

# Telematics - Information and services for mobile users.



**BMW Group**  
Forschung und Technik



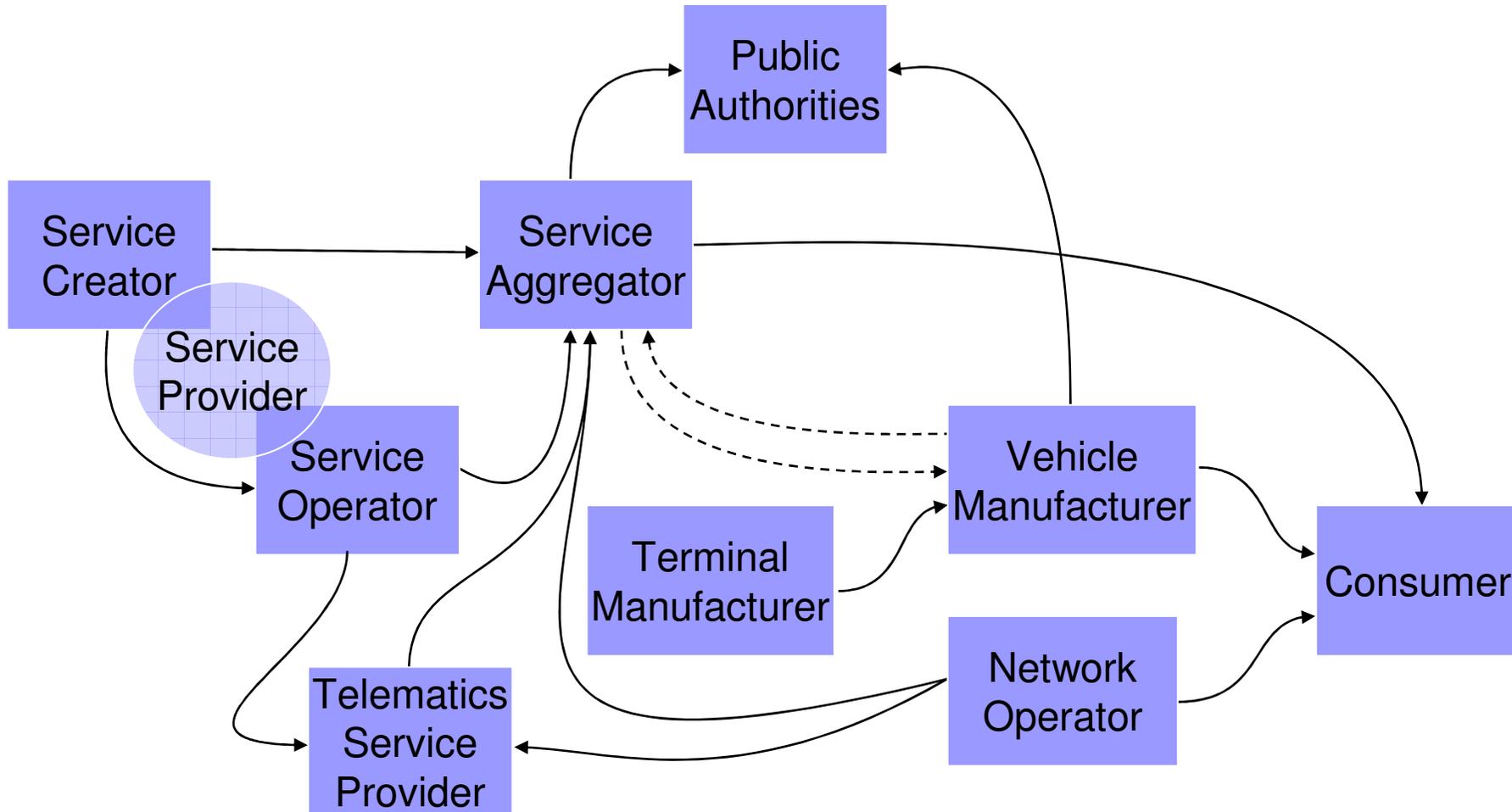
# Telematics.

A well informed driver is a safer driver.

