

”User Pays Principle” – Perspectives on Social Sustainability

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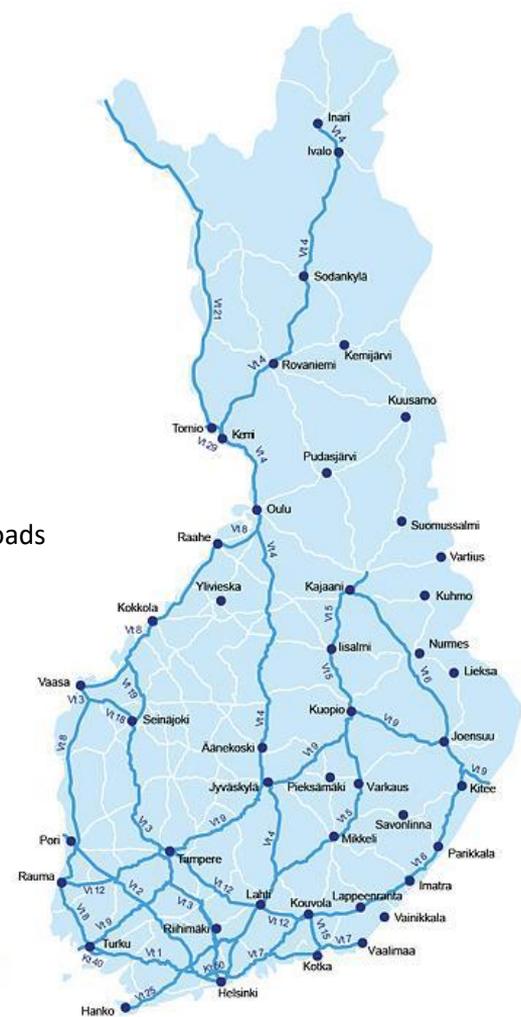


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Finnish Road Network in numbers

- 454 000 km long in total
 - 350 000 km private and forest roads
 - 26 000 km municipal streets
 - 78 000 km of highways maintained by the state of Finland
 - 13 000 km main roads, including 900 km of motorway
 - 64 900 km regional and connecting roads
 - Approximately 65 % (50 000 km) of highways are paved
 - More than half (41 000 km) of the total highway network is in the lowest maintenance category due to low traffic volumes
- Challenging weather conditions – Impossible to maintain all roads sufficiently at all times and increasing needs for maintenance.

- Main roads
- Regional and connecting roads



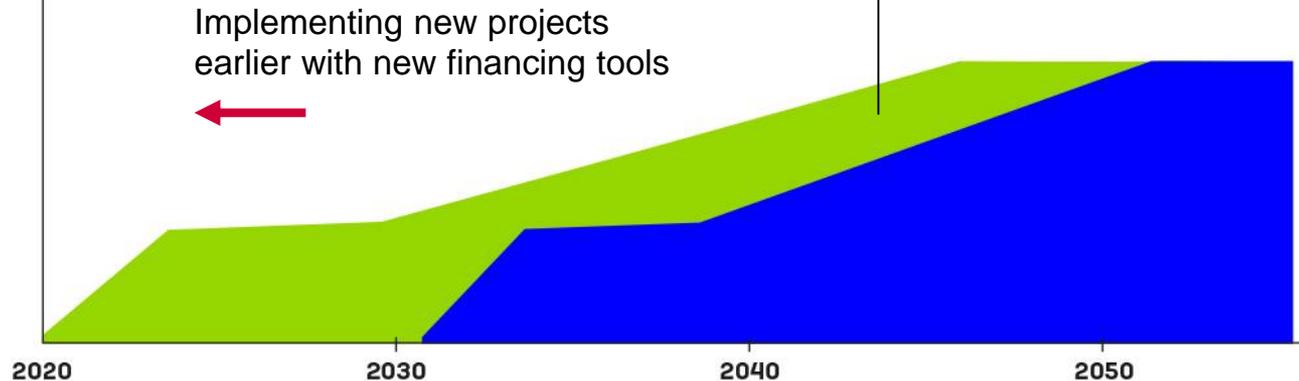
Source: Finnish Transport Infrastructure Agency

Big Picture of Transport Infrastructure Policy

Benefits from the
Transport
Infrastructure

Benefits gained by
implementing projects earlier

Due to the delays in
implementing transport
infrastructure, society
loses the benefits
created by them



Predictable, More and Earlier

We need more **predictable transport system planning, more investments on transport infrastructure** and we need to **implement projects earlier**.

In order to build more, it is necessary to consider financial methods, which include pricing schemes.



How does an economist approach "User Pays principle"?

