



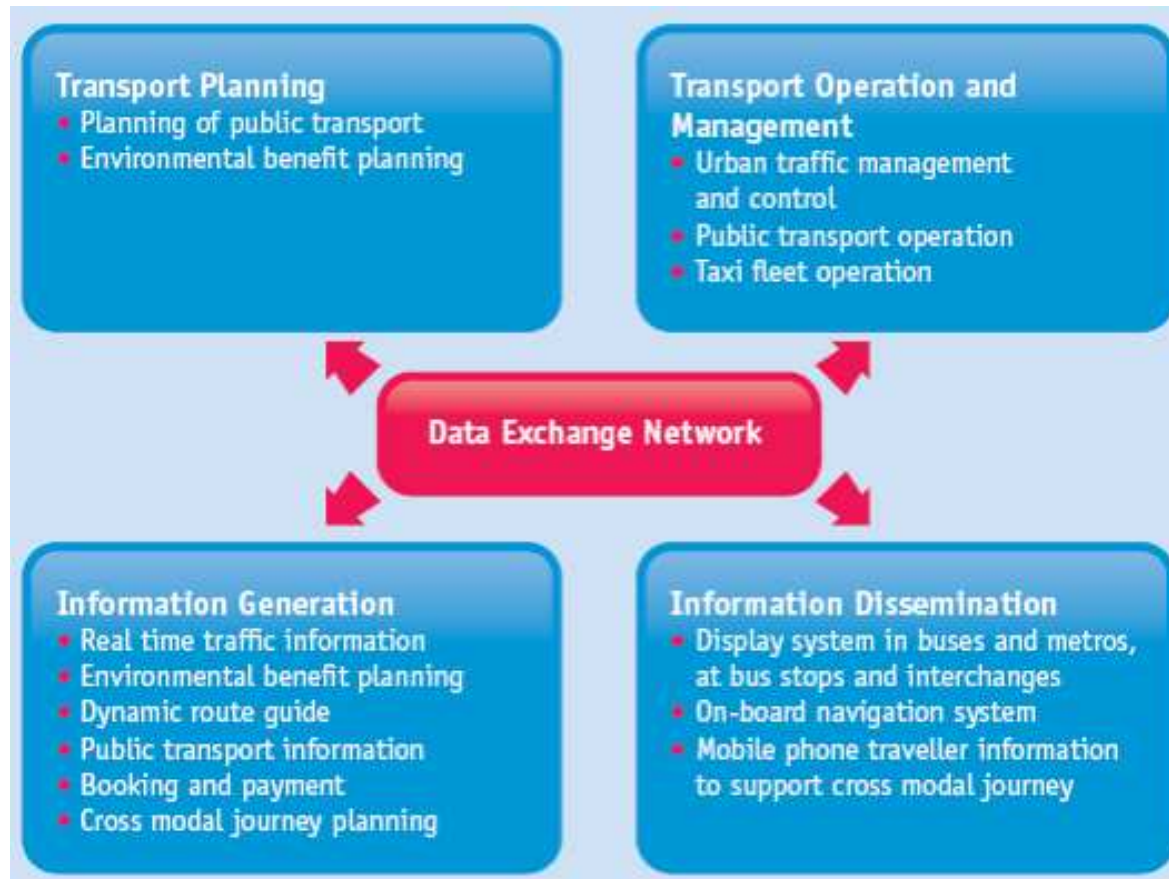
# European Standards for Intermodal Traveller Information

Michael Ortgiese  
PTV AG  
Orlando, October 17<sup>th</sup> 2011



[www.viajeo.eu](http://www.viajeo.eu)

