WP0
Moonshot Project

Marc Jené, Andreas Sumper, Maria Marin.
July 14th.

Agenda WP0

Moonshot Concept and Course Description

Advisory Board

Stakeholder Involvement

Project Plan

Q&A

Action Item Review

Moonshot Concept and Course Description

What is Moonshot Thinking?

The Moonshot Triangle

The Subject

ILOs and Potential Benefits

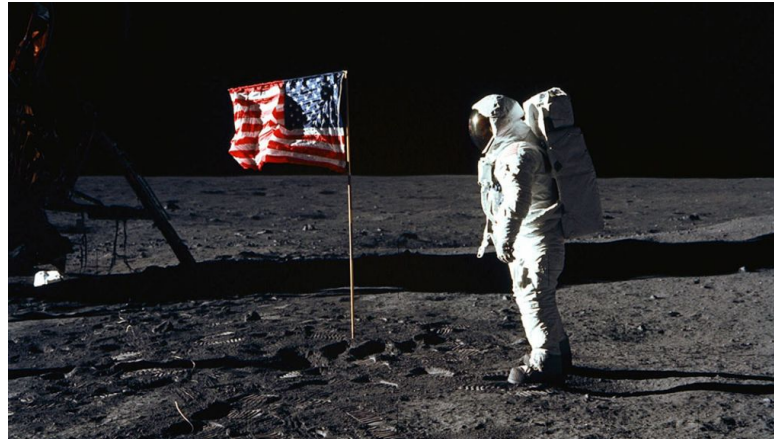**Assessment**

Blended-Online Modality

What is Moonshot Thinking?

"We choose to go to the moon in this decade, not because it is easy, but because it is hard"

John F. Kennedy, 1962

JFK giving the Moonshot speech, 1962

Man first landed on the Moon, 1969

What is Moonshot Thinking?

50 years later, Astro Teller (director of X, The Moonshot Factory – formerly Google X) took this message and transformed it into a philosophy.

Astro Teller

We could say that Moonshot Thinking is when

- you choose a **huge problem**, such as climate change,

- propose to create a **radical solution** to the problem

- using a **disruptive technology**.

Examples

**Loon Project**, expanding Internet connectivity with stratospheric balloons - X, 2012

Hyperloop, capsules propelled through a tube, carrying passengers at over 1,000 km/h - 2013

Principles of Moonshot Thinking

10x is easier than 10%

1. Ideas are the easy part
2. Try to kill your best ideas early
3. Set quarterly audacious goals
4. Failing is not "wasting" time and money
5. Perspective shifting > Being smart

