

Pushing Innovation in personal data leveraging: the role of Territorial Labs

Paolo Traverso
FBK Center for Information Technology - IRST
Trento RISE
Via Sommarive 18,
Povo, Trento, Italy

Pushing Innovation in personal data leveraging: the role of Territorial Labs

Paolo Traverso
FBK Center for Information Technology - IRST
Trento RISE
Via Sommarive 18,
Povo, Trento, Italy

Overview

- The Context & the Vision
- The Smart Campus Territorial Lab
- The Health & Well Being Territorial Lab
- The Mobile Territorial Lab
- Conclusions

Context: FBK and Trento RISE

Trento RISE, the “Trento Research Innovation & Education System”:

- Association of the University and FBK (the Research Centers) in IT in Trento
- Trento RISE is Part of the **European Institute of Innovation and Technology** in ICT, the “**EIT ICT Labs**”
- **Mission:** Research to drive the **innovation & internationalization of the territory**





Vision & Mission

EIT ICT Labs is a new initiative intended to turn Europe into the global leader in ICT innovation.

It aims to fulfill this mission by establishing a new type of partnership between leading companies, research centres, and universities in Europe.



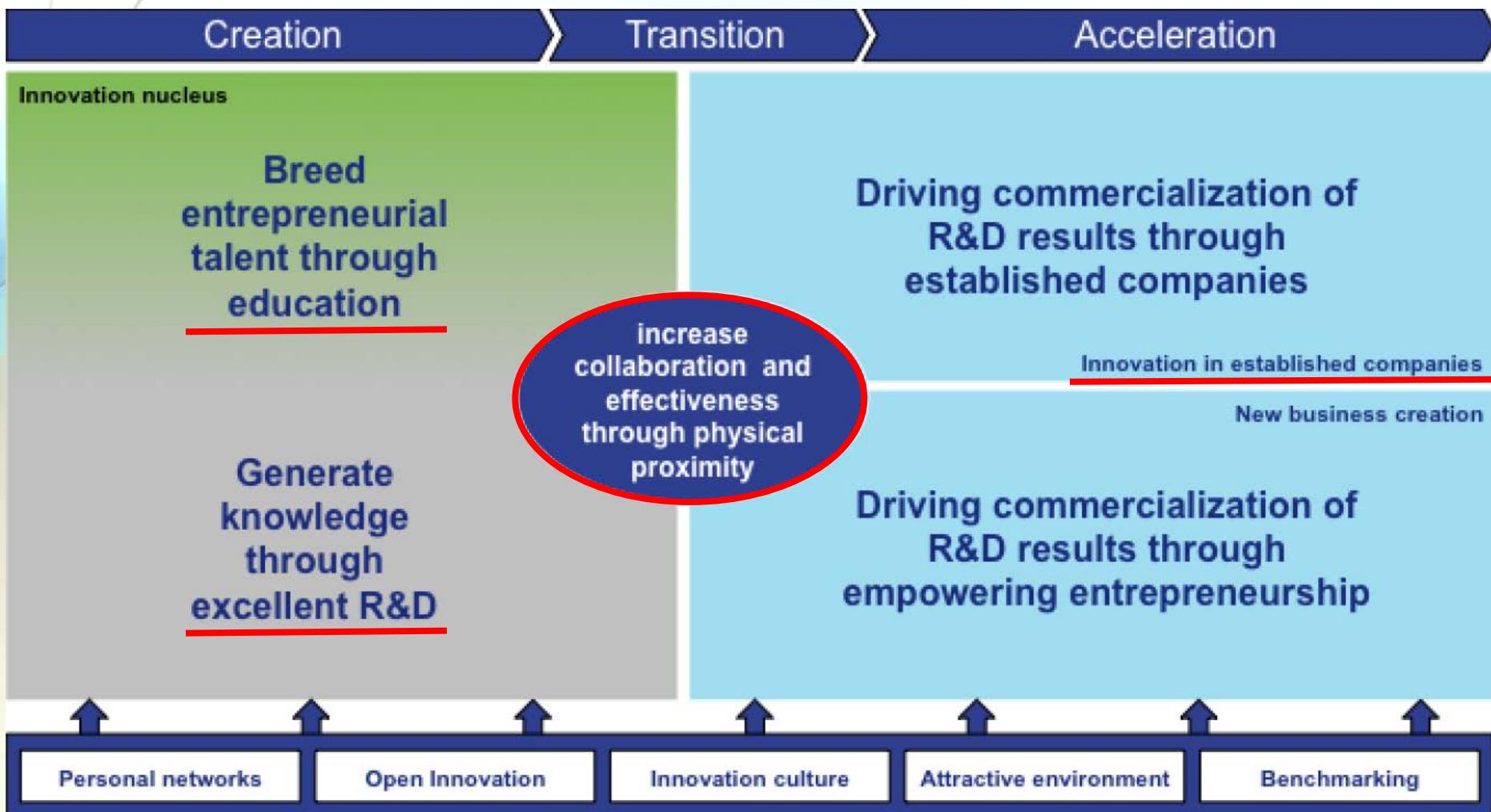
Vision

ICT Innovation is our key enabler to enhance the quality of life for everyone.

Mission

Turn Europe into a global leader in ICT Innovation

EIT ICT Labs – The model







From Trento RISE strategy slides:

ICT for Quality of Life and Territorial Labs



- **Solutions and services in different domains** (e.g., transport, health, environment, work, tourism, education, inclusion and participation)
 - should not be considered in isolation, but as
