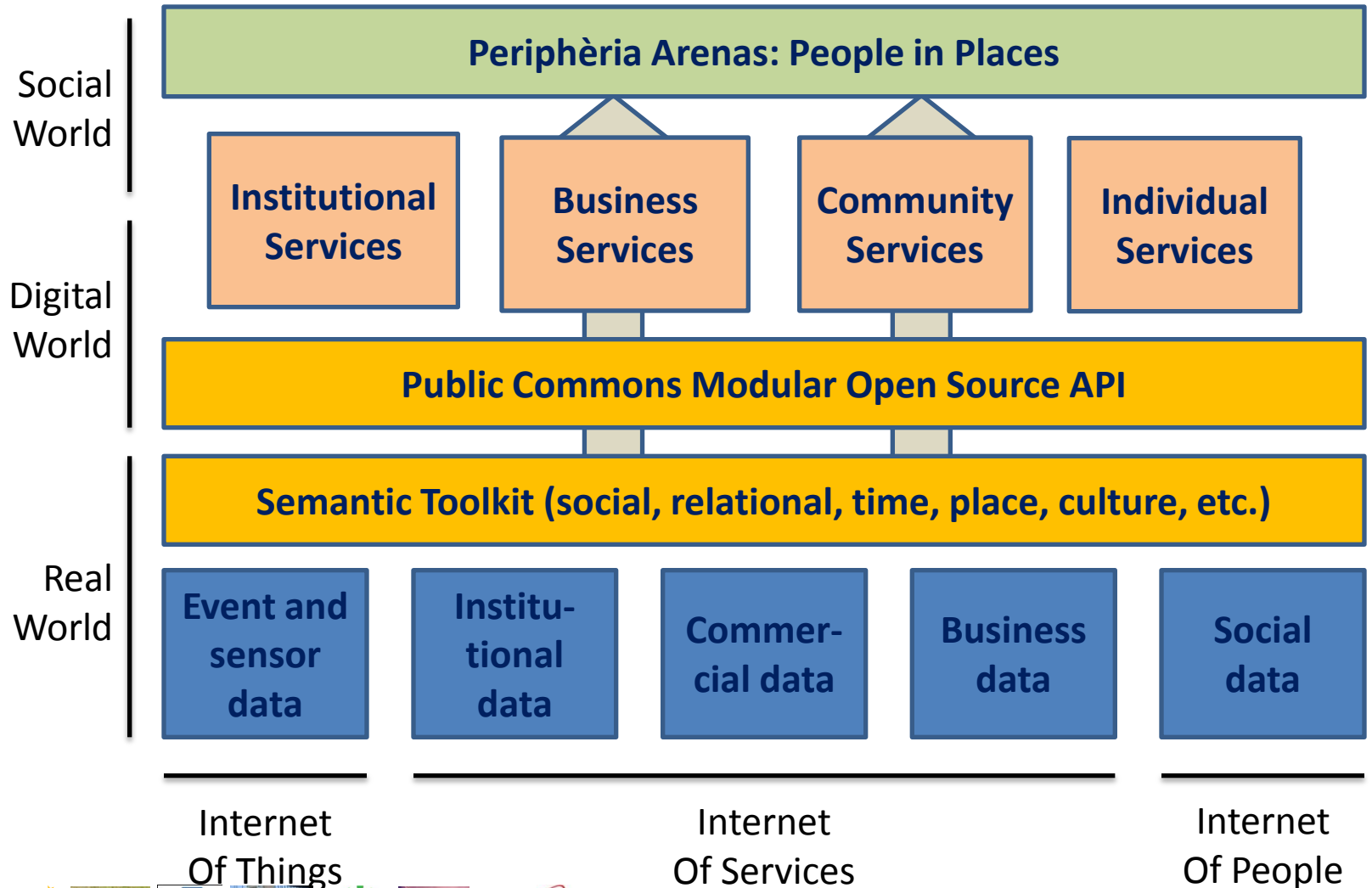
- Concepts
- Dichotomy visions
- Semantic issues
- Policy making issues
- Behavlets
- Relations with other arena
- Spatial Infrastructure
- Future Internet features
- Privacy and transparency



