ITS Market Status

ITS Alaska Annual meeting - Fall 2014

Open Roads

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Next Generation Traffic Management

- **Innovative Network Management**
  - Integrated Corridor Management (Session 2)
  - Connected / Autonomous vehicles (Session 4)
  - Active Traffic Management
- **Operations with No Borders**
  - Data and Video sharing
  - Systems Integration / ITS Standardization
  - Virtual TMC / Cloud-based Services
  - Open Data
- ***New interactions with system users***
  - *Transforming user experience*
  - *Dynamic Mobility Applications*

Dynamic Mobility Applications (DMA) Program

- **Large scale, multi-year program on connected vehicle technology**
- **Vision:**
  - to expedite the development, testing, ***commercialization***, and deployment of innovative mobility applications, fully leveraging both new technologies and federal investment to transform transportation system management, to maximize the productivity of the system, and enhance the accessibility of individuals within the system
- **Objective**
  - foster the development of open source applications that utilize multi-source ITS data to ***transform*** surface transportation management and information. The research conducted in this program will identify high-value applications for research and develop the tools, metrics, and concepts that form the foundation for future application development
- **http://www.its.dot.gov/dma/**

Program Phases

- **Phase 1 – Foundational Analysis**
- **Phase 2 – Tool Development**
- **Phase 3 – Focused Deployment**

- **6 Major tracks**
  1. Stakeholder Engagement,
  2. Mobility Application Development,
  3. Proof-of-Concept Tests,
  4. Demonstrations,
  5. Evaluation and Performance Measures,
  6. Outreach and Technology Transfers.

Program Components

- **Research Data Exchange**
  - Projects for real time data capture
  - System of data repositories
  - http://ntl.bts.gov/networking/tlrarchive/20130430tlr/TLR201304.pdf
- **Open Source Portal**
  - Share and coordinate application development
  - Seems to be behind schedule
  - http://dmaopensource.com/
- **Application Development**
  - ConOps and System Requirements complete for all
  - Most in prototype phase

DMA Bundles

- ***Enable Advanced Traveler Information Systems (Enable ATIS)***
- **Freight Advanced Traveler Information Systems (FRATIS)**
- **Integrated Dynamic Transit Operations (IDTO)**
- **Intelligent Network Flow Optimization (INFLO)**
- **Multimodal Intelligent Traffic Signal System (MMITSS)**
- **Response, Emergency Staging and Communications, Uniform Management, and Evacuation (R.E.S.C.U.M.E)**

EnableATIS

- **Traveler information component of the DMA Program.**
- **Seeks to provide a transformative framework for multi-source, multimodal data to enable the development of new ATIS strategies.**
- **Leverage robust pool of real-time data through connected vehicles, public and private systems, and user-generated content.**
- **It is unique among the various DMA program tracks in that it is dependent on a diverse industry and stakeholder group.**

- **EnableATIS Strategy Assessment: FHWA-JPO-14-113**

10-year goals of EnableATIS program

- **Widespread availability of end-to-end trip planning and management applications (integrating time of departure, cost, mode, route, and parking decisions)**
- **Emergence of at least one state-of-the-art corridor or regional transportation management systems utilizing systematically obtained traveler trip data**
- **Improve predictability and reliability of travel, with 50% reduction of unanticipated late arrivals.**

Rapidly Changing Landscape

- **Technology Evolution**
- **Personalization and Real-Time Information**
- **Emergence of Private Sector**
- **Monetization of Information and Services**
- **Connected / Autonomous Vehicles**
- **Changes in Public Sector Involvement**

Public Sector Trends

Data Collection and Management

- **Increase data availability**
  - Expand coverage of data collection
  - Multi-source and multi-modal
- **Data management**
  - Data hub / fusion engine
  - Governance
  - Open data
- **Data fusion and analysis**
  - Predictive Analytics
  - Big Data

Technology and Applications

- **Consolidation of services and applications**
  - Applications that present a wide range of traveler information
- **Involvement of private sector**
  - Data providers
  - Application developers
- **Crowdsourcing and Social Media**
  - More data points
  - New dissemination channels

