

Nordic **WAY 2**

Lessons learned from NordicWay2 C-ITS deployment pilots:
The service provision ecosystem companies' perspective

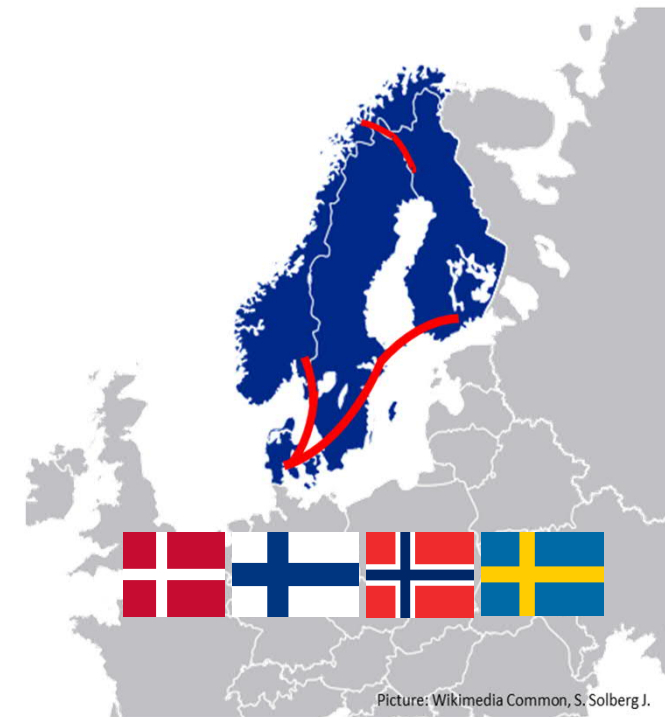


Ecosystem evaluation results

Petri Mononen VTT



Co-financed by the European Union
Connecting Europe Facility



Picture: Wikimedia Common, S. Solberg J.

The backdrop

C-ITS deployed fast but technology-push and public involvement are dominant - limited attention to the business viability.

Often aggravated by complex mobility scenarios involving many stakeholders with their own needs and interests, e.g.

the commercial parties (e.g. revenues, customer satisfaction), and
authorities (fast, safe and green traffic).

Some overlap, but different on other aspects → a challenge to find business models that are attractive for all.

The backdrop

NordicWay2 (C-ROADS) C-ITS deployments

- 20 Day 1 and Day 1.5 C-ITS services deployed in FI, SE, NO
- Delivered by 10+ business ecosystems with dozens of actors
- Investigated in detail in 2019-2020, to find out the companies' perspectives, hopes, worries and lessons learned
- Foci on start-up phase challenges and visions of scale-up
- Data collected mainly in workshops + some written input
- Evaluation team Petri Mononen (VTT), Risto Kulmala (Traficon), Magnus Simons (VTT)



RWW
SSVW
EVA
HLN
SI
IVS
IVI
PVD
TJW
GLOSA
etc.
etc.

Research questions

What should be taken into account in forming a service ecosystem? What defines an "ideal" ecosystem?

What problems and challenges have been encountered? (challenges encountered thus far and foreseeable challenges)

What is the business potential of the service? (perceived, anticipated, modelled or observed potential - the actor perspective)

What are the most important things to be taken into account and solved in the service development and provision phases, in short term and in medium term?



Methods & tools

Value network modelling (current state & scaled-up state)

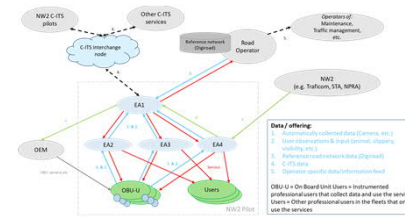
Motivational charts of pains, gains and commitment

End-to-end content provision and service provision matrices (roles, data, actions, hand-overs)

Business projection charting

Scale-up strategy workshop

Etc.