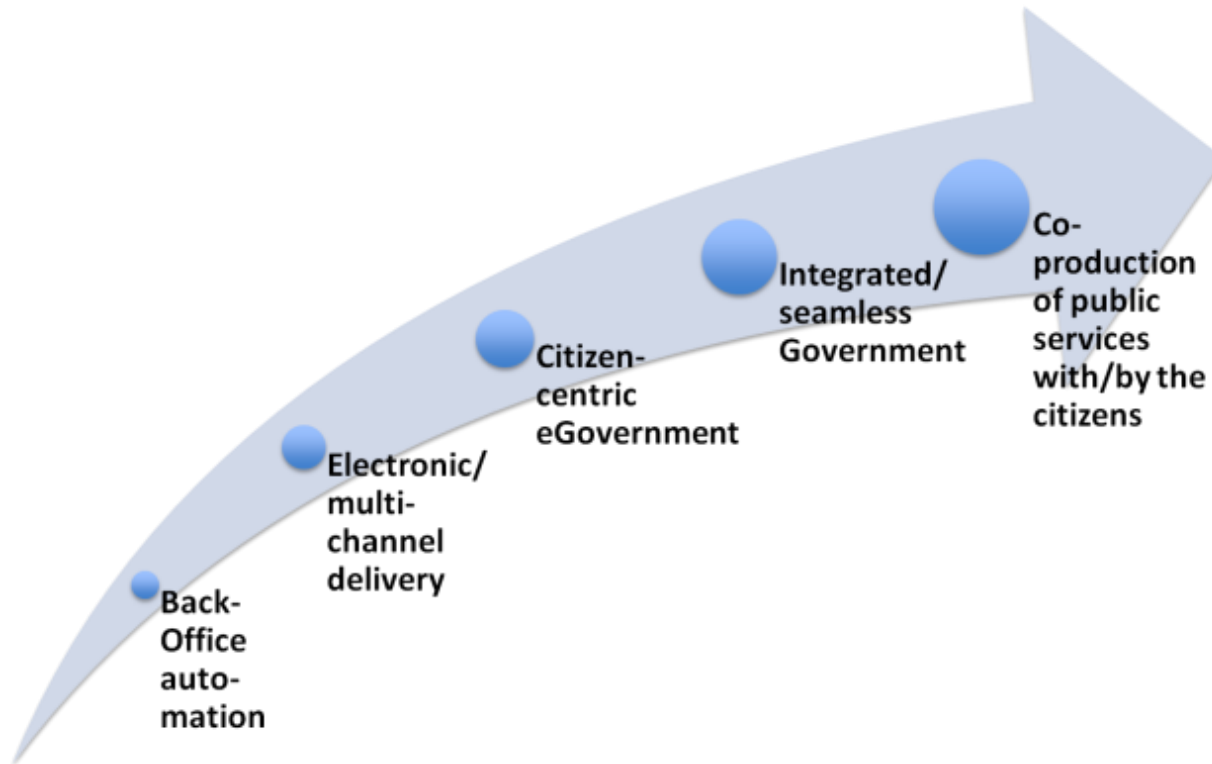
The Periphèria Future Internet Model



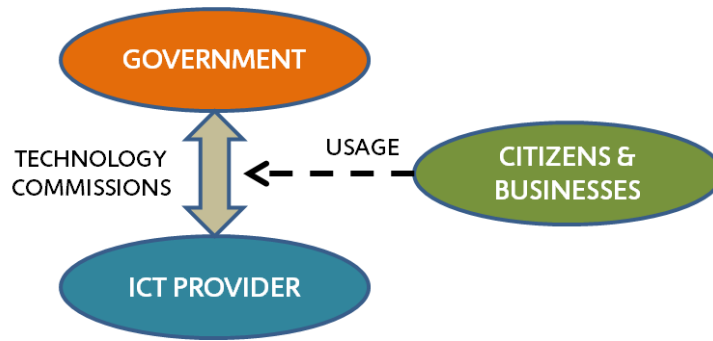
Arena LL Open Data Architecture



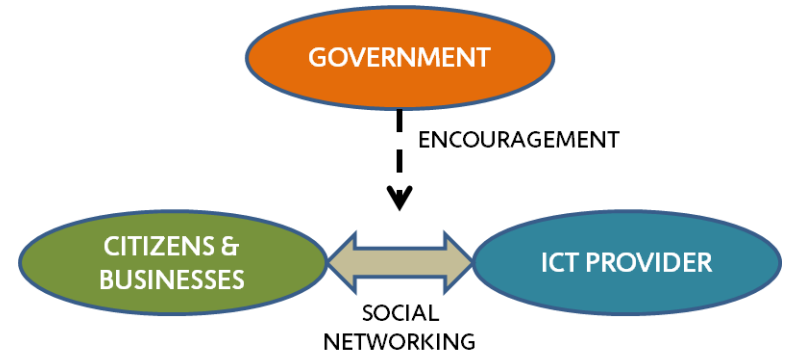
Evolution of City Services



Emergent Roles

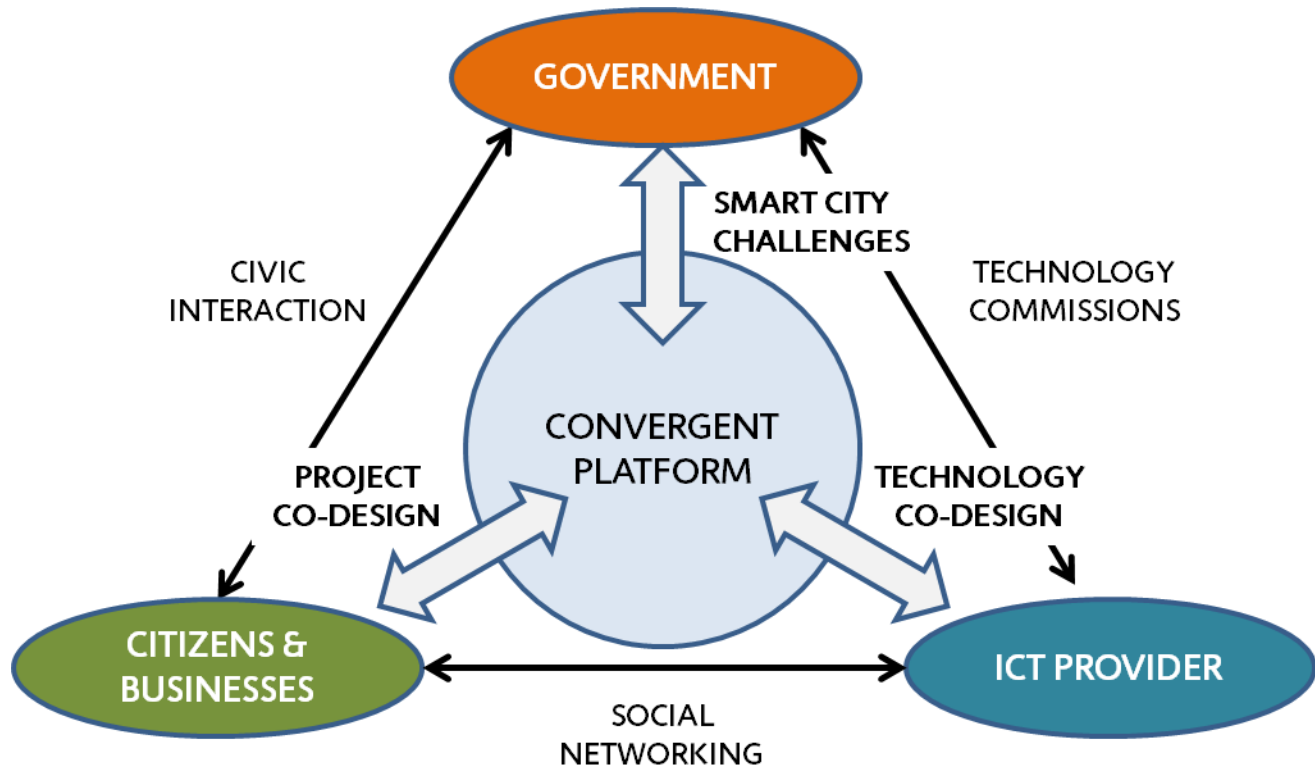


Government-commissioned
Smart City services



Emergent bottom-up
Smart City initiatives

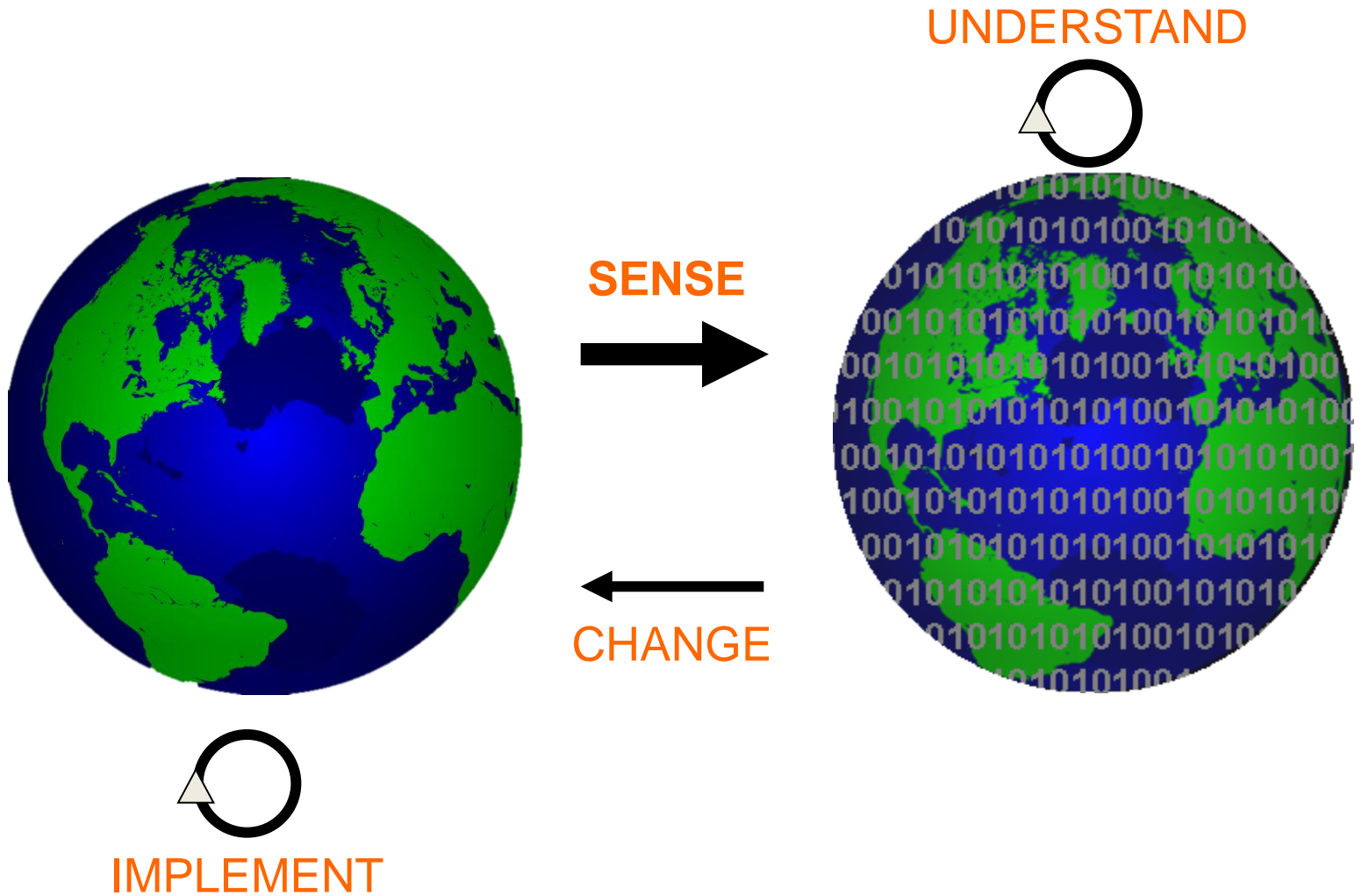
