



Open Innovation for Future Internet-enabled Services in "Smart" Cities

**CIP ICT-PSP Info Day
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Dr Max Lemke

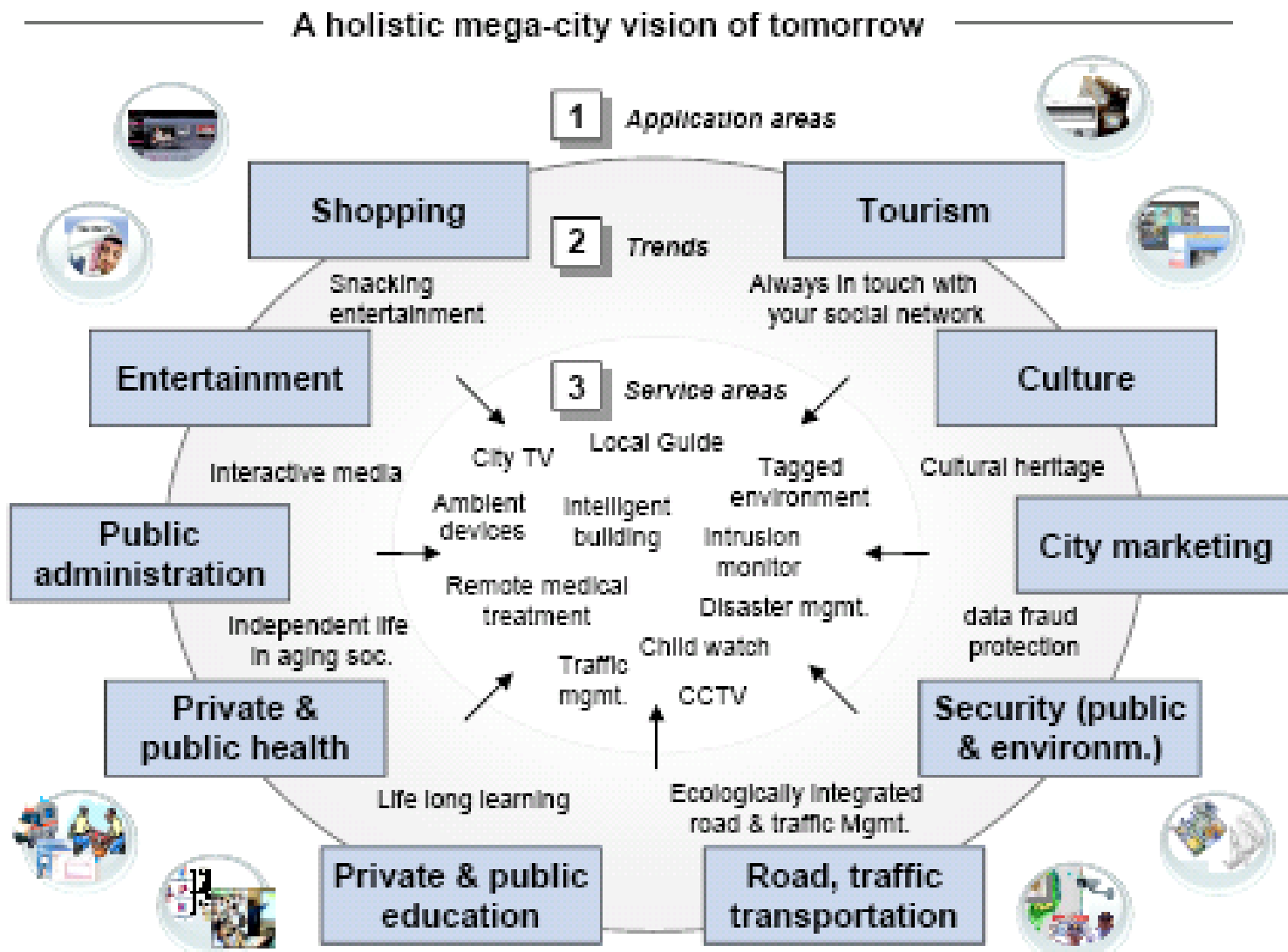
**Deputy Head of Unit
European Commission
DG Information Society and Media
New Infrastructure Paradigms and Experimental Facilities**

