# Challenge Based Innovation (CBI)

CERN Ideas

ESADE Business School

IED Barcelona Escola Superior de Disseny

UPC Universitat Politècnica de Catalunya BarcelonaTech

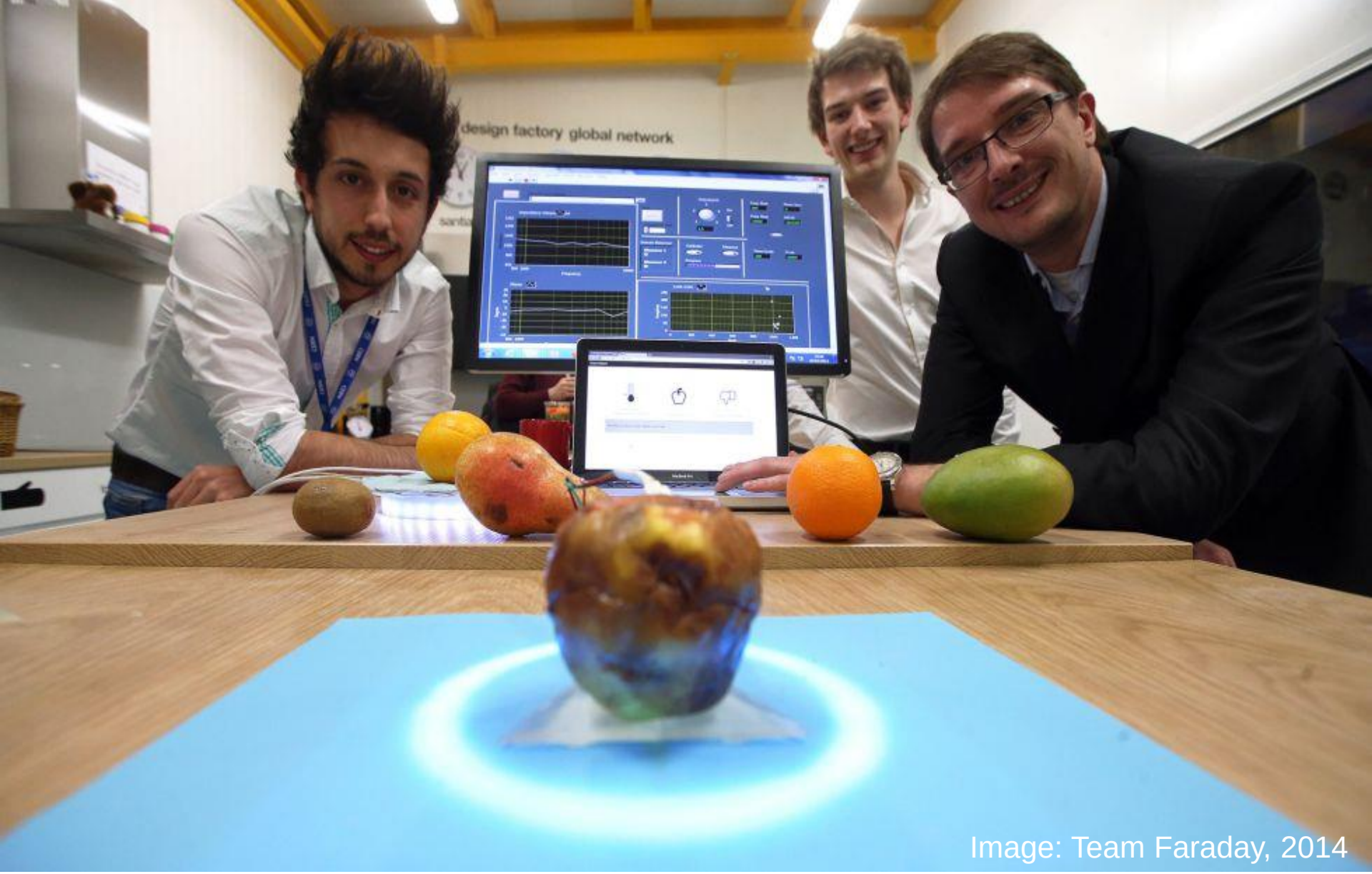
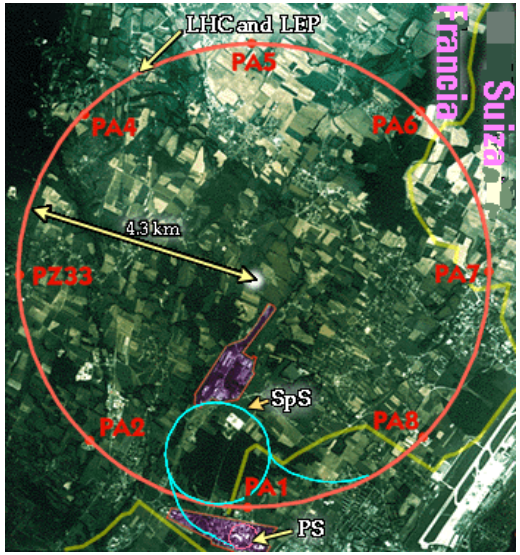
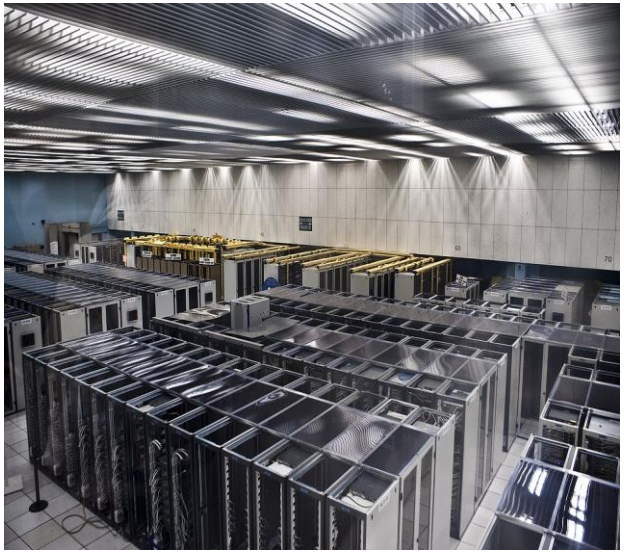


