KICK OFF | **CLIP USACH:** Programa Desarrollo de Capacidades

VICERRECTORÍA DE INVESTIGACIÓN, INNOVACIÓN Y CREACIÓN

DIRECCIÓN DE INNOVACIÓN Y EMPRENDIMIENTO

DEPARTAMENTO DE INGENIERÍA INDUSTRIAL LEIND

UNIVERSITÉ DE LORRAINE

INP Ensgsi NANCY

CLIP USACH

PROGRAMA DESARROLLO DE CAPACIDADES ESPACIOS DE INNOVACIÓN

NOVIEMBRE 2024
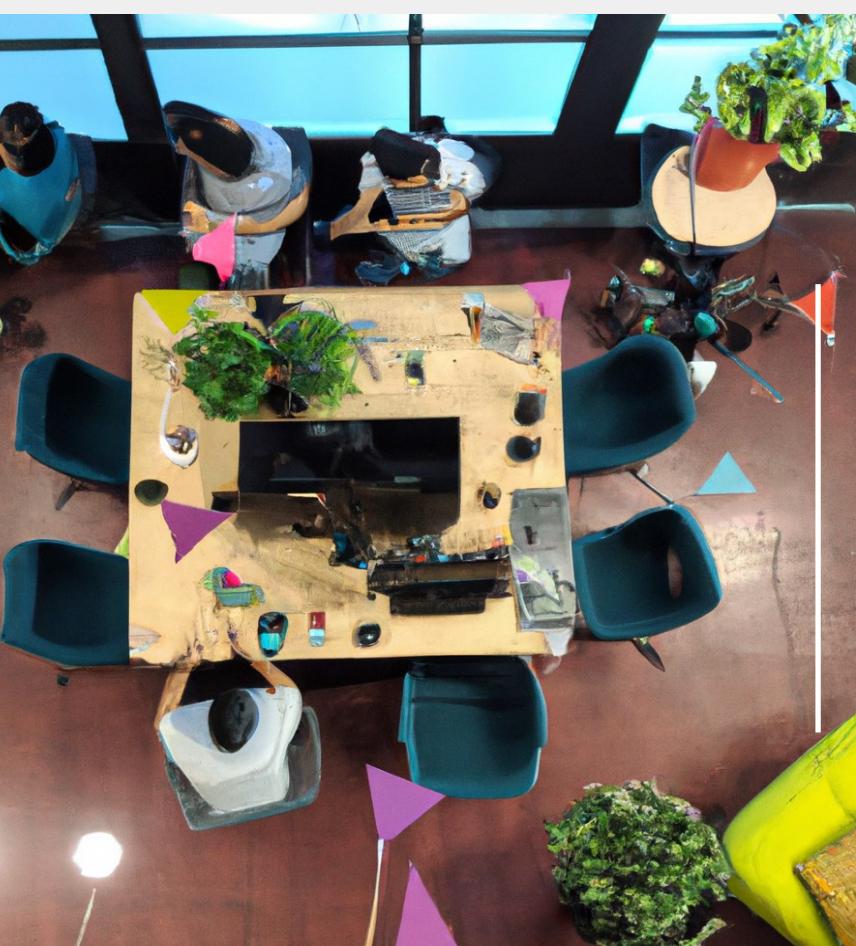
Identificar espacios de innovación dentro del campus USACH para el fortalecimiento de sus capacidades de gestión, financiamiento e impacto, con el propósito levantar una red que fortalezca la cultura de innovación dentro de la institución.

PROGRAMA PILOTO

NIVELES DE MADUREZ

INTERDISCIPLINA

COLABORACIÓN

REQUISITOS

1 Equipos de innovación compuesto por un mínimo de 3 personas y máximo 5. Será *deseable* considerar 1) un perfil académico 2) un perfil profesional gestor de la I+i+e 3) un perfil estudiante pre o postgrado.

2 Los equipos deberán disponer obligatoriamente de 7 horas mensuales para gestionar su participación en el programa. (Sprint, Mentorías, Trabajo Autónomo)

3 Cada espacio interesado deberá contar con una carta de patrocinio/compromiso institucional emitida por la unidad mayor donde se encuentre inserta.

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Equipos de Innovación

• Iniciativas de innovación previas o en curso
• Competencias, habilidades y focos temáticos existentes
• Experiencia y aspiraciones con impacto socio-económico

Proceso de Incubación

CLIP

Red de Espacios de Innovación USACH

• Évolución de la estrategia de los espacios de innovación
• Diseño operacional del espacio de innovación
• Gobernanza y modelos integración a la Universidad

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Un proceso de co-construcción a partir de 4 temáticas principales

- **Gestión del Espacio de Innovación:**
  - Cómo definir la visión y el alcance del Espacio de Innovación?
  - Cómo gestionar los proyectos de innovación y evaluar sus resultados?
- **Operación en Modo Living Lab:**
  - Cómo poner en marcha y facilitar proyectos de innovación con múltiples partes interesadas?
  - Cómo desarrollar el pensamiento ecosistémico?
- **Gobernanza, Universidad, Industria y Sociedad:**
  - Cómo estructurar e integrar los espacios de innovación a la misión universitaria?
- **Labs Sostenibles:**
  - Cómo crear una cultura de innovación responsable en las universidades?
  - Cómo pasar de la sensibilización a la realización de prototipos y soluciones sostenibles y sustentables?

Pilares del CLIP

Propósito y Valores

Roles y Competencias del Equipo

Diseño Estratégico y Operacional

6 SPRINTS

Fundamentos y Principios

Objetivos:

Construcción del Manifiesto del Lab

Conformación del equipo del lab

Intención Estratégica & Proceso de Creación

Objetivos:

Definir el propósito y objetivos del lab

Diseño del proceso de innovación

Materialización

Objetivo:

Transformar la vision del lab en una hoja de ruta de evolución articulando recursos y competencias

Proceso de Uso & Resultados

Objetivo:

Diseño del modelo de negocio y prácticas de integración del lab a la misión universitaria

Evaluación y Adaptación

Objetivo:

Evaluación del desempeño del Lab Prácticas para un trabajo más creativo, resiliente y sostenible

Piloto SINAPSIS

Objetivo:

Diseño y prototipado de soluciones sostenibles - Retos plataforma SINAPSIS

| I | 27-Nov – 19-Dic | II | 20-Dic – 16-Ene | III | 06-Mar – 26-Mar | IV | 27-Mar – 23-Abr | V | 24-Abr – 20-May | VI | 21-May – 24-May |

MOMENTOS CLAVE EN CADA SPRINT

- **Inicio del sprint**
  - Presentación de los objetivos del sprint, actividades y workshops
- **Soporte en línea**
  - Videos conceptuales y literatura complementaria
- **Trabajo autónomo**
  - Revisar el contenido propuesto y realizar los talleres en equipo
  - Dedicación de al menos *2 horas por semana*
- **Mentorías**
  - Check-ins intermediarios con el panel de mentores dispuesto por la ENSGSI
- **Finalización del sprint**
  - Enviar y socializar los resultados

MOMENTOS CLAVE EN CADA SPRINT

1 Kick-off (Santiago)

Taller presencial en Santiago, facilitado por los mentores de la ENSGSI. Presentación de objetivos e inmersión al programa de incubación.

2 Acompañamiento en línea

Desarrollo de cada sprint con acompañamiento virtual soportado por un sitio web y herramientas colaborativas.

3 Taller de clausura (Nancy)

Taller presencial en Nancy como inmersión en el diseño y prototipado de soluciones al reto seleccionado de la Plataforma SINAPSIS

4 Síntesis y entrega de certificados

Trabajo de síntesis y presentación de propuestas de solución por parte de los labs y entrega de certificados

KICK OFF | **CLIP USACH:** Programa Desarrollo de Capacidades

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KICK OFF

CLIP USACH:
Programa Desarrollo
de Capacidades

CLIP

Collaborative **I**nnovation lab **I**ncubation **P**rogram

Growing and Harvesting Innovation spaces

Pr. Mauricio Camargo

ERPI- Université de Lorraine

ERPI Key Figures

A **Multidisciplinary** team in
Industrial Engineering specialized in
the study of **innovation processes**
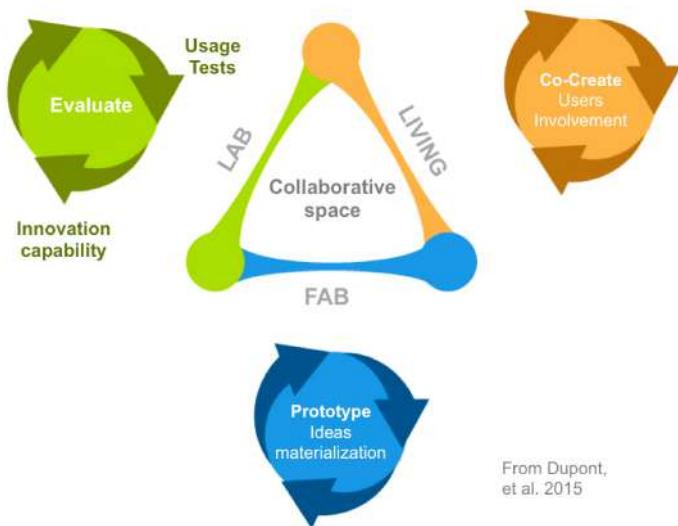
61 Members

18 permanent researchers

21 PhD students

From Dupont, et al. 2015

1 research platform (LF2L - http://lf2l.fr)

LORRAINE FAB LIVING LAB®

Chemical Eng.

