



Ecosystems in Winter Road Maintenance and C-ITS

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Business ecosystem definition



“An economic community producing goods and services that create value to customers, who are themselves members of the community. Some member organisms also include suppliers, lead providers, and other stakeholders.

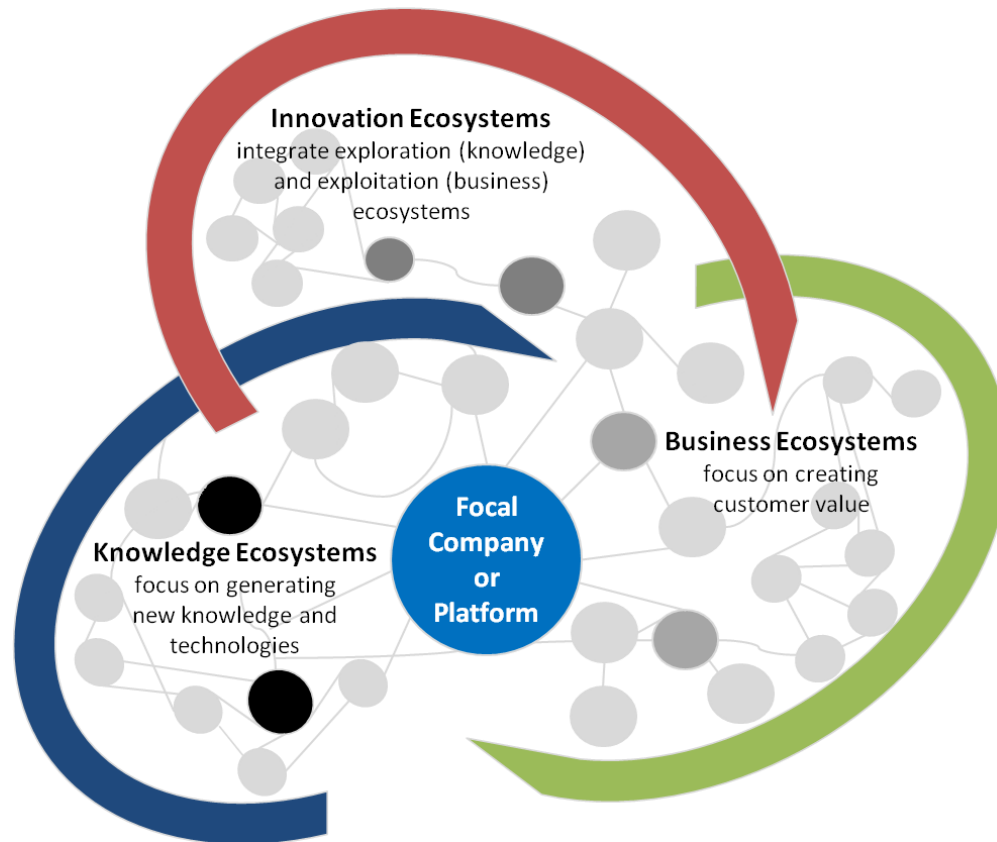
Over time, they coevolve their capabilities, and tend to align themselves with the directions set by ecosystem leaders. Those companies holding leadership roles are ecosystem leaders, but the function of ecosystem leader is valued by members because it enables members to move toward shared vision, investments, and to find mutually supportive roles.”

Together can be achieved more than working independently.

Moore: The Death of Competition: Leadership and Strategy in the Age of Business Ecosystems, 1996. Harvard University.