 - tightly interconnected in a synergic and society centric manner
 - where services in different domains interoperate and concur to form a “system of systems” ...
- A “**data driven**” approach to the interconnection of services through
 - massive individual and territorial data sets (available thanks to agreements with regional authorities and industrial partners)
 - Territorial Labs where new services are experimented

Territorial Labs

- **Key business model enabler:** territorial data and apps allow for new kinds of services
- Territorial labs apply to **all three dimensions:**
 - **Research:** results tested in realistic settings
 - **Education:** hands-on experience for students in Masters and PhD courses and/or during summer/winter schools
 - **Business:** market tests, comparison among alternative business models, assessment of the impact on organizations



- **Key business model enabler:** territorial data and apps allow for new kinds of services
- **Three ingredients:**
 - **Territory-wide data, systems, and applications**
 - **Open Service Platform**
 - **People as spectators & prosumers**





People as Spectaucthors & Prosumers

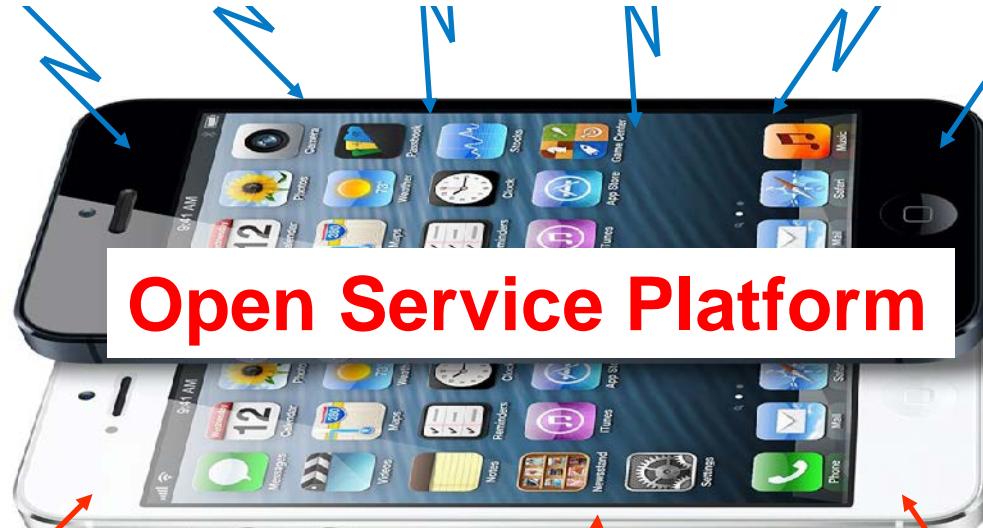


Territory-wide Data & Apps





People as Spectaucthors & Prosumers



Open Service Platform



Territory-wide Data & Apps



From Users to Prosumers and Spectauthors

Green Hero

Bike Bus Walking



Car pooling

Gamification

Discover Trento

Feedback Events Points of interest

*Participation
Fidelization*

Bus full Train full Snowy/icy road Traffic Jam Car accident

Bike availability Bus delay Free parking Parking full Offer/require car ride Walking bus

