

**ICE**



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**2011**

# Living Labs for experimenting the Future Internet in Smart Cities

21<sup>st</sup> of June 2011

Esa Posio, CTO, Internet Experimentation  
University Of Oulu, Center for Internet Excellence



# Common Assets

- The characterization of assets as “common” assets (resources) implies that such assets do enable cross-sector and cross-geographical (at the scale of cities, regions, countries) applications which share common services, expertise, facilities etc. These common assets can be contributed by all constituencies involved Future Internet, Living Labs and Smart Cities.
- Assets or resources of importance for innovation ecosystems may include: network infrastructures, test bed facilities, innovation labs, competence centers, available data, technologies, applications, methodologies, urban development resources etc. Assets are owned, operated and used by specific actors.
- Common assets can be shared, combined and made accessible in order to facilitate user driven open innovation. Common assets identification thus lies at the basis of collaboration through partnerships across the domains of Future Internet, Living labs and Smart Cities.





# Example of common assets of Oulu

Common Assets of Oulu are an inventory of resources associated Future Internet, Living Labs and City of Oulu. The inventory focuses on the relations and synergies between these resources and how resources can be combined and used for cities' and urban development and innovation. Assets are listed in couple of thematic groups; ICT, eHealth, Learning & interaction, Smart City, Research and Enablers

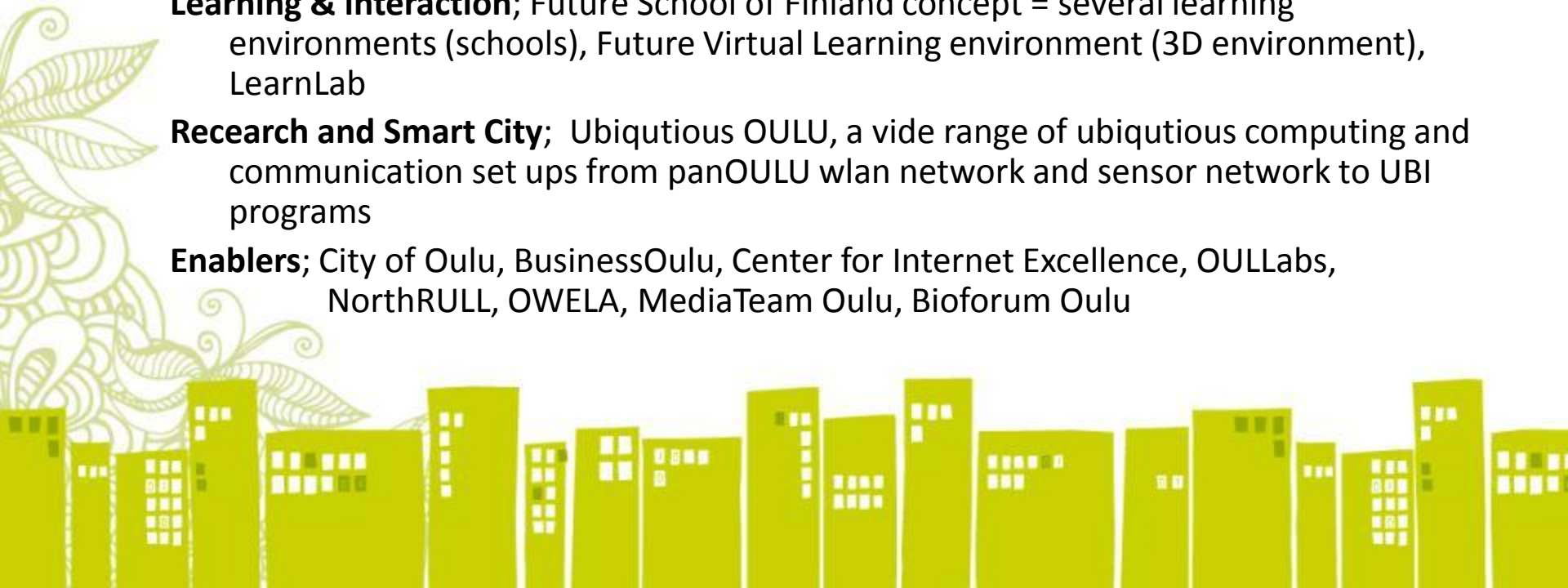
**ICT;** Convergence Laboratory, MultiMedia Studio, panOULU wlan network, UBi-displays, Type Approval services, Octopus Network etc.