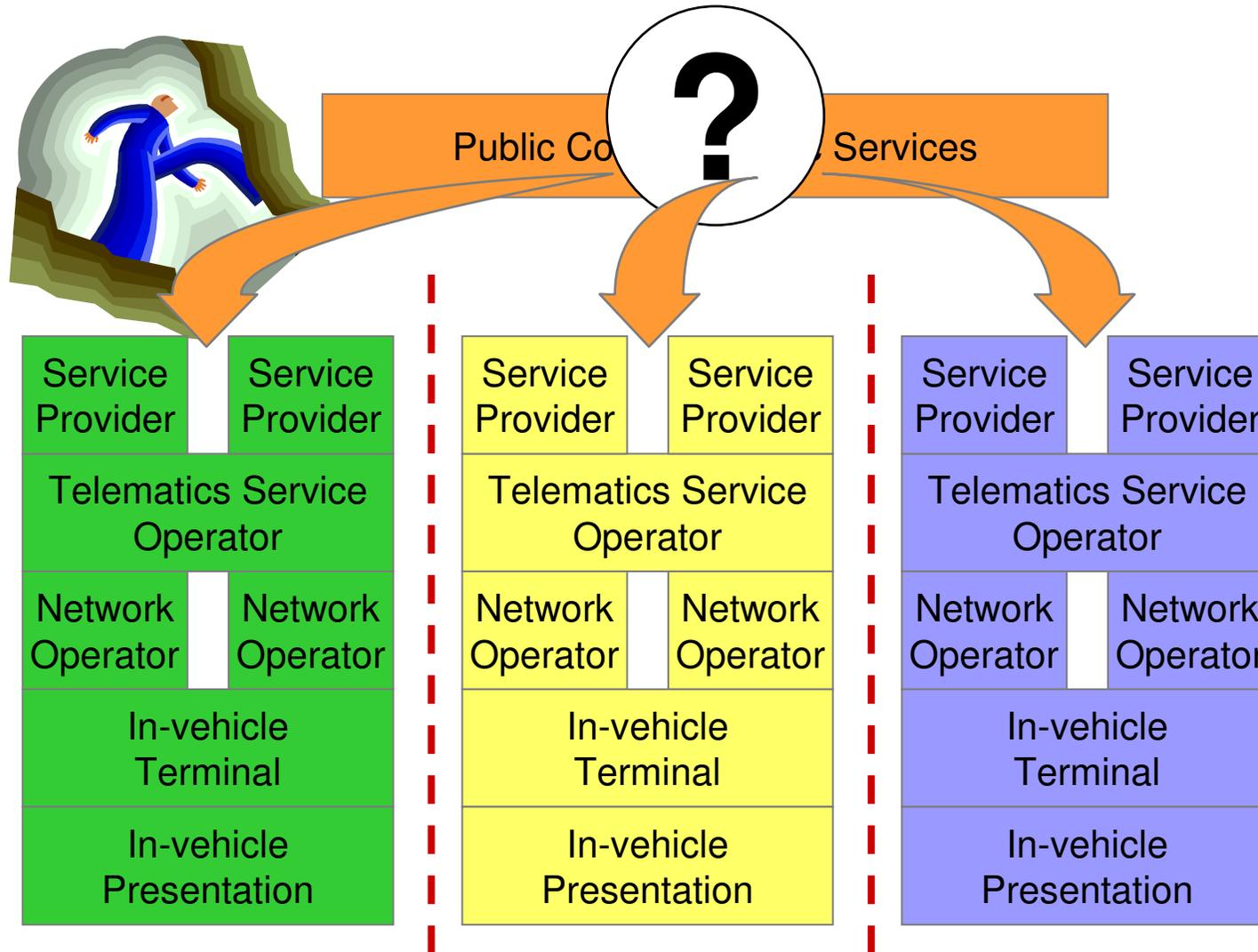
Services delivered to the mobile user with a specific focus on, or a particular added value in an automobile environment.



# Fragmentation in the evolving Telematics value web.



# Status-Quo in Telematics.



To have an impact, public content and services need horizontal platforms to be in every vehicle.