Mechanical
Autoaticis

Business
Neuro Psychology

collaboration
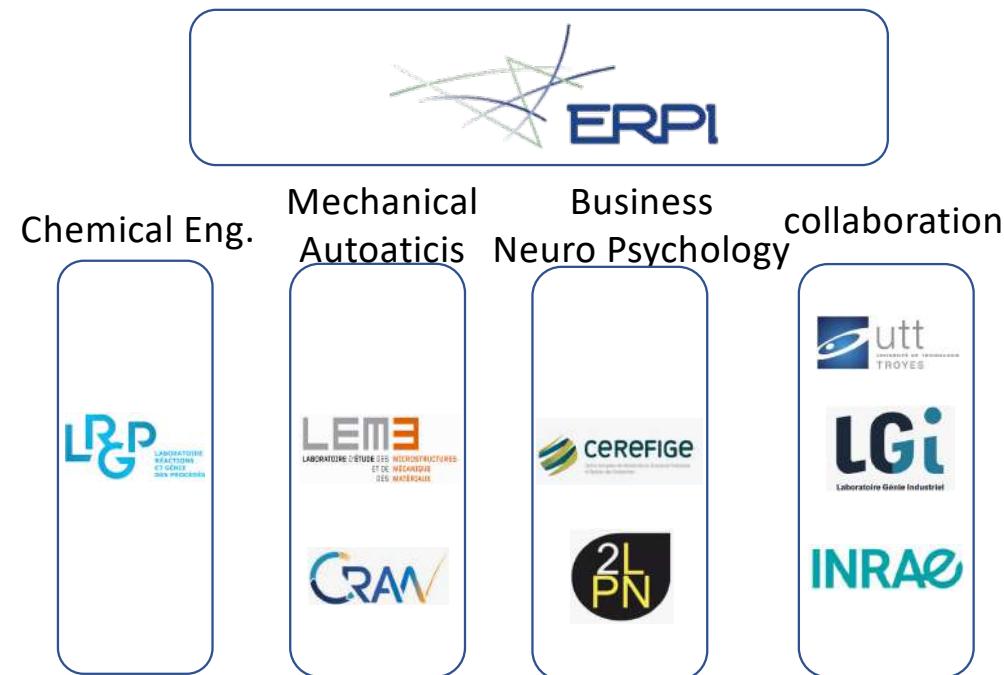
Creator of methods & tools supporting innovation process

Research domain: Front end of innovation

Innovation Metrology

Prospective & weak signals

Design support in front end

Acceptability product/process/ supply chain

Innovation capability
- Product
- Process
- Business Model

Technological Emergence/maturity
- Product-Process
- Industrial supply chain

Materialized
- Creative Exploration
- Feasibility Product-Process
- Physic & digital (virtual) Prototyping

Validation during the front end
- Multi-actors Acceptability
- User eXperience & test by use

IIP- Potential innovation index
IIE Export through innovation index
TLB+ Sustaiability Index

MRT – Resource Management
Technological Roadmap
Agile supply chain

Creativity / 2 days to genarte ideas
Need analysis / DESTINEED

Living Lab approach

Innovation research : contribution to tackle the society current issues

Smart Territories
- Healt
- Mobility
- Wellbeen

Bioeconomy
- Biosourced products
- Bio fuels
- Biomass valorization

Renewable Energies
- Hydrogen
- Energy efficiency
- Electromibility

Industry 4.0
- Lean & Digital Transition
- 3D Printing
- Open Source technologies

Circular Economy
- Recyclability
- Sustainable industries

REVES – Renaissance Ecologique des VillES

Chaire: Renaissance Ecologique des Villes

ENEDIS L'ELECTRICITE EN RESEAU

métropole GrandNancy

ACTIBAC GROUPE

NOREMAT

SMARGRINET: H2020

DigiTeRRI
Soutien territorial à la numérisation

AIRBUS

INEDIT: H2020

TEA

INSTITUT CARNOT ICÉEL

Everest-Bio

Grand Est ALSACE CHAMPAGNE-ARDENNE LORRAINE

INP Ensgsi NANCY   Collaborative Innovation lab
Incubation Program
CLIP

Main Research and Innovation Projets
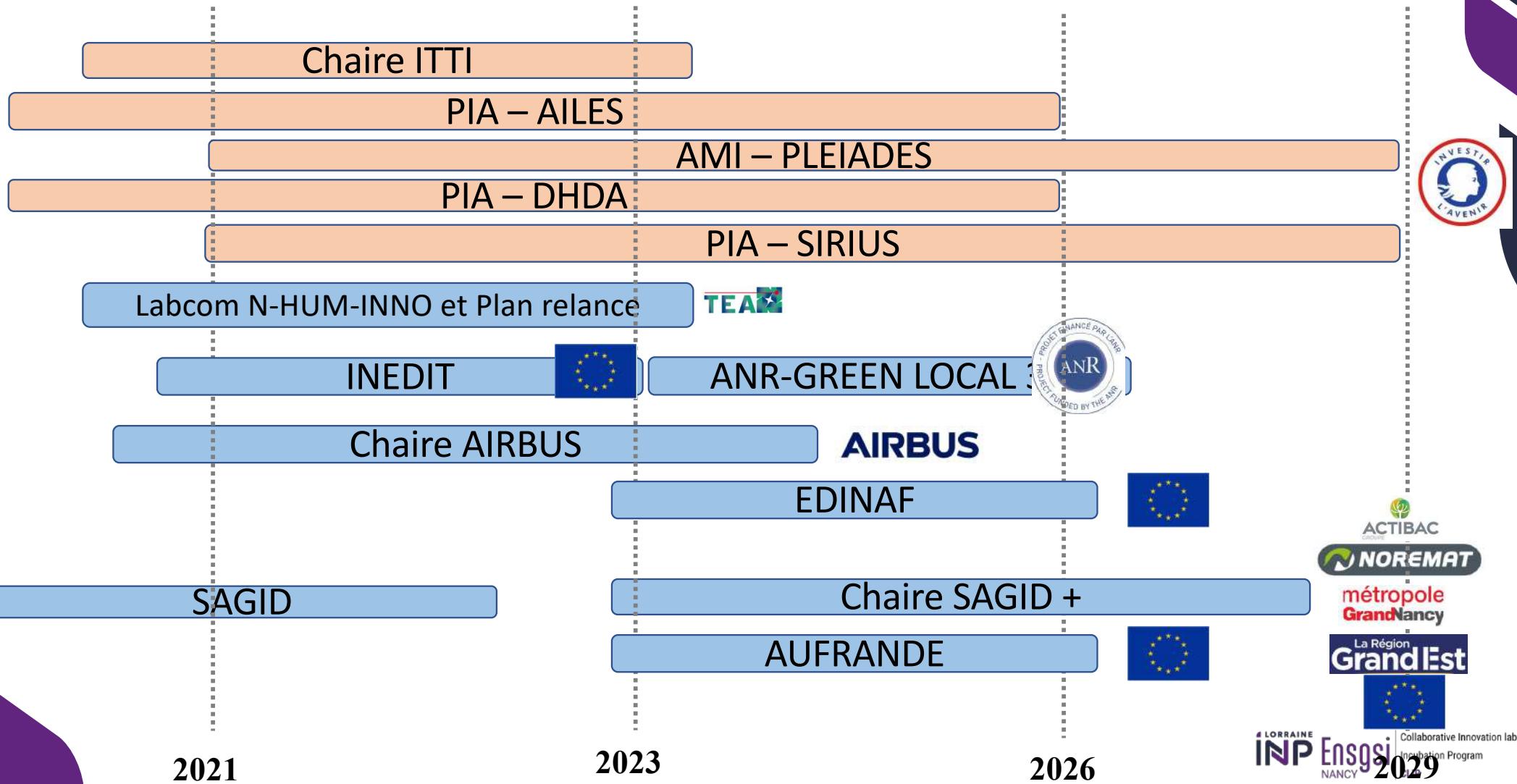
Origin of grants 2016-2020
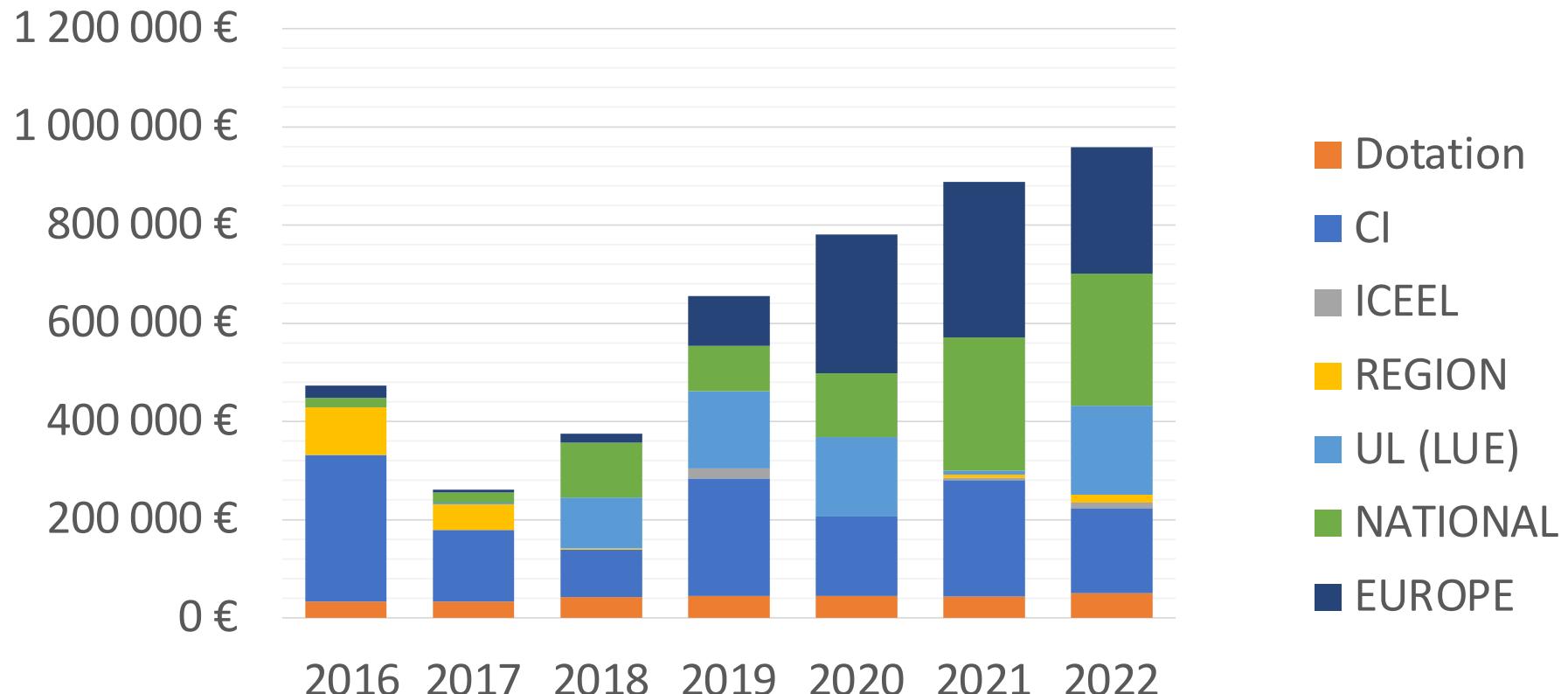
Our experience on international cooperation

- **Period 2016-2022**
- **25 PhD / 8 Double degree – Codirected with international partners**

Collaboration

Recurrent (>4)

