Policy Learning Platform Peer Review
Policies and activities for knowledge and technology transfer and use of research infrastructure by Centres of Excellence and Centres of Competence, Bulgaria

Peer inputs – Sessions 4

Online, 14 December 2021

Research and innovation

Interreg Europe

European Union | European Regional Development Fund

Our 4 peers

- **Dr Leena Sarvaranta – former Head of EU Affairs at VTT, Finland**

- **Markus Dettenhofer – CEITEC, former executive Director, Czech Republic**

- **Alaitz Landaluze - Basque Innovation Agency, Spain.**
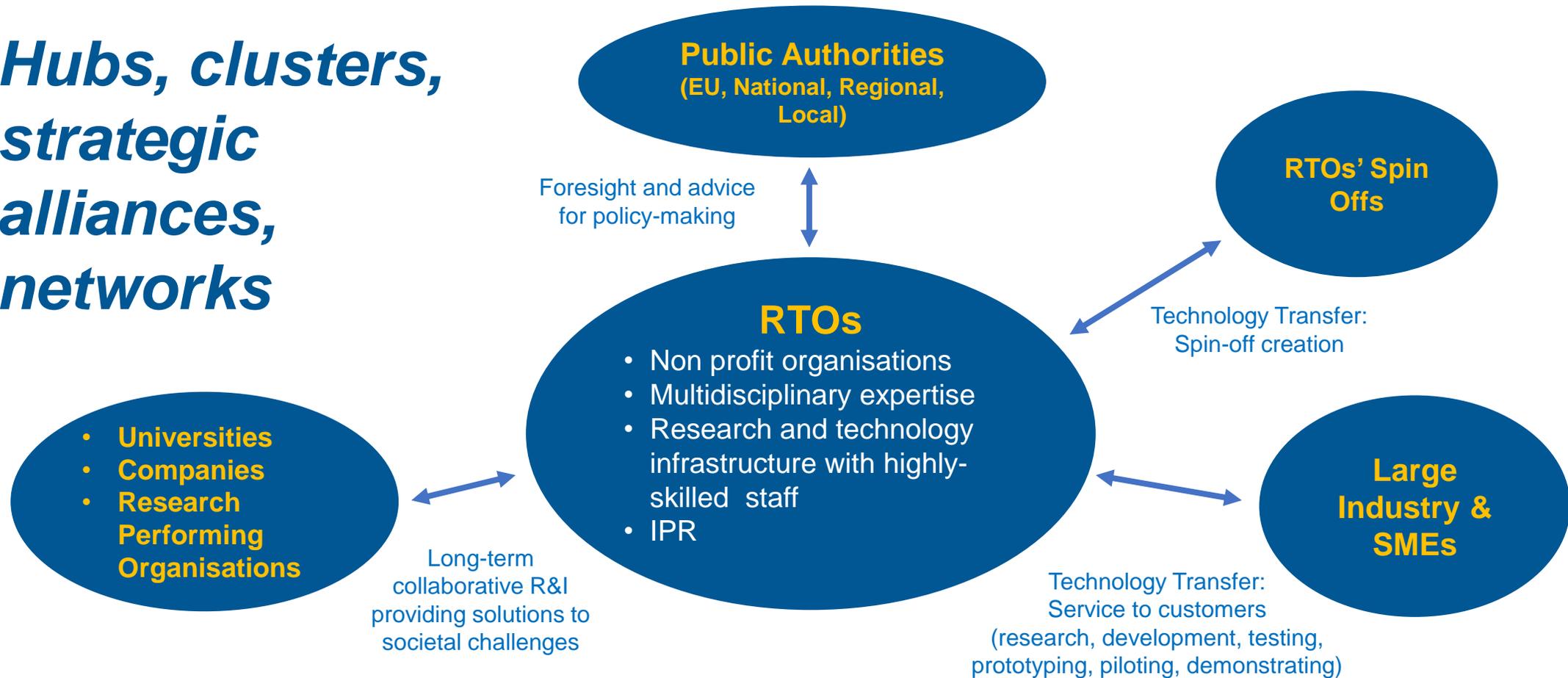
- **Pieter de Jong – Wetsus, Netherlands.**

Dr Leena Sarvaranta – former Head of EU Affairs at VTT, Finland,

Leena Sarvaranta, professional background:
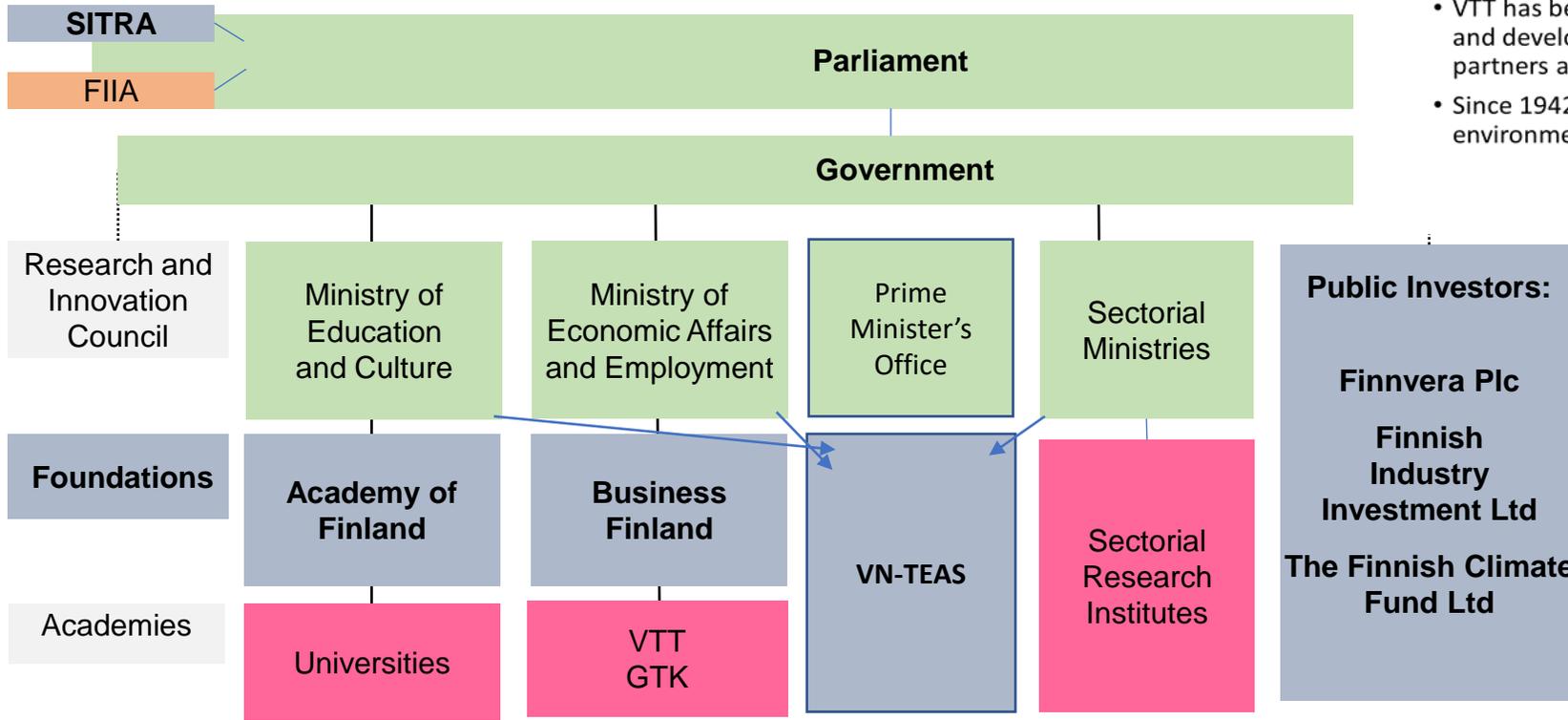Head of EU Affairs at VTT Technical Research Centre of Finland (2007-2021)

Collaboration at national level in Finland	Collaboration with the European Commission
2007-2021 **Sub-committee for EU Research and Innovation Policy, Ministry of Economic Affairs and Employment** 2014-2021 **RIS3 Coordination Group, Helsinki-Uusimaa Regional Council** 2016-2021 **Scientific Advisory Board for Defence, Ministry of Defence** 2016- current **Government Foresight Group, Prime Minister's Office** 2014-2018 **Strategic Research Council, Academy of Finland**	**DG GROW (Industrial Policy)** 2018-2019: Strategic Forum for Important Projects of Common European Interest (IPCEI), Sherpa 2013-2015: Key Enabling Technologies (KETs) High Level Group, Sherpa 2010-2011: Key Enabling Technologies (KETs) High Level Group, Sherpa **DG REGIO (Interregional Cooperation)** 2021- Expert Group on Interregional Innovation Investments (I3) 2018-2020: Scientific Advisory Group on Industrial Transition and Interregional Cooperation in Innovation **DG RTD and DG CONNECT (Public-Private Partnerships)** 2013-2017: Ex-Ante and Mid-Term Evaluations of Contractual PPPs for H2020 2011-2013: Interim and Final Assessments of Research PPPs in the European Economic Recovery Plan (FP7) **Evaluation of FP7 and H2020 project proposals** 2014-2017-2020: H2020-NMP/CSA, H2020-Swafs/RRI 2007-2008-2012: FP7-ERA-Nets, FP7-NMP/SME

RTOs' Open Innovation Ecosystem: VTT

Hubs, clusters, strategic alliances, networks

Public Authorities
(EU, National, Regional, Local)

Foresight and advice for policy-making

RTOs' Spin Offs

Technology Transfer: Spin-off creation

RTOs
- Non profit organisations
- Multidisciplinary expertise
- Research and technology infrastructure with highly-skilled staff
- IPR

- **Universities**
- **Companies**
- **Research Performing Organisations**

Long-term collaborative R&I providing solutions to societal challenges

Large Industry & SMEs

Technology Transfer: Service to customers (research, development, testing, prototyping, piloting, demonstrating)