Social/User data

*Socialization
Personalization*





Services

*Multi-modality
Awareness*

Vision: Territory-wide People-centric services

- **Territory-wide Services**
 - There is a huge amount of data and apps available in the territory
 - No way to build some value added services without them
- **People-centric Services**
 - People can be spectators and prosumers
 - People can be an enormous source of data, information & knowledge
 - Service platform + value added services as the bootstrapping motivation for people – social communities
- **Service Platform**
 - Need for an a platform open to third party & user development
 - Need for data analysis, context awareness personalization, semantics
 - Need for run-time flexible service adaptation techniques

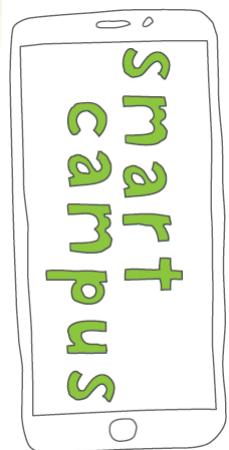
Approach

- Territorial labs that realize these concepts
- Dealing **from the very beginning** with the two main and **difficult problems:**
 - Useful and really used services
 - Users involved and really participating to the design and realization

- The Context & the Vision
- The Smart Campus Territorial Lab
- The Health & Well Being Territorial Lab
- The Mobile Territorial Lab
- Conclusions



Smart Campus



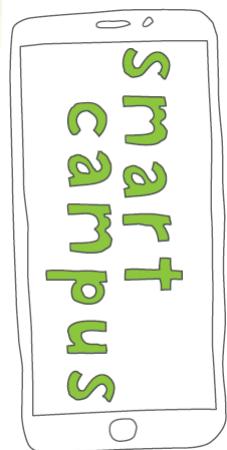
SmartCampus offers **advanced ICT solutions** to catalyse the creativity, participation, and enthusiasm of campus people (and institutions), and to develop **innovative services** supporting the social and personal everyday life as well as the functioning of the campus.



Smart Campus ingredients:

- A **platform** for the development and provisioning of services for the campus
- A **community** of end users involved in all the phases of the project
- A **territorial lab** to experiment innovative ICT solutions

Smart Campus



SmartCampus offers **advanced ICT solutions** to catalyse the creativity, participation, and enthusiasm of campus people (and institutions), and to develop **innovative services** supporting the social and personal everyday life as well as the functioning of the campus.



Smart Campus main characteristics:

- Need for local university services (e.g. info about lectures, programs, exams)
- Need for territory-wide services (e.g. mobility, culture, social life, gov support)
- Most of students' needs are citizens' (people's) needs
- An easy & accessible community acting as spectators & prosumers

Status of the Smart Campus Project...

- **Start:** 01/01/2012
- **Team:** 18 people
- **Platform:** version 1 delivered in June
- **Services:** first set delivered in September
- **Community:** first 50 students/explorers



The screenshots illustrate the following features of the Smart Campus mobile application:

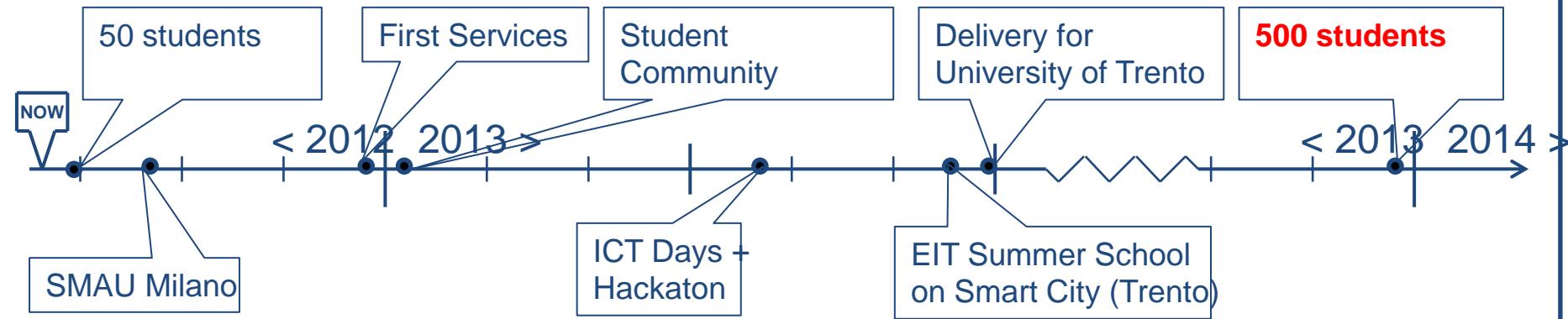
- Journey Planner:** Shows a map of Trento with various travel routes and landmarks.
- Discover Trento:** Displays local points of interest (POIs) and travel times between locations.
- Events & Stories:** Lists upcoming events and stories, such as "FIORELLA MANNOIA in concerto" and "WILCO in concerto".
- Portfolio:** A dashboard for managing personal information, including a "Portfolio for FBK" section which lists work-related activities like "#work #widget #studies (unitn) #Trento Rise (research) #Trento Rise (work)".

Status of the Smart Campus Project...

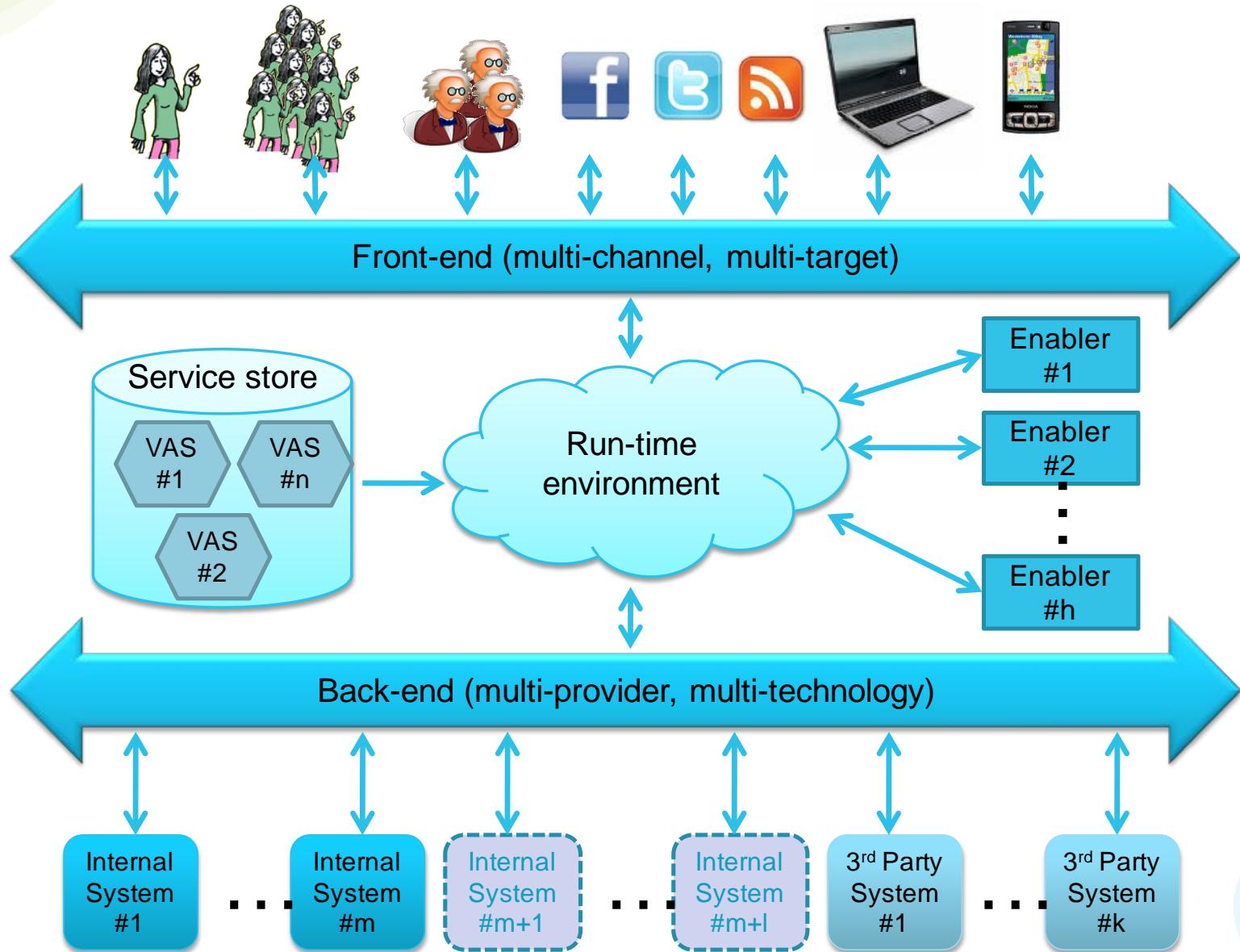
- **Start:** 01/01/2012
- **Team:** 18 people
- **Platform:** version 1 delivered in June
- **Services:** first set delivered in September
- **Community:** first 50 students/explorers



