

Building digital innovation ecosystems

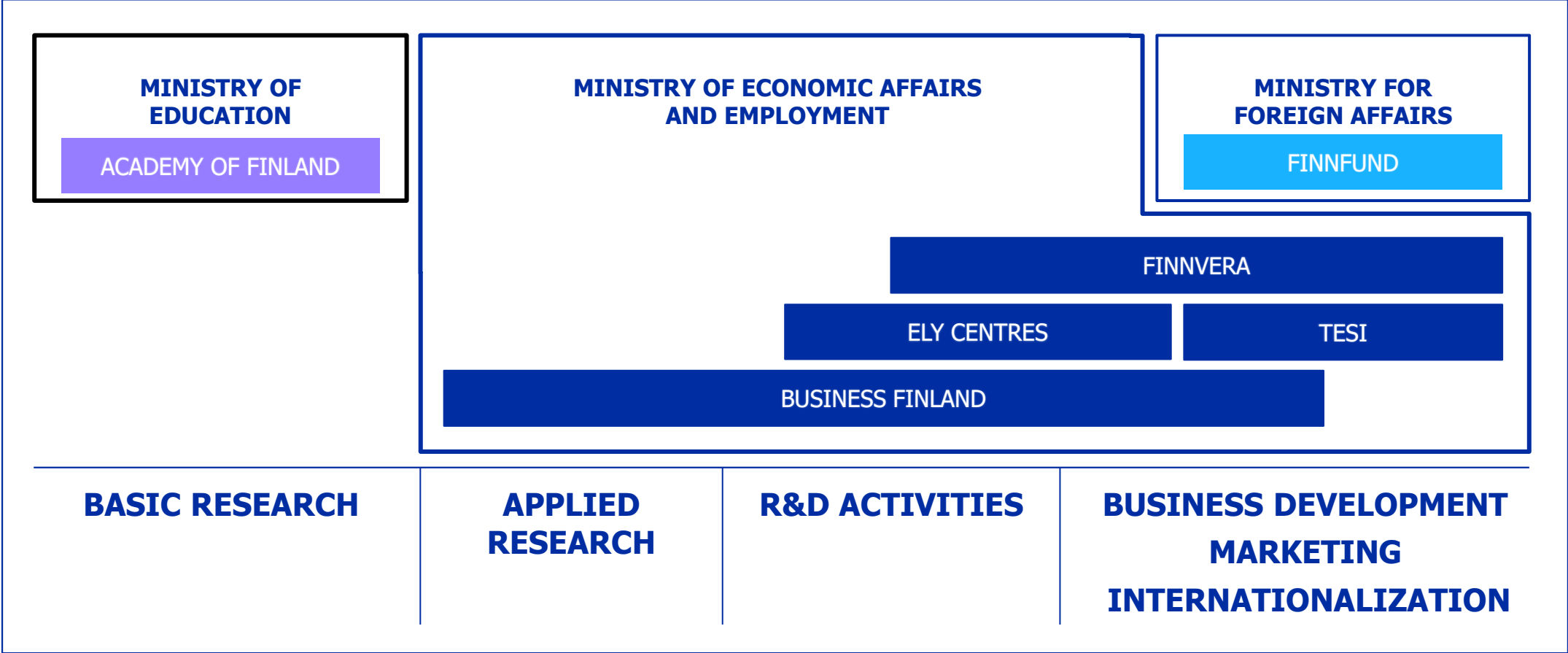
What can we learn from each other?

Business Finland
How we work
Veturi
Connected programs
Q&A



Sixten "Sigge" Sandström
Ecosystem Lead
Business Finland

CENTRAL GOVERNMENT ORGANIZATIONS THAT PROVIDE FUNDING FOR RESEARCH AND COMPANIES' GROWTH AND INTERNATIONALIZATION



**BUSINESS
FINLAND**

**WE GENERATE PROSPERITY
FOR FINLAND BY ACCELERATING
OUR CUSTOMERS' SUSTAINABLE
GROWTH GLOBALLY**



BUSINESS FINLAND

WE PROVIDE FUNDING FOR RESEARCH, DEVELOPMENT AND INNOVATION ACTIVITIES.

Innovations are the most important source of growth, according to research.

WE SUPPORT EXPORTS AND INTERNATIONALIZATION.

Finland depends on exports.
The internationalization of companies is important for the national economy.

WE CREATE ECOSYSTEMS

Ecosystems improve the ability of companies to innovate, grow and succeed in international competition. We provide SMEs, in particular, with tools for growth and larger companies, often acting as leading companies, with a boost to change.