Scientific discovery   **R&I activities**   **Market uptake**

Source: EARTO
www.earto.eu

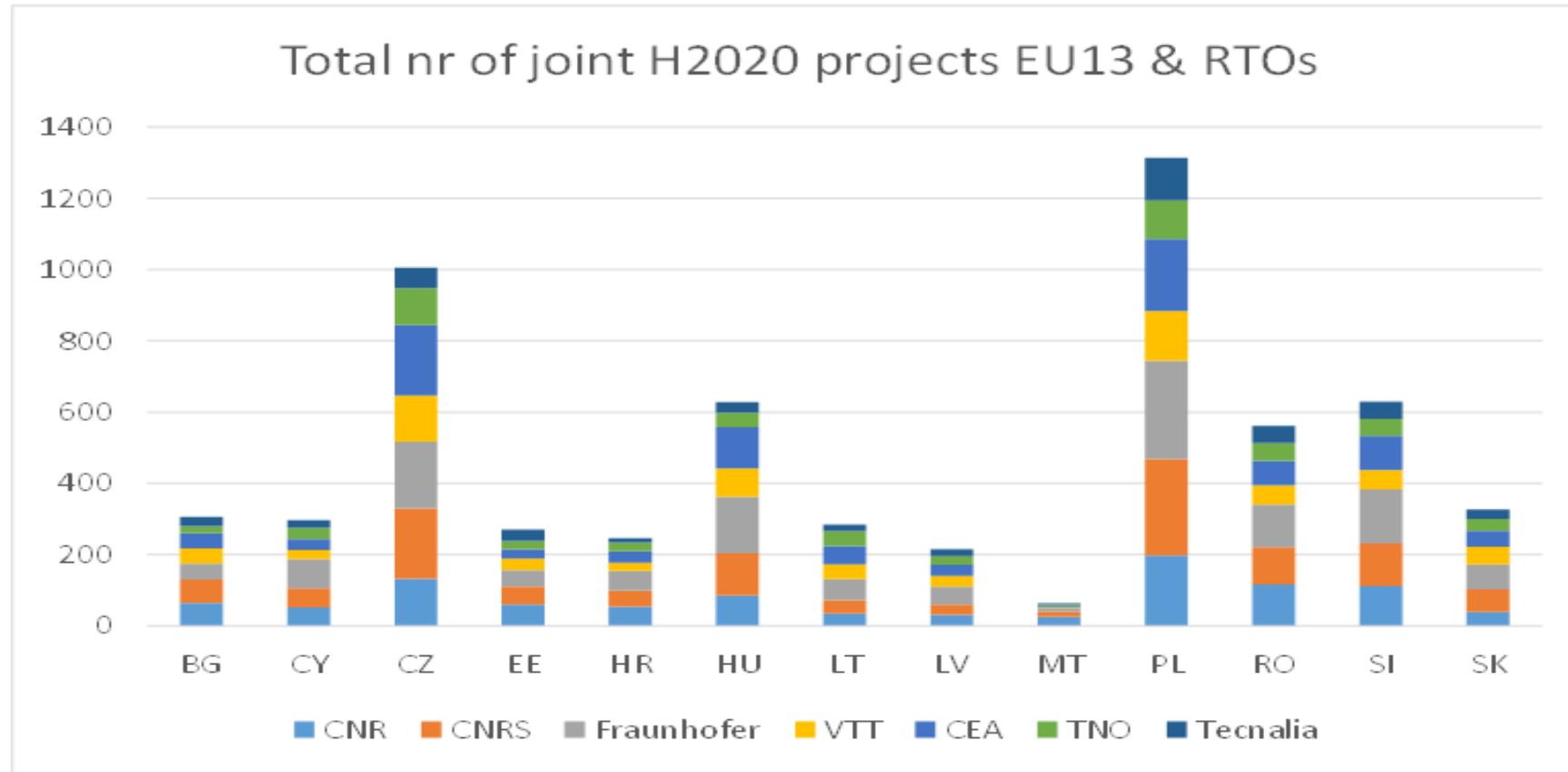# Governance and roles in the Finnish R&I institutional system

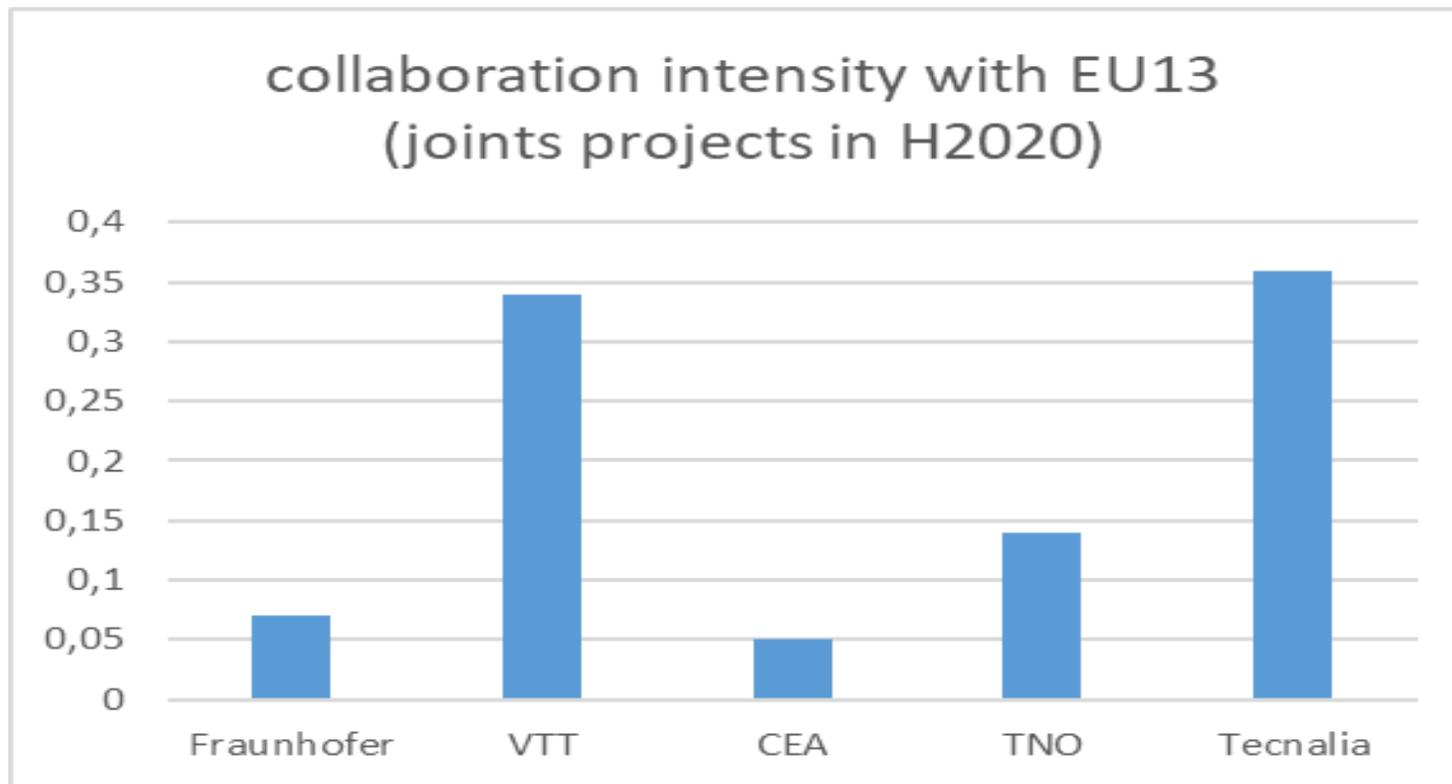Role of RTOs is not always well understood

- VTT has a special societal purpose and a central role in the Finnish research and innovation system – it is extended towards EU level as well
- The development path of Finland as a whole, and needs of each industrial era, can be reflected in VTT's history. Today, the *Exponential Hope Strategy* with a global dimension is paving the way.
- VTT has become an important centre for technological expertise in Finland and developer of new technologies. Challenge-driven collaboration with partners and customers takes place within open innovation ecosystems.
- Since 1942, VTT has always been able to adapt to changes in its external environment - continuous internal renewal is key!

SITRA

FIIA

Parliament

Government

Research and Innovation Council

Ministry of Education and Culture

Ministry of Economic Affairs and Employment

Prime Minister's Office

Sectorial Ministries

Public Investors:

Finnvera Plc

Finnish Industry Investment Ltd

The Finnish Climate Fund Ltd

Foundations

Academy of Finland

Business Finland

VN-TEAS

Sectorial Research Institutes

Municipalities

Academies

Universities

VTT GTK

Regional Councils

Private Companies

Industry Associations

https://www.unifi.fi/

https://tulanet.fi/tulanet/

13.12.2021

RTO H2020 Collaboration with EU13 (2014-2020)

Total nr of joint H2020 projects EU13 & RTOs

Legend: CNR, CNRS, Fraunhofer, VTT, CEA, TNO, Tecnalia

RTO H2020 Collaboration with EU13 (2014-2020)

collaboration intensity with EU13
(joints projects in H2020)

With relation to staff size

Markus Dettenhofer – CEITEC, former executive Director, Czech Republic;

Expert profile

- US trained (BS - UC Berkeley, PhD - Johns Hopkins, Post-doc & Lecturer Harvard Medical School)

- Member of start-up team for novel neurological treatment company, Boston, Massachusetts

- Project Leader – Vaccine and antibody R&D Johnson & Johnson (NL)

- Executive Director CEITEC – Central European Institute of Technology (CZ)

*CEITEC is a scientific consortium in the **fields of life sciences, advanced materials and technologies** whose aim is to establish itself as a high performing European centre of science.* **www.ceitec.eu**

CEITEC

Initial Investment: 208 M€

Annual Running: 38 M€

8 Research Programmes

12 Core Facilities

 # Researchers: 550

Total headcount: 1000

Annual budget

- EU Grants
- Czech non-competitive
- Czech competitive grants
- Commercial contracts

5% · 22% · 48% · 25%
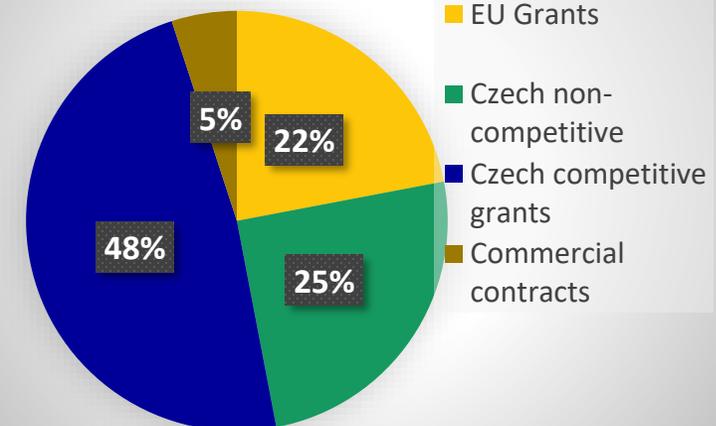
Cooperation with Application Sphere – CEITEC Policies and Procedures link found here: f35536 (ceitec.eu)