Types of ecosystems

LIVING LABS



AI
CONNECTIVITY
SENSORING

SMART ENERGY
AUTONOMOUS SYSTEMS
DIGITAL HEALTH

A few points about Finnish winter maintenance

- Finnish road weather expertise is well-known and internationally recognized
- companies, authorities, individual experts and research institutes hold a lot of know-how
 - This know-how and knowledge is a bit scattered
- Long tradition in operating with quality-driven winter maintenance management policy



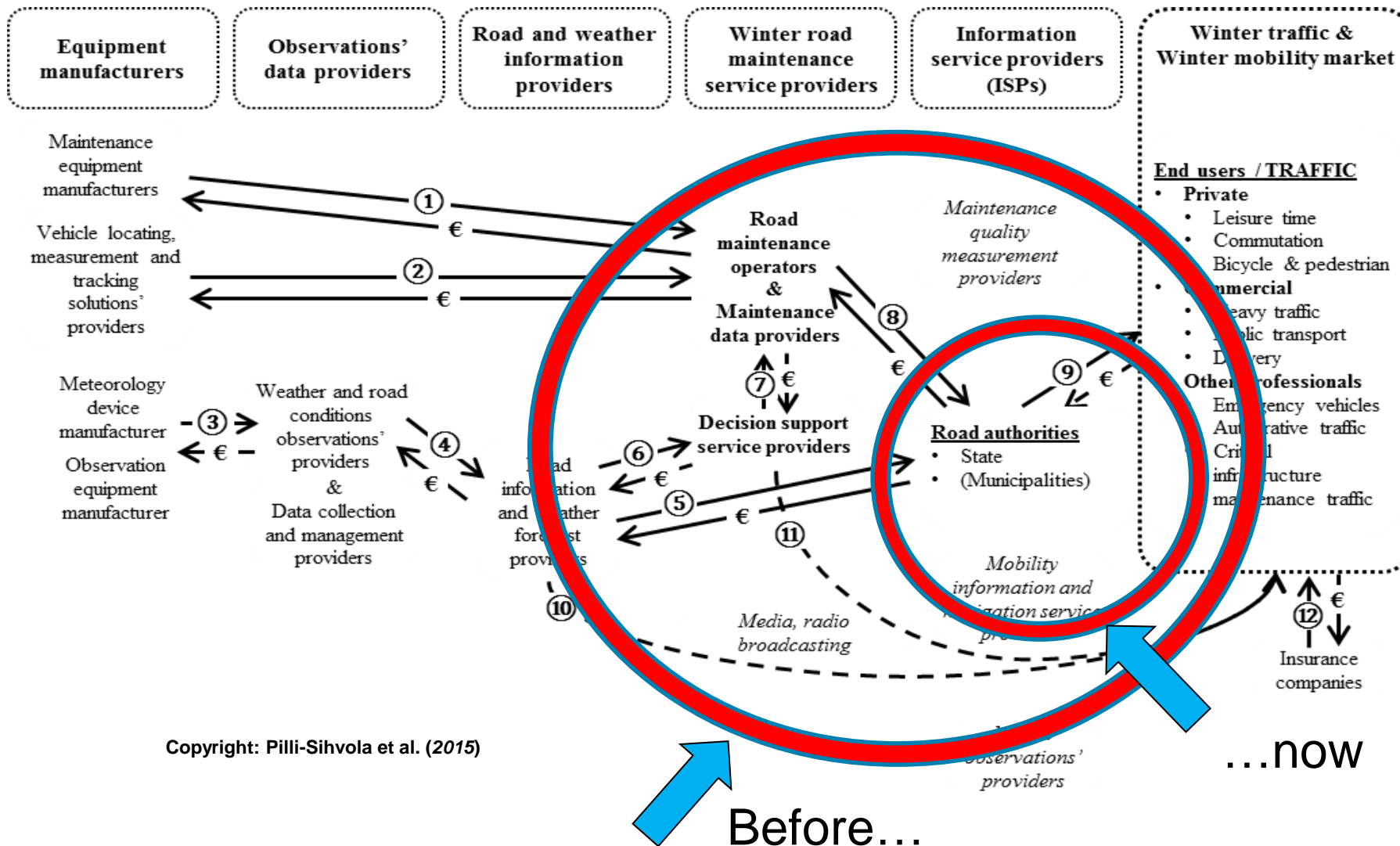
FIRWE – Finnish Road Weather Maintenance



