



# Challenge Based Innovation (CBI)



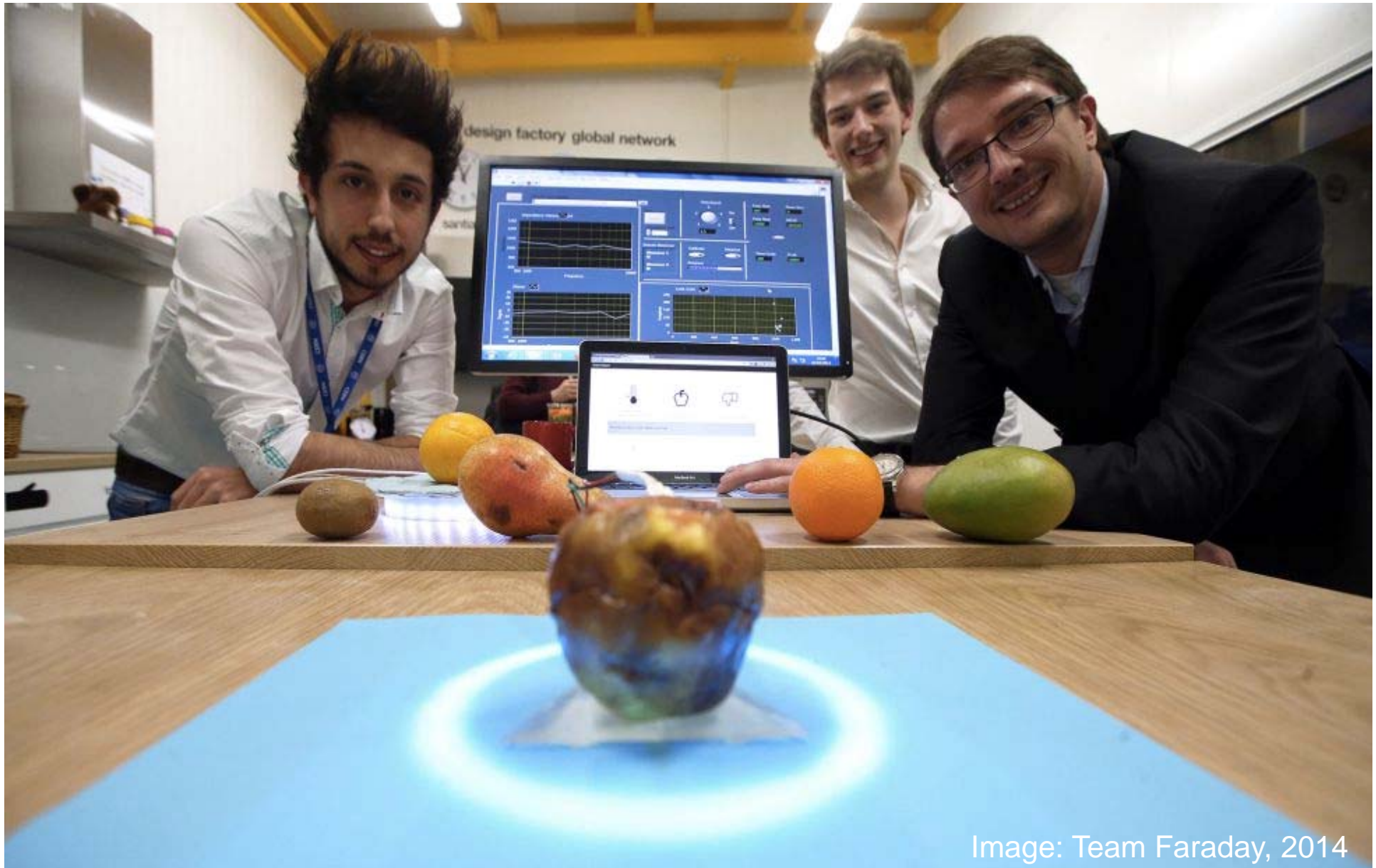
