Why ATTRACT?

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ENRIITCyourCoffee Season 3
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Why ATTRACT?

Is the potential of European Research Infrastructures as Innovation Engines fully exploited ?

- The European Commission defines Research Infrastructures (RI) as facilities providing resources and services for research communities to conduct research **and foster innovation***.
- Is it really the case? We mean, is the potential of RI with respect to boosting innovation fully utilized?
- This is the question that the ATTRACT Consortium, in a dialogue with the EC, posed before conceiving, designing and deploying the ATTRACT initiative.
- The answer seek was not related to the traditional role of considering RI as access facilities for industry.
- It had to do with how the technology generated for pushing the limits of Fundamental Science, which is the mission of RIs, could translate faster and more streamlined into industrial applications, new business and social wealth.
- And as well, how the communities behind RIs could benefit from industrial know-how (e.g. advanced and high scale manufacturing capacity) for pushing their research-driven mission.

* https://ec.europa.eu/info/research-and-innovation/strategy/european-research-infrastructures_en

ATTRACT as an answer to the question

A novel Ecosystem focusing on breakthrough detection and imaging technologies

The dialogue between the ATTRACT Consortium and the EC led to key insights*:

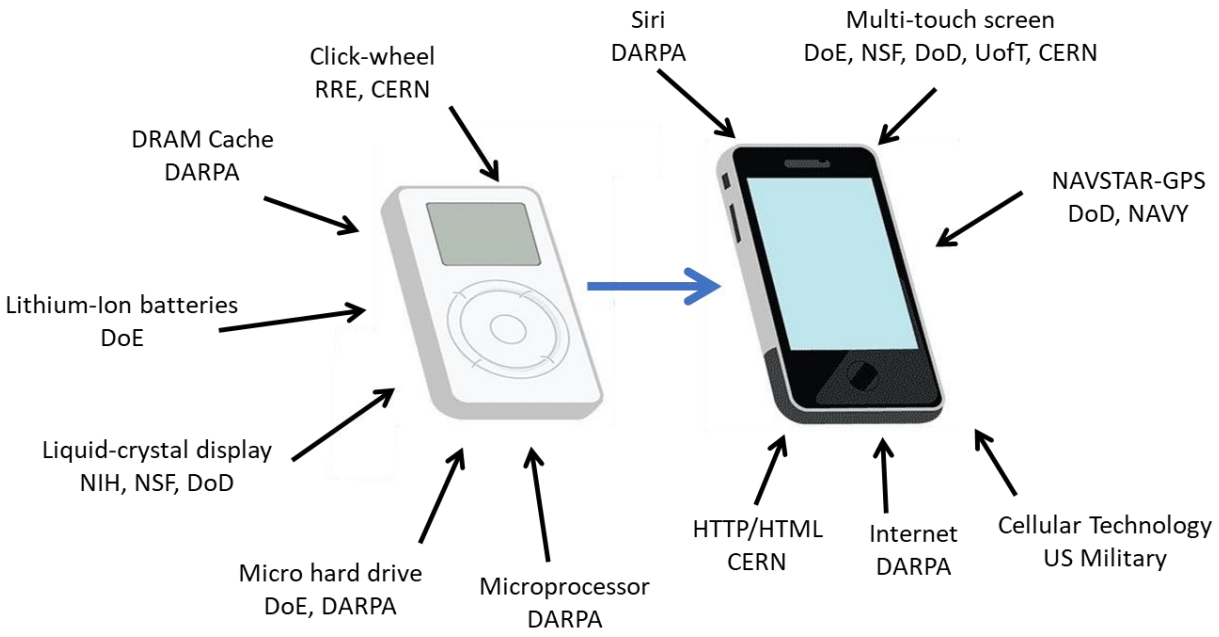
1. The innovation potential of European RIs is only partially exploited.
2. There is a clear need for identifying win-win R&D&I opportunities between the industrial communities and those behind RIs beyond the existing frameworks and practices.
3. A novel action framework was necessary for enabling those opportunities incorporating the paradigm of "Open Science, Open Innovation, Open to the World".
4. Such framework should be prone to be tested, by generating, gathering and analyzing data. Only then, it should be possible to corroborate its validity and consider a significant scaled-up deployment.