**eHealth;** HYTKE (Usability lab), Oulu Wellness Institute, Technology Health Care Center

**Learning & interaction;** Future School of Finland concept = several learning environments (schools), Future Virtual Learning environment (3D environment), LearnLab

**Research and Smart City;** Ubiquitous OULU, a wide range of ubiquitous computing and communication set ups from panOULU wlan network and sensor network to UBI programs

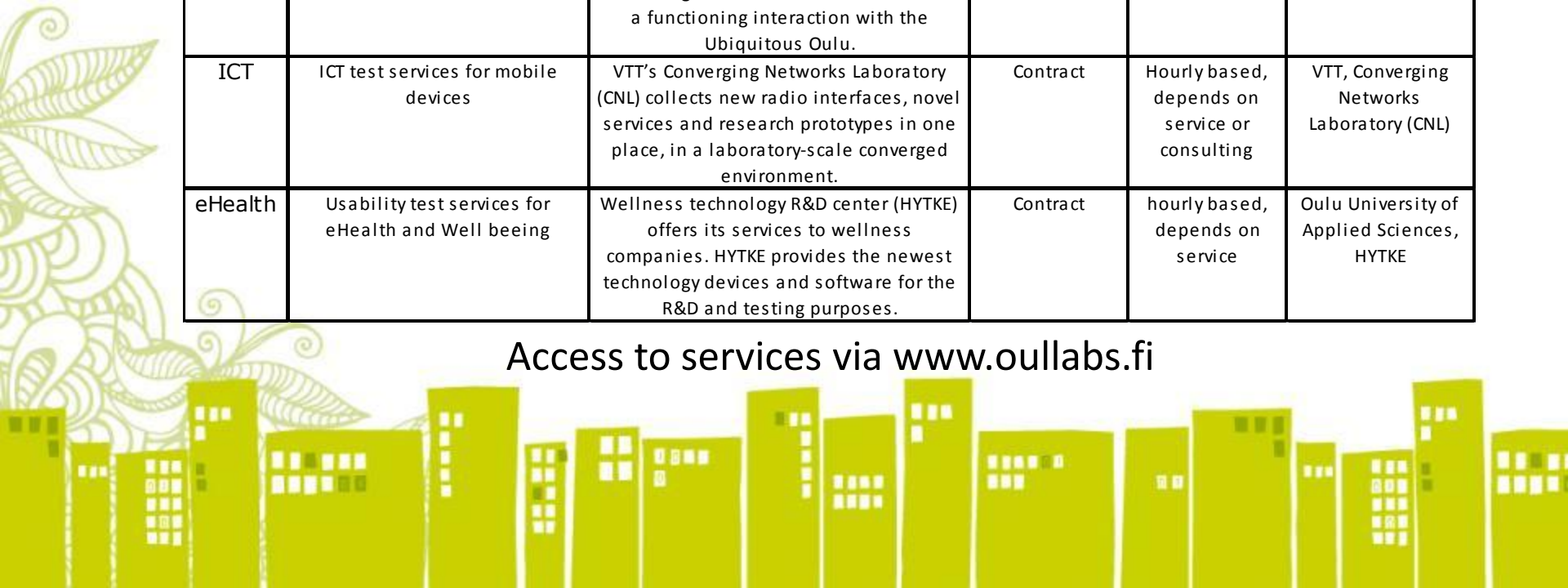
**Enablers;** City of Oulu, BusinessOulu, Center for Internet Excellence, OULLabs, NorthRULL, OWELA, MediaTeam Oulu, Bioforum Oulu



# Example of Common Assets

Type of service	Service offered	Service description	Access mechanism	Pricing	Facility
enabler	Test project management	Planning, organizing and running customers test- and pilot -projects	Contract	Hourly based	OULLabs
enabler	Test user recruitment	Recruiting of test users for customer projects	Contract	Based on amount of users	Test User community tool, <a href="http://www.patiolla.fi">www.patiolla.fi</a>
ICT	free wireless internet access coverage over the city of Oulu	The panOULU offers an open and free Internet connection within its coverage area. PanOULU WLAN network has ca 1300 WLAN access points in Oulu and eight nearby towns. They offer an efficient short range data transfer which enables a functioning interaction with the Ubiquitous Oulu.	Contract	Based on test run and analysis of gathered data	City of Oulu, MediaTeam University of Oulu, WLAN-network
ICT	ICT test services for mobile devices	VTT's Converging Networks Laboratory (CNL) collects new radio interfaces, novel services and research prototypes in one place, in a laboratory-scale converged environment.	Contract	Hourly based, depends on service or consulting	VTT, Converging Networks Laboratory (CNL)
eHealth	Usability test services for eHealth and Well being	Wellness technology R&D center (HYTKE) offers its services to wellness companies. HYTKE provides the newest technology devices and software for the R&D and testing purposes.	Contract	hourly based, depends on service	Oulu University of Applied Sciences, HYTKE

Access to services via [www.oullabs.fi](http://www.oullabs.fi)





