euCognition

The European Network for the Advancement of Artificial Cognitive Systems

Transport Landmarks

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WHITE WILLOW
TRANSPORT INTELLIGENCE

2 useful rules...

1. If giving a presentation about transport problems

   *the chance of getting to your destination is low,
   due to the problems you are going to talk about !*

2. Some Airlines refer to passengers as SLC...

"*Self Loading Cargo*"

Transport Context

- **Higher Demand from EVERYONE**
  - Car ownership
  - Ease of travel
  - Land use change

- **Service expectation from EVERYONE**
  - A car is expensive (if you don't buy a house it's the costliest thing you own)
  - Quality of car / train /plane not matched by infrastructure and service
  - Time, time, time – everyone wants to be somewhere else NOW!

- **Environmental Pressure on EVERYONE**
  - Carbon footprints
  - Can't build more and more roads and railways and airports
  - What fuel by 2040?

- **Safety**
  - UK, France Roads, Airlines
  - Developing countries not so good
  - Euro Ncap rating sells cars

The problem

- **How do we use technology to :**
  - Increase network capacity
  - Match demand to capacity
  - Deliver better services (reliable journeys)

- **And do it:**
  - Safely
  - Safeguarding the future
  - With a business case
  - So everyone can engage and use?
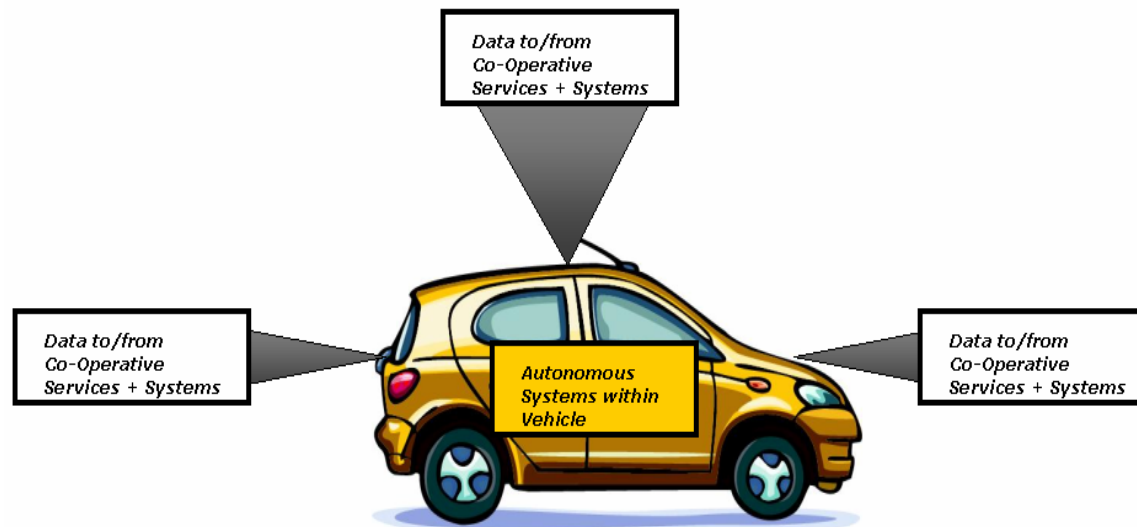
- **Across Europe**
  - Different institutional needs
  - Different markets
    - One country drives on the wrong side of the road even...

5 -15 years – some given changes

- **Road User Charging will be widely in place**
  - By time, distance and place
  - Means data from every vehicle on location etc using Galileo
  - Potentially makes a complex way of deciding your journey

- **More driver/ passenger related data**
  - Pay as you go insurance tells us about how drivers use cars
  - Smartcards for entire trip ticketing

- **More and more autonomous systems in vehicles**
  - Lane warning / automatic cruise control
  - Automatic towbar for trucks
  - Widespread systems for Traction Control etc

- **Pressure on airport capacity**
  - Even more than today
  - Especially when stormy…

- **Electric and hybrid vehicles**

Landmark applications

- Co-operative vehicle highways
  - Vehicles and roads interconnecting
  - Not just smart vehicles like Stanley
  - Shorter headways means more vehicles
  - Balance of control shifting – vehicle takes control
  - Huge legal and management issues as makes roads like air traffic control
  - Match vehicle to driver's skill
  - Would you be the first to try it as retro fitting impossible
  - DARPA work impressive here but has to become everyday

- Cognitive systems have a role in anything the driver does now

Data to/from Co-Operative Services + Systems

Data to/from Co-Operative Services + Systems

Autonomous Systems within Vehicle

Data to/from Co-Operative Services + Systems

Landmark 2

- **Seeing through the data**
  - In UK 23 million places to travel from, to 23million -1 places
  - In 30 million vehicles, For 60 million people and the goods they need
  - It's a very complex web

  - Impacted by sunshine, (and rain), TV, soccer, holidays…
  - Need to understand why and where people are travelling to manage this

  - Need to Manage demand not congestion
    - Bus stop vs bus tickets
  - Intelligent thinkers see patterns and act on them
  - What is the situation and what should we do?