En construction (2-4)
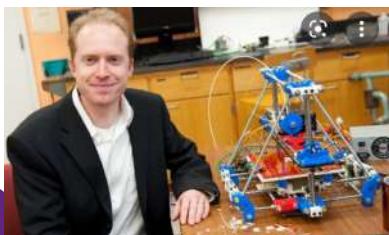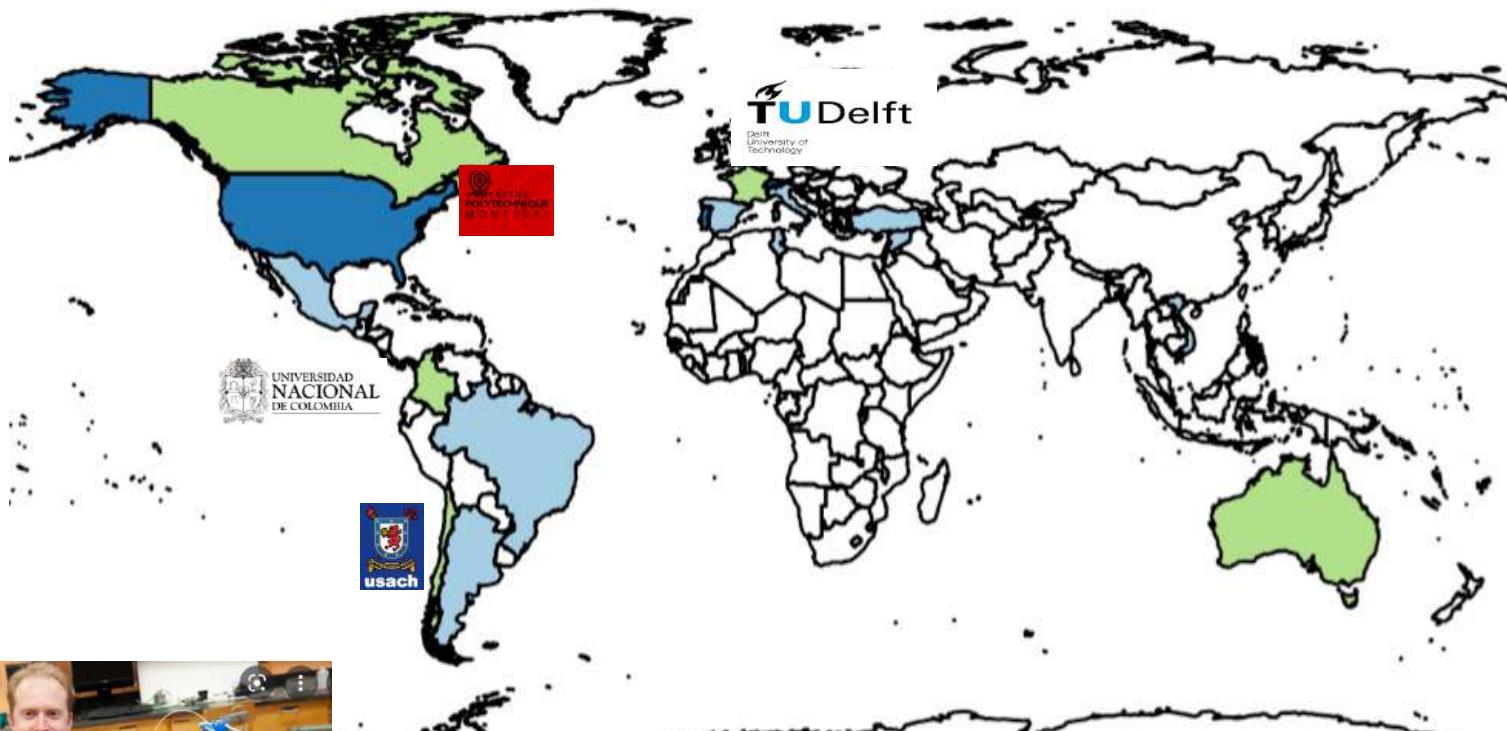
Exploratoire (<2)

Prof@Lorraine
Contrat Doctoral
Dreams

AUFRANDE

Innovation as a system

Scale

- Innovation ecosystem
- Organization Strategy
- Project steering and piloting
- Technical development
- Learning and reasoning (individual/collective)
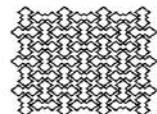
INNO PULL

TECHNO PUSH

Boly et al, 2014
Kapssali, 2011

Picto: Hawdon, David, Useicon, Luism , Burmish

Current Research Challenges:

- How to deal simultaneously with the different scales?
    - Integrity
    - Coherence

- How to insure the interdisciplinarity (collective knowledge creation)between communities having different:
    - Points of views,
    - Concepts
    - research approaches (qualitative/ quantitative)

While achieving the scientific community to recognize the value or interdisciplinary research?

The role of scientific demonstrators (Moultrie, 2015)

Artefacts that act as **mediators between actors** in a social system been described as **« boundary objects »** (Star, 1989)

Common to all of these social worlds is the notion that boundary objects **can assist in creating common knowledge** among individuals in dispersed design teams and across boundaries (Carlile 2002, 2004)

James Moultrie shown the use of this concept by the different communities:

- Organizational studies,
- Engineering
- Design and New product development
- Behavioral studies

ADEME, 2022 about Territorial demonstrators

"They allow to:

-Create a new representation, and a shared vision for the territory

- Create the space for cooperation of the stakeholders to manage change in its complexity

- Acting in an integrated, systemic way, gradually widening the scope"

☼Materialiser   <>Associer   � Innover

Plate-forme de codesign pour Manager l'innovation collaborative

www.lf2l.fr

Lorraine Smart Cities Living Journey

2019-2024…

2010

2013
Co-founder
France Living Labs

2005

2015

2014

2008

2011

2015-2016
Co-Founder
Francophonie Living Labs

LSC LL launch

2018

Projects   **Networks**

Research platform & programs   **Demonstrators**

Communities of users and practices   **Collaborative innovation**   **PPP Partnerships**

Sustainable Regional Development

And its platforms

Most popular third places

FABLAB

Are places enabling users to manipulate data and objects easily in order to design, manufacture, repair and test those objects with simple and affordable equipment (Gershenfeld 2006)

(GSILab- 2009, MIT)

LIVING LAB

Is a user-centred, open-innovation ecosystem, often operating in a territorial context (e.g. city, agglomeration, region), integrating concurrent research and innovation processes within a public-private-people partnership. The concept is based on a systematic user co-creation approach integrating research and innovation processes. (Pallot, 2009)

(Lorraine Smart City Living Lab, 2010, ENoLL)

06/12/2023

« make almost everything »

Exchange and formalize projects

FABLAB

Learning and training

A platform of social, digital and economical innovation

Answer to local problems

community of Resources and competencies

European Network of Living Labs
Adherent Member

European Network of Living Labs
Adherent Member

2013 Co-founder France Living Labs

2015-2016 Co-Founder Francophonie Living Labs

INP Ensgsi NANCY

Collaborative Innovation lab
Incubation Program
CLIP

Principle

2014

Accelerate passage from idea or concept (2D) to their materialisation (3D virtual or prototyped)
and evaluate by time and usage (4D – *scenarios of evolution*)

Based on a mix of technologies and governance modes from:

- Collaborative space
- Users involvement
- Ideas materialisation
- UX evaluation and acceptability
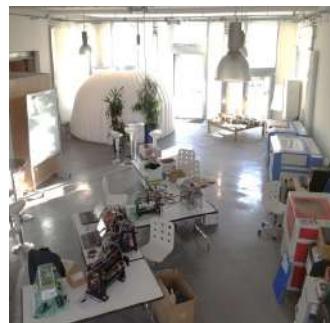
PPPP Collaborative Ecosystem overview

Academics Partners

International networks

Complementary crossed communities of practices

Citizens / Territories / Cities

Companies

The 4th dimension of innovation

Créativité 2D

Immersif 2D/4D

Evaluation par l'usage 4D

VR & Simulation 3D/4D

Matérialisation 3D

Open Innovation 2D

Capacité à innover 2D

Fiches idées 2D

Modélisation 2D/3D

Virtualisation 3D

Interactions régulières avec les communautés de pratiques

2D

2D

2D/4D

2D/3D

4D

3D

3D/4D

3D

4D LORRAINE FAB LIVING LAB ®

Prise en compte constante des besoins et insatisfactions

Dupont, et al. 2015

L'UNIVERSITE DE LORRAINE PRESENTE LE

LORRAINE SMART CITIES LIVING LAB
INTELLIGENCES COLLECTIVES ET TERRITOIRES D'INNOVATION

Science Participative et Citoyenne

Foire Expo de Nancy
2017 (36 m2)
2018 (66 m2)
2019 (250 m2)
2020 & 2021 annulée
2022 *(400 m2 ICE-IAMOT)*

Open Citizen Lab pour tester vos idées, vos produits, vos projets

L. Dupont, UL – EPRI – LF2L, juin 2018

Green FabLab as a multilevel demonstrator:

Green Fablab

Circular economy and 3D printing: Towards a distributed recycling paradigm

Green FAB LAB

Our vision of Green Fablab (or Hackerspace, or Makespace) is that in these geographically distributed spaces, they can be considered not only as a fabrication spaces, but also a recycling, remanufacturing and refurbishing places in order to contribute to a more circular economy.

