



Working in ecosystems together with industry

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Recognised opportunities in Finland – Growth portfolio



Growth comes from new knowledge and scientific research, technological development and transversal technologies: artificial intelligence and machine learning, utilisation of data, digital platforms

Kasvuportfolio Kasvumahdollisuudet kasvuteemoittain		
Digimurros, uusi arvonluonti ja teknologiat mahdollistajana		
<ul style="list-style-type: none"> • Alustatalous • Tekoäly ja analytiikka • 5G, esineiden internet, konnektiviteetti • Lohkoketjut 	<ul style="list-style-type: none"> • Tietoturva ja yksityisyys • Synteettinen biologia • Fotoniikka ja mikroelektroniikka 	<ul style="list-style-type: none"> • Disruptiiviset arvoketjut • Virtuaaliratkaisut ja pelillisyyys • Arktinen osaaminen • Avaruusteknologian uudet sovellusalueet
Liikkumisen ja logistiikan murros	Resurssitehokas kasvu	Teollisuuden uusi aika
<ul style="list-style-type: none"> • Saumaton liikkuminen ja logistiikka • Turvallisuus • Meriteknologia • Hiilineutraali liikenne 	<ul style="list-style-type: none"> • Biotalous • Kiertotalous • Älykkäät energiaratkaisut ja sähköverkot 	<ul style="list-style-type: none"> • Älykkäät tehtaot • Kestävä, terveellinen ruoka • Uudet funktionaaliset materiaalit
Terveys ja hyvinvointi	Uudistuva kuluttaja	Monimuotoiset yhteisöt
<ul style="list-style-type: none"> • Kehittyvät hoitokeinot ja diagnostiikka • Yksilöllistetty terveys ja osallistava terveydenhoito 	<ul style="list-style-type: none"> • Matkailu ja elämystalous • Jatkuva oppiminen • Kaupan uudet ratkaisut • Merkityksellisyys 	<ul style="list-style-type: none"> • Muuttuva työ • Kestävä asuminen ja sujuva arki • Vuorovaikutteiset palveluverkostot

Most of the potential IPCEI value chains highly relevant to technology industries



The full list of the recognised potential strategic value chains for IPCEI:

- **Personalised medicine**
- **Space-launchers**
- **Cybersecurity**
- **Wired and wireless networks**
- **Industrial IoT**
- **Personal and clinical medical devices**
- **Hydrogen based and other low-carbon energy conversion**
- **Low carbon steel-making**
- **Low carbon industrial processes and carbon capture and valorisation technologies**
- **Bio-based materials**
- **Electric mobility for vehicles - propulsion, wireless energy transmission and smart charging**
- **Critical raw materials for innovative applications**
- **Connected and autonomous mobility for vehicles**
- **Net zero energy building construction and renovation**
- **Additive manufacturing**
- **Smart vessels (autonomous vessels, electric propulsion)**

