AESIS

NETWORK FOR
ADVANCING & EVALUATING THE SOCIETAL IMPACT OF SCIENCE

4 - 6 November

AGH

We welcome you to

Ministry of Science and Higher Education
Republic of Poland

Impact of Science

Technote

VERTIGO VENTURES

ELSEVIER

researchfish by interfolio

Fraunhofer ISI

A pilot of the Societal Impact Assessment

Przemysław Korytkowski

West Pomeranian University of Technology, Szczecin

Emanuel Kulczycki

Adam Mickiewicz University, Poznań

Members of the Committee for Science Evaluation

at the Ministry of Education and Science

Agenda

1. Research evaluation exercises in Poland
2. Pilot study

Evaluation exercises

1. State Committee for Scientific Research (KBN):
   - peer-review: 1991, 1998
   - parametric: 2003, 2006, 2010
2. Committee for Research Units Evaluation (KEJN):
   - parametric + peer-review: 2013, 2017
3. Committee for Science Evaluation (KEN)
   - parametric + peer-review: 2022

Evaluation exercises

Four criteria of assessment in 2017:

1. scientific and creative achievements (35%-75%);
2. scientific potential (5%-20%);
3. economic effects (5%-45%);
4. other effects of scientific activity (10%-15%).

Evaluation exercises

Four criteria of assessment in 2017:

1. scientific and creative achievements (35%-75%);
2. scientific potential (5%-20%);
3. economic effects (5%-45%);
4. other effects of scientific activity (10%-15%).

Three criteria of assessment in 2022:

1. scientific and creative achievements (50%-70%);
2. economic effects (0%-35%);
3. societal impact (15%-20%).

Approach to societal impact in 2013 and 2017

In the criterion **other effects of scientific activity**:

- “No more than 10 major achievements of social or economic importance…”
- Units had to provide unstructured text with no more than 900 characters.
- “application of the results of scientific research or development work of **high social importance**, in particular in the field of health protection, environmental protection, protection of public order and safety, protection of monuments and cultural heritage, protection of jobs, food quality and safety, or economic, including new technologies and products, implementations, licenses and activities to increase innovation;”

Research on the evaluation of science in Poland

Kulczycki, E., Korzeń, M., & Korytkowski, P. (2017). Toward an excellence-based research funding system: Evidence from Poland. Journal of Informetrics, 11(1), 282–298. https://doi.org/10.1016/j.joi.2017.01.001

Korytkowski, P., & Kulczycki, E. (2019a). Examining how country-level science policy shapes publication patterns: The case of Poland. Scientometrics, 119(3), 1519–1543. https://doi.org/10.1007/s11192-019-03092-1

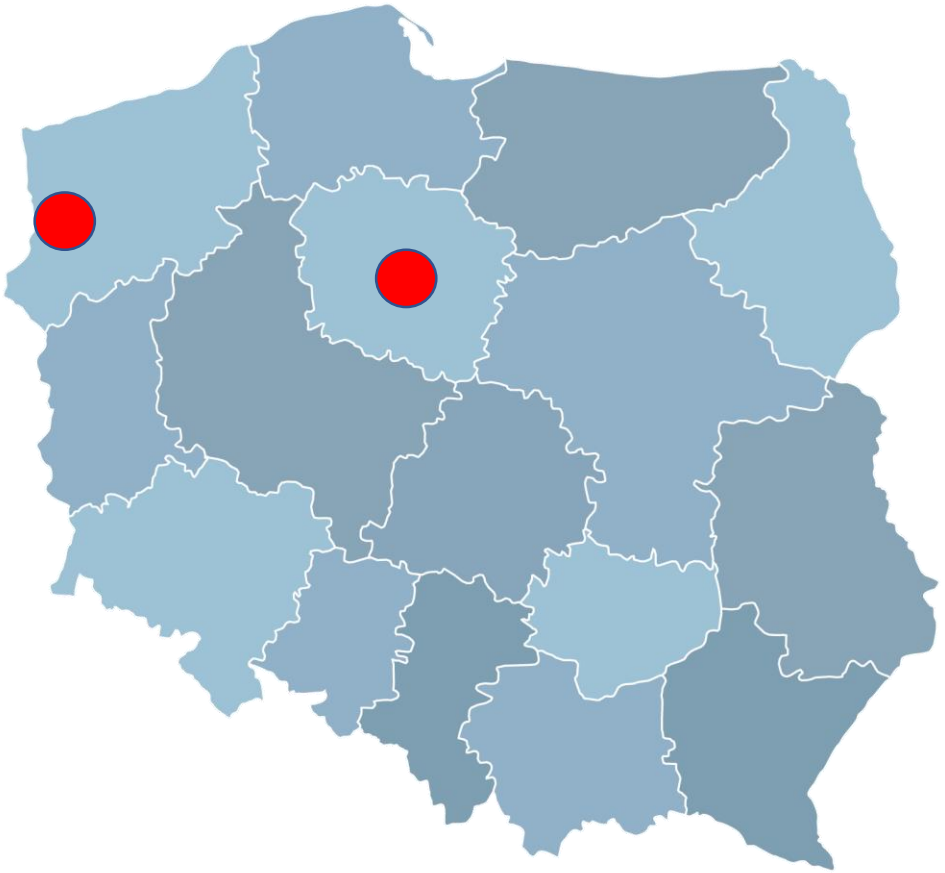
Korytkowski, P., & Kulczycki, E. (2019b). Publication counting methods for a national research evaluation exercise. Journal of Informetrics, 13(3), 804–816. https://doi.org/10.1016/j.joi.2019.07.001

