Intelligent Transportation Systems
Opportunities and Challenges

ITS is Great, Right?

But, may I ask, where is the Beef?

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Transport System Performance

- Efficient and Reliable Services
- Good Match of Capacity & Demand
- Reliable Trips
- User Comfort & Convenience
- User Sense of Security
- Minimum Losses due to Accidents & Incidents
- And more…
ICT Technologies and ITS

• Information, Computing, and Telecommunication (ICT) technologies are powerful.

• Many aspects of transportation systems can be improved.

• ITS is born!
Here Comes the White Knight - ITS

- Road users are receiving more useful and timely traveler information.
- Safety Statistics are much improved in recent years.
- More energy-efficient options are being promoted.
But, Have We Been Saved?

- How much improvement is truly due to ITS?
- Same ITS concepts from 20 years ago are still being discussed.
- Many cities and regions are still witnessing the same traffic problems as before.
Technology will carry the load!?  

Mobility, Safety, Efficiency  

Everyone thinks I am the superman!!

Technology  

I can’t do it alone!
When you have a powerful hammer, everything looks like a nail.
Society cannot keep up with it!!

Technology

Institutional, Legal, Societal, Political Issues, etc.
Case Study – ETC

• **Usage Based Concept**
  - Smooth transactions and operations.
  - More and more toll roads in US (e.g. High-Occupancy Toll) Lanes Pay by distance traveled and by vehicle types
  - Congestion pricing (e.g. higher fees at peak hours)

• **Harder and harder to get free lunch**
  - Equitable system to sustain highway maintenance and operation
  - Where do we get money to pay for all of these?
    - More VMT Based Tolls? Higher Gasoline and Electricity Tax?
Case Study – Ride Sharing

• A New Class of Ride Sharing
  - Uber, SideCar, Lyft, ZimRide
  - People connect via mobile phones
  - Riders pay “suggested donation”
  - Are they commercial ride providers, like taxi?

• California Public Utility Commission (PUC) issues cease-and-desist notices
  - Companies do not have legal standings to operate transportation services
  - Stop or face fines and jail time
A Revolutionary Transformation in Automobiles
The Next Frontier - Cars

• “Our vision is to create a continuum of personal computing experiences that provides consistency and interoperability across all Internet-connected devices in the home, car, office or in your pocket.”
  – (Intel CEO Paul Otellini, Intel Developer Forum, 09/ 2010)

• Intel Capital creates a $100 million Intel Capital Connected Car Fund to accelerate technology innovation in the automotive industry.
  – (Intel Newsroom, 02/ 2012)
Industries are Moving!

• **GM OnStar** Telematics Has Revenue of $1 Billion (January 2011)

• **Microsoft and Toyota** Announce Strategic Partnership on Next-Generation Telematics (April 2011)

• **Ford and Toyota** teams up on telematics (August 2011)

• **CES 2012: Mercedes** launches mbrace2 telematics system (January 2012)

• **Verizon** acquires **Hughes Telematics** for > 612 M (June 2012)

• **Nissan** North America teams up with **SiriusXM** for telematics services (September 2012)
An Entangled Growth Network in A Connected World

Telematics Providers
Insurance Providers
Infotainment Providers
Automakers
Transportation Operators

Contents Providers
Data Processors

Hardware & Software Manufacturers

Cloud Computing
Transportation System Management

Telecom Providers
Access Providers
Will we ever get there?
Relevance to Today’s Competition

• Positioning Technologies provided by Galileo Satellite Systems
• And a powerful combination with wireless Communication
There is still hope!

- Technology is becoming more readily available at lower costs.
- Connectivity is enabling a kaleidoscopic suite of new applications.
- Deployment is more widely spread than before, and lessons are being learned.
- Realization needs time, resources, and champions.
Thank You!

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