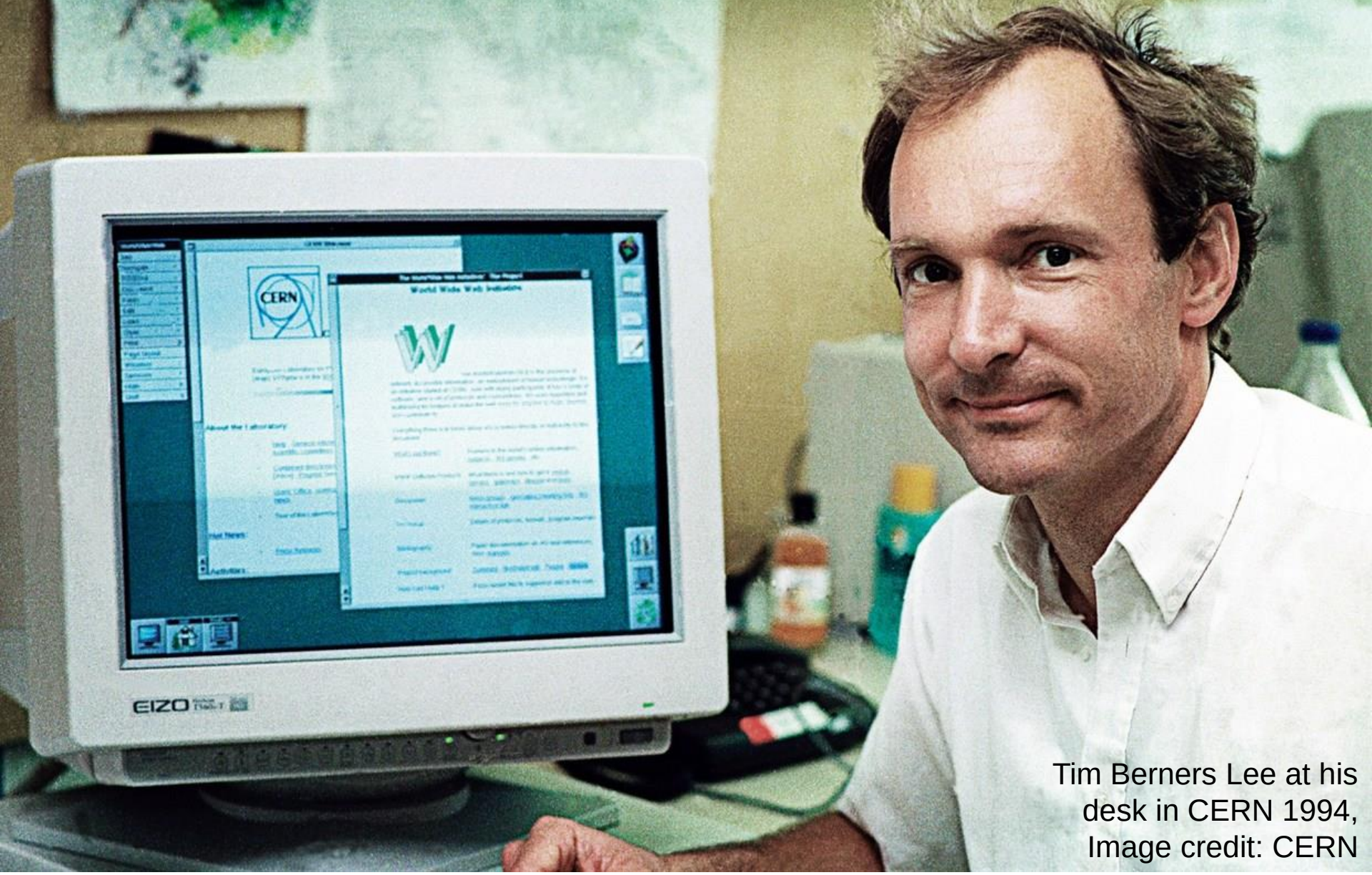

Image: Team Faraday, 2014

A project based course where multidisciplinary teams tackle challenges facing the society and search for novel applications for technologies developed at CERN.

