

RI2integrate - Embeddedness of high quality research infrastructures in the Danube Region

*Training Seminar on Science and Technology Parks:
operation, financing, best practices
and contribution to the development
of Regional Competitiveness*



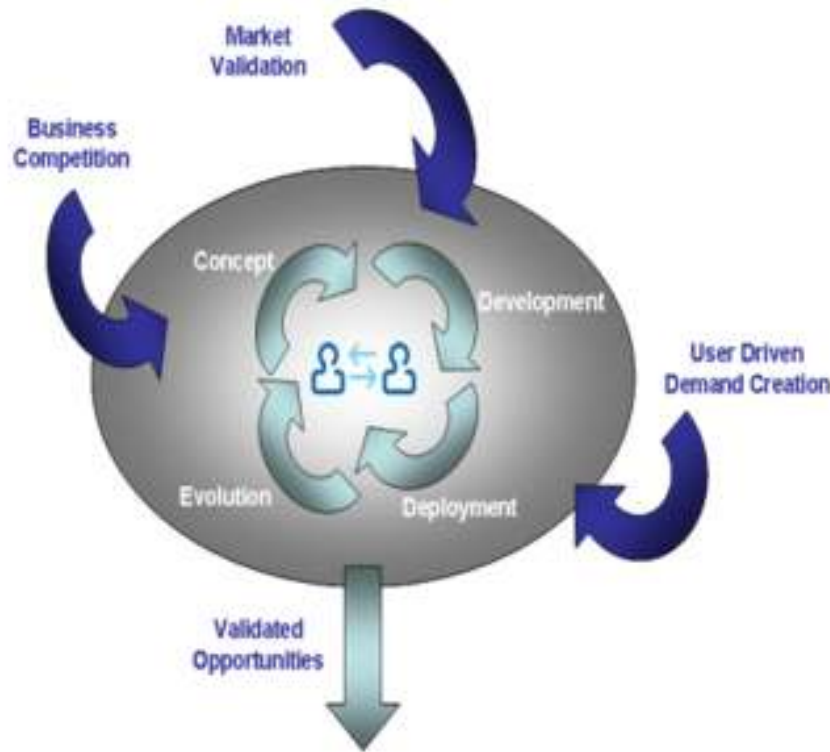
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ELI-NP Conference Room

Development of Regional Competitiveness and Innovation Entrepreneurship Initiatives with the contributions of Science Parks – City living labs

By Dr Paris Kokorotsikos, CEO Euroconsultants S.A

- Planning Expert of IASP (Innovation Association of STPs)
- Shareholder of Thessaloniki Technology Park, Technopolis ICT Park, i4G Incubators
 - CEO Euroconsultants S.A.
- Prof if Innovation Entrepreneurship at IHU, International Hellenic University

The Living Lab concept



Source: R. Santoro, M. Conte, "Living Labs in Open Innovation Functional Regions", ESoCE-Net, 2010

- A system and environment for building a future economy in which **real-life user-centric innovation** will be the normal **co-creation technique** for new products, services and societal infrastructures (ENoLL)
- **user-centric innovation** approach in combination with **resource-sharing capabilities**
- characterized by the European Commission as **Public-Private-People Partnerships (PPPP)** for user-driven open innovation

Key elements of good practice in LL (1)

- Involving stakeholders in the innovation process
 - **Innovators:** drivers of innovation, expected to deliver more innovations and better products
 - **Users:** persons using and being impacted by the innovation (consumers, citizens, employees), decision makers for buying an innovation
 - **Researchers:** research for innovators, benefit from synergies
 - Service providers: brokering projects, engaging and motivating users, facilitation and project management
 - **Policy makers:** initiating and structuring the LL movement
- Building trust
 - Strengthens creativity and innovation

Key elements of good practice in LL (2)

- Using state-of-the-art methodologies and ICT tools
 - Methods and tools to engage and activate users and support collaboration for a) enabling digital communication, and b) enabling a shared space for information and knowledge sharing
 - Methods and tools created as results of Living Lab processes, being the target for user-driven creations
- Good governance
 - Strategic level (ownership, drivers, management structure, stakeholder involvement, IPR, financing, development)
 - Operational level (working practices, quality and progress monitoring, internal communication, responsibilities and liabilities, dissemination and external communication)

Similarities and differences between Preincubators and Living Labs

Concept	Pre-incubation	Living Lab
Objective	<i>Innovation development and support:</i> supporting future entrepreneurs from the academic environment to innovate	<i>Innovation development and support:</i> supporting user-centric innovation
Structure	<i>Collaborative environment:</i> potential entrepreneurs, higher education institutes, regional innovation centres, business incubators, private capital	<i>Collaborative environment:</i> user-centric, innovators, researchers, service providers, policy makers
Facilities	<i>Resource-sharing facilities:</i> working space (real or virtual), ICT infrastructure, information and communication tools	<i>Resource-sharing facilities:</i> virtual space, ICT infrastructure, information and communication tools
Services	<i>Co-ordination and management:</i> selecting and managing potential entrepreneurs, defining market potential, networking, training	<i>Co-ordination and management:</i> engaging and motivating users, brokering and managing projects, internal and external communication

European Network of Living Labs and the 3Os Strategy

*The year is 2030 - **The Lab***

“Open Science has become a reality and is offering a whole range of new, unlimited opportunities for research and discovery worldwide.