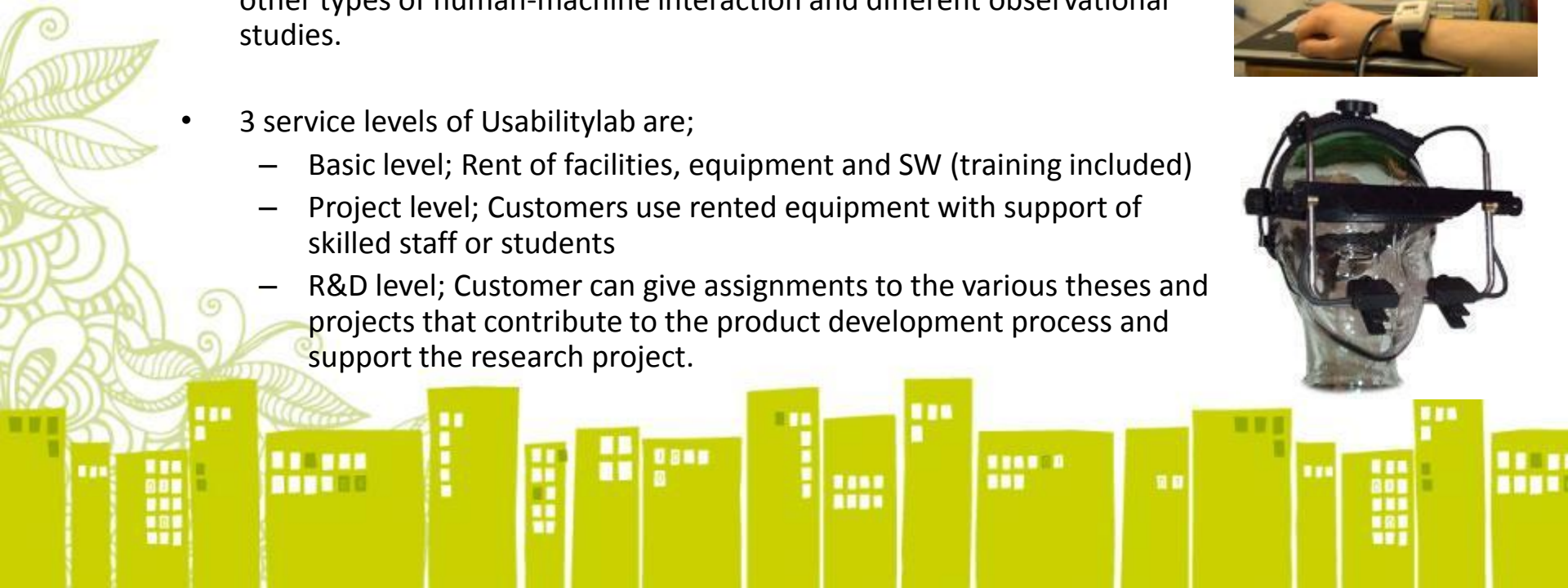
FIREBALL

# Research and Development Center of Wellness technology (HYTKE)



[www.oamk.fi/hankkeet/hytke](http://www.oamk.fi/hankkeet/hytke)

- The equipment, facilities and software of the center can be used for different stages of development or research, such as rapid prototyping, usability evaluation, measurement and evaluation of the reliability of the developed equipment.
- Services are developed to serve businesses and other organizations in usability design and research processes. The center's hardware and software implementations allows experiments either in the laboratory or in a real life environment. Instruments are also suitable for analysis of other types of human-machine interaction and different observational studies.
- 3 service levels of Usabilitylab are;
  - Basic level; Rent of facilities, equipment and SW (training included)
  - Project level; Customers use rented equipment with support of skilled staff or students
  - R&D level; Customer can give assignments to the various theses and projects that contribute to the product development process and support the research project.





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# Technology Health Care Center Oulu



“TTKaakkuri” Product Testing, [www.ouka.fi/ttkaakkuri](http://www.ouka.fi/ttkaakkuri)

- In addition to the normal services of healthcare center, Technology Healthcare Center Oulu offers product testing and analyzing services to companies and research institutes. This service is called TT Kaakkuri, product testing service.
- Technology Healthcare Center Oulu provides product testing services enabling improvements to product's functionality. Testing is conducted by healthcare professionals in real healthcare environment with real patients.
- In product testing service professional health care personnel and product test specialist creates an individual test packages tailored for customers' needs.





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# Technology Health Care Center Oulu



Testing packages can vary from minor idea testing to the extensive contextual evaluation. Testing package contains normally one or more of following modules::

- Piloting
  - Usability testing
  - User studies
  - Impact & impressiveness
- Questionnaires, interviews etc.
- A final report including improvement ideas and recommendations for further actions.

Product testing in real healthcare environment aims to get benefits for customers:

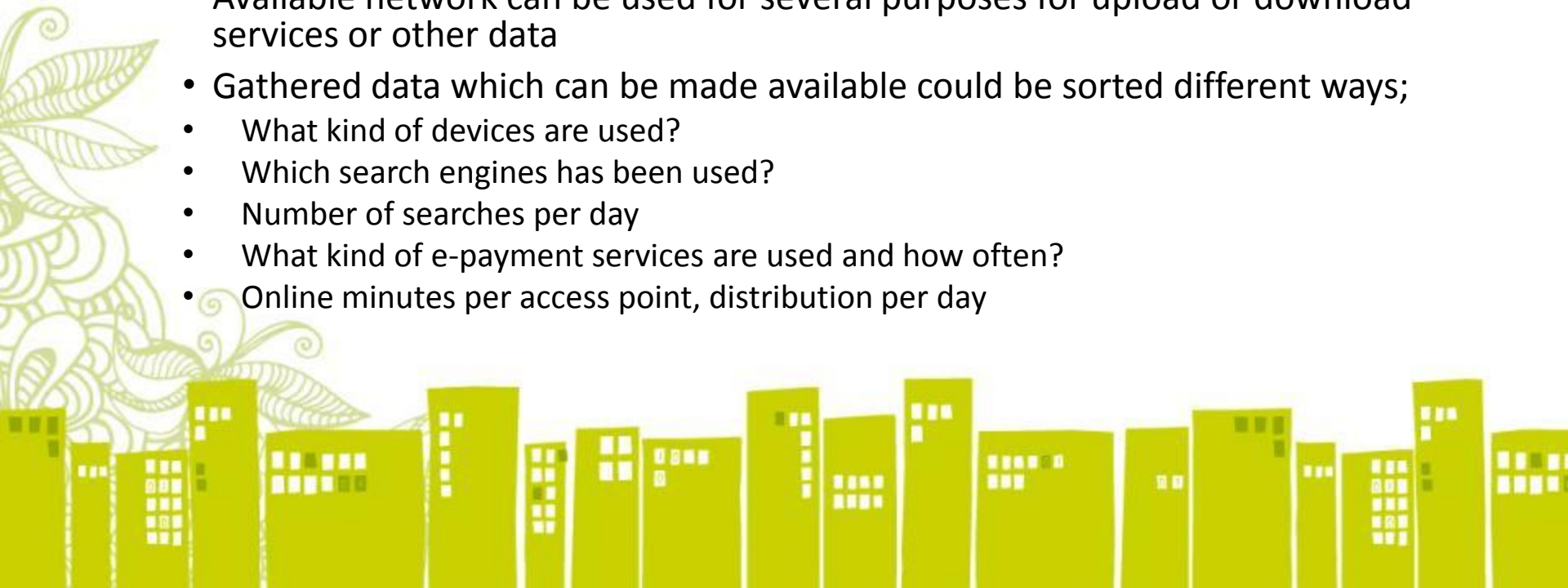
- knowledge of product testing in real health center environment
- well planned products that meet the needs of health care professionals
- knowledge of the co-operation models with companies and public sector when producing and implementing new innovations
- External evaluation of the products usability, suitability and required quality
- Recommendations how to improve user experience
- Technological Proof-of-concept





# panOULU WLAN network

- The panOULU offers open (no authentication) and free (no payment) wireless Internet access within its coverage area. PanOULU WLAN network has ca 1300 WLAN access points in Oulu and eight nearby towns (~500 AP's within 1 km of city center). <http://www.panoulu.net>
- Provided by a consortium of 9 municipalities, 4 public organizations and 4 ISP's
- APs offers an efficient short range data transfer which enables a functioning interaction with the Ubiquitous Oulu.
- Available network can be used for several purposes for upload or download services or other data
- Gathered data which can be made available could be sorted different ways;
  - What kind of devices are used?
  - Which search engines has been used?
  - Number of searches per day
  - What kind of e-payment services are used and how often?
  - Online minutes per access point, distribution per day





# panOULU WLAN network,

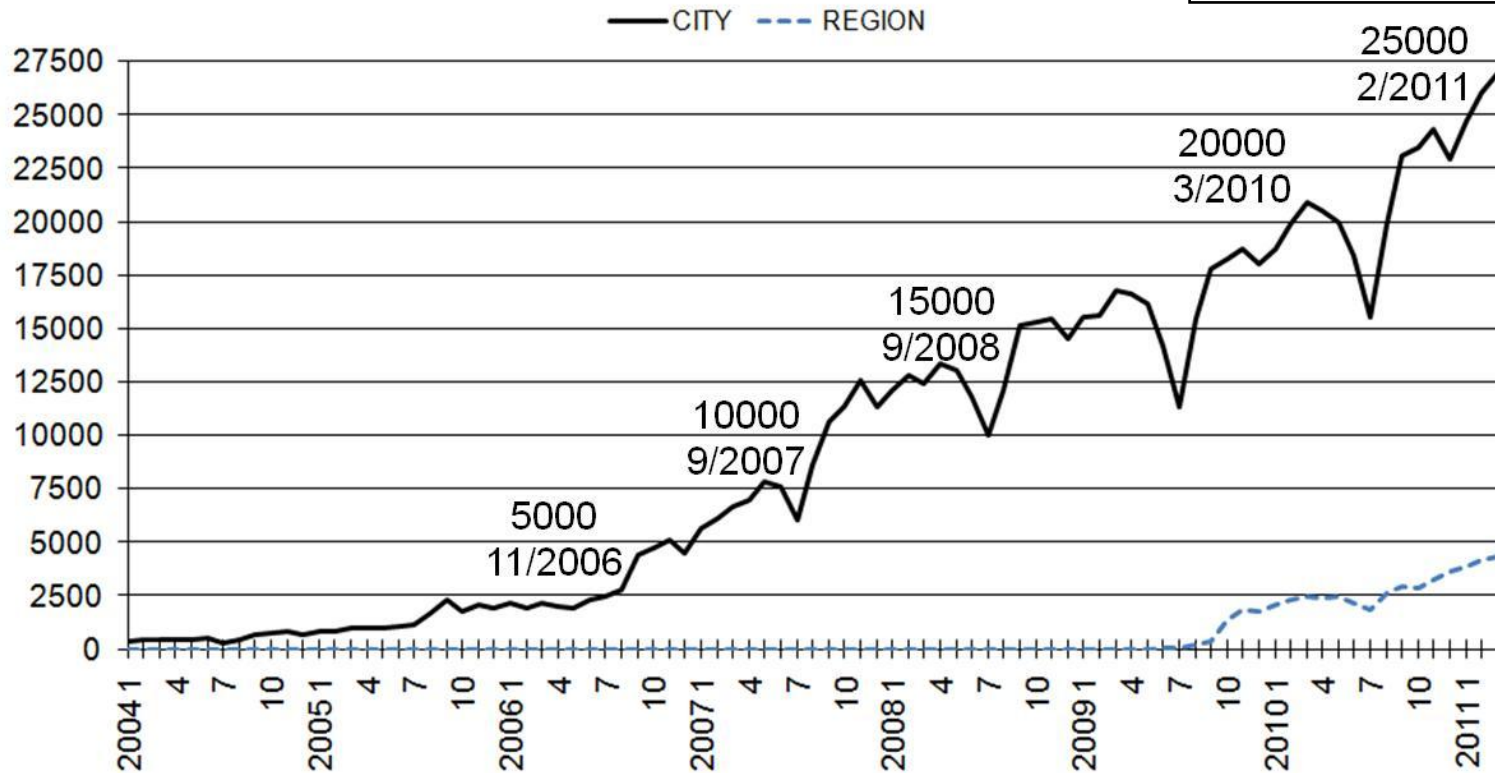
Usage as Internet access network (1)



