



# Globally significant innovation and growth networks

Highlights of a study for Technology Industries of Finland by Spinverse Ltd.

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Pyöreän pöydän keskustelu yrityksille tutkimus-, kehitys- ja innovaatorahoituksesta

12 Dec 2019



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# Introduction



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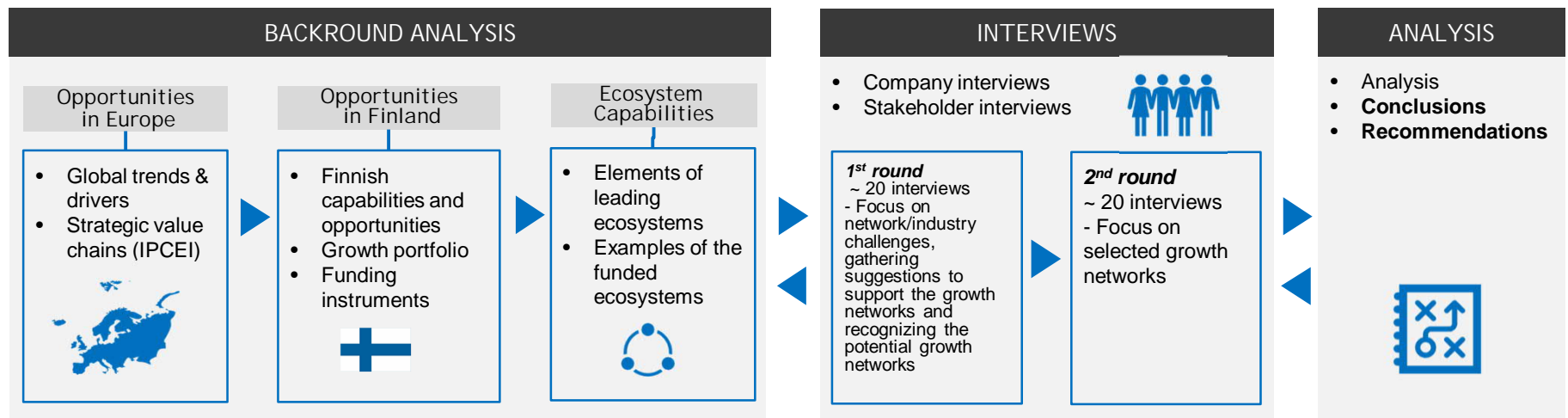
- One of the long-term objectives in Finland 2030 on the way to 4% R&D-intensity: There are several business-run billion-euro growth ecosystems which produce competitive solutions to global needs
- To support this objective, the aim of this study is to
  - Recognise and describe innovation and growth networks with business and growth opportunities
  - Examine the views of the key network actors on strategic capabilities and investing needs in the network
  - Examine the priorities of the key actors in the networks on how the scope, management and schedule related focus in the national and EU funding would strategically increase the networks capability to reach its objectives and create billion-euro businesses.
  - Gather the proposals from the network on other concrete EU-level, national or regional activities that would support in reaching objectives of the network



# Methodology of the study



- The aim of the background analysis was to present the current drivers, themes, strategic capabilities, networks and strengths of Finland that could form a base for the billion-euro future businesses
- Based on the background analysis, industry experts and other stakeholders were selected, and 40 interviews conducted
- Conclusions and recommendations were conducted based on the background and interview analysis





40 people from industry and stakeholders in leading ecosystems were interviewed for the study September-December 2019



- ABB Technology Oy
- BaseN
- BC Platforms
- Beneq
- Business Finland
- CombiWorks
- EPEC
- Flexens
- Fortum
- F-secure
- GE Healthcare
- Glaston
- Kone
- Konecranes
- LUT
- Metso-Outotec
- M-Files
- Nokia
- Normet
- Ponsse
- Sandvik
- Siemens
- Silo.AI
- SitoWise
- Straquest
- Tieto
- Uros
- Valmet
- Vasek
- VTT
- Wärtsilä