Scientists, citizens, publishers, research institutions, public and private research funders, students and education professionals as well as companies from around the globe are sharing an open, virtual environment, called The Lab.”

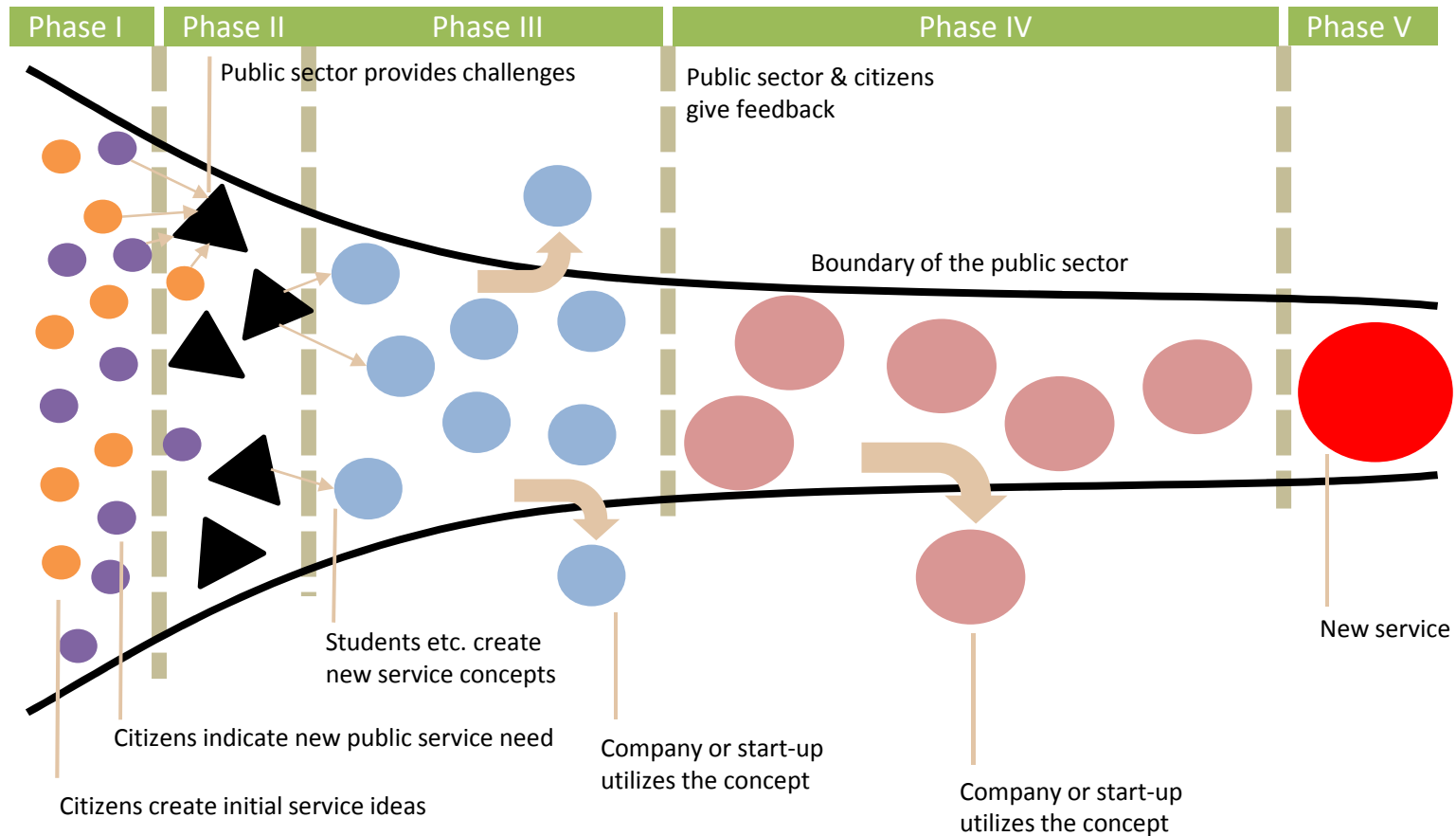
3Os = Open Innovation, Open Science, Open to the World



