



ITS Canada's Connected Vehicle Strategies

A Global Context



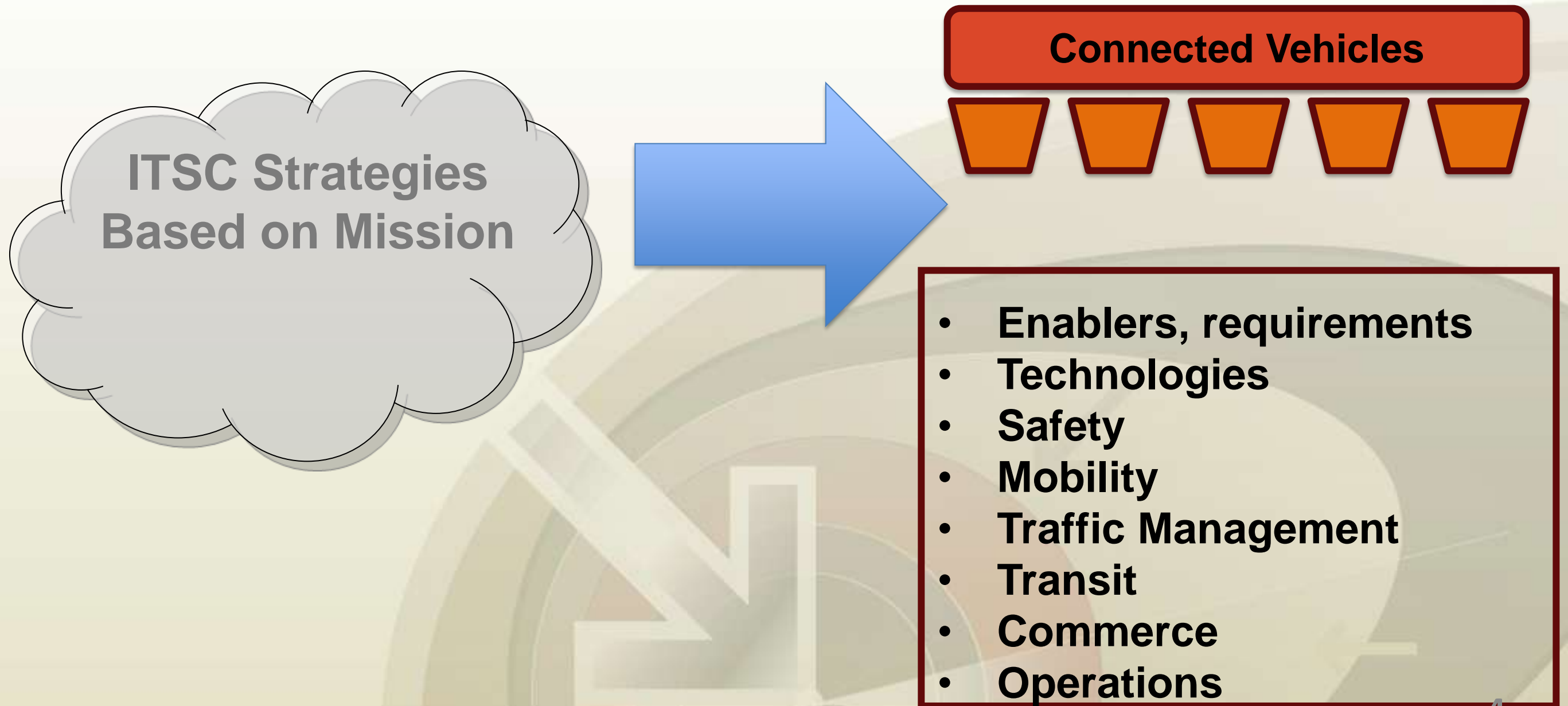
QNX Multimedia

(time permitting)

“the connected car is the third-fastest growing technological device, following smartphones and tablets”