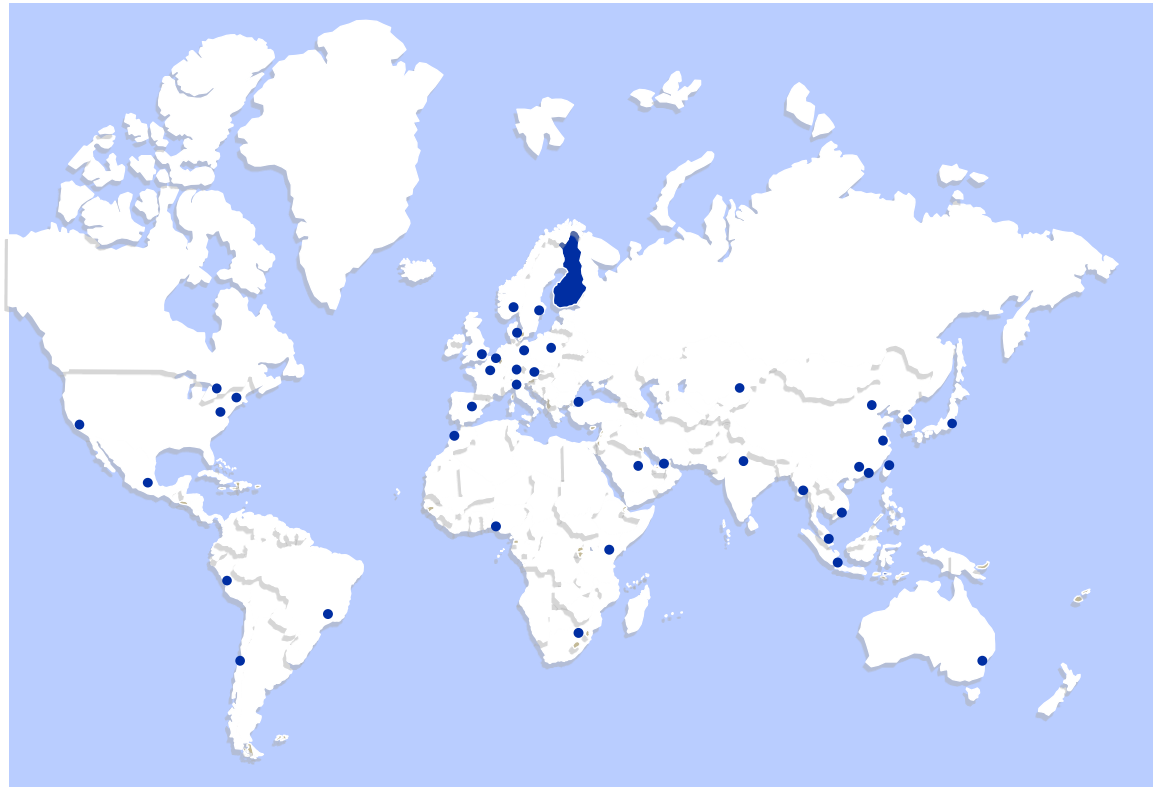
WE ATTRACT INVESTMENTS TO FINLAND.

Foreign investments bring new customers and partnerships and improve the international competitiveness of companies.

WE PROMOTE TOURISM TO FINLAND.

Tourism is an important industry for our national economy. A positive country image also benefits other industries.