Source: Proceeding Innovation 2.0 conference, Cluj Romania, 2017

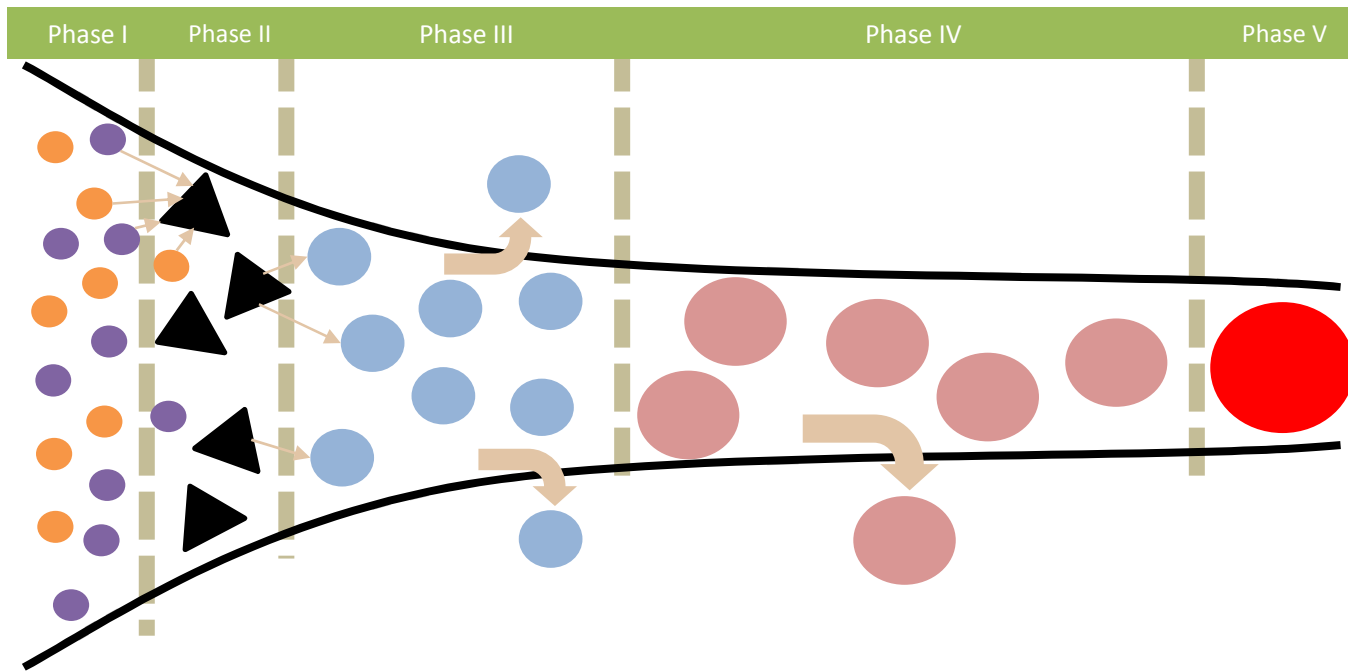
Schematic concept of Living LAB Process

UNIVERSITY – AN ESSENTIAL PART OF THE OPEN INNOVATION FRAMEWORK?
 Satu Luoja¹, Sami Kauppinen¹, Janne Lahti¹
¹ Laurea University of Applied Sciences (FINLAND)



Shared understanding, shared vision and share value creation

Ideas, concepts, prototypes, experiments, validation, pre launch, launch, post launch



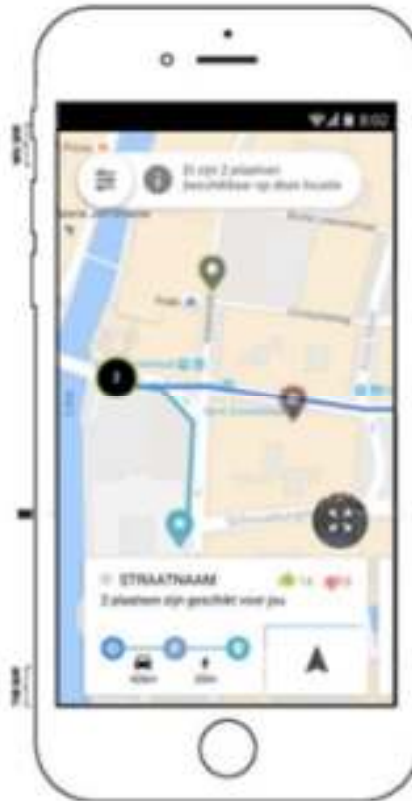
	Shared meanings, sheared understanding, shared vision, shared value co-creation						
	Challenges	Ideas	Prototyping and experimenting	Validating	Pre-launch	Launch	Post-launch
Learning	Citizens learning digital skills & user's ability to learn how to co-create and use technology (Barcelona, Helsinki)						
TestBeds			Robots and the Future of Welfare Service				
Living Labs	Digital services, platforms, tools, games, robotics, IOT etc.						
Show rooms					Technology Library and Demo Visits		
Transnational scalability	Transnational Care Living Lab						