The pilot study

Zachodniopomorski Uniwersytet Technologiczny w Szczecinie

AKADEMIA SZTUKI W SZCZECINIE

UNIWERSYTET MIKOŁAJA KOPERNIKA W TORUNIU



http://excellence-project.zut.edu.pl

DIALOG

The team

1. Przemysław Korytkowski (PI)
2. Emanuel Kulczycki
3. Bartłomiej Małachowski
4. Agnieszka Olejnik-Krugły
5. Ewa Rozkosz

Pilot study objectives

- To develop **procedures** for collecting societal impact narratives.
- To develop expert assessment **procedures**.

- The results of the pilotage will be communicated to:
  - The Ministry of Science and Higher Education
  - The Committee for Science Evaluation

Legal framework

- Act of 20 July 2018. Law on Higher Education and Science
- Regulation of the Minister of Science and Higher Education of 22 February 2019 on evaluation of the quality of scientific activity
- Regulation of the Minister of Science and Higher Education of 6 March 2019 on the data processed in the Integrated Information System on Higher Education and Science POL-on

Legal definition of societal impact

§23 of the Regulation of 22 February 2019

„The assessment of **the impact of scientific activity on the functioning of society and economy** is carried out on the basis of descriptions of the **relationship** between the results of scientific research or development works or scientific activity in the field of artistic creation and **economy, functioning of public administration, health protection, culture and art, environmental protection, security and defense of the state or other factors** influencing the civilizational development of the society, hereinafter referred to as "impact narratives", drawn up on the basis of evidence of this impact having in particular the form of reports, scientific publications and quotations in other documents or publications.”

The narrative form

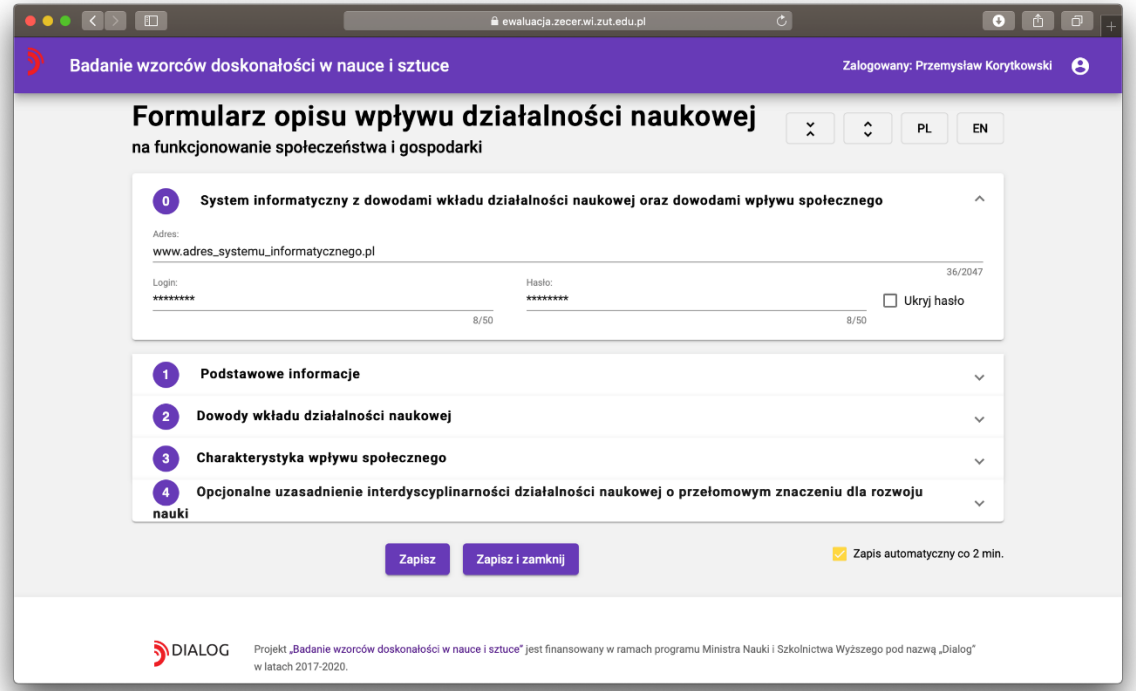
1. **Title of societal impact narrative** (max. 150 characters with spaces)
2. **Scientific contribution** (max. 3,500 characters with spaces)
3. **Evidence of scientific contribution** (max. 5 references to documents/publications from the years 1996–2020)
4. **Characteristic of societal impact** (max. 6,000 characters with spaces)
5. **Evidence of societal impact** (max. 5 references to documents/publication from the years 2017–2020)