# Viajeo activity spaces



# Viageo Consortium

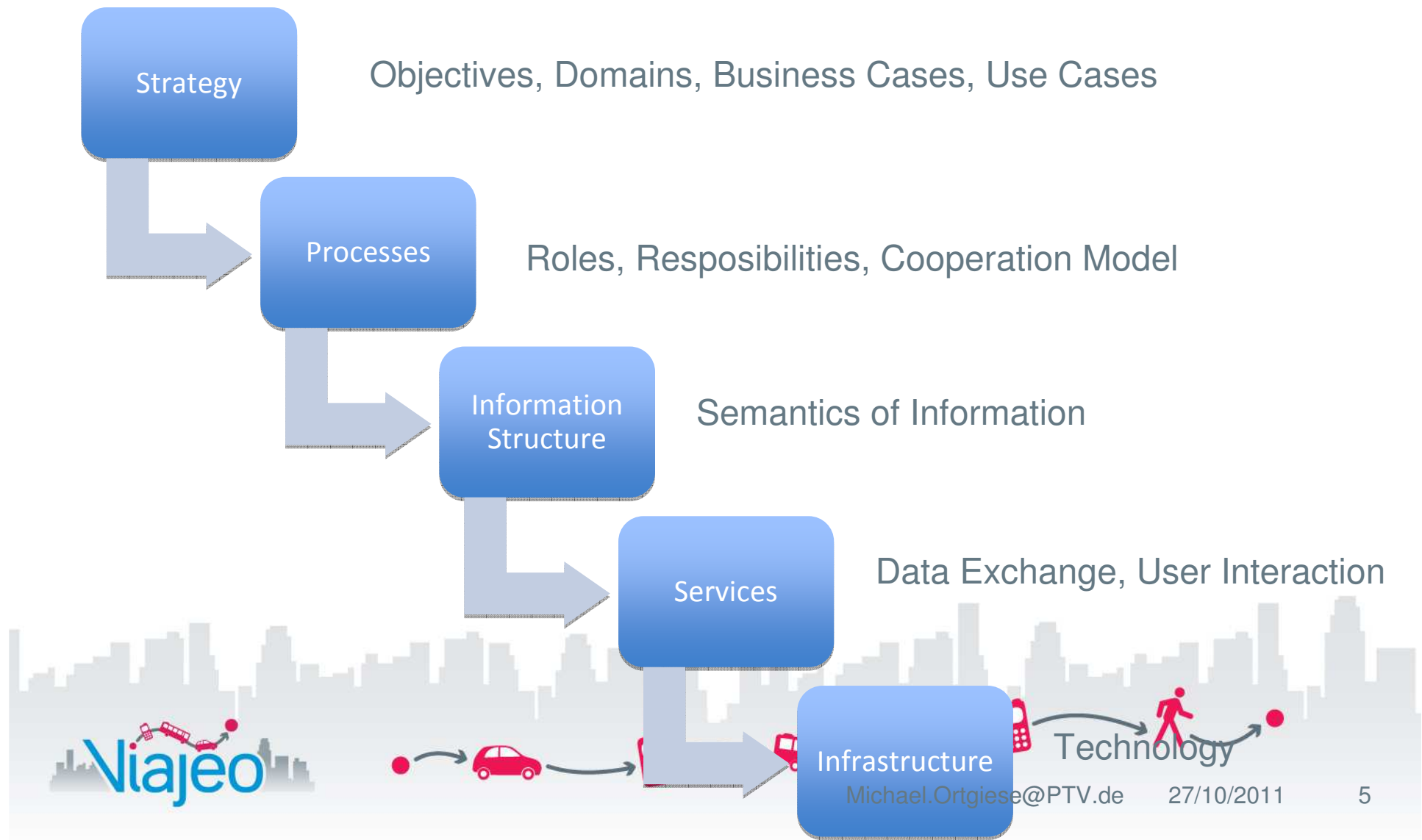


# Approach

- Well defined set of core processes
- Standardised interfaces to connect processes
- Publication via open interfaces; accessible by external parties
- Existing architectures in the sites
- “Open Platform” doesn’t mean “Open Source“



# 5 Steps To Create Services



# Step 1

Strategy

Objectives, Domains, Business Cases, Use Cases



# Scope: traveller information services

## Five development steps

### 1. Best way from A to B

- Fastest, shortest, ...

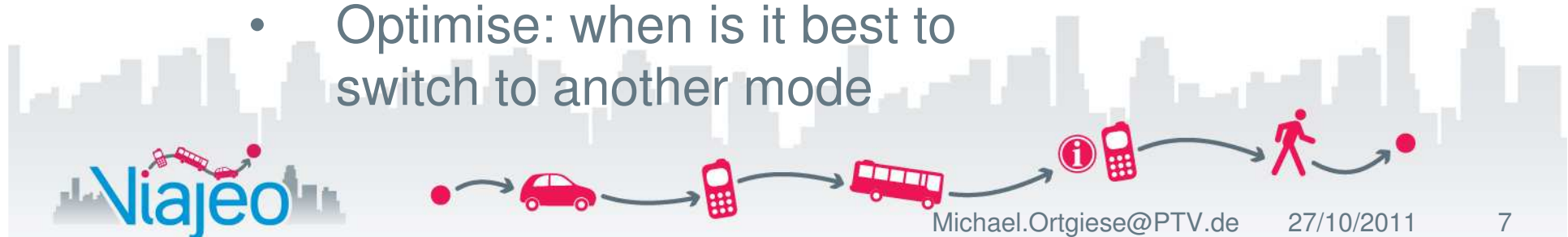
### 2. Multi-modal

- Allow to compare (car, PT, walk,...)



### 3. Intermodal

- Optimise: when is it best to switch to another mode



# Scope: traveller information services

## Prognosis in dynamic routing

Five steps



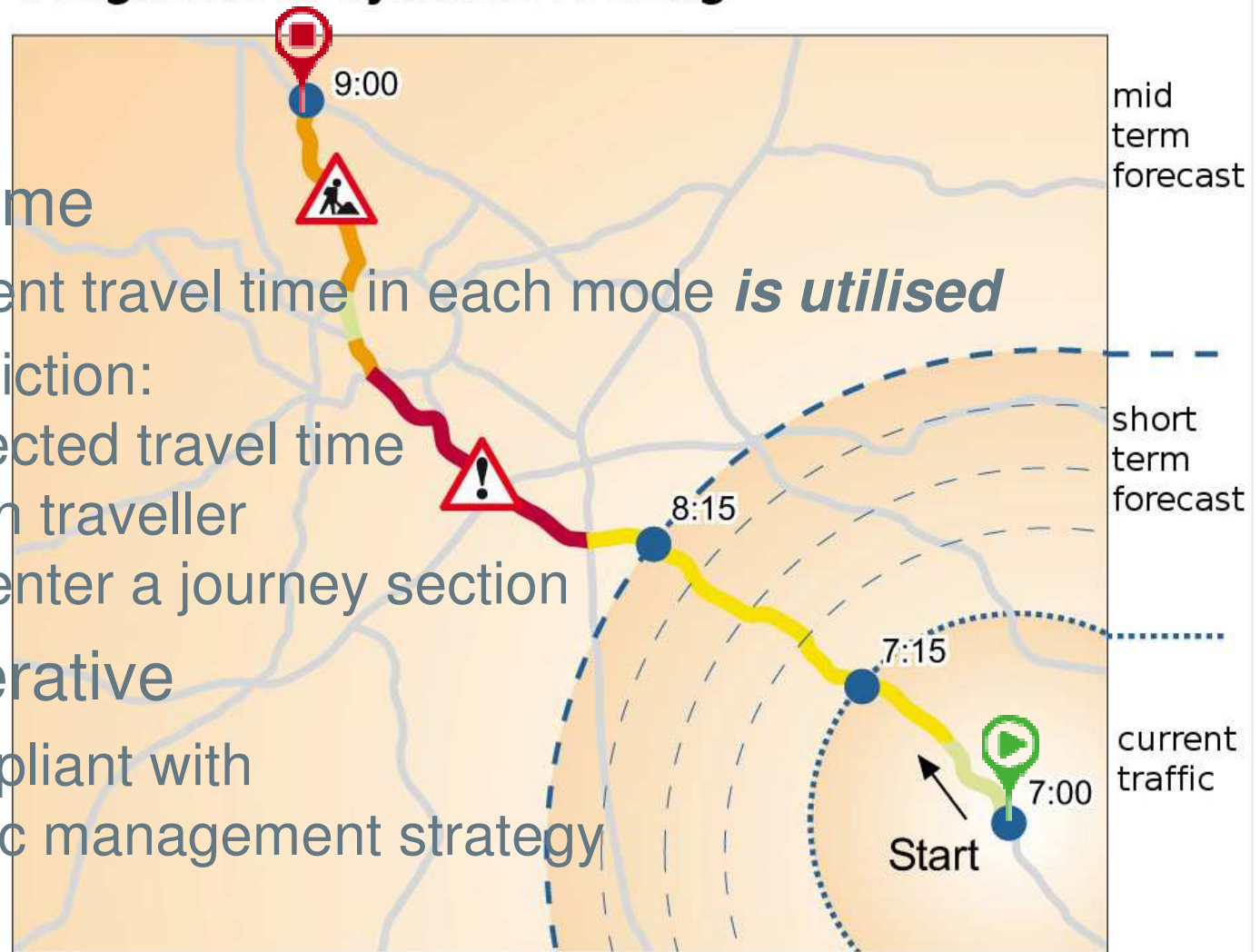
### Real time

- current travel time in each mode *is utilised*
- prediction: expected travel time when traveller will enter a journey section