Source: Proceeding Innovation 2.0 conference, Cluj Romania, 2017

EXAMPLE imec: Gov-Lab

Flemish civil servants ideate, co-create and test new services for citizens

PARKADVISOR APP



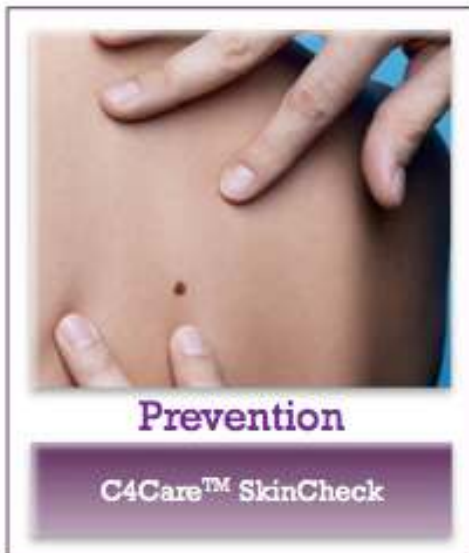
- 1) The Parkadvisor application: helping disabled people find a parking spot
- 2) The Hi App: helping refugees to prepare for the job market
- 3) Deel Mijn Data (share my data) and Digitale Vaccinatiekaart (digital vaccination pass)

EXAMPLE

CforCare Living Lab: E-triage

SkinCheck4LIFE

THE IMPACT OF E-TRIAGE IN SKIN CANCER PATIENTS
USING MOBILE TELEDERMOSCOPY



EXAMPLE

Laurea Robots and the Future of Welfare Service

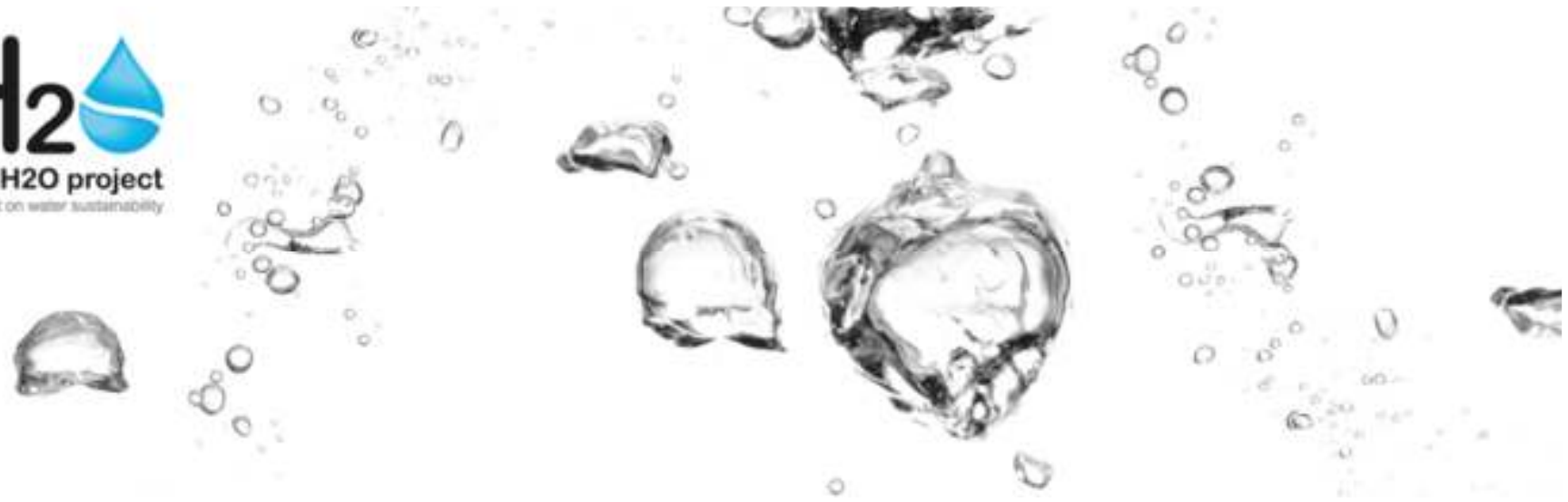
How homecare workers assess care robots in homecare?

What possibilities homecare workers see at care robots?