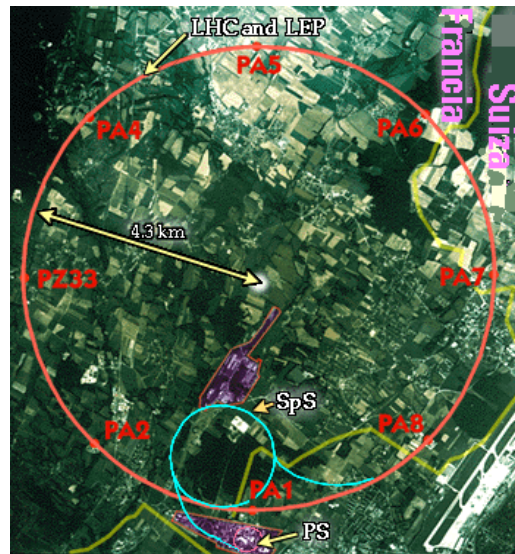
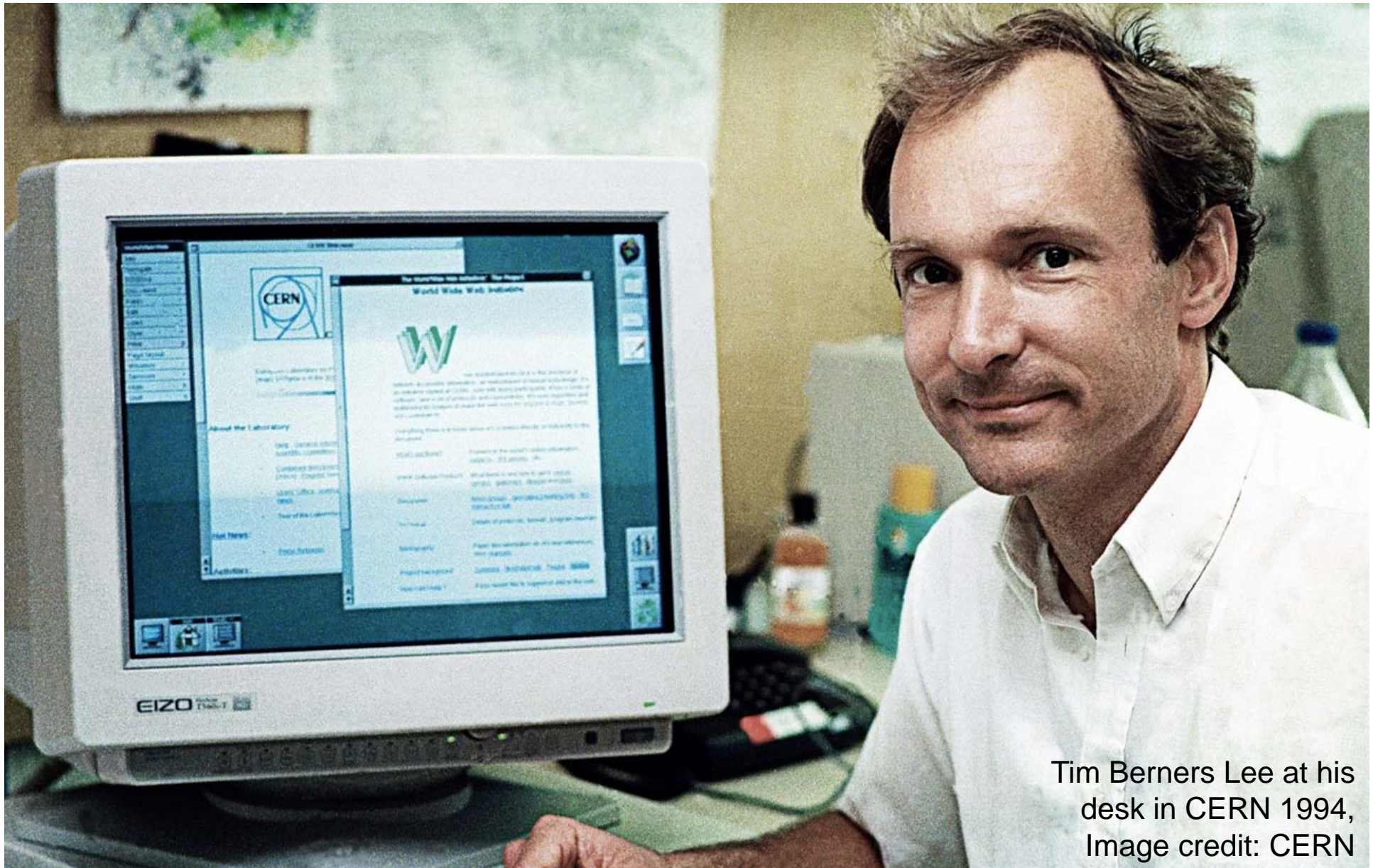