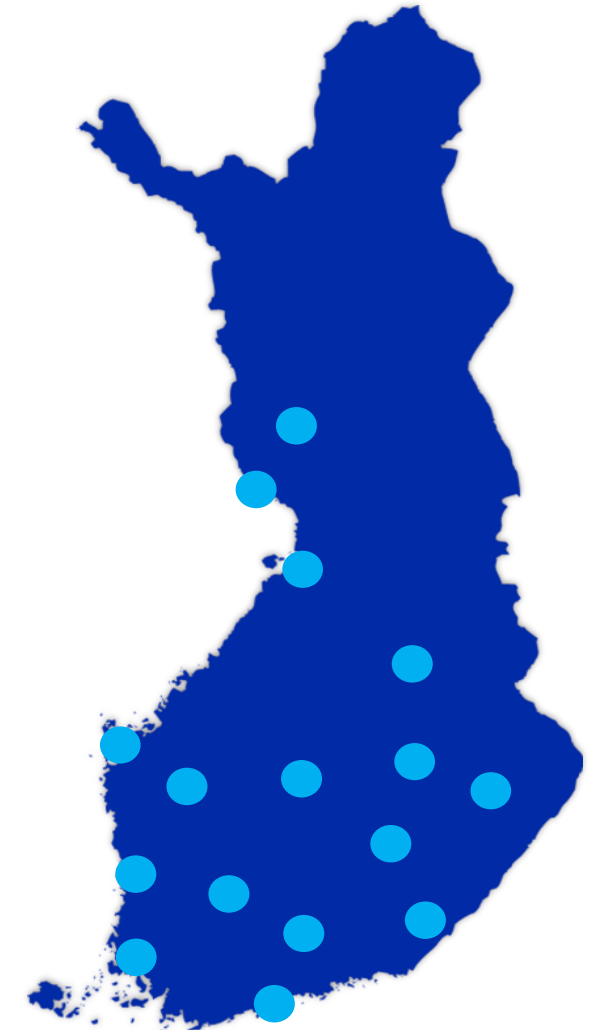
WE HAVE **INTERNATIONAL** **AND LOCAL** EXPERTISE



760
specialists

16
locations
in Finland

40
locations
round the world



THEMATIC FOCUS AREAS



BUSINESS FINLAND'S THEMATIC FOCUS AREAS



Digitalization based boost for productivity



Comprehensive health & wellbeing



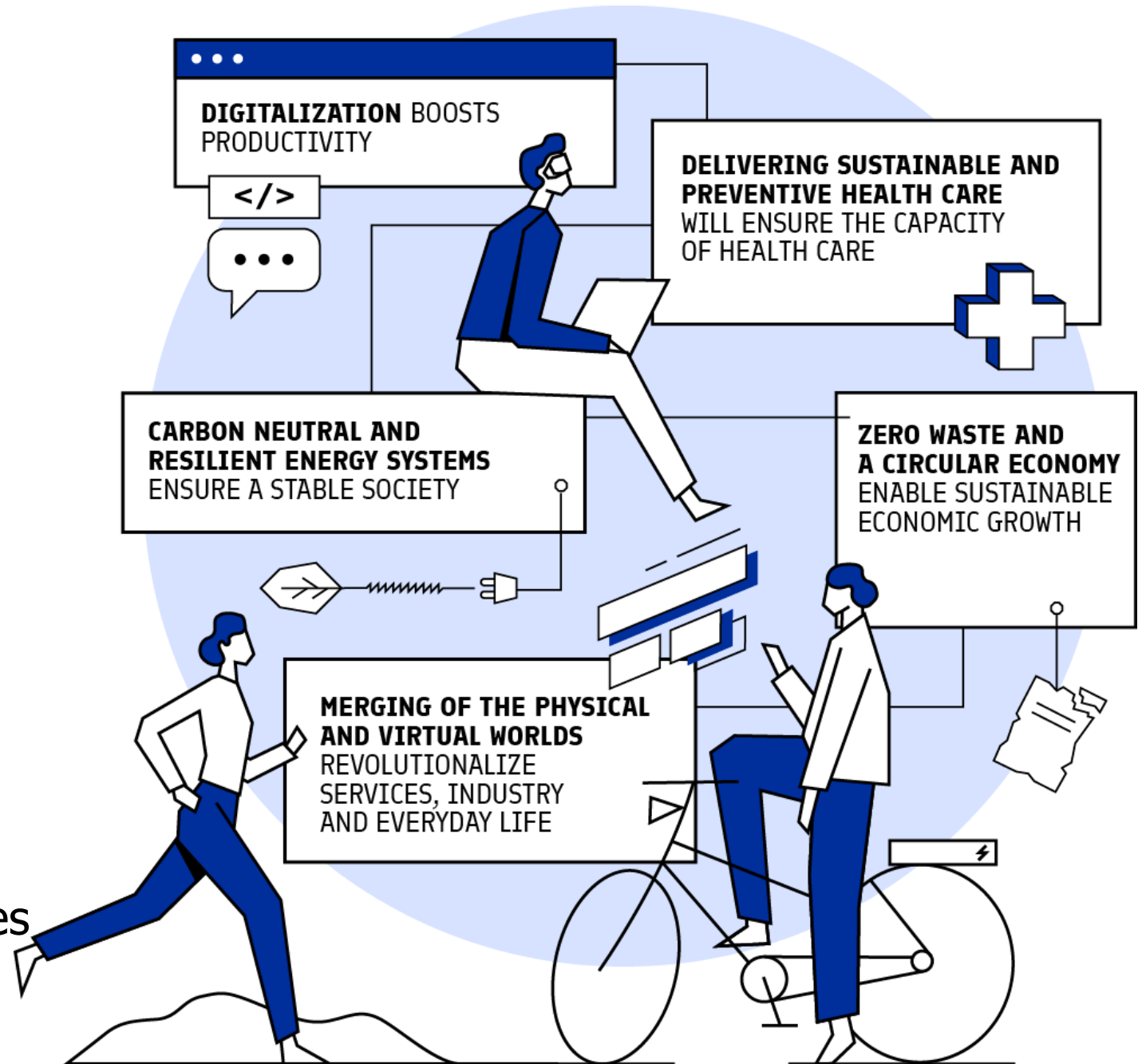
Carbon neutral & resilient energy system



Zero waste & circular economy



Engaging immersive experiences



Principles of Business Finland funding for public research

Business Finland's goal is to **generate prosperity** and **well-being** for the Finnish society by accelerating companies' **sustainable growth**.

We fund research, which benefits Finnish companies in their export business.

Win-win

The scientific community is creating unique expertise that companies need for renewal and growth in the global markets.

Companies see the needs arising from future business operations and bring new research challenges to be resolved together.

R&D FUNDING LEVELS for companies

	SMEs	MIDCAP COMPANIES Turnover max. 300 M€	LARGE COMPANIES
COMPANY RESEARCH PROJECT GRANT Create new knowledge and competence	Grant max 50%	Grant max 40%	Grant max 40% Large companies must buy services from SME's and / or research organizations or implement the project as a joint project with them. The share of the bought services/co-op activities has to be 40 % of the project's overall costs.
DEVELOPMENT AND PILOTING LOAN Develop or renew products, services and business model. Demonstrate the functionality of your solution	Loan 50% / 70%	Loan 50% / 70%	Loan 50% Large companies must buy services from SME's and / or research organizations or implement the project as a joint project with them. The share of the bought services/co-op activities has to be 15 % of the project's overall costs.