...the next step is to **PILOT care robots JOINTLY WITH USERS AND OTHER STAKE-HOLDERS?**



Source: Proceeding Innovation 2.0 conference, Cluj Romania, 2017



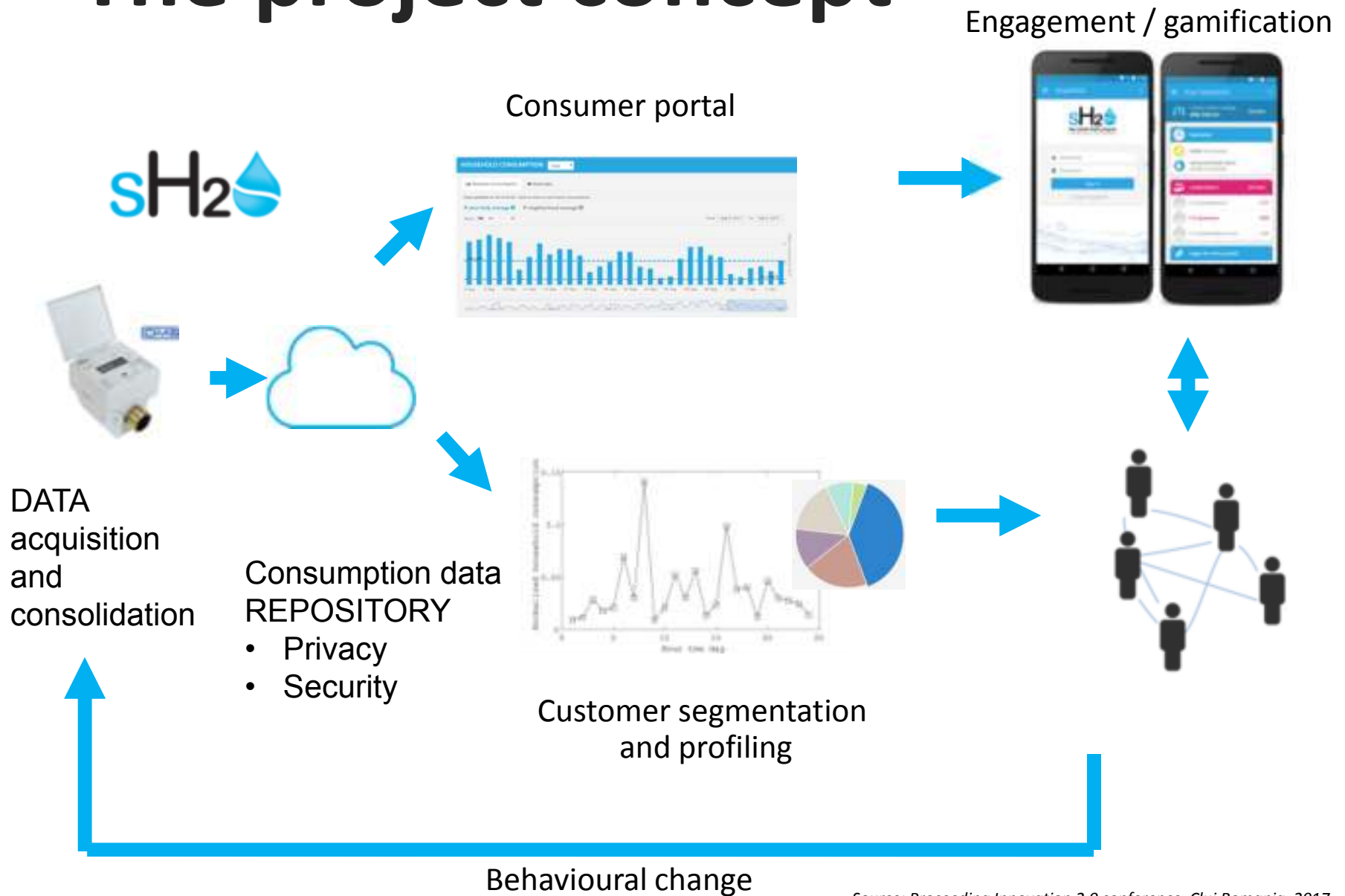
The SmartH2O project: raising awareness for water conservation

EU Seventh Framework Programme

Source: Proceeding Innovation 2.0 conference, Cluj Romania, 2017



The project concept



Some ideas for new metrics: the case of social innovation

Key selected indicators:

- **Identification of relevant organizations participating in the innovation and presence of final users and/or intermediaries** (like NGOs, professional associations)
- **Role of final user and/or intermediaries** (central, secondary) and degree of interactions (from user-driven to co-innovation; from collaboration to covalue creation)
- **Innovation goals:** business vs social
- **Sustainability** of the innovation network, project of activity.
- **Innovation impacts:** impacts on societal challenges, impacts on poverty, impact on workers' welfare, impact on Innovation ecosystem building
- **Empowerments** (formal, non-formal, individual training and capabilities vs ecosystems with empowerment mechanisms)