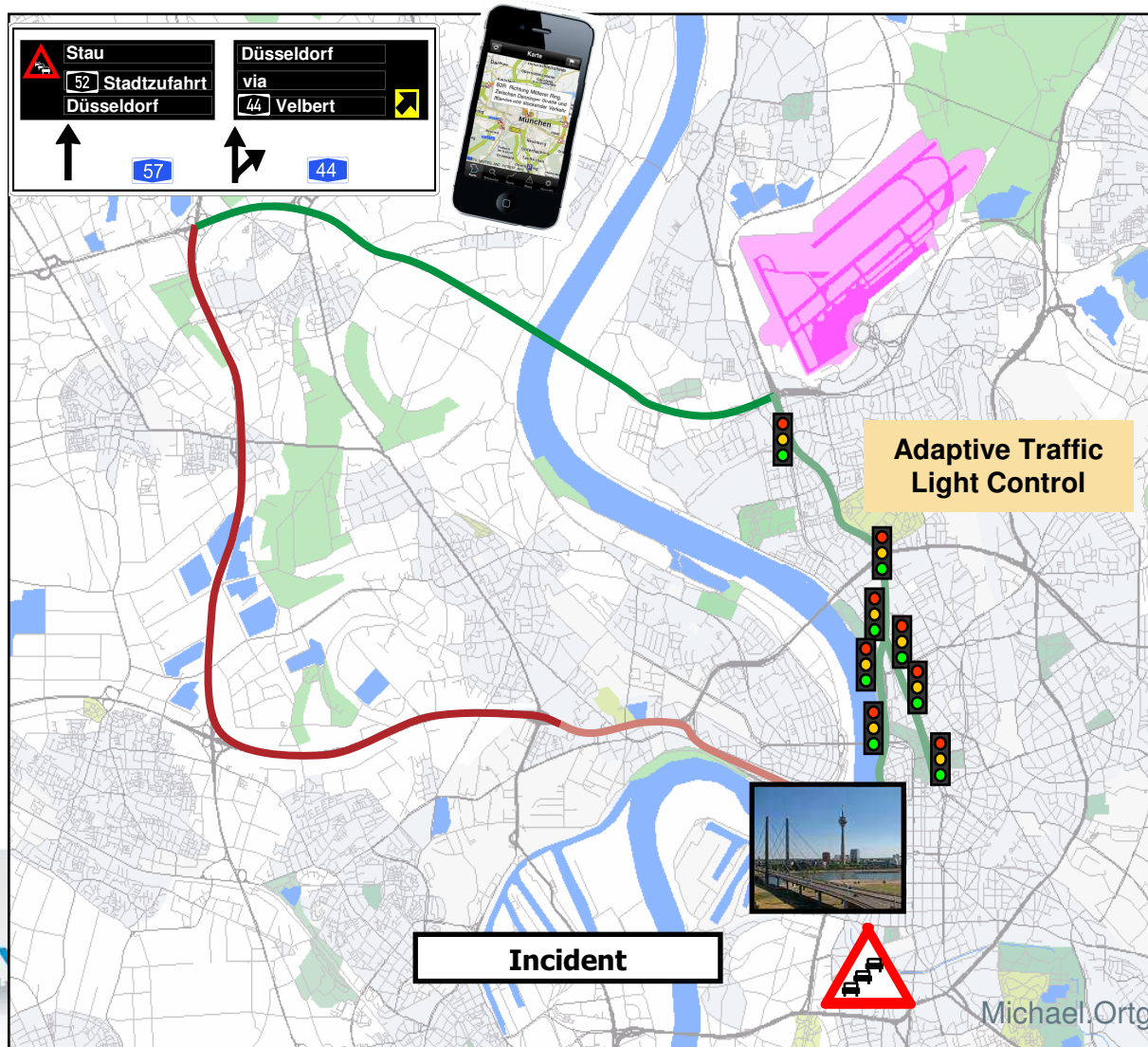


### Cooperative

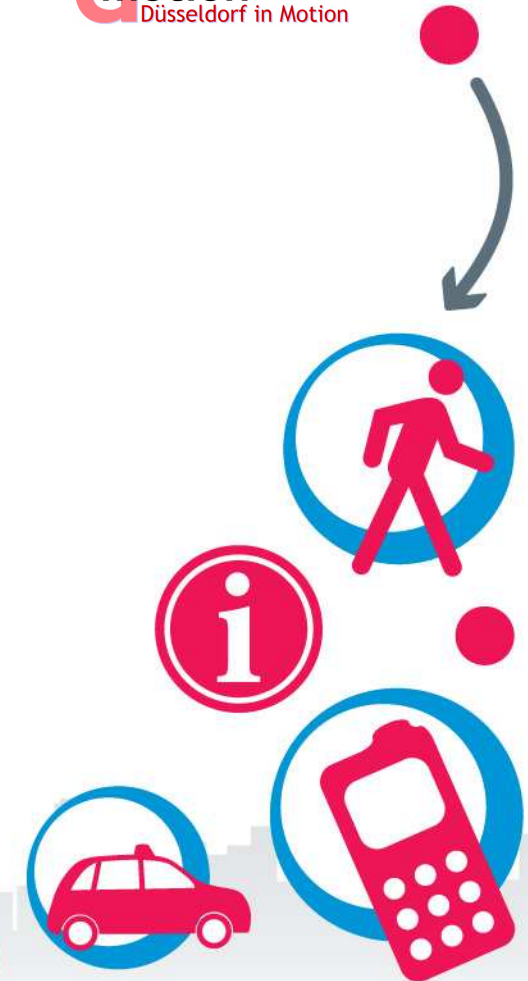
- compliant with traffic management strategy



# Cooperative Traffic Management



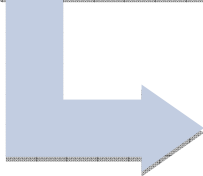
**dmotion**  
Düsseldorf in Motion



# Step 2



Objectives, Domains, Business Cases, Use Cases



Roles, Responsibilities, Cooperation Model



# The complexity of the task: many stakeholders

- different road operators
  - collecting own traffic data
  - some produce forecasts
  - know about roadwork and closures
- different public transport operators
  - own time tables
  - own dynamic vehicle positioning and dynamic guidance