Policies

- Basic Principles
  - Professionally led TT negotiations at institutional level
  - Standards in practice are encouraged
  - Conflicts with existing IP and publication process should be avoided
  - Legal and ethical guidelines must be followed
- Agreements
  - Work and service contracts
  - Research and development agreements
  - Collaborative Agreements (type 1- no public funding; type 2 – public funding)
  - Material Transfer Agreements
  - Non-disclosure Agreements
  - Exploitation or License Agreements
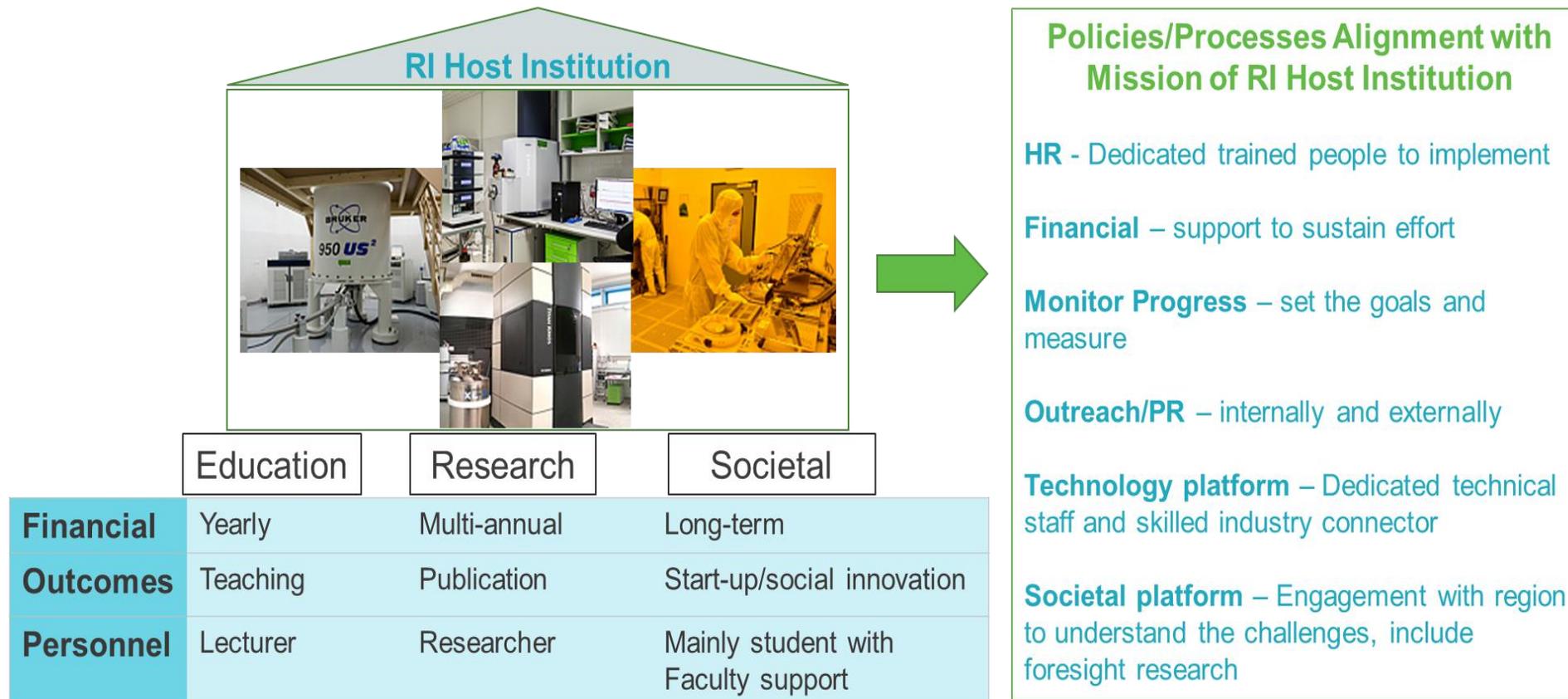
Procedures

- TT office leads awareness campaign for application research
- Researcher contacts TT office of potential commercialization opportunity
- Agreements involve a joint effort between researcher, TT officer and third party
- Soft skills training in entrepreneurship, collaborative work, and use of infrastructure

Research and innovation

Spectrum of Technology Transfer examples in Czech Republic

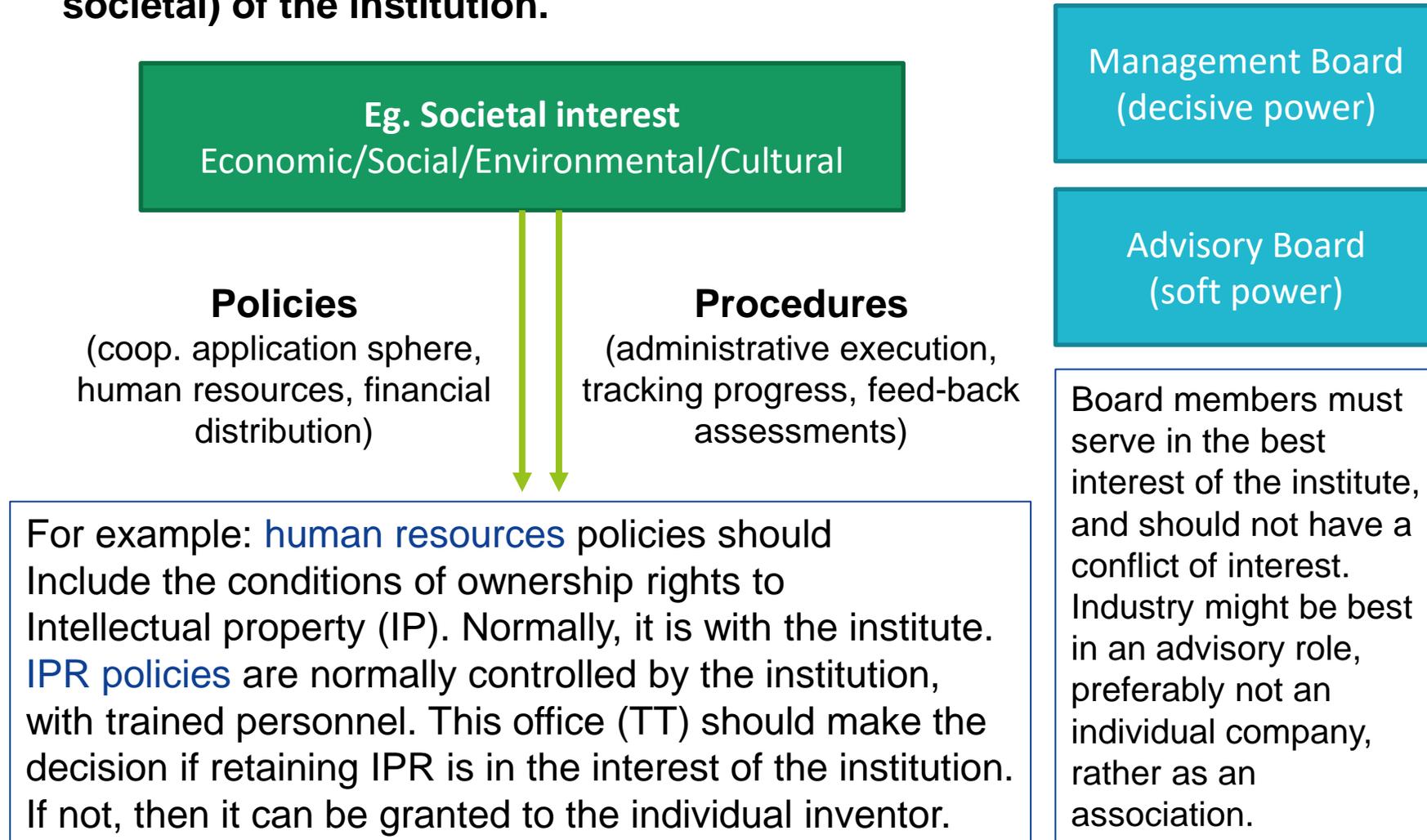| Examples	Good/Bad	How to improve
Company established by academic and is awarded grants for duplicate activities	There is no technology transfer here; the weak university system and grant agency is being exploited	Better due diligence. Personnel's time divided should be clear. Equipment use tracked and paid-use established.
PhD Student does measurements for company, and lab earns money	The company pays little money; the student does not progress on their thesis	The institute should strengthen their position with companies, to establish relationships based on gained know-how
Hesitant Technology Transfer office – focused on full control of IP rights	The deal is not reached because of a legal demand for IP rights, when there is no novel invention yet.	Work in good faith to get the deal done. Offer staged progression and possible first right of refusal option.
PhD student establishes intellectual consulting company – fee for service	The skill was developed as a student. Little benefit to the university immediately. But, many graduates employed.	This company will grow organically, without the complications of IP. PlasmaSolve
PhD student takes license on IP from institute – established a company	Founder worked in sales and marketing for 2 years. Then took a license on the IP. Royalties for institution, and trust built.	Very good example. NenoVision

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Mission Attainment: Centres of Excellence, Centres of Competence

RI Host Institution

	Education	Research	Societal
Financial	Yearly	Multi-annual	Long-term
Outcomes	Teaching	Publication	Start-up/social innovation
Personnel	Lecturer	Researcher	Mainly student with Faculty support

Policies/Processes Alignment with Mission of RI Host Institution

HR - Dedicated trained people to implement

Financial – support to sustain effort

Monitor Progress – set the goals and measure

Outreach/PR – internally and externally

Technology platform – Dedicated technical staff and skilled industry connector

Societal platform – Engagement with region to understand the challenges, include foresight research

The RI Host Institution must be operationally equipped to fulfill its mission which is articulated both internally and externally

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Governance

The basis for good governance is to provide policies and procedures which can be operationalized to serve the interests (education, research, societal) of the institution.

Eg. Societal interest
Economic/Social/Environmental/Cultural

Policies
(coop. application sphere, human resources, financial distribution)

Procedures
(administrative execution, tracking progress, feed-back assessments)

Management Board
(decisive power)

Advisory Board
(soft power)

For example: human resources policies should
Include the conditions of ownership rights to
Intellectual property (IP). Normally, it is with the institute.
IPR policies are normally controlled by the institution,
with trained personnel. This office (TT) should make the
decision if retaining IPR is in the interest of the institution.
If not, then it can be granted to the individual inventor.

Board members must serve in the best interest of the institute, and should not have a conflict of interest. Industry might be best in an advisory role, preferably not an individual company, rather as an association.

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Alaitz Landaluze - Basque Innovation Agency, Spain,

Innobasque, the Basque Innovation Agency

Innobasque was created in July 2007 to boost the innovation based transformation process of the Basque Country.

400 leaders on the stage

Non-profit private association

+900 *partners*

comprised of companies, social organisations, public administration, science and technology centres.

The Basque president ("lehendakari") is the honorary president.