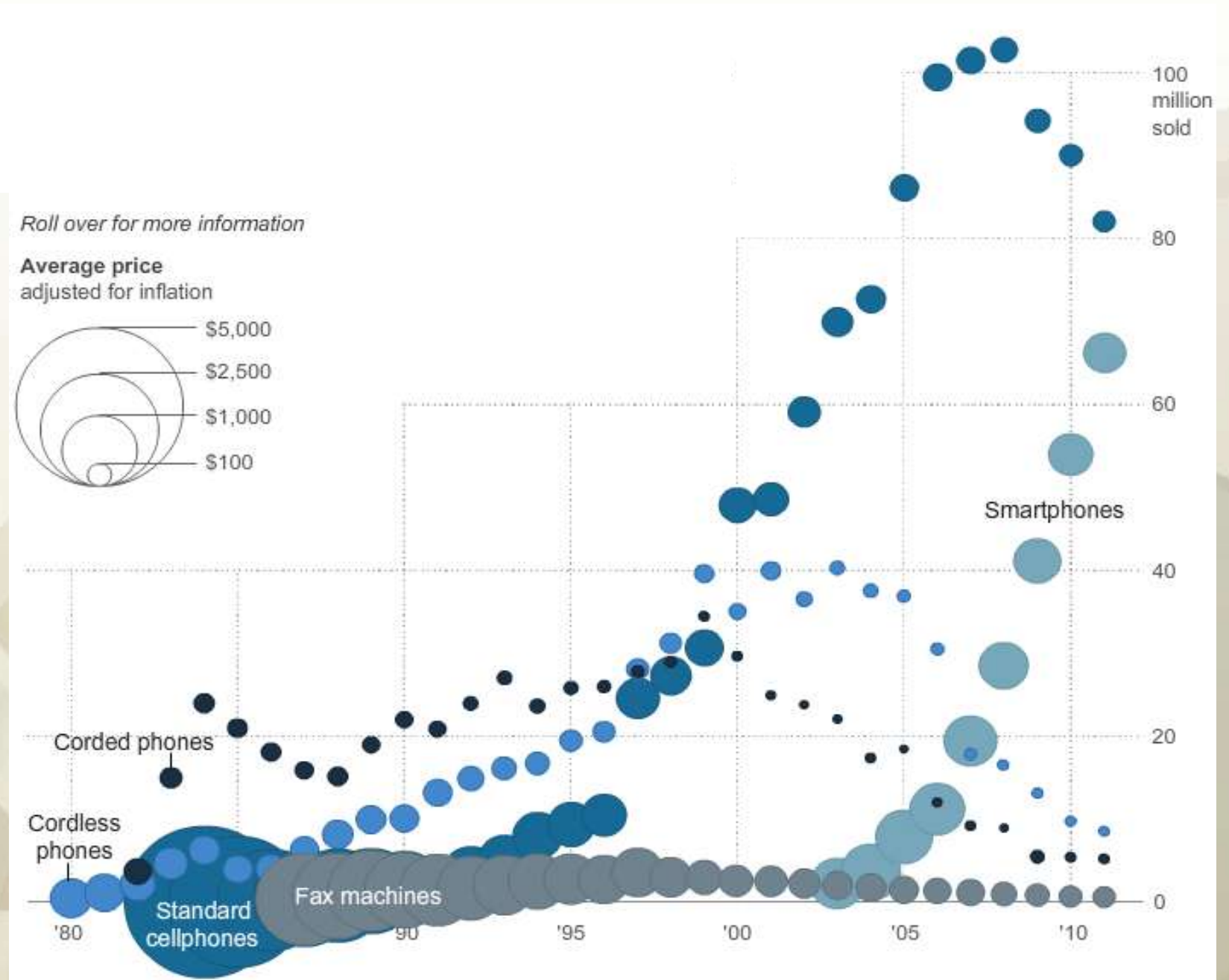
Intel Press Release, November 9, 2011

Presentation Objectives



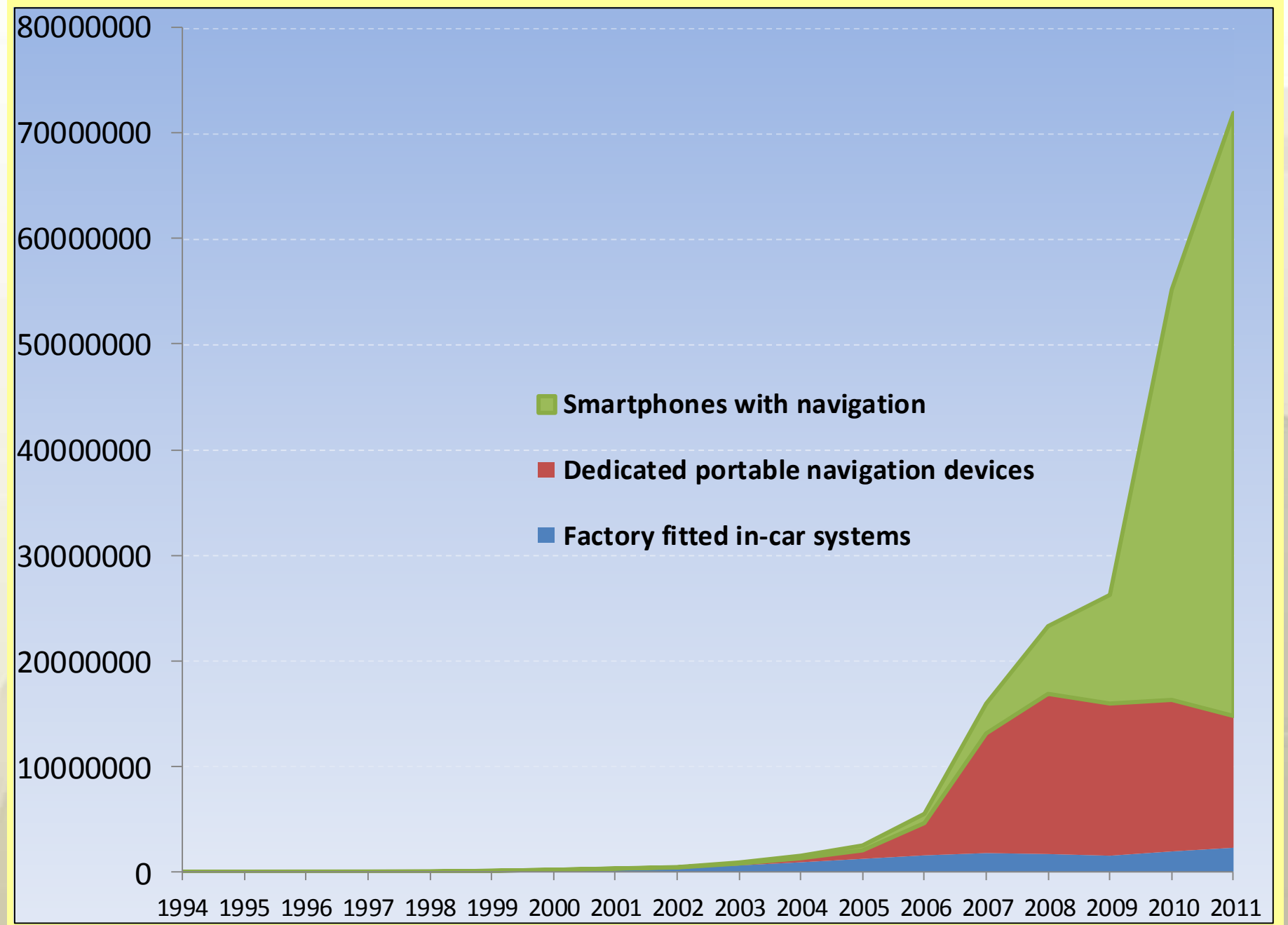
The Growth of Gadgets

2010 data are estimates and 2011 data are projections. GRAPHIC: Alicia Parlapiano / The Washington Post - January 10, 2011