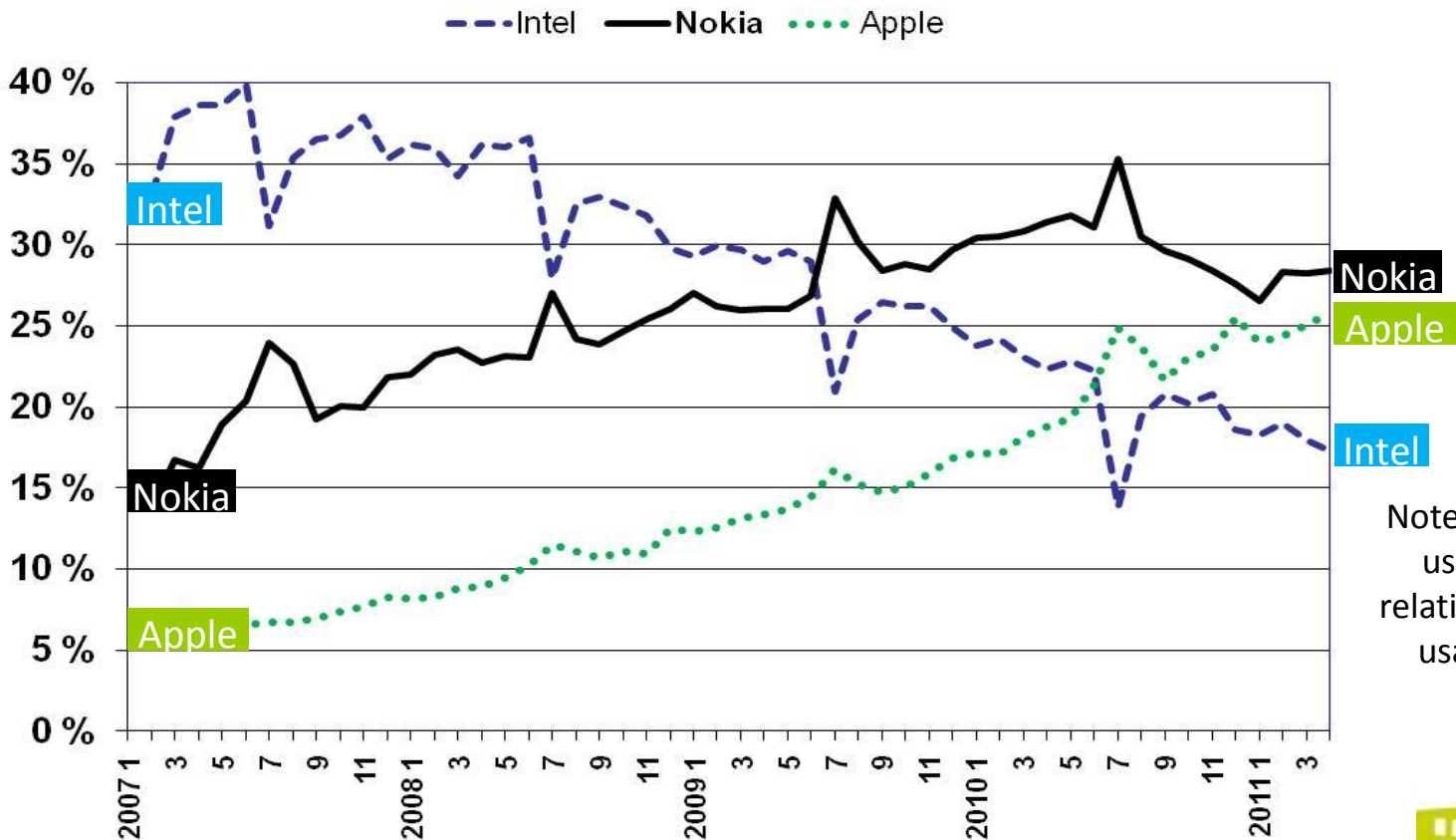
monthly usage of panOULU WLAN, number of devices