2021-2024 strategic areas:

- Monitoring & Evaluation (Science, Technology and Innovation Plan Secretariat)

- Innovation in SMEs

- R&D internationalization

- STEAM Education

The Basque Autonomous Community
High level of autonomy, including innovation policy
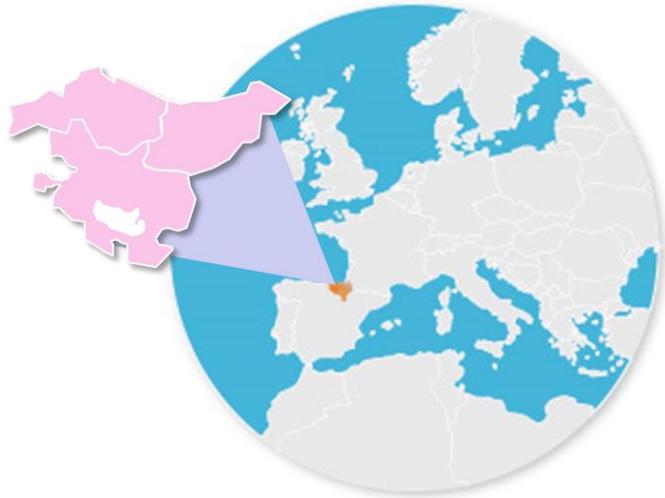
Population (2020)
2,189,138 (4.6% of Spain)
GDP per cápita in PPS (2019, EU-27=100)
117.3 (Spain=91)
R&D over GDP (2020)
2.08% (Spain=1.41%)

Distibution of competences

Basque Autonomous Community

- Own tax system
- Education and culture
- Health
- Industry and Commerce
- **Innovation policy**
- Transport and Public Works
- Police
- Housing and Environment
- Agriculture and Tourism
- Labour and Social Welfare
- Hydraulic resources

Kingdom of Spain

- Armed Forces
- Foreign Affairs
- Social security
- Ports and Airports
- Postal Services & Communications
- Foreign Trade
- Customs Services
- State Railway System

Source: Basque Institute of Statistics (Eustat) and Eurostat.

Industrial and open economy

GVA per sector (%; 2018)

- Agriculture, forestry & fishing: Basque Country 1.0, Spain 3.1, EU-27 1.8
- Industry: Basque Country 24.3, Spain 15.9, EU-27 20.1
- Construction: Basque Country 5.8, Spain 6.2, EU-27 5.4
- Services: Basque Country 68.9, Spain 74.8, EU-27 72.7

■ Basque Country ■ Spain ■ EU-27
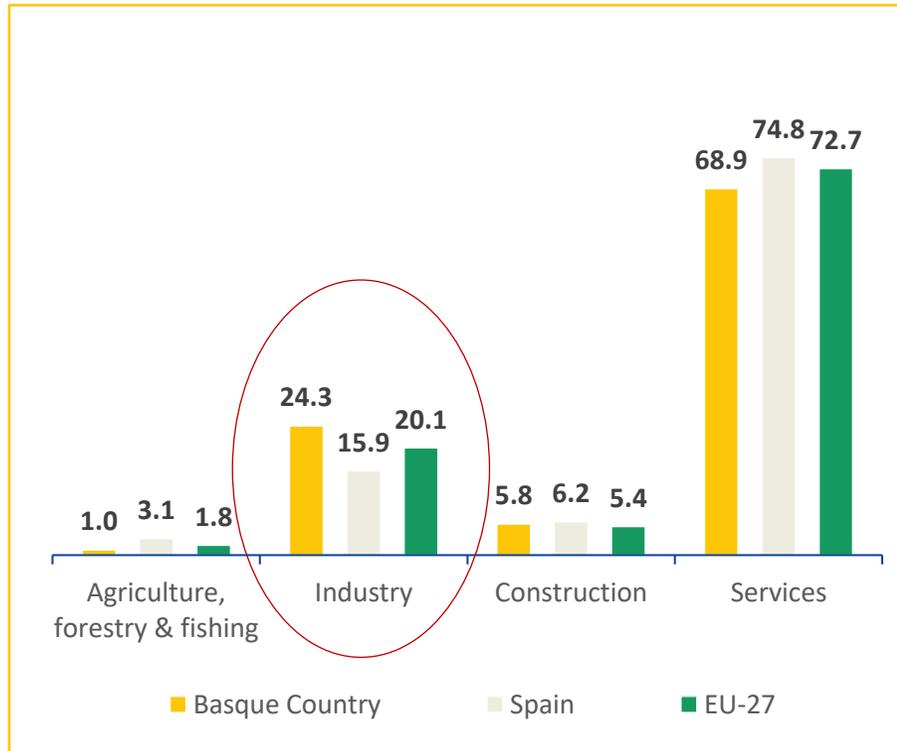
Exports and imports (2017)

Size of balls: Imports + Exports (Millions of €)

Trade deficit

Trade surplus

Imports (Millions of €)

Exports (Millions of €)
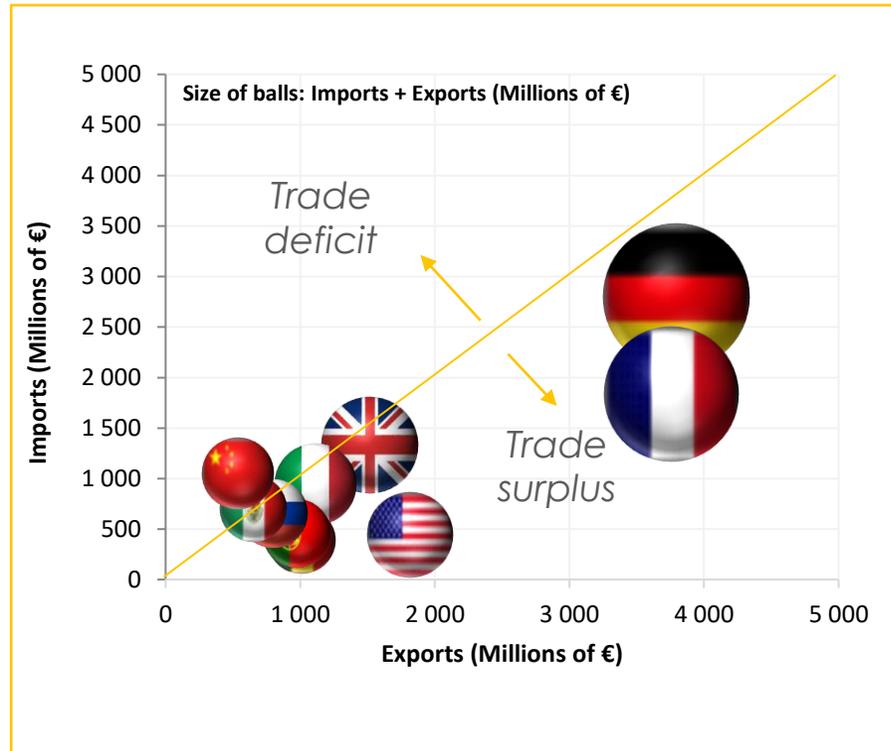
Source: Basque Institute of Statistics (Eustat) and Eurostat.

Basque Country approach: Long tradition of industrial and innovation policies

Basque Country approach:
Pillars of the Science, Technology and Innovation Ecosystem

Science (17% of the R&D, 4.400 people) Ministry of Education	Technology (24% of the R&D, 3.400 people) Ministry of Industry	Innovation (55% of the R&D. 5.400 people)

Entities:
- Universities
- Basic Excellence Research Centres
- Ikerbasque

Entities:
- RTO (50% of private funding)
- Cooperative Research Centres

Entities:
- Companies
- R&D Units

Mission:
Science of Excellence

Mission:
Contribute to competitiveness and diversification

Mission:
Competitiveness and diversification

Main indicator: high impact publications

Main indicator: contract research

Main indicator: sales for new P&S, exports of high technological level

RTOs creation and integration process

Cooperative Research Centres

- **Creation of CICs**: CIC bioGUNE, CIC biomaGUNE, CIC marGUNE
- **New CIC**: CIC microGUNE (Microtechnologies Cooperative Research Center)
- **New CICs**: CIC nanoGUNE, CIC tourGUNE
- **New CIC**: CIC energiGUNE
- **Reorganisation of CICs**: CIC bioGUNE, CIC biomaGUNE, CIC energiGUNE, CIC nanoGUNE

Technology centres

- **Founders**: inasmet, LABEIN Centro Tecnológico, ROBOTIKER
- **Creation of Tecnalia Technology Corporation**: tecnalia Corporación Tecnológica
- **Creation of IK4 Alliance**: IK4 Research Alliance
- **Founders**: ikerlan, CEIT, AIKER, Tekniker
- **Tecnalia's merger approval**: tecnalia Inspiring Business
- **IK4's last incorporation**: AZTERLAN
- **Tecnalia starts working as one organisation**
- **Re-accreditation of Technology Centres**: IK4 Research Alliance, tecnalia Corporación Tecnológica
- **New technology centre**: Leartiker
- **Creation of BRTA**: BRTA Basque Research & Technology Alliance

Timeline: 1997 — 2000 — 2002 — 2004 — 2006 — 2008 — 2010 — 2012 — 2014 — 2015 — 2017 — 2019 — 2021

Basque STI network

- Decree 96/1997 Network's constitution
- Creation of Basque Technology Network — sareTEK
- Decree 278/2000 Network's regulation
- Creation of the Basque Technology & Innovation Network
- Decree 221/2002 Network's regulation
- Creation of the Basque Science, Technology & Innovation Network
- Decree 109/2015 Basque STI Network's accreditation
- Beginning of the Basque STI Network's reorganisation
- Decree 21/2021 Basque STI Network's update
- Updating of the Basque STI Network's composition

BRTA members

Basque Country Approach: balance between the development of R&D centers and the support to technological upgrading of companies

R&D infrastructure development (RTOs, Universities, etc.)

- Supporting and collaboration programs
- Invest in new laboratories and equipment

Support to companies for technological upgrading

- Supporting programs
- Training
- Strategic investment in local companies

Lesson learnt: It is necessary that public investments are dedicated in a balanced way both to the generation of knowledge infrastructures (universities, RTOs, etc.) and to supporting continuous technological upgrading of companies. Otherwise, they will not be able to absorb the knowledge generated and public investments will not have an impact on local competitiveness.