- Potential for significant benefits for road operators, maintenance decision makers, road authorities and road users
 - better awareness and more proactive measures
 - reduced operational maintenance costs and lighter environmental footprint
 - improvements in traffic safety and traffic management
- Team: **Vaisala, Arctic Machine, Foreca, Teconer and VTT in cooperation with other Finnish public & private sector actors**

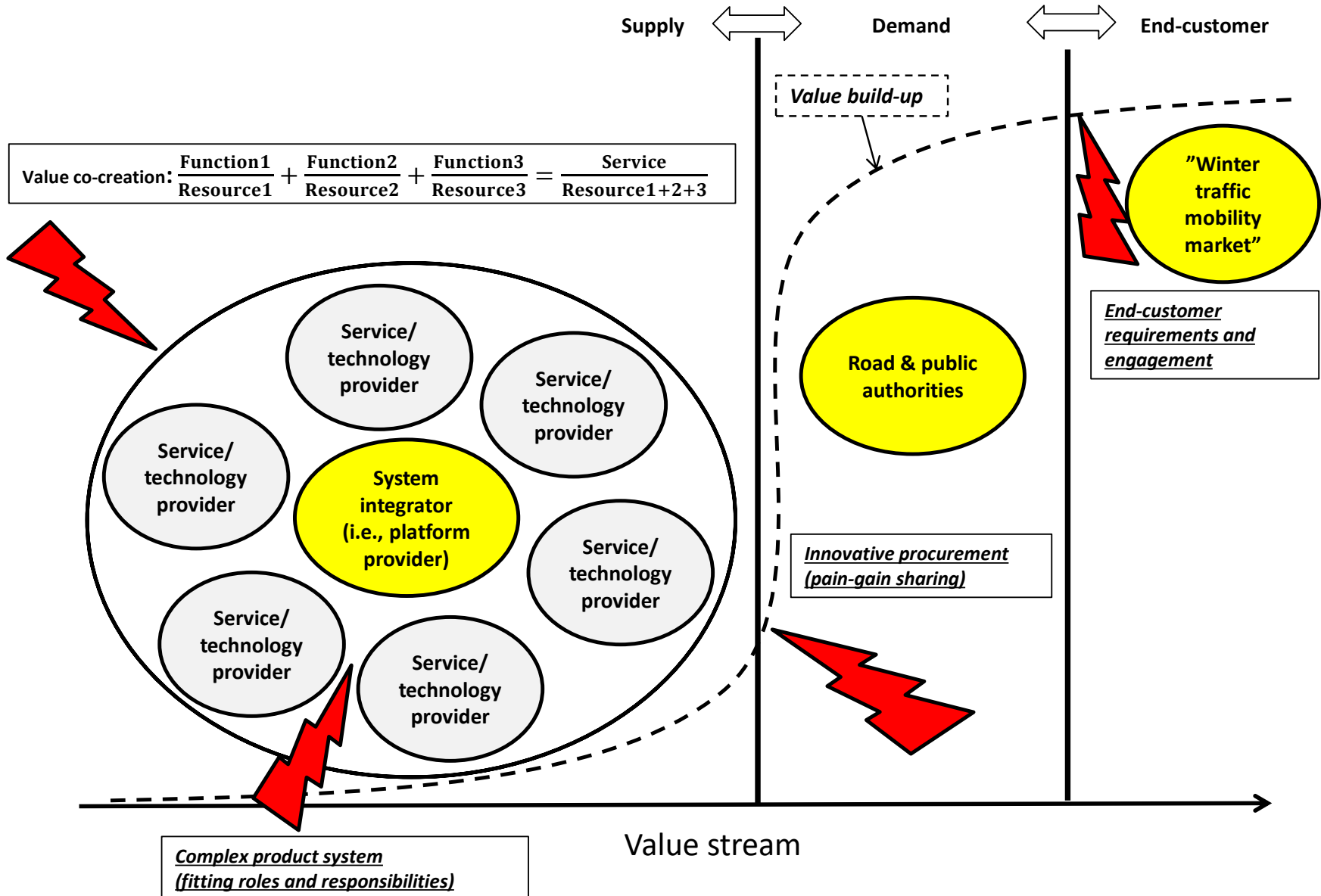


... Qand now daytime in Finland...