# Challenge based innovation @ CERN







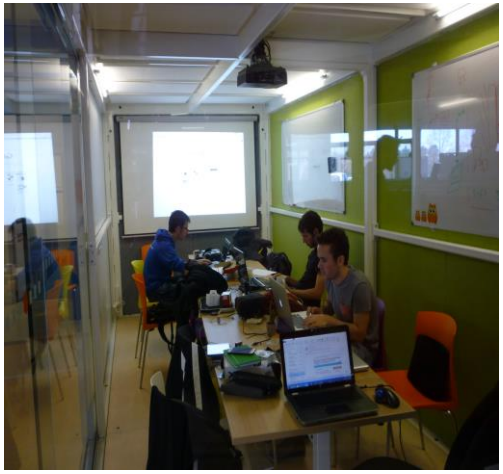

Tim Berners Lee at his desk in CERN 1994, Image credit: CERN

CERN spin-offs: www, medical imaging, high efficiency solar panels

# Challenge based innovation @ CERN IdeaSquare

CERN

Ideas

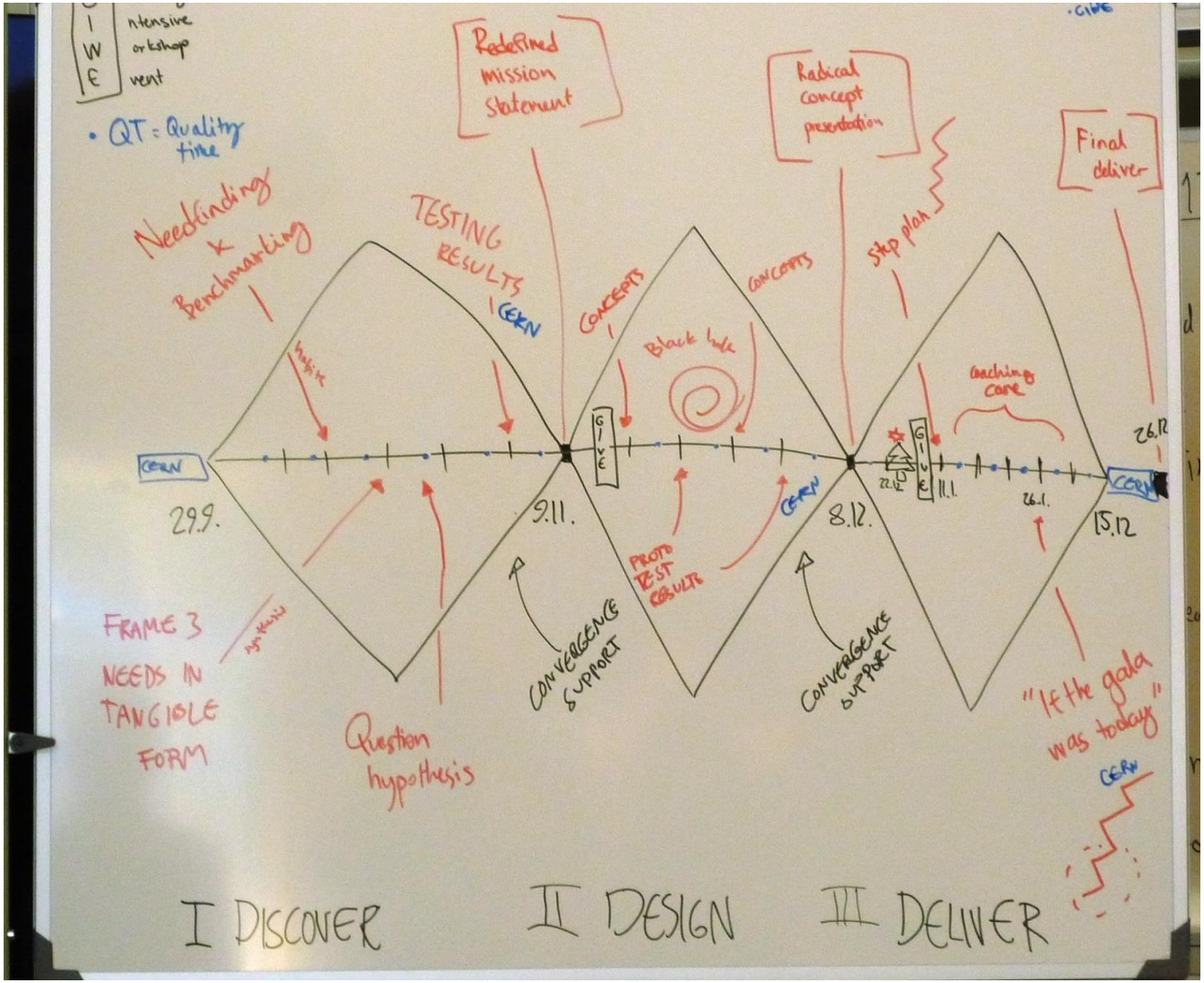


# Methodology: Design Thinking approach

1.- Needfinding (discover)

2.- Ideation (Solution design)

3.- Implementation, proof of concept (deliver)



**Aided movement** A skirt with a system that helps women with osteoporosis to reduce the hip’s bones break in case of falling.