Example of possible integration in the Innovation Radar

Organizations working with the team	Role in innovation design	Role innovation implementation	Role in dissemination	Testing role	Coinnovator role	Leading / central role
Public sector (A, B, C)						
Private firm (A, B, C)						
Third sector (A,B,C)						
Final users						

Source: Proceeding Innovation 2.0 conference, Cluj Romania, 2017

Citizen Centric Open Labs

Citizen is in the Middle – in Data driven “Economy”

Money (GDP) is only one of the Dimensions

Data is important in all Dimensions =>
Cross sectoral value creation is critical

Digital Personal and Business data

Linear Value in Variance

Exponential value through networking

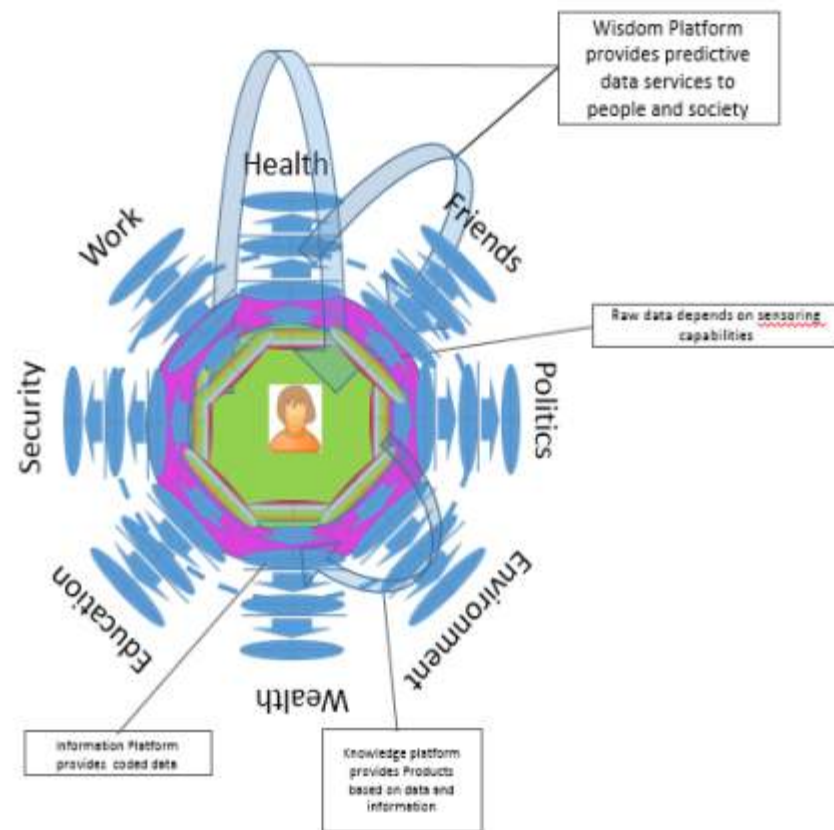
Transformational value in Programmability

Challenges

In Data

In Ecosystems

In Interoperability



City Centric Open Labs

What makes communities smart, in terms of Connecting Svstems, Infrastructure & BIG



Intelligent Lighting

A smarter way to light up your community



Intelligent Video

Help create a safe community.



Intelligent Traffic Management

Smooth traffic flow with smarter technology.



IoT Security Credentialing

Keep bad things from happening to good data.

Principles of Smart Communities

- Compact, walkable neighbourhoods
- Mixed Use urban form
- Highly Connected street networks
- Sufficient Density
- Building Design that emphasizes human scale
- Range of housing to serve diverse populations
- Regional Planning



Using environmentally-responsible building techniques for both individual buildings and neighborhood infrastructure is also an important part of the smart cities.

Green buildings and infrastructure have the potential to:

- **reduce energy use, water use and stormwater runoff,**
- **produce other benefits,** such as improving **indoor air quality and supporting locally-sourced materials.**

Steps in Smart Communities – The Modelling approach



- **Step 1:** Establishing the Principles of Development
- **Step 2 :** Determining the layout of the Development
- **Step 3:** Designing the details

L

Leadership and collaboration for a smart governance of the local digital ecosystem



L1

Develop a smart governance framework for digital transformation

L2

Establish a digital ecosystem governance structure

L3

Collaborate with stakeholders to define digital strategy

Are you a digital ambassador in your city and region?