ERPI

UNIVERSITÉ DE LORRAINE

Michigan Technological University

Western UNIVERSITY · CANADA

Institut Charles Delaunay

utt TROYES

INEDIT
open INnovation Ecosystems for Do It Together process

open INnovation Ecosystems for Do It Together process

PROJET FINANCÉ PAR L'ANR

ANR

INP Ensgsi NANCY CLIP
Incubation Program
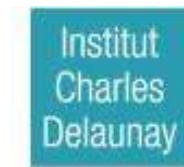
Green FabLab as a demonstrator:
Plastic recycling through distributed closed loop circuits

http://lf2l.fr/projects/green-fablab/

Santander, P., Cruz Sanchez, F. A., Boudaoud, H. et Camargo, M. (2020). Closed loop supply chain network for local and distributed plastic recycling for 3D printing : a MILP-based optimization approach. *Ressources, Conservation et Recyclage,* 154, 121602

- Small scale: 2 km radius (neighborhood scale)
- Low processing capacity,
- Technologies: cheap, easy to use
- Active role of users and local communities

Green FabLab as a System

Innovation ecosystem

Organización Strategy

Project steering and piloting
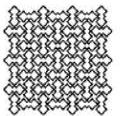
Technical development

Learning and reasoning (individual/collective)
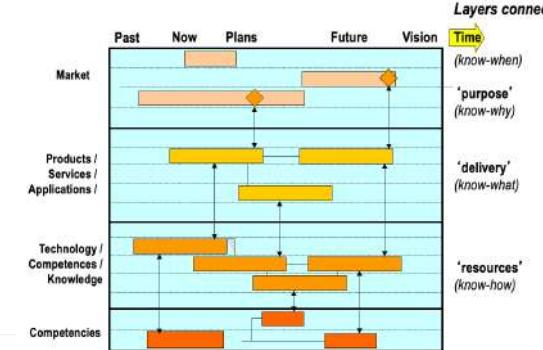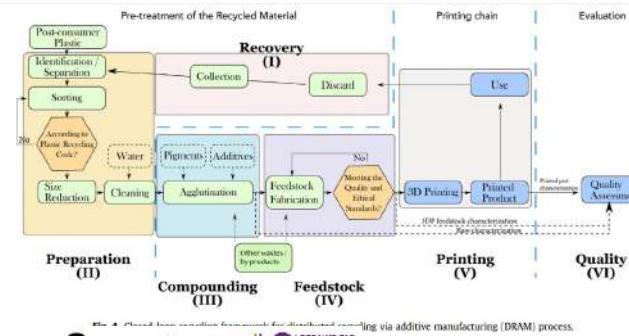
Multilevel perspective

SAGID $^+$ Industrial Chair Advanced System to the Sustainable Management of roadside verges

2023-27

Brunelle MARCHE
Mauricio CAMARGO
Christophe BACHMANN

Context

Did you know?

- In France there is about 1,000,000 km of roads, i.e. 5,000 km² of green outbuildings, representing 5 M tonnes of recoverable grass

- On a global scale, they represent 270,000 km², store 0.015Gt C/year and a 70% increase is expected by 2050

At the interface of several ecosystems

- Natural (forests and national parks)
- Agricultural
- Urban
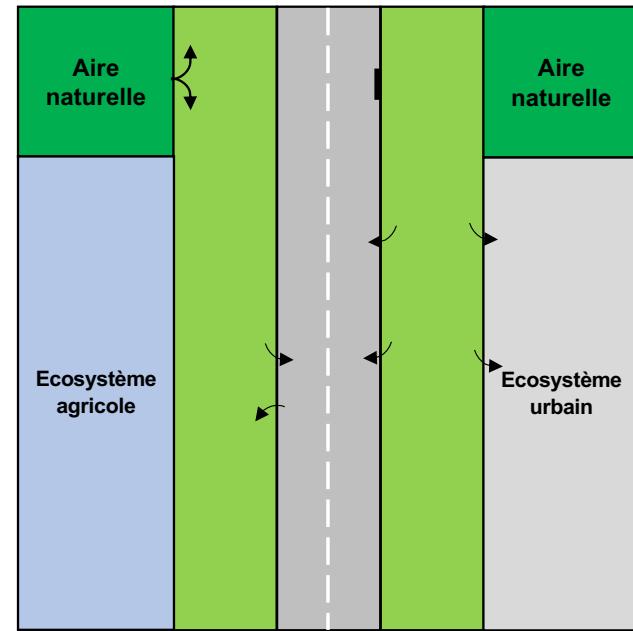
Phillips et al, 2020 - Journal of Applied Ecology

Roadsides are sources of social and environmental benefits…

Biodiversity
Corridor and habitats for many species
Crop pollination, pest control

Environmental regulation
Air filtration
Filtration and bioremediation of water
noise reduction
Flood and fire control
Global and local climate regulation
Reduced erosion

Energy recovery
Wood and herbaceous biomass

Social value
Road safety
Psychological well-being
Valuation of the territory
Control of allergenic species

Phillips et al. 2020

… under the condition to be managed under a sustainable
perspective!!
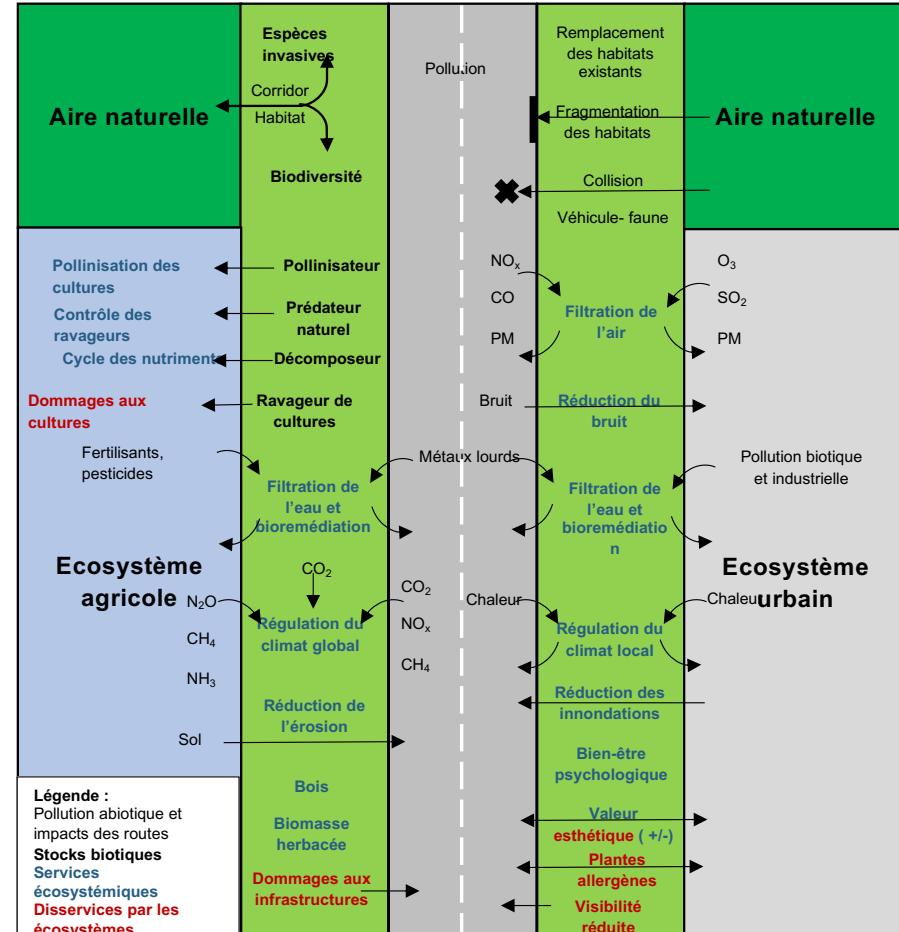
SAGID as a System

Innovation ecosystem

Organización Strategy

Project steering and piloting
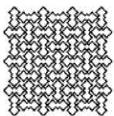
Technical development

Learning and reasoning (individual/collective)
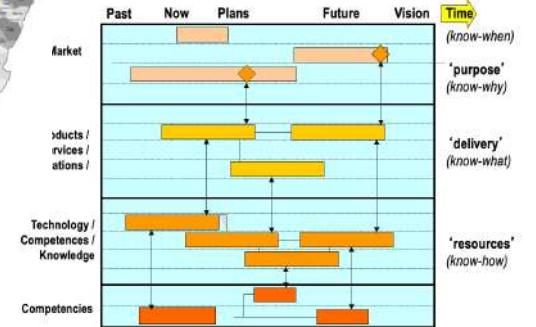
Final Considerations

- Researcher involvement within the complex adaptative system

- Dealing Multi level perspective and orchestration of open Innovation ecosystems still a challenge for academics and practitioners

- Simultaneous Bottom-up/Top Down approaches are required.

- Technological platforms should be seen as a enabling means rather than goals

Kick-off – Sprint 1

Lorena Delgado, Mauricio Camargo, Ferney Osorio

Facilitadores

Embarking on an adventure... with no compass

Practices for success

Purpose

Team & Community

Place

Technological equipment

People

Source of ideas!

New solutions!

Do things differently!

Inspire people!

Strengthen skills!

Commitment to Innovate!

(Veeckman et al., 2013; Viki, 2018; Ahuja, 2019)

A recurring adventure...

- Living Labs: +475
- FabLabs: +1750
- Design Factories: 29
- Tiers-Lieux: +3500

Sources: https://fabfoundation.org/ - https://enoll.org/ - https://dfgn.org/ - https://francetierslieux.fr/

Governments
Companies
Universities
Communities

I want an innovation lab!
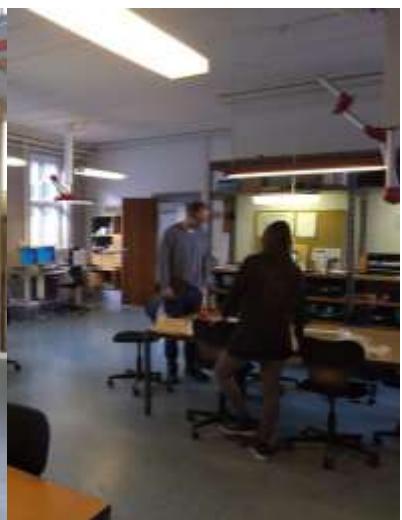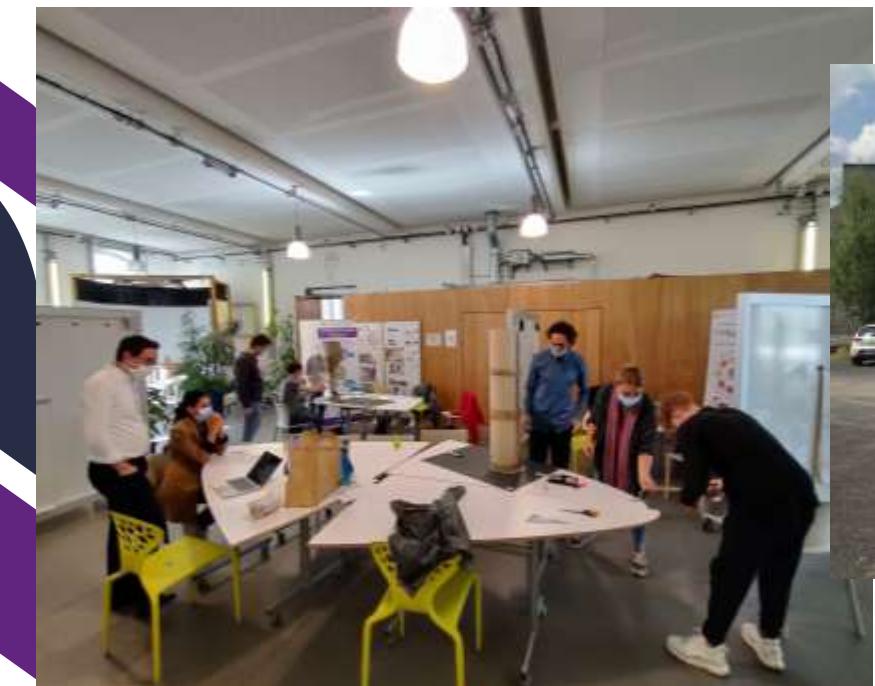
What do they have in common?