Periphèria Convergent Platform



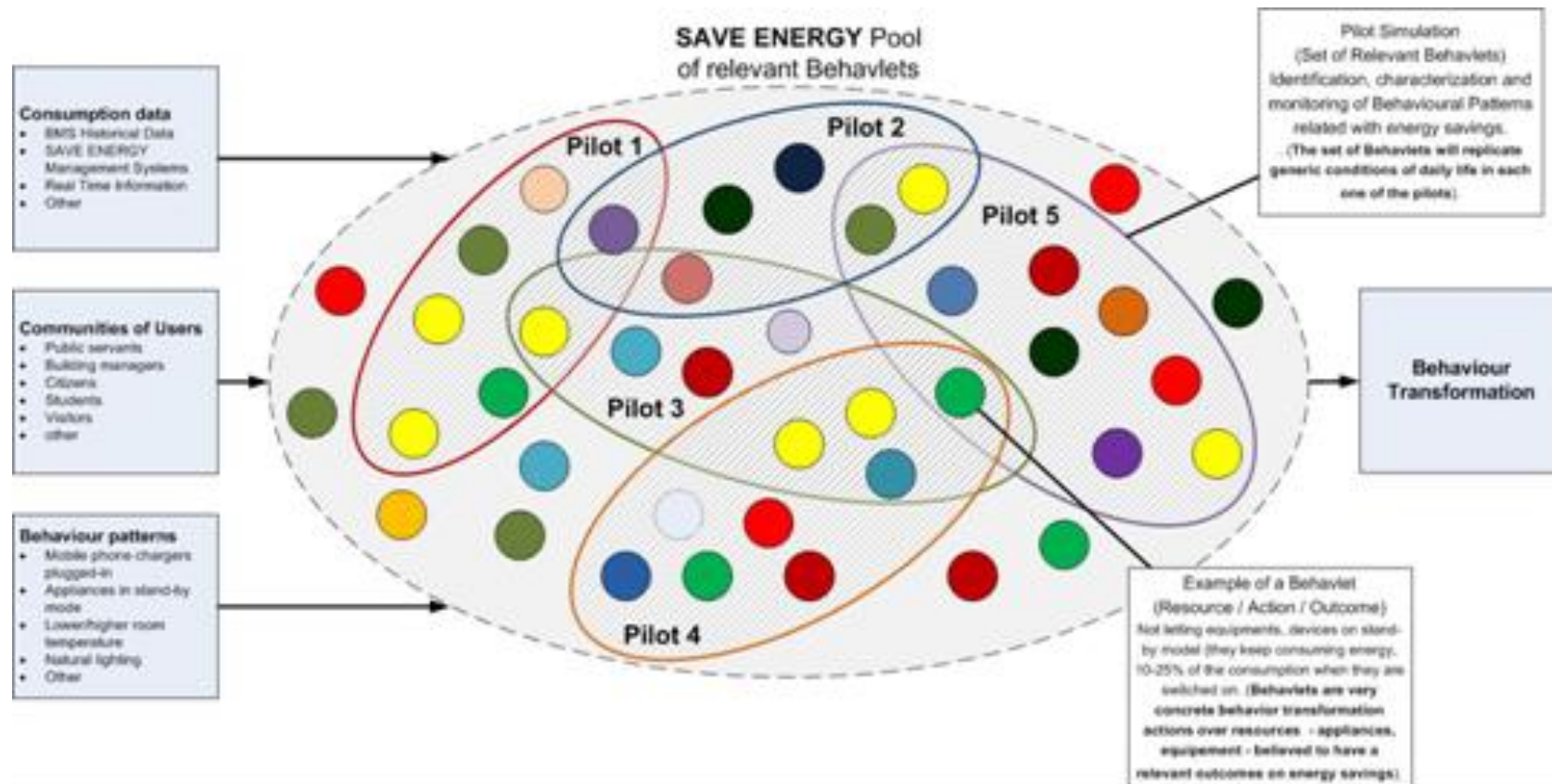
Smart Citizen Desires

- Be heard
- Be attracted (stay longer in a neighbourhood or group)
- Be green
- Be engaged (participate e.g. with others, in decisions)
- Be valued
- Be safe
- Be counted (identify with/feel ownership for e.g. a place)
- Be aware (e.g. of actions/impacts/benefits)
- Be prospective (envisage e.g. possible options/futures)
- Be reflective (e.g. on governance arrangements)
- Be informed (access information, people, services)
- Be integrated (e.g. with/across ethnic/religious minorities)
- Be different (e.g. opt out in socially acceptable ways)

FROM DESIRES TO CHANGE



Sustainable Behaviour Transformation



Urblets = Behavlets in Arenas

Smart City Challenges

«Open Call» for initiatives in a thematic domain, addressing a specific issue while promoting a new idea of sustainability, active role of citizens in co-delivery.

Posted by a city government or citizen group in a city, but of general relevance. Identifies one or more Arena Models as the reference setting.

The organisation posting a challenge commits resources:
a) in kind, b) institutional, or c) with a financial value.
Third Parties can commit additional resources.
Pre-Commercial Procurement is encouraged.