## Challenges / CBI 14-15 / CBI 15-16 / CBI 16-17 / CBI 17-18 / CBI 18-19

**See:** http://www.cbi-course.com/

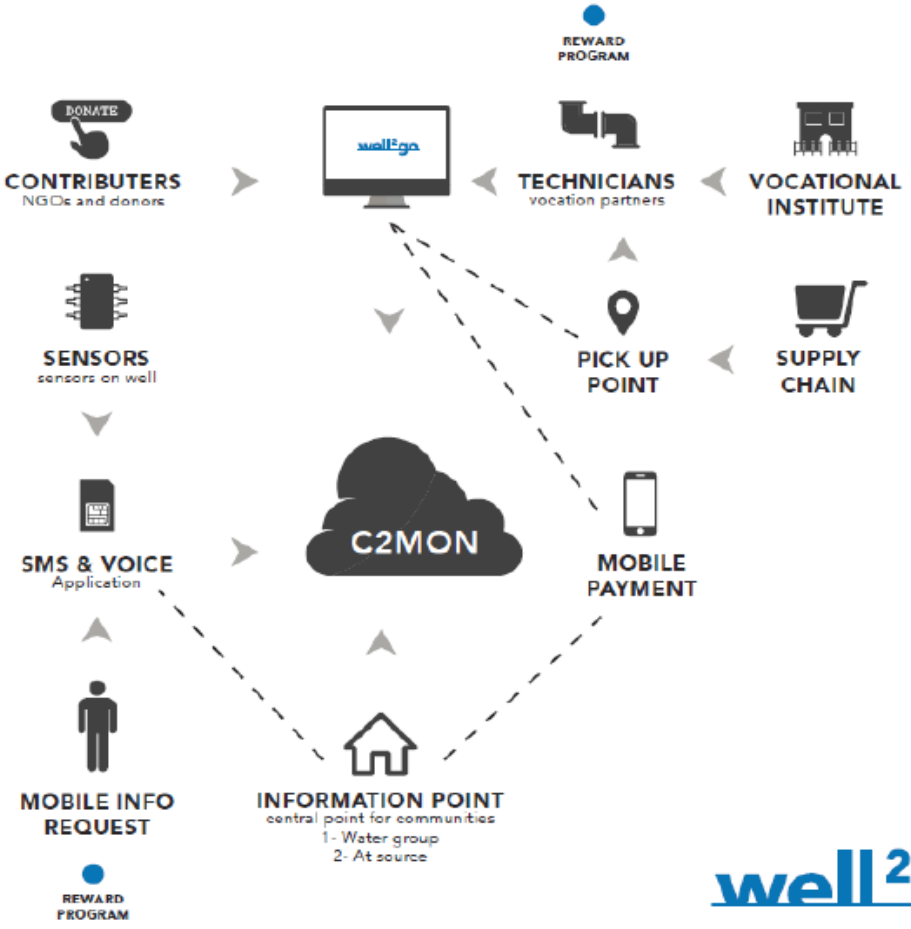
## Challenges / CBI 15-16

- **Creating a literate world:** How might we significantly reduce child and youth illiteracy at scale in developing countries with the use of technology?
- **Water safety:** How might we improve public health by providing safe access to water?
- **European labour mobility:** How might we increase labour mobility within EU by supporting the workers with useful and actionable information, drawn from big data?
- **Food safety in home delivery:** How might we home deliver food in a new way that maintains the food at a selected temperature, ensuring its safety?

•**Water safety: Well2Go.  78% of wells not fully working**