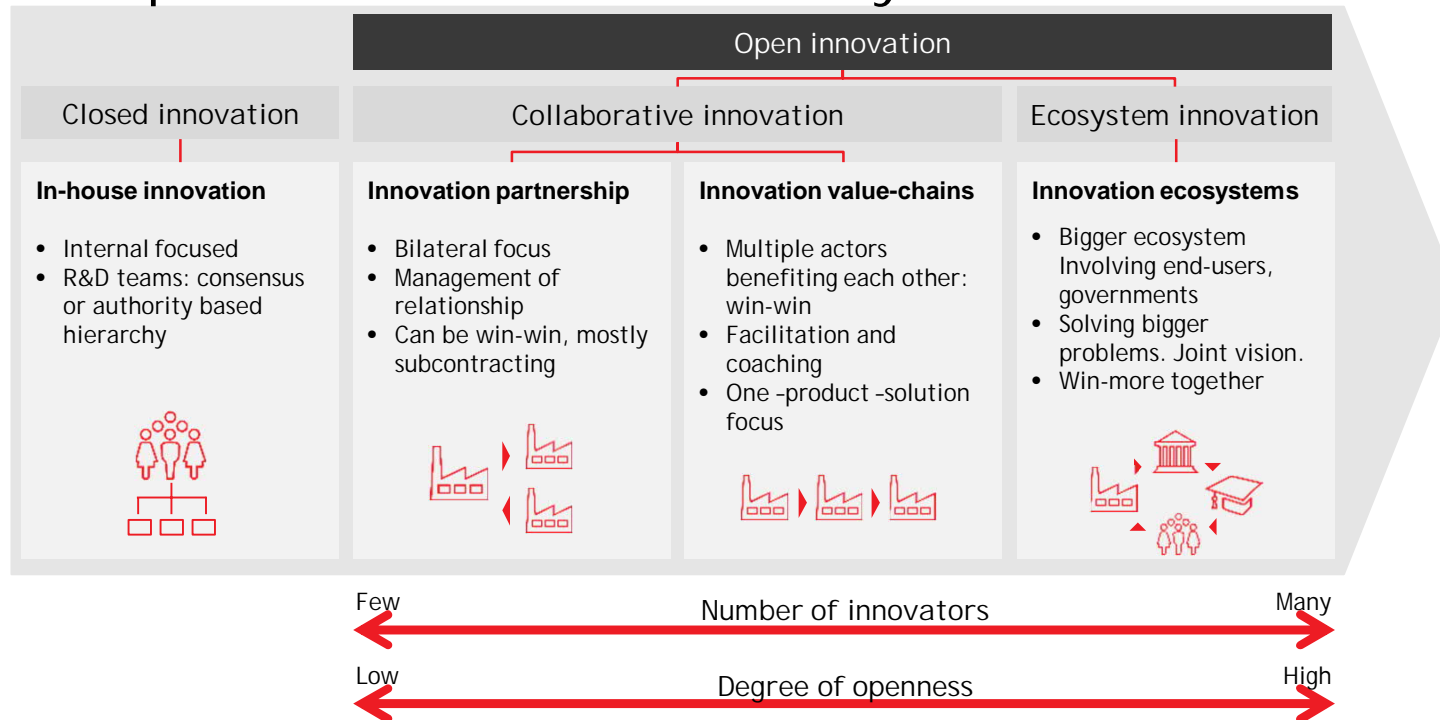




# Background analysis



# Opening innovation - from in-house-innovation to partnerships, value chains and ecosystems



Adopted from: Mika Westerlund, Risto Rajala, Martin Curley



# How to define an ecosystem and a platform?



## Ecosystem

A loosely defined organization formed by many parties that participate in the value creation for the customer.