Public investment in the Basque Country - 500M€ (2020): 40% Knowledge infrastructures (Universities, RTO, etc.), 40% companies support, 12% collaboration programs, 8% talent promotion

Pieter de Jong – Wetsus, Netherlands,

Wetsus & WaterCampus Leeuwarden

Sharing solutions for better regional policies

Peer Review Republic of Bulgaria

December 13th, 2021

Pieter de Jong

Interreg Europe

European Union | European Regional Development Fund

combining scientific excellence with commercial relevance

Wetsus: Excellence in Multi-disciplinarity

- 23 universities, 50 scientific chairs
- 105 companies
- 23 themes

- *65 PhD projects*
- *€ 15 million/year program* (25% companies, 25% universities, 50% governments)

Combining scientific excellence with commercial relevance

Innovation Chain

Study track water Leeuwarden

WATER CAMPUS Leeuwarden

Age >

lifelong learning

from 10 years | from 12 years | from 16 years | from 20 years | from 25 years

Primary education	Secundary education	Vocational education	Applied sciences water	Master water technology	PhD	Business education

• 3 Water Days
• 8+ Program
• Water Wonder Lab
	• Honours program
	• Teaching material
	• Profile Selection Test
		• Training and education professionals
		• Empowering vocational education
			• Bachelor of
			  - Environment
			  - Biotechnology
			  - Chemical Engineering
				• MSc Water Technology (joint degree)	• Research schools	• MBA Program
						• Masterclasses
						• Business Challenge

WATER CAMPUS Leeuwarden   WATER CAMPUS Leeuwarden   CIV water   cew centre of expertise water technology   wetsus academy masters in water technology   wetsus   Lemniscaat SCHOOL OF MANAGEMENT   HEMA   wetsus

Canada

USA

South Korea

Japan

China

India

Singapore

Israel

Saoedi Arabia
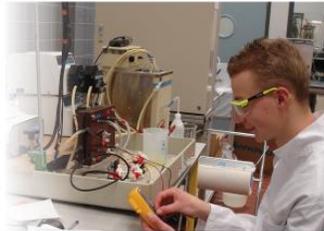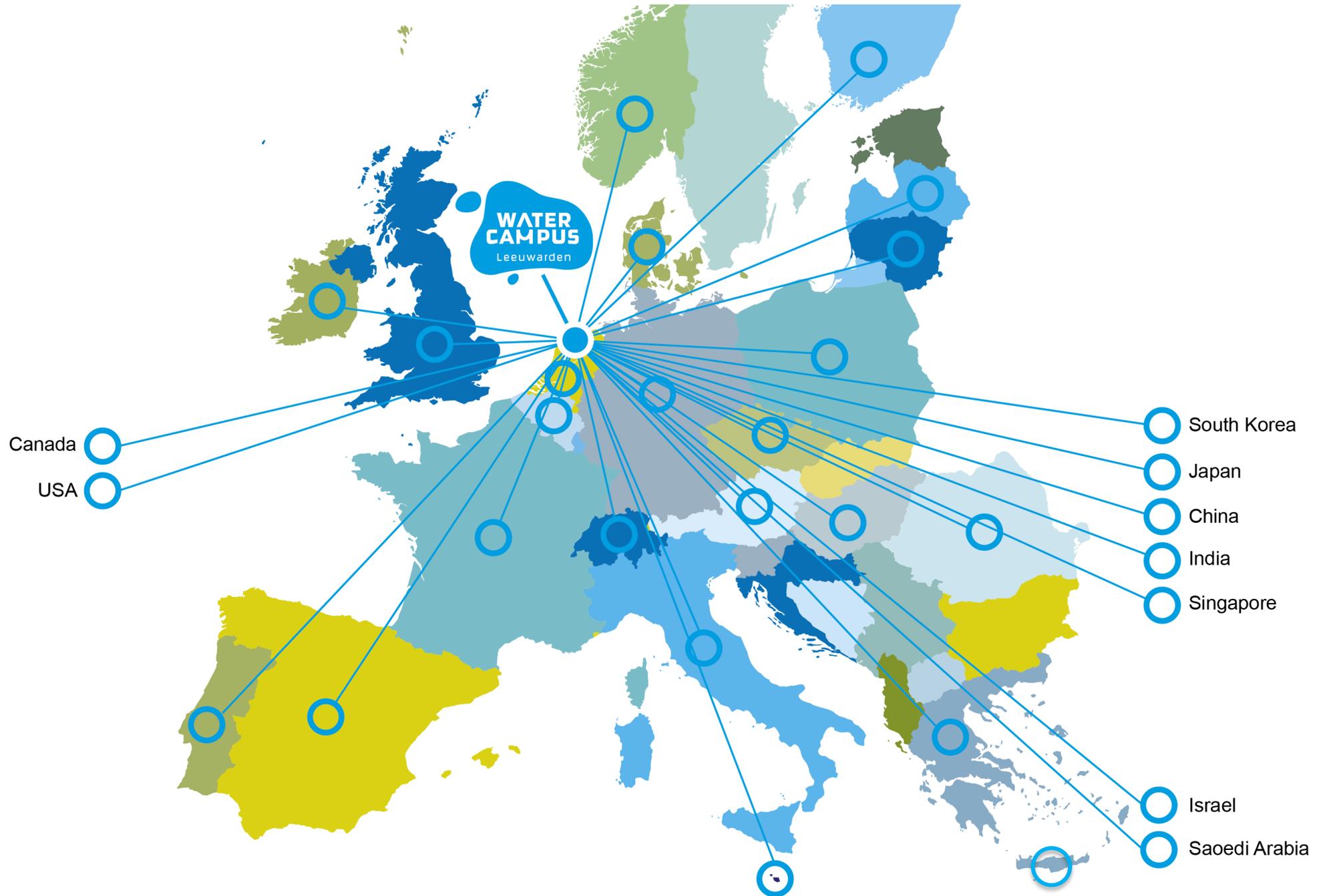
wetsus

Output

24 novel scaled up technologies
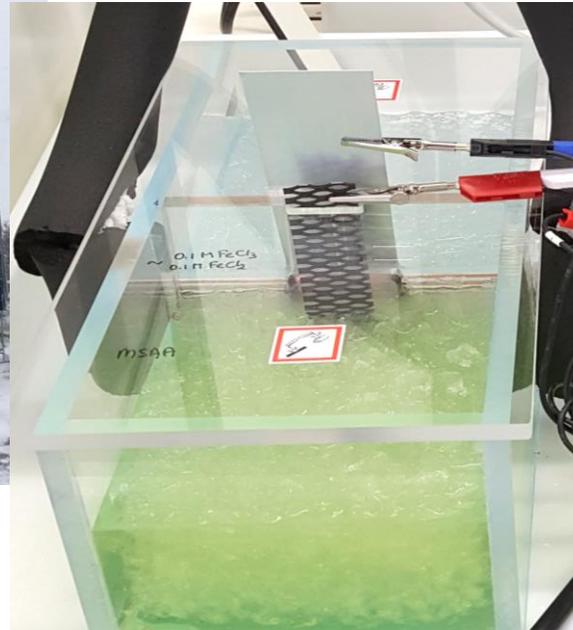
40 inventions
taken-up by SMEs

38 Spin-off companies

120 PhD graduations

wetsus

www.wetsus.eu
www.watercampus.nl
www.topsectorwater.nl

Short Break

5 minutes

Policy Learning Platform Peer Review
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Peer inputs – Sessions 5

Online, 14 December 2021

Research and innovation

Interreg Europe

European Union | European Regional Development Fund

1. Enhancing business interest

- 1) How to increase the capacity to identify technologies of interest to businesses and industry in general?

Dr Leena Sarvaranta – former Head of EU Affairs at VTT, Finland,

Policy challenges

1) **How to increase the capacity to identify technologies of interest to businesses and industry in general?**

Top-down measures and facilitation:

(a) **Open mindset - Shift approach towards collaboration at national level, and towards interregional collaboration at EU level**

> **Adopting EU policies and practices**

(b) **Innovation governance – Increased role for the ministry of economic affairs (instead of ministry of education)**

> **Special-purpose research and technology institutions (CoE, CoC…. RTO?)**

(c) **Integration and operational steering – "A carrot" is needed**

> **A special-purpose funding agency to force collaboration between research and industry in practice (thematic programme-based cross-disciplinary and competitive R&I funding, with international evaluation panels and appropriate KPIs)**

Policy challenges

1) **How to increase the capacity to identify technologies of interest to businesses and industry in general?**

Case VTT:

➤ Open Governance:
- VTT has a high level of autonomy and accountability (performance agreement with the Ministry)
- Private, public and academic stakeholders are present in the VTT Board

➤ Open innovation:
- VTT technology roadmaps are co-designed and implemented with many different stakeholders, in Finland and across the EU

➤ Public Mission (as stated by law):
- VTT is an integral part of the Finnish R&I system, having a seat in key dots
- Beneficiary status "REC" in the EU programmes (same funding percentage as "HEU")
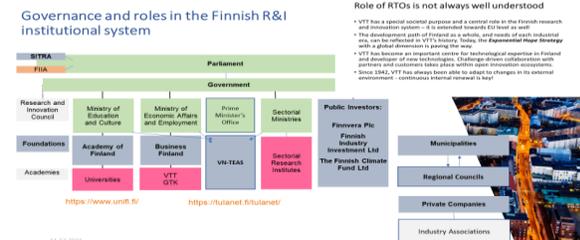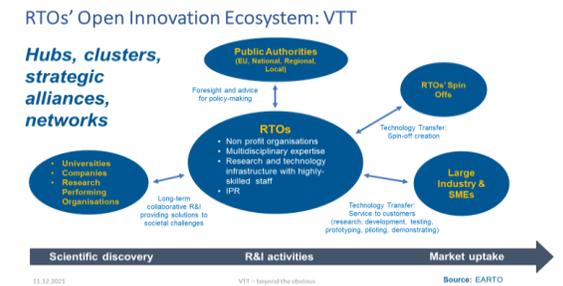
Markus Dettenhofer – CEITEC, former executive Director, Czech Republic;

Policy Challenge 1. How to increase the capacity to identify technologies of interest to the business and industry?

Scoping
- Map the existing research and technologies within the Centres. Assess level of 1) innovativeness and 2) technology/solutions readiness
- Map and understand local/regional business domains/fields, and willingness to try new solutions
- Identify/recruit and/or train a person(s) to perform this work (must have education and motivated background; and be given the support of the management of the host organisation).
- Find the intersection of the technology being developed with the business demand

Initiation
- Invite business community to the Centre to present their business/technical challenges together with the targeted researchers
- Have the centre representative(s) work to develop know-how sharing activities, potentially through joint research, first.

Research and innovation

Policy Challenge 1. How to increase the capacity to identify technologies of interest to the business and industry?

Research and innovation

If no match exists between supply and demand

- Open an active search for interested businesses in further geographic locations
- Initiate short-term exchange of students with industry and/or bring industry scientist for secondments to centres

If researchers are reluctant to engage with industry

- Recruit external researchers which are more application-minded
- Start an education programme with students to raise awareness of the positive aspects of application research

Alaitz Landaluze - Basque Innovation Agency, Spain,

(1) How to increase the capacity to identify technologies of interest to businesses and industry in general?

Science, Technology and Innovation policy ⟷ Industrial policy (cluster policy)

Key elements:

- Close relationship between the Basque Government and companies (participation in High level advisory board)

- Presence of companies in RTOs and CRCs governing bodies

- RTOs are members of cluster organizations

- Technological roadmaps are periodically elaborated by cluster organizations (example: Energibasque)

- Companies participate in the definition and implementation of S3 strategy

Short Break

5 minutes

2. Managing Innovations

- 2) How to properly manage the innovations that arise as a result of project research activities?

Expert support

Markus Dettenhofer – CEITEC, former executive Director, Czech Republic;

Policy Challenge 2. How to properly manage the innovations that arise as a result of project research activities?

This is mainly about the question of capacity of personnel who will specialize in the management of innovation.