Common collaborative instruments in use

Co-Research

Research driven projects aiming at new innovations

- For research organization(s) and three or more companies, who aim to build new business in the field of the research topic and take part in the project funding
- Co-Research –funding is used only in specific calls, where it's availability is mentioned.
- Participating companies carry a 10-15% RDI investment commitment

Co-Innovation

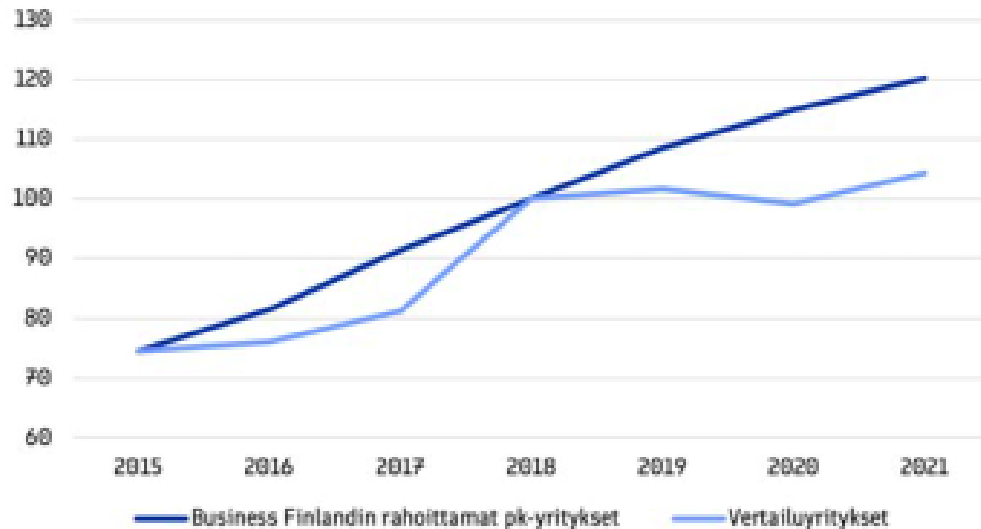
Market driven projects with scientifically validated innovations

- For research organization(s) and companies of all sizes seeking international markets
- For high-quality research and utilization of research in the companies' R&D activities
- Projects and ecosystems that support SME growth and internationalization, and/or renewal of large companies are prioritized.
- 3-7 companies plus 1-3 research organisations all with also own RDI financial contribution

Impactful investments

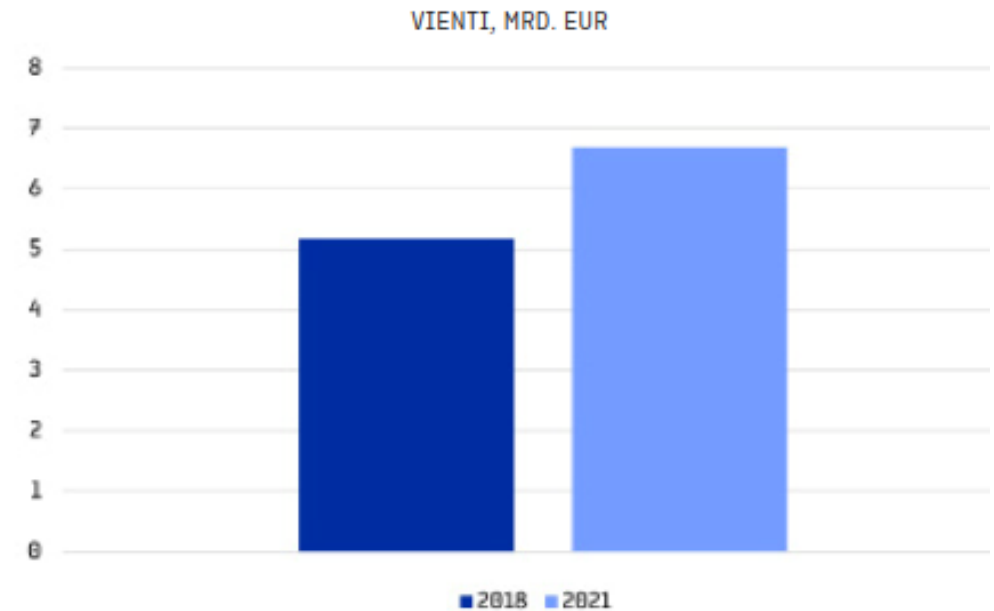
LIKEVAIHDON KEHITYS BUSINESS FINLANDIN RAHOITTAMISSA PK-YRITYKSISSÄ

Liikevaihto kasvoi Tekesin rahoittamissa pk-yrityksissä selvästi enemmän kuin pk-yrityksissä keskimäärin vuosina 2015–2020.