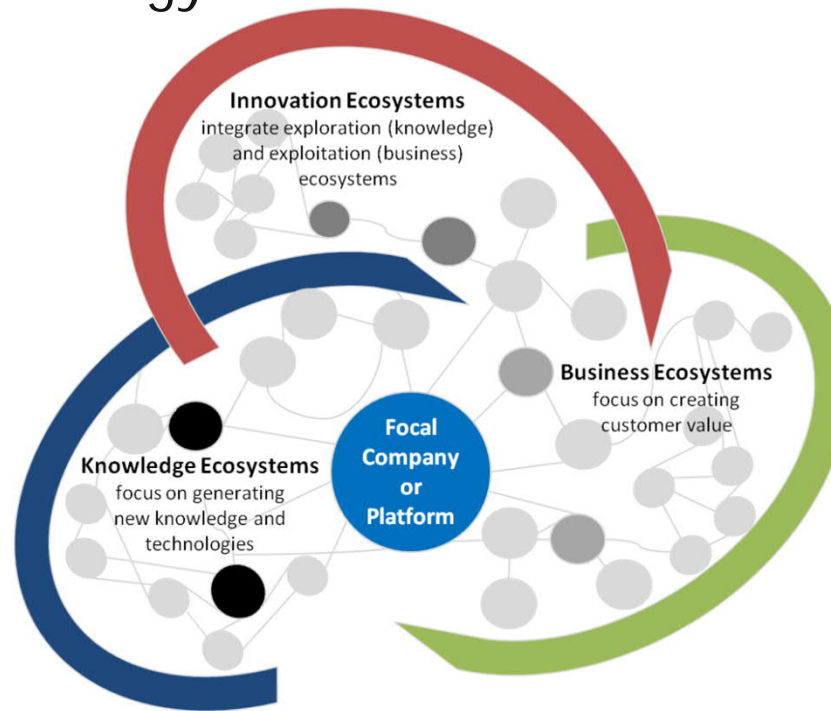
## Platform

A group of fixed and shared operational principles and supporting solutions, with which the ecosystem arranges, manages and carries out value-creating activities.