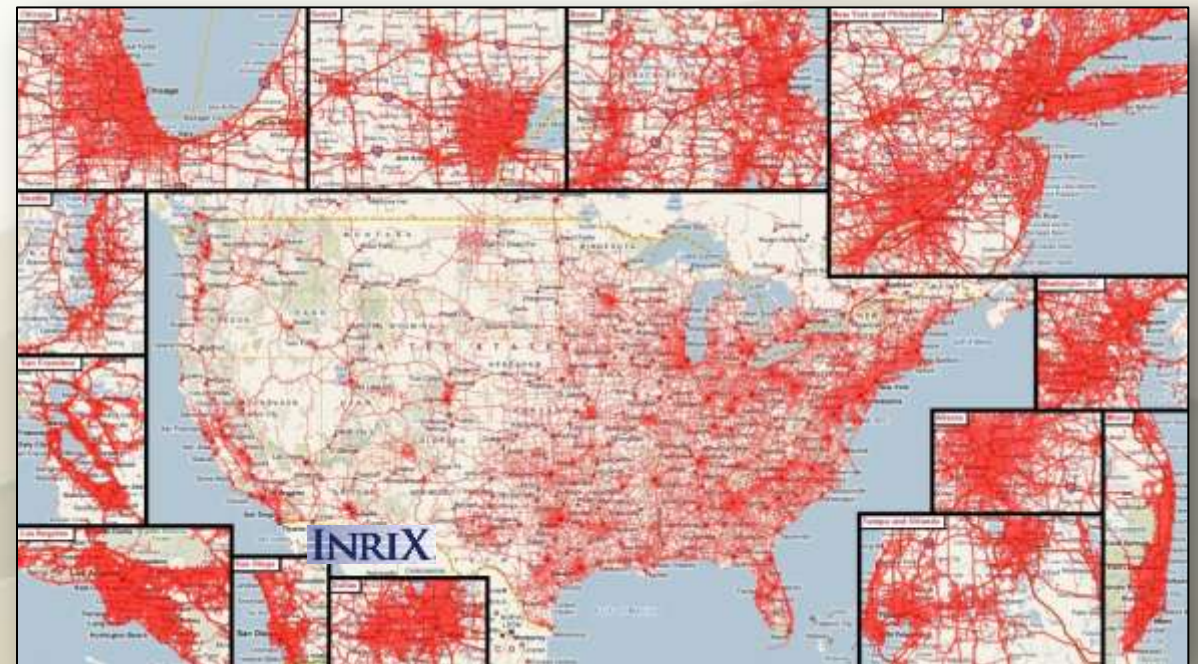
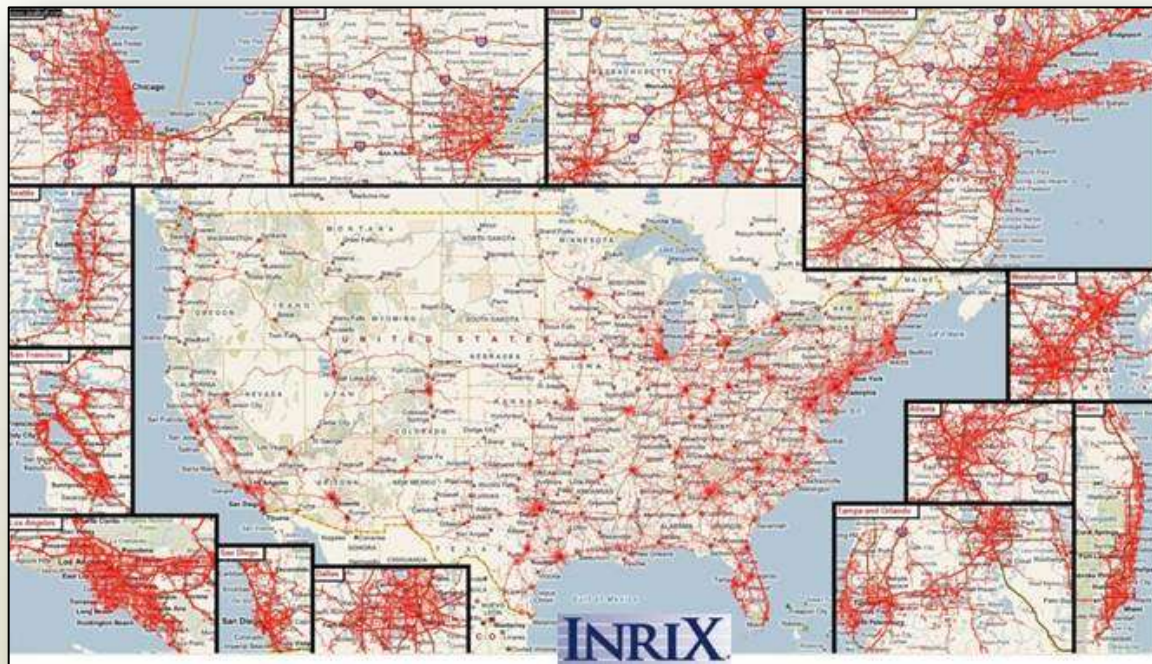
US Navigation Sales 1996 to 2011

Courtesy: Navteq



Growth in Vehicle Probe Data

April 2009 January 2012

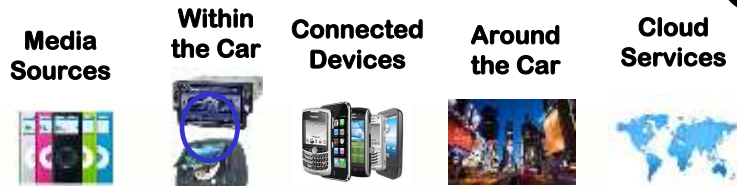


- 15 minute snapshot of incoming GPS data (fleets, cars, phones, apps, etc..) – Source INRIX®

Overview

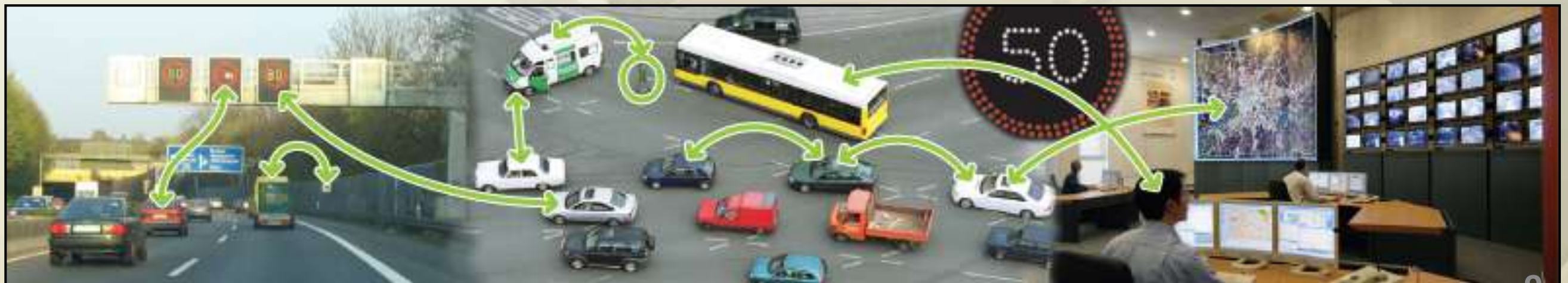
- **Connected Vehicles**
- **ITSC Mission and Member Needs**
- **History of CV Involvement**
- **Evolution of New Technical Committees**
- **International Stakeholders**