**- sensor + sms-based network to identify failing wells**

**- platform to manage and finance wells repairing**



well²go

## Challenge examples / CBI 16-17 / CBI 17-18

- **Integration of People with Intellectual and Developmental Disabilities into Society**
- **Better Shelter 2.0. Improvement of quality of life of people at refugee camps**
- **Smart Maintenance for Industry 4.0**
- **Immersive Technologies for Training Activities on Emergency Sanitary Missions**
- **Operational Methods for Radiation inspection**

- Disruptive solutions
- Solutions biased towards ICT

## PROPOSALs FOR CBI since 2018

# Challenge Based Innovation
# for the UN Sustainable Development Goals (SDGs)

Image: Team Penrose, 2015

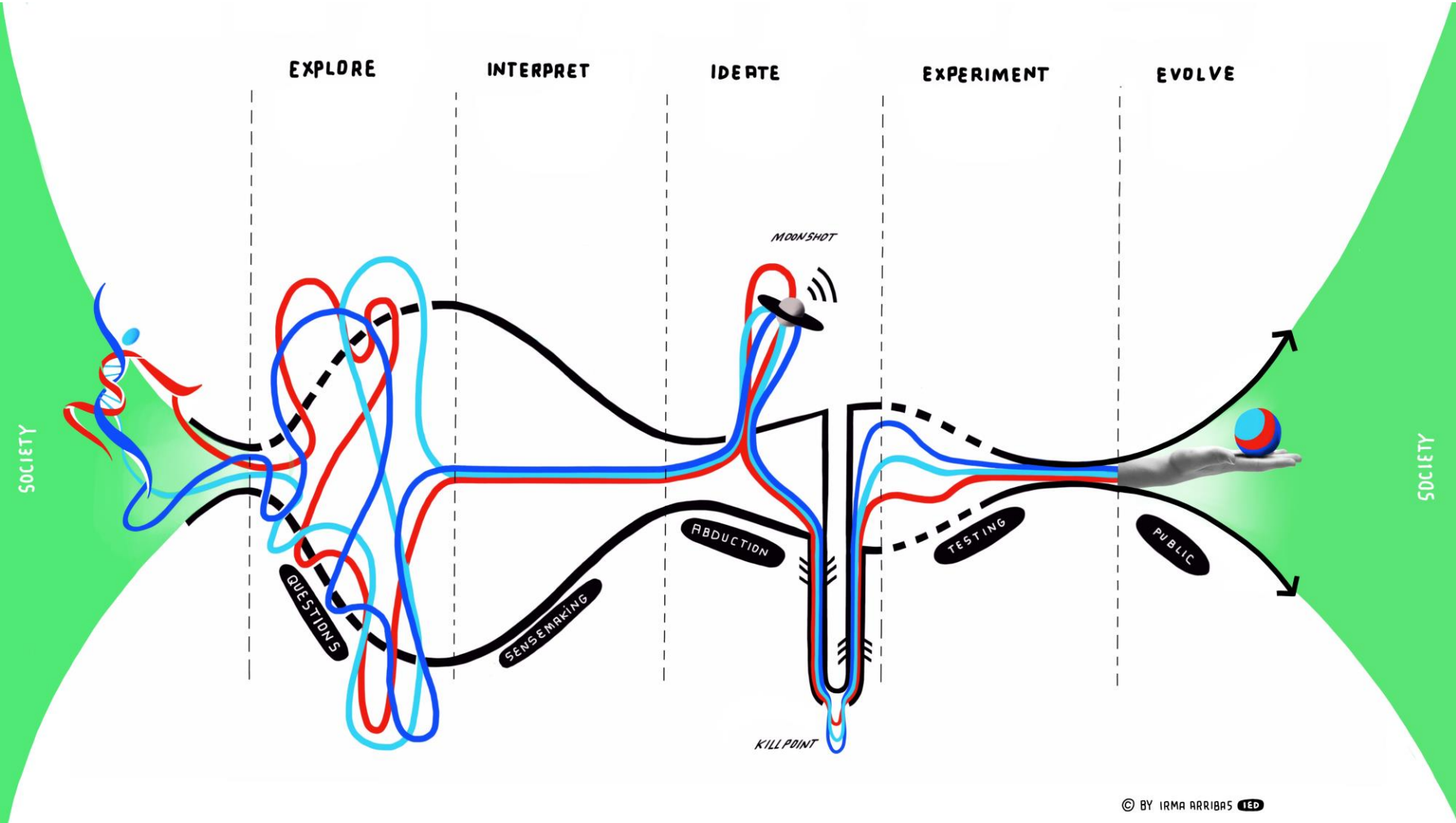
Multidisciplinary teams, students from ESADE, UPC, IED.