Modified from Finnish Government Report on  
Research Publication Series 19/2016

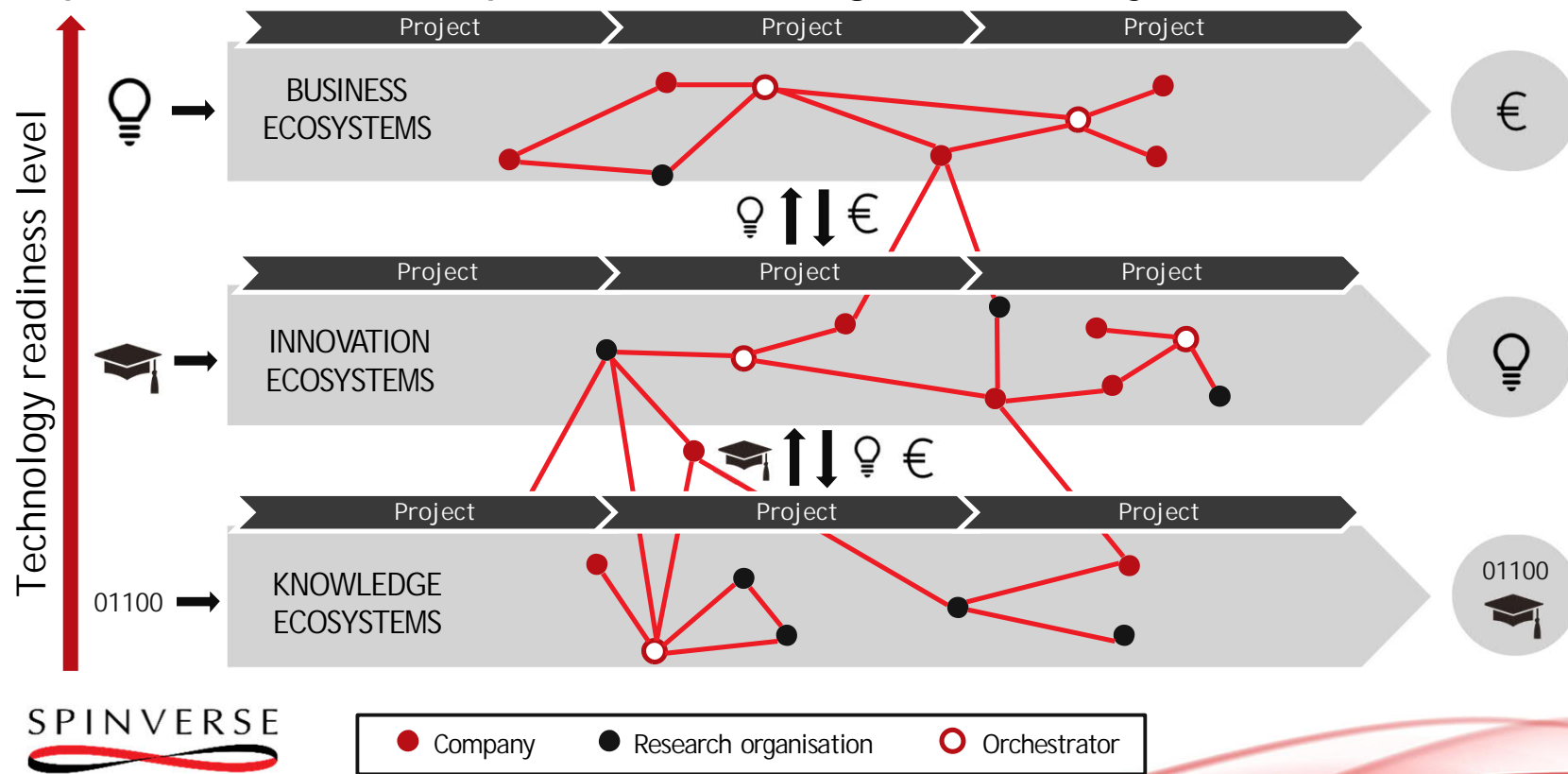


Knowledge, Innovation and Business ecosystems create knowledge, technology and customer value





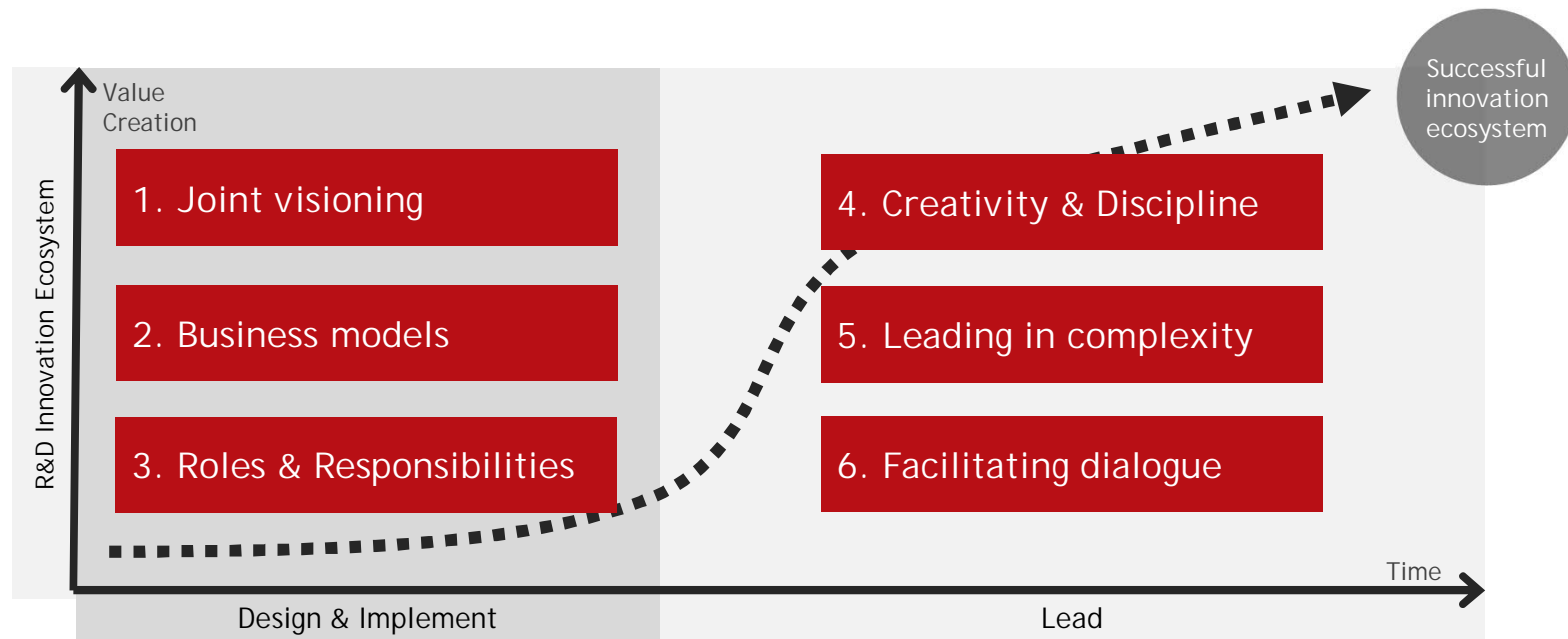
These ecosystems have different drivers and their co-operation needs public funding and many orchestrators