Connected Vehicles

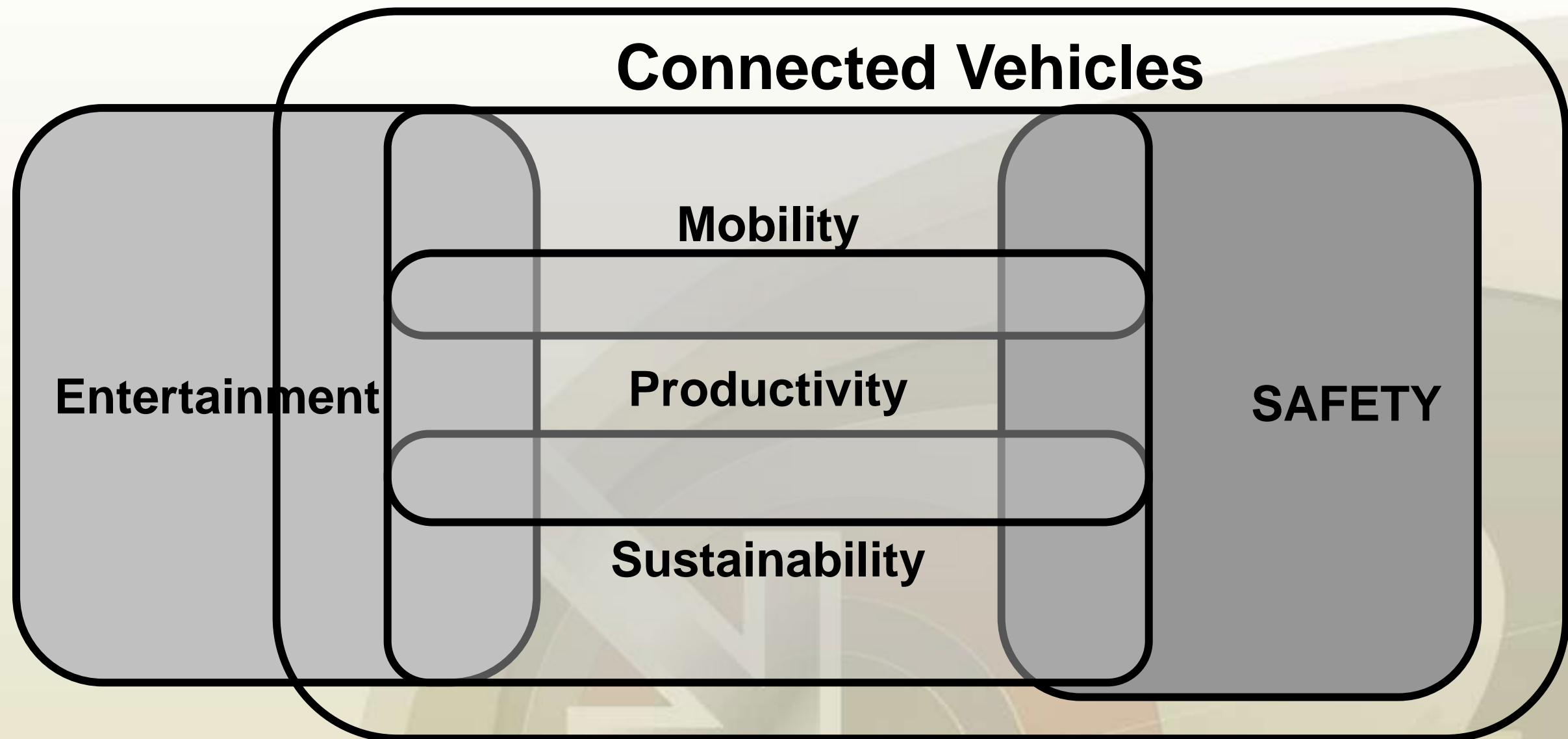


- Infotainment, cloud services
- Location aware
- Driver information
- Multimodal coordination