Image: Team Faraday, 2014

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



Idea<sup>s</sup>

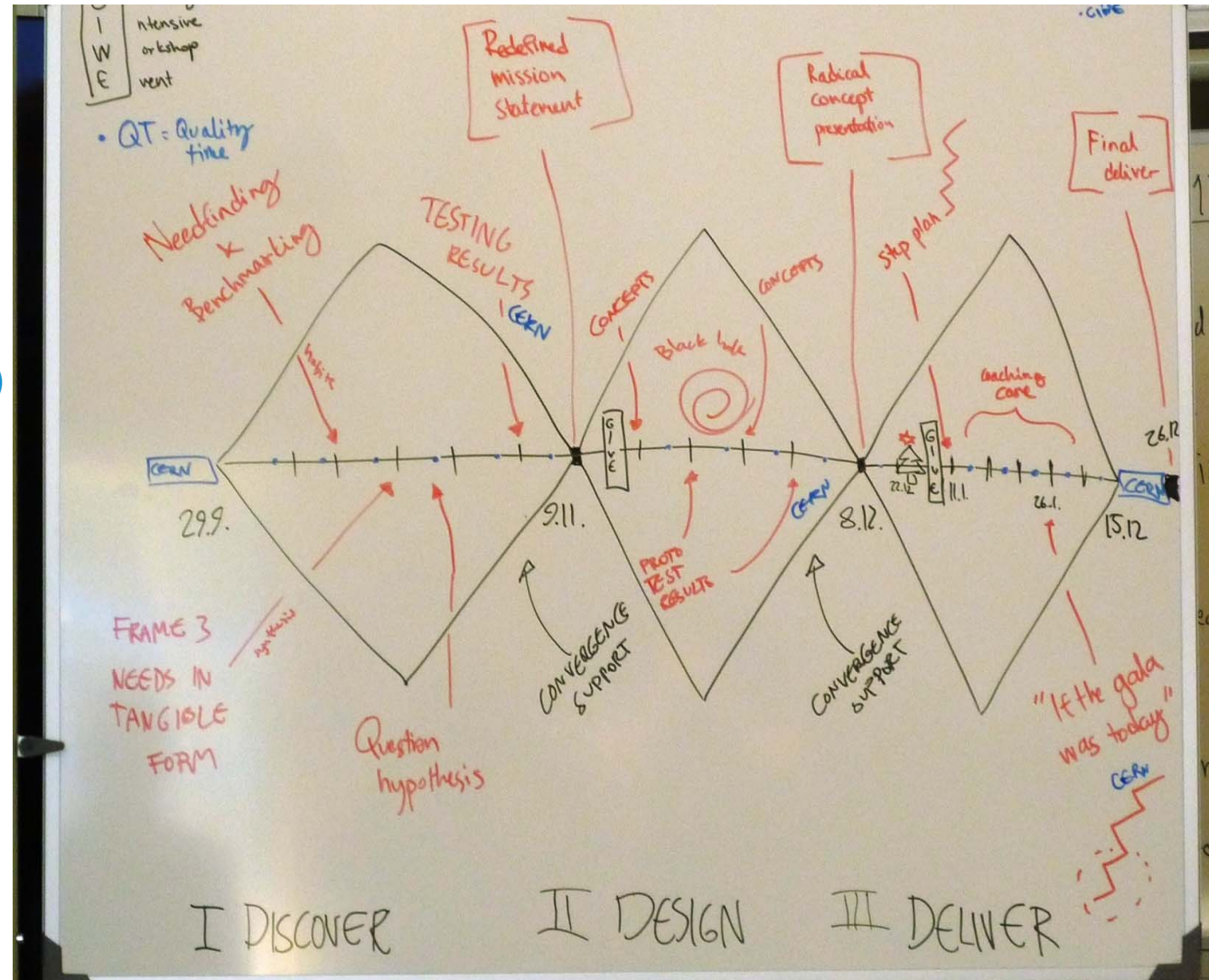


# Methodology: Design Thinking approach

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

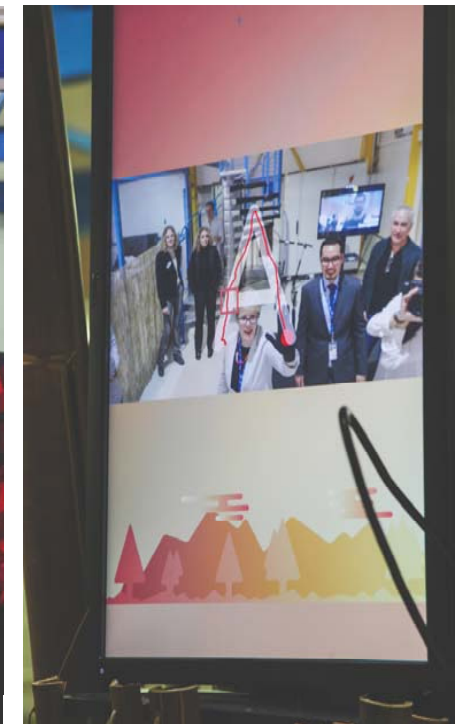
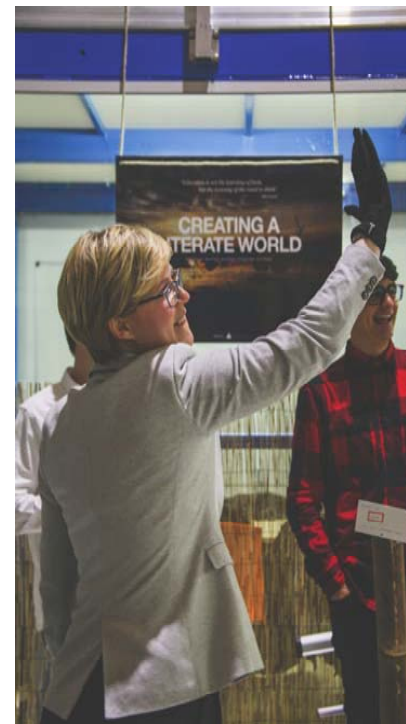
**See:** <http://www.cbi-course.com/>

Challenges / CBI 15-16