Workplace for creative
thinking

(Ekvall, 1997; Kristensen,
2004)

**Innovation
Lab**

Technology

Creativity

Prototyping

(Moultrie et al., 2007; Mortara
& Parisot, 2018)

Facilitate the innovation
process

(Gey et al., 2013; Memon et
al., 2017)

People, Practices, Organization

(Magadley & Birdi, 2009; Fecher et al., 2020)
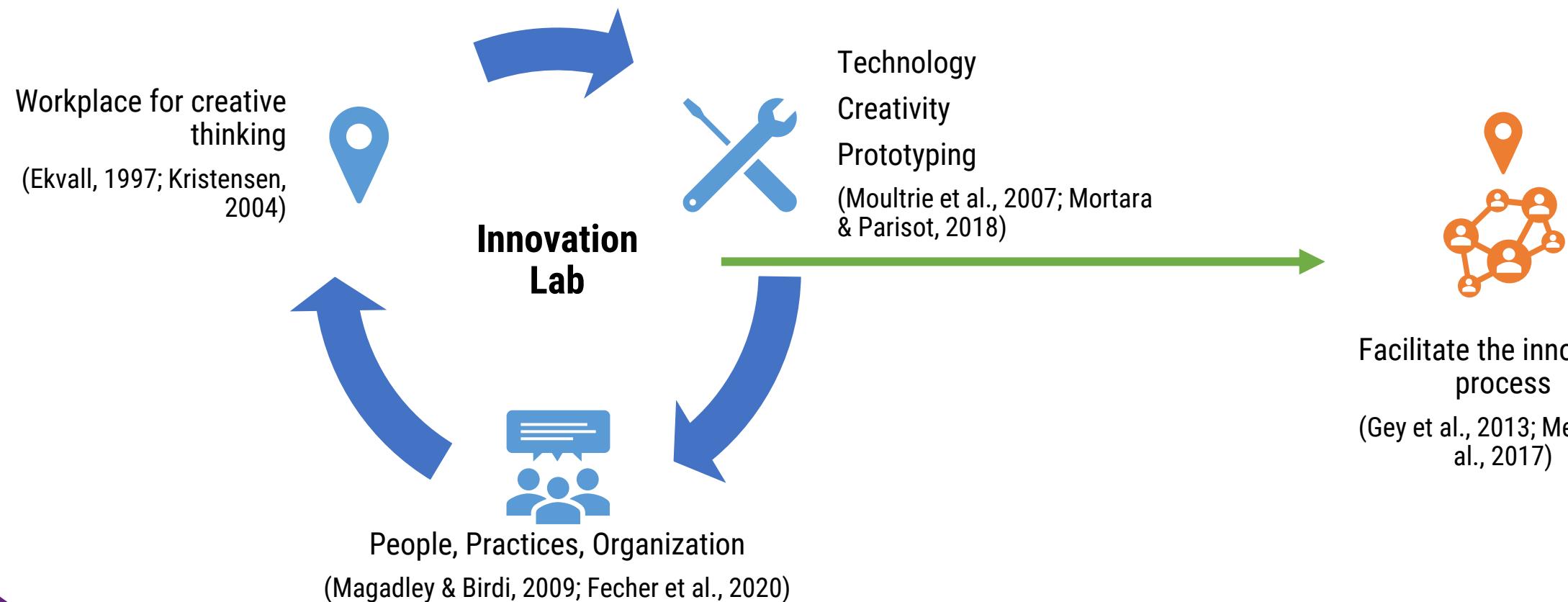
Beyond popularity and compelling stories

Five Reasons Your Boss Was Right To Shut Down Your Innovation Lab
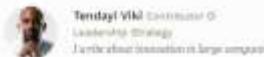
Tendayi Viki
Leadership Strategy
Forbes

ANALYSIS / CITIES TRANSPORT AND INFRASTRUCTURE

Public innovation labs around the world are closing — here's why

In Mexico City and Colombia, a change in political prise kee shut down labs

apolitical

Why Innovation Labs Fail, and How to Ensure Yours Doesn't

by Simone Bhan Ahuja

July 20, 2018

Innovation labs can be a beacon for hope**…or a source of frustrations**

See them as simple **"innovation gadgets"**

Isolated places to show **"cool stuff"**

And measure them from vanity metrics **"the innovation theater"**

(Ahuja, 2019; Apolitical, 2019; Blank, 2019; Wells, 2022)

Cases stopping operations

- MindLab 2002-2018 (Denmark)
- Lab for the City 2013-2018 (Mexico)
- FLELLAP 2010-2013 (Belgium)
- ViveLab Network 2012-2017 (Colombia)
- MediaLab Prado 2000- (Spain)

It is not only about infrastructure, but also about **creating a community around the innovation lab!**

(Dupont, 2009; Veeckman et al., 2013; Bloom & Faulkner, 2016)

So today the journey begins...

The Heroes

The group going
through the journey

The Abyss

The challenges ahead
and fears
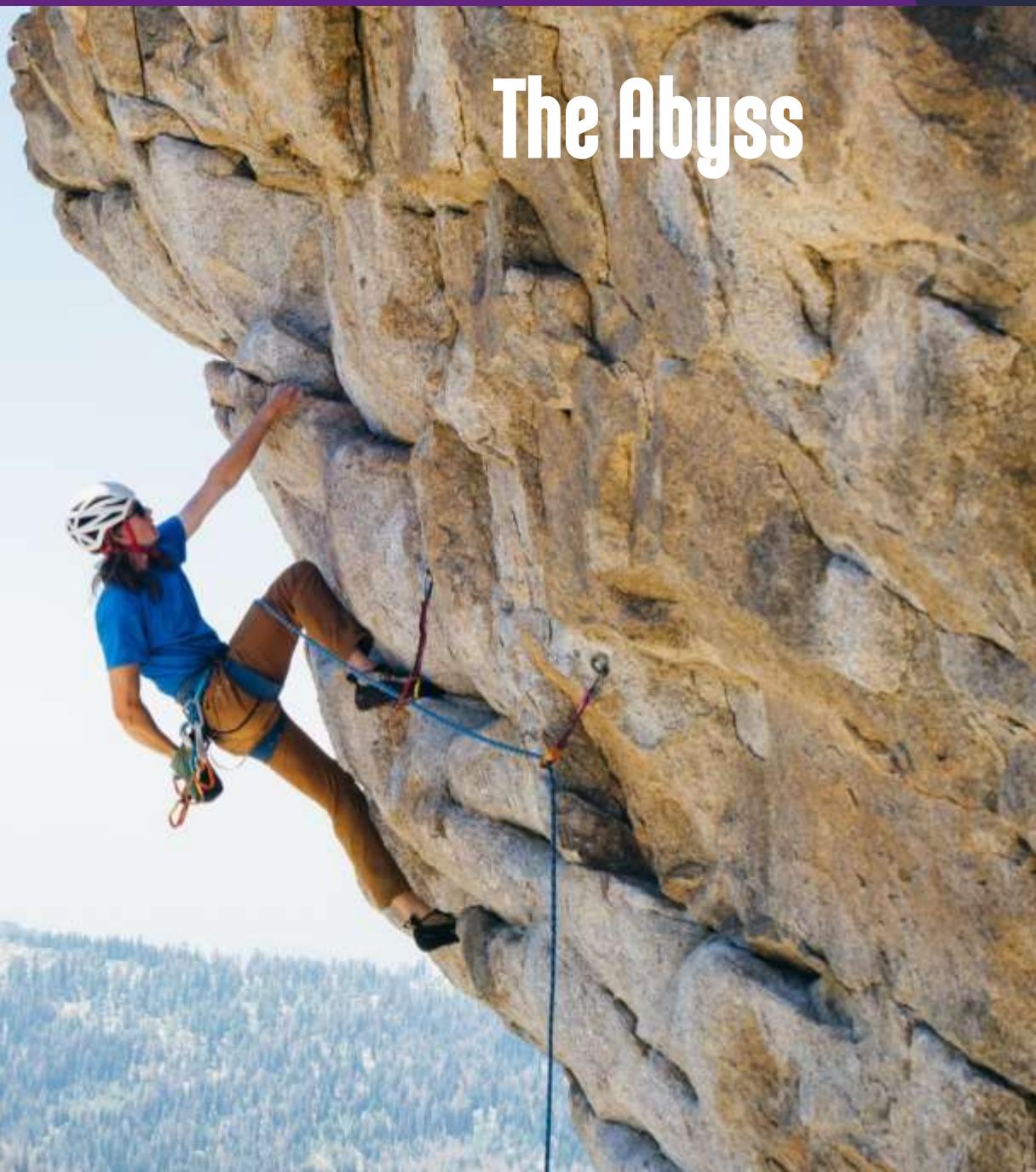
The Guide