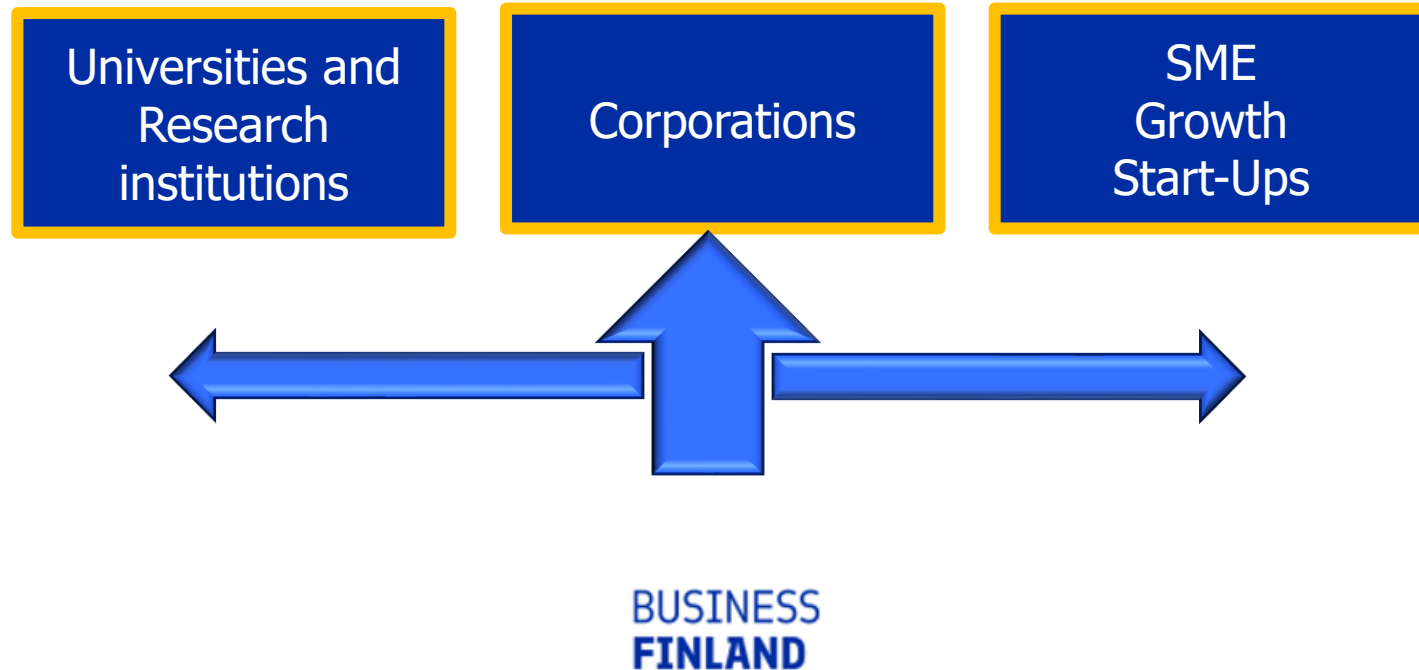
Turnover growth

VIENNIN KEHITYS BUSINESS FINLANDIN RAHOITTAMISSA PK-YRITYKSISSÄ



Export growth

Veturi programs = Ecosystems

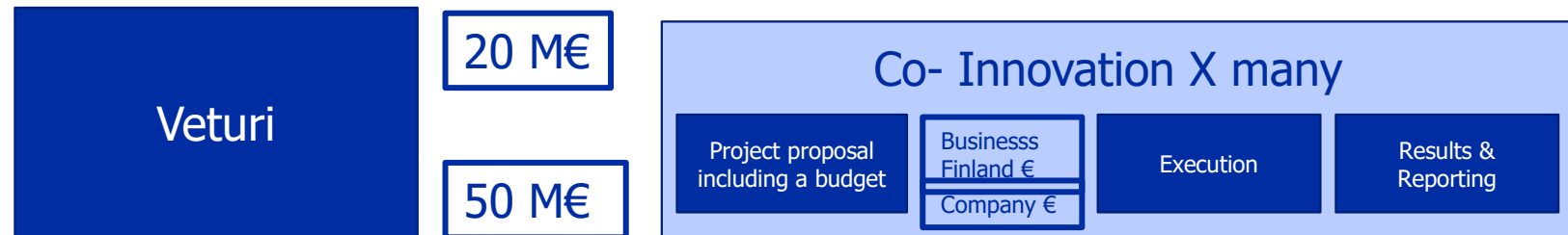


A large amount of Corporate grants are channelled through projects as RDI investments to Universites / Research and smaller companies alike

Funding overview



Funding level varies
Corporates ↔ Start-ups
Grants ONLY for RDI



Veturi = Ecosystem
Several co-innovation projects
3-7 companies + 1-2 Research
Coordination of key importance

Focus on the Problem, Not the Technology



Veturi means locomotive in Finnish

LEADING COMPANY ECOSYSTEMS ARE PLATFORMS FOR GROWTH

LEADING COMPANY

- A global company that commits to significantly increase its R&D investments in Finland
- The company creates a strong ecosystem with other companies and research organizations

Business Finland

- Funding max 20 M€ / leading company, max 50 %, 3-5 years
- R&D investments and ecosystem development as payment metrics

ECOSYSTEM

- Research organizations, companies and other partners who solve a significant challenge together with a leading company
- Target is a billion-dollar new business.