# **Telematics and road safety.**

## **A well informed driver is a safer driver.**

- Navigation information
  - Trip planning and scheduling
  - Automated routing relieves driver
- Accurate and up-to-date traffic information
  - Helps with trip planning and adaptation
  - Has direct influence on driver mood
- Road and weather status information
  - Allows for pro-active driving through advance information
- Accident notification and timely hazard warning
  - Master critical situations by keeping drivers alert

# Telematics and road safety.

## A well connected driver is a safer driver.

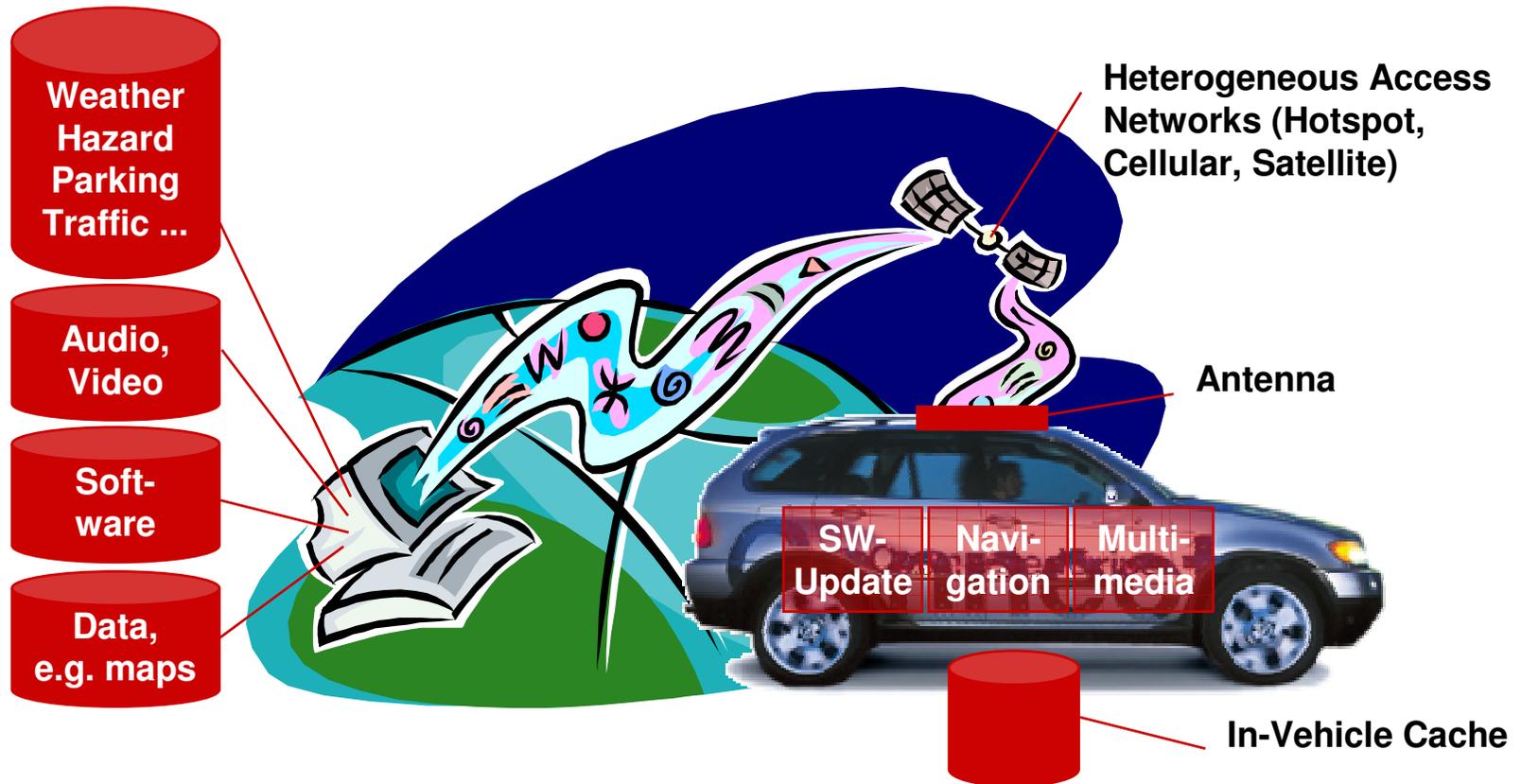
- Vehicle-to-vehicle and vehicle-to-beacon communication
  - Preventive safety through danger warning
  - Driver assistance to tackle safety hot-spots (intersections, etc.)
- Accurate and up-to-date passage information
  - Speed limits
  - Right of way
  - Etc.
- Emergency response
  - Automated emergency call
  - Closing the data-loop across the rescue chain