# Spinverse Open innovation ecosystem leadership model

Building and leading industry driven open innovation projects are based on six key elements







# Strategic innovation and growth networks



## Five ecosystems for different industries, maturity levels and purposes



### 1. LuxTurrim5G

- Nokia drives smart city development with 5G, data-driven services and new operating/business models

### 2. CleverHealthNetwork

- HUS commercializes public health data with industry for better diagnosis of diseases

### 3. Smart Buildings

- Kone drives intelligence in buildings for best people flow experience

### 4. BATCircle

- Aalto-driven research ecosystem on battery metals enables industry to invest in Finnish

### 5. Advanced Manufacturing Network (concept)

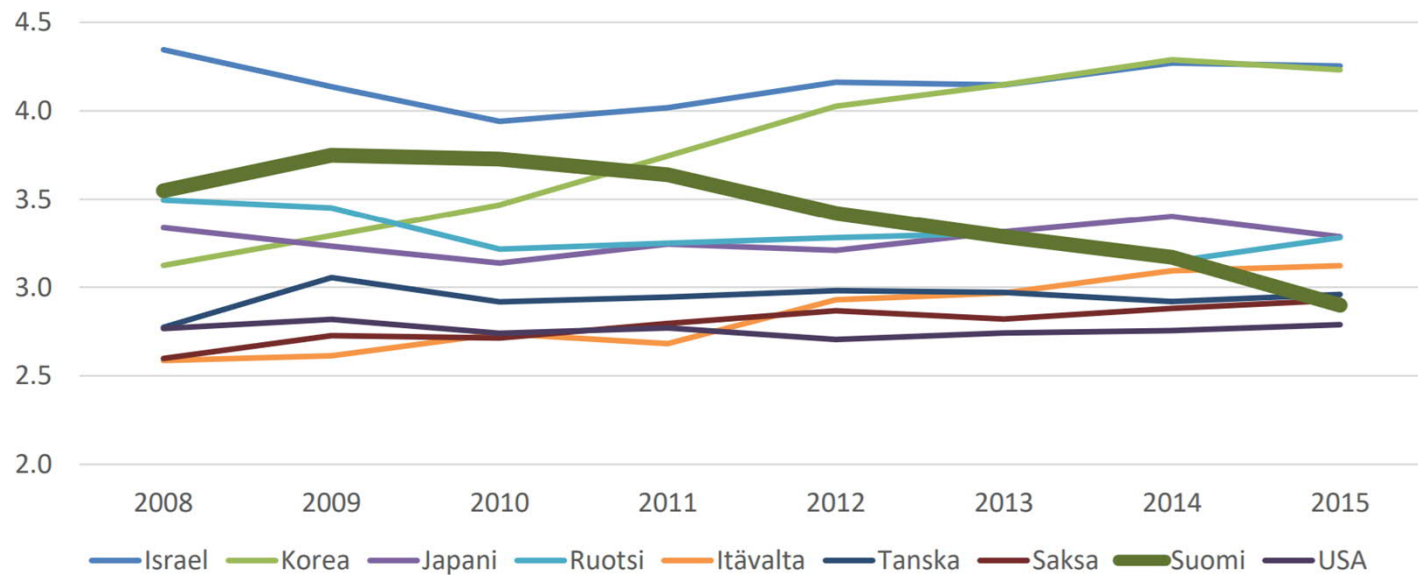
- Industry drives Finland-wide knowledge and innovation ecosystem on advanced manufacturing technologies