- private information collection

- FCD / FMD



# Information and more ....

**DB BAHN** Contact | Help | Site map | a a+ a++ Enter question or search item Search

Home | Offers | Destinations | Services | Trains | Tourism | About DB Bahn My Bahn

Search Select **Ticket&Reservation** Payment Booking Confirmation

Outward journey	Station/Stop	Date	Time	Duration	Changes	Products
	Karlsruhe Hbf Köln Hbf	Su, 05.06.2011	08:00 10:05	2:05	1	ICE

**Your ticket** One-Way Ticket, 1 adult, 2nd class, Karlsruhe - Köln  
Standard fare  
Full flexibility, Exchange/refunds free of charge. Charge of EUR 15 after the 1st day of validity **83,00 EUR**

Reservation wanted? [Print page](#)

**Reservation**

- Ticket with seat reservation**  
2,50 EUR EUR per seat and direction (for max. 2 trains in each direction).
- Seat reservation only (no ticket)**  
4,50 EUR EUR per seat and direction (for max. 2 trains in each direction).
- Ticket without seat reservation**

Your reservation requests for your trains

**Seat requests**

No. of seats:  In the 2 class

Compartment type:  any  Open saloon  Open saloon with table  Compartment

Location of the seat:  any  Window  Aisle (if possible)

Zone:  any  Phone zone  Quiet zone

Tip: select only the most important criterion for you to increase the probability of fulfilling your seat request.

**Ticket delivery method**

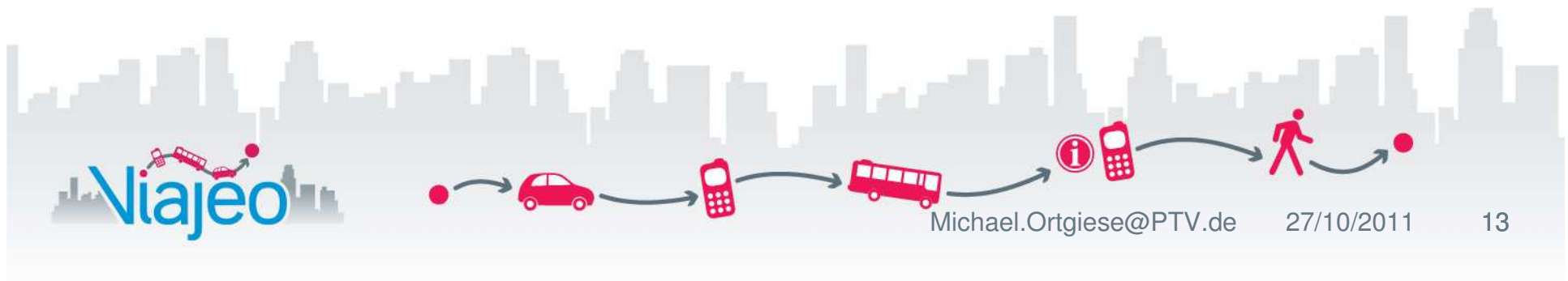
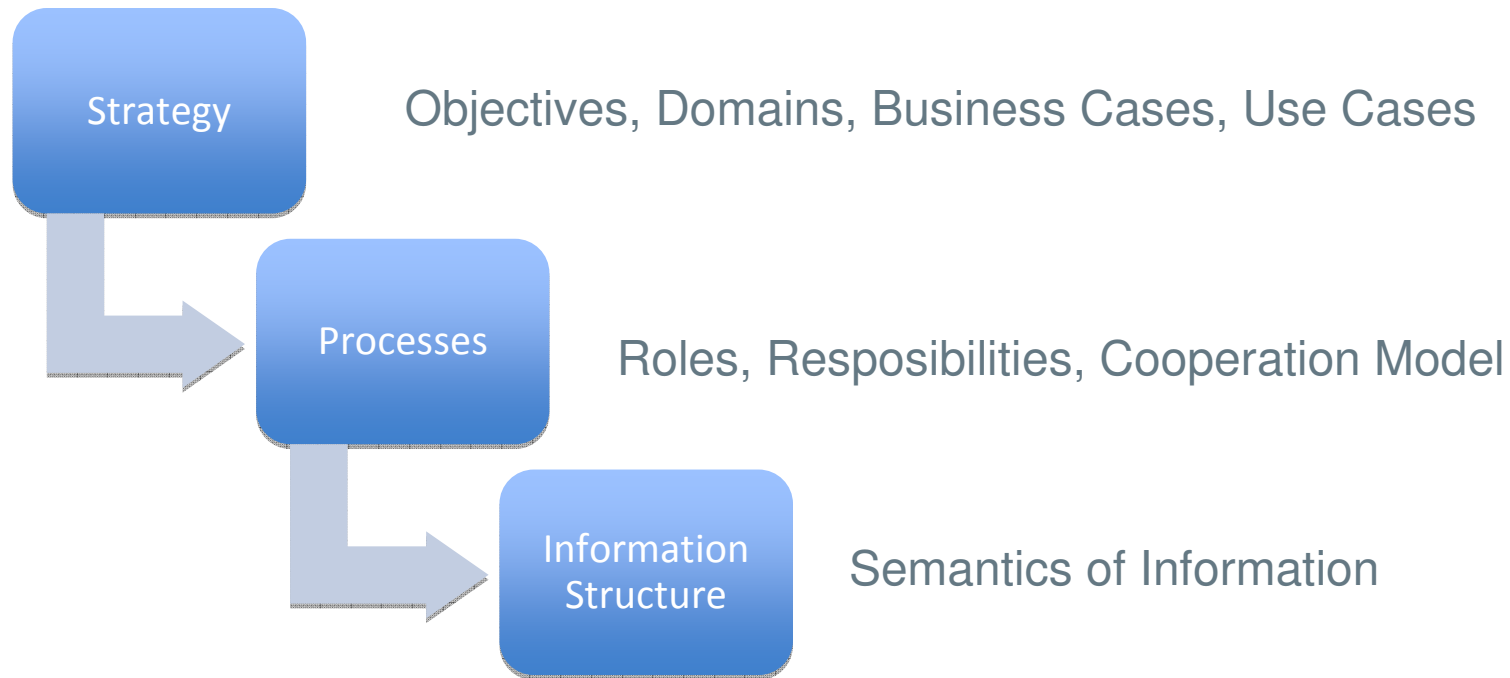
**Delivery method**