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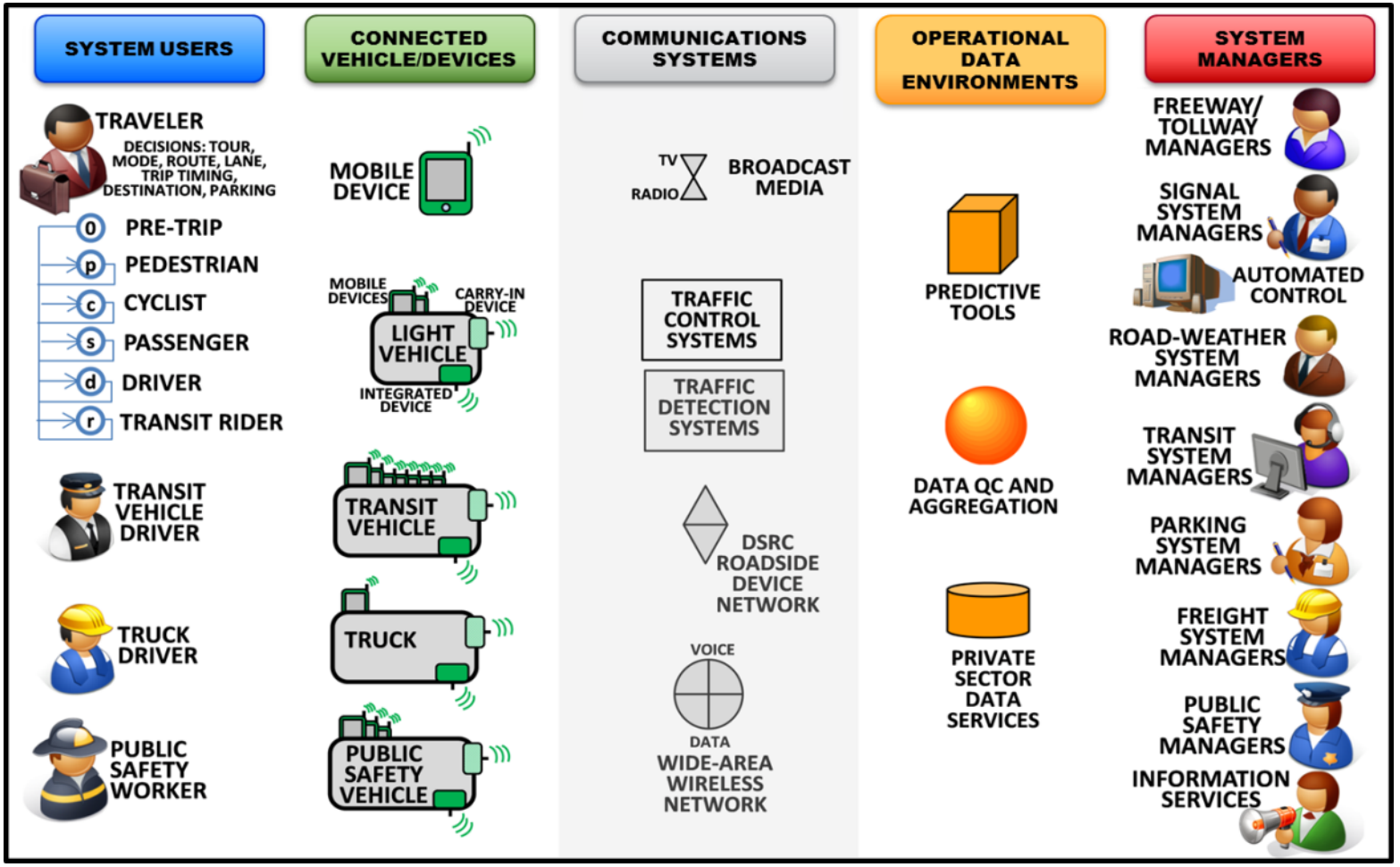
Making Sense of a Connected World



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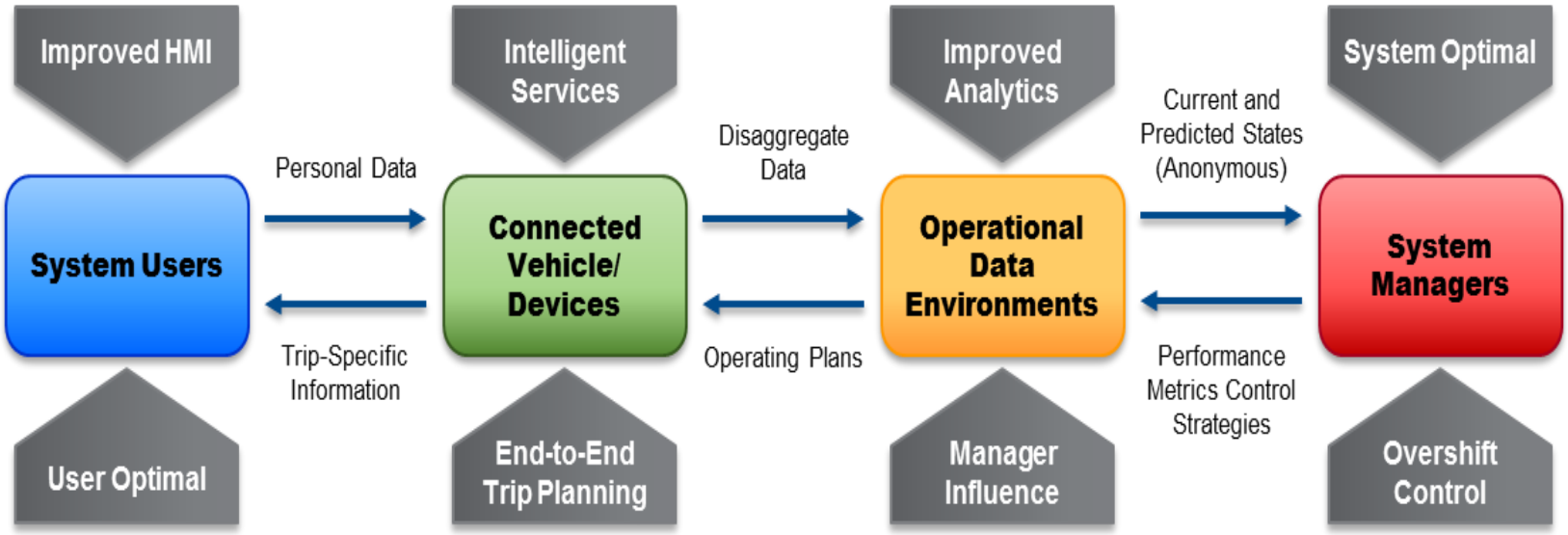
Re-envisioning the Supply Chain



Federal Role

ID	Research Opportunities	Federal Influence
System Optimal	• Integrating new data sources into conventional TSM&O models and algorithms • Creating new TSM&O tools that exploit big data	Strong Strong
User Optimal	• Advanced methods and technologies for improved user service provision	Weak
Overshift Control	• New models that predict and manage overshift	Strong
Improved Analytics	• Development of predictive analytics methods • Assessment of predictive methods to address system manager needs in information provision	Weak Strong
End-to-End Trip Planning	• New multi-modal trip planning apps • Data fusion methods and algorithms for processing and archiving data from multiple sources • User privacy and policy for sharing data	Moderate Moderate Strong