Each challenge establishes one or more deadlines.
Evaluation coordinated by the Periphèria Observatory.

Example Challenge and Ideas Space

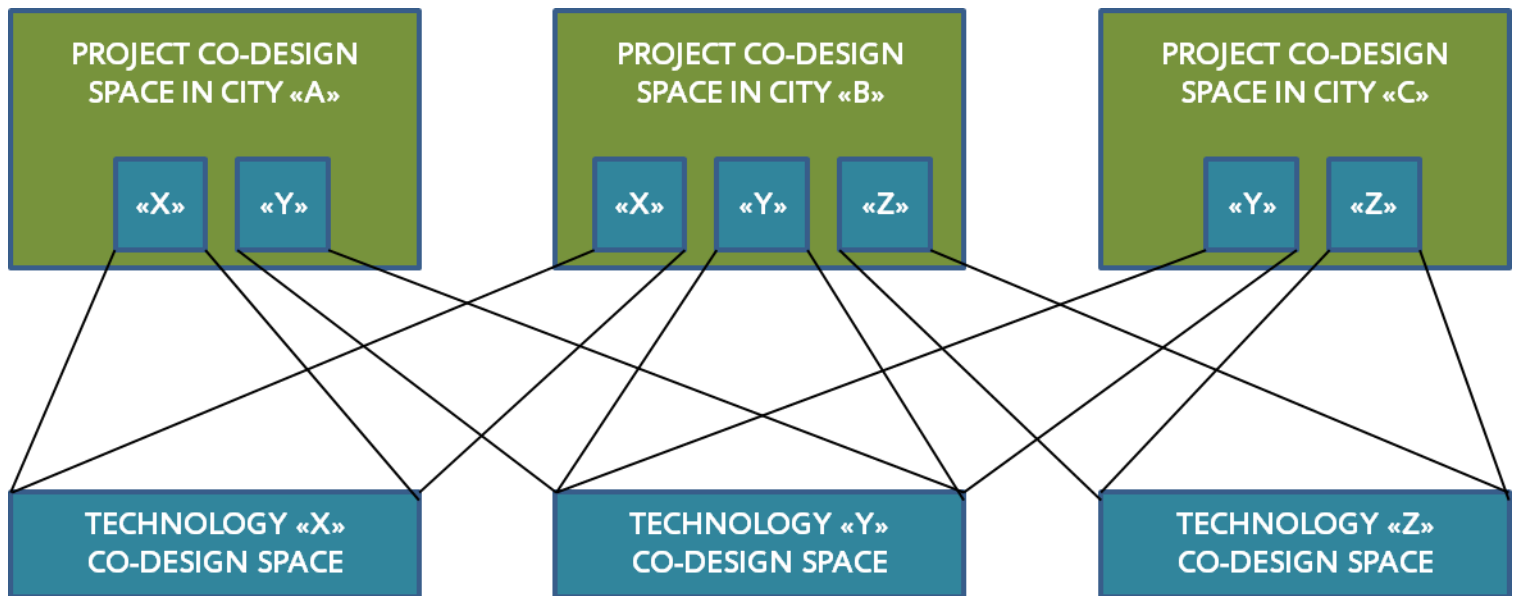


Safe city

Metadata	
Author	<>
Partner	<>
City	<>
Post Date	<>
Close Date	<>
Status	<>
Arenas	<>
Proj CDSs	<>
Tech CDSs	<>

Challenge and Ideas Space Mock-up		
Challenge	Services and initiatives to increase personal safety in public spaces.	Icon Image
Arena Visions	Citizens can visitors can enjoy public spaces (neighbourhood, street, square, park...), spend more time in them, and "care about" them, due in part to the sense of personal safety.	
Sustainable behaviours	Increased "taking care" of public spaces. Citizens and businesses offering assistance to those in need, be it directions or emergency help.	Idea Spaces
Citizen & business participation	Citizens and businesses actively contribute by assuming "custody" of public spaces. Can also participate directly in eg monitoring or assistance activities.	Jogging "buddies" in the park.
Commitment of resources	The sub-contracting budget in Periphèria allows for technology developments which can be used to make prototypes supporting the successful project ideas.	Citizen "first aid" network.
Idea space: Eyes on the street		"Eyes on the street" programme for shops.