HUGE PROBLEM

RADICAL SOLUTION
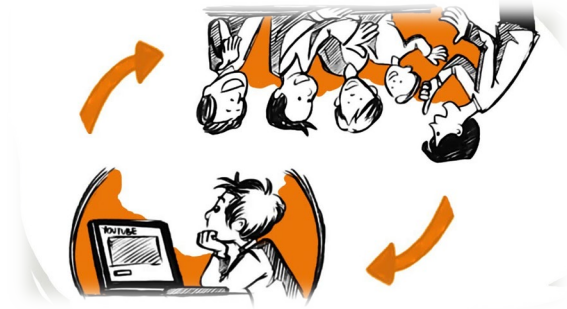
BREAKTHROUGH TECHNOLOGY
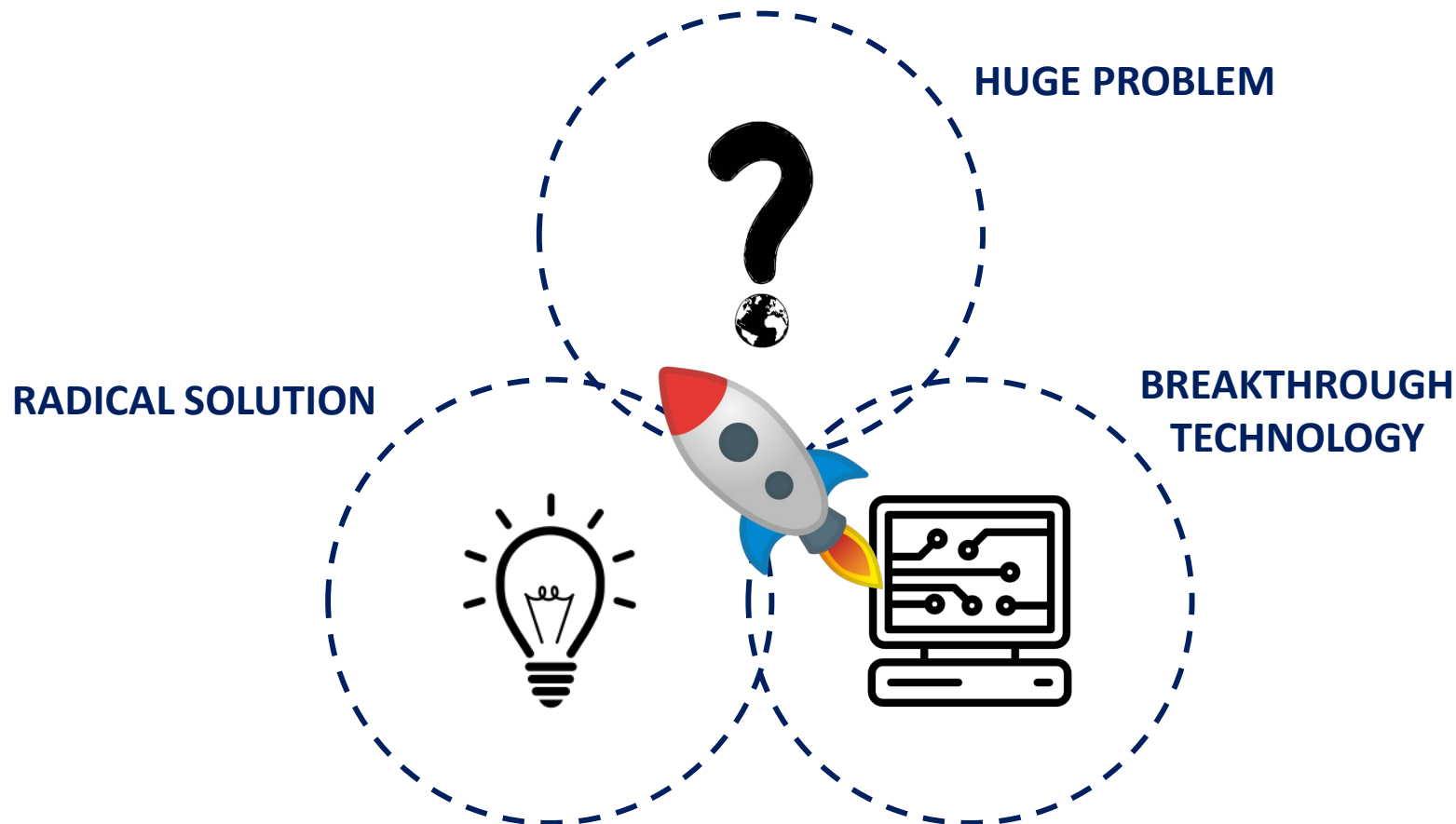
The Subject (5 ECTS)

Project-Based Learning (PBL).

Flipped Classroom approach with an online option.

Students with previous knowledge in energy, innovation and entrepreneurship.
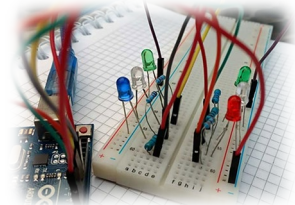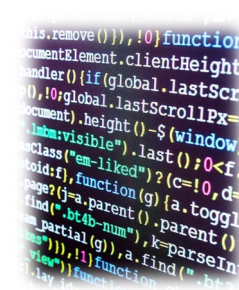
What makes it unique in the InnoEnergy track?

Tackling a **moonshot** (huge) problem.

Not ideas, but solutions. **Prototyping** is essential.

Project management: **Agile**.

Less focus on the business side and on the go-to-market strategy.

ILOs

1. Examine and identify **future long-term challenges** in the Energy Industry. Be able to foresight new challenges.

2. Investigate **state-of-the-art technologies** relevant in the Energy Industry.

3. Design possible solutions, build **prototypes**, test them to fail and improve them.

4. Apply the **Agile** methodology to manage the project, foster quick communication and involve everyone in all the process.

Potential Benefits for the InnoEnergy Ecosystem

This course is designed pursuing the following outcomes:

- Enhance the university-corporation-startup ecosystem.

- New startups from the students.

- Students joining startups (e.g. as Business Creators)

- Students joining big companies (e.g. in the Innovation Department)

- Introduce the Moonshot Thinking methodology to big companies and startups.

Subject Assessment

- There are **4 sprints**. At the end of each one the work done and the results will be presented. Different presentation modes will be considered (report, pitch, video...). The biggest part of the final grade will be obtained from here.

- Following the flipped classroom approach, the students will have to answer **quizzes** at home, after studying a topic.

- **Self-evaluation** will also be included.