The help and guidance needed

The Treasure

The awards and
achievements

Envisioning the innovation space of tomorrow

Why innovation labs & spaces?
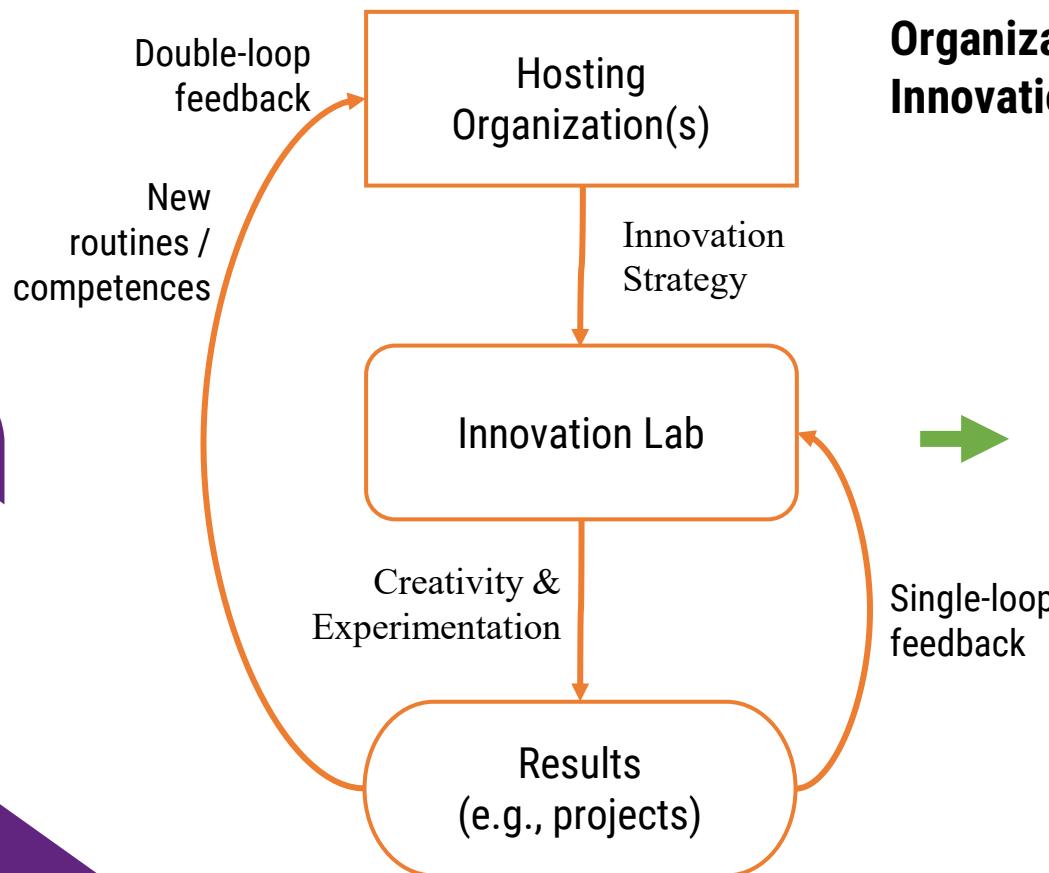
Organizational nature of an Innovation Lab

(Lewis & Moultrie, 2005)

The embodiment of an organization's will to innovate

Double-loop feedback

New routines / competences

Hosting Organization(s)

Innovation Strategy

Innovation Lab

Creativity & Experimentation

Single-loop feedback

Results (e.g., projects)
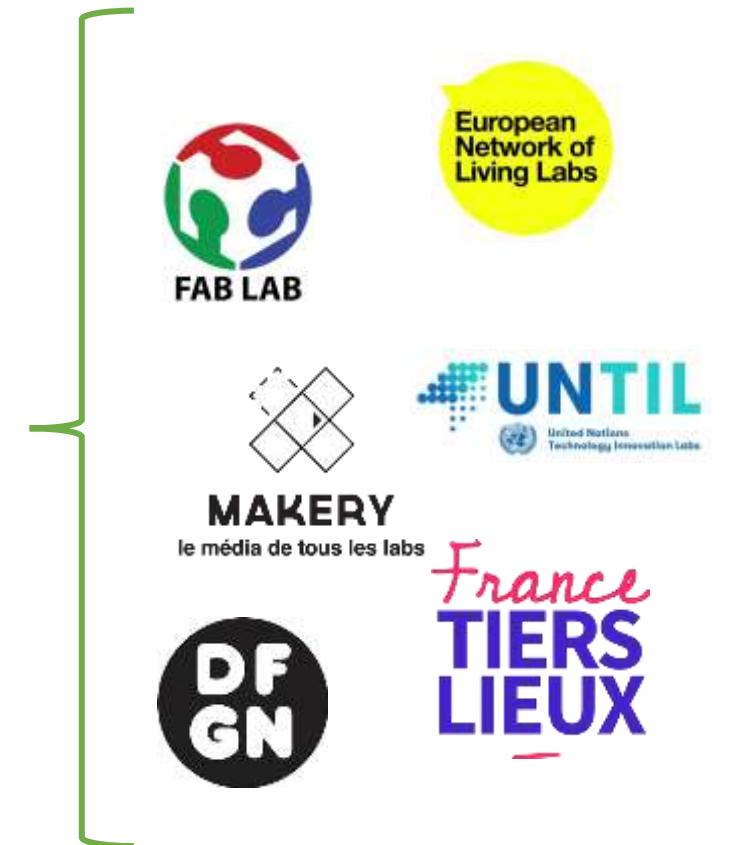
What are the stakes in managing an innovation lab?

From embedded and closed contexts (2005)...

...to open and multi-stakeholder contexts (today)

Innovation lab inside the firm
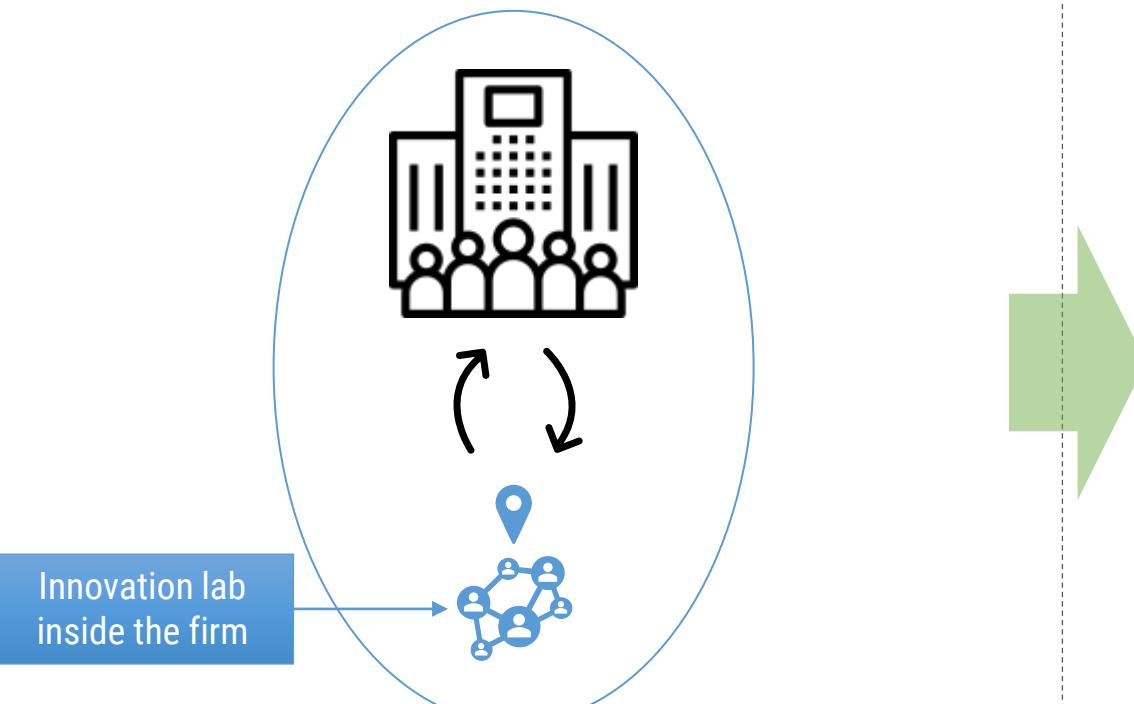
(Lewis & Moultrie, 2005; Moultrie et al., 2007)

Partner 1

Host

Partner 2

Shared/open innovation labs

Citizens

Companies

Industry

Academic Communities
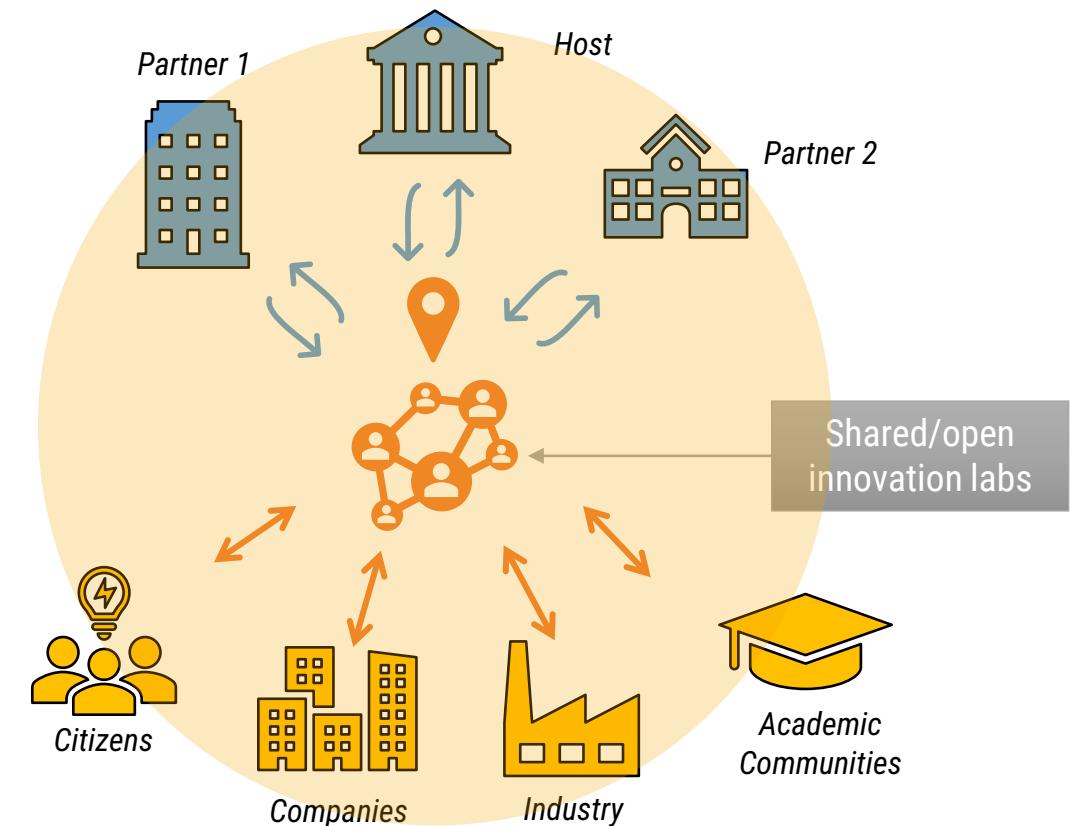
(Morel et al., 2018; Osorio et al., 2019)