- First, perform an assessment of potential personnel who could be dedicated to this activity, full-time. Do they have any experience in this activity from abroad, within institutions that are proficient in innovation management?
- If this person(s) exists, send them for further training to work in a highly functional TT office, abroad.
- If no one exists with this profile, recruit an experienced person(s) to establish a TT office.
- The question of centralization or decentralization of a TT office will need to consider the following:
  - If centralized, it should have autonomy from the institutions it serves (due to turf disputes)
  - Centralization would be preferred, as a start, if the existing capacity is low in the country.
  - Decentralized could be an option, after some period of time, if the supporting institution truly has its own capacity and the demand of deal-flow.
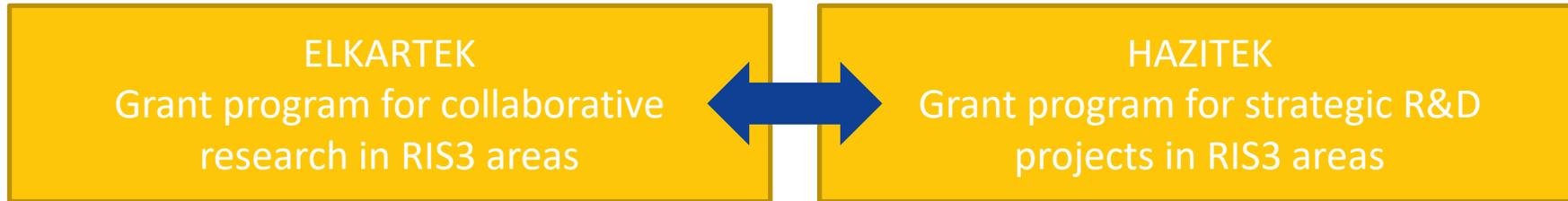
Policy Challenge 2. How to properly manage the innovations that arise as a result of project research activities?

- Benchmark the activities of the TT office with other more advanced centres from different countries.
- The TT office will need to develop:
  - A series of standardized agreement forms
  - A digital data-base of technology developments and business contacts with their areas of specialized interest
  - People skills to stay engaged with stakeholders through skills training events, business round-tables, student pitch events, etc.
  - A go/no-go scheme for deal decision-making (eg. file IP, contracted fee-for-service, know-how sharing agreement)

Alaitz Landaluze - Basque Innovation Agency, Spain,

(2) How to properly manage the innovations that arise as a result of project research activities?

ELKARTEK Grant program for collaborative research in RIS3 areas	HAZITEK Grant program for strategic R&D projects in RIS3 areas

Beneficiaries:
- **Knowledge infrastructures**

Objective
- Knowledge generation around RIS3 areas

Characteristics:
- Level of support:
  - 100% fundamental research
- Length: 2 years
- RIS3 areas
- Maximum of 8 participants

Beneficiaries:
- Local companies

Objective
- Improve Basque companies' competitiveness through R&D (market-pull).

Characteristics:
- Level of support:
  - 50% industrial research
  - 25% experimental development
- Length: 3 years
- RIS3 areas
- Minimum:
  - 3 companies
  - 4 M€ budget
  - **1 Basque knowledge infrastructure (University, RTO, etc.), subcontracted, at least, 20% of the budget.**

Pieter de Jong – Wetsus, Netherlands,

Policy Challenge (2)

How to properly manage the innovations that arise as a result of project research activities?

- There is an **iterative process** within the WaterCampus in which breakthrough research outcomes immediately feed in to upscaling & pilot projects, which results feed back into the breakthrough research.
- **Wetsus requests patents** for research and innovation outcomes, these are transferred to participating companies, or used to build spin-off companies. Wetsus research is pre-competitive.
- Companies can also work 1 on 1 at WaterCampus, working with CEW, (Centre of Expertise Water Technology) in upscaling or demonstration projects (high TRL). This takes place in the Water Application Centre, or at demonstration sites. CIV-Water (Centre of Innovative Craftsmanship, Centre of Vocational Excellence Water) can provide support in pilot projects.

wetsus

Pilots, parallel with research, speed up innovation
financed through EU-programmes
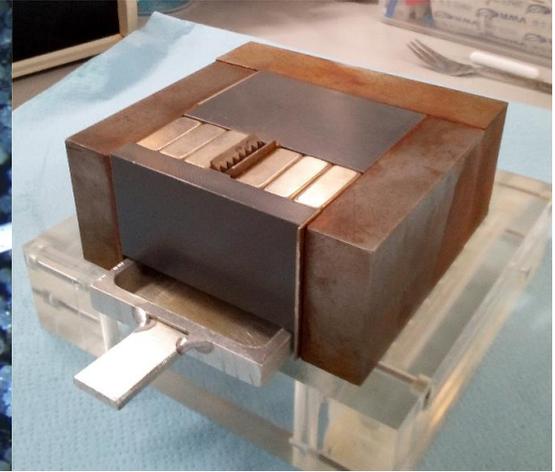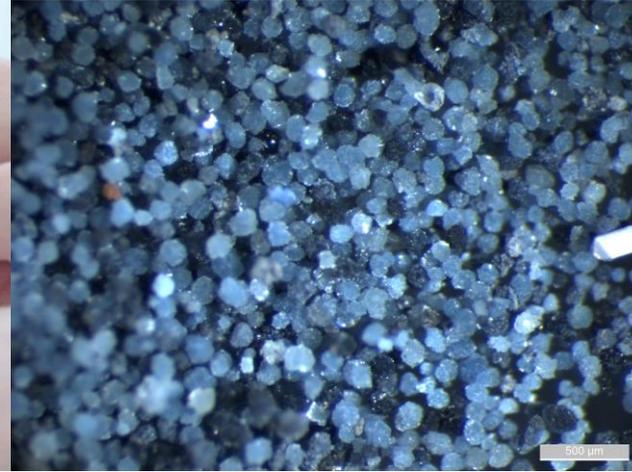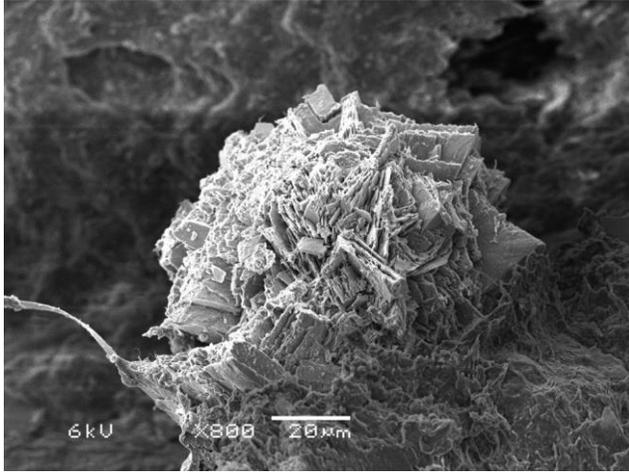
Cross-sectoral innovations

Biodegradable plastics from waste

Circular agriculture for **healthy soils**

Sustainable **carbon cycle**

Salinity-gradient energy production & storage

Sensing & control

Solutions for EU challenges

CLosing the N-cycle
installed at Girona Sewage plant (ES)

Metal-free energy storage
installed on Pantelleria (IT)

Low-energy desalination
installed at Burriana (ES)

Assessing the spread of **antimicrobial resistance** in the Vechte (DE)

Demosites Water Technology
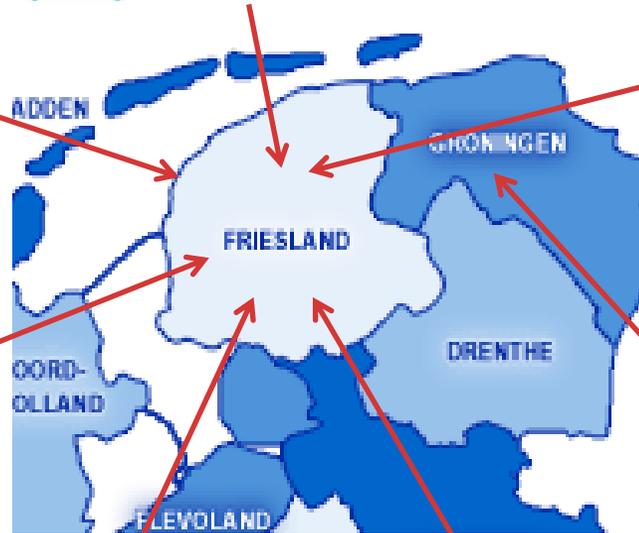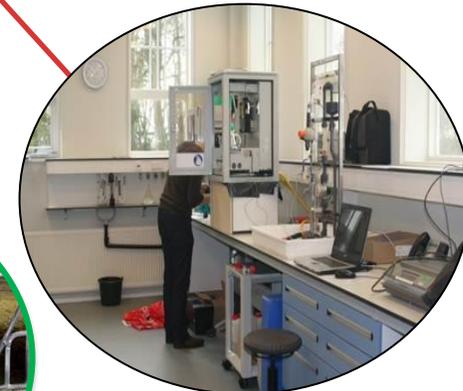
2. Managing Innovations

Open Discussion

3. Research Ownership issues?

- What is the best and most efficient way to settle ownership of the research results and benefits of the projects between all partners, including intellectual property rights?

Expert support

Alaitz Landaluze - Basque Innovation Agency, Spain,

(3) What is the best and most efficient way to settle ownership of the research results and benefits of the projects between all partners, including intellectual property rights?

R&D project leader	IP ownership
Knowledge infrastructures (Universities, RTOs, etc.)	The IP is owned by the participants. They settle the ownership model at the beginning of the collaboration. Sometimes there are conflicting interests between publication and intellectual protection.
Local companies (knowledge infrastructures are hired)	Basque industrial companies generally do not see benefits in the protection of knowledge. If they do, they protect the knowledge of the project. If they don't, the knowledge infrastructures that participate in the project could protect the generated R&D if the leading company allows to.

IP management and maintenance costs are included as eligible costs in the main R&D programs

# Pieter de Jong – Wetsus, Netherlands,

Policy Challenge 3

What is the best and most efficient way to settle ownership of the research results and benefits of the projects between all partners, including intellectual property rights?

- Wetsus has 106 paying members. The Wetsus research programme is structured into 20 different themes, which act as **independent IP groups**. Each theme only has complementary company members: SMEs, corporates, end users. The generated IP (e.g. patents) will be offered to these companies first.

- In 18 years there has been no IP issue at Wetsus. Wetsus requests patents. Companies that are active in a theme have **first right of refusal**. Generally one company takes the outcomes to the market.

- A patent can also become the basis for a **spin-off company**.

- In case there is no apatite / market interest in a patent it is **dissolved**.