FusionPoint

ESADE
UNIVERSITAT RAMON LLULL

UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

IED
Barcelona
Escola Superior de Disseny

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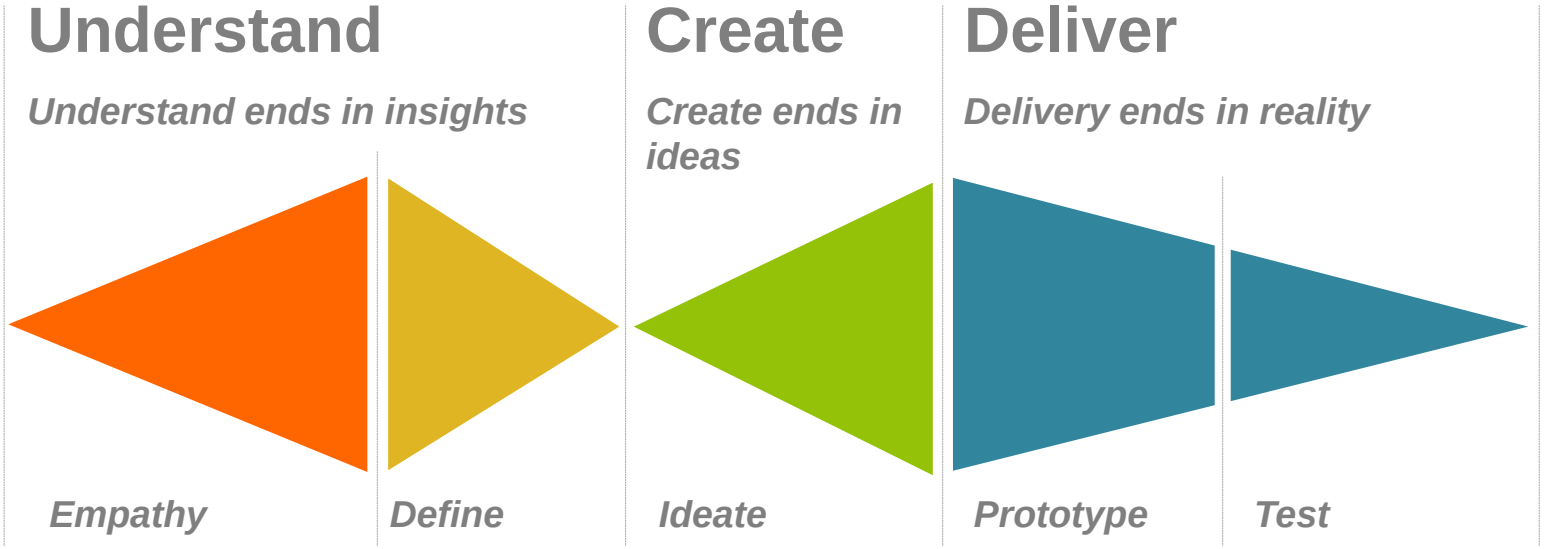
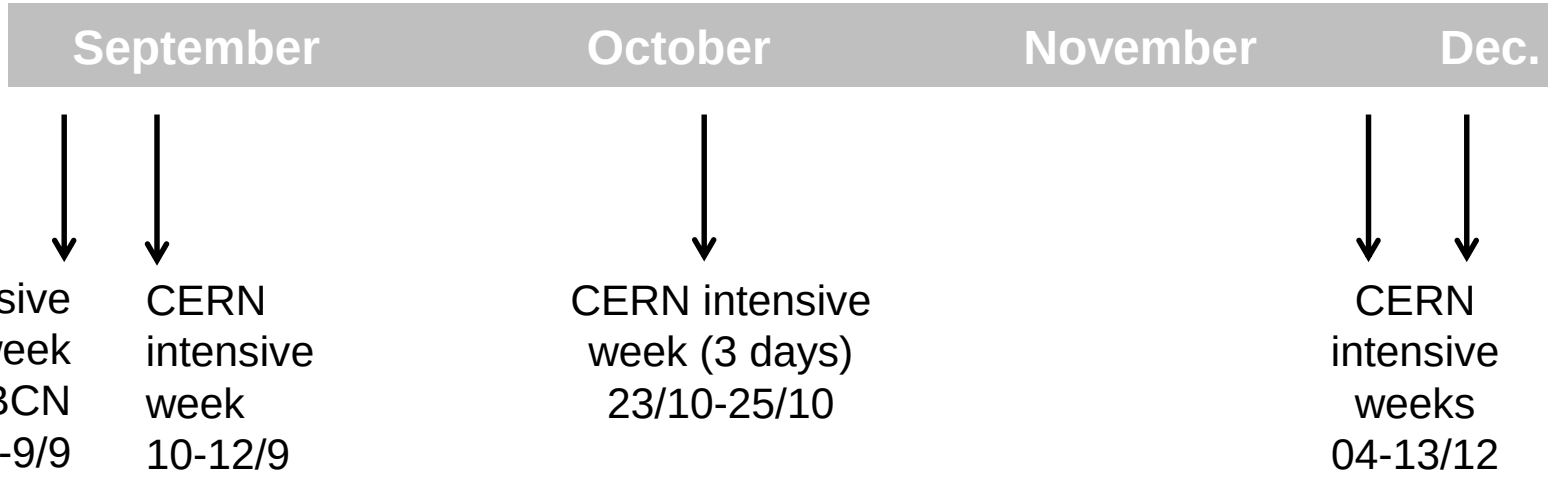


