America’s Transportation Challenges

- Traffic congestion - $230 billion per year
- Highway fatalities and injuries - $300 billion
- Growing and aging population
- Deteriorating infrastructure
- Shrinking budgets at all levels
- Gas tax not keeping up with costs
Traffic Projections for 2035

It looks like the U.S. is having a heart attack
...and this is just the trucks!

Source: Oak Ridge National Laboratory’s Center for Transportation Analysis
We Need Smarter Solutions

- We cannot afford to simply build new roads to meet demand
- Technology enables us to:
  - Manage the existing system to optimize capacity, reduce costs
  - Provide new and improved travel alternatives
  - Improve vehicle and highway safety
  - Ensure that new and reconstructed roads and bridges incorporate the latest technology to meet future demands
ITS America’s Role in Advancing Smart Solutions

• We bring together policymakers and industry leaders to advance a safer, smarter, more efficient and sustainable transportation network

• Members include state and local agencies, universities, national labs, private companies spanning the highway, transit, automotive, commercial vehicle, telecom, tolling, and high-tech sectors

• Our state chapters represent over 1,200 companies and public agencies in 40 states
The Future Will be Shaped By the Investments of the Past
There is a Lot of Churn Within the ITS Industry

- Google acquires WAZE
- Sirius XM acquires Agero
- Verizon acquires Hughes Telematics
- Vista Equity Partners acquires Omnitracs
- Robert Bosch Car Multimedia GmbH spun off Bosch SoftTec GmbH
- Cubic acquires Swarco
- 3M buys Federal Signal
- Microsoft acquires Nokia
- Apple acquires five mapping companies
We Live in an Increasingly Connected World
Connectivity is Changing How we Think About Transportation
Big Data is the Future
We Will See Unprecedented Change in the Automotive Space
February 3, 2014: U.S. DOT Secretary Anthony Foxx announces steps toward requiring full-scale integration of V2V in all new cars and light trucks.


Strong signal to industry that 5.9 GHz-based DSRC will be the standard for V2V and V2I safety messages.

Can supplement current safety systems comprised of radar, cameras, GPS, pre-emptive braking.

Also seen as key enabling technology for the safe, efficient operation of autonomous vehicles, and for improved traffic management and mobility services.
V2X Deployment

- V2I already deployed in Japan, automakers have agreed to deploy V2V in Europe as early as 2015
- U.S. DOT expected to finalize V2V rulemaking by the end of the Obama Administration
- Michigan plans to expand 3,000-vehicle Safety Pilot in Ann Arbor to 30,000 in coming years including V2I
- Takes years to turn over entire fleet but adoption can be accelerated through retrofit and aftermarket
- Safety benefits can be realized with 10% market penetration and increase exponentially from there
- Once V2V is standard, V2I and aftermarket will grow opportunistically based on funding, market forces
Vehicle/Driving Automation

- **NHTSA Preliminary Policy Description**
  - **Level 1 – Function-specific Automation** - Driver is still “solely responsible” but may temporarily “cede limited authority” of steering, braking etc. (e.g. ACC)
  - **Level 2 – Combined Function Automation** - Driver “solely responsible,” but may relinquish the controls of steering and the foot pedals (e.g. Traffic Jam Assist)
  - **Level 3 – Limited Self-Driving Automation** – Driver can “cede full control of all safety-critical functions,” but driver can reestablish control with reasonable transition
  - **Level 4 – Full Self Driving Automation** – all conditions with no driver intervention
• ITS America successfully petitioned the FCC in 1999 to set aside the 5.9 GHz band for DSRC to support ITS safety apps
• Spectrum crunch forcing policymakers and industry to look at ways to better utilize spectrum including 5.9 GHz band
• The FCC and industry are exploring the feasibility of allowing sharing in the 5.9 GHz to support WiFi expansion
• ITS America is working with other stakeholders to bring parties together to explore potential technical solutions
• The FCC is supportive of spectrum sharing, but FCC Chairman Tom Wheeler has also committed to not put V2V safety at risk
• The FCC is eager to test any viable technical solutions if proposed – but devil is in the details
Progressive Countries and Localities are Investing in Technology

- Managed Lanes
- HOT Lanes
- Adaptive Signal Control
- Bus Rapid Transit
- Complete Streets
- Smart Parking
- Integrated Corridor Management
- Open and public data
- Electronic toll collection
And Continued Evolution in the Infrastructure

- Pay as you drive insurance
- Mileage-based user fees
- Integrated payment systems
- Multi-modal freight planning
- Smart parking
- Open data for transit
- Smarter cities
Non-traditional Transportation Companies Will Stay Involved