

CHALLENGING  
CONVENTIONAL  
THINKING

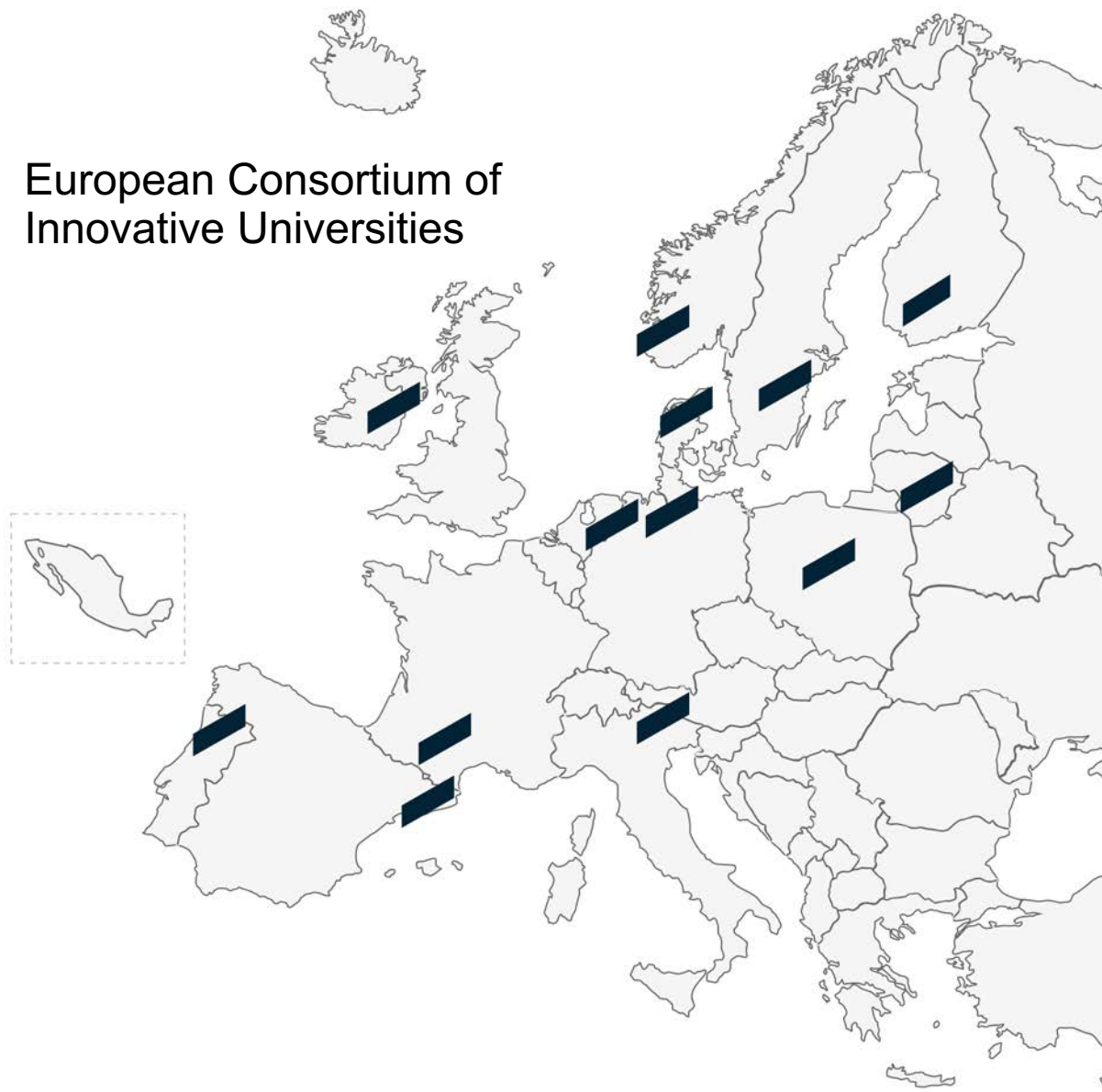


# Challenge-based learning and impact

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## European Consortium of Innovative Universities



UNIVERSITY  
OF TWENTE.