Business Finland Finland

- Funding for other parties in the leading company's ecosystem

LEADING COMPANY AND CHALLENGER ECOSYSTEMS 2020–2023 (RRF)

NESTE

Sustainable and globally scalable solutions for the research and development of raw materials that reduce the use of crude oil

ABB

Platforms for the optimal generation and consumption of electricity in a carbon-neutral society.

FORTUM & METSÄ GROUP

New fiber-based products for consumer markets to reduce the carbon footprint.

KONE

Mobility solutions for urban environments in line with the principles of sustainable development

BUSINESS
FINLAND

NOKIA

Making Finland a pioneer in 5G networks, industrial 5G

NOKIA

Energy efficient edge-computing

WÄRTSILÄ

Zero emission marine

SANDVIK

Globally competitive electric and digital solutions for heavy machinery

TIETOEVRY

Trust based digital services

BOREALIS POLYMERS

Sustainable plastic industry

MEYER TURKU

Climate neutral cruise ship and shipyard

VALMET

Circular economy technology

BITTIUM

Seamless and Secure Connectivity

DANFOSS

Fossil free future

KONECRANES

Zero4 material flow

MIRKA

Chopping the Green Transition

ORION

A Digital Boost for the Finnish Pharmaceutical R&D

PICOSUN

Chip zero

PONSSE

Unlocking sustainability in off-road and commercial vehicles

RRF Funded

Challenger class



Veturi Ecosystems mapped in BF thematic choices map

2021

2022

2023

2024

2025

2026

2027



Comprehensive health & wellbeing



Engaging and immersive experiences



Digitalization based boost for productivity

Mission Digital Native



Carbon neutral & resilient energy system

Mission Zero Carbon Future



Zero waste & circular economy

Orion Virtual Big Pharma

Bittium Seamless and Secure Connectivity

Nokia Competitive Edge



TietoEvy Affordable, accessible, and trusted digital services

Picosun Chip Zero

Nokia Unlocking Industrial 5G Beyond Connectivity

Konecranes Zero4

Kone The Flow of Urban Life

Ponsse Forward'27

Sandvik Shift '25 (innovations for mining industry)