- Many of them have been reflected in the EC policy paper, *Sustainable Research Infrastructures,* *https://ec.europa.eu/info/sites/default/files/research_and_innovation/research_by_area/documents/swd-infrastructures_323-2017.pdf*

ATTRACT: Key pillars (1)

"Where does breakthrough Innovation come from?"

Public Funding: Key for helping nascent breakthrough technologies, many of them even at the conceptual level, mature for raising the interest of private capital .



DARPA: Defense Advance Research Project Agency
RRE: Royal Radar Establishment
CERN: European Organization for Nuclear Research
DoE: Department of Energy
NIH: National Institute of Health
NSF: National Science Foundation
DoD: Department of Defence
UofT: University of Toronto

ATTRACT: Key pillars (2)

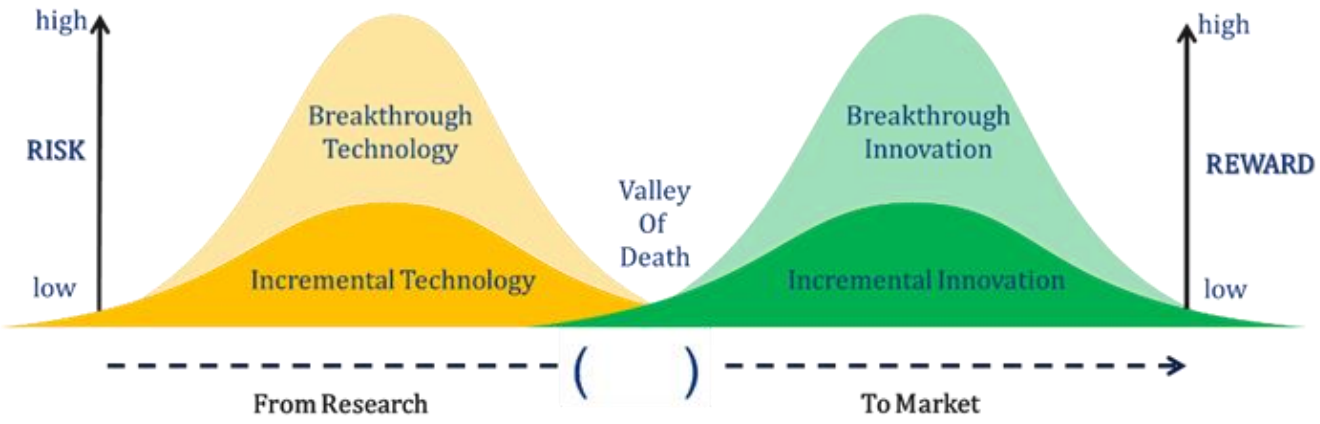
"Not two Valleys of Death look the same"

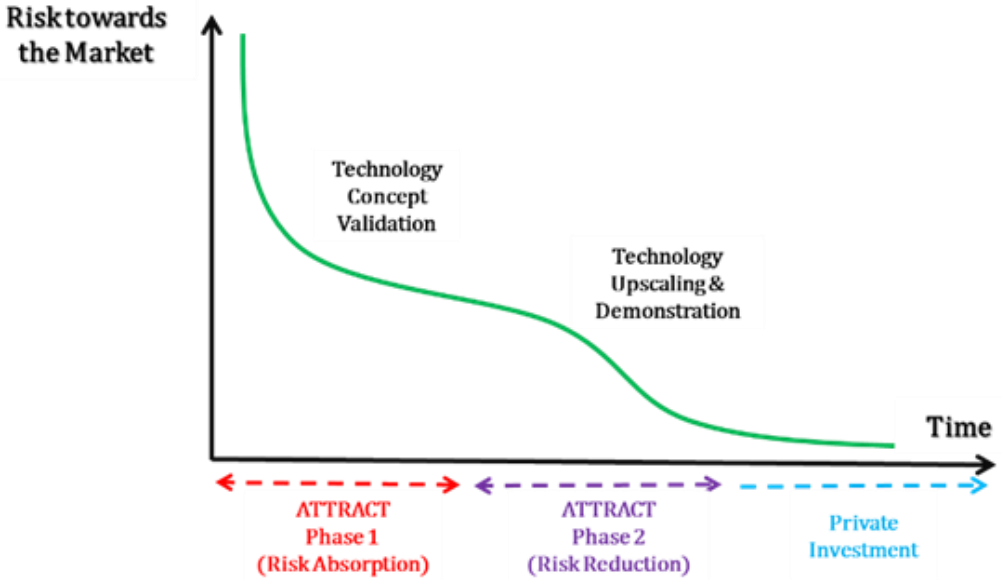
Phase approach to funding: Breakthrough Technologies (coming from Fundamental Research) are very risky to invest upon for private capital.