- Print out your online ticket**  
Only valid for the passenger in person with own identity card. Non-transferrable!  
-> More info  
Who is going to use the online ticket?  
 **I shall be using the online ticket personally**  
 Someone else will be using the online ticket

- Journey Planner = eCommerce Platform
- We have to link business models not only data sources
- Pre-Condition: Common understanding about the business of all stakeholders
- ITS = mix of public and private stakeholders / interests

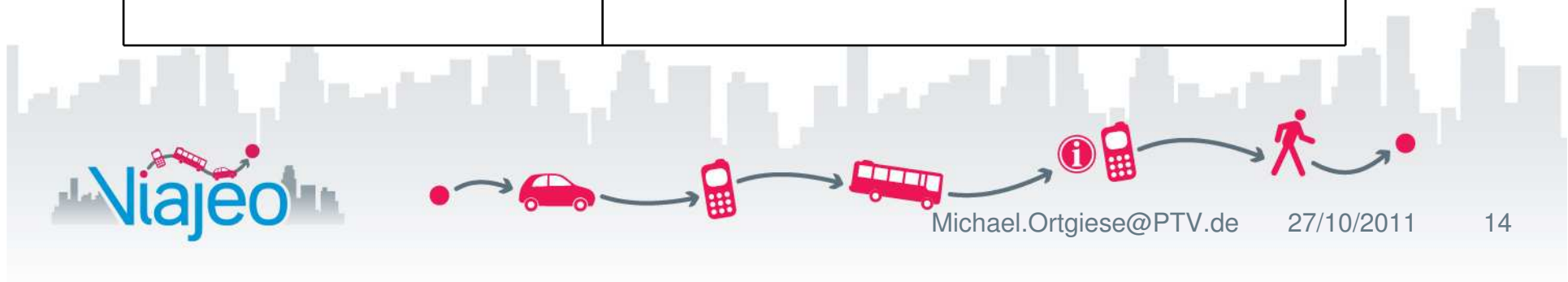


# Step 3

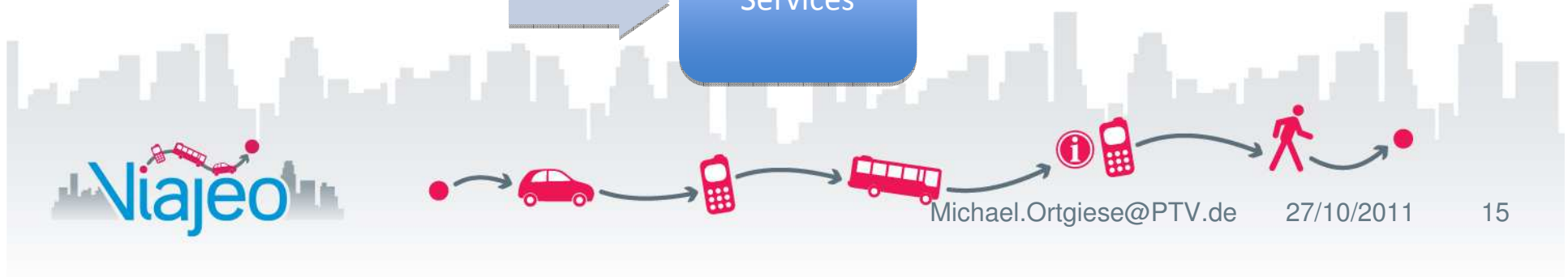
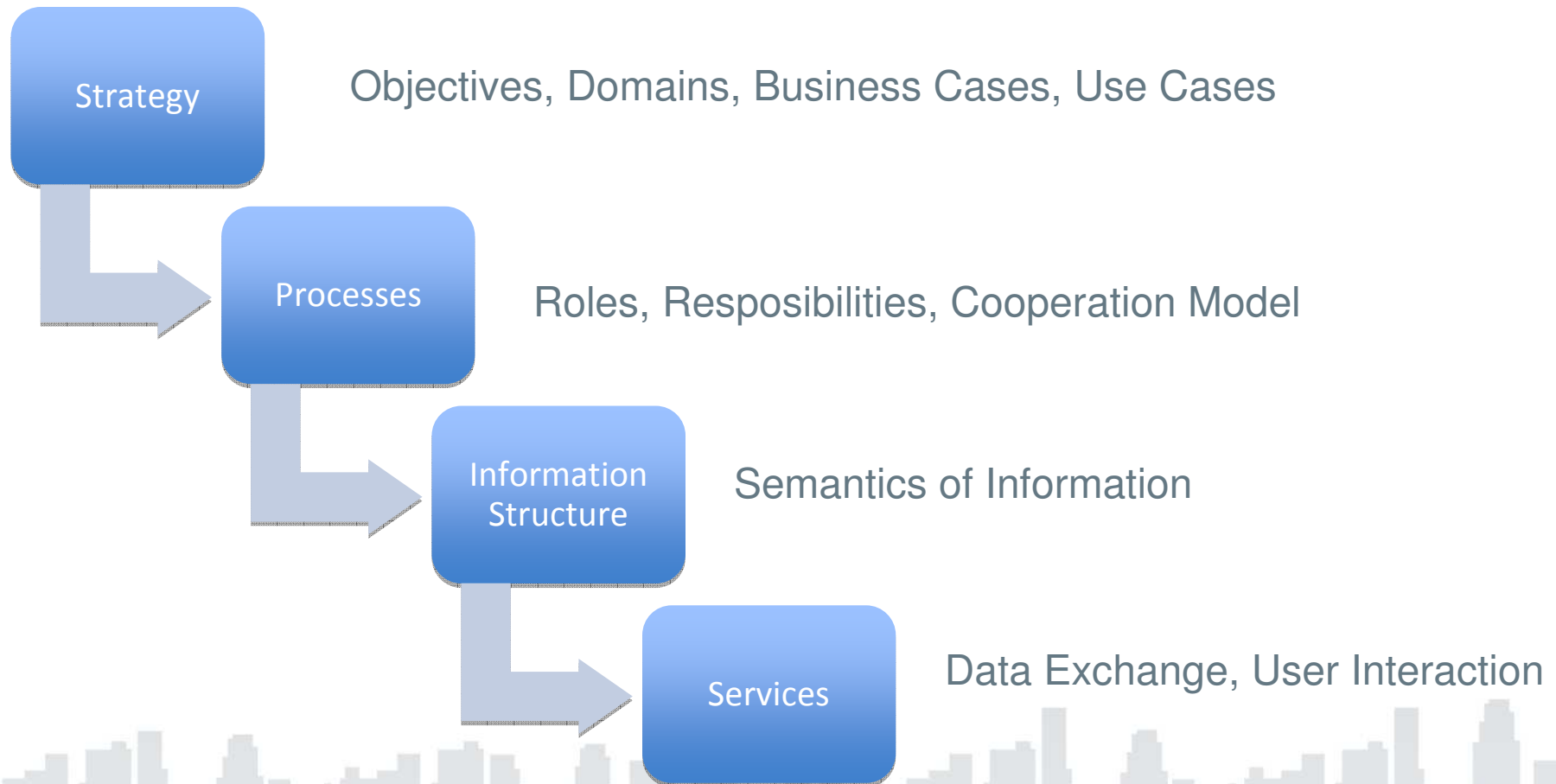