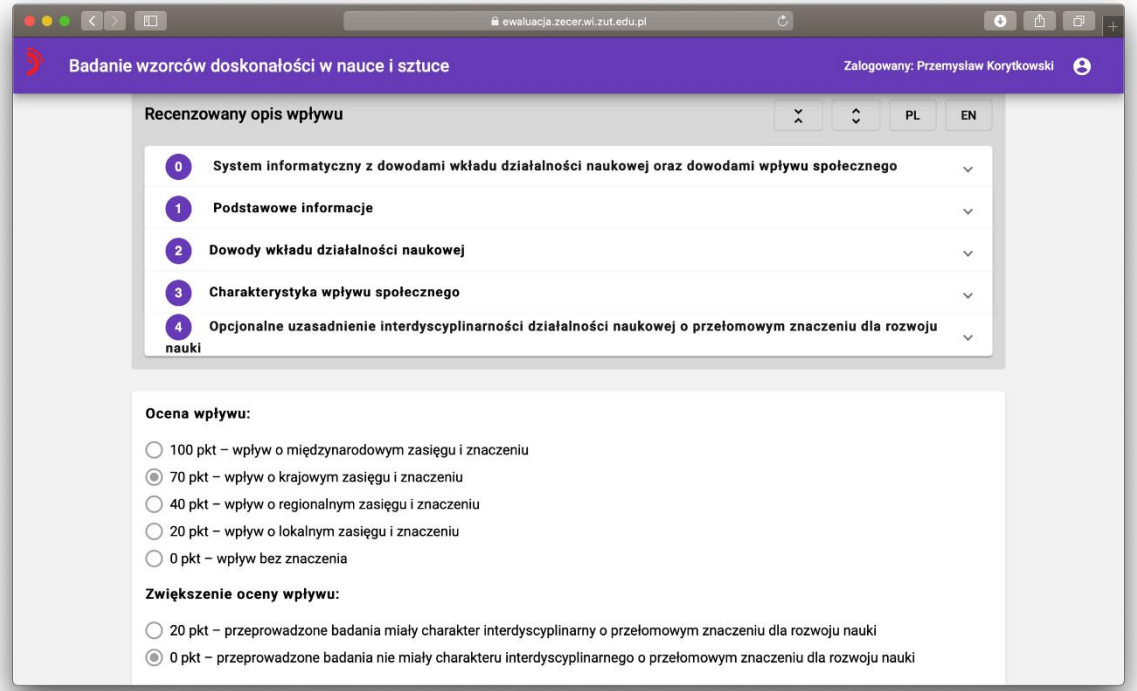
Handbooks

- Handobook for evaluated entities:
  - 16 pages - 58 paragraphs
- Handbook for experts:
  - 10 pages – 41 paragraphs

http://excellence-project.zut.edu.pl

Proprietary supporting software





Pilot study schedule

- 1-30 June 2019
  - Designating teams for each discipline
- 20-21 November 2019
  - Training for the teams
- 1-31 January 2020
  - Submitting narratives
- 2-16 February 2020
  - 1st on-line survey for teams
- 1-28 February 2020
  - Narratives assessment by 27 members of Committee for Science Evaluation
- March 5th
  - Gathering feedback from experts
- 17-21 March 2020
  - 2nd on-line survey for teams
- June 18th, 2020
  - Publication of the final report
- July 31st, 2020
  - Publication of new Regulation

Narratives

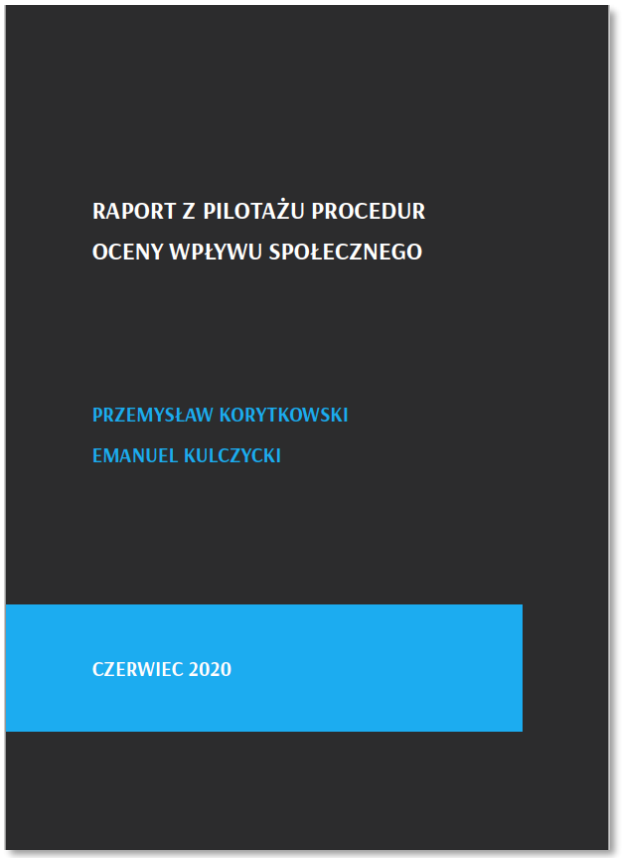
- 41 out of 47 disciplines
- One narrative per discipline + optionally one special
- 53 narratives under preparation finally submitted 52 (including 8 special case studies)