De-risking them needs public funding:

First, a **risk-absorption stage**, where ideas and concepts could reach a prototype level and technology concept validation.

Second, a **risk-mitigation stage**, where the most promising concepts are further helped raising towards a pre-market product.





ATTRACT: Key pillars (3)

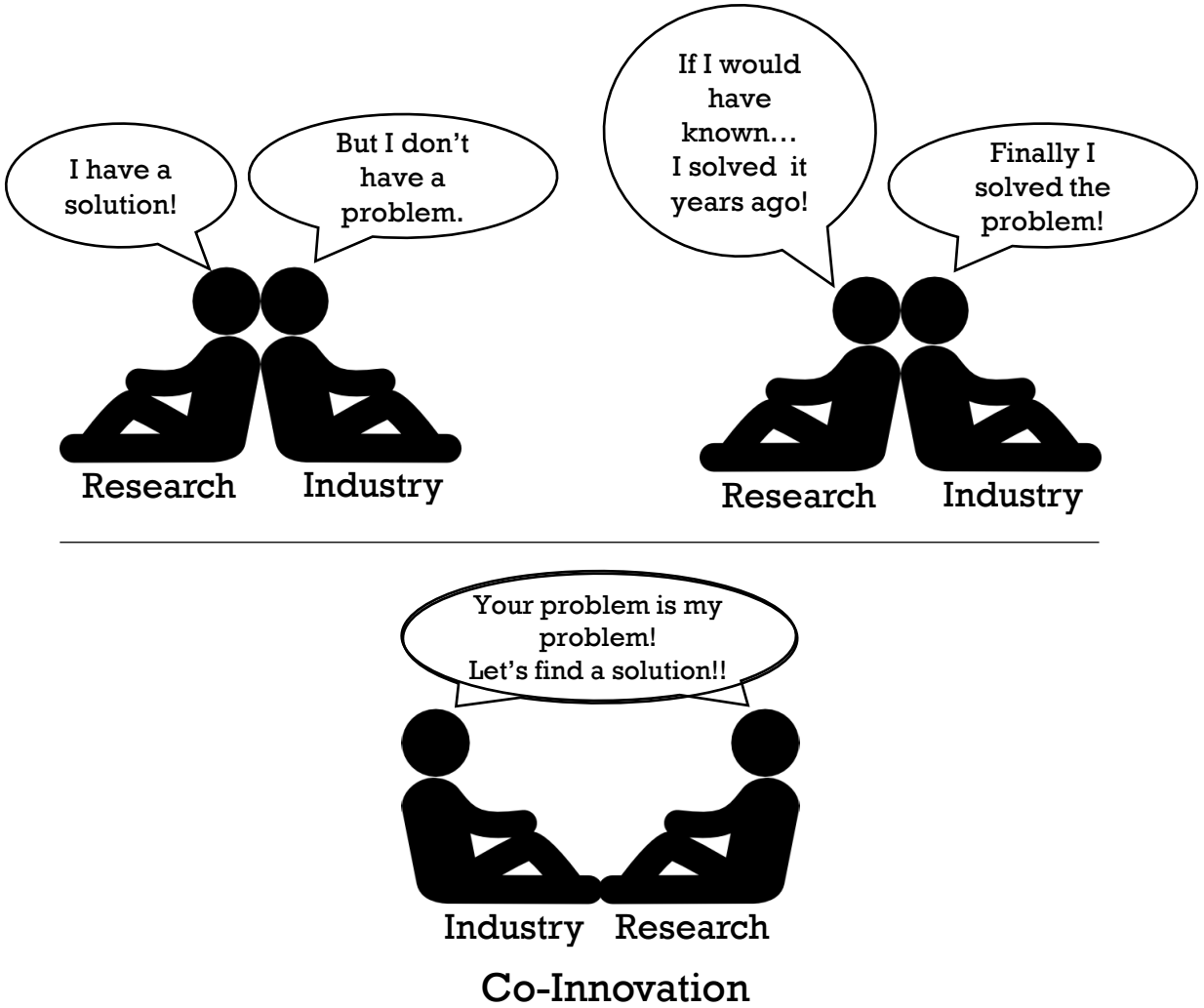
"Trust and shared know-how is not built in one day"

Co-Innovation:

- Bridge between two communities (research and industry) that in principle have different motivations and goals for undertaking R&D&I (capital and/or resource intensive) efforts .