- Location and context aware
- Participant in traffic services
- Driver assistance
- V2V: Collision avoidance
- V2I: Safety, Mobility, Sustainability



Connected Vehicle Applications, Interaction



Connected Vehicle Applications vs. Communications, Location Technologies

Entertainment

Productivity

Sustainability

Mobility

ATIS, Dynamic Routing, Freeway Traffic Management

Real Time Traffic Management

Safety

Pedestrian, Cyclist, Emergency Management

Real Time Safety – V2V, V2I



Wide area, a few seconds latency, cellular data communications, road level location accuracy



Local area, milliseconds latency, DSRC communications, lane level location accuracy



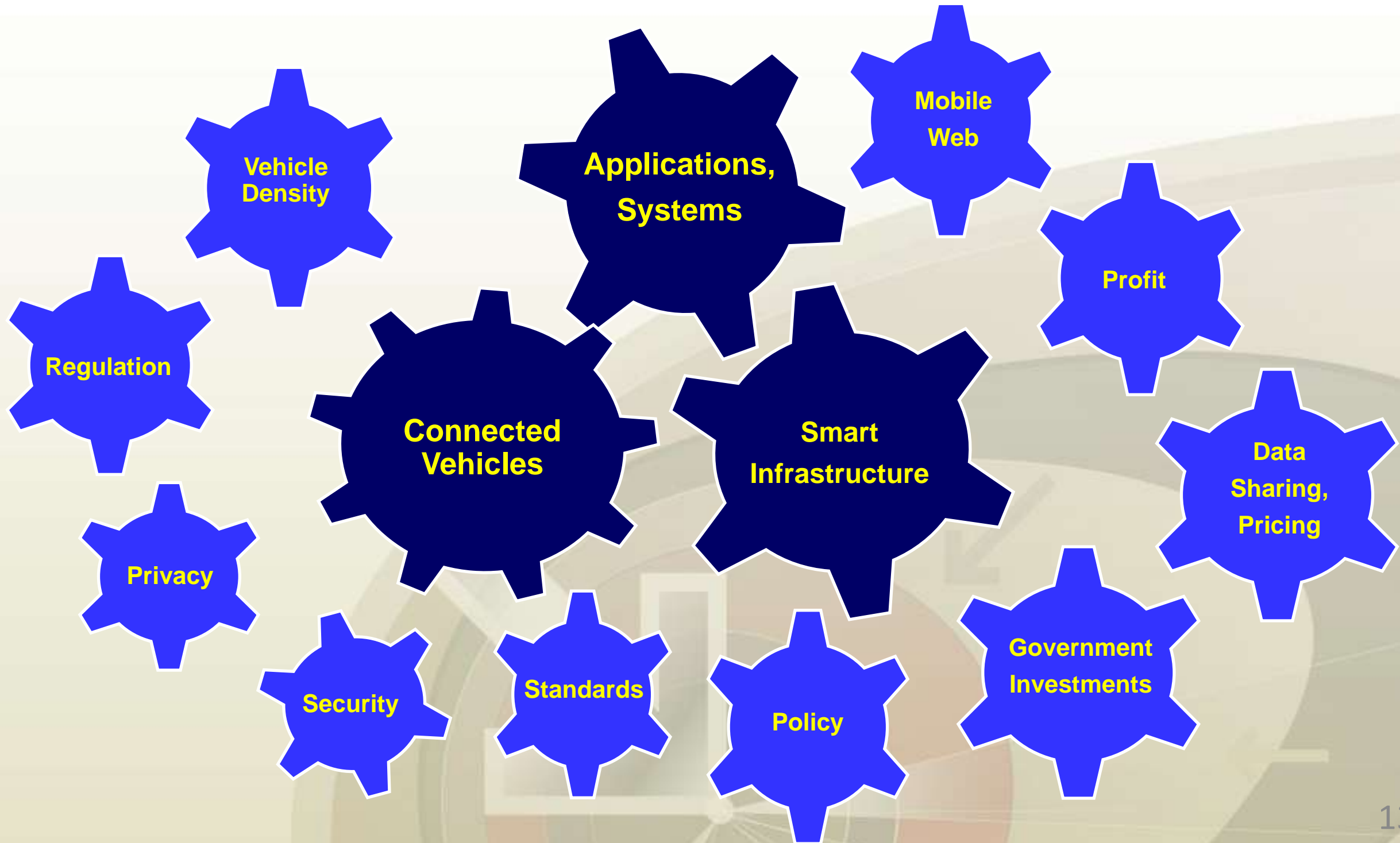
Will use either technology. Some applications improve with class of service, accuracy

Connected Vehicle Stakeholders

The collage features the following logos and images:

- Government & Regulatory:** Department of Transportation, United States of America; Transport Canada; Transports Canada; NHTSA; CBSA ASFC; Ontario; City of Vancouver.
- Manufacturers & Suppliers:** GM, BMW, Toyota, Delcan, Ford, QNX, Delphi, G4 Apps Inc., GMAC Insurance, Kapsch.
- Technology & IT:** IBI Group, Ericsson, Telus, Bell, Rogers, IBM, Siemens, CAA.
- Transportation & Infrastructure:** York Region Transit, OC Transpo, Metrolinx, Montréal, Toronto, Ottawa, Ontario.
- Other:** TransCore, a server room, a control room, a semi-truck, and a car.