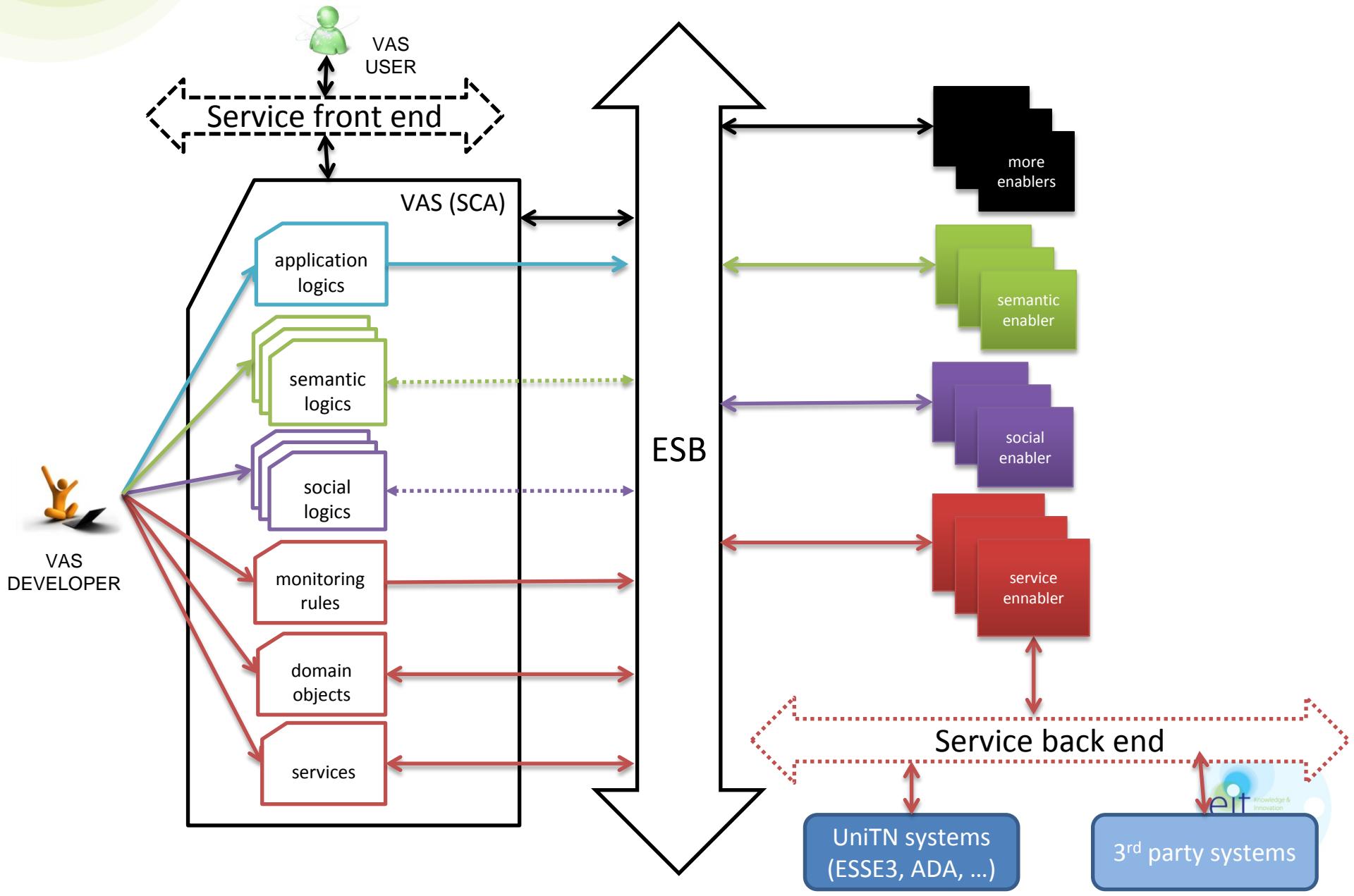
• Smart Campus: Milestones



SmartCampus Platform: Architecture



Platform: Service Component Architecture (SCA)



Services: Needs collected from students

- Video streaming
- Collaborative notes taking
- How difficult? Check the course
- Thesis finder
- Study together
- This is me!
- Help your mates!
- Time bank
- Uni voice
- Action in Trento
- Worldwide Uni
- Where are my friends?
- Discover Trento
- Bus finder
- Interactive map
- Paper eater
- Queue skipper
- Mensa queue skipper
- Menu finder
- Lunchmate finder
- Accommodation finder
- Car pooling
- Virtual parking lot
- Card all-in-one
- Time manager
- ...

- The Context & the Vision
- The Smart Campus Territorial Lab
- The Health & Well Being Territorial Lab
- The Mobile Territorial Lab
- Conclusions



HWB-TTL: scope and goals