Innovation labs at the heart of a complex environment
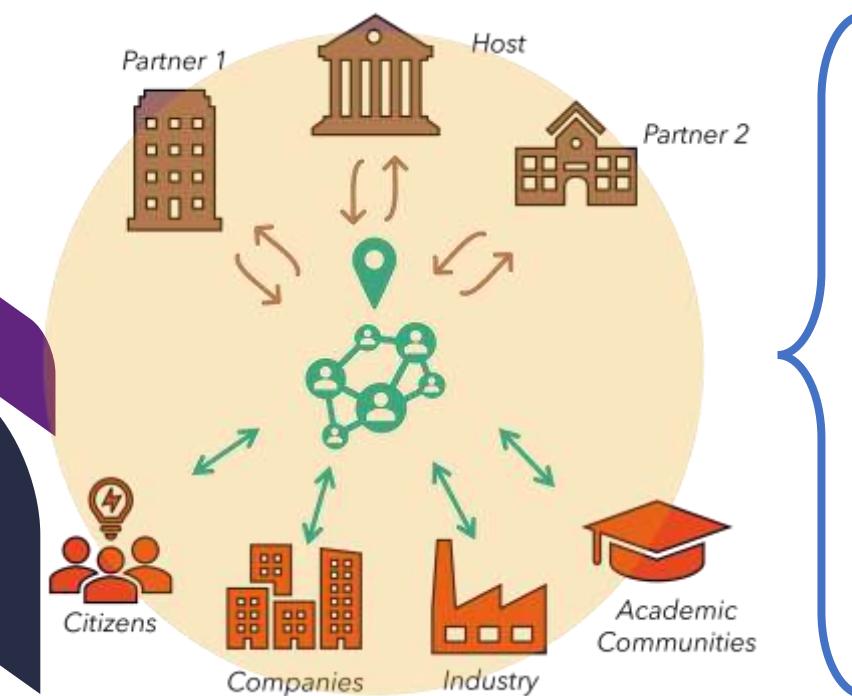
(Morel et al., 2018; Osorio et al., 2019)

Conjunction of expertise, cultures, mindsets and interests that change with each project
(Rayna & Striukova, 2019)

Facilitating vs Controlling
(Peschl & Fundneider, 2014; Fecher et al., 2020)

Context-dependent. Diverse but seem to operate analogously
(Gryszkiewicz et al., 2016; Memon et al., 2018)
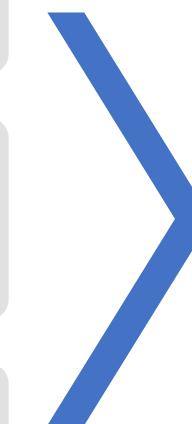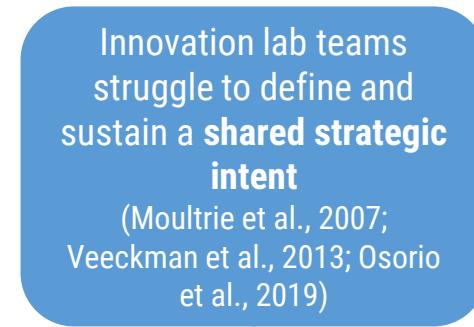
Innovation lab teams struggle to define and sustain a **shared strategic intent**
(Moultrie et al., 2007; Veeckman et al., 2013; Osorio et al., 2019)
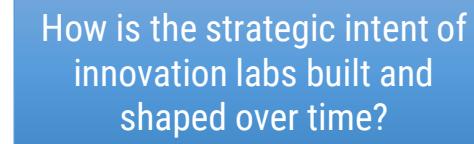
How is the strategic intent of innovation labs built and shaped over time?

Strategic Intent

- Proactive mode in strategy-making, a symbol of the **organization's will** about the future
  (Hamel & Prahalad, 2005)

- Creates a **creative tension** sparking competence development towards a desired performance

  (Hamel & Prahalad, 2005; Leonard-Barton, 1995, O'shannasy, 2016)

- A tool for creating **coherence among multiple intentions**
  (Gratton, 1994; Mantere & Sillence, 2005)

Use of Strategic Intent

1. By making it understandable

2. By following its unfolding in time

3. Intent is carried by people not institutions

(Gratton, 1994; Mantere & Sillence, 2005; O'shannasy, 2016)

A – Australian Health Association:

"A conviction that patients remain at the centre of all we do and seeks to achieve a positive, meaningful and sustainable impact on the health and well-being of our community"

B – South African Airline:

"'We Lift You Up', drives as an aspiration to lift people up in an inspiring, empowering, passionate and innovative way, to render a positive impact in the world."

C – University in Singapore:

"Creating a brighter future for life in the tropics world-wide through graduates and discoveries that make a difference."

A framework to depict the strategic intent of innovation labs

(Osorio et al., 2019)
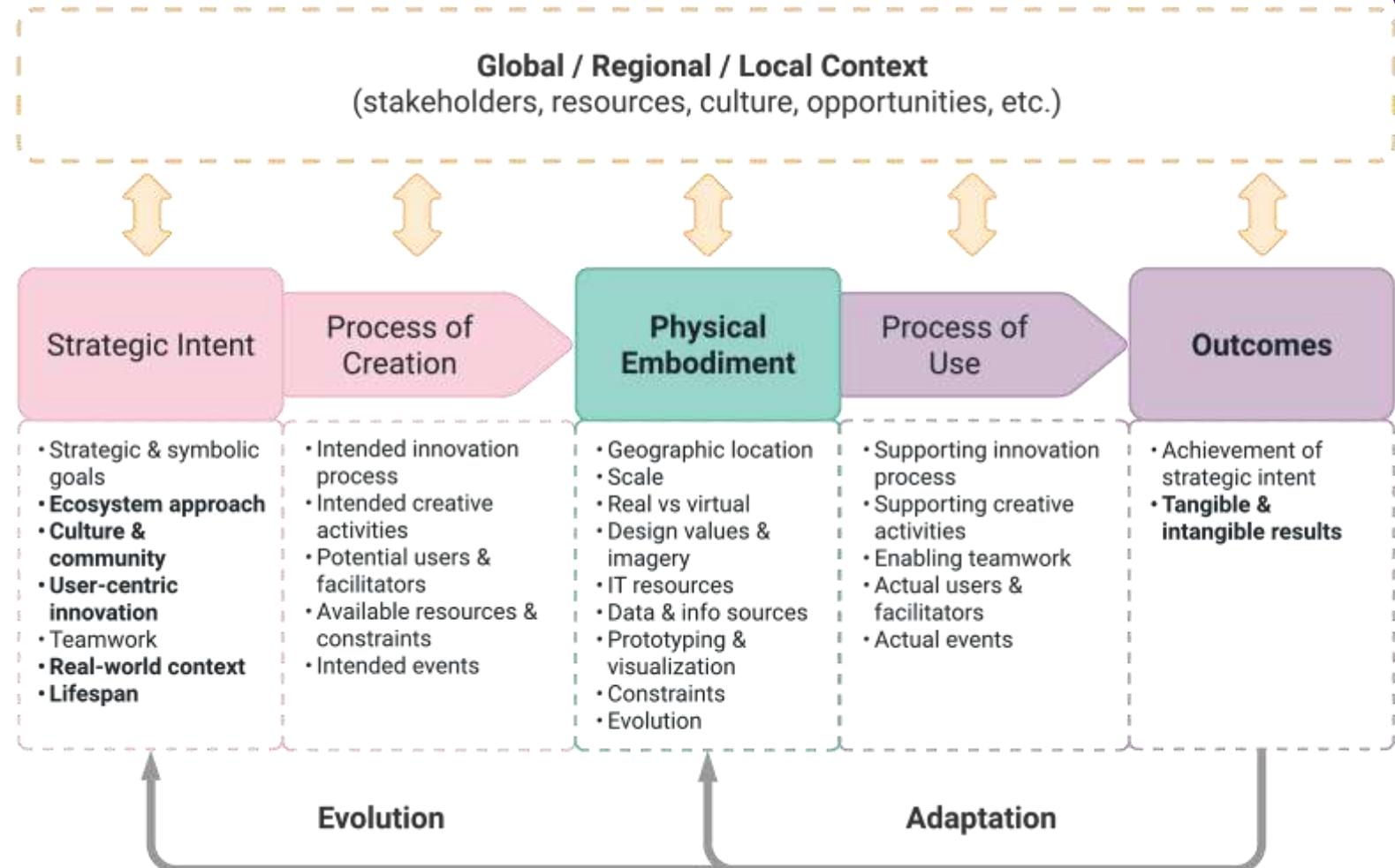
Analysis of your own innovation space

Analysis of an innovation space that is a leading reference in your field
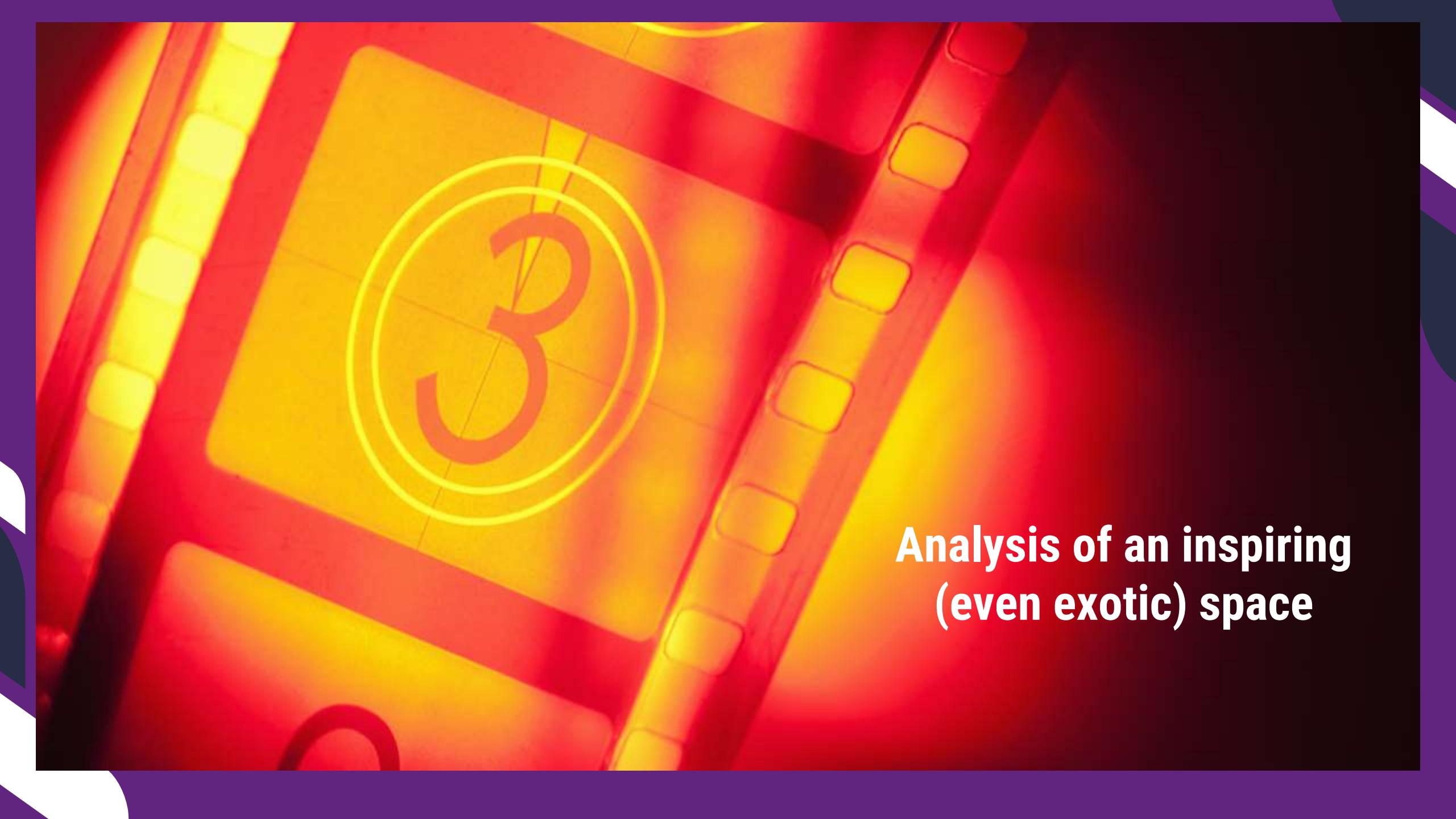
Analysis of an inspiring (even exotic) space

Draw your innovation space of tomorrow!