University	Number of disciplines	Number of prepared narratives
West Pomeranian University of Technology in Szczecin	14	16
Academy of Art In Szczecin	2	2
Nicolaus Copernicus University in Toruń	29	35

Final report

Korytkowski, P., Kulczycki, E. (2020). Raport z pilotażu procedur oceny wpływu społecznego. DOI: 10.6084/m9.figshare.12402686
(83 pages)

http://excellence-project.zut.edu.pl



Conclusions

1. All the disciplines were able to identify and prove the social impact using the provided form.
2. 17% of the evidence of scientific contribution were published more than 10 years ago, and 46% before 2017.
3. It took on average less than 40 hours to prepare a narrative by usually a team of 2-4 people. The work was spread over several months due to the process of identifying and documenting societal impact.
4. Evidence of scientific contribution and evidence of societal impact can be properly assessed only if the experts have access to the indicated materials (e.g. PDF, MP3, MP4).

Conclusions

5. The model of individual expert assessment did not work. The experts' assessments differed quite strongly, and justifications were partly contradictory.
6. Experts from the same discipline as the narrative, payed much more importance to description of the scientific activities than experts who represented another discipline.
7. One of the biggest challenges is the experts’ training.

Recommendations

1. The ministry should launch a broad information campaign.
2. All evidences should be in a central system provided by the Ministry.
3. A unified bibliographic style (for ex. APA7) should be applied for evidences.
4. Experts should represent broad backgrounds, including non-academic.
5. The Ministry and the Committee should provide training to experts.
6. The Committee should ensure balanced pool of experts.

Recommendations

7. Experts should evaluate the same types of impact areas (for ex. environmental protection).

8. The Ministry should introduce expert panels and procedure for agreeing on the ratings and justification.

9. The Ministry should change the scale of assessment and oblige the experts to justify the assessment in a multidimensional way.

10. The Ministry should resign from additional societal impact narratives.

11. The Ministry should reduce the importance of the social impact criterion from 15%-20% down to 10%.

Dziękuję za uwagę!

(Thank you for your attention!)

CHARLES UNIVERSITY

Societal Impact of Research in the CR and at CU

Jan Konvalinka

veda@prorektor.cuni.cz

Recent state of play

- Changes over the last decade – slow mindshift from two to three main missions: not only teaching and research but also „third role and openness towards society“
- Low income from tech transfer and cooperation with public and private sectors
- Research impact has not been evaluated
- Czech comprehensive universities = mostly focused on basic research – important for funding – therefore the most appreciated
- Applied research and tech transfer mostly developed at technical universities
- Accelerator: National M17+ Evaluation (approved 2017, fully implemented 2020)

M17+ Evaluation: Goals

- **Serves mainly the national bodies –** R&D&I Council and MEYS
- The aim is:
  - to get information for management of Research Organisations and R&D&I at all levels (formative evaluation),
  - to increase the efficiency of public spending (summative evaluation);
  - to obtain one of the supporting documents for provision of a grant for the long- term conceptual development of the research organization
  - to foster the quality and international competitiveness of Czech R&D&I

M17+ Evaluation: Tools

- 5 modules:

- M1 - Quality of Selected Results
- M2 - Research Performance

carried out by the R&D&I Council

- M3 - Social Relevance
- M4 - Viability
- M5 - Strategy and Policy

carried out by the International Evaluation Panel

M17+ Evaluation: M3 – Social Relevance

- structured by units (faculties and university institutes)
- based on self-evaluation report
- each evaluated unit is registered under a single “FORD category”
- impact of R&D&I and its results on society and individuals
- 11 criteria, i.e. Applied research projects, Contract research, Revenues from non-public sources, Applied research results with an economic impact on society, System of and support for technology transfer, popularization of RDI, etc.
- still underway + pilot cycle

M17+ Evaluation: Charles University

- **External view**
  - on the impact of CU's R&D&I **at all units including the HUM and SOC**
  - on milieu of the institution, mission and vision, objectives and strategies, tools
- **Complementary with the CU's evaluation of research**
  - which focuses on research performance and quality of research activity
  - focus on the quality of scientific activities in international comparison (benchmark universities)

Tech transfer at Charles University

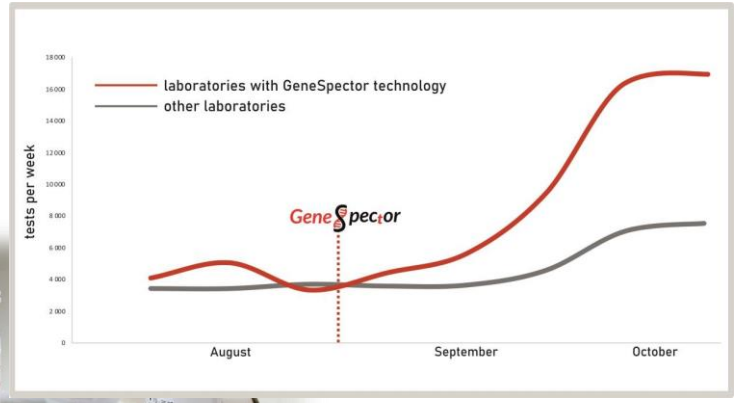
- Knowledge and technology transfer – strong development in last years:
  - Centre for Knowledge and Technology Transfer
  - Charles University Innovations Prague s.r.o.
- Locally based tech transfer offices at some units - training of individual innovation scouts for each of the units
- In last two years 3 spin-offs and a number of success stories