Partner	Content provision				Service provision			
	Content	Processing	Provision	Presentation	Content	Processing	Provision	Presentation
Partner 1	X	X	X	X	X	X	X	X
Partner 2	X	X	X	X	X	X	X	X
Partner 3	X	X	X	X	X	X	X	X
Partner 4	X	X	X	X	X	X	X	X
Partner 5	X	X	X	X	X	X	X	X

Partner	Pain	Gain	Commitment
1 econ. 1, Partner 1	Product development to products that have no clients as of yet. Risk taking (cost & time).	NW2 funding alleviates and mitigates the risk-taking element. New business opportunities potential. Delivery of traditional road information in novel ways.	Active actor in the market Involved in R&D. Supports strategic objectives
1 econ. 1, Partner 2	To find out if or not a governmental buyer can be found to big data.	Data loop: the more data intensive the network management is, the better.	Active actor in the market Involved in R&D. Supports strategic objectives
1 econ. 2, Partner 3	Purchase costs of equipment to collect data. R&D resources (working time of experts)	At all times safe and fluent material flows to the industry. Brand image issues, e.g. to attract new drivers to the sector (customers, shareholders).	Supports strategic objectives Provides better customer

Service x	Content provision				Service provision			
	Content	Processing	Provision	Presentation	Content	Processing	Provision	Presentation
Partner 1	X	X	X	X	X	X	X	X
Partner 2	X	X	X	X	X	X	X	X
Partner 3	X	X	X	X	X	X	X	X
Partner 4	X	X	X	X	X	X	X	X
Partner 5	X	X	X	X	X	X	X	X

<p>Follow that rabbit strategy Use a non-platform demonstration project to model success.</p>	<p>The piggyback strategy Connect with an existing user base from a different platform and stage the creation of value units to recruit those users.</p>	<p>The seeding strategy The platform company acts as first producer, borrows value units or simulates platform activities creating value units that will be relevant to at least one set of potential users. Others will follow.</p>	<p>The marquee strategy Provide incentives to attract members of a key user set onto your platform. This is a single group of users who are so important that their participation can make or break the success of the platform.</p>
<p>The single-side strategy Create a business around product or services that benefit a single set of users, later attract a second set of users who want to engage in interaction with the first set.</p>	<p>The producer evangelism strategy Design your platform to attract producers, who can induce their customers to become users of the platform.</p>	<p>The big-bang adoption strategy Use one or more traditional push marketing strategies to attract a high volume of interest and attention to your platform.</p>	<p>The micromarket strategy Start by targeting a tiny market of members already engaging in interactions, in order to provide matching characteristics of a large market.</p>

Service	Data providers	Current user groups	Number of Users 2019
Traffic jam ahead warning	Professional drivers, manual button activation in vehicle (Main responsibility: navigation & map engineering/usage of data)	Coordinator, forest companies, VTI ecosystem	Users are new only through VTI
Accident or person on the road	Professional drivers, camera in vehicle (Coordinator, forest companies)	As above	Users are new only through VTI
Road works warning	Professional drivers, camera in vehicle (Coordinator, forest companies)	As above	Users are new only through VTI
Weather conditions	Professional drivers, camera and camera in vehicle (Coordinator, forest companies)	As above	Users are new only through VTI
Temporary slippery road	Professional drivers, camera and camera in vehicle (Coordinator, forest companies)	As above	Users are new only through VTI
Reduced visibility	Professional drivers, camera in vehicle (Coordinator, forest companies)	As above	Users are new only through VTI
Slow or stationary vehicle	Professional drivers, (Special Transport)	Will be changed to Traffic Management	Users are new only through VTI

...forming the ecosystem (consortium, others)

...the service formulation and provision phases

access to data and right to use for service provision purposes within the pilot (within the consortium, with public actors, with commercial actors)

Any other issues / challenges

Consortium is quite small so it is easy to put together. Because forest industry covers own mobile data collection devices and equipment, it may be easier to build the platform. It is possible that there is now possibility to get data from mobile fleets if there is no business models to cover the costs.