## Finnish funding for R&D and ecosystems has decreased heavily contributing to parallel decline of industrial investments

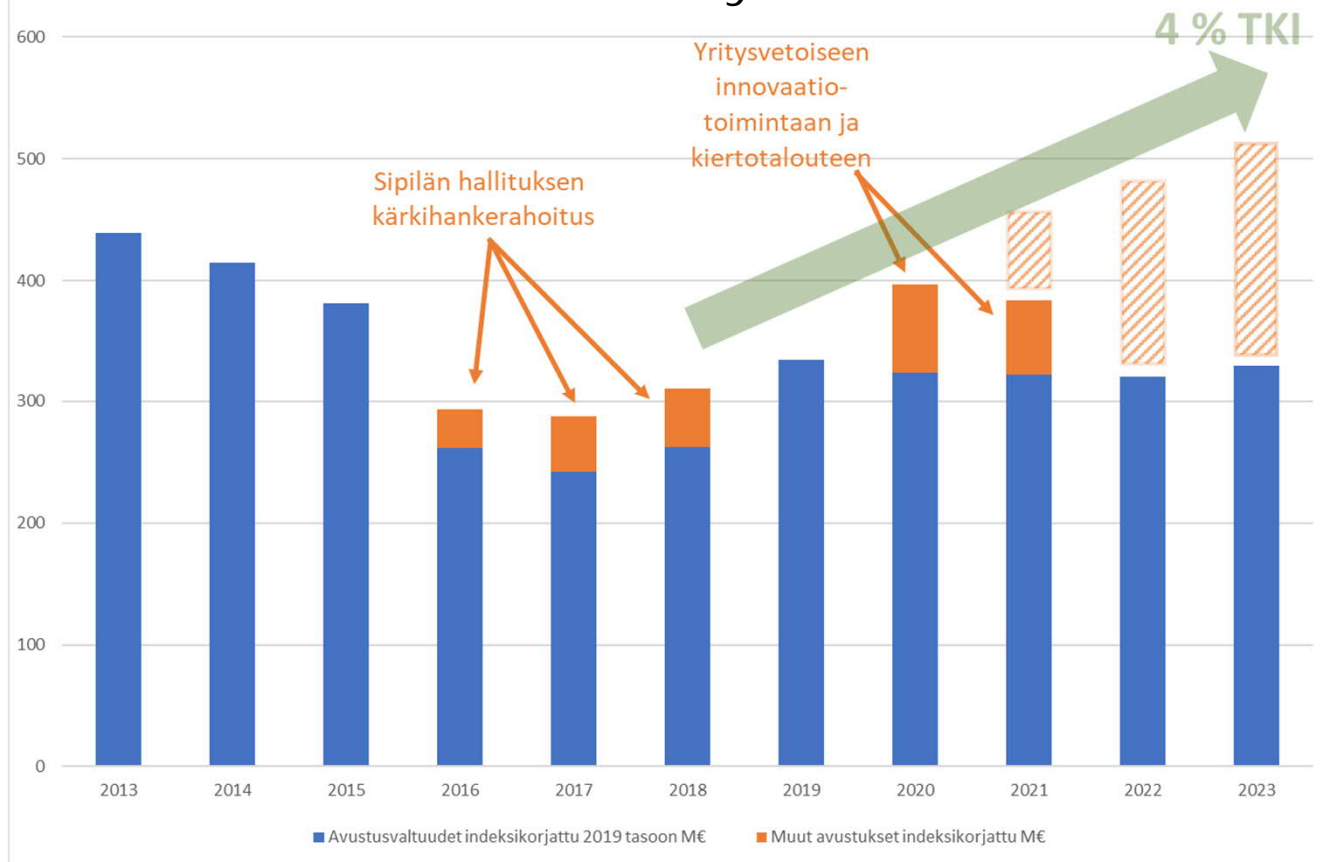
- Funding is one of the most important strategic capabilities