Copyright: Pilli-Sihvola et al. (2015)

Boosting Innovations



the area is full of small acts – Making hard to do one common vision



We are surrounded by ecosystems



“Fluent door-to-door supply chain enabled by autonomous operation and digitalization”

Marine transport and port operations

Urban transport

Quick and easy-to-use door-to-door mobility enabled by automated chain of different means of transportation

Unmanned air, water, land and space systems

“Novel solutions for asset monitoring, logistics and safety & security”

Inter-Urban transport

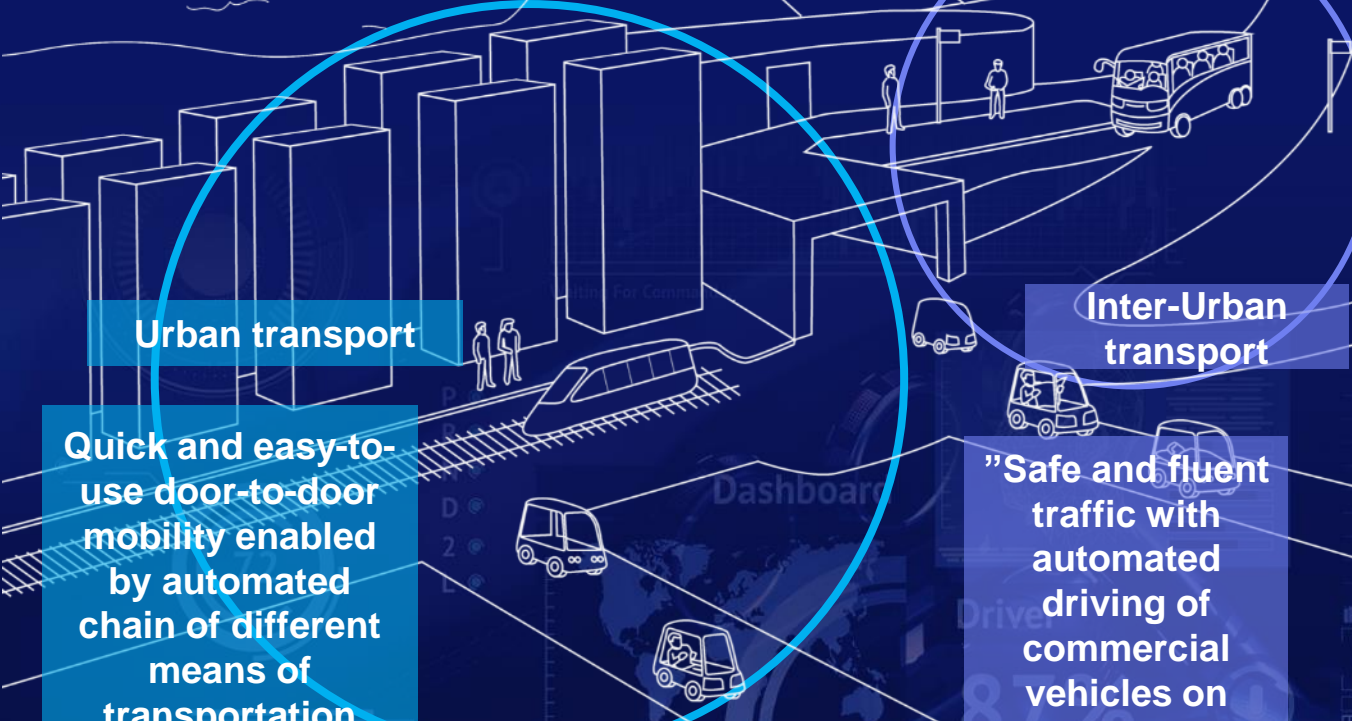
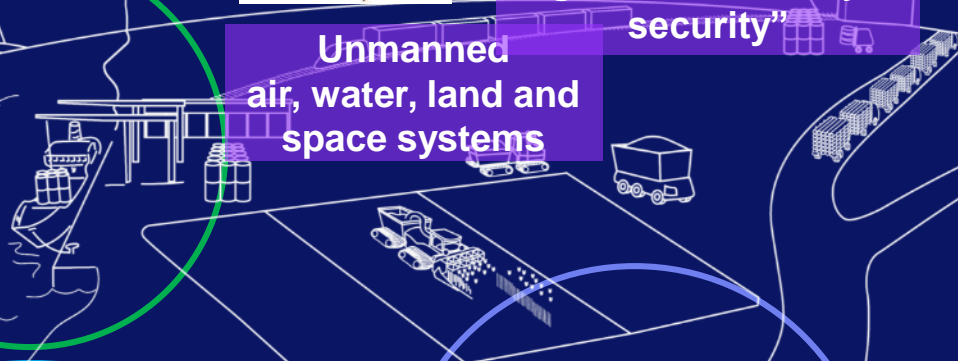
“Safe and fluent traffic with automated driving of commercial vehicles on highways”