We are trusting that in every phase we need to create value for road maintenance and traffic control center other than there is no business available.

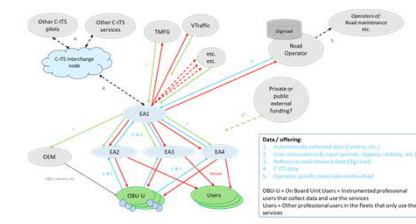
No major problems. Basically pilot enables data access for free. But challenge will be faced later when business model should cover cost and provide margin for service operator.

Handling to access to data and to overcome, private roads (detached) remain still a challenge - discussions are ongoing with ministries to solve this.

Also making data coverage, the conventional "hotspot key" better to detect user locations is the best way to keep the data abundant, both public and private. But the consent requirement and need to pilot give even beyond postal codes (timber harvesting and transport).

The use of the message code might remain relevant in this particular pilot. The data format is limited and does not allow transferring images, for example.

Not a challenge but a very positive notion. This pilot has already yielded quite a bit of international attention. Also, sharing some in an additional "Forest and Forest Technology" exhibition awarded for forestry sector recently in category "New Business Distribution of the Year".



Findings: Ramp up challenges

Some highlights:

Contracting can be very challenging and time consuming - especially GDPR, but also service contracts

Data quality issues

Service coverage issues (temporal & geographical)



Findings: Pains, gains, commitment

Integrator pain

Attracting users in the harshly competitive climate

Pains

Revenue streams from individual private users may be thin

Product development investment, data costs, etc.

Lack of skilled work force (capabilities, knowledge, experience)



Findings: Pains, gains, commitment

New business opportunities

Access to new data

Gains

Revenue growth and service portfolio expansion

New national and international contacts and networking coming from the cooperation in the ecosystem in itself

Operational gains



Findings: Pains, gains, commitment

Commitment

Aspiration to be an active actor in this market while creating new business.

The will to be involved in the forefront of the latest R&D&I activities.

Being involved in these kinds of endeavors strongly support the company strategic choices and objectives.



Findings: Business models

Feasibility, scalability, long term sustainability, profit):

“If there is public data, there needs to be public co-funding.”
(Direct revenue collection pipeline stops at publication of data)

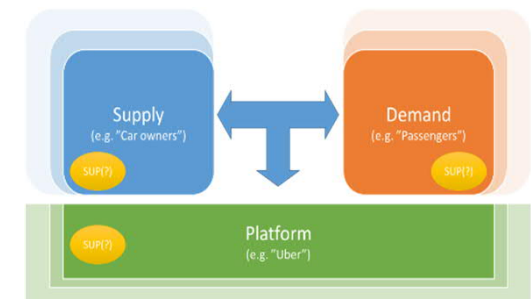
“Revenue streams from individual private users may be thin.”
(“Grouping synergy”: insurers, employers, etc. as primary clients?)

Scaling up ideas are now there and brewing - but not too concrete yet across the board.

The most prominent scaling up strategy: the “single-side strategy”, also “follow that rabbit”, “big-bang”, “piggyback”.

The most prominent and promising Scale Up Partner candidates: navigation device manufacturers and large fleet owners.

<p>Follow that rabbit strategy Use a non-platform demonstration project to model success.</p>	<p>The piggyback strategy Connect with an existing user base from a different platform and stage the creation of value units to recruit those users.</p>	<p>The seeding strategy The platform company acts as first producer, borrows value units or simulates platform activities creating value units that will be relevant to at least one set of potential users. Others will follow.</p>	<p>The marquee strategy Provide incentives to attract members of a key user set onto your platform. This is a single group of users who are so important that their participation can make or break the success of the platform.</p>
<p>The single-side strategy Create a business around product or services that benefit a single set of users, later attract a second set of users who want to engage in interaction with the first set.</p>	<p>The producer evangelism strategy Design your platform to attract producers, who can induce their customers to become users of the platform.</p>	<p>The big-bang adoption strategy Use one or more traditional push marketing strategies to attract a high volume of interest and attention to your platform.</p>	<p>The micromarket strategy Start by targeting a tiny market of members already engaging in interactions, in order to provide matchmaking characteristics of a large market.</p>



Findings: Data exchange platform

Generally the C-ITS platform (federation model, interchange node) was perceived as an opportunity and a benefit - but opposing views, challenges and worries were brought up as well

“All data structured through one source very helpful.”