What we learned at Charles University

- SSH faculties started to recognize their potential only recently, still hadn't fully acknowledged the value (both financial and non-financial) - didn't put any contractual base for their cooperation
- topical issues of current times projected into research (migration, violence, radicalization and hate, intercultural communication, gender inequality, social exclusions, ageing population, etc.)
- the internal monitoring systems were not set, i.e. data and material proofs are missing
- cooperation with public institutions such as the ministries and international organisations as e.g. World Bank, the OECD and the European Parliament - influence of policies
- direct participation in discussions in the political and public space, to which it endeavours to contribute expertise - influence of societal discourse
- proper commercialization: Gene Spector and Charles Games s.r.o.

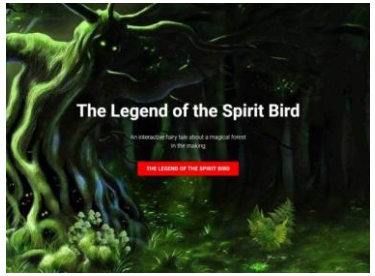
Case study 1: Gene Spector

- GeneSpector s.r.o. – new spin-off company of Charles University founded by CUNI subsidiary Charles University Innovations Prague s.r.o. together with commercial partners to develop and manufacture kits providing comprehensive solutions for Covid-19 testing from sampling to final analysis
- Based on a technology developed at the 1st Faculty of Medicine
  - viRNAtrap sampling solution disinfects the sample and eliminates the possibility of transmission of the infection to laboratory personnel
- Testing kits provide solutions for all testing steps
  - collection, transport, RNA isolation, PCR analysis
- GeneSpector solution rapidly accelerates throughput of laboratories
- After two months since its foundation GeneSpector has 25 % of Czech market
- We prepare to enter foreign markets ultimately followed by an EXIT



Case study 2: Charles Games

- Charles Games s.r.o. – first spin-off company of Charles University: founded by CUNI subsidiary Charles University Innovations Prague s.r.o. to develop and market computer games as well as to provide incubation services for young developers
- Based on previous game development at the Faculty of Mathematics and Physics
  - World-wide critically acclaimed WWII-themed game Attentat 1942
- CG products have won:
  - AMAZE award (DE) for the most amazing game of 2018
  - Best learning game at the Games for Change (USA).
- CG team is currently working on 4 new game titles
  - The Legend of the Spirit Bird, Silicomrades, Freedom 1945, Exile 1968
- We prepare subsidiary production company CG Productions to further reach new markets and user platforms



Case Study 3: COVID-19

- Covid situation mobilized academia (both teachers and students) including (research) capacities at universities and the Czech Academy of Sciences
- Some examples
  - Students volunteering in hospitals, at testing sites, in social services, etc.
  - Laboratory capacities
  - Help in homes of elderly
  - Shaping the national discourse
  - Fighting against the wave of fake news, denial and pseudoscience
  - Actively informing the public and explaining the science behind the pandemic

  …

Case Study 4: shaping the discourse

- Authoritarian and populist politicians do not occur in the US only
- Universities are and have to remain islands of free thought and free speech
- Political pressure indirect but increasing
- Case study: sending the head of state to the court:
  - Title of “Professor” traditionally given in Czechia by the king/president of the country (very traditional, very formal ceremony)
  - The current president refuses to appoint professors based on their political activities
  - Protests from the academia, civil lawsuit “Charles University against the president of the country”
- Titles are not important, the freedom of speech is
- It is our mission to be on guard

Thank you for your attention!

www.cuni.cz

Approaches for challenges in Finland's science ecosystem

Vice President Riitta Maijala, Academy of Finland - Research Council of Finland

International conference on Impact of Science, AESIS, 4 - 6 November 2020, Krakow, Poland
Plenary opening 6.11.2020 : Impact in different European Science Ecosystems