UNIVERSITY  
OF TRENTO



**UAB**  
Universitat Autònoma  
de Barcelona

GROUPE  
**INSA**

**U**S University  
of Stavanger

**li.u** LINKÖPING  
UNIVERSITY



**TUHH**  
Hamburg University of Technology

**DCU**  
Ollscoil Chathair  
Bhaile Átha Cliath  
Dublin City University

**TJ** Tampere University

**AALBORG UNIVERSITET**



**Tecnológico  
de Monterrey**

# ECIU Network

## Uniting Over

**298,000**  
STUDENTS

**46,688**  
STAFF incl. 27,182 Academic Staff/Researchers

**489**  
RESEARCH GROUPS

**147**  
FACULTIES

# ECIU

## Members

University of Twente (The Netherlands)

Aalborg University (Denmark)

Dublin City University (Ireland)

Hamburg University of Technology (Germany)

Kaunas University of Technology (Lithuania)

Linköping University (Sweden)

Tampere University (Finland)

Universitat Autònoma de Barcelona (Spain)

University of Aveiro (Portugal)

University of Stavanger (Norway)

University of Trento (Italy)

Institut National des Sciences Appliquées (France)

Lodz University of Technology (Poland)

TEC de Monterrey (Mexico)

# The European Universities Initiative



European Universities are transnational alliances that will become **the universities of the future**, revolutionising the quality and competitiveness of European higher education. In order to achieve this major step forward, the Commission is testing different cooperation models for European Universities.



## The alliances

- are based upon a co-envisioned long-term strategy focussed on sustainability and excellence
- **adopt a challenge-based approach according to which students, academics and external partners can cooperate in inter-disciplinary teams to tackle the biggest issues facing Europe today**
- offer **student-centred curricula** jointly delivered across inter-university campuses, where diverse student bodies can build their own programmes and experience mobility at all levels of study
- **21<sup>st</sup> century skill set:** creative thinking, inter-cultural communication, inter-professional learning, teamwork ...



**Societal Challenges** are the backbone of our initiative and are translated into our curriculum supported by challenge-based learning pedagogies

**PILOT FOCUS : SDG11**



# Challenge-based learning

# It's an inductive method!

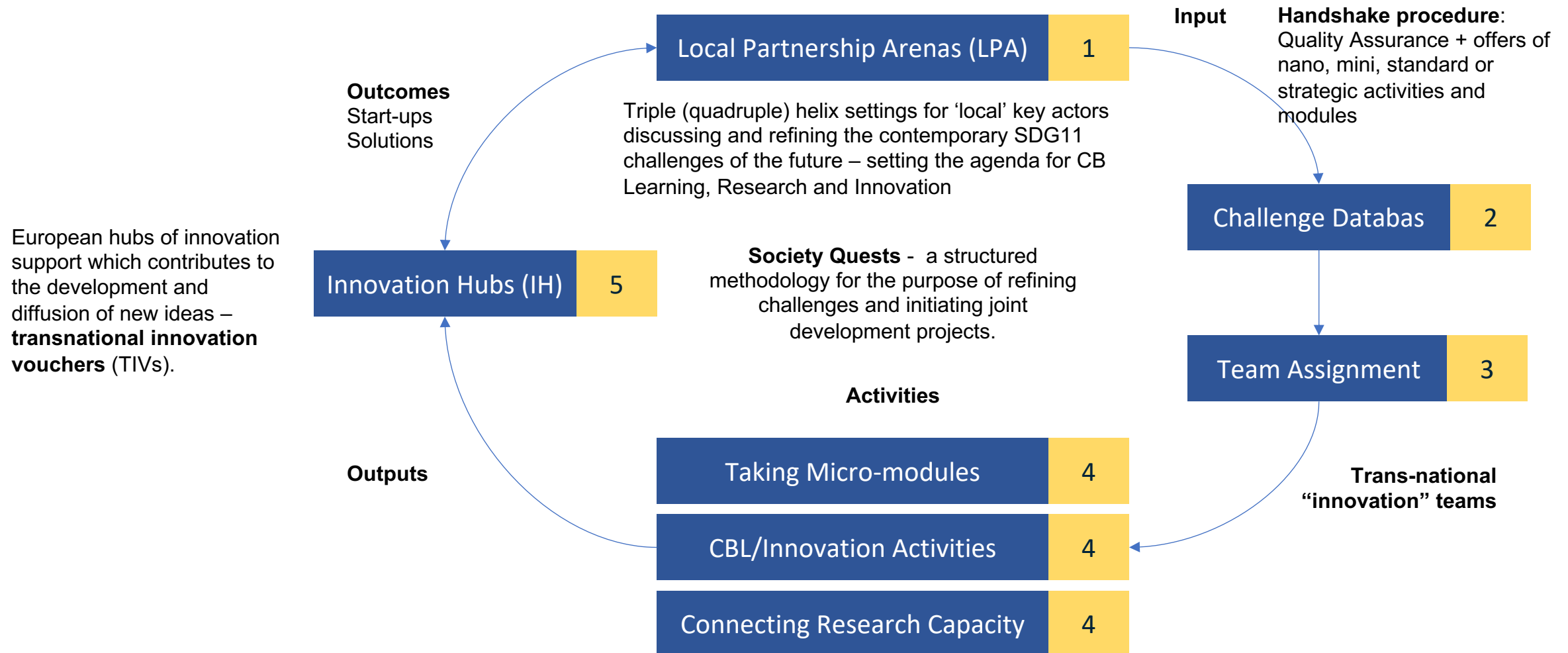
Prince & Felder (2006)