“Common platform helps to increase the product range.”

“All interchange of data is good for us.”

“Enables cross-border exchange and services” etc.

“The role of the interchange node might remain marginal. The data format is limited e.g. does not allow transferring images.”

“The interchange model does not scale.”

“Some actors not open to sharing information.”

“A bottleneck for innovation?”



Findings: Public actors' role

Public sector and public funding have been integral to the development by e.g.

- Helping to populate the network and providing valuable real-time data
- Increasing the value of the network for all by helping to have more organizations and people to join and share data
- Creating a network effect that will be a benefit to the ecosystems; and
- Being demanding customers (describing the needs and specs, input into business models, regulation needs and contractual obligations incl. GDPR)

The public sector probably will remain an important, if not the most important facilitator, client and market driver in large scale C-ITS

Relying only on markets might have European competitiveness implications



To conclude

In order to maintain momentum

the added positive impacts for end-users and for the society need to be in place, but also

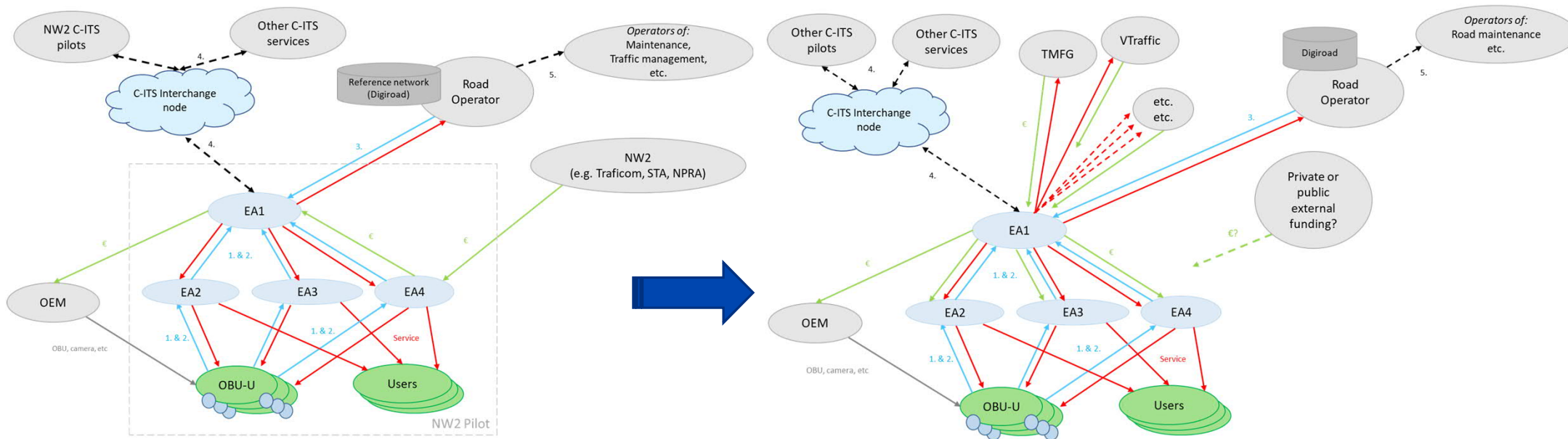
the business benefits need to be there for commercial actors in an ecosystem.

Now is a critical time in terms of facilitating viable business models to keep the deployment ratio up.



Results to be published in NordicWay 2 deliverable «Evaluation Report».

2020 2025 ... ➔



Thank you!

Contact:

Dr. Petri Mononen
Principal Scientist
+358 40 5155 808

petri.mononen@vtt.fi