max.lemke@ec.europa.eu

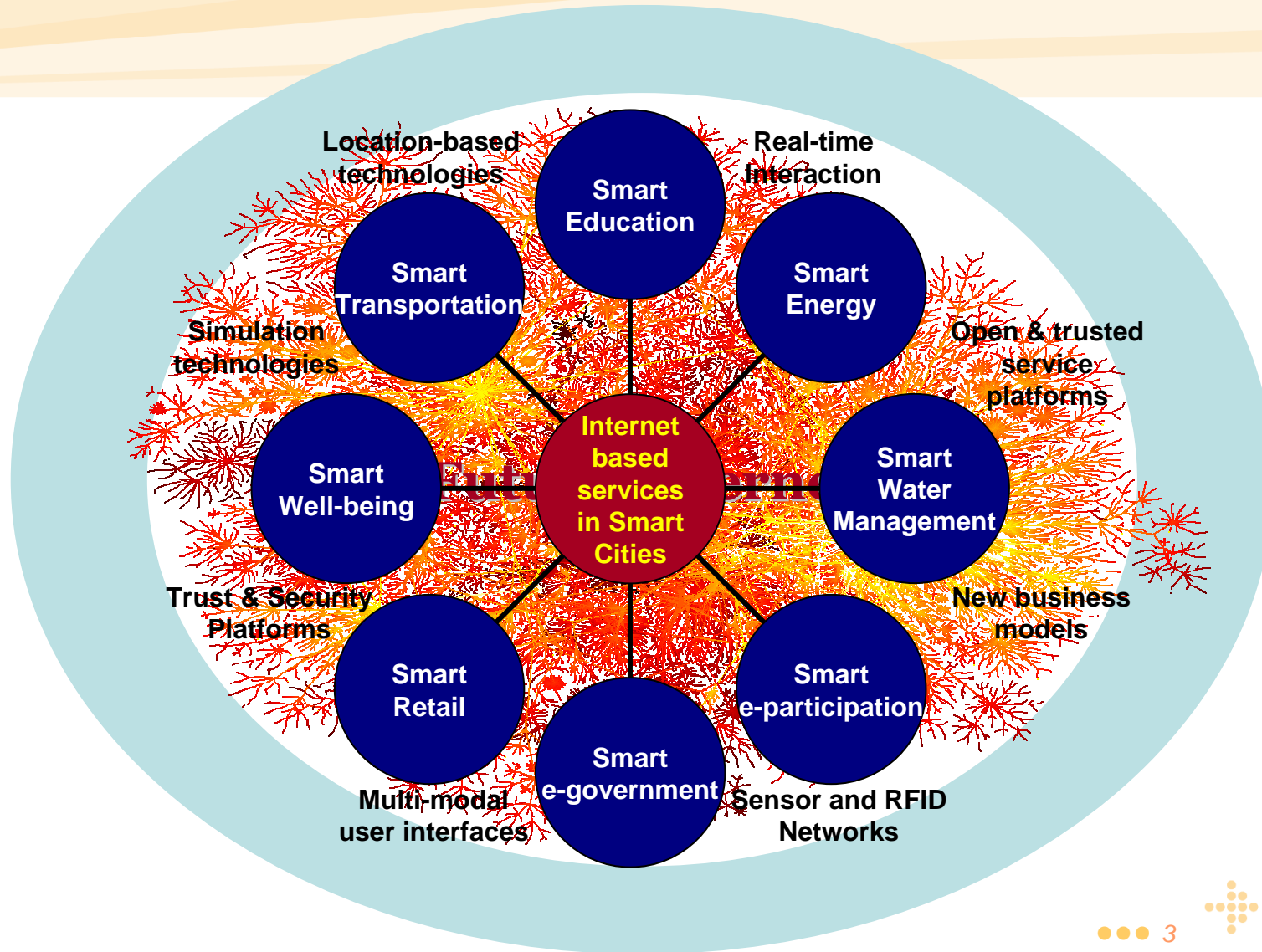
**European Commission
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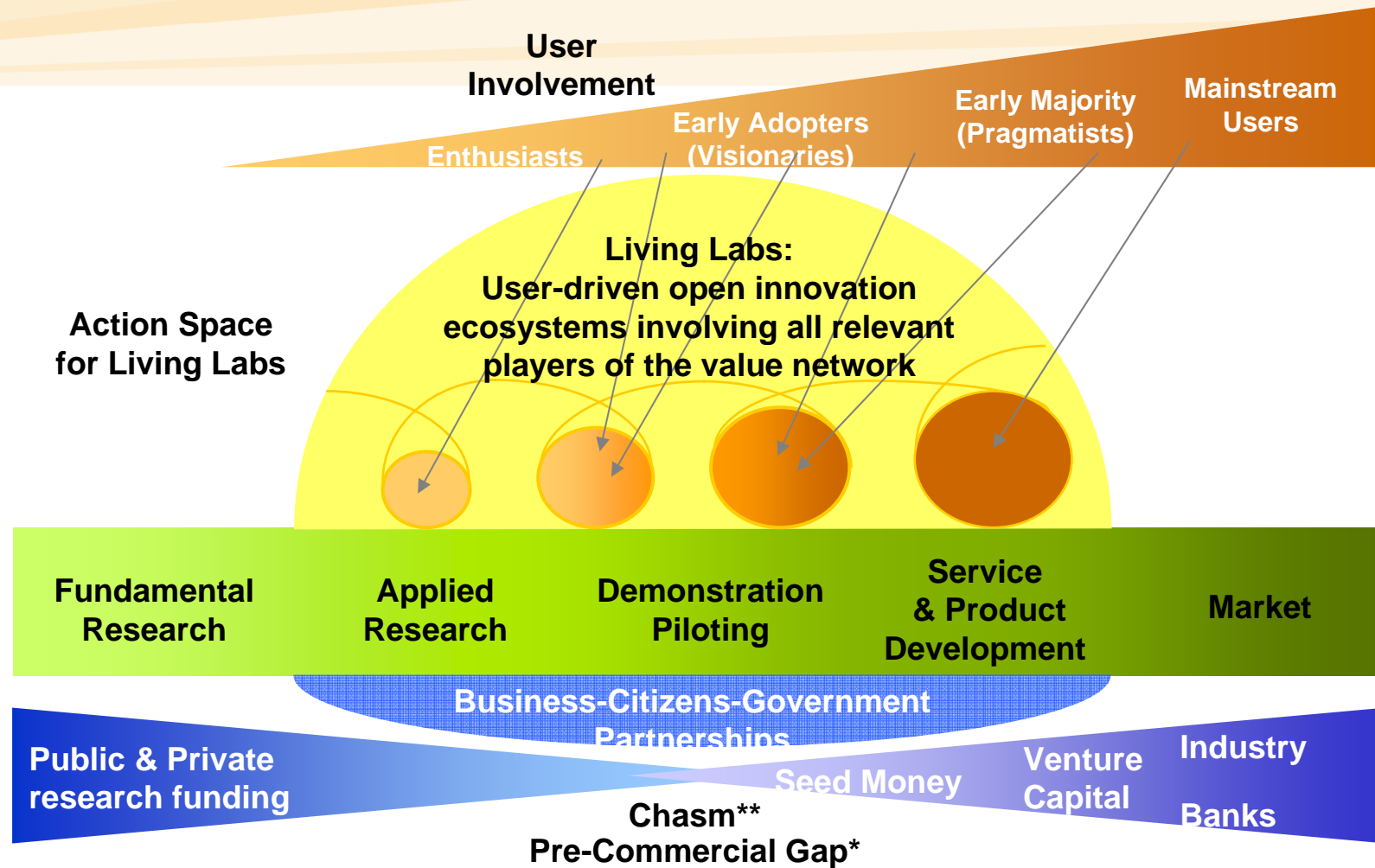
Smart cities - a system of systems



Internet-enabled services: making the city "smarter"



Action space for Living Labs along the technology adoption cycle



* MacDonald and Associates, 2004

** Geoffrey A Moore: Crossing the Chasm, 1999



EU RTD & Innovation Programmes related to the Internet

- FP7 - Challenge 1: Medium to long term research on the Future Internet (technology driven)
- FP7 - Application Challenges: Medium to long term research innovatively using advanced ICT including Future Internet (application pull)
- Future Internet PPP: Short to medium term system level research combining application pull and technology push
- **CIP: Accelerating take-up of technologies which come out of the labs and are mature for innovation**

As ecosystems smart cities are important catalysers for the Future Internet PPP and CIP

Motivation for the EC to act under the CIP-PSP Programme

- **New and often “revolutionary” internet technologies are maturing**
 - Ready for a new wave of internet-based services
 - Transforming our way of life
- **Fragmented market of island solutions – a barrier for broad take-up**
 - Single solutions in individual cities
 - Pilots of limited scope
 - Fragmented groups of stakeholders
 - Need for open platforms for internet-based services
- **Innovation ecosystems can bridge**
 - Work well locally in cities or regions
 - High potential for exploiting synergies across borders

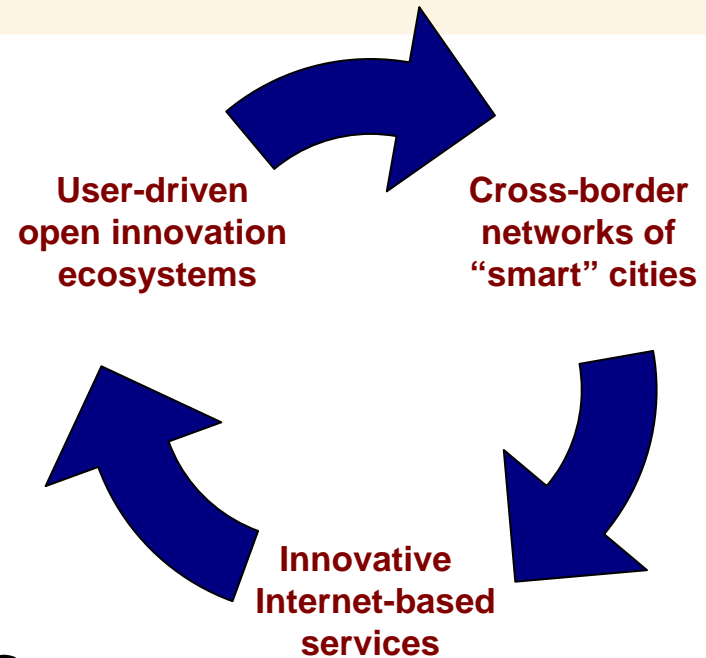


Relevant Communications (2009) and Reports

- **A Strategy for ICT R&D and Innovation in Europe: Raising the Game**
- **A public-private partnership on the Future Internet (2009)**
- **Internet of Things – An action plan for Europe**
- **RISEPTIS Report: ‘Trust in the Information Society’**

Focus and Outcome: three major elements

- Total budget: 15 M€
- Several Pilots Type B
- Accelerating the uptake of innovative Internet-based technologies and services in cities
- Apply user-driven open innovation methodologies across networks of smart cities
- One of the pilots dedicated to innovative RFID technologies showing the benefits of Internet of Things type technologies in services of high societal value



User-driven open innovation ecosystems

Bridging the gap between Internet-based technologies and their take-up in new services

- Integral part of local ecosystems while being networked across borders
- Early user engagement in the innovation process
- Enabling PPPPs
(Public Private Partnerships including People)



Cross-border networks of smart cities

Sharing best practices towards open platforms for new Internet-based services

- Smart living
- Green digital agenda
- Improved citizen involvement
- Open smart city platforms



Innovative Internet-based Services

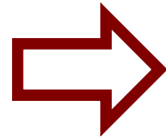
Based on an appropriate combination of advanced Internet technologies

- Mobile and location-based services
- Broadband and high-speed networks
- Internet of Things including sensor networks and RFID
- Advanced protocols and standards (e.g. IPv6)
- Security and privacy management systems
- Multimodal interfaces and 3D technologies
- Modelling and simulation
- . . .



Technologies – examples: Trust, Security and Privacy

- **Global, ubiquitous Future Internet and Web of Services**
- **Internet of things, objects, virtual and tangible entities**



Need for open and trustworthy platforms for services and applications for Smart Cities



Technologies – examples: Sensors, RFIDs, IoT

Networked RFID tags and elements

Passive and active tags partially interconnected
Simple mobile devices

Sensor Networks

Interconnected simple and multimodal sensors and actuators
Partially built-in intelligence
Complex mobile devices

Internet of Things

Diverse identification technologies (sensors, biometrics, etc.)
Intelligent Objects
Distributed Intelligent Systems
Sophisticated devices, clothes and materials



Conditions and characteristics

- Pilots should as far as possible build on
 - existing advanced city ecosystems and networks
 - existing services platforms in cities
 - existing or emerging initiatives
- Strong involvement of industrial stakeholders, in particular SMEs
- EU funding to be significantly complemented
- 3 – 5 cities per pilot
 - urban regions with city focus
 - satellite cities where appropriate
- Collaboration of all pilots under this objective in a joint working group
 - to exploit synergies
 - to disseminate experiences
 - to evaluate the “networked living lab approach”



Expected Impact

- Stimulating a new wave of Internet-based services using innovative Internet technologies
- Wider uptake of innovation ecosystems in cities through sharing of experiences in “smart” city concepts
- Reinforcing the role of the user/citizen
- Improving capacities for SMEs



References

- Future of the Internet: ec.europa.eu/foi
- Living Labs: ec.europa.eu/livinglabs
- Riseptis Report (Trust & Security):
<http://www.think-trust.eu/general/news-events/riseptis-report.html>
- RFIDs, Sensors, IoT:
http://ec.europa.eu/information_society/policy/rfid/index.html
- Competitiveness and Innovation Programme:
ec.europa.eu/ict_psp
- ICT Programme <http://cordis.europa.eu/fp7/ict>



Commission Responsibles

- Unit F4 (coordinating unit)
 - Max Lemke (DHoU)
 - Olavi Luotonen (contact point)
- Unit D4
 - Gerald Santucci (HoU)
 - Peter Friess (contact point)