# Broadcast Telematics.

## Current and future role.

- FM Radio
  - Audio
  - RDS-TMC
  - Pay TMC (CA TMC)
- Digital Audio Broadcasting DAB
  - Audio, TMC & TPEG
- Digital Video Broadcasting DVB
  - Video, data broadcasting, TPEG
- Sirius, XM Radio and counterparts
  - Satellite services

# Examples of ongoing research activities. Broadcast services.



# Innovative broadcast telematics.

## Why are they not there yet?

- Accurate traffic information
  - City, regional, national, international
  - Reliable basis for autonomous routing decisions
- Hazard warning
  - Low latency: emergency braking, airbag sensor, ...
  - General situation: ice, accident, start of congested area, construction site, ...
- General information
  - Current speed limit, weather, ...
- Value added services
  - Parking facilities and load situation, ...
  - Mapping update, software distribution, ...

# **Broadcast Telematics.**

## **Challenges for digital technologies.**

- FM-Radio and TMC
  - Established customer base
- Price
  - Product and service pricing
  - Economies of scale
  - Tax situation
- Content
  - Availability of content
  - Detection, accuracy, granularity, and freshness
- Technology
  - Terminals and in-vehicle platforms
  - Sensors
  - Aggregation chain and broadcast technologies

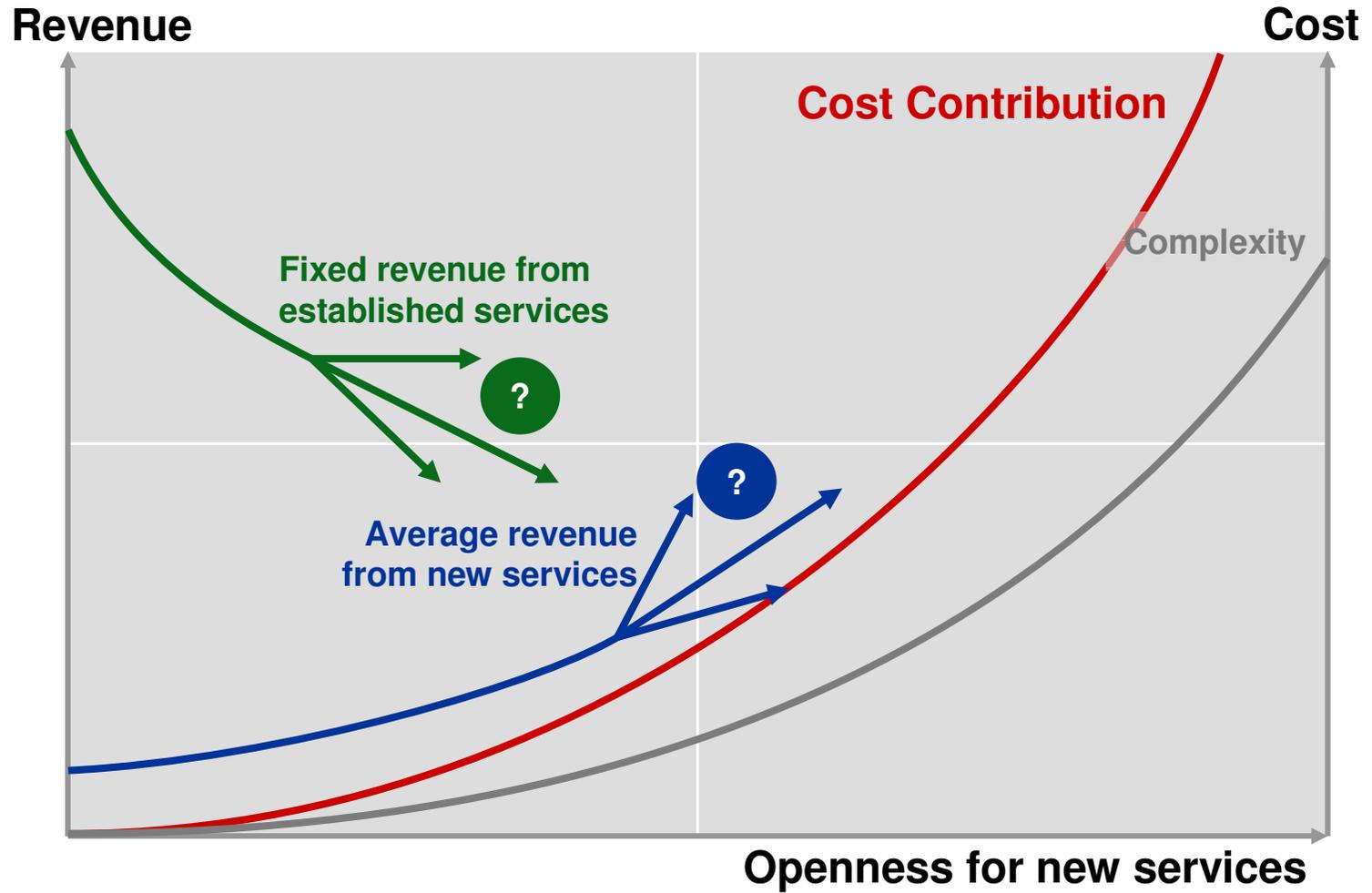
# **Broadcast Telematics.**

## **Challenges for digital technologies.**

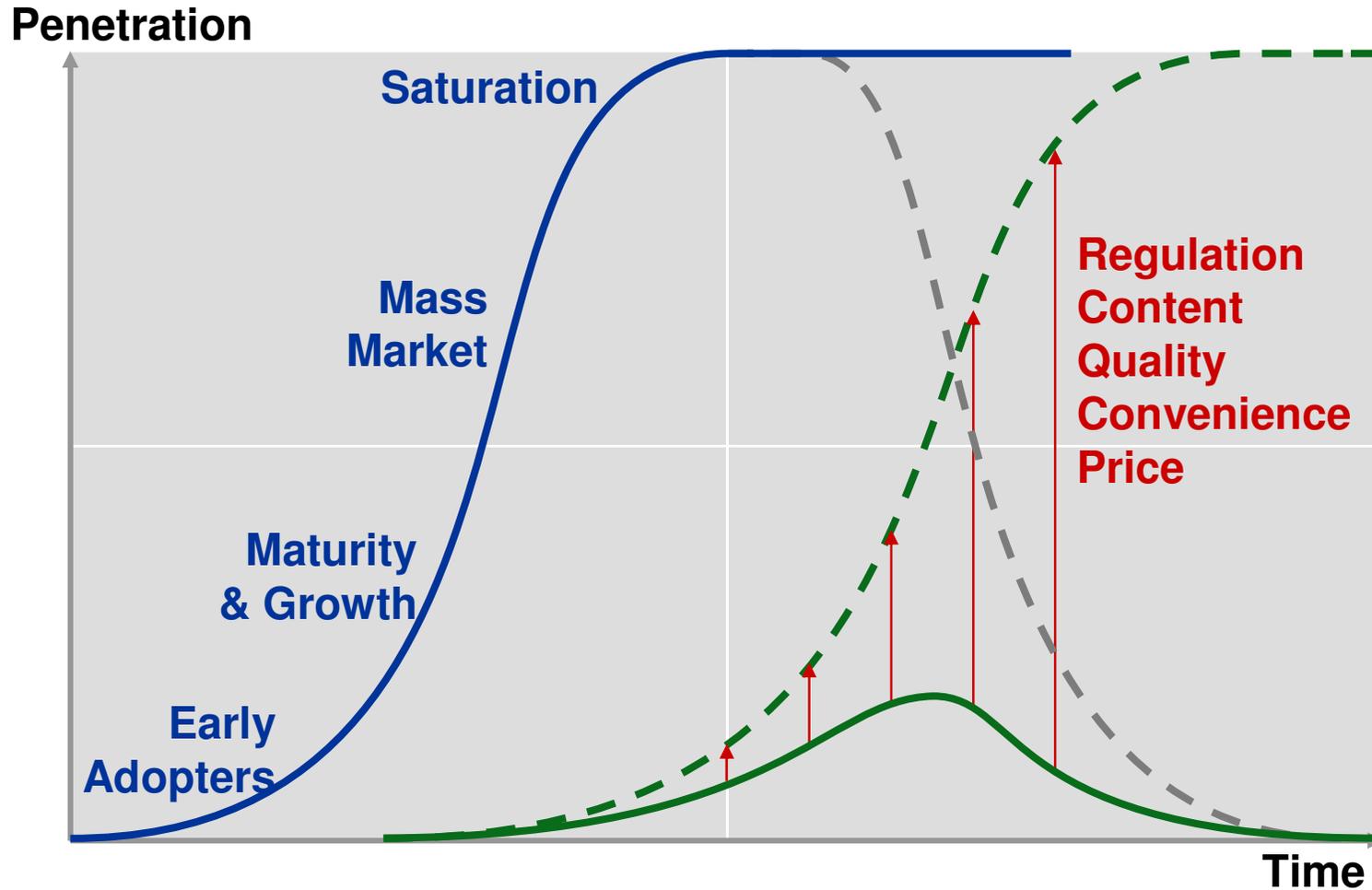
- Networks and services
  - Capacity for innovative services
  - Network access for SME service providers
  - Provisioning and service discovery
  - Short life cycle
- Legislation and Regulation
  - Spectrum
  - Rolling out European Services
  - Rolling out National Services
- Penetration
  - Coverage for innovative services