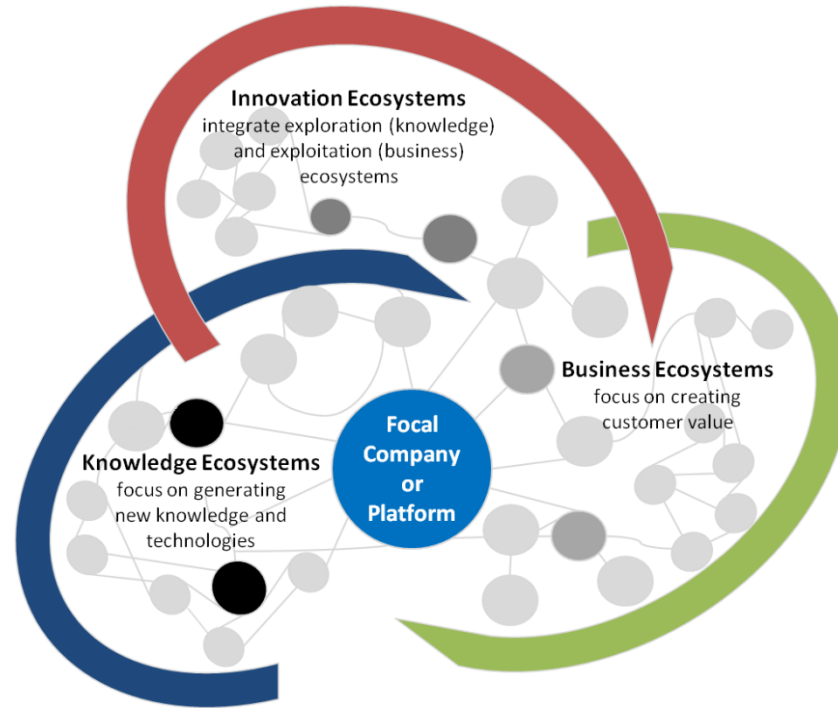


But new ones are needed too!

