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

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- Prof if Innovation Entrepreneurship at IHU, International Hellenic University
The Living Lab concept

- 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

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

Source: Proceeding Innovation 2.0 conference, Cluj Romania, 2017
<table>
<thead>
<tr>
<th>Phase</th>
<th>Description</th>
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<tbody>
<tr>
<td>Phase I</td>
<td>Shared meanings, sheared understanding, shared vision, shared value co-creation</td>
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<tr>
<td>Phase II</td>
<td>Challenges, Ideas, Prototyping and experimenting, Validating, Pre-launch, Launch, Post-launch</td>
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<tr>
<td>Phase III</td>
<td>Learning: Citizens learning digital skills &amp; user's ability to learn how to co-create and use technology (Barcelona, Helsinki)</td>
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<tr>
<td>Phase IV</td>
<td>TestBeds: Robots and the Future of Welfare Service</td>
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<tr>
<td>Phase V</td>
<td>Living Labs: Digital services, platforms, tools, games, robotics, IOT etc.</td>
</tr>
<tr>
<td></td>
<td>Show rooms: Technology Library and Demo Visits</td>
</tr>
<tr>
<td></td>
<td>Transnational Care Living Lab</td>
</tr>
</tbody>
</table>

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

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)

Source: Proceeding Innovation 2.0 conference, Cluj Romania, 2017
EXAMPLE
CforCare Living Lab: E-triage

SkinCheck4LIFE

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

Source: Proceeding Innovation 2.0 conference, Cluj Romania, 2017
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

DATA acquisition and consolidation

Consumption data REPOSITORY
- Privacy
- Security

Consumer portal

Customer segmentation and profiling

Engagement / gamification

Behavioural change

Source: Proceeding Innovation 2.0 conference, Cluj Romania, 2017
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)

*Source: Proceeding Innovation 2.0 conference, Cluj Romania, 2017*
### Example of possible integration in the Innovation Radar

<table>
<thead>
<tr>
<th>Organizations working with the team</th>
<th>Role in innovation design</th>
<th>Role innovation implementation</th>
<th>Role in dissemination</th>
<th>Testing role</th>
<th>Coinnovator role</th>
<th>Leading / central role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public sector (A, B, C)</td>
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<td>Private firm (A, B, C)</td>
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<tr>
<td>Third sector (A, B, C)</td>
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<tr>
<td>Final users</td>
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*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 Prorammability

Challenges
- In Data
- In Ecosystems
- In Interoperablity
City Centric Open Labs
What makes communities smart, in terms of Connecting Systems, 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
An innovative, mobile-based, multi-merchant, loyalty system

Yummy Wallet – A Pay and Save App!

Theofilos Mylonas | CEO & Co-founder
https://en.yummywallet.com
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:

- Apple Pay
- COSMOTE prepaid
- AMEX
- PayPal
- VISA
- MasterCard
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.
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’s 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, marketeers, 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).