  - **A cognitive system to turn masses of transport data into intelligence**
  - **Data = "there is a queue"**
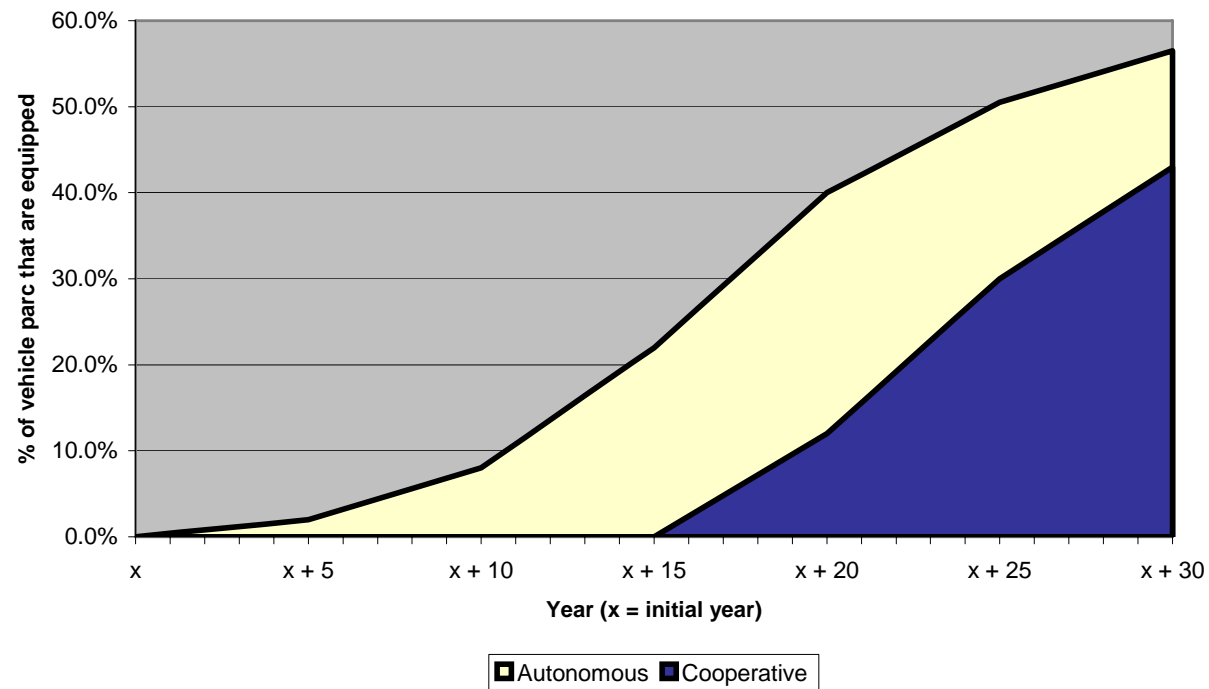 - **Intelligence = "turn left to avoid a queue"**

Landmarks 3

- **Total journey service**
  - Correct route, mode , price for what I want (best time, least stress, best food)
  - Joined up door to door
  - Walking, parking , steps
  - Travel "Agent"
  - Sell me one bill for all my travel
  - Use past experience

  - Navigation integrated with lifestyle

  - **A cognitive system to tell me how to best travel the way I want**
  - *an e-concierge*

Challenges

- **We can't stop the world to change it**
  - Evolution of services
  - Changes to vehicle fleet may take 10 years

People!

- **People!**
  - Everyone needs transport
  - Drivers not astronauts
  - Passengers not pilots
  - Understanding how to use new ideas safely
  - And wanting to pay for them.
  - Like to be in control of things

- **Money**
  - Transport highly cost driven
  - 10 cent saving in a vehicle wiring loom is a great prize for a supplier
  - Business case needs to be proven

Strengths

- People like cars with "Gadgets"
  - 007 started a trend
  - Early adopters

- Everyone travels
  - So market is big

- Politically high on agenda
  - So support good

2 passing comments

- I'd like a service that …

  - tells me that my last plane out of London is cancelled before I get to the airport
  - and how to now get to the meeting
  - Then cancels my hotel,
  - works out how to get to Munich tomorrow as the first plane has no spaces now
  - Does my presentation flawlessly in all major European languages

- That your Roadmap isn't just for drivers but for all travellers

  - A routemap would be a better name!

Sorry…

- I can't be with you

- Happy to help anyway

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