Blended-Online Modality

On-site	Online
Lectures	Video
Q&A	Forum / Slack
Follow-up sessions	Videoconference in groups
Prototyping sessions	Remote prototyping lab
Project management	Online Agile tools
Workshops	Videoconference + miro.com
Pitching	Videoconference or video

Advisory Board

Board Constitution

Open Discussion

Personal Feedback

Outcomes

Board Constitution

Role	Name
MSc EFSC alumnus	Daniele Paratore
MSc EFSC alumnus	Noran Kamal
UPC professor	Carme Pretel
UPC professor	Enrique Velo
UPC professor	Lluís Batet
Big Company (Endesa) Professional	Jacob Rodriguez
InnoEnergy Education Industry Liason Officer	Monica Mejli
InnoEnergy I&E working group coordinator	Florian Bauer
InnoEnergy Education Strategy and Production Team Manager	Anouk Gelan

Open Discussion

- Tackling huge challenges.

- The role of startups in sharing knowledge.

- Relevance of the ILOs in the students curriculum.

- Course methodology.

Personal Feedback

Monica Mejli

- Societal challenge integrating different stakeholders.
- Give continuity to the challenge.
- How to convince startups?
- Consider monetization plan.
- Working group established.

Enrique and Lluís - UPC Professors

- Foster skills that are not normally taught in engineering degrees.
- Establish a direct relationship with the companies or institutions involved in the project.
- PBL issues and assessment methodologies.
- Course digitalization.

Jacob - Endesa

- Challenge aligned with companies long-term vision.
- They have 2 challenges: Digitalization and New Markets.
- Possible outcomes such as internships to give continuity to the project.
- Communication with students through the teacher so he can filter the information.

Noran and Daniele - Alumni

- Workload – You need time for a subject like this.
- Flipped classroom – Great approach.
- Important for the teacher to be close and available.
- Rapid Prototyping can be an awesome competence.
- Take advantage from tools used in other subjects.
- Alumni as mentors.

Outcomes

- Social challenge with collaboration of big companies – Green Deal.

- Working group with Monica Mejli – Startups, continuity of project in form of Master Thesis and monetization plan.

- Build a solid block of Rapid Prototyping that will be shared with other IE programs.

- Detailed plan of the sessions will be designed to adequate the workload.

- Introduce Q-teams methodology for team creation.

- Pilot test will be documented and shared.

Stakeholders Involvement

Stakeholders Overview

Companies KPIs

How to Involve Them
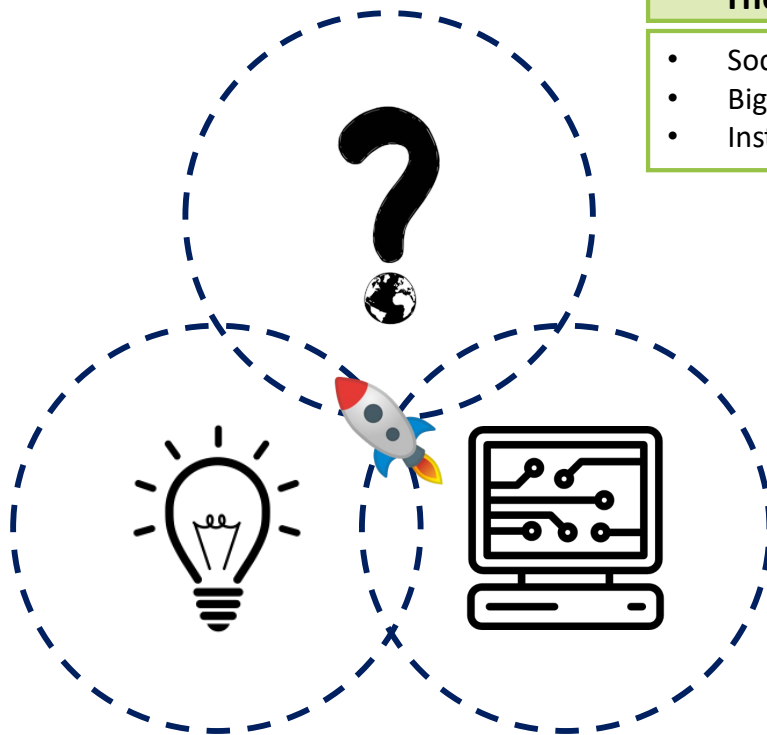
Stakeholders Overview

The Huge Problem

- Society.
- Big company.
- Institutions.

Radical Solution

- Motivated students.
- Cross-disciplinary experts or mentors.
- Workshops instructors.
- Teachers.

Breakthrough Technology

- Research centers.
- Startups.
- Fab Labs.

Companies KPIs

Big Company

- 3-4 solutions explored with pros and cons defined.
- Scouting of 1-2 breakthrough technologies.

Startup

- Scouting of 1 new application of their technology.
- Connection with 1-2 big players of the energy field.

- Many talented students engaged and with experience in the field.

How to Involve Them

- Understand big companies long-term vision – Exploration of the strategic vision of the company and transformation into a moonshot challenge.

- Understand startups needs – Analyze startups stages and adapt ideas and solutions to the Moonshot Project.