- Starts with challenges to be interpreted, questions to be answered, problems to be solved
- Student centred method – i.e. the knowledge is created by the student – not transferred by the teacher
- Includes active and collaborative learning

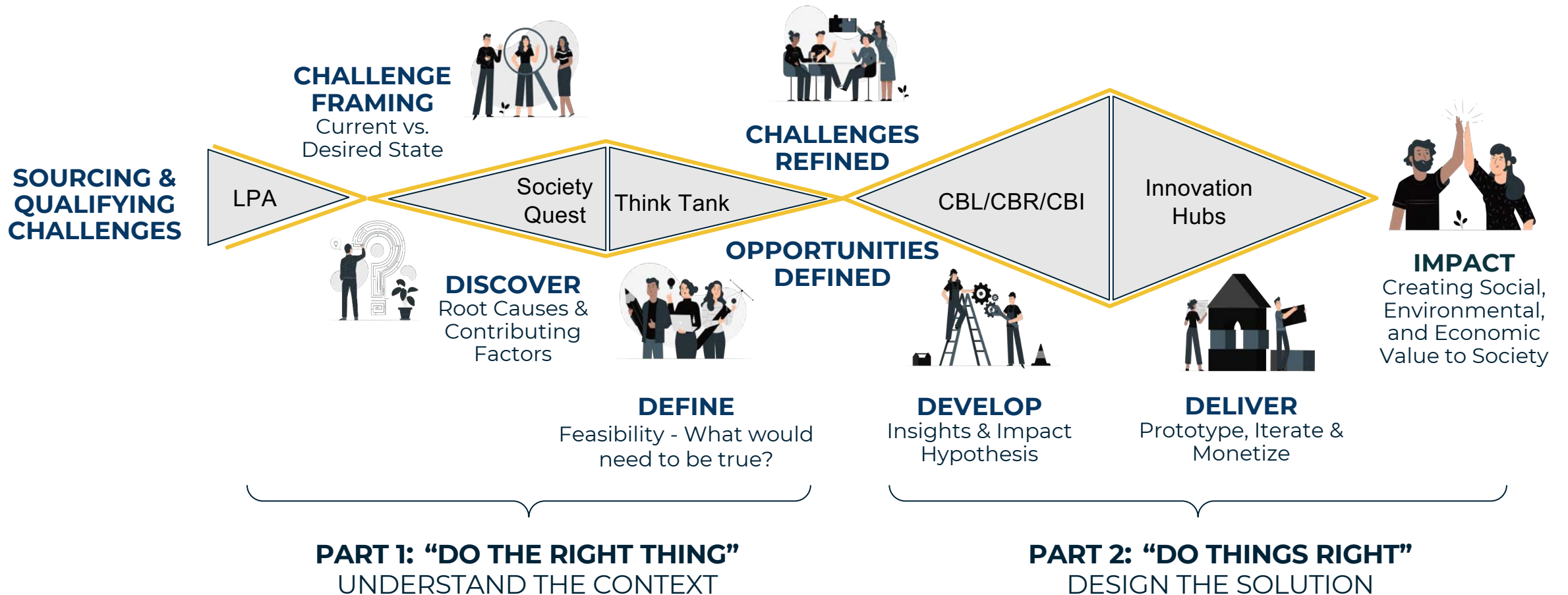
# CBL enhance...