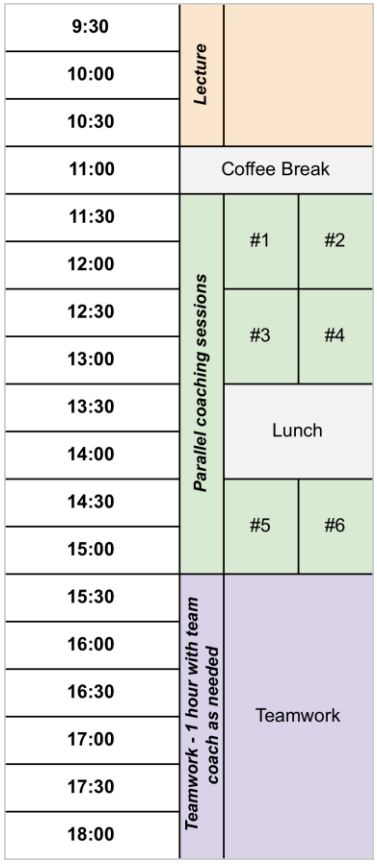




Preliminary Schedule

**4/9** ← Weekly teamwork & CBI-day (thursday) → **13/12**

Weekly CBI day (Thursday)

09:30 LGM
10:00 Knowledge Pill
11:30 Coffee Break
11:45 Coaching sessions 1-2
12:30 Coaching sessions 3-4
13:15 Lunch Break
14:30 Coaching sessions 5-6
15:15 Coaching sessions 7-8
16:00 Teamwork