Connected Vehicle Enablers



ITS Canada Mission

The mission of ITS Canada is to lead the promotion and advancement of intelligent transportation systems and services to benefit Canadians

ITS Canada Member Needs

- Knowledge and Awareness
- Education and Training
- Advocacy: Access to Governments at Home and Abroad (Deployment)
- Networking and Common Thought
- Export and Partnership Assistance

CV in ITS Canada's Strategic Plan

- Evolving Technologies
- Growing International Markets
- Complexities Demanding International Collaboration
- Core Application Will Be Deployed Across All ITS Segments

History and Evolution

- Component of Strategic Plan Confirmed 2009
- Commenced with Google Group 2010
- Strategic Plan Review Fall 2011 Created 5 New Technical Committees:
 - Advanced Traveller Information Systems
 - Revenue Systems
 - Advanced Traffic Management Systems
 - Advanced Public Transit Systems
 - Connected Vehicle Systems

Today and Forward

- Chaired by Paul Manuel, Kapsch TrafficCom and Board Member
- Over 30 Active Members Already: Academic, Industry, Government
- Non-Partisan and Unbiased Committee
- Strategic Plan in Draft Now
- Mission (tentative):
 - to encourage appropriate deployment and use of CV technology in Canada in order to improve roadway efficiencies

Plan Elements

- Need: Societal Coast of Road Collisions;
Efficient and Eco-Friendly Routing
- Impact on Safety; CVO; Revenue Systems;
Asset Management; Probe Data
- Onboarding the Public and Vehicle
Manufacturers
- Moving Government Forward

Resources

- Committed at AGM Quebec City June 10, 2012
- \$15,000 Seed Money for Events
- Shared Resource (new) for ITSC to Manage Committees
- Seeking Collaborators, Partners, Advocates and Members

Stakeholders: Domestic and International

- US DOT and RITA (Ann Arbour for Example)
- World Congress Board (Canada sits on it)
- Municipalities, Regions, Provinces and Federal in Canada
- Europe, Asia: Standards Will Be Essential for Optimum Deployment
- See Some Here:

Government Roles

	Canada	US
DSRC Spectrum	Industry Canada	FCC
New Vehicle - Safety	Transport Canada	USDOT: NHTSA
New Vehicle - - Driver Interface	Transport Canada	USDOT: NHTSA
Driver Distraction – Aftermarket, Personal Devices	Provincial MoTs	State DOTs *NHTSA Guidelines
Traffic Signals	Industry Standards Provinces Municipalities	Industry Standards States - AASHTO Municipalities *FHWA Guidelines
Geographic Databases	Industry Standards Provinces Municipalities	Industry Standards States - AASHTO Municipalities *ITS JPO
CV Data Architecture		ITS-JPO
Enforcement, Clearance	Provinces, CBSA	States, CBP
Logistics	Industry Transport Canada	Industry USDOT