- Innovative thinking abilities (Martin et al 2007)
- Improves interaction in the group (Mahoney et al 2012)
- Makes students more involved (Baloian, Nelson, et al. 2006)

# The Challenge-based Learning and Innovation Cycle



# Challenge-based Impact Process



**Learning  
Objectives**

**Enhance Social &  
Cultural Intelligence**

**Educate in  
Critical Thinking**

**Train in 21st  
Century Skills**

**Meet society's  
challenges**

## CHALLENGE (CROWD)SOURCING OPEN & ONLINE



<b>Objective</b>	<b>An open, inclusive and transparent process to surface local challenges</b>
<b>Actors</b>	<b>ECIU:</b> Coordinator, marketing dept, students <b>External:</b> Civil society, public sector, industry, community
<b>Input</b>	A simple online concept note template to facilitate a public call for challenges
<b>Activities</b>	<b>6 weeks:</b> Online open call promoted through external networks and university channels
<b>Desired Output</b>	A broad range of challenges identified and surfaced by different sectors of society
<b>Desired Outcome</b>	<ul style="list-style-type: none"> <li>- Raise awareness of local university's involvement in ECIU and the challenge-based learning approach</li> <li>- Enhance university reputation and deepen engagement with external stakeholders as the broader public becomes aware of the university's ambition to solve problems raised by the local community</li> <li>- Provide a platform for multiple voices within society to surface challenges that may have previously not been heard</li> </ul>

<div>TEMPLATE</div> <div>CHALLENGE STATEMENT</div>	
How might <u>(challenge champion)</u> <u>verb</u> <u>(desired outcome)</u> <u>by</u> <u>(limiting factor)</u> ?	
<div><b>BACKGROUND</b></div> <div><b>ABOUT THE CHALLENGE</b></div> <p>Context on the circumstances that have led to the challenge.</p> <div><b>ABOUT THE CHALLENGE CHAMPION</b></div> <p>Outlining the relationship the champion has to the challenge, what they can influence and what resources they could leverage.</p> <div><b>TARGET GROUPS</b></div> <p>Describing the different target groups and how they are involved in and affected by the challenge.</p>	<div><b>CURRENT STATE</b></div> <p><b>Quantify the need</b> Provide statistics and numbers to determine baselines, benchmarks and targets. <i>Format: Data. Graphs. Visualisations.</i></p> <p><b>Qualitative insights</b> Quotes from stakeholders / target groups who are/will be impacted illustrating how are they affected and what will/should change. <i>Format: Video. Personal Narrative. Testimonial.</i></p> <div><b>DESIRED STATE</b></div> <p>Potential for <b>impact</b> on individual and societal level. <i>Format: Vision</i></p> <div><b>RESOURCES</b></div> <p>What resources can be contributed? What needs to be sourced or explored. (Research, space, equipment, funds etc.)</p>

## SOCIETY QUESTS - MULTIPLE TEAMS, MULTIPLE CHALLENGES SESSION FLOW

Welcome & "who's in the room" energizer exercise	
Challenge Pitches	Challenge champion & community member summarises challenge & opportunity providing situational context (what contributing factors we should be aware of) and insights (what has been tried before, noting what worked, what didn't and why)
Panel Discussion	Moderated discussion with all challenge champs on stage discussing commonalities, potential for overlap and collaboration - identify if there are shared visions or root causes
Q&A	Audience questions with Challenge Champs & Community Members (captured in shared doc realtime and constantly updated throughout the day)
Lunch with themed tables	
Nano Challenge: From insight → idea	Nano challenge structure - As a multi-stakeholder team explore different angles of how you may want to address the challenge. Identify what you could contribute and what other stakeholders would need to be involved.
Presentation	Present 1-2 concepts you think should be explored further through CBL & CBR
Wrap Up	After hearing all the concepts, all stakeholders sign up to work on the challenges they want to take forward. Challenge coordinator notes the project teams for future follow up.
Optional networking dinner	