Hosting and supporting RDI projects aimed at enhancing the well-being of citizens through ICT-based services

Focus: **well-being (care, prevention, ..)** rather than cure

Strategic focus: Active Ageing and Ambient Assisted Living

- Active ageing and quality of life at work
- Ageing well in the community
- Ageing well at Home

Objective: becoming an international asset for the development and validation of HWB services

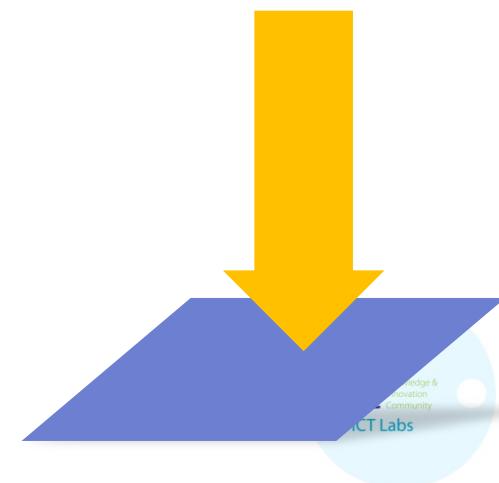


HWB-TTL: the first hosted project - 1

To be ran by the winner of a PCP bid issued by Trento Rise

Goal: deliver advanced services for primary and secondary prevention

- Cognitive and affective deterioration
- Security at home
- Access to external services



HWB-TTL: the first hosted project – 2

Role of the HWB-TL

- Recruit, motivate and manage ~200 older adults, professional and non-professional caregivers to participate in design and solution validation