Danfoss Fossil Free Future

ABB Green Electrification 2035

Wärtsilä Zero Emission Marine



Meyer Climate-Neutral Cruise Ship



Fortum & Metsä Group ExpandFibre

Neste Novel Sustainable & Scalable Solutions for Transportation and Chemicals

Borealis Polymers Sustainable Plastics Industry Transformation



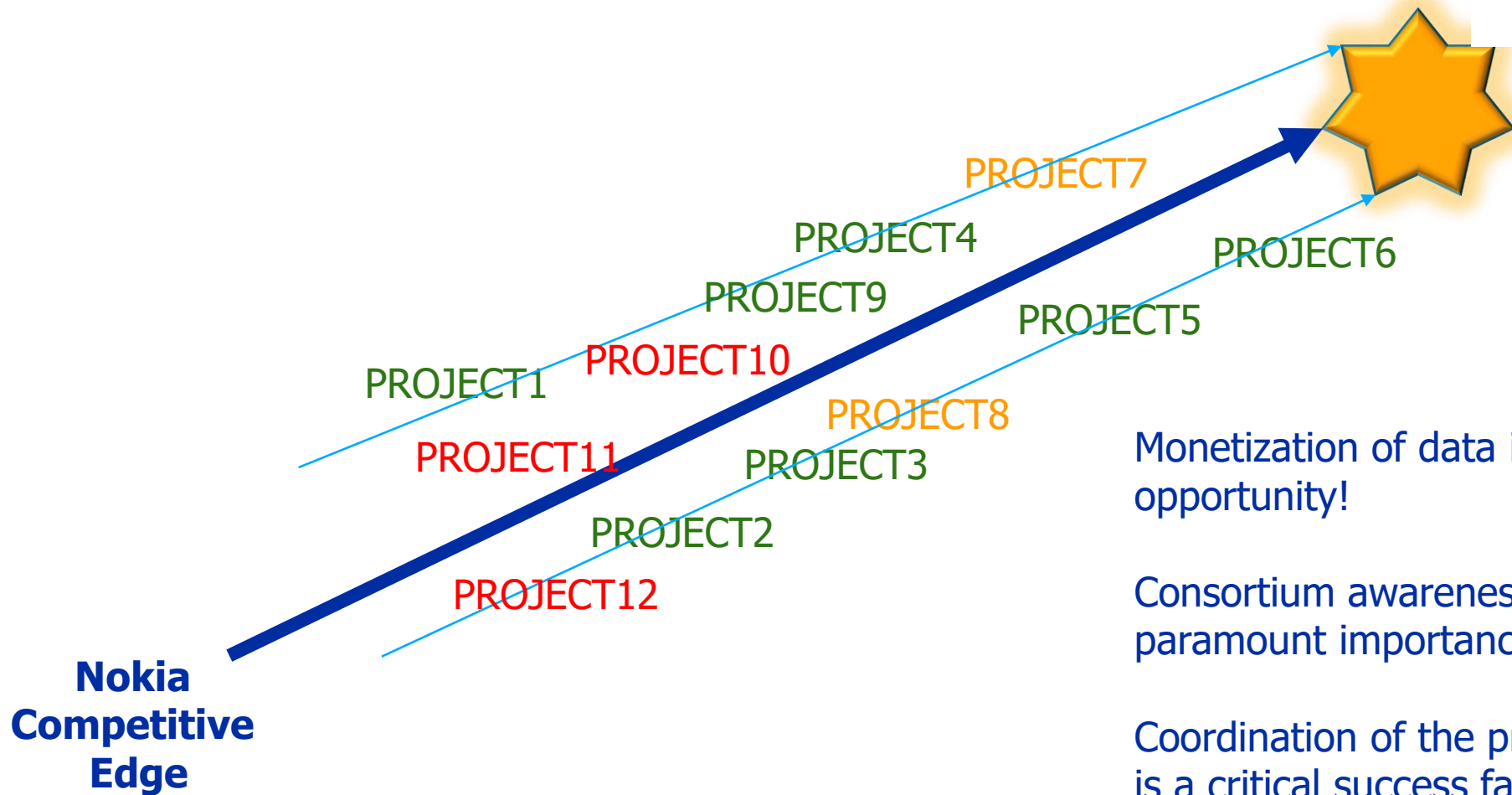
Valmet Beyond Circularity



Mirka Chaping the Green Transition

The Veturi ecosystem

1. Dramatic reduction in costs and network capacity requirement
2. Sustainable and energy efficient networks
3. Secure critical networks (*including low latency, privacy and security*)



Monetization of data is a big international opportunity!

Consortium awareness and collaboration is of paramount importance for the Veturi targets.

Coordination of the projects in the portfolio is a critical success factor



Partners and Ecosystems

Partnering to create the technology that helps the world act together

“

The world is changing. Industries must adopt Fourth Industrial Revolution technologies, including 5G, in order to keep up with customer expectations. This requires building ecosystems where we can jointly innovate with partners and customers.

Pekka Lundmark

President and Chief Executive Officer

...One very concrete example of industry-academia collaboration is Nokia's Veturi program enabled by Business Finland

Key benefits of Business Finland's Veturi Mechanism – Nokia's View

More R&D investments, More ecosystem-level offerings, More global business growth

30+

New projects with 200+ ecosystem partners on Industrial 5G and Edge Computing

300 MEUR

New direct R&D investments in Finland with ecosystem partners

1.5 BEUR

Nokia Veturi-related total cumulative R&D increase in the Finnish ecosystem by 2030 with related FDIs

Selected results from the ecosystem projects to drive twin transition

Examples from Industrial 5G and Edge computing domains

8-15%
Productivity
increase

20-30 %
Energy
efficiency

15-20%
Reduced
emissions

How to build world-class ecosystems?

Strategic approach

Alignment with business strategy and portfolio vs. ecosystem mission

Top management support

Ecosystem orchestration

Define and execute of deliberate and purposeful actions undertaken by the leading (i.e. Veturi) company and ecosystem partners to co-capture value

Develop and promote ecosystem offering during ecosystem life cycle

Continuous learning

Shared resources, joint-communication and digital platforms and tools

VETURI AND PORTFOLIO PROGRAMS



DATA ECONOMY PROGRAM SUMMARY

Key Outcome & Impact

Finnish companies are creating significant new international business through efficient utilization and sharing of data, acting as role models internationally

Awareness

...build **thought leadership**; research, interpret & communicate the emerging disruption in data economy and its' impact to business and organizations

Change

...activate companies to build their **capabilities** and **business** to capture the potential of novel data based solutions

With Business Finland Data Economy program services we will...

...stimulate the birth of data based **ecosystems** & **networks** in selected domains

...boost the **renewal** of **existing** and **development** of **new** data economy based businesses

Ecosystems

Growth

Scope

- Promote and drive the creation of new international business through efficient utilization and sharing of data
- Runtime 1+4 years, first year 2023
- Funding target 135 M€

Stakeholders & customers

- Companies willing to embrace the change and the potential it brings
- Companies who are willing to take action to renew their business
- Companies who have the desire, potential and opportunity to create cross vertical data based joint offerings
- Technology Industries of Finland, industry associations, Allied ICT Finland, Academy of Finland, Sitra, existing & developing data focused ecosystems

Business landscape

- Finland is digitally advanced but lags behind peer countries in monetization of data sharing as data economy
- Stakeholders say tech is there but culture and attitudes need work
- Cross industry networks have potential of delivering the greatest value
- IDC foresees the growth of the EU27 data economy from 397 B€ in 2020 to 510 B€ by 2025 on a baseline scenario, to 800 B€ in a high growth scenario
- Strong desire and drive to move forward at national and EU level