Digital skills & entrepreneurs to accelerate the digital transformation process

S



S1

Develop a digital skills strategy

S2

Support digital skills training

S3

Encourage entrepreneurship and innovation

Entrepreneurs in large companies

Citizens and NGO representatives

Creative and cultural actors

Mayors and Presidents of regional councils

Managers of tertiary organisations

Researchers & academics

Cluster managers

Social partners

Innovators

City managers

Cook up your digital ecosystem



Journalists

CEOs of SMEs

Entrepreneurs and founders of start-ups

T1

Develop a digital strategy

T2

Establish a digital ecosystem governance structure

T3

Collaborate with stakeholders to define digital strategy

T4

Develop a digital skills strategy

T5

Support digital skills training

T6

Encourage entrepreneurship and innovation



Key infrastructures and investments for digital launch pads

I

Blueprint for cities and regions as launch pads for digital transformation

www.digitalambassadors.eu

Access to data and technologies for applied solutions to local challenges

T



CASE STUDY LIVING LAB START UP / UNIVERSITY STUDENTS / CITY BUSINESS

YUMMYWALLET

YUMMYWALLET

An innovative, mobile-based, multi-merchant, loyalty system

Yummy Wallet – A Pay and Save App!



Theofilos Mylonas | CEO & Co-founder

<https://en.yummywallet.com>

YUMMYWALLET

Yummy Wallet is a cashless payment
& money savings platform that combines
mobile payments and loyalty benefits
in a single app



*pay with your mobile
on or off campus*



*track payments,
earn cash & benefits*

Taking the Benefits Off-Campus

Know your customer



Create a one-to-one relationship

Engage your customers



With personalized marketing via our loyalty engine and our merchants dashboard

Gain access to new customers



Run targeted campaigns to attract new customers for the Yummy Wallet's customer base.

Build a unique shopping experience



Offer Mobile Payments and Order on the Go to your customers

Gather important customer insight



With Yummy Wallet Marketing Platform

Το Yummy Wallet έγινε σε συνεργασία με ισχυρά brands



- Προώθηση της λύσης στους φοιτητές και τους εργαζόμενους του Πανεπιστημίου Μακεδονίας.

- Οι πληρωμές είναι τραπεζικό προϊόν
- Εγγύηση της Εθνικής Τράπεζας
- Υποδομές



- Υποστήριξη της νέας cosmote prepaid
- Δίκτυο καταστημάτων COSMOTE / GERMANOS
- Επιτόπου έκδοση/ενεργοποίηση.
- Bonus scheme 1€ = 5MB

Allow students and staff to make secure mobile campus payments for goods and services, all across campus.

Use Yummy for:

- ❖ Catering
- ❖ Institution's online store
- ❖ Bookstores
- ❖ Mini-markets
- ❖ Ticketing - events, etc.
- ❖ Library fines
- ❖ Copying, printing, binding, etc.
- ❖ Fee payments - accommodation, exams, etc
- ❖ Parking
- ❖ University-operated buses/shuttles

Yummy offers payment options by working with other payment platforms

YUMMYWALLET



Ο Θεόφιλος μόλις αγόρασε με το Yummy Wallet από το Mongo Asian Food και κέρδισε επιστροφή 0,54€ η οποία προστέθηκε στο υπόλοιπό του.





Campus Loyalty Program

- ❖ Six Islands in Aegean sea in Greece (Limnos, Lesbos, Chios, Samos, Syros, and Rhodes).
- ❖ 30.000 resident students, staff and alumni.
- ❖ Average student spending / month: 700€.



Benefits of a Turn Key Off – Campus Program

Cashless Purchases

Allow students to make cashless purchases and earn loyalty rewards within the campus and throughout city's affiliated stores.

Strengthen Local Retail Ecosystem

Increase spend and relationships for off-campus merchants and the community.

Added value with mobile services

Instant Push Notifications to inform students about all academic news i.e. grading, scheduling, etc.

Generate revenue

Increase revenue by capturing off-campus transactions

Extending YUMMY Software to Smart City Engagement Program for Locals and Visitors

➤ **The Problem**

Often a City will begin their smart city initiatives with large infrastructure projects such as smart lighting, smart water meters, smart parking, IoT to collect air pollution, etc. which inevitably improve our lives but often many of these programs are not so important and critical to a large percentage of local citizens, visitors and local businesses pertaining to daily financial transactions and to the retail ecosystem as a whole.

A smart city must find the means to engage locals and visitors with smart programs to provide information in a smart way, to strengthen local businesses to grow through smart loyalty programs (as they are the core for economic development), to assist customers in order to have positive impacts on adoption and acceptance of Smart City projects.

➤ **The solution**

Yummy Software and Services is an international startup that builds programs based on mobile technology which enhance the quality of citizens' lives and makes them more efficient helping at the same time local businesses to grow.

The basic product Yummy Wallet (YW), is a cloud platform, consisting of web and mobile apps that support mobile payments & citizens engagement programs.