# Service innovation dilemma.

## Why the life-cycle despair is hard to solve.



# Introducing new technologies. How to make consumers switch.



# Ongoing standardization activities.

## New drivers for broadcast services.

- Digital Video Broadcast DVB
  - DVB-H: new release of DVB air interface fine-tuned for handheld reception
  - DVB-CBMS: Convergence of Broadcast and Mobile Services
- IP Datacast Forum IPDC
  - Industry forum
  - Harmonizing and advancing innovative broadcast applications
- Third Generation Partnership Project 3GPP
  - Multimedia Broadcast/Multicast Services MBMS
  - Broadcast bearer for 3G access network
- Open Mobile Alliance OMA
  - Recently developed focus group on mobile broadcast.

# Ongoing research activities.

## EC FP6 DAIDALOS.

- Mobility Beyond 3G
  - Heterogeneity: multi-access, multi-operator
  - Mobility: terminal, person, session
  - Separation: transport, service infrastructure
  - Integration: handover, routing, A4C, Security, QoS, Service Creation & Provisioning
- Media Convergence
  - All-IPv6 network infrastructure
  - Teleservices, Broadcast Services
  - Sensor Services, Device Services
- Pervasive Systems and Services
  - Pervasive Service Platform incl. Discovery
  - Personalization concepts & Privacy
  - Context-based adaptive reconfigurability