How

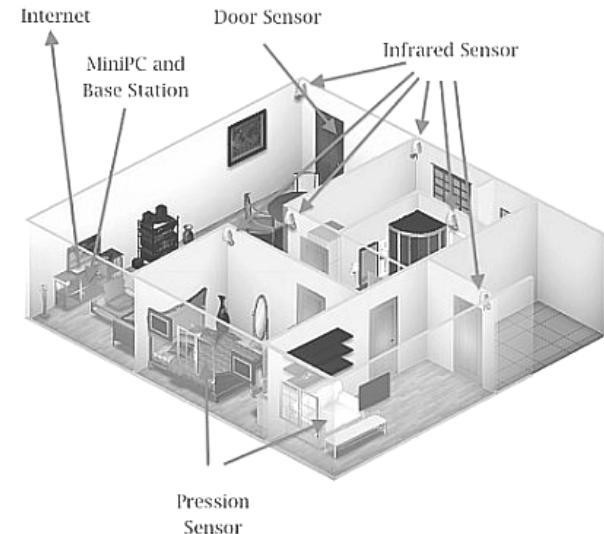
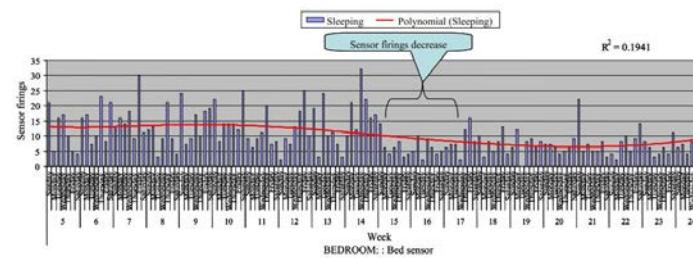
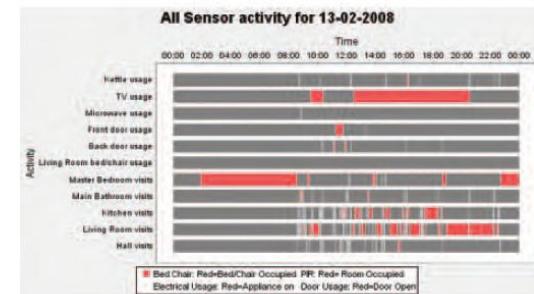
- By building on local social partnership network (social coops, volunteering associations, public bodies,)

Planned activities

- Testing and validation of the services in the user's homes
- Yearly evaluation of the products of RDI activity

Details on involved technologies

- Ambient intelligence and monitoring
- Multimodal analysis of human behavior
- Decision support systems
- Advanced middleware for data management
- Human computer interaction for visualization of complex behavioral patterns
- Social networking
- Mobile computing



- The Context & the Vision
- The Smart Campus Territorial Lab
- The Health & Well Being Territorial Lab
- **The Mobile Territorial Lab**
- Conclusions



What is the MTL Trento?



- Partnership-based project
- Aimed both at basic *research* and *service* RDI
- Focusing on the “*mobile*” ICT
- Rooted in the involvement of citizens in *real-life* settings
- Mid term time frame (> 1 year)
- A project that seeks to become an “*open facility*” along the Open Experience and Living Lab model of EIT ICT Labs



MTL Objectives



Basic research

- Social network analysis with focus on **trust networks**
- **Empowering** users as producers and owners of valuable personal data
- User modeling and profiling (**personality, preferences, mood, life styles, ..**)

Service RDI

- Development of a mobile **Personal Data Store** for mobile data management
- User's behaviors **self awareness** platforms
- **Co-design** and beta testing of networking mobile **apps**
- Targeting specific **CoP** (Communities of Practices)



Progress state



Users panel: recruited 60 out of 70 end users

Personal Data Store under development

Developing a back end panel for managing the research tasks
(surveys, panel management, etc.)