- Creation of a Moonshot Project adapted to companies' long-term vision and startups needs.

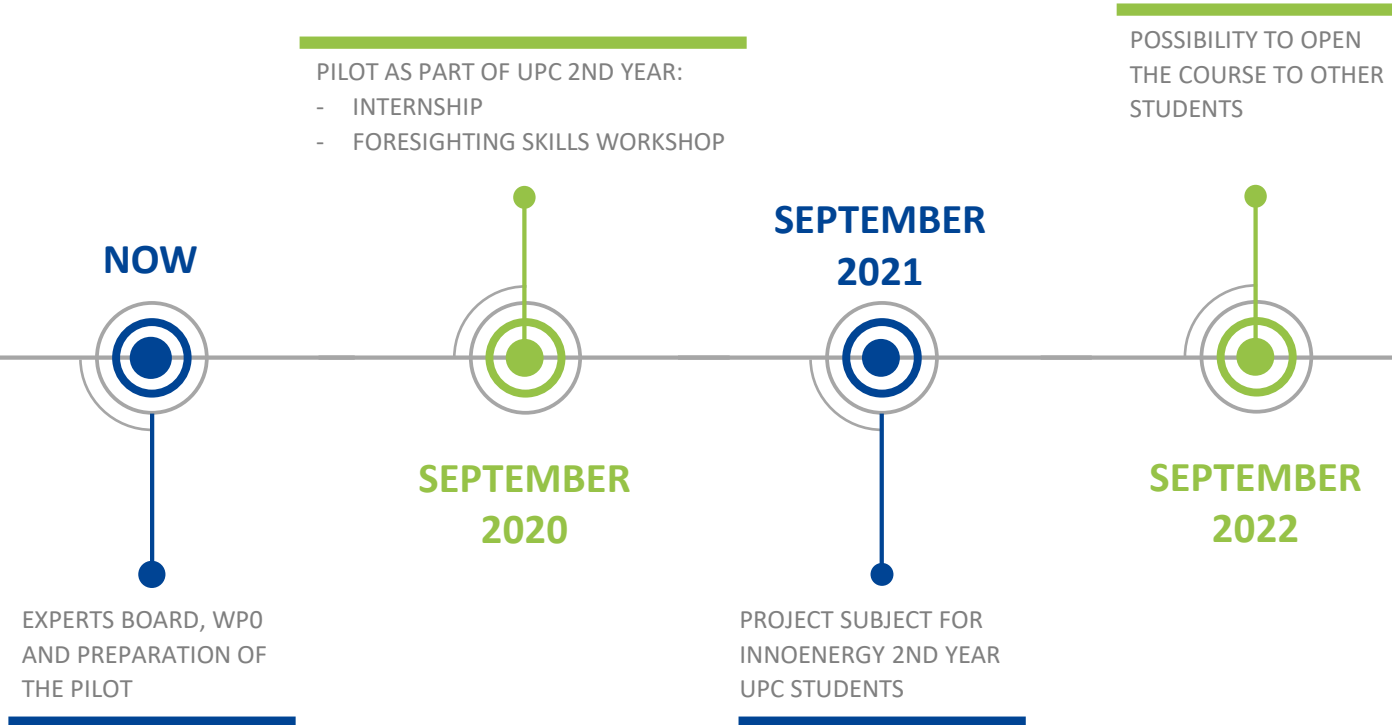- Creation of a Working Group with Monica Mejli.

Project Plan

General Roadmap

Activities

The Team

Support Needed

General Roadmap

PILOT AS PART OF UPC 2ND YEAR:
- INTERNSHIP
- FORESIGHTING SKILLS WORKSHOP

POSSIBILITY TO OPEN THE COURSE TO OTHER STUDENTS

NOW

SEPTEMBER 2021

SEPTEMBER 2020

SEPTEMBER 2022

EXPERTS BOARD, WP0 AND PREPARATION OF THE PILOT

PROJECT SUBJECT FOR INNOENERGY 2ND YEAR UPC STUDENTS

Activities

- Design lectures and sessions.

- Create digital learning material.

- Define challenge.

- Find and define relation with big company.

- Look for startups / research centers willing to participate.

- Analyze how to include foresighting skills sessions.

The Team

CORE TEAM

Andreas Sumper	Maria Marin	Marc Jené
andreas.sumper@upc.edu	maria.marin@innoenergy.com	marc.jene@innoenergy.com

Course design support	Industry liaison	Digital material support
Anouk Gelan	Monica Mejli	Sandra Garcia

Additional support

InnoEnergy and UPC personnel

Support Needed

- Help with existing digital learning material that can be reused for the course.

- Getting the different stakeholders involved.

- Find expert workshop instructors.

- Q-teams.

- The go on the full project and budget.