IdeaSquare as a prototype for ATTRACT: exploring new avenues

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CERN
Philosophical Principles

• The main mission of big labs like CERN is exploring the limits of fundamental science.

• This mission generates value not only knowledge related but in the form of breakthrough instrumentation.

• This last one is seldom exploited in the industrial realm except by serendipity.

• Is it possible to create an instrument for systematizing serendipity?
**ATTRACT Roadmap**

**2018 (ATTRACT Phase 1, 20 M Euros)**
- Initial 20 M Euros EC fund.
- Seed funding of 170 breakthrough projects (100 k Euros each).

**2020 (ATTRACT Phase 2, ca 35 M)**
- Scale EC funding (in place).
- Select 6 to 7 projects of ATTRACT Phase 1.
- Scale funding them with 4 to 6 M Euros.

**2021 (Maxi-ATTRACT)**
- Sustainable Public-Private Capital Funding Model.
- 1 B Euros Public Funding.
- Matching private funding (“investor club”, EIF, EIB).
- Repeat seed/scale funding cycles massively.

**2025**
- Maxi-ATTRACT seed/scale funding model fully deployed.
ATTRACTION: Main Strategic Actors

Value Extractors

Value Captors

Research Infrastructures

Business & Innovation Experts

Public & Private Investment

European Commission

Industry

ESRF

EMBL

ESO

European XFEL

Industrial and Business value is ensured but what about social (innovation) value?
ATTRACTION: Young Talent

- ATTRACTION aims to create a new pathway to favour innovation linked to entrepreneurship and “out of the box” thinking.

- IdeaSquare has been experimenting for a long time this approach in many ways.
Challenge Based Innovation (collision representation)
ATTRACTION (2020 and beyond)

- Connectome of collisions for social innovation
- Using R&D&I funded projects as nodes
- Student teams as edges
Exploring New Avenues
Why?

• We are aware of our constraints and we explore ways to overcome them.

• All these years of hands-on activities and project have given us a better idea of what aspects are more interning for our visitors and collaborators.

• We also are eager to try new things by experimenting and push our own personal limits.

• Some examples follow…
Could we overcome physical space limitations for CBI?

The High Speed Initiative
### Some reminders

<table>
<thead>
<tr>
<th>Philosophy of the initiative</th>
<th>Challenge</th>
<th>Goal</th>
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<tr>
<td>• Student driven collaborative challenge</td>
<td>• Produce a holistic concept for a supersonic, economically viable, 300 passenger aircraft</td>
<td>• The final concept could become a paper/report to be published</td>
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<td>• Supervised by experts</td>
<td>• Many interlinked aspects need to be considered</td>
<td>• All contributors will be authors</td>
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<td>• Open to anyone willing to contribute</td>
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Design & Integration

Operation, Logistics, Business

Flight Controls & Avionics

Materials & structures

Propagation – Combustion

Environmental issues
Initiative overview

Main Objective
Repository Analysis.
Potential targeted experimentation actions.

Main Objective
Prototype Conceptualization based on I and II.

Phase I
Ramping-up
Approx. 1-2 year

Phase II
Analysis
Approx. 1-2 year

Phase III
Conceptualization
Approx. 1-2 year

More information at
https://indico.cern.ch/event/570268/timetable/#20161021

Dedicated Effort

Time
General Characteristics of the Platform

• Familiar layout (Wikipedia format) especially for students


• Versatile (many functionalities possible, upload different document formats, video, etc)

• CERN-IdeaSquare owns the domain

• Wiki site makes an automatic log of all the changes.

• Extensive information and tutorials exist on Wikipedia.

• Accessible through any case of interfaces (PC, tablet, smartphone, etc).
Could we introduce future technology challenges to CBI students?

The Quantum Future initiative and ATTRACT iStore
Future Emerging Innovator

Scientific community

Round Table

Industry

Challenges
Future Emerging Innovator

Challenges

1st step  
Framing Challenges, April 9th

2nd Step  
Quantum Hackathon, May 4th & 5th

3rd Step  
Emerging Future innovator program (3 months)

Prototypes  
Connect to industry

Ideas/Projects  
Connect to Research Institution

Spinoff  
Long Term Research
Attract Innovation Store

Secure Identity Proof

AI

Transparency

Smart Contract
Is CERN mindset approach to innovation interesting for executives?

ESADE-CERN IdeaSquare executive courses
• Immersive hands-on experience into a thinking mindset necessary for embarking on daunting projects with extremely uncertain goals.

• Pilot and first edition successfully completed.

• More editions this year and next in the pipeline.
Could we go beyond traditional Design Thinking methodology?

Multiverse Thinking
What I have personally learnt from the CBI students?

• While at CERN we teach them to think big but while at their institutions Design Thinking (DT) is applied “by the book” (= incremental mindset).

• CERN technologies are very abstract for a traditional DT.

My controversial conclusion

“Let’s invent a new methodology based on breaking assumptions, thinking big and liberate the poor students from the incrementalism constraints”

In other words...

More in line with CERN DNA.
From here...

DESIRABILITY (HUMAN)

FEASIBILITY (TECHNICAL)

VIABILITY (BUSINESS)

DESIGN THINKING

to here...

Option Thinking

Multiverse Thinking

System Thinking

Combinatorial Thinking
The MT process steps

1. Building Block Selection
2. Scenario Building
3. Transition Identification
4. Technology Formulation
5. Conceptual Prototype
6. System Graph
The MT Main Characteristics

• Starting on how the World is today it focuses on (far) future scenarios.

• **Social Constructs** and **Resources** are taken as methodologic building blocks.

• Scenario building uses today as starting point and imagines the future by combinatorically relating **Social Constructs** with **Resources**.

• This relationship (tension) provides the transformative specs for a not yet existing technology.

• Technology is interesting only if it is transformative of scenarios (feasibility is not an issue).

• Technology options are formulated based on modes of production, distribution, consumption and revenue in conventional and unconventional ways.
  
  • Conventional ways: potentially legal or socially accepted ways for production, distribution, consumption and revenue in a future scenario.
  
  • Unconventional ways: potentially not legally or socially accepted ways (e.g. distribution through a dark internet in the future, piracy, etc) in a future scenario.
Experimenting with MT

- Successfully tested with MSc level students (20 in total from Basque Country University and Tampere University).
- Further test as part of the ESADE MBA teaching programme (46 students).
- Increasing demand for new editions (planned for November).

This experience has changed my mind completely, opening my mind and making me think about assumptions that I didn’t even realise before they were.

I will apply it for future entrepreneurial activities. Also, I believe it has been very useful for life in general, to get a view people normally don’t use.

This experience will let me approach new projects from different angles, also I can interact and use the space for presentations and my life. I think everything we have learnt at IdeaSquare is going to be useful for our professional and personal future.

I’m sure I will do things in a different way I would have done it without it.
Future explorations linked to Multiverse Thinking:

• alteration of the perception of time and how this can trigger innovative ideas

• Social Presencing Theatre within Theory U and innovative artistic practices: how can the group dynamic and awareness support the emergence of the not-yet-realised?
How the way we move can teach us how to innovate?

• Alteration of the perception of space through movement proposals that questions the objective representation of space

• Which innovation did not change the perception of space?

• Become your own prototype in changing the perception of space
Thank you

Any questions?