“Sustainable productivity for harvesting of natural resources through remote controlled and autonomous systems”

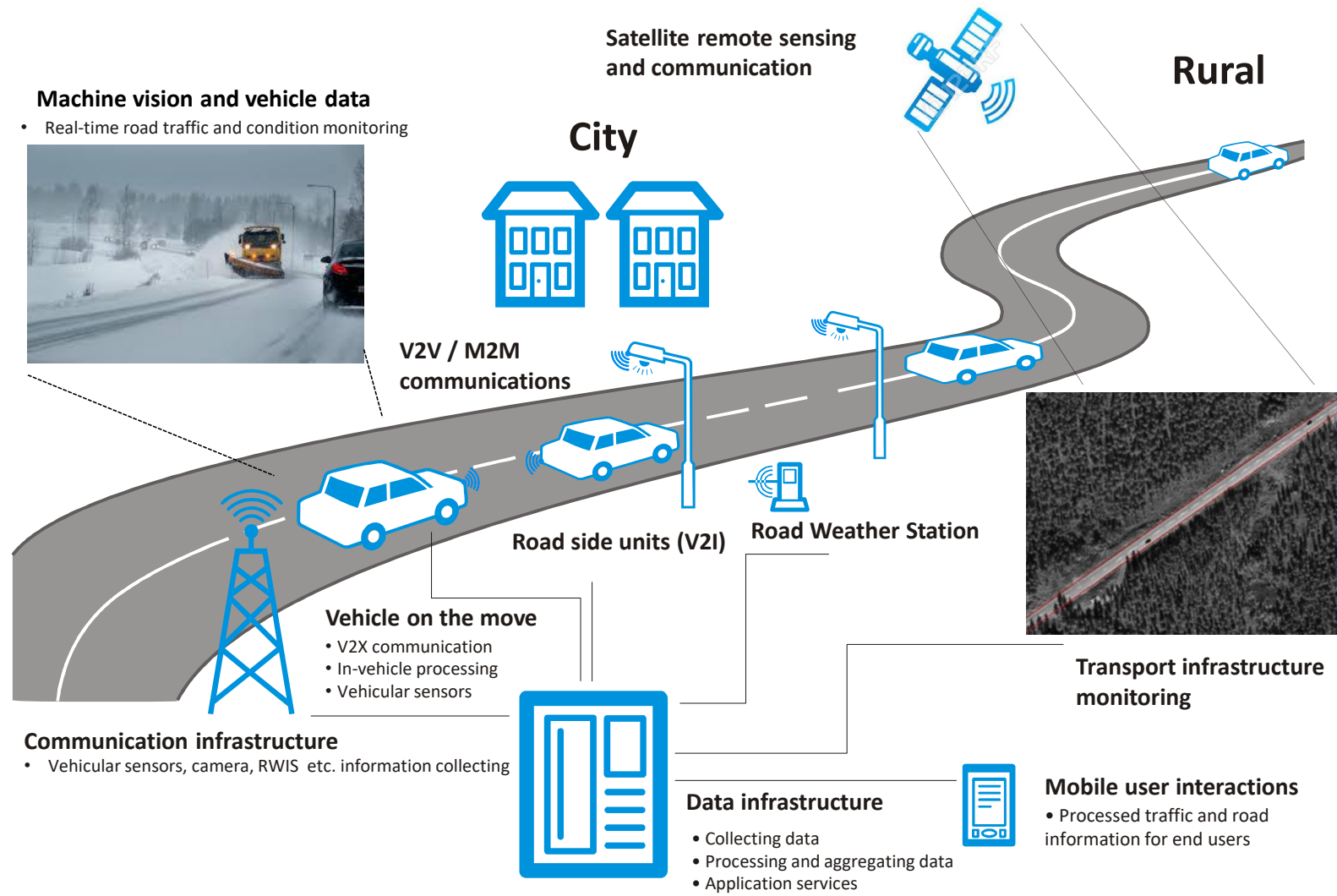
