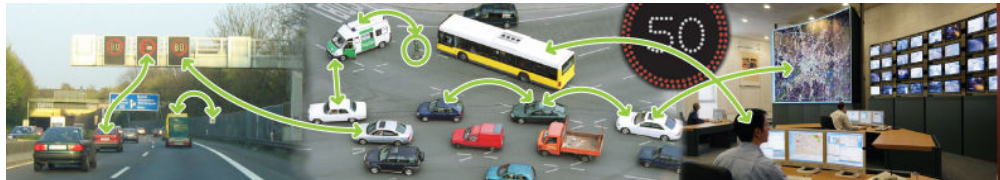




Cooperative Systems for Travellers

Axel Burkert, PTV

Cooperative Systems Summer School
Clermont-Ferrand, France, 10-11.09.2009



Introduction

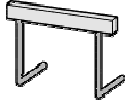
What are services for Travellers?

- Traffic information services
- Routing and navigation services
- Tourist information (Points of Interest)
- Accommodation and transport booking
- Next Gen Services

to name just a view

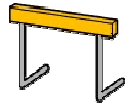


Some Hurdles for Service Providers in General



Customers demand large geographical coverage (you don't just travel in Clermond-Ferrant and won't buy a service covering only this region)

Customers also demand a good quality (the information must be „true“) → higher quality can be achieved by fusion of data from different sources



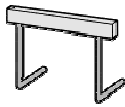
Different interfaces make technical access to traffic data in different regions and from different sources difficult

Different interfaces and transmission technologies make technical access to end user devices difficult

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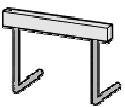
Some More Hurdles for Service Providers in Service Generation



Specialised Hardware (HW) required for service display on client side

High precision positioning needed for next generation routing services

→ New end user equipment necessary (high costs for users, again low acceptance)



Distribution of new on-trip services produces significant costs for EACH new service

→ Together with limited revenue potential this poses a significant hurdle for services to be introduced

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Effect

High costs for data acquisition and service distribution

→ high price for service deterrers users

Demands of clients (geographical coverage, quality) hard to achieve

→ User Needs not matched (or only with high costs) which limits revenue potential

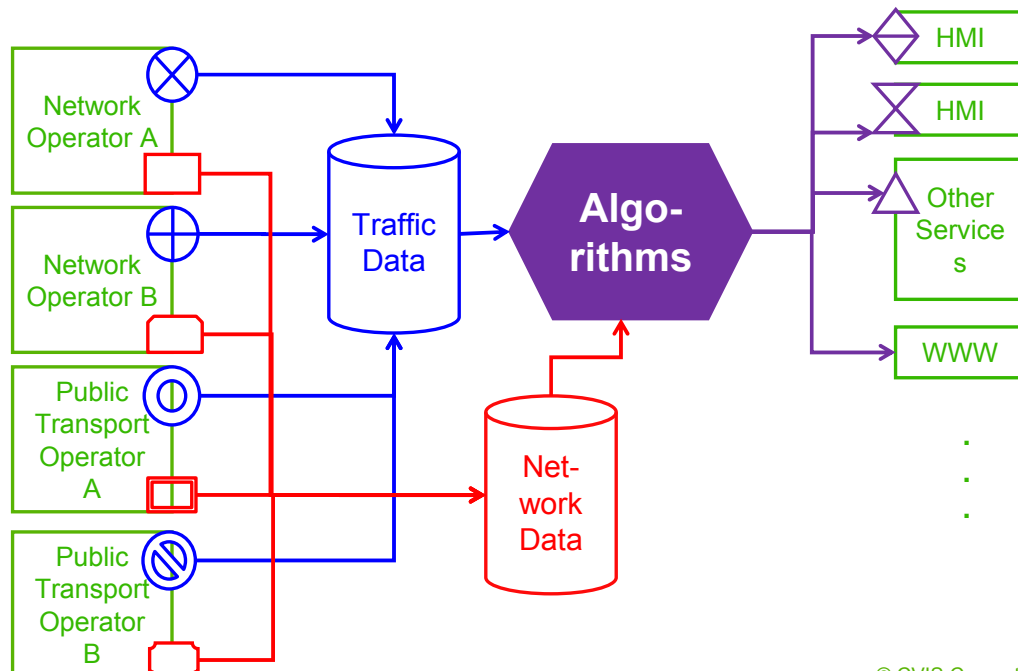
→ Traveller Information Services using traffic data are difficult to place in the market



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Data Acquisition Today Schematics for Intermodal Information Service



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Summary of the Situation Today



The complexity of the related challenges makes services expensive

- high provision price for information services
- demanding refinancing schemes

Coverage of larger areas across borders expands problems (different national standards etc.)