## DISCOVER - SOCIETY QUESTS ROOT CAUSES & CONTRIBUTING FACTORS

<b>Objective</b>	<b>Generate excitement, explore and expand challenge potential, catalyze collaboration opportunities between stakeholders</b>
<b>Actors</b>	<b>ECIU:</b> Coordinator, innovation hub rep, teamchrs, students <b>External:</b> Challenge champions, representatives from community, civil society, public sector, industry
<b>Input</b>	X number of Framed Challenges (with supporting data) which achieved the predetermined threshold of votes
<b>Activities</b>	<b>1 Day:</b> Nano Challenge with Pitch, Panel, Q&A, Presentation & Wrap Up
<b>Desired Output</b>	Generate a pool of potential high impact CBL & CBR projects to be reviewed, refined and built upon by Local Partnership Arena
<b>Desired Outcome</b>	Deeply defined potential challenge projects that are: <ul style="list-style-type: none"> <li>- Rooted in data</li> <li>- Humanized through personal narrative</li> <li>- Contextualised through root causes &amp; contributing factors</li> <li>- Reinforced/supported by identified stakeholders and resources</li> </ul>

# A good challenge is...

- Open, by means of that it could be adapted by the students to fit the group
- Searching for “a” solution rather than “the” solution
- Challenge providers takes the role of a “speaking partner” rather than being a customer



# Join forces and create real impact

Welcome to the ECIU University Challenge platform!

The ECIU University is a European university where learners, teachers and researchers cooperate with society and businesses to solve real-life challenges. Together, we create, test and evaluate a whole new educational pedagogy – challenge based learning.

Learn more about the [ECIU University](#).

Real-life challenges are worth solving because of economic or societal leverage, they also provide a stimulating environment for in depth learning, experimenting with problem-solving skills and innovative competences to develop practical solutions.

ECIU University provides the opportunity for challenge-based learning in a multidisciplinary international setting, imagine the possibilities!

## Engage in solving challenges

- Work in multidisciplinary and international teams.
- Engage with business companies and societal partners across Europe.
- Tackle local, national and global problems with a help of a novel, challenge-based learning model.

## Join micro-modules

- Fill in the skill and knowledge gap in a particular area, for example, energy and sustainability, circular economy.
- Develop transversal skills, for example, intercultural communication.
- Learn foreign languages.



Open for application

### Circular economy for SME in Norrköping

Create opportunities for small to medium enterprise (SME) in Norrköping to work with circular economy, overcoming the obstacles with not knowing how to benefit for other SME to create circular production chains....

RESPONSIBLE CONSUMPTION AND PRODUCTION, INDUSTRY, INNOVATION, AND INFRASTRUCTURE, SUSTAINABLE CITIES AND COMMUNITIES



Open for application

### Civil Rights Defenders

Civil Rights Defenders is an international human rights organisation that defends people's civil and political rights. Our guiding principle is the importance of strong local human rights actors and we partner with an...

REDUCING INEQUALITY, ZERO HUNGER, GOOD HEALTH AND WELL-BEING, QUALITY EDUCATION, NO POVERTY, GENDER EQUALITY, SUSTAINABLE CITIES AND COMMUNITIES, PEACE, JUSTICE, AND STRONG INSTITUTIONS, DECENT WORK AND ECONOMIC GROWTH



Open for application

### Digital Business Model for Workwear Apparel

Henmark Apparel AB develop functional clothing focusing on comfort, quality and longevity. Using digital sales channels, the company can cut out the expensive middleman and instead spend more money...

RESPONSIBLE CONSUMPTION AND PRODUCTION, DECENT WORK AND ECONOMIC GROWTH

# ECIU Challenge platform

- On-line <https://challenges.eciu.org>

- In total 160 challenges:

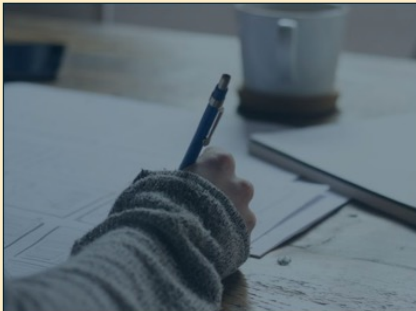
40% private (80% SMEs)

40% public (municipalities, regions)

20% NGOs



## Choose a micro-module that intrigues you



Coming soon 15 ECTS

### Sustainable Development in the Global Context - 4Z006

This course focuses on the question of how the international and global flows of resources, trade, materials and goods have developed, particularly during the post-war period, as well as on how the political and...



Coming soon 7 ECTS

### Intensive Beginner's Course in Swedish for Exchange Students, level A1-799G47

This three-week intensive course is intended for exchange students who wish to gain an introduction to the Swedish language. The aim of the course is to give a short introduction to Swedish everyday life and...