Mobile machinery

Rural transport

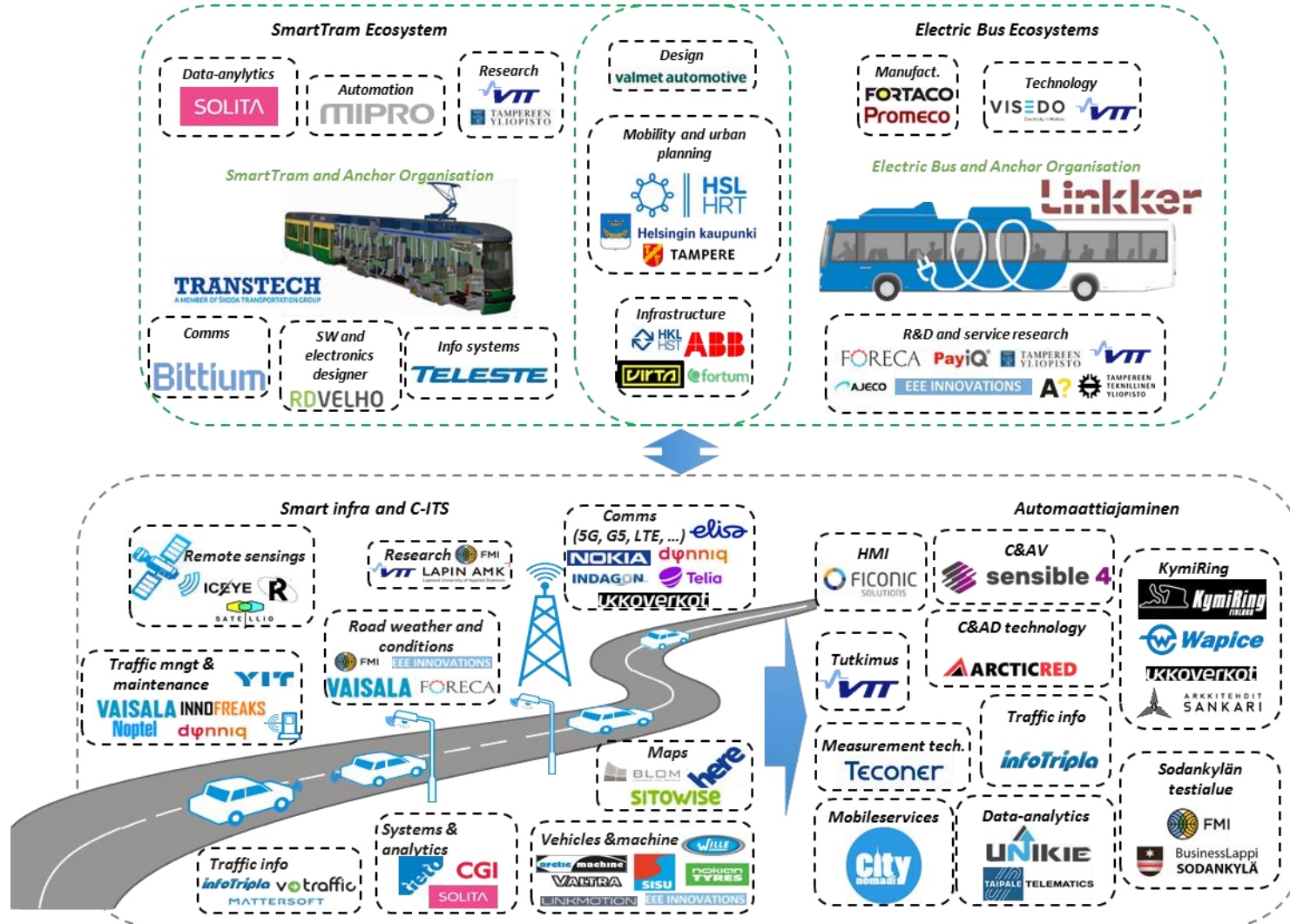
“Automated and combined people and goods transport solutions”