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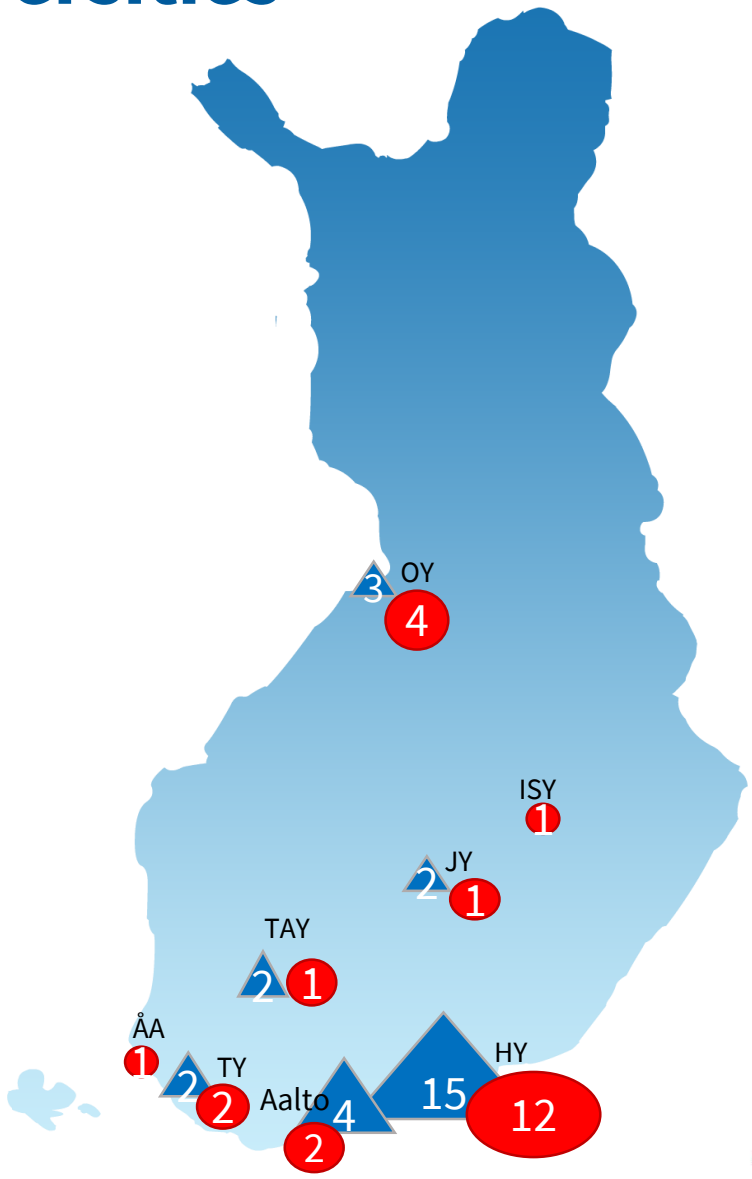
In 2014: Overlap of research infrastructure coordination (24) and Centres of Excellence (28) in Finnish Universities

Successful combination of people and research environments

- CoEs have been funded by Academy of Finland since 2000
- Long term development by many CoEs in building research infrastructures
- As high quality infrastructures, many of them were included into the National Research Infrastructure Roadmap
- Several CoE leaders have played key roles in promoting Finland's memberships in ESFRIs



Centre of Excellence

Roadmap Infrastrcuture

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Approaches for challenges in Finland's science ecosystem (A) – Competences and abilities

Challenges identified

1. Support for science based decision making not strong enough and interaction between decision makers and scientists too weak
2. Strategic ability of universities to improve the quality of science and profile should be stronger

New approaches by funding instruments

1) Strategic Research Council
2) University research profiling funding

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1) Strategic Research Council objectives & novel approaches

The main objectives

- Building a research base for wicked societal problems (grand challenges)
- Enhancing the use of research in decision making

The novel SRC approaches

a) Committing the Government to the research – the Government annually decides the themes

b) Making multi-disciplinarity (or even inter- and trans-disciplinarity) a requirement and a criterion for funding

c) Funding based on societal relevance, impact and research quality with equal weight

d) Strong weight on interaction in applications and during projects (interaction plan)

e) Mainstreaming public engagement and transparency

2) Competitive funding to strengthen universities' research profiles

- **Background**: University reform in Finland in 2010

- **Aim** of funding instrument
  - to support and speed up the strategic profiling of Finnish universities in order to improve the quality of research
  - to intensify strategic cooperation with relevant actors and to clarify the responsibilities between these actors

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Competitive funding to strengthen universities' research profiles

- **Based on their own strategies**, universities set out concrete plans for how they intend to improve the quality and impact of their research
  - describing how they intend to promote strengths, thematic research modules and / or emerging research fields
  - providing a clear schedule for each step
  - detailing their own financial commitment during and after the funding period

  - Examples of profiling areas: BioMediTech, Learning in digital world, Cyber security, Sea and maritime studies and Sustainable welfare systems
- More information can be found
  - https://www.aka.fi/en/research-funding/programmes-and-other-funding-schemes/university-profiling/

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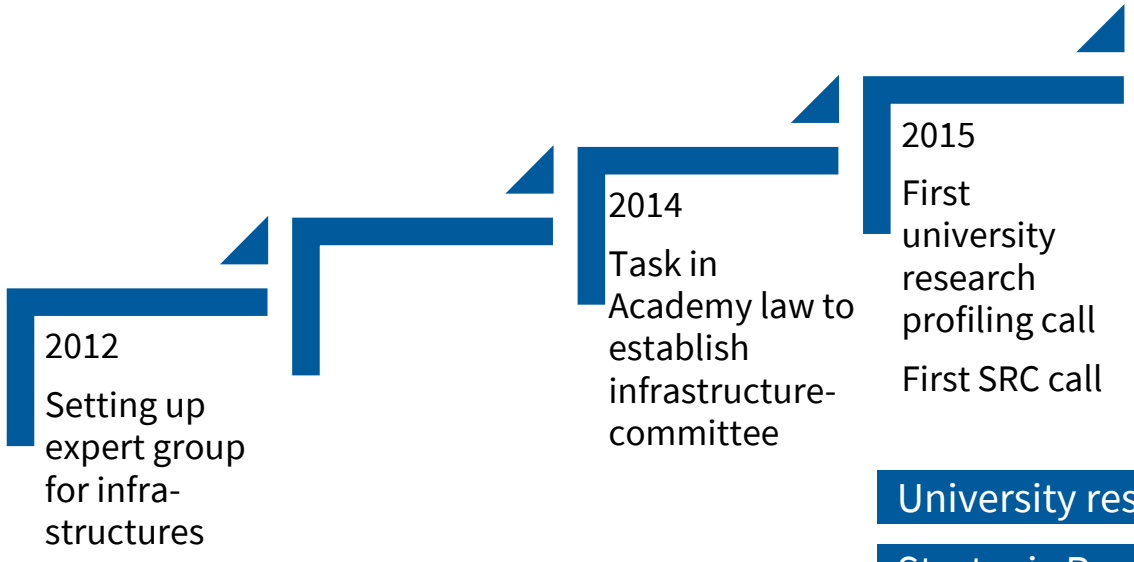
Supporting research environments and impact by Academy of Finland competitive funding

