Welcome - CERN Ideasquare as an Innovation Experiment
“Ideasquare@CERN is a pilot project that combines detector R&D with society-driven student challenges. It brings together physicists, engineers, industrial partners, PhD students and cross-disciplinary MSc-students to interact with each other. The purpose is to co-develop new technologies for research purposes, and at the same time, create a fruitful environment for socially and globally relevant new product ideas and innovation.”
EDUSAFE

EXAMPLE: EU-FUNDED DETECTOR UPGRADE R&D PROJECT

- EDUSAFE is a 4-year Marie Curie ITN project (Ending 2016)
- Training for 10 Early Stage and 2 Experienced Researchers
- Focuses on research into the use of Virtual Reality (VR) and Augmented Reality (AR) during planned and emergency maintenance in extreme environments
- The result will be an integrated wearable VR/AR system (+control system) which can be implemented and tested as a prototype, using LHC at CERN as a test and demonstration platform
TALENT is a 4-year Marie Curie ITN (Ending 2015)
Provides training for 14 Early Stage and 1 Experienced Researcher
Focuses on piloting new state-of-the-art technologies on the new precision pixel detector: ATLAS Insertable B-Layer (IBL) and for future high precision tracking detectors
The outcome will be to create the means to produce affordable high performance detector modules in European industry and thus answer to the forthcoming needs of research infrastructures and industry application demand
EXAMPLE: MASTER-LEVEL STUDENT COURSE

- Challenge Based Innovation (CBI) is up to 6 month MSc-level specialization course for product and service development, run by participating universities from (currently) 8 countries around the world.
- Two pilot runs completed so far, 8 final proof-of-concept prototypes produced – today the 3rd round of CBI completes.
- In the course, multidisciplinary student teams learn how to apply Design Thinking – process for new product/service development; CERN researchers act as technological coaches in the process.
- “Work very hard, learn and have fun!”
- “Fail fast and often to succeed sooner”
END-USER, DESIGN THINKING DRIVEN APPROACH

http://2014.cbi-course.com/
WHAT IS THE LINK TO INNOVATION?

Detector R&D Projects

MSc-Level Student Programs (CBI)

Defined

Initially undefined

Technology

Focus

Product

Process
HOW ARE NEW IDEAS GENERATED?

The Lovely Human Collider @ IdeaSquare

(re)Define the problem
Design never ends

Needfinding + benchmarking
Understand the users, design space

Test with users
Learn

Ideasquare

Prototype
Build

Bodystorm
Ideate

Feeding Loop
CERN’s Innovation Value Chain

Idea Input

Prototype – Test – Refine
New Ideas

Towards Commercial Products

IdeaSquare

Knowledge Transfer Group

Universities, Research Institutions, KT & IdeaSq

Student teams as catalysts
Demonstrator of ATTRACT

Student teams, companies, startups
HOW THEN TO MEASURE SOCIETAL IMPACT?

- Number of start-ups, turnover?
- Number of ideas, projects, products, partners or students?
- Number of patents?
- Probability of success (or risk of failure)?
- Resources obtained?
- Amount of coffee drunk?
- What is it that we are **not** seeing but perhaps should? Magic…
## SOME STATS

### Coffee machine usage totals

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Water usage (in liters)</td>
<td>1503</td>
<td>1730</td>
<td>3233</td>
</tr>
<tr>
<td>Total cups distributed</td>
<td>12542</td>
<td>14414</td>
<td>26956</td>
</tr>
<tr>
<td>Coffee</td>
<td>5992</td>
<td>5867</td>
<td>11859</td>
</tr>
<tr>
<td>Coffee&amp;Milk</td>
<td>2420</td>
<td>2311</td>
<td>4731</td>
</tr>
<tr>
<td>Milk</td>
<td>2197</td>
<td>4066</td>
<td>6263</td>
</tr>
<tr>
<td>Hot Water</td>
<td>1933</td>
<td>2170</td>
<td>4103</td>
</tr>
</tbody>
</table>

### How many new people did you meet today?

<table>
<thead>
<tr>
<th>Number of new people met</th>
<th>Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>56</td>
</tr>
<tr>
<td>Proportion of responses</td>
<td>29%</td>
</tr>
</tbody>
</table>
CONCLUSIONS

• IdeaSquare hosts detector R&D projects and facilitates in parallel MSc-level student projects such as CBI
• IdeaSquare is a place to experiment innovation; how to connect science (products) with society (processes)
• We are currently experimenting and collecting data – all sorts of data for innovation research purposes
All you need is PHYSICS

..Love
..Design
..Business
..and Engineering.

Questions? Comments?

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Let’s meet for coffee and make it happen!