- Entails the identification and collaboratively pursuing of win-win outcomes, starting already at the conceptual stages of a technology development and enduring them until the later stages of the innovation value chain (e.g. commercialization).

- Departs from research-industry relationships established as simply customer-supplier ones.



ATTRACT: Key pillars (4)

"Young people want to change the world"

Young Innovators Projects:

- ATTRACT is facilitating the integration of interdisciplinary MSc level students teams working side by side with professional researchers from academia and industry developing the R&D&I funded projects.

- These Young Innovators' goal is prototyping technology solutions specifically addressing the United Nations Sustainable Development Goals,

- They use a Design Thinking approach inspired by the technology developed by the projects.

ATTRACT: Why Detection and Imaging?

Are you able to point a field in the picture with nothing to do with Detection and Imaging?

- The scientific mission of European RIs as well as their R&D associated communities is strongly coupled with detection and imaging technology instrumentation (including computing).

- Detection and Imaging technologies are and will be at the core of future industrial developments applications and business (e.g. IoT, Smart Cities, Autonomous Transport, Sustainable Agriculture, etc).

ATTRACT: How we are deploying it? What's next?

"From R&D&I communities to Ecosystems for which 2+2 > 4"

ATTRACT Phase 1
20 M EC total Funding

Concluded.

The first 170 R&D&I breakthrough are completed

TRL 3-4.

100 Young Innovators benefitted.

2019-2020 Horizon 2020

ATTRACT Phase 2
35 M EC total Funding

Starting.

Open Call leveraging on the most promising opportunities from Phase 1 (25 M Euros). Launching targeted by the end of May 2021.

TRL 7-8.

400 Young Innovators benefitting (2M Euros).

A multifold socio-economic study of ATTRACT will be completed (1 M Euros).

2019-2024 Horizon 2020

ATTRACT Transition:
From the RI Unit to the EIC

Foreseen.

Transition towards the European Innovation Council.

R&D&I: Small Open Call Phase 1 type

Strategic objectives:

1. Integration model into the EIC (Pathfinder?/Accelerator?/Other?)

2. How private and public financing could be integrated?

3. How to scale-up the opportunities for Young Innovators?

2022-2024 Horizon Europe

MAXI ATTRACT
EIC

Ambitioned

Full integration and deployment of ATTRACT into the European Innovation Council (EIC) .

Phases 1 and 2 deployed cyclically.

Development of an EU scale Programme for Young Innovators.