Big data and digitalization widens the ecosystems...



...when winter road maintenance is only a small piece in this puzzle



Why companies need to seek new business ecosystems?

Disruptions

Complexity

Competition

Blue Ocean

Creating such value for end customers

- that you are not capable for doing alone
- your present networks are not the right ones
- you do not have access...

- Servitization and customer centricity in value co-creation → *“our customers are looking for someone to solve the problems, that are meaning-full for their customers”*
- New partners (for creditability at market entry, access to resources and technologies) → *“our customers perceive us as based on our current role and their experience“*
- Traditional roles are disappearing → *“our suppliers are our customers and vice versa”*
- Enabling technologies and business models → *“we need to break our current mind-set and way of thinking*
- Own role is disappearing or new players entering to playground → *“we can’t stay put, we need to look for new options”*

What are the companies' challenges in ecosystem orchestration?

- Emerging new value opportunities requires destroying current values, understanding both dimensions
- Value is generated to actors at different times and in variant forms
- Relevant actors are new and their recognition and motivation
- Current business requires most of the time and resources
- New business model disrupts current business models, capabilities and networks (dependencies at ecosystems, competition with the current customer, internal organization and KPIs)
- Killing current business models requires courage
- Ecosystems cross the boundaries of traditional domains

Benefits of participating innovation ecosystems

- Creating market potential - building end-user relevant solutions
- Shared resources
- Learning from other companies
- Reducing the need to invest general internal competence or the latest “hype”
- Access to the latest scientific knowledge interpreted to applicable form
- Support for pilots and creating references & demonstrartions
- Competence development
- Mobility
- Etc.

What should we (= companies) do?

- Understanding the logic of action of the whole ecosystem,
- Proactively aim to recognise the possibilities from emerging ecosystems
- Be open for different options and development paths, agile piloting
- Look for the core and differentiating competences
- Focus on end customers (current as well as future) and the value ecosystems provides to them
- Agree on risk and revenue sharing within the ecosystem
- Be prepared to also the negative changes, parts of the current will destroy and changes of multiple actors are needed



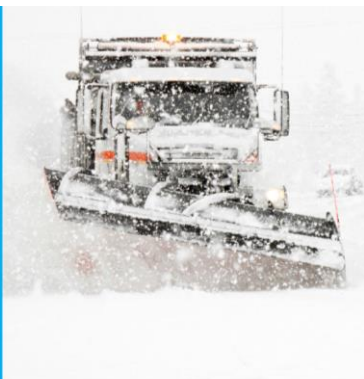
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Finnish winter road management – the evolving business ecosystem

BECSI WP2 project report

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Interested? Download a report:

<http://www.vtt.fi/inf/pdf/technology/2015/T208.pdf>