YW provides the following:

1. Information delivered to locals and visitors mobiles in a smart way via geofencing location-based services. Messages are sent to smartphone users who enter a defined geographic area. Information may include tourist and historical information, wayfinding, self guided tours for visitors and information on local events for locals. The app allows local businesses to place banner ads to generate revenue and turn this smart city venture into a cost profitable program.
2. YW helps local businesses build a strong install base, by participating with no cost in the biggest affiliation coalition loyalty program. Personalized deals are distributed by push Notifications, social media, email, SMS, web link or QR codes and can be used to create a city-wide Loyalty program where locals or visitors can enjoy multiple loyalty rewards from individual store programs (cash back, stamps, points etc).
3. Mobile Payments are embedded to make citizens lives simpler, safer and smarter. YW offers mobile payments tied with Intelligent multi level personalized marketing & loyalty tools. With a tap on YW, users can buy tickets (buses, events or theaters) and collect cashback, stamps and/or points every time they shop in store, web or via mobile. Mobile payments are offered in cooperation with National Bank of Greece, the biggest bank in the Balkan region. For international business we will support Apple and Google Pay.

YW' cloud business analytics which will be developed under FrontierCities2 funding, will enable interested parties to answer multi - dimensional queries regarding shopping trends.

As a local/visitor I can:

- register with email or FB.
- Order my coffee on the way, pay with my mobile, enjoy instant rewards and pick up my coffee at the store without waiting in line.
- search merchants, events etc.
- receive native language information, coupons, passes via SMS, push notifications, email, web links or QR Codes based on precise location.
- See details about each merchant (store photos, cashback amount, address, map, phone, email).
- use map navigation to guide me to a selected store either by foot or car.
- invite friends in social networks.
- navigate through special merchant offers that apply only for a limited time period.
- drop a comment / review

As a merchant I can:

- register (using my email/password or Facebook/Google authentication) my store in Yummy Wallet by providing the necessary information.
- set up my offers (cashback/stamps/points reward policy per transaction or offers or coupons)
- deposit money to my account by using the Yummy payments portal so I can be able to provide instant cashback rewards.
- enjoy electronic invoicing.
- observe customer data, current and past sales, cash back rewards and various reporting based on numerous parameters.
- set up a limited time special offer along with a photo.

As a smart city's stakeholder or marketer I can:

- use the BI interface to analyze consumer behaviour and get personalized information to maximize my marketing goals.
- use the Location Services interface to set up specific
- GeoFences and create location-based campaigns with live push notifications.
- collect accurate data about people movements and shopping habits.

YW delivers value to retailers, marketers, locals and visitors through mobile technology, analytics & targeted marketing. YW's multi-channel personalized marketing platform is easy for consumers and retailers as there is no need of additional hardware, systems integration, staff training or any investment in marketing & loyalty platforms.

Loyalty rewards are used to create a city-wide loyalty program where locals and visitors can each have a single city-wide loyalty account stored on their phones to receive loyalty rewards from individual store programs.

Our Smart City solution YW:

- 1) allows visitors to receive native language information based on their precise location. The solution also provides real-time visitor analytics, allowing you to understand the number of visitors and their movements around attractions, eg:
 - 1.1 Self-guided tours – walks, museums, art galleries, gardens etc*
 - 1.2 Historical information*
 - 1.3 Local information with way finding*
 - 1.4 Points of interest and must know information*

- 2) keeps local citizens up to date by receiving proximity based information via push notifications. This can be a key weapon for delivering accurate update on the city's plans and initiatives. Information may include:
 - 2.1 What's on at local events, markets and special events*
 - 2.2 Road closures*

- 3) Smart City Locals and Visitors Engagement Program offers great benefits for local businesses trying to attract and engage consumers:
 - 3.1 New ways to increase sales by attracting new customers and retaining existing ones.*
 - 3.2 Access to a engagement platform with no upfront cost. Retailers are able to evaluate their customer's overall satisfaction.*
 - 3.3. The biggest percentage of the retailer's money reward is returned back to the consumer for maximum value & benefit.*
 - 3.4 Offering targeted advertising and delivering personalized offers.*
 - 3.5 Access to aggregate customer sales information through web.*
 - 3.6 Ability to upload customizable sale offers valid for specific period of time.*

Conclusions

- The Living Lab approach is the ideal process for identifying market trends and developing innovations in the pre-incubation process, by utilising the creativity of stakeholders, including those that can have the role of the users, in a co-creation process
- Already established Living Lab models can be used as models for developing future Living Lab initiatives with the collaboration of business incubators and the higher education institutes and the aim of supporting entrepreneurship emerging from the academic and research environment (case of Central Macedonia)