New funding instruments established: Competences and abilities approach



University research profiling funding since 2015 – for universities

Strategic Research Council (SRC) Funding since 2014 - for research groups

Strategies for research infrastructures, roadmaps and funding since 2012 - for RPOs

Center of Excellence funding since 2000 - for research groups

Lisää esitykseen alaviite

RPOs = Research Performing Organizations

The National Roadmap for Research, Development and Innovation 2020: Strategic focus areas

Competences

- Raising level of education and competence
- Increased inter-sectoral researcher mobility
- Researcher training to stimulate private sector employment
- Better utilisation of societal resources in RDI activities

New partnership model

- A new PPP model to be created
- Measures for tackling climate change and other societal challenges through RDI
- RFO measures to support greater research impact
- International RDI-cooperation

Innovative public sector

- Stronger leadership and coordination of RDI system
- Renewal of the public sector through RDI
- Evaluation of the Academy of Finland

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Approaches for challenges in Finland's science ecosystem (B) – Ecosystem and partnership approach

Challenges identified

3) Combining high quality science and innovation in competence clusters

4) New types of partnership models should be developed

New approaches by funding instruments

3) Flagships funding established in 2017

4) Research infrastructures as collaborative platforms

5) Developing RDI partnership networks of higher education institutions and government research institutes with the business sector in order to boost the societal impact of high-quality research

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Attractive, large competence clusters for excellent people with high ambitions

The Finnish Flagships represent

- effective mix of **cutting-edge research**
- **long-term plan** for eight years
- versatile **societal impact** e.g. in support of sustainable growth and development
- close **collaboration** with business, industry and society
- high ambition level
- excellent working facilities, infrastructures and **strong commitment** from host organisations
- **high-quality research and proven impact**

- More information can be found: https://www.aka.fi/en/research-funding/programmes-and-other-funding-schemes/flagship-programme/

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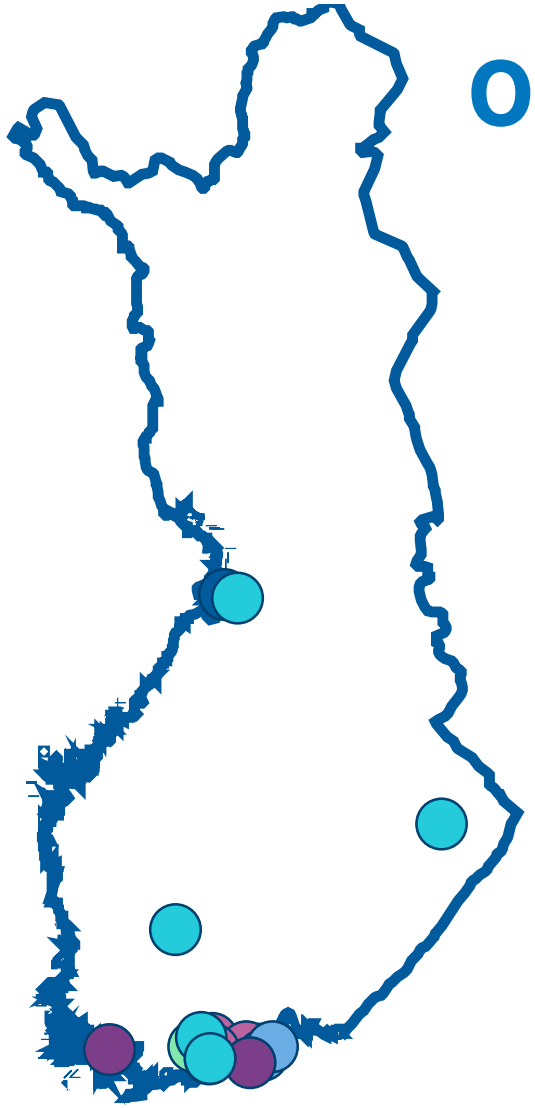
FLAGSHIPS – High-impact competence clusters

- Six flagships selected
- Each flagship has a long-term plan for eight years
- Flagship term: 2019–2026
- Collaborators include large corporations, SMEs and startups, educational institutions, hospitals and other public organisations

8 years of activity within the flagships areas, with an estimated total worth of 9 billion euros.

Most of this is financed by business companies.