- The IP management of the Wetsus research programme includes a claim on **1% of future profit**, which feeds back to the institute. This is in accordance with European state aid rules for the water technology sector.

wetsus

Connecting >100 tech-companies and end-users from across sectors
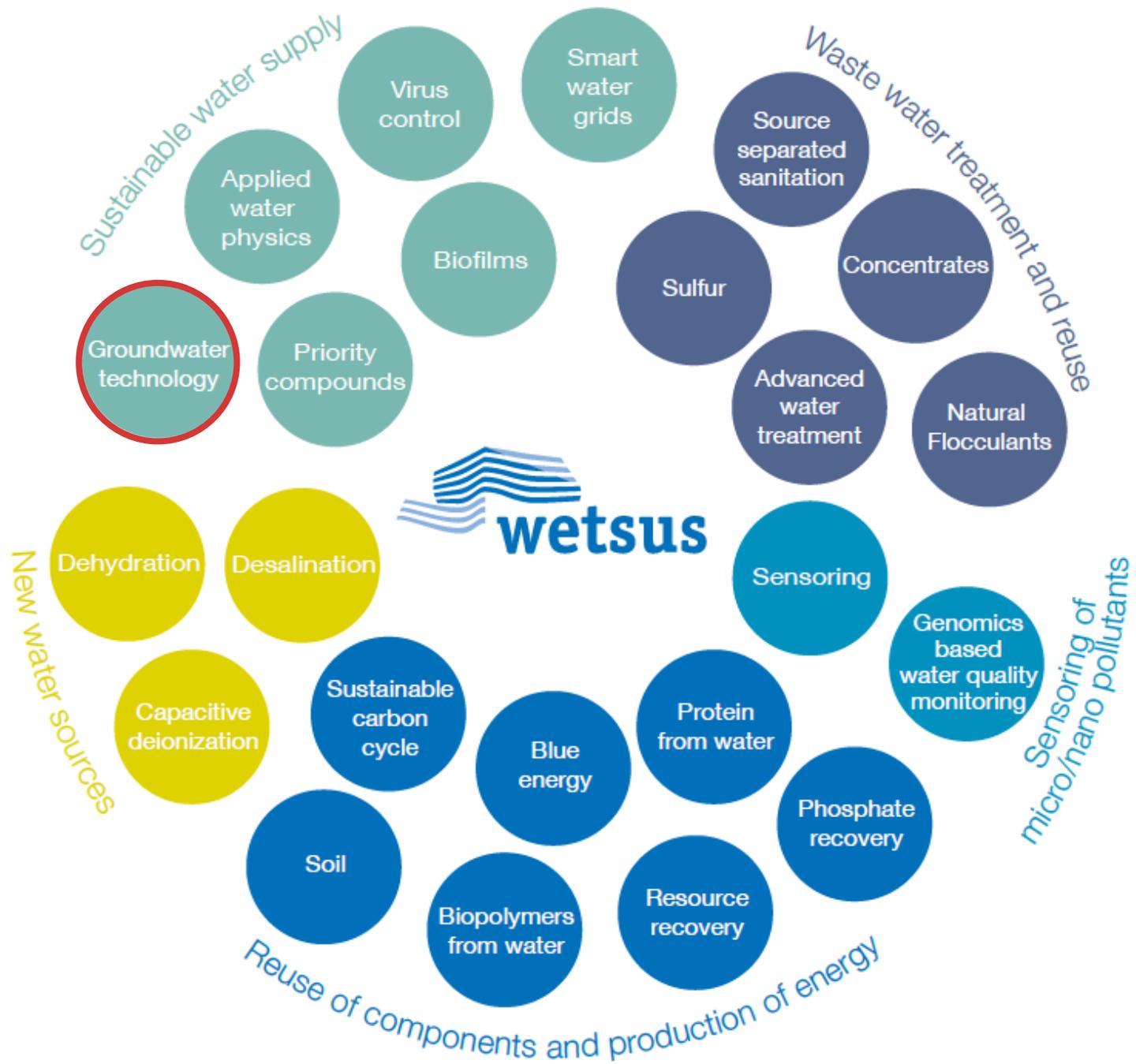
Thematic Meetings
3x per year
PhDs presenting research results

Groundwater Technologie Theme

3. Research Ownership issues

Open Discussion

Short Break

5 minutes

4. Technology Transfer

- (4) What are the most appropriate contemporary forms and models of technology transfer for the needs of the Bulgarian centres?

Dr Leena Sarvaranta – former Head of EU Affairs at VTT, Finland,

Policy challenges

4) What are the most appropriate contemporary forms and models of technology transfer for the needs of the Bulgarian centres?

Ecosystem approach and PPP-models are needed for the twin transition (Green Deal)
- Promote Bulgarian participation in HEU Partnerships (Pillar 2): Member State contributions, matchmaking for companies…
- Adopt common EU practices: training for project plans, HEU model grant agreements, IPR rules….

Increased institutional capacity in Bulgaria is needed
- Continuity / legal form / institutional funding of CoEs and CoCs? (RTO?)
- A centralised agency to provide streamlined services to all Bulgarian stakeholders?
    - Avoid building firewalls between Scientific research - Applied research –Market-driven development
- Integrate with a proactive role for follow-up of EU policies (industry strategy, regional policy, R&I programmes) and an advisory role for decision-making?

Different time perspectives in R&I – service model mix

Addressing Beyond — **Universities (curiosity-driven scientific research)**

Addressing Future — **RTOs - VTT (collaborative applied research)**

Addressing Immediate — **Companies (market-driven development and innovation)**
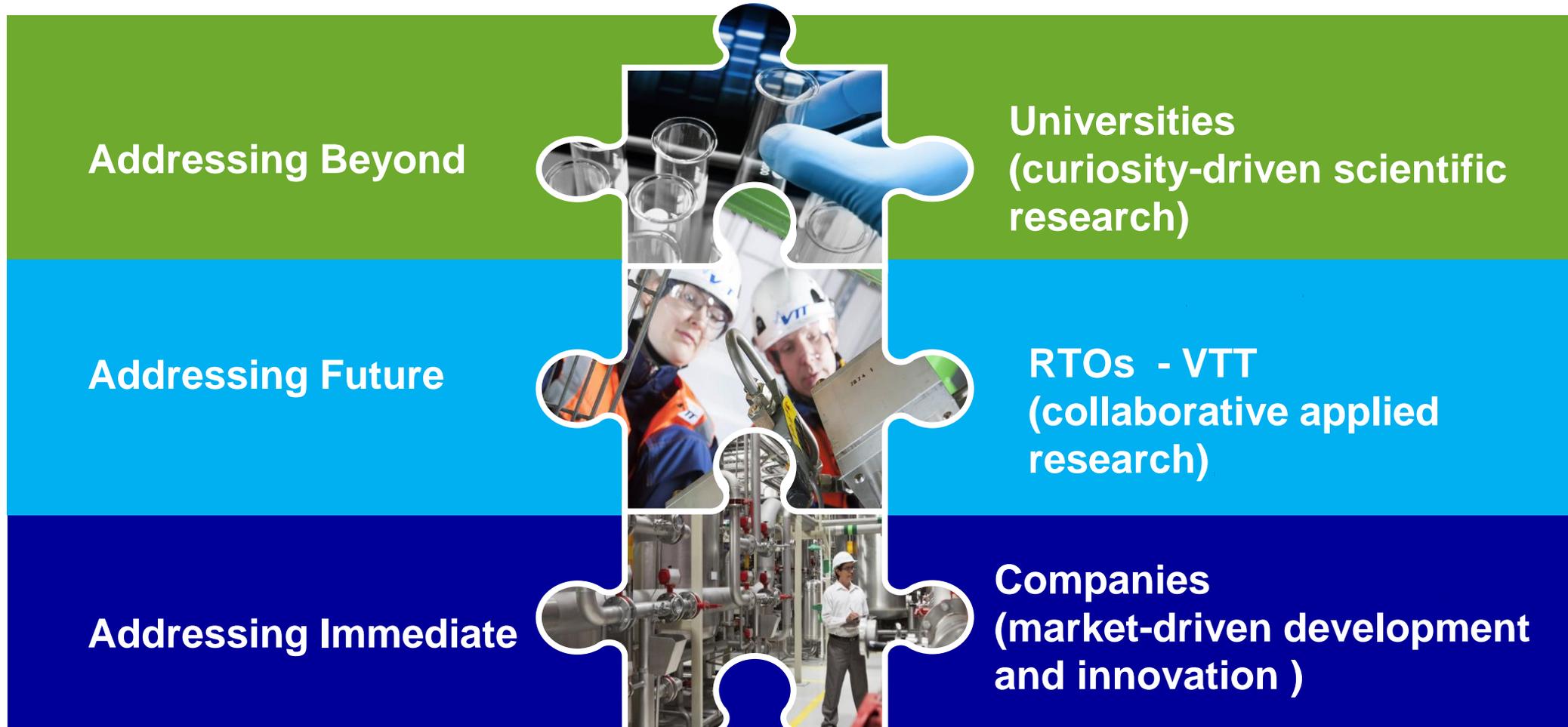
Combination of government grant and competitive external funding – RTO perspective

Addressing Beyond (Next)	Addressing Future (New)	Addressing Immediate (Now)
Curiosity-driven scientific research and means risk-taking in research	Collaborative applied research and co-creation, mainly taking place through jointly funded activities and includes risk-sharing between partners in larger consortia.	Market-driven development and innovation. RTOs offer transaction-type contract services with 100% external funding from customers in private or public sector.
You cannot always predict the outcome of emerging signals and observations. **Adequate institutional government grant / basic funding is needed** for independent strategic in-house research.	Increasing competition for public programme funding and growing administrative complexity due to various participation rules is a challenge. National funding agencies, EU framework programmes and regional programmes do not apply harmonised rules. Typically public programmes only cover 40-70% of total/ actual/ real costs. Therefore, RTOs **need to match external public funding with institutional basic funding / government grant**.	Customers are typically expecting immediate value for money (or almost immediate). **Institutional government grant is not allowed as substitution for commercial purposes**

Markus Dettenhofer – CEITEC, former executive Director, Czech Republic;

Policy Challenge 4. What are the most appropriate contemporary forms and models of technology transfer for the needs of the Bulgarian centres?

For the Bulgarian context, which may not have a strong tradition investor-based businesses nor see a great demand to push for securing Intellectual Property, I offer two considerations to improve the innovative capacity of the region.

1. Support the development of innovative service-based businesses
   - Advantages are: revenues early on; creates jobs for the region; know-how is gained with every contract; revenues can be used to build up capacities
2. Develop soft skills training programmes and seeding grants to encourage students to establish businesses
   - Students can dedicate themselves to the company fully; they have the potential to work with the centre that the ideas came from (future public-private engagement); if successful will hire alumni from centre.

Policy Challenge 4. What are the most appropriate contemporary forms and models of technology transfer for the needs of the Bulgarian centres?

Patents
- Filing and getting the issuance of patents is expensive (US approx. $50K)
- The common ways of getting a return on patents is through a licensing agreement. And if there is no customer for this novel invention, this is not money well spent.