Working on Website, MarCom, TL governance for scalability

Start activities in **November**

Conclusions



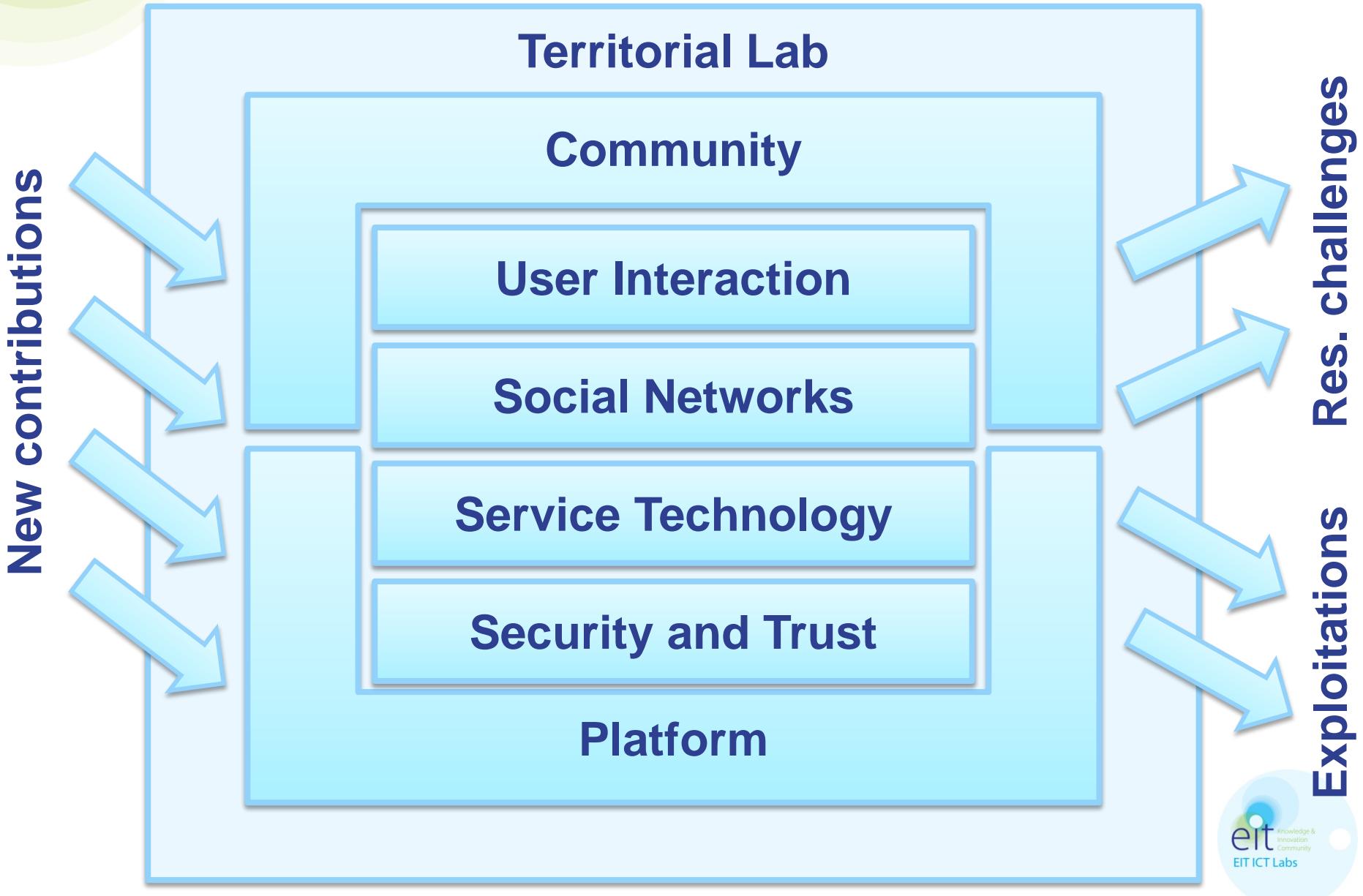
- Territory-wide Services
 - There is a huge amount of data and apps available in the territory
 - No way to build value added services without them
- People-centric Services
 - People can be spectators and prosumers
 - People can be an enormous source of data, information & knowledge
 - Service platform + value added services as the bootstrapping motivation for people – social communities
- Service Platform
 - Need for an a platform open to third party & user development
 - Need for data analysis, context awareness personalization, semantics
 - Need for run-time flexible adaptation techniques



Pushing Innovation in personal data leveraging: the role of Territorial Labs

Paolo Traverso
FBK Center for Information Technology - IRST
Trento RISE
Via Sommarive 18,
Povo, Trento, Italy

SmartCampus: Approach



SmartCampus Platform: Objective

- Open platform for the provisioning of **services** supporting everyday life activities of all the **people** (individuals and communities) and **institutions** in the campus.