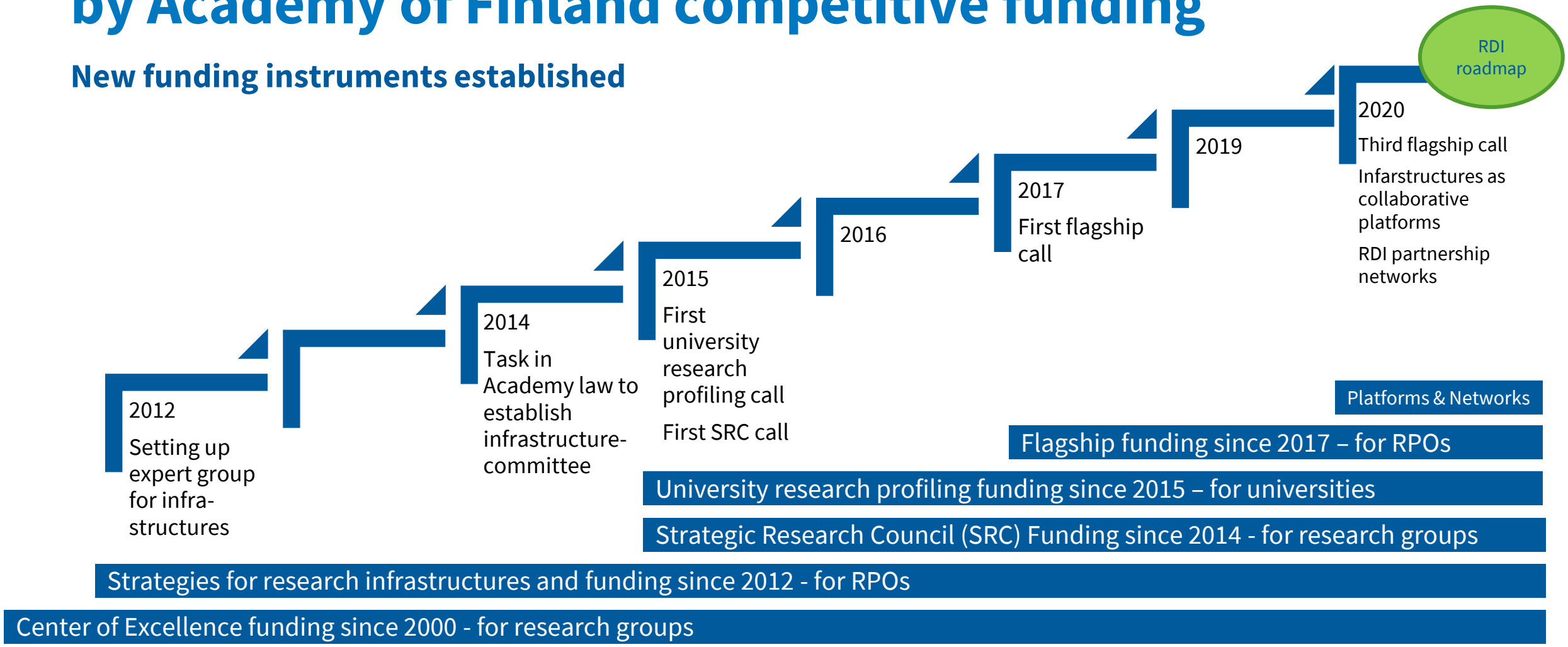
Ongoing Flagships for the years 2018-2025



- **6G** – 6G-Enabled Wireless Smart Society & Ecosystem | University of Oulu
- **FCAI** – Finnish Centre for Artificial Intelligence | Aalto University, University of Helsinki & VTT
- **FinnCERES** – Competence Centre for the Materials Bioeconomy | Aalto University & VTT
- **iCAN** – Digital Precision Cancer Medicine Platform | University of Helsinki & Helsinki University Hospital HUS
- **INVEST** – Inequalities, Interventions and New Welfare State | University of Turku & National Institute for Health and Welfare
- **PREIN** – Photonics Research and Innovation | University of Tampere, Aalto University, VTT & University of Eastern Finland

Supporting research environments and impact by Academy of Finland competitive funding

New funding instruments established



Lisää esitykseen alaviite

RPOs = Research Performing Organizations

Approaching both competences and abilities as well as competence clusters and partnerships

- In Finland, the focus in enhancing the impact of science has expanded from the individual / group support towards research environments and competence clusters within the ecosystems
  - Thematic strategic research funding for research groups
  - Flagships, university profiling and research infrastructure funding for the areas which also the research performing organizations find strategically important
  - New initiatives to support the development of partnerhsips: Research infrastructures as platforms for collaboration and Developing RDI partnership networks

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More information

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https://www.aka.fi/

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Break
10.45-11.15 (GMT+1)

Up Next

11.00-12.15	**Roundtable: Science during and after Crisis Times**	Kościół Mariacki room
	Roundtable: Open Science	Tyniec room
	Mass Media & Communication	Smocza Jama room
	Regional & Municipal Level	Nowa Huta room
	Research & Technology Organisations	Sukiennice room
	Ranking Impact	Brama Florianska
	Science Assessment for Stimulating Broader Impact	Barbakan room