Projects and Technologies








Example Project Co-design Space



Learn about your park

Metadata	
Author	<>
Partner	<>
Date	<>
Participants	<>
Challenge	<>
Submitted	<>
Win	<>
Arena	<Park & Museum >
City	<>
GPS	<>
Prog Bar	<>
Indicators	<>
Tech CDSs	<>

Co-design Space Mock-up			
Vision	Revitalising public parks.	Map 	
Mission	Make public parks interesting and safe.		
Strategy	Ideas for citizens to spend time in parks.		
Project Description		Progress Bar	
<p>A programme to provide information about a park and its natural and cultural features. Information can be provided by the city, schools, citizens. Citizens can become “custodians” of areas of the park by providing knowledge and checking in.</p>		 Indicators	
		Check-ins and QR reads 	QR code to provide info
		Privacy and Security Location and time of visits. Social surveillance. 	Avatar guide on Layar
		Co-design discussion space	
			Look@it for safety.

Example Technology Co-design Space

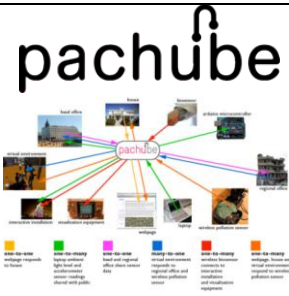


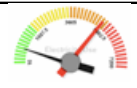



IoT

Pachube

Metadata	
Author	<R. Ferreira>
Partner	<4-ISA>
Date	<Creation date>
PCSs	<Project spaces using>

Technical Notes	

Co-design Space Mock-up

Embed/main view	Author's description	Component thumbnails	
	<p>Pachube is an application used to manage real-time data from sensors devices and environments. Pachube connects people to devices, applications, and the Internet of Things. As a web-based service built to manage the world's real-time data, Pachube gives people the power to share, collaborate, and make use of information generated from the world around them.</p>		
Co-design discussion space			
			
			

Smart Cities Network Observatory

- Inter-disciplinary “design thinking” support to Smart City Network
- Capture the territorial dimension of urban innovation processes
- Territorial and socio-economic effects of Future Internet driven Living Labs
- Potential of EU smart cities as lieux de ressources for user-driven innovations enabled by Future Internet
- Assess long-term sustainability for Smart City infrastructures and services

Periphèria Smart Cities Network

- Involving citizens and businesses in the co-design and co-creation of smart city services as well as other sustainable smart city initiatives.
- Using Future Internet technologies and IoT to drive social innovation and support new smart city services.
- Sharing the key objective of attaining full sustainability through deep-reaching societal transformations.
- Drawing on their territorial capital – geographical, social, infrastructural, and cultural – for place-based innovation.
- Working together with other peripheral cities to share experiences and promote reciprocal learning.
- Promoting a wide dissemination of Periphèria and engagement of other cities.