T&K-intensiteetti (T&K-investoinnit BKT:een suhteutettuna, %)



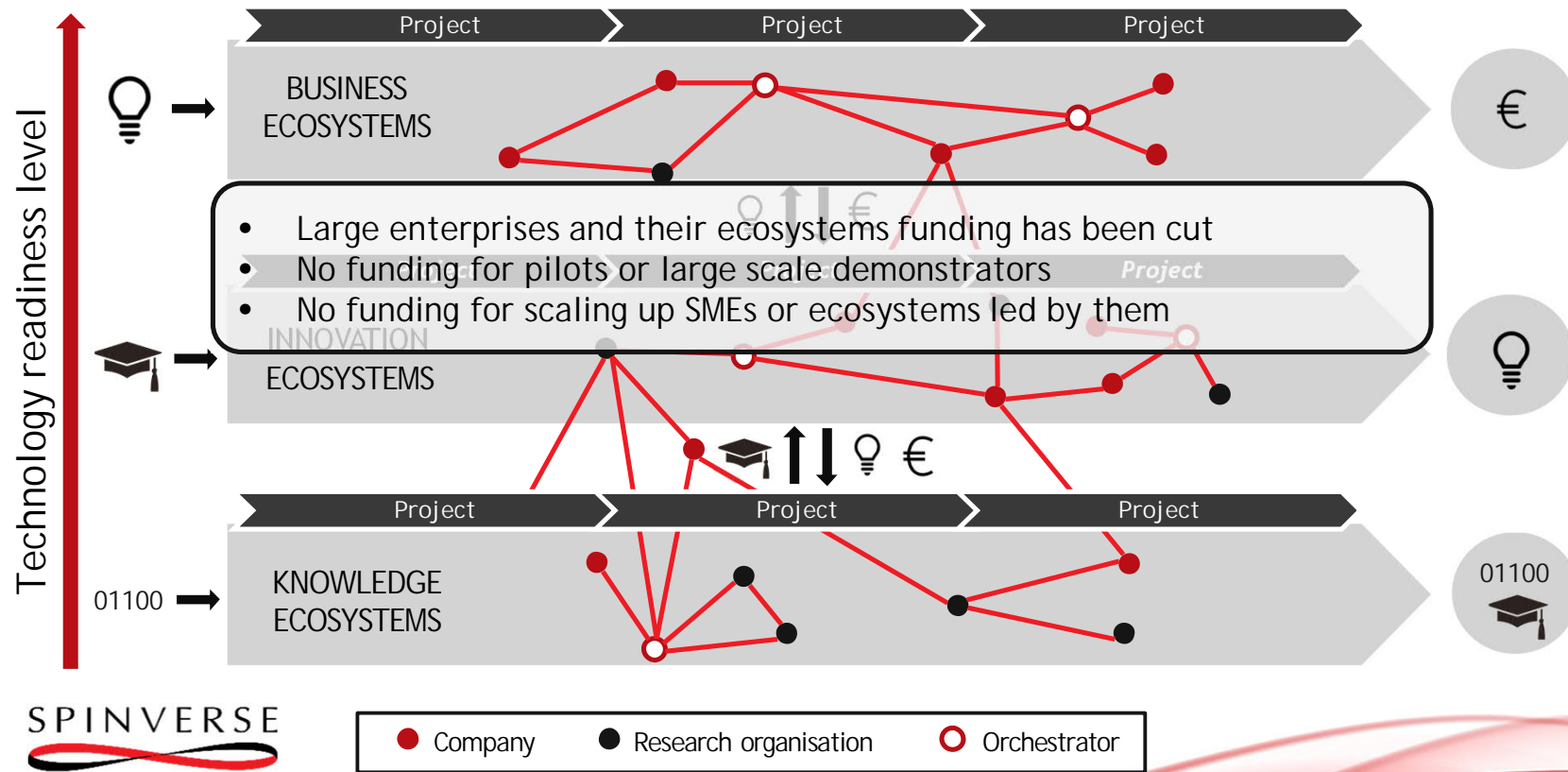


There is now a positive trend in innovation funding – let's keep the trend and focus it correctly