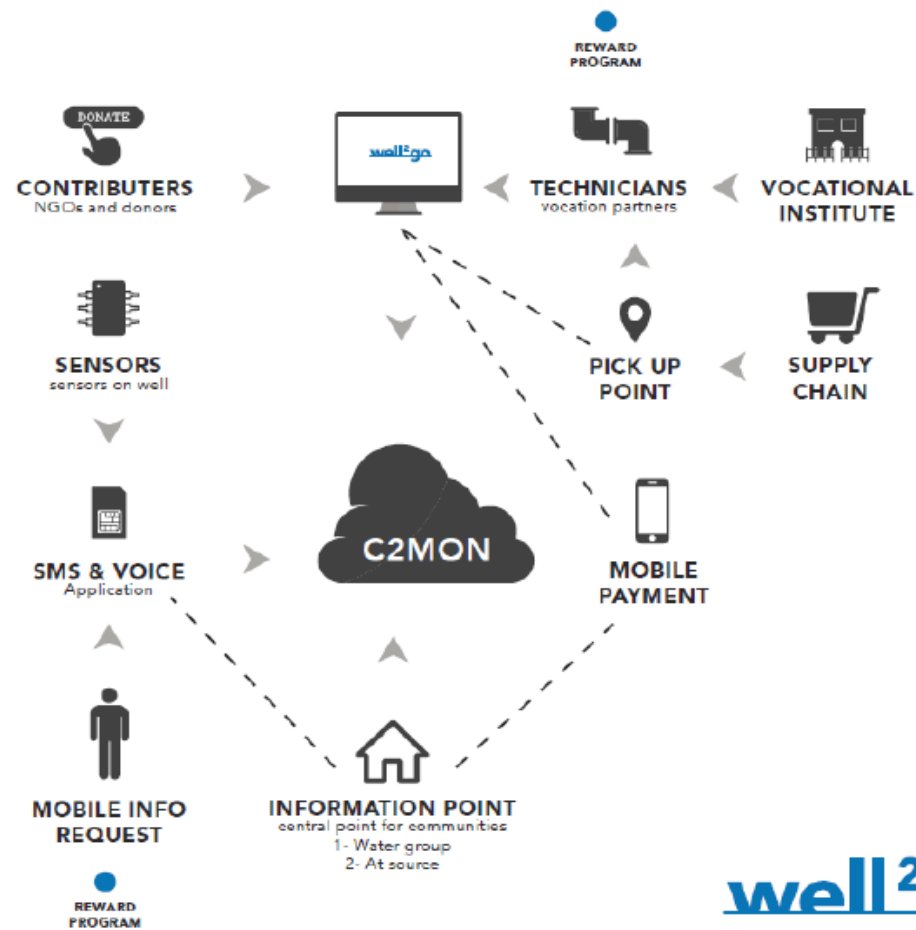
- **Creating a literate world:** How might we significantly reduce child and youth illiteracy at scale in developing countries with the use of technology?
- **Water safety:** How might we improve public health by providing safe access to water?
- **European labour mobility:** How might we increase labour 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?