Coming soon 7 ECTS

### Recent Trends in Strategic Urban and Regional Planning – Urbanisation and globalisation - 709A04

The course addresses large-scale trends of urbanisation and globalisation from a sustainable urban and regional planning perspective. Theoretical and empirical approaches are applied to analyse the...

# ECIU micro-modules

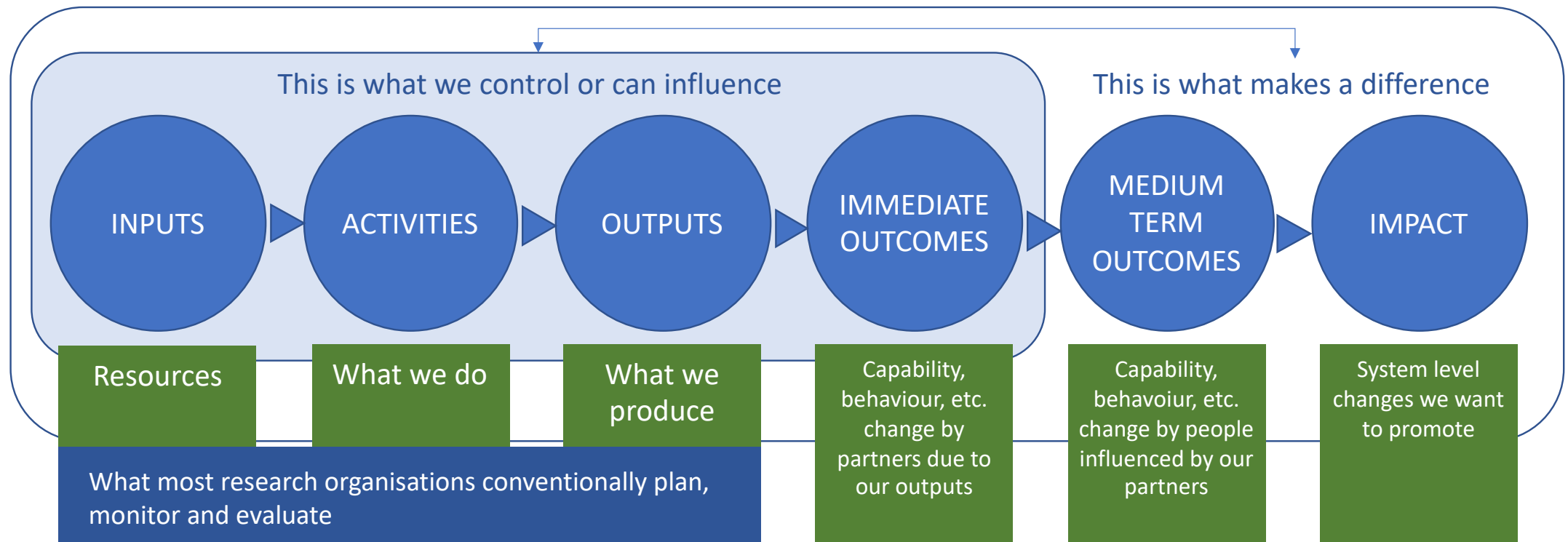
- On-line <https://challenges.eciu.org>
- In total short learning 150 modules, micro-credentials for life-long learners
- Modules connected to challenges

# Impact Management



Impact statement

Participation: Who we need to reach across the various parts of the pathway to make a difference



## Impact Case Study

# InGenious East Sweden

- Ranked as excellent by the Swedish Innovation Agency, Vinnova
- Listed by OECD and the Worldbank as a best practice for innovation policy-makers globally
- 140 project with a total of 800 students since 2013

*"Our world is changing so fast, therefore we want to meet the students, those we call digital natives. They can find new applications because they see the world in a different way."*

[Ronald Ingman, Director, Ericsson]

*"Through InGenious I discovered an entrepreneurial spirit within myself – which I never thought I had. I learned to work with people from different disciplines and cultures, with diverse approaches and understandings – making ideas grow!"*

[Eni Iduozee, Student]



**ECIU** University



## Results

**78 %**

of the solutions  
are licenced back  
to the companies

**50 %**

of the students will  
be employed by  
the companies

**15 %**

of the students  
will start their  
own business

**50 %**

of the students  
will remain in  
the region





The ECIU University is an EU-funded initiative that creates a ground-breaking and innovative educational model on a European scale.

[www.eciu.org](http://www.eciu.org)



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Erasmus+ Programme  
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