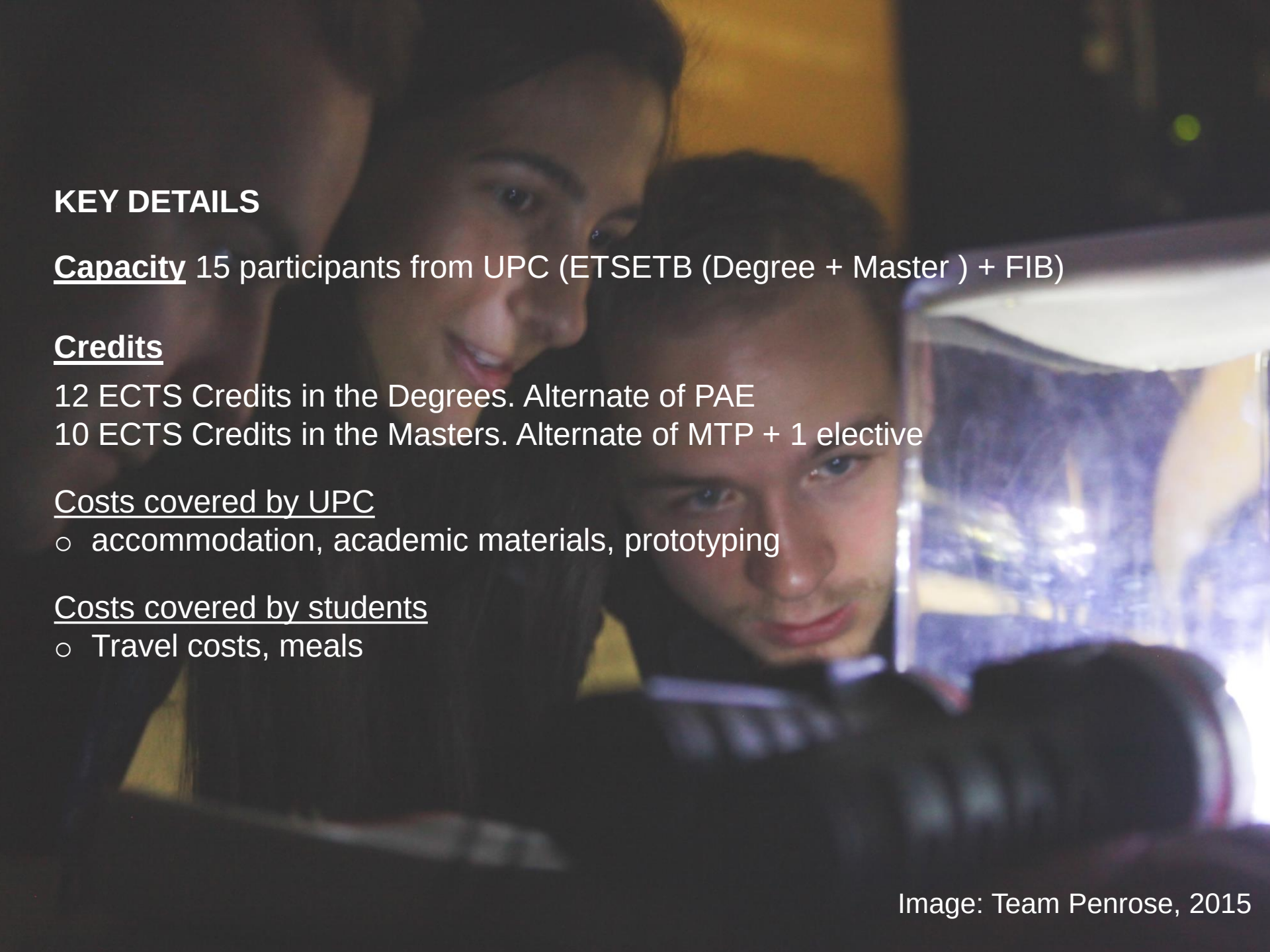

*"Knowledge Pills"*

*Coaching sessions*

- 1 mentor per team
- feedback from 3 coaches/fields

*Teamwork*

- 8 projects
- 5-6 members/p
- 3 schools



**KEY DETAILS**

**Capacity** 15 participants from UPC (ETSETB (Degree + Master ) + FIB)

**Credits**

12 ECTS Credits in the Degrees. Alternate of PAE
10 ECTS Credits in the Masters. Alternate of MTP + 1 elective

Costs covered by UPC

- accommodation, academic materials, prototyping

Costs covered by students

- Travel costs, meals

Image: Team Penrose, 2015

# Teaching

The home universities provide local teaching and weekly coaching sessions. During the periods developed at CERN, IdeaSquare will support the teaching team.

Local teaching & coaching includes sessions from three disciplines:

**Business:** ESADE
**Design:** IED
**Engineering:** UPC

## Students' profile

Distributed teams with students from

BARCELONA (~45 students)

. ESADE Business School (15 students)

. Istituto Europeo di Design (IED) (15 students)

. Universitat Politècnica de Catalunya (UPC) (15 students)

**Thank you for your interest! We will be waiting for your applications!**

**E-mail to ramon.bragos@upc.edu before May 25, 2019**

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