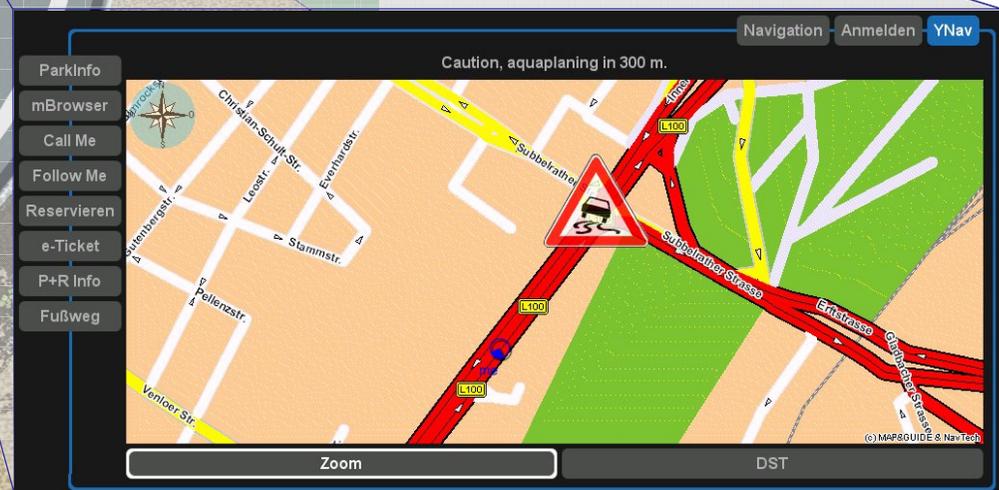
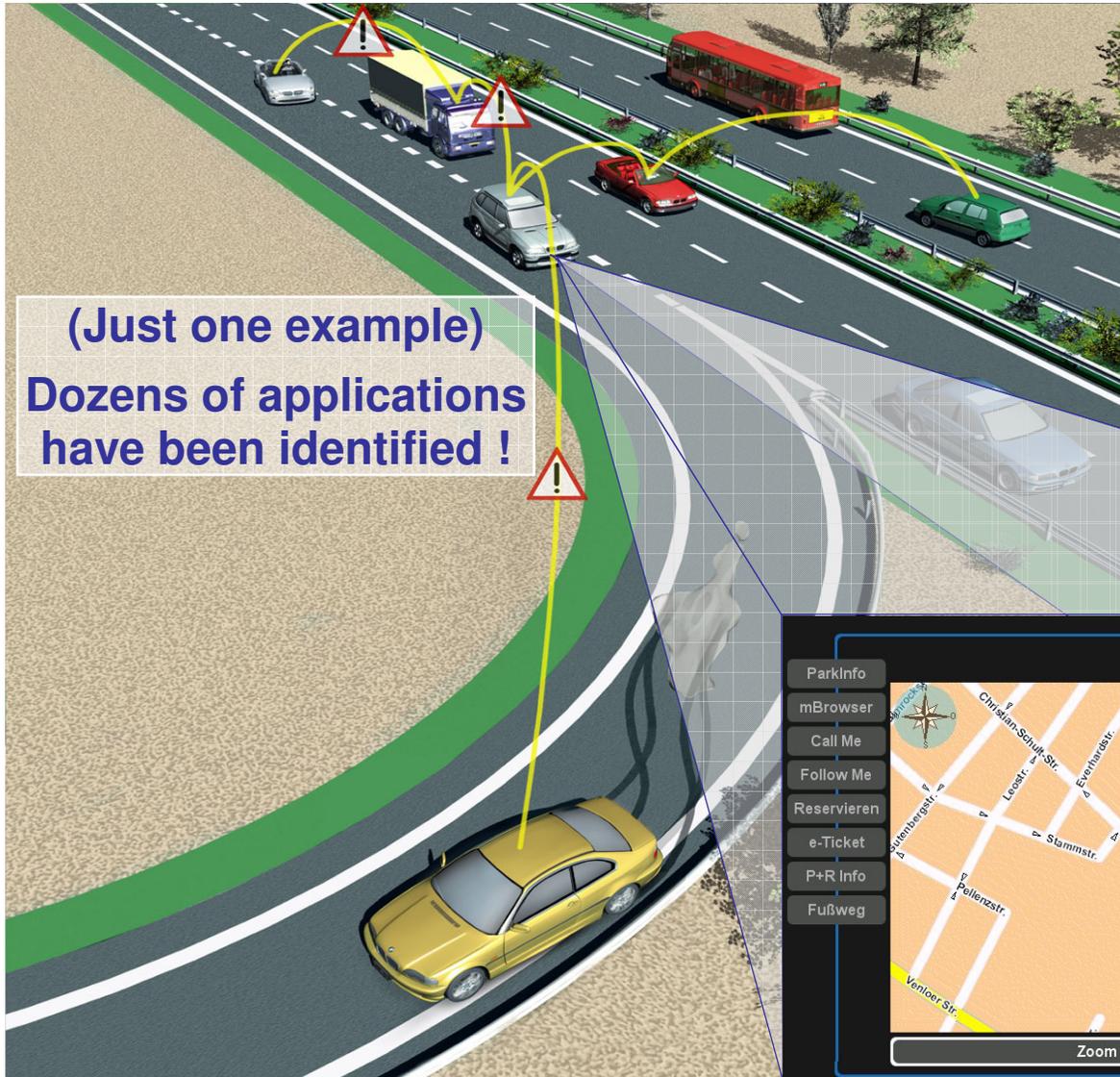
# Ongoing research activities.