CITY March 2011

- 26 982 devices
- 689 145 sessions
- 19.0 million online minutes
- Stats from 852 AP's



Manufacturer proportions of devices using panOULU network  
(compiled from MAC vendor ID)

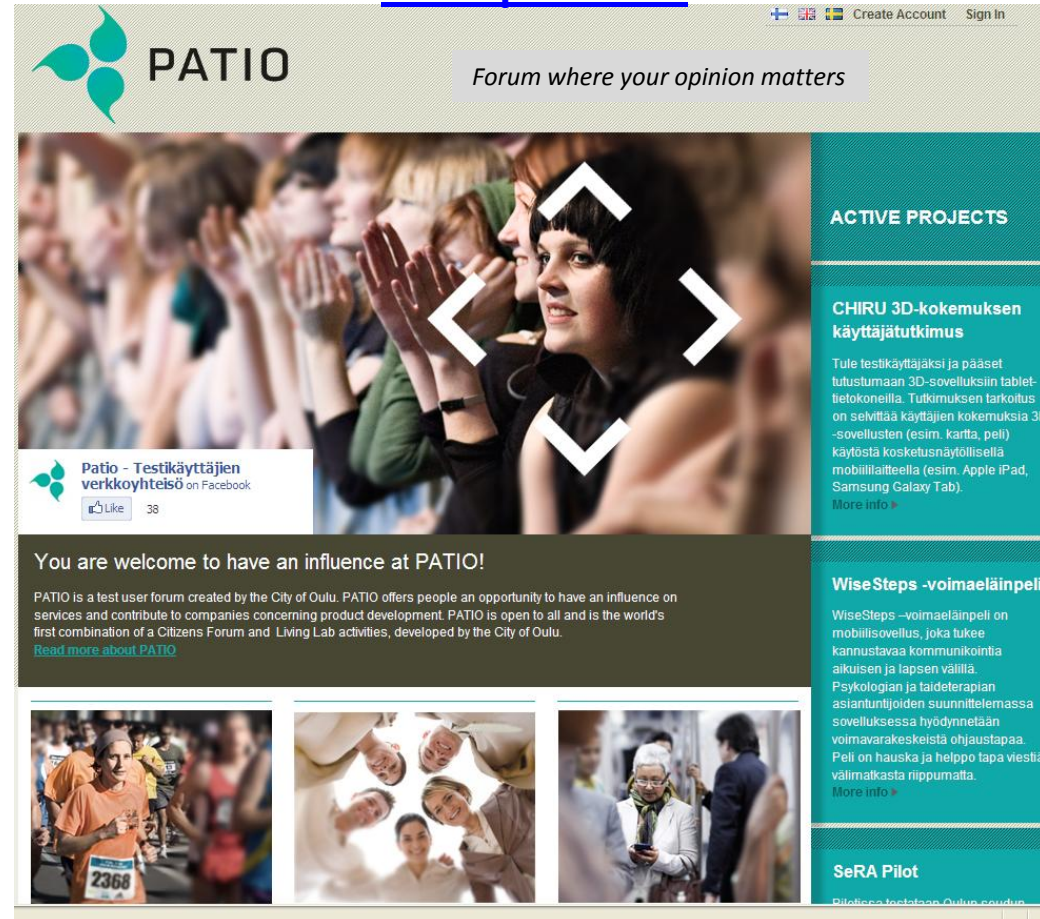


# Test User Community, PATIO

## Test User Community is called PATIO (terrace)

- Test user recruitment services (access to end users)
- Test projects
- Moderation of discussion at the PATIO
- User studies
- User surveys and polls

[www.patiolla.fi](http://www.patiolla.fi)

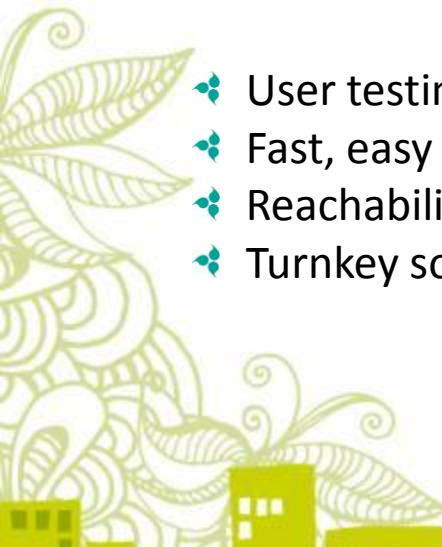


The screenshot shows the PATIO website homepage. At the top, there is a navigation bar with the PATIO logo (a green leaf-like shape) and the text "PATIO". To the right of the logo, there are language selection icons for Finnish, English, and Swedish, along with "Create Account" and "Sign In" links. Below the navigation bar is a tagline: "Forum where your opinion matters". The main content area features a large image of a woman clapping, with a white diamond-shaped graphic overlaid on it. Below this image is a Facebook social media widget for "Patio - Testikäyttäjien verkko yhteisö" with 38 likes. A central text block reads: "You are welcome to have an influence at PATIO!" followed by a paragraph explaining that PATIO is a test user forum created by the City of Oulu, offering an opportunity to influence product development. Below this are three small images: a runner at a marathon, a group of people smiling, and a person using a mobile device. On the right side, there is a teal sidebar with the heading "ACTIVE PROJECTS". It lists three projects: "CHIRU 3D-kokemuksen käyttäjätutkimus" (with a description of a 3D app testing project), "WiseSteps -voimaelänpeli" (with a description of a mobile game for children), and "SeRA Pilot" (with a description of a pilot project in Oulu).