But Benefits to Governments Are Clear

Government Benefits

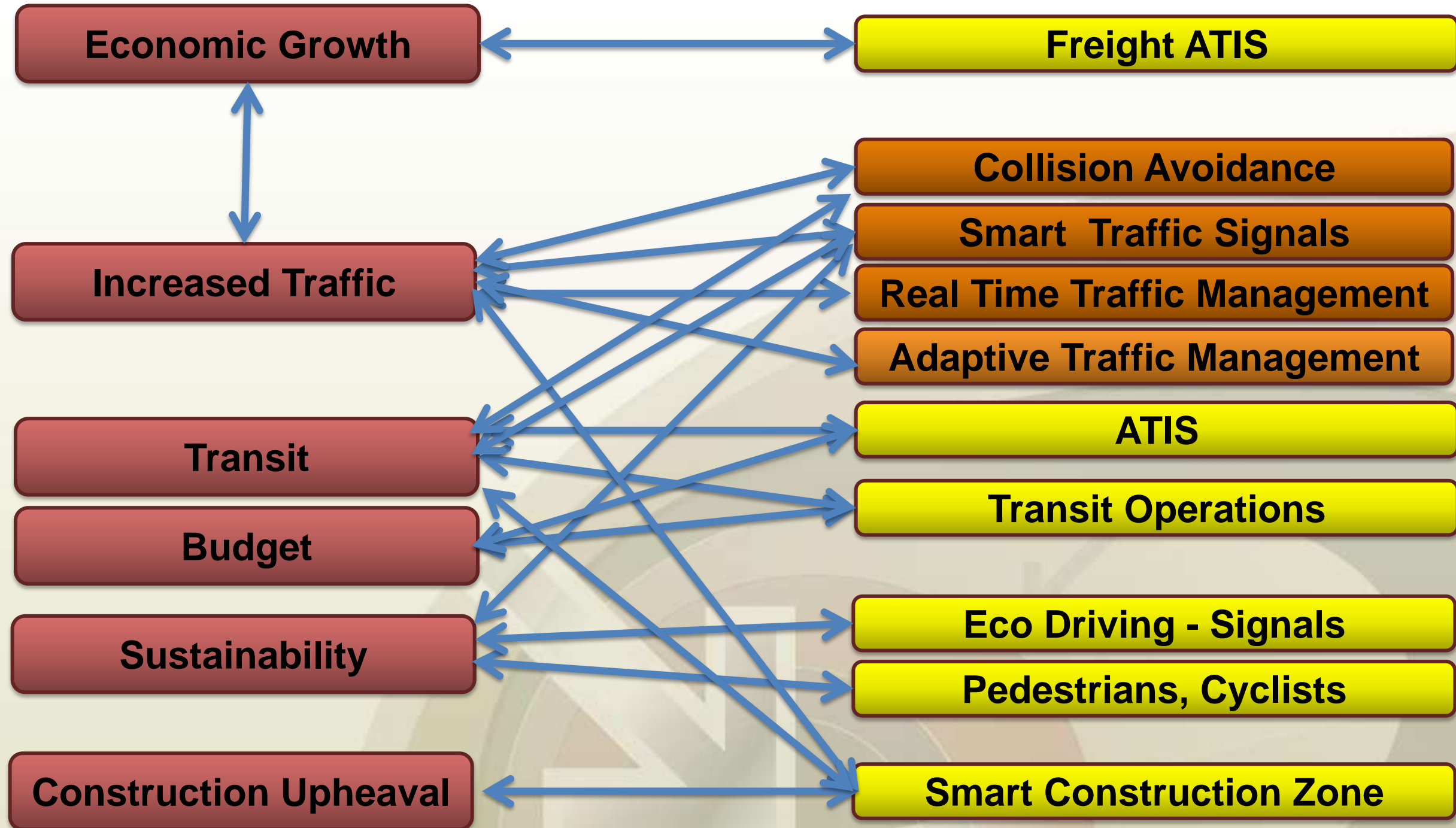
	Province	Region, Municipality
Safety	Traffic Throughput Medical Expenses Freight Efficiency Lower Operations Cost	Traffic Throughput Transit Operations Freight Efficiency Lower Operations Cost
Connected Traffic Signals	Reduced Collisions Traffic Throughput Emergency response Reduced Emissions Freight Operations	Improved Transit, Lower Cost Reduced Collisions Traffic Throughput Emergency response Reduced Emissions Freight Operations
ATIS - vehicle as probe - in vehicle signage	Network wide coverage Active traffic management Traffic Throughput Road, management planning	Network wide coverage Active traffic management Traffic Throughput Road, management planning
In vehicle messaging, tolling	Flexible management	Flexible management
Connected Fleet	Lower cost of operations Sustainability	Lower cost of operations Sustainability
Electronic Enforcement, Clearance	Better coverage with same resources	

Region, Municipal Issues

- **Population Growth**
- **Higher Density Dwellings in Key Areas**
- **Economic Growth**
- **Getting People to and from Work**
- **More Traffic**
- **Need for More and Better Transit**
- **Upheavals Caused by Construction**
- **Sustainability**
- **Budget**



Region, Municipal: Challenges, Applications



Actions to Advance: What can you do to assist?

- **Join the Committee!**
- **Develop/embrace connected vehicles in**
 - **Driver distraction regulations**
 - **Fleet driver policies, guidelines**
- **Embrace the evolution to real time safety and traffic management, the revolution to near term applications**
- **Develop a vision and a plan**
- **Ensure it is part of your organization / province/ region / municipality strategy**
- **Identify what you need in terms of standards, policies and other support**
- **Identify public awareness programs and how to deliver**
- **Consider transit operations as investing in smart infrastructure on basis of reduced costs of operations**
- **Establish smart transit or freight corridors – partner with communities to use**



Questions??

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