- **Creating a literate world: Bam-Boo**

- **Knowledge kiosk + interactive contents**
- **Use of free time + community building**



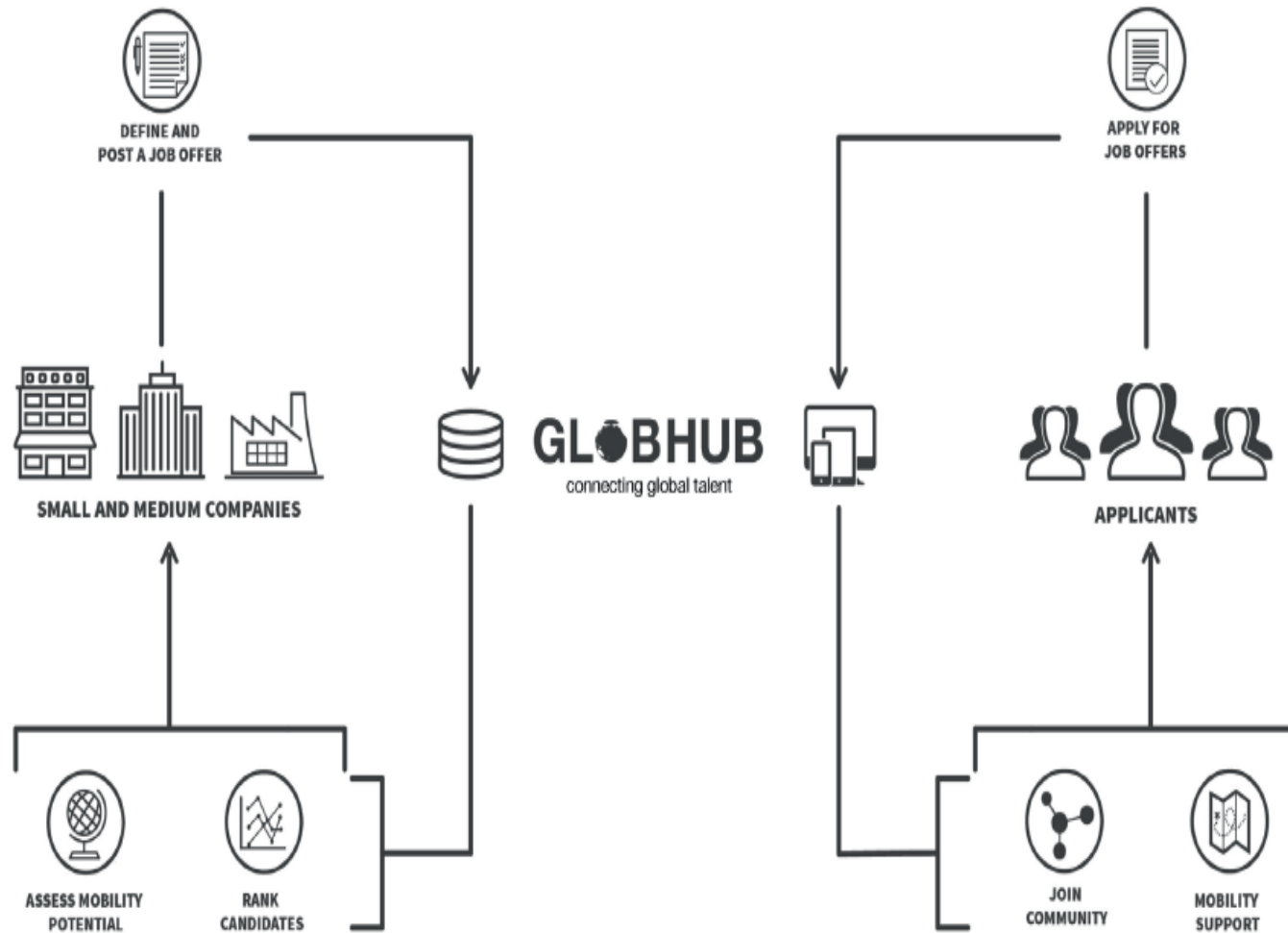
- **Water safety: Well2Go. 78% of wells not fully working**
  - **sensor + sms-based network to identify failing wells**
  - **platform to manage and finance wells repairing**