Finnish national funding currently does not support industry-led ecosystems or scaling-up sufficiently







# Conclusions & Recommendations



# Conclusions



- Creating ecosystems calls for vision and win-win
- More competence needed for ecosystem leadership and orchestration
- More support for commercialisation and scaling-up needed
- More collaboration needed between ICT companies and manufacturing industry
- Collaboration of companies and universities/RTOs needs come-back
- University/RTO IPR terms need clarification and re-adjustment to attract industry
- Competitive and flexible, but more predictable national funding is needed for RDI growth
- Companies need to utilise EU opportunities and BF to support them
- Industry needs to be able to trust on the availability of the skilled experts



## Recommendations for Universities and RTOs



- Industry commercializes IPR better. Soften requirements for IPR-licensing terms, let the industry make money and expect bigger public funding through bigger taxes
- Commercializing research is successful when research topics come from industry need – renew Technology Transfer Office operations to pull industry needs in, not to push in-house research out
- Incentivize professors for collaboration with industry, not only to research and teaching – this leads to better and more relevant research and teaching as well
- Collect industry needs early when investing in research and piloting infrastructure: set company commitment in the form of usage or co-investment as internal criteria for investment approval
- Develop the education of R&D-, innovation and project management to better train skills for managing complex projects



## Recommendations for Finnish Government



- Ensure predictable and internationally competitive innovation funding level to maintain industry's trust for long-term investments in Finland. Predictable funding level is not in conflict with continuous 3-5 years cycle of renewal on topics and projects. Make and execute the roadmap for 4% RDI intensity.
- Make and keep Finnish legislation and public organizations as forerunners in opening public data for industrial commercialization
- Use innovative public procurement extensively. Legislation and 10% target are there - next encourage pilots of large projects with high-level attention and centralized risk-balance funds
- Start-up ecosystem in Finland has reached internationally competitive level, now it is time to enable scale-up funding



## Recommendations for Cities and Regions



- Create best environment to attract Innovation and Business Ecosystems to your area:
  - Set ambitious targets on innovative procurements and follow them through at the highest level of administration
  - Ensure fast permitting and necessary infrastructure investments
  - Define smart specialization of your region and actively market it in international domains
  - Remember benefit of Finland. If there is more competitive region in Finland to attract an international mega-project, support it instead



## Recommendations for Business Finland (BF)



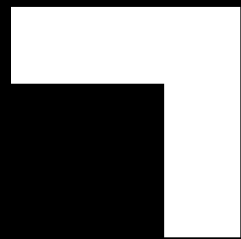
### Innovation funding

- We cannot reach 4% RDI-target without Large Enterprises and their ecosystems. Guide more funding for them. It also helps bring back the co-operation between industry and academia.
- Review BF recommended IPR rules between companies and universities/RTOs – acknowledge the industry's role as the commercializing party. Use best practices of SHOK-projects and model agreements from selected EU Joint Undertakings like ECSEL.
- Encourage increased use of EU opportunities, especially for large enterprises and ecosystems behind them. Enhance your support and funding for better linking to European strategies and roadmaps, networks, funding.
- Funding rules should encourage finding the best international partner, not force working with Finnish ones. Even if an international partner is not funded, it can be part of the evaluation criteria.

### International co-operation

- BF can help internationalisation in rising economies with strong governmental control
- BF should continue to build bi-lateral partnerships with countries outside EU and raise awareness of opportunities
- Industry-driven ecosystems can serve as internationalization channels for SMEs and start-up companies globally. Build them as integral part of toolset in renewal from Finpro export legacy.





**Teknologiateollisuus**