## EC FP6 Global System for Telematics GST.

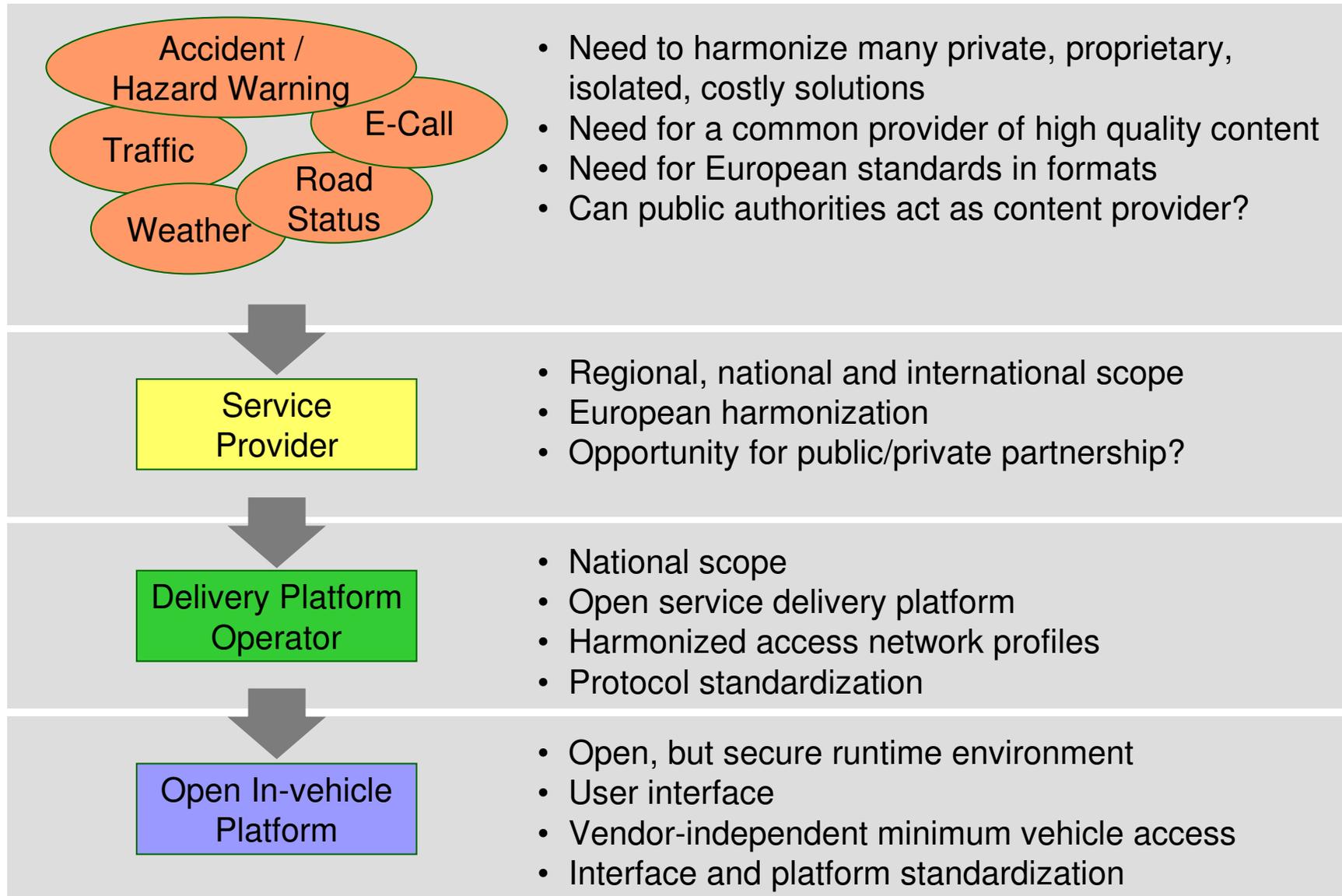
- Key Vision
  - Open systems instead proprietary ones; openly available interface specifications.
  - Cost efficient telematics service development and delivery.
  - Increase the range of available economic telematics services.
- Bringing new actors to the market:
  - Fleet managers and automobile clubs
  - Insurance and assistance companies
  - Public authorities and urban municipalities
  - Parking lot operators and gasoline distributors ...
- Key building blocks
  - Technology (Open Systems, Security, Payment, Certification)
  - Services: Broadcast Services, EFCD, E-Call



# Innovative broadcasting: Car-to-Car safety . Closing the loop on Local Danger Warning.



# Using Telematics to improve road safety. Giving penetration to services that matter.



# The Broadcast Telematics ecosystem.

## Conclusion.

Open service delivery chains have the potential to unlock a horizontal Telematics market and improve road safety.

Broadcast systems are and will continue to be a vital part of Telematics service delivery.

For successful Broadcast Telematics, efforts are necessary at all levels: business models, services, content, devices, standards.

Regulation is playing a critical role.

Public content and services can be key facilitators.