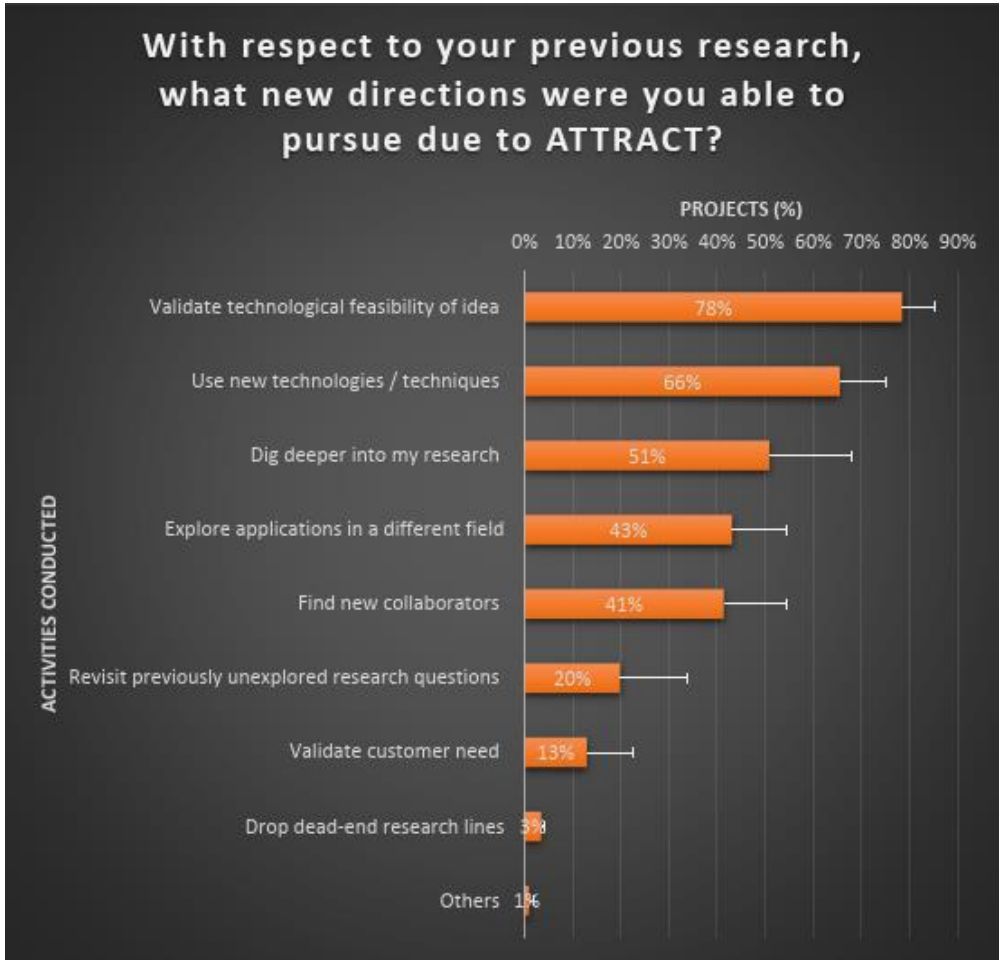
Extrapolation of the ATTRACT model at National level.

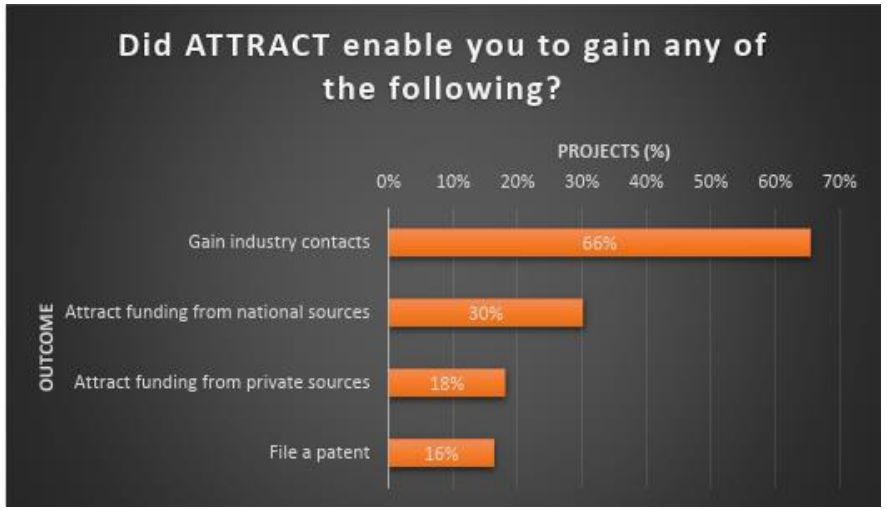
Expanding beyond the Detection and Imaging field.

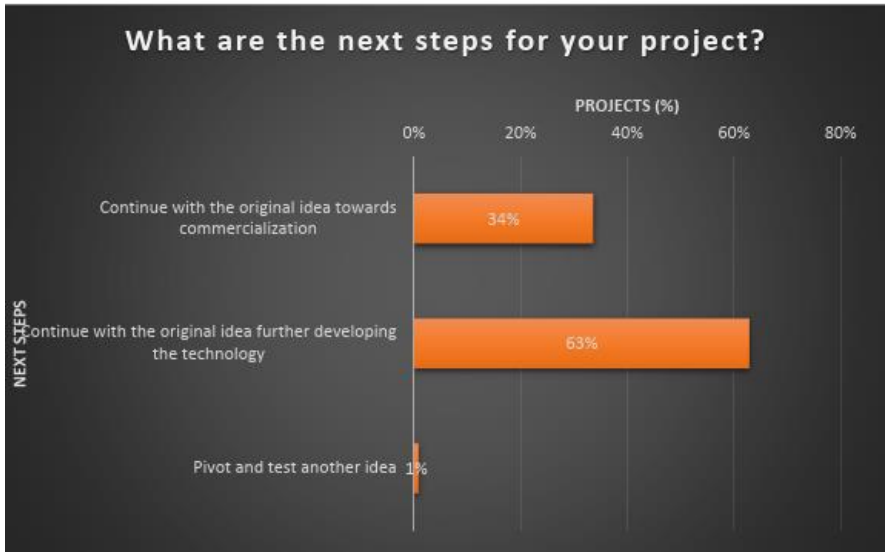
2025 (?) Horizon Europe/ Beyond?