"Exotic case" – Source of inspiration (any sector or domain)

Vertical analysis

"The Benchmark" - (similar activities of same thematic focus)

Horizontal analysis

Your own case

Imagine: An alternative innovation space strategy to the one used by the case studies
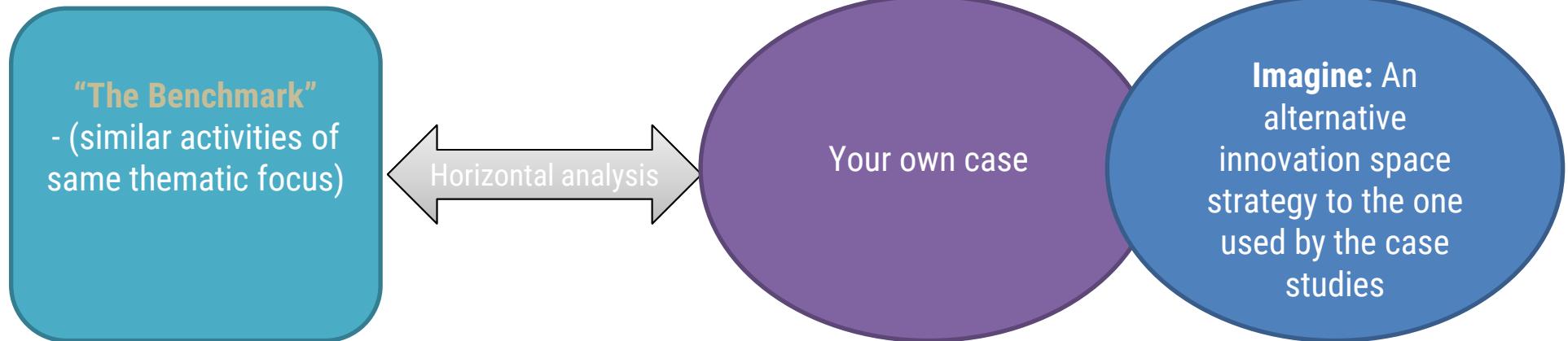
Be recursive and creative!

Conformation of CLIP Teams

Competence-based Role Model for Innovation Lab Teams

(Osorio Bustamante, 2021)
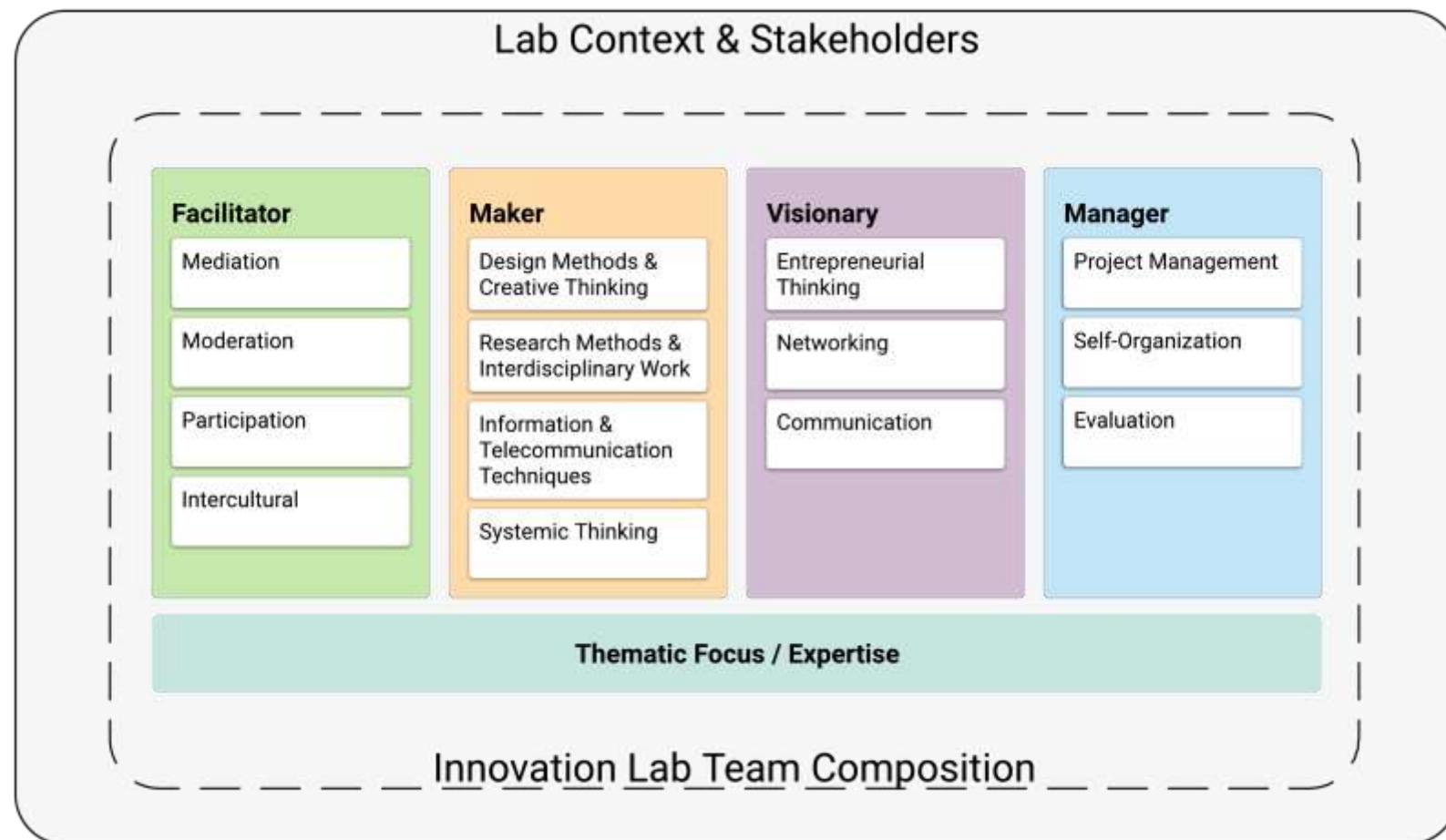
Facilitator

What can you expect from facilitators in your team?

- Design strategies, methods, and tools for **orienting the innovation process** through each project

- Provide guidance and mentoring to **stimulate professional and personal development** of project teams and participants

- Get people involved and encourage collaboration in every lab activity

- Act as **peacekeepers** when conflict emerges, maintaining focus on project objectives and common goals

- Ensure **intercultural inclusiveness** in all the lab projects or activities

Maker

What can you expect from makers in your team?

- **Understand needs and problems** through the combination of multiple research methods and settings

- Capture ideas, data, and any form of knowledge, restructure them and **propose novel concept solutions**

- **Help you to build** physical (and digital) representations of solutions on an iterative basis

- Propose alternatives to **address the complexity** of every problem and the systemic impact of each solution

Visionary

What can you expect from visionaries in your team?
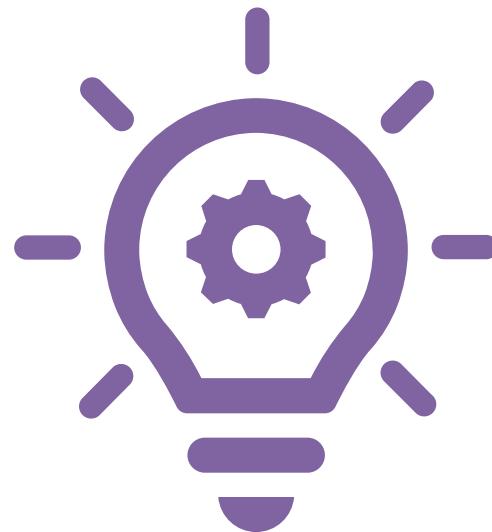
- Provide a constant **flow of ideas** and project opportunities for your lab

- Build **connections** with communities and stakeholders for establishing strong links between your lab, the university, and the territory

- Create an emotional connection with the people around the lab by communicating **compelling stories** from each project, event, success, or failure

- Go out and **find the opportunities** for your lab whether they are new alliances, funding options or showcase scenarios

Manager

What can you expect from managers in your team?
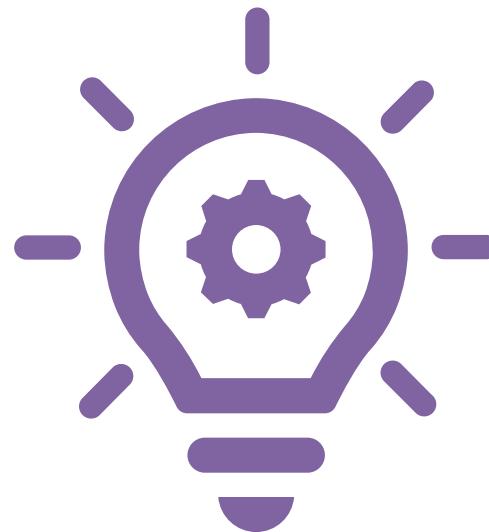
- Handle with **technical, financial, and legal issues** of the lab and its projects
- Contribute to project planning keeping the balance between visionary solutions and **achievable goals**
- Implement **monitoring and assessment** mechanisms to track the lab's evolution and communicate results
- Have a strong belief in themselves that helps them **make decisions** for the sustainability of the lab and its ecosystem

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