# Overview about Common Interfaces

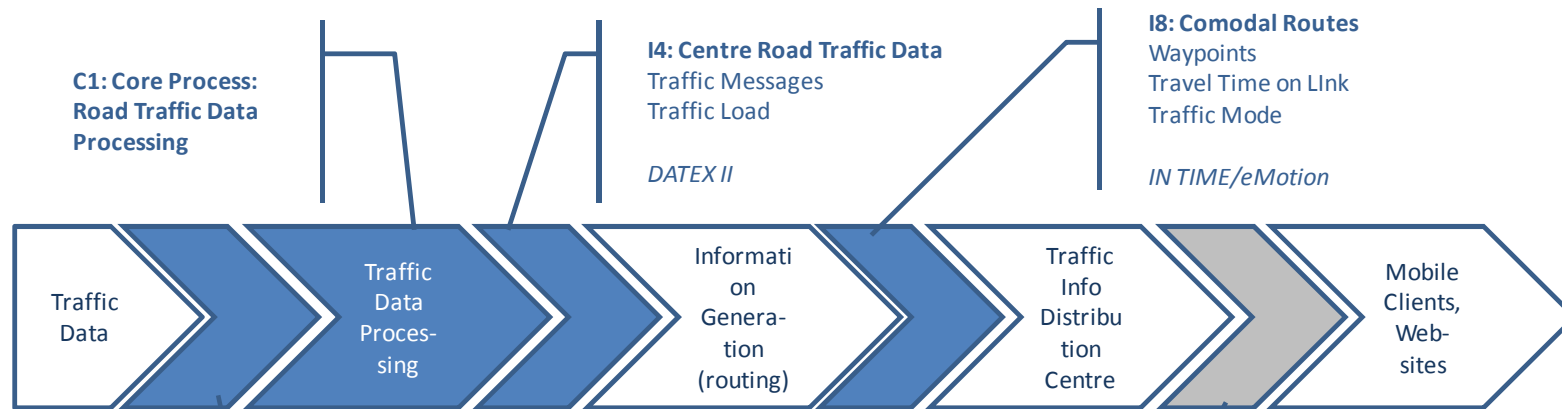
Interface Name	Data Typically Transmitted
FCD	Vehicle ID, Time Stamp, Position, Speed
Roadside Traffic Count Data	Detector ID, Lane N°, Direction, Traffic Count (passenger cars), Traffic Count (lorries), Time Gap (between vehicles)
Roadside Environmental Data	Detector ID, Direction, Measurement CO2, Measurement NOx
Centre Road Traffic Data Interface	Traffic Events, Traffic Load per Segment
Static Public Transport Information	Timetables, Stop Positions
Dynamic Public Transport Information	Vehicle ID, Time Stamp, Delays (line,vehicle)
Traffic Information over TPEG	Traffic Messages, Traffic Load
Comodal Routes	Waypoints, Travel Time on Links, Traffic Mode



# Step 4



# Common Interfaces in Abstract Process Chain



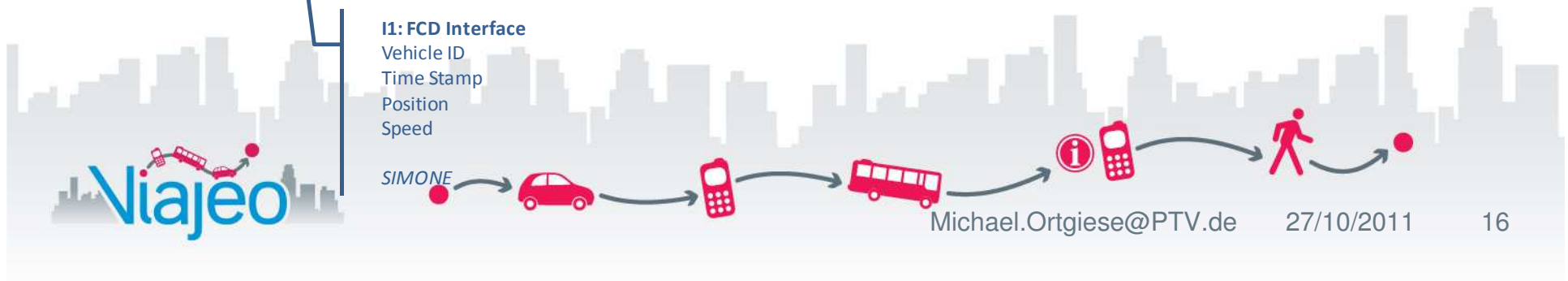
**I2: Roadside Traffic Data**  
 Vehicle Count Data (passenger cars/lorries)  
 Speed  
 Detector ID  
 Lane N°  
 Driving Direction  
 Time Gap (between vehicles)