Investor-based businesses
- Looking for exit strategies – stock market IPO, buy-out from bigger company, exponential growth through customer revenue. Are these real possibilities?
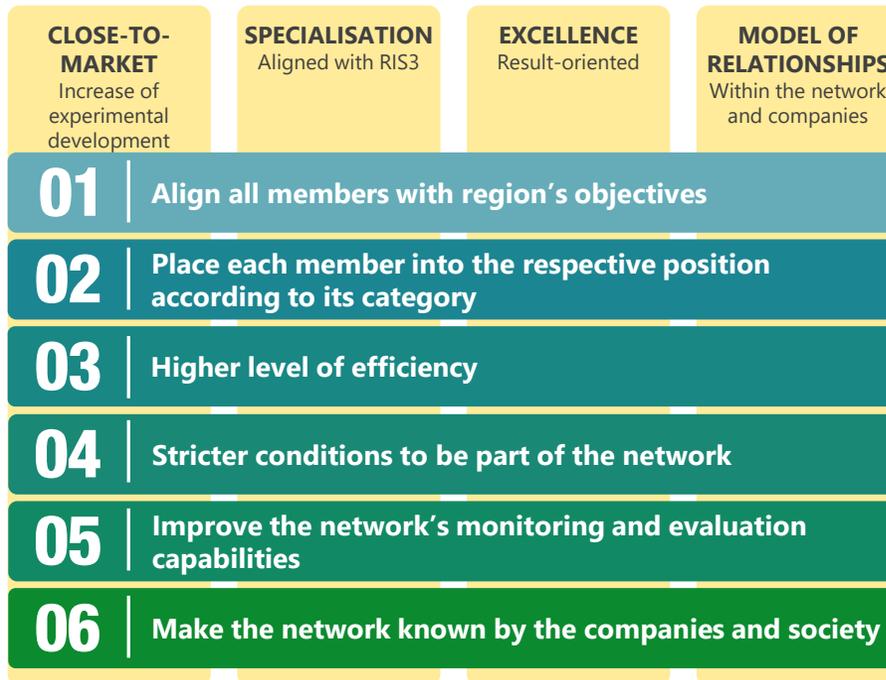- Consideration should be given to exit, with the start of such a business.

Alaitz Landaluze - Basque Innovation Agency, Spain,

(4) What are the most appropriate contemporary forms and models of technology transfer for the needs of the Bulgarian centres?

Basque STI Network's reorganisation (2015-2020)

OBJECTIVES AND PILLARS

CLOSE-TO-MARKET Increase of experimental development	SPECIALISATION Aligned with RIS3	EXCELLENCE Result-oriented	MODEL OF RELATIONSHIPS Within the network and companies

01 Align all members with region's objectives

02 Place each member into the respective position according to its category

03 Higher level of efficiency

04 Stricter conditions to be part of the network

05 Improve the network's monitoring and evaluation capabilities

06 Make the network known by the companies and society

RESULTS

Common strategy for the network

Technology centres' and CICs' objectives linked to the STI policy

In-depth knowledge about technology centres and CICs and traceability between efforts and results.

(4) What are the most appropriate contemporary forms and models of technology transfer for the needs of the Bulgarian centres?

Example: CRCs
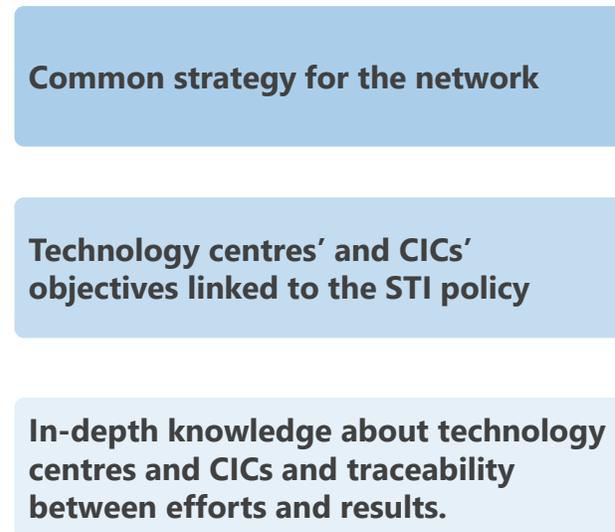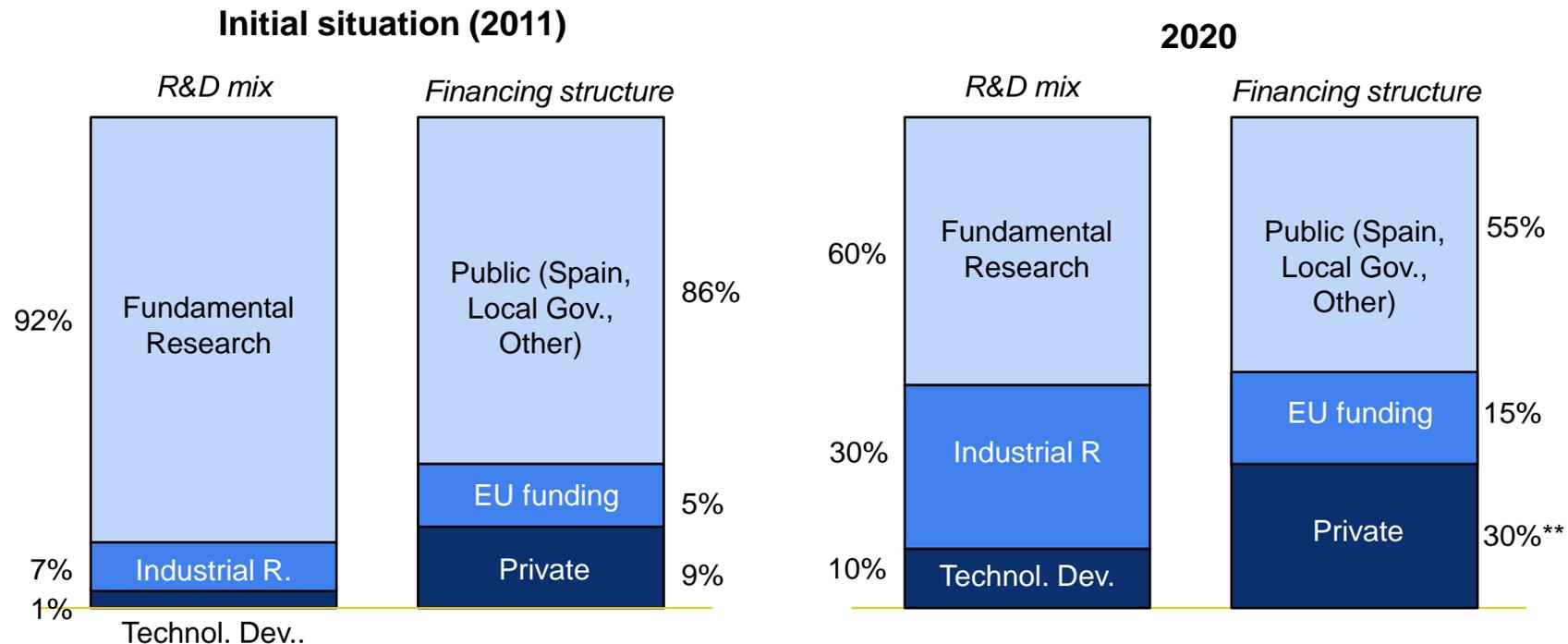
Mission

- Conduct market-oriented collaborative research with companies and other research centres, specializing in one of the strategic scientific-technological fields for the country; and, focusing on basic research activities of excellence but encompassing the entire R&D value chain, including the commercial exploitation of research results.

Financing structure

Initial situation (2011)

R&D mix

- 92% Fundamental Research
- 7% Industrial R.
- 1% Technol. Dev..

Financing structure

- Public (Spain, Local Gov., Other) 86%
- EU funding 5%
- Private 9%

2020

R&D mix

- 60% Fundamental Research
- 30% Industrial R
- 10% Technol. Dev.

Financing structure

- Public (Spain, Local Gov., Other) 55%
- EU funding 15%
- Private 30%**

(4) What are the most appropriate contemporary forms and models of technology transfer for the needs of the Bulgarian centres?

EXAMPLE: CRC BALANCED SCORECARD

ELEMENT		INDICATOR		Weigh	Unit	Goal 2021
R&D mix		f1	% Fundamental Research revenues	3%	%	60,00%
		f2	% Industrial Research revenues	3%	%	30,00%
		f3	% Technological Development revenues	3%	%	10,00%
Specialization		g1	% Industry 4.0 revenues		%	
		g2	% Energy revenues	10%	%	100,00%
		g3	% Health revenues		%	
Excellence	Fundamental research	h1	Scientific publications	12%	Nº	65,00
		h2	Scientific publications in Q1	12%	Nº	60,00
	Industrial research	h3	Patent requests to EPO and PCT	6%	Nº	2,00
		h4	IP revenues	6%	`000 €	200,00
	Technological Development	h5	Revenues from start-ups	1%	`000 €	30,00
		h6	Impact on local companies' revenues	3%	`000 €	700,00
Relation Model	Technology transfer	i1	% private revenues from local companies	5%	%	20,00%
		i2	% total private revenues	5%	%	30,00%
		i3	Researchers transfered to local companies	5%	Nº	7,00
	Local collaboration	i4	Co-direction of doctoral thesis	5%	Nº	15,00
		i5	Co-authorship of scientific publications	5%	Nº	35,00
		i6	Patent co-inventions	5%	Nº	1,00
	International collaboration	i7	% EU funding	5%	%	15,00%
		i8	EU projects with local companies	5%	Nº	5,00

4. Technology Transfer

Open Discussion

BRIEFING
Peer Review Recommendations
(…5 more minutes)

Peer Review Recommendations

- Each peer prepares recommendations for each thematic block (S3 Sector Prioritisation, Inclusive EDP, Monitoring EDP, Mission-oriented S3)
- Each peer can give up to 3 recommendations per thematic block.
- Your recommendations must be:
  - Adapted to the host region's institutional context.
  - As concrete and actionable as possible.
- The thematic experts and hosts are available online to answer any questions from the peers.
- **The peers must send by e-mail their policy recommendations to the thematic experts (Arnault and Marc) by <u>11:30</u>.**

Example of recommendations from the peer review in Region SUD on Revising S3 to Integrate the Priority 'AI in Health'

- **Develop a SWOT Analysis and benchmark** to understand what would be the AI priority thematic and where region SUD's competitive advantage lies and where is it positioned on the relevant value chain and with what actors (research, start-ups, clusters)

- **Promote quadruple helix collaboration** – involve a wide range of actors—clusters, companies, regional government, universities, end-users —to rally actors and promote AI (through informal working groups or more formal structures such as a cluster dedicated to AI or AI digital innovation hubs) to ensure adequate coordination.

- **Communicate on the positioning of the region on the AI thematic not forgetting the civil society dimension**

THANK YOU FOR THIS FIRST DAY!

Sessions 5 and 6

Online, 15 September 2020

Research and innovation

Interreg Europe
European Union | European Regional Development Fund