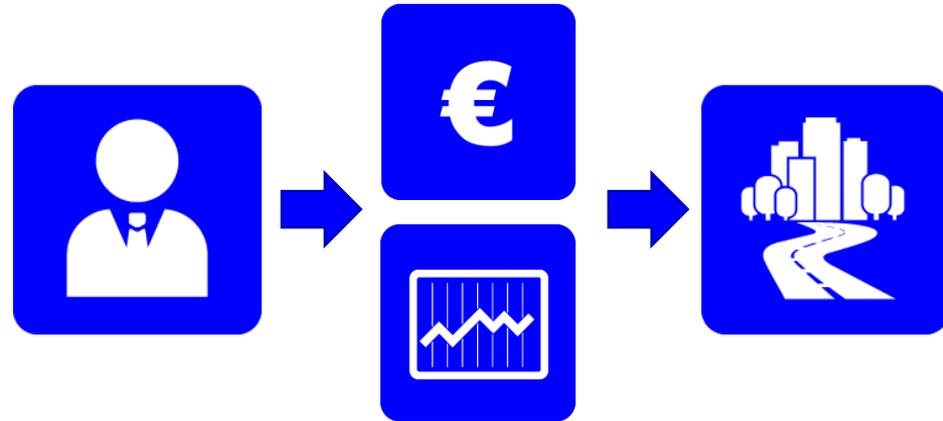
Theory

- Transport economics and optimal pricing for finance of infrastructure: "*Self-Financing Theorem*" (Mohring & Harwitz, 1962)
 - Optimal road pricing and optimal capacity -> Revenues = Capital cost of infrastructure
- What is the optimal level of road pricing?
- What are we optimizing? Social welfare, CO2 (mileage), socially acceptable distribution?

Practice

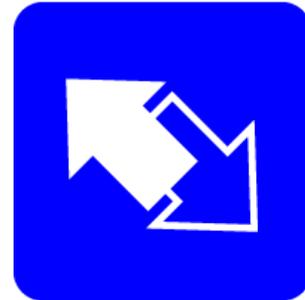
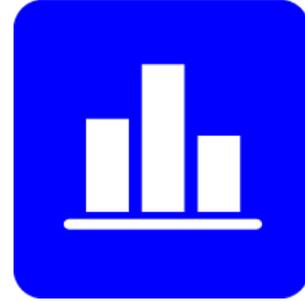
- Users pay for the right to use infrastructure.
- Pricing scheme covers maintenance costs, but it could cover also capital and investment costs.

$$R = \kappa * C_k \rightarrow \phi \equiv \frac{R}{C_k} = \kappa$$



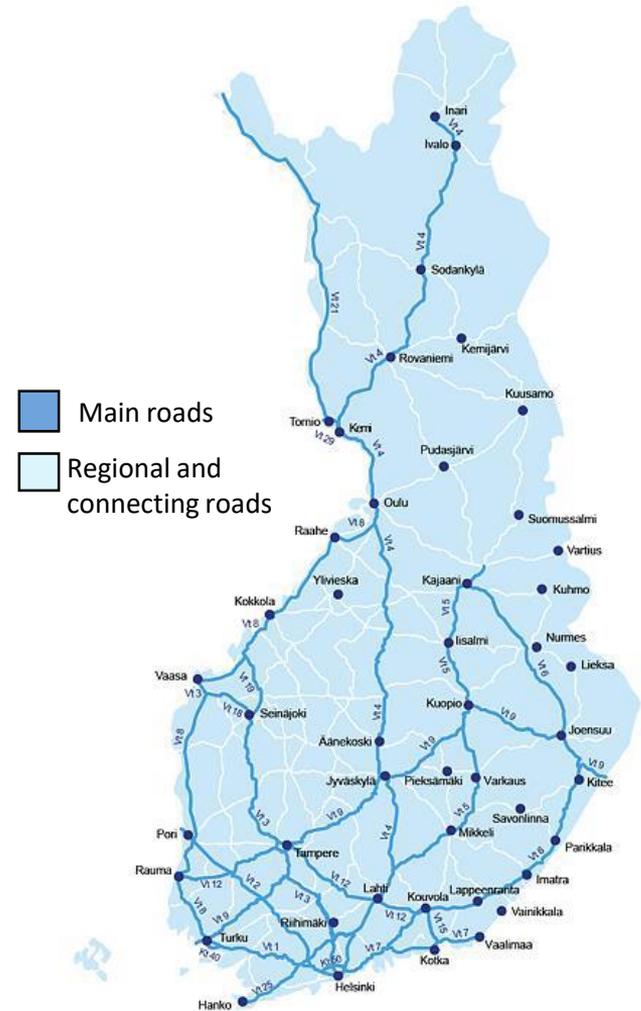
How does "User Pays principle" affect users?

- Introduction of "User Pays principle" into a market without an implemented pricing scheme will increase the marginal costs for the users.
- Users have optimized their behavior in the transport market within the constraints of land use, current regulation and prices.
- Without a realistic alternative (other transport mode), impacts for the users are linear -> Users must adapt consumption elsewhere (e.g. housing).



Finland and "User Pay principle"

- Finland is a country with a big land mass, widely spread transport network and low population density.
- Introduction of "User Pay principle" in a socially just manner is possible, but it needs wider range of measures.
- Social justice in transport needs to be clearly defined -> It is dependent on the policy goals and natural features of each country.





Thank you!

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