Periphèria becomes Global

ATHENS, 10-11TH OF NOVEMBER

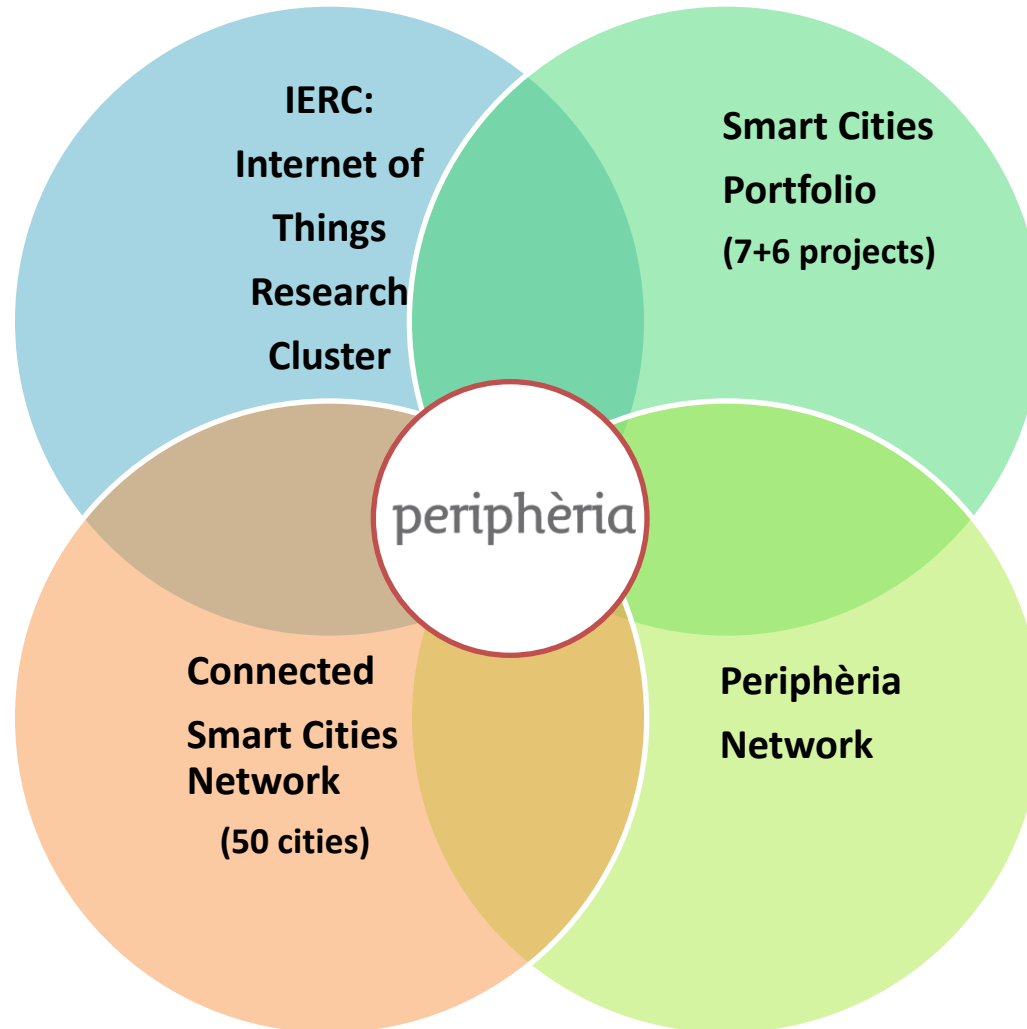
- Presentation of the Periphèria objectives, methodologies and tools
- Launch of the Periphèria Platform
- Pilot Cities Challenges
- Sponsoring Cities Challenges
- World Bank strategic partnership
- Connected Smart Cities Network

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Networking Smart Cities



Join ENoLL and Connected Smart Cities Network

- Gain insights into the potential contribution of Future Internet technologies to achieving your city's sustainability goals.
- Share experiences on the formation and governance of multi-stakeholder Living Lab partnerships.
- Interact with other cities to understand the impact of Living Lab innovation on your city's territory.
- Learn to steer local creativity towards addressing strategic sustainability issues.
- Focus available resources towards implementation of winning citizen-driven project ideas.
- Take advantage of the 6th Wave for ENoLL membership to be jointly launched on the 24th of October at Poznan FI Week by the EU Polish Presidency and ENoLL. Mobilizing Hungarian innovation stakeholders(www.openlivinglabs.eu)
- Work together to make your **city the place for a better and happier society.**

Conclusions (1/2)

- **Connected Smart Cities Network** was launched under the EU-funded (7th Framework Programme) FIREBALL-project in Helsinki on November 18th, 2010 by the cities of Amsterdam, Manchester, Lisbon, Barcelona and Helsinki.
- Aims to **establish a collaboration mechanism through which a network of Smart Cities across Europe engages in long-term collaboration for adopting User Driven Open Innovation to explore the opportunities of the Future Internet** and to support cities to innovate in order to tackle the major societal challenges faced by Europe, such as sustainable mobility, climate change, energy security or our ageing population.
- **Smart Cities Network in ENOLL as a Thematic Domain.**



Conclusions (2/2)

- **Sustainable Smart cities** are open-innovation ecosystems where creativity and knowledge co-creation and sharing naturally flourishes stimulated and supported by open innovative policies and future internet environments.
- **Networked Sustainable Smart Cities** acting as drivers and enablers of user driven open innovation will be the platforms for the societal transformations of the future.
- Future Internet technologies, Living Labs and Social Innovation enable **Sustainable Smart Cities** co-creation where citizens' sense of belonging and identity, wellbeing and togetherness, form a **better and happier society**.

THANK YOU

Prof. Álvaro Duarte de Oliveira
Alfamicro

alvaro.oliveira@alfamicro.pt

Skype: alvaroduarteoliveira

+351 91 666 66 66

+351 21 486 67 84