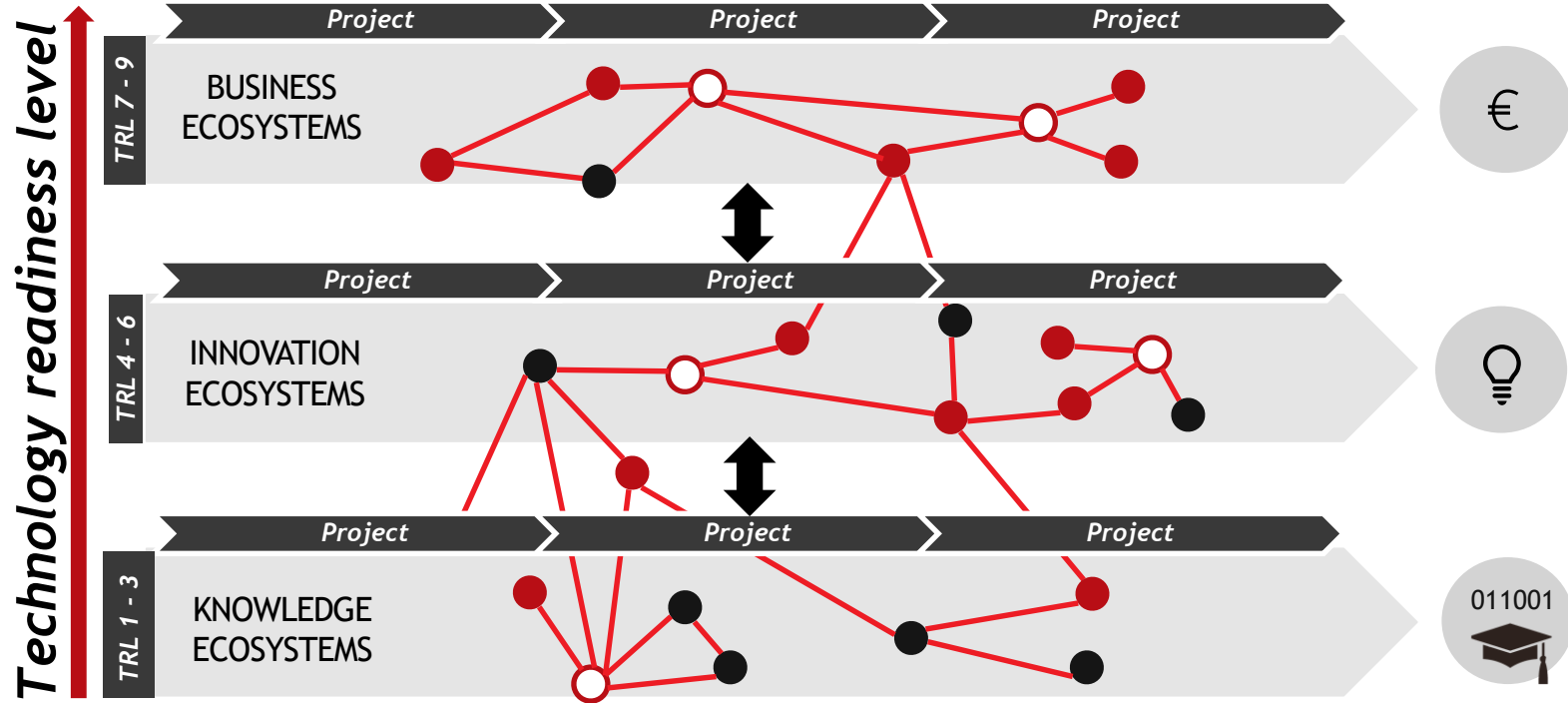


Ecosystems as tools for innovation and competitiveness

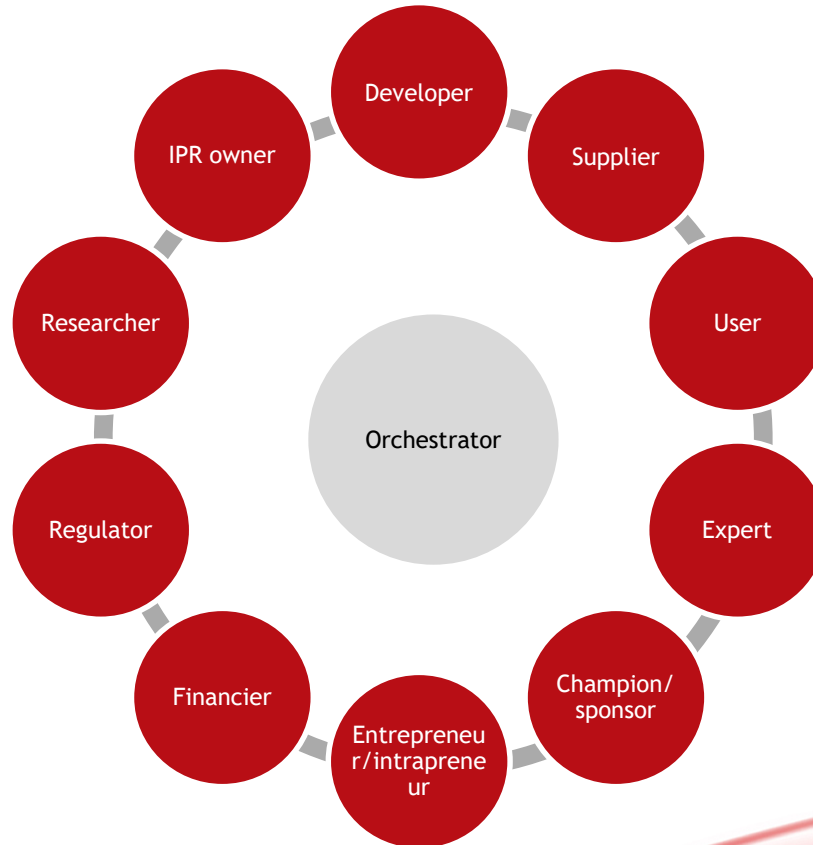
Three kinds of ecosystems are in continuous interaction...



These ecosystems have different drivers and different impact with many orchestrators



Open innovation Ecosystem stakeholders are diverse



Other stakeholders:
Sector shapers, intermediaries,
clusters, geographic hubs,
adaptors, infomediaries ...

Building and managing impactful industry driven open innovation projects are based on 6 key elements

Joint visioning

Spending enough time in articulating a shared vision and strategy for the ecosystem

Business models

Consider and define at the early stage the value creation and capture models for each actor

Roles & Responsibilities

Agreeing from the very beginning among actors who is doing what

Leading in complexity

Leading complex ecosystems require simple guiding principles that enable self-organising cooperation

Facilitating dialogue

The quality and the frequency of the interactions between partners make ecosystem productive

Managing balance

Orchestrating ecosystems to have a right balance between discipline and creativity