**well<sup>2</sup>go**

- **European labour mobility: GlobHub**

- **Platform to match job seekers and employers at European level using advanced algorithms**

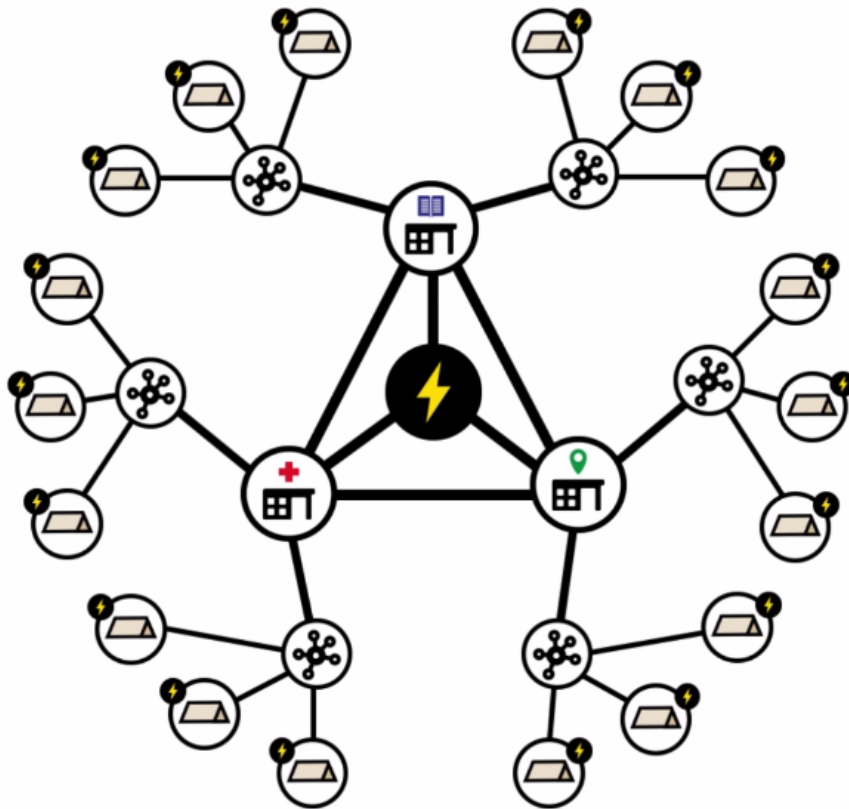


## Challenge examples / CBI 16-17 / CBI 17-18

- **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

## Challenges / CBI 16-17

- **Better Shelter 2.0. Improvement of quality of life of people at refugee camps:**
  - **ElecTree, smart energy distribution for shelters**