**I7: Traffic Information over TPEG**  
 Traffic Messages  
 Traffic Load  
 Routes  
 Recommended : TPEG TEC

DATEX II

**I1: FCD Interface**  
 Vehicle ID  
 Time Stamp  
 Position  
 Speed

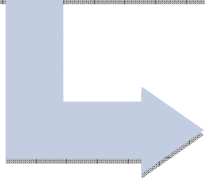
SIMONE



# Step 5

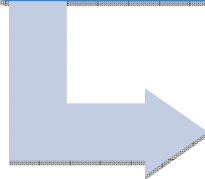
Strategy

Objectives, Domains, Business Cases, Use Cases



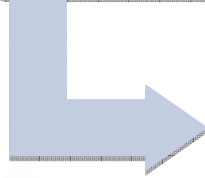
Processes

Roles, Responsibilities, Cooperation Model



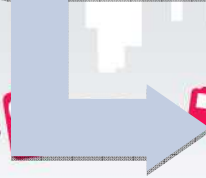
Information Structure

Semantics of Information



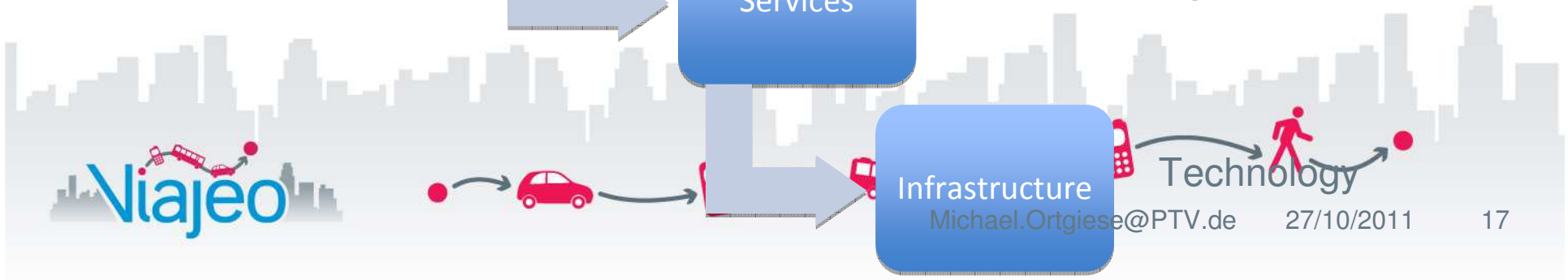
Services

Data Exchange, User Interaction



Infrastructure

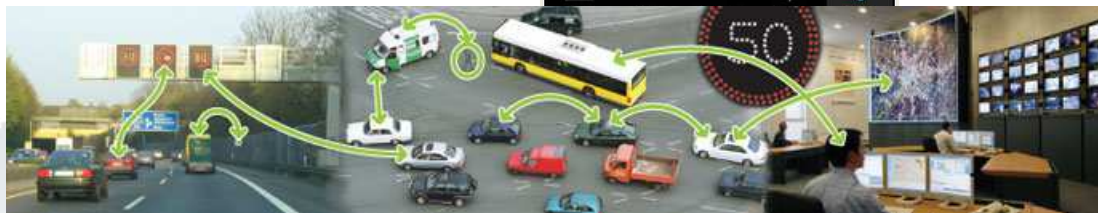
Technology



# Technology – Nothing is fixed



- Today  
All services are implemented by existing technologies
- Tomorrow  
New technologies are allowing new services concepts
- We must be flexible
- We need migration concepts



Viajeo



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27/10/2011

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# Future Challenges

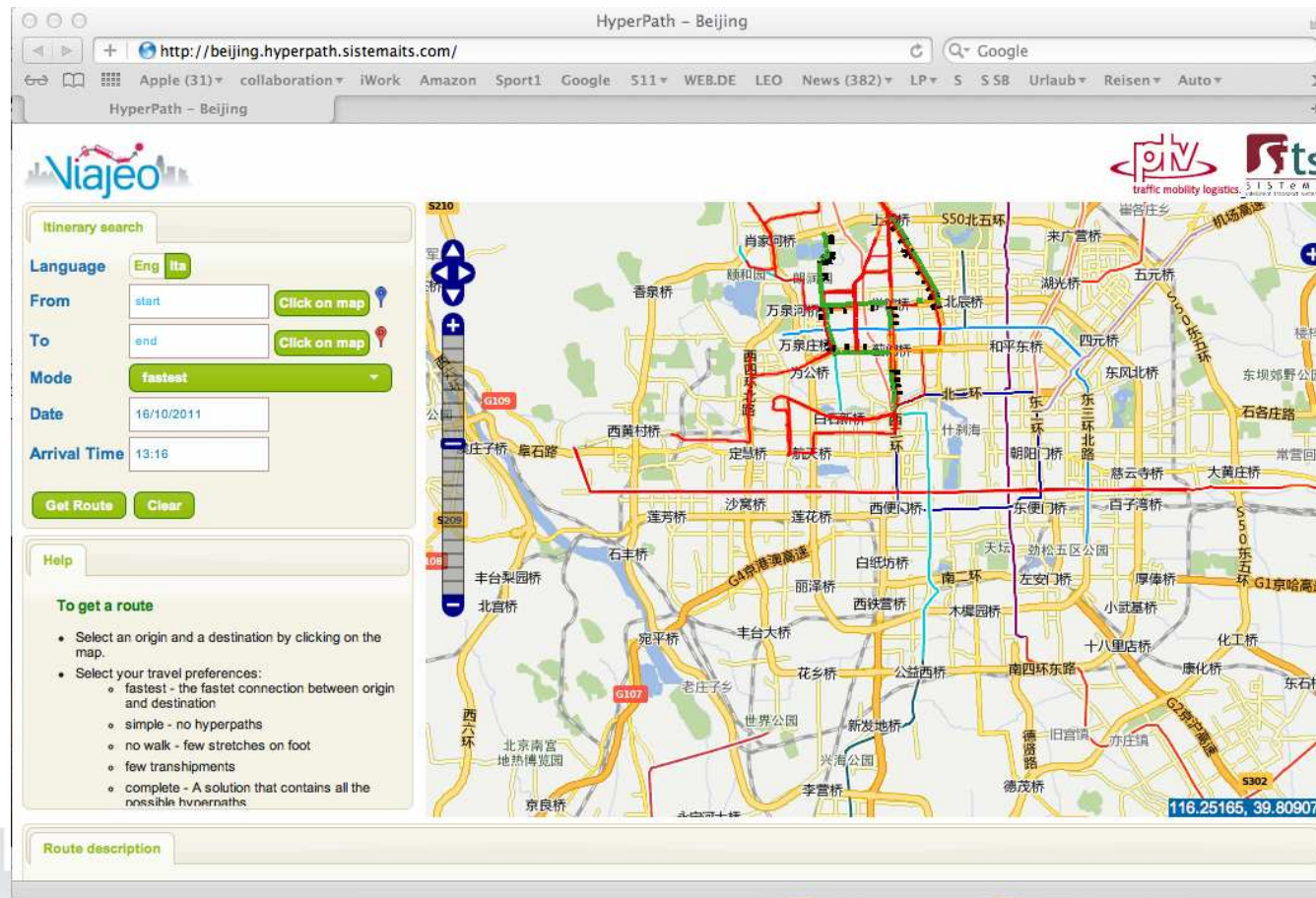
How to combine new and traditional services?