ATTRACT: Some figures of merit (1)

"How are we doing even just after Phase 1?"

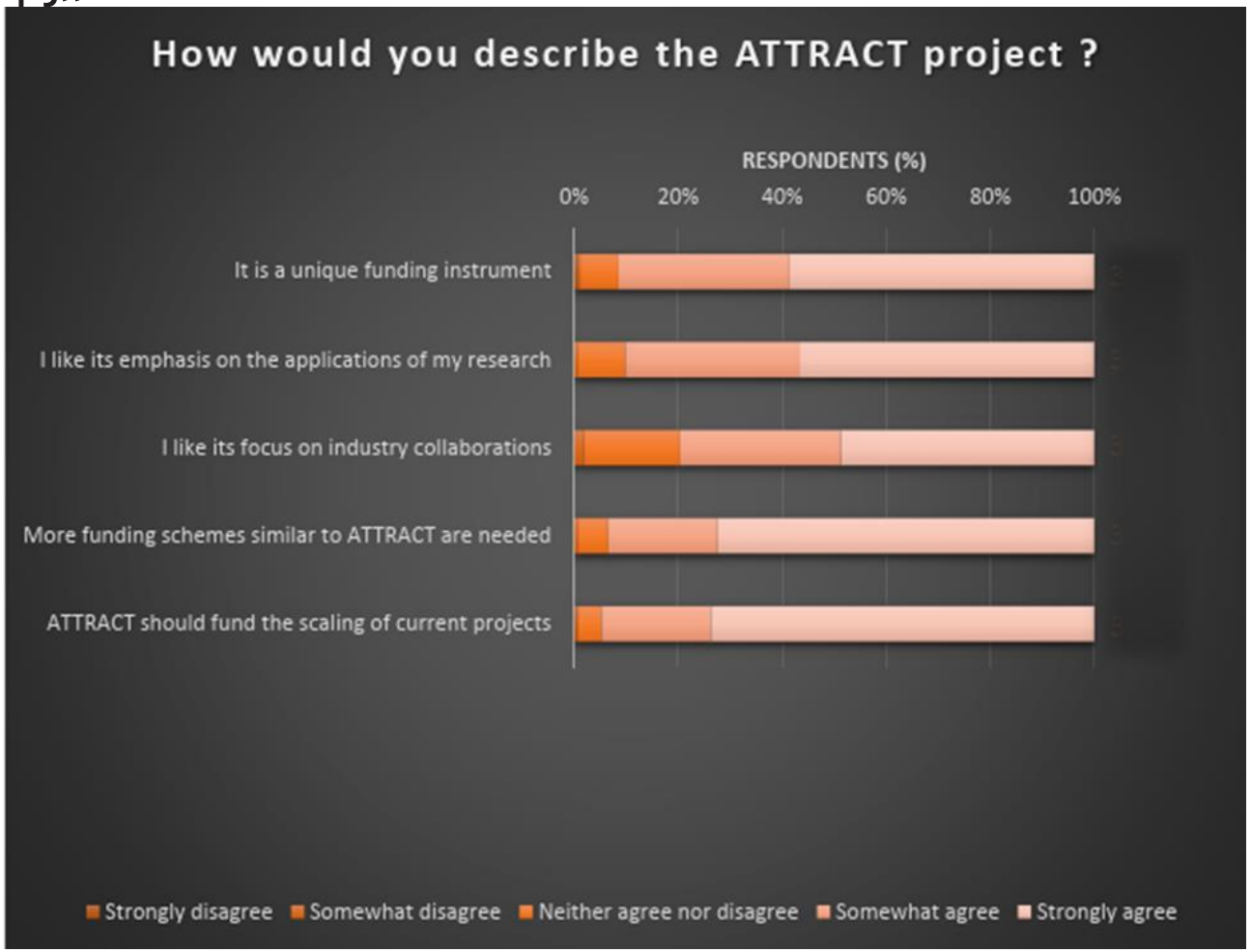


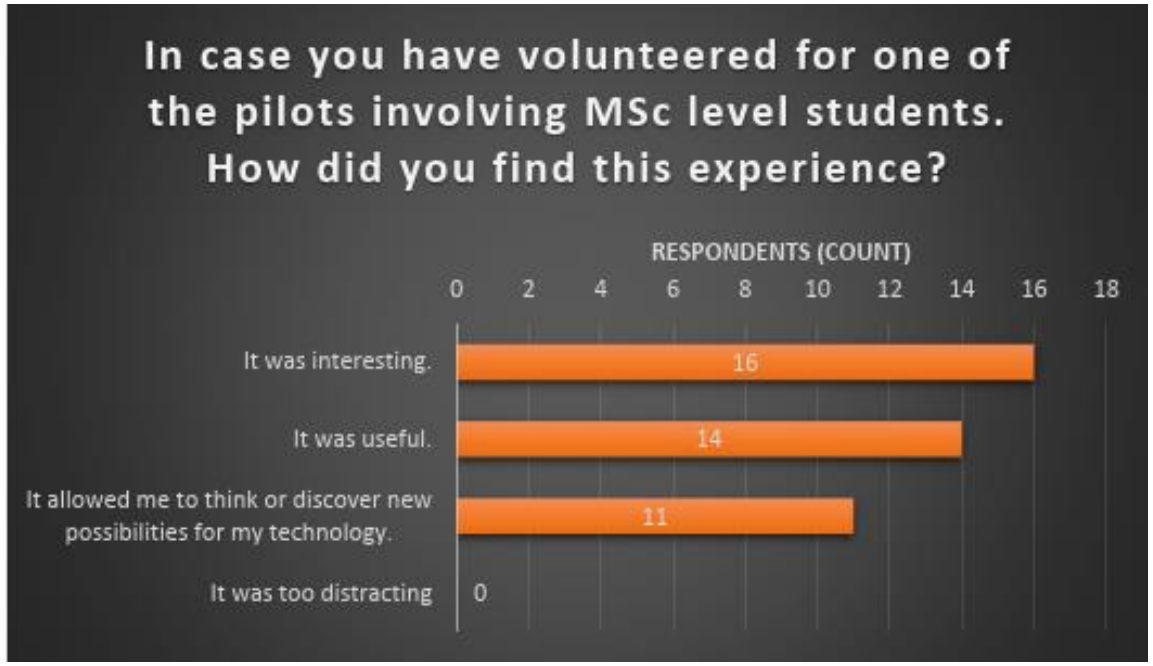




ATTRACT: Some figures of merit (2)

"How are we doing even just after Phase 1?"





ATTRACT: More Information

- ATTACT Facts and Figures: https://attract-eu.com/facts-and-figures/
- Phase 1 Funded Projects: https://phase1.attract-eu.com/showroom/projects/
- Phase 1 Young Innovators' Projects: https://phase1.attract-eu.com/showroom/student-projects/

Channel	Link
ATTRACT Website	https://attract-eu.com/ especially the News and Events section https://attract-eu.com/news-and-events/ as well as the Media Room https://attract-eu.com/media-room/
YouTube	https://www.youtube.com/channel/UC44Q8eMkRUpvHZm6f8iduvg
Facebook	https://www.facebook.com/ATTRACTEU/
Twitter	https://twitter.com/AttractEu
LinkedIn	https://www.linkedin.com/company/attract-eu

Final Reflexion

The ATTRACT Consortium aims enabling a potential project where…

….a biologist realizes that her ideas for a new sensor,

….are solving the issues faced by an astrophysicist friend,

….and when both get in contact with a company developing solutions for plastic recycling,

….the three of them think it is worthwhile working together, and even more,

… relying on some young folks for prototyping their ideas and get inspired by new ones.

Thanks!