ELEC|TREE



## PROPOSAL FOR CBI 2018

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



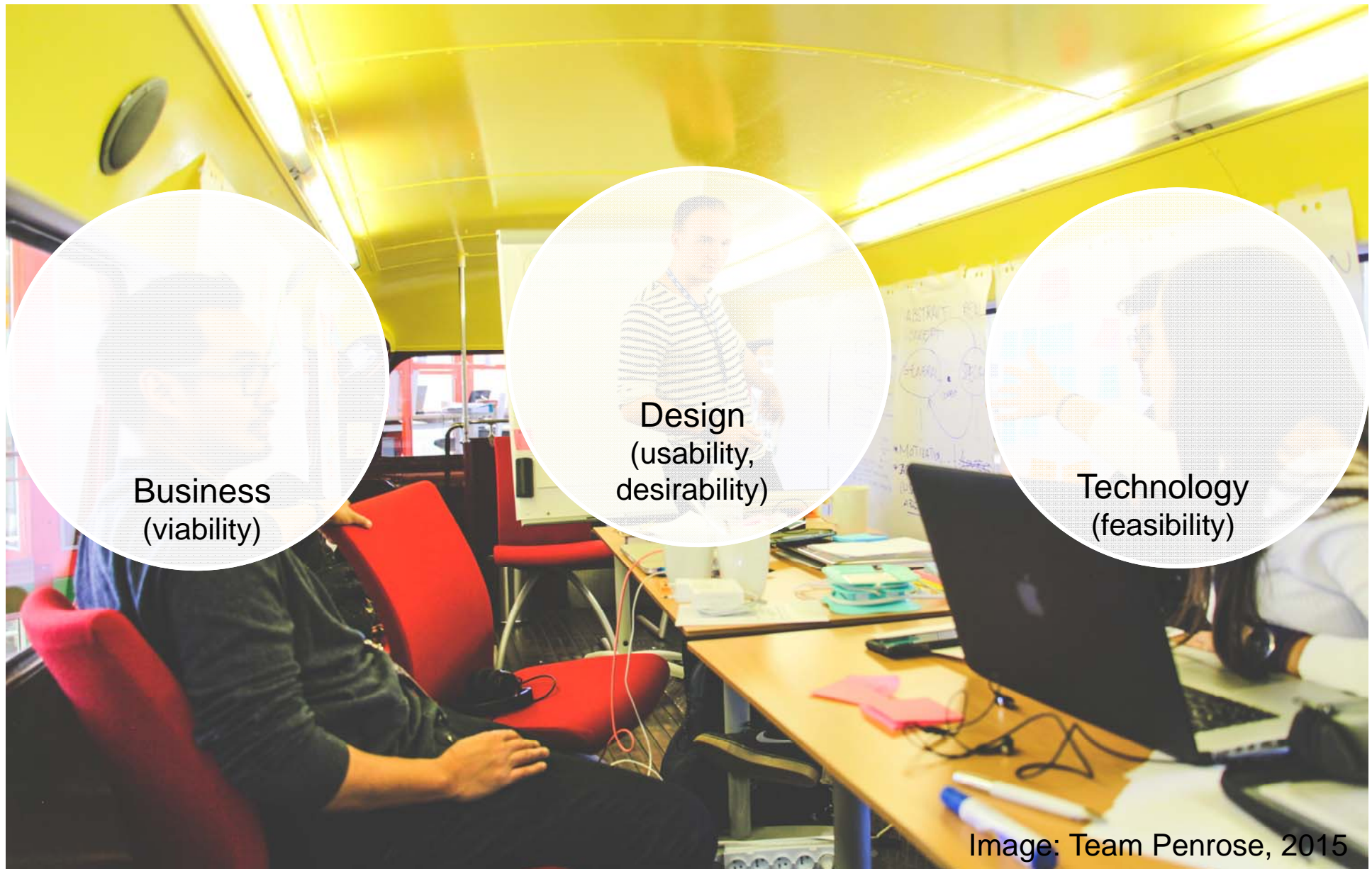
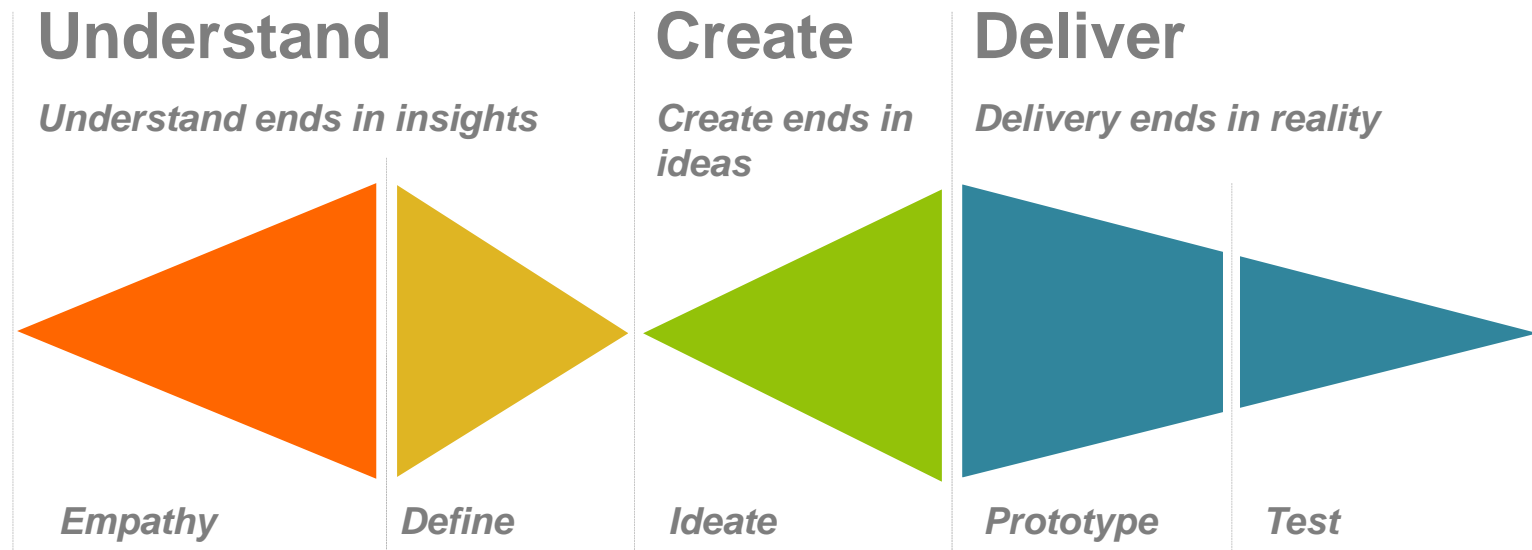
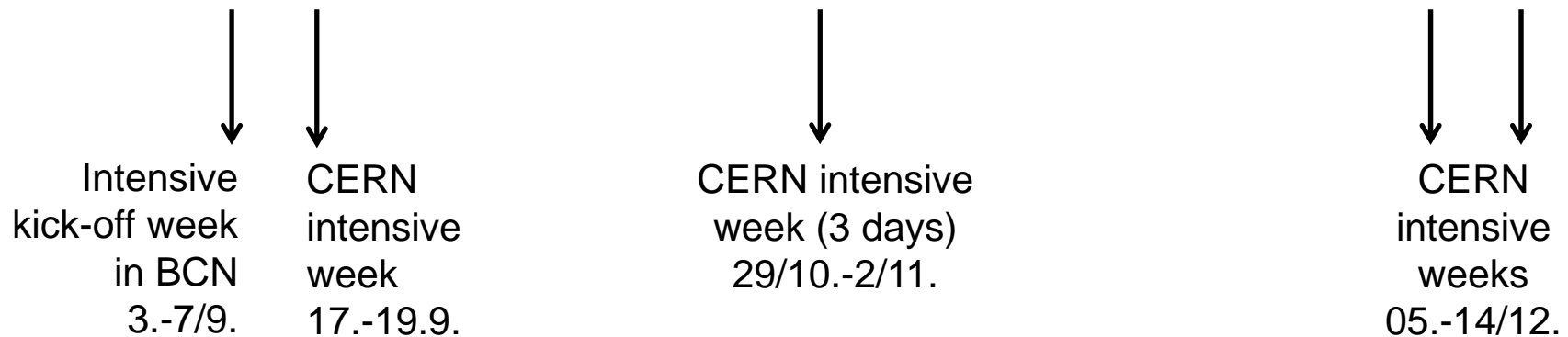


Image: Team Penrose, 2015

Multidisciplinary teams, students from ESADE, UPC, IED.



**September**      **October**      **November**      **Dec.**



**Preliminary Schedule**

**3/9** ← Weekly teamwork & CBI-day → **14/12**



## KEY DETAILS

**Capacity** 10 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**

- o accommodation, academic materials, prototyping

### **Costs covered by students**

- o 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 (~30 students)

- . ESADE Business School (10 students)
- . Istituto Europeo di Design (IED) (10 students)
- . Universitat Politècnica de Catalunya (UPC) (10 students)

**Thank you for your interest! We will be waiting for your applications! E-mail to [ramon.bragos@upc.edu](mailto:ramon.bragos@upc.edu) before June 24, 2018**