- Services might not have all relevant data and/or cover only a limited area
- limited B2B & B2C business cases

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Service Provider's View on Cooperative Systems



- Open Network
 - All nodes can be accessed in the same manner
 - Services can be provided to any platform (e.g. vehicle)
 - Data can be withdrawn from any platform (RSU, centre or vehicle)
 - Connectivity secured by sophisticated management mechanisms („always online“)

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Service Provider's View on Cooperative Systems



- Open Platform
 - Client Platforms do not need specific hard- or software
- many applications can use the same platform,
- service provider does not have to supply own HW
- User does not have to upgrade existing or buy new HW (→ high acceptance)
- driver not „cramped in“ by too many boxes
 - Easy distribution of services and implementations due to application management feature and HMI access

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Service Provider's View on Cooperative Systems



- Standardised Traffic Data Provision on all (applicable) nodes
 - Technical data access to traffic data is easy
 - low costs for acquiring traffic data
 - one interface for all traffic data
 - no geographical boundaries for acquisition of traffic data
 - Many more data sources available (RSU, Vehicle)
 - higher accuracy of data
 - more data sources to fuse data from improving information quality

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Service Provider's View on Cooperative Systems

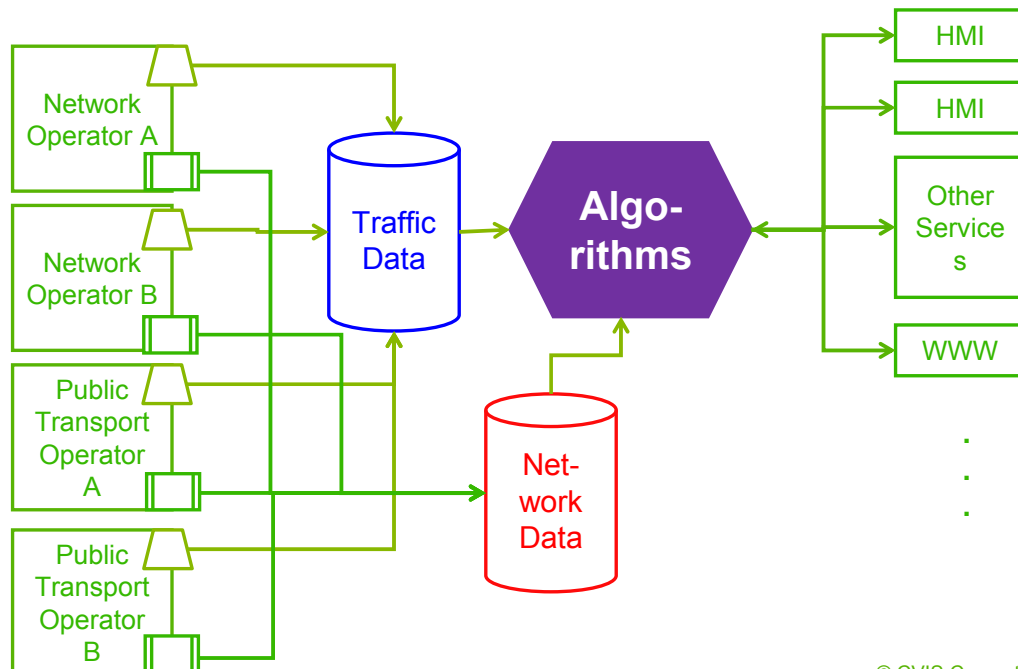


- Standardised Positioning Data available for mobile units
 - High precision data available for advanced services
 - No extra hardware required for high precision
 - no additional costs for users → higher acceptance
 - no additional costs for providers → cheaper end product / services

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Cooperative Improvement on Example of Intermodal Information Service



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Some Key Benefits of Cooperative Systems for Service Providers



- Different system parts can be located on physically separated entities but cooperate
- Service providers can link with other services and more data sources expanding their coverage and/or quality
- System providers can concentrate on those parts they are best in (e.g. Algorithms, not communication)
- System providers can operate in larger markets without major adaptations reducing unit costs
- Significant cost reduction of system implementation since many organisational/technical issues are solved already
- Better data coverage (thus better information quality) since users can contribute (eg. FCD)

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Summary: Major Benefits of CoopSys



The Open Communication principle provides a common technical environment in which business ideas can be realised much more easily and with much lower (entry) costs than today.

This should lead to a lively activity regarding the implementation and operation of new services.

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Two Examples from CVIS



Cooperative Traveler Assistance:

Route planning service for cars handing over the vehicle between the centres along the route. The driver is updated if he should alter his route due to traffic conditions.

Parking Booking Service:

Originally designed as Freight&Fleet application drivers can pre-book parking spaces for a specific time slot to avoid having to look for a parking space at their destination.

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A Example from the Summer School Sessions



Pothole Service

Vehicles will detect potholes (e.g. by reading damper data) and generate warning message. These are sent to the traffic management/road maintenance centre. Once several vehicles sent the same message for the same spot the trust-level is high enough to generate an order for the road maintenance to check the road stretch for the pothole.

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Example for Next-Gen Service



Day2Day Travelling Assistant (VIAJEO):

The system tells the traveler if it is raining on his way to work, if the public transport is on time and when the user needs to leave work the latest to reach his convenience store in time before closing. The user can provide feedback via his mobile device if the closing times changed (and he is locked out) benefitting the next user (=social network).

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Freedom – Not only in Society, but also in Applications



Like the internet CVIS provides a platform with key functionalities

- **Communication**
- **Required data**
- **Access**
- **Disregarding geographical borders**

There are no prescribed applications, so think for yourself and be creative!!!

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Thanks for your attention...

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