- Analysis of our footprints
- New services (e.g. Social Networks) open new opportunities

- Channels for information
- Source of traveller data



# Multi Modal Journey Planner Beijing Desktop



<http://beijing.hyperpath.sistemait.com/>

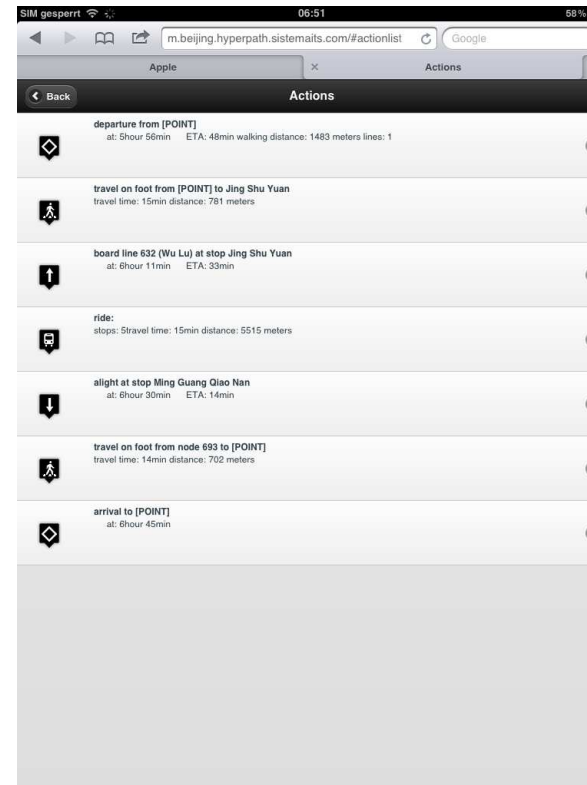
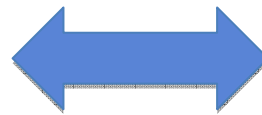
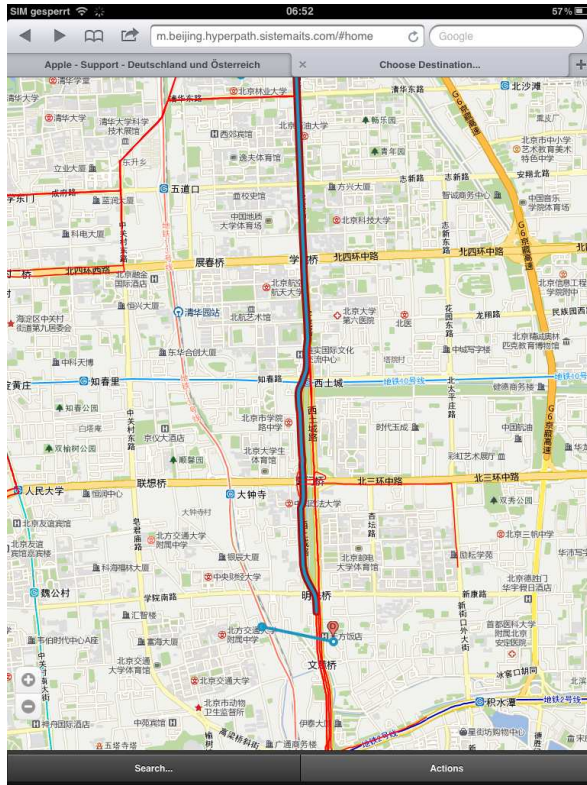


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# Multi Modal Journey Planner Beijing iPad



<http://m.beijing.hyperpath.sistemaits.com//>



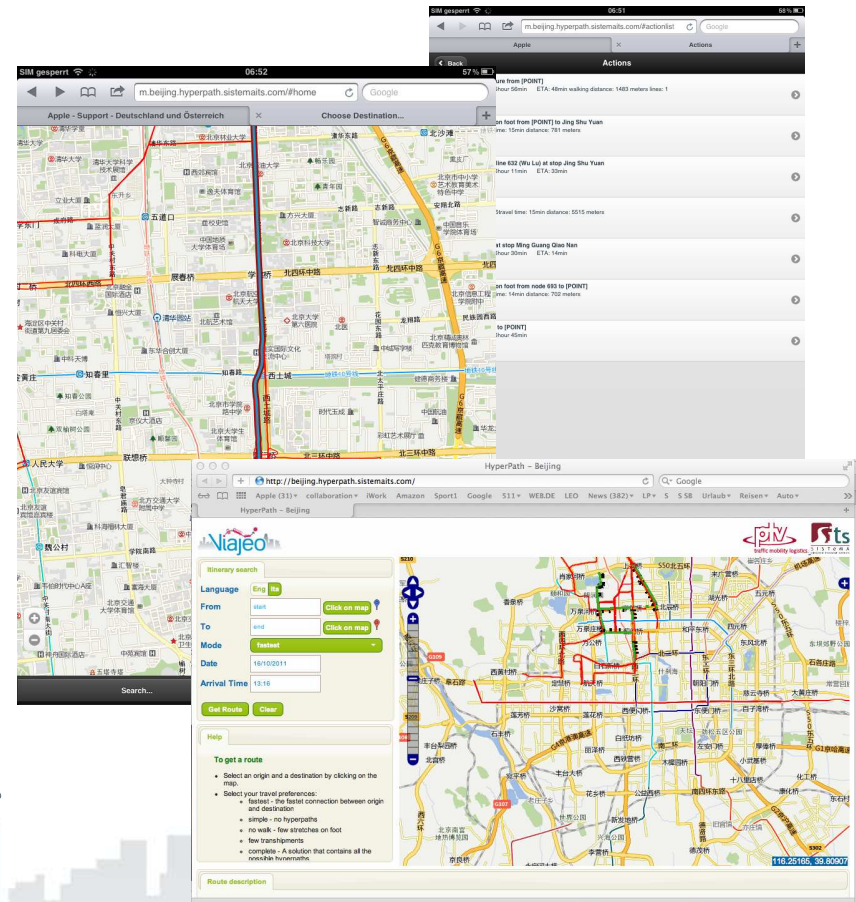
# Multi Modal Journey Planner Beijing Innovation

European Standards

- Time Table
- Real Time Public Transport Data
- Floating Car Data

Intermodal Route Calculation

- One integrated network
- Calculation engine in working on the integrated and dynamic network
- *(Explanation: State of the art planners are combining two separate calculations for car and PT)*



# Thank you!

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