# PATIO for companies



- ❖ User testing in the web
- ❖ Fast, easy and low-cost
- ❖ Reachability of different user groups
- ❖ Turnkey solutions– we do it for you

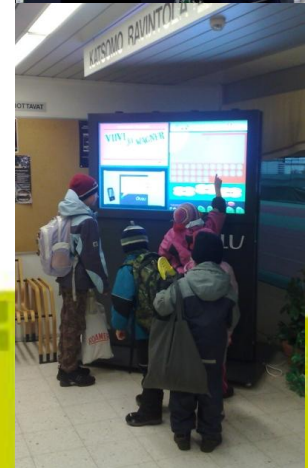


- ❖ Impact of the shared opinion
- ❖ Possibility to influence in development of services and interesting subjects (UDI)
- ❖ A web community of like-minded
- ❖ Rewards



# UBI-Hotspot (display)

- UBI-hotspot is a large public display, which combines features of information content and commercial use in a unique way. A hotspot alternates between a passive broadcast mode and an interactive mode.
- In the broadcast mode the entire 57 inch display is allocated for digital signage **advertisement broadcast, the UBI-channel**. In the interactive mode the display is divided between the UBI-channel and **touch screen service portal, the UBI-portal**. The transition in between passive and interactive modes is triggered by either touching the display or by face detection from the video feed of the two overhead cameras.
- Commercial use in UBI-hotspots is available via both services, UBI-channel and UBI-portal



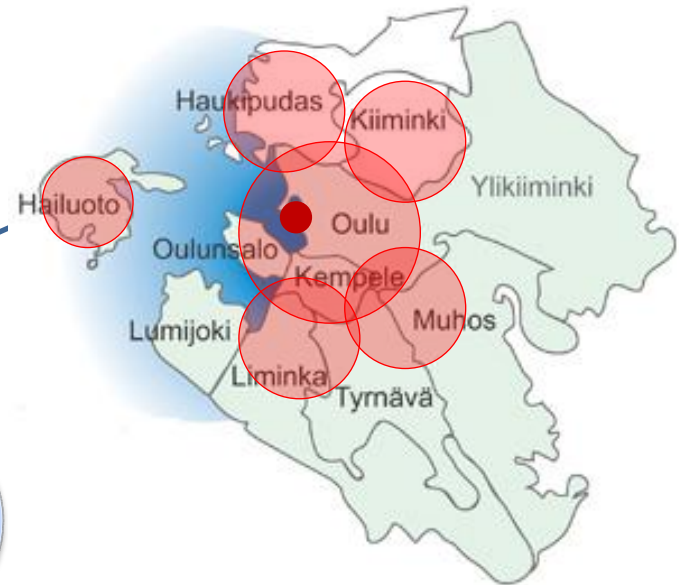
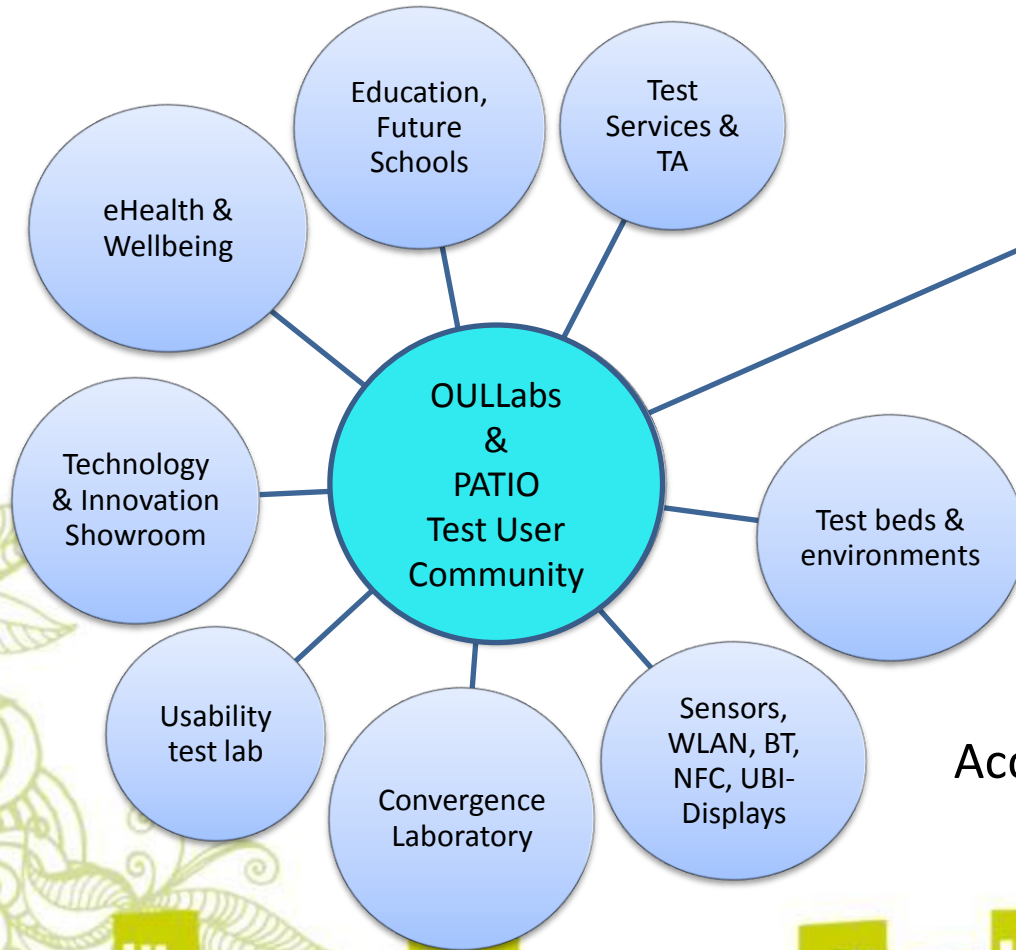
# UBI-Hotspot (display)