6G BRIDGE

Scope

- 5G Advanced & 6G
- Funding budget 130M€
- Timeframe 2022-2026, followed by next program

Stakeholders & customers

- 190 organizations, main industry ICT incl. heavyweights such as Nokia and Ericsson
- 6G Finland, 6G Flagship, 5G Momentum, Allied ICT Finland, Academy of Finland, Technology Industries of Finland

Business landscape

- ICT market forecasted to \$4.4 trillion 2022 expected annual growth of 5.5% (Gartner)
- Finland has a well-established and recognized market: strong company pool, active research & innovation community
- Strong link to national & EU-wide policies

Key Outcomes

- ✓ Finnish intellectual property generated in 6G exceeds the amount generated with 5G
- ✓ Finland is a recognized thought leader globally in 6G with an impact on the market
- ✓ Finnish stakeholders have concrete partnerships with EU, US, JP, Nordics, UK, CA with essential role
- ✓ Finland is a leading country in international ICT talent and investment attraction
- ✓ Finland has established the world's 1st 6G test network which is widely recognized

6G Bridge program aims for Finland to be **the global leader in unlocking new value with 5GA and 6G for sustainable industries and societies**, by

Increasing ecosystem-driven collaboration in research and innovation for 5GA/6G

Building future business ecosystems in 5GA/6G and attracting international investments

Cultivating key capabilities in 5GA/6G

Fostering testing and experimentation on facilities in 6G



Decarbonized Cities Program 2023 - 2028

Scope

- Market driven comprehensive solutions for optimal cross-sectoral energy transition in cities to enable their decarbonization
- Funding budget 150 M€

Stakeholders & customers

- Hundreds of companies operating mainly in energy generation, storage and use in built environment, decarbonization of mobility and transport, urban data management, XR and digital solutions as well as services
- Main collaboration partners: Smart City Innovation Cluster, ITS Finland, Clic Innovation, Comission, KiRA Hub, Veturis and companies able to help others to export
- Selected cities (FI, abroad)

Business landscape

- Frost & Sullivan ranks “Climate neutral cities” as **nr 1 growth opportunity in 2022**. Market size trillions of €
- Finland is set to be carbon neutral by 2035 , cities leading the way already 2030. Cleanest electricity, heating and cooling in the world
- EU 100 climate neutral cities mission boosted by RRF. Demand for energy efficient solutions dramatically increased due to war

Key Outcomes 2028

- **COMPANIES** have developed a portfolio of unique solutions and offerings, generated new IP. Export of program participants well above reference group, new export 3 B€ altogether.
- **INVESTMENTS:** Finland attracts talents and investments (2-3 international players established in Finland) in this theme
- **POSITIONING:** Finland recognized as global forerunner in Decarbonized Cities theme
- **RESEARCHERS** recognized internationally, wanted research partners. Increased EU funding to Finland (EU 100 cities mission)
- **CITIES:** Finnish cities have reached their decarbonization goals by piloting and utilizing unique Finnish solutions, international partner cities have reached their targets via jointly developed and tested Finnish solutions.



FINNISH SOLUTIONS DECARBONIZE CITIES WORLDWIDE BY BOOSTING COMPREHENSIVE ENERGY TRANSITION

City collaboration:
Speed up reaching cities' carbon neutrality targets

Development of new competences and internationally competitive city solutions

Innovation leading to city related investments and business

Recognition and visibility of Finnish solutions amongst major international stakeholders

Thank You & Takk – Questions/Spörssmål

**I'm talking 'bout Business Finland, better pay attention,
They help companies grow and expand with their vision,
From Helsinki to Lapland, they got the mission,
To make Finnish businesses thrive, that's their ambition.**

**They provide funding and expertise,
For startups and corporations alike,
No matter the industry or the size,
They got the resources to make it right.**

**Chorus:
Business Finland, they the real MVPs,
Helping Finland's economy to succeed,
Investing in innovation and technology,
Building a brighter future for you and me.**

**Verse 2:
If you're looking to create and innovate,
Then Business Finland is the place to relate,
They connect you with the right people and tools,
So you can build something truly cool.**

**They support research and development,
And help companies go global with their talent,
From gaming to green tech, they got the spectrum,
Of industries covered, no need to stress them.**

**Chorus:
Business Finland, they the real MVPs,
Helping Finland's economy to succeed,
Investing in innovation and technology,
Building a brighter future for you and me.**

**Verse 3:
Now let me talk about their impact,
On the Finnish economy, it's a fact,
Their investments create jobs and attract,
Foreign companies to come and interact.**

**They boost exports and promote tourism,
They're making Finland a better place to do business,
Their vision is to see Finland boom,
And with Business Finland, we might just witness.**

**Chorus:
Business Finland, they the real MVPs,
Helping Finland's economy to succeed,
Investing in innovation and technology,
Building a brighter future for you and me.**

**Outro:
So if you're a Finnish entrepreneur,
Or a company looking for growth and more,
Look no further than Business Finland,
They'll give you the tools to win.**

**This is how
Chat GPT
sings about
Business
Finland**

Thank You

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