- **UBI-program** sells campaigns to **UBI-channel**, which vary in length from 1 day to 1 year. In a campaign, an advertiser has (by default) a slot of maximum 15 seconds to use for either a picture or video format spot. UBI-channel playlist contains a total maximum of 20 commercial spots.
- There is also a limited non-commercial capacity allocated for municipality to use
- To **UBI-portal**, we sell annual rights to offer own **UBI-portal page**.  
Customer pays a fixed annual payment and provides the portal page content as a web page, which is then published in the entire UBI-hotspot network in "Partners" section of the UBI-portal.

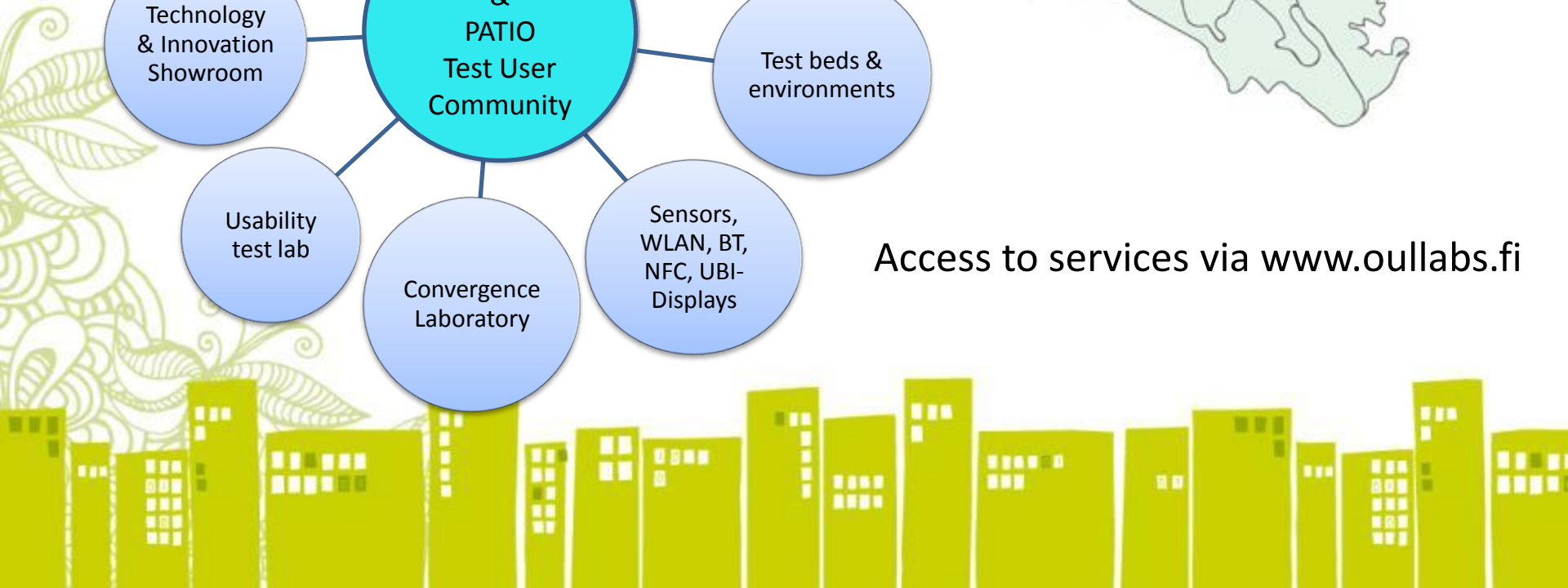


# OULLabs productized services

panOULU WLAN coverage where it matters



Access to services via [www.oullabs.fi](http://www.oullabs.fi)



# Thank You!

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[esa.posio@cie.fi](mailto:esa.posio@cie.fi)

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[www.patiolla.fi](http://www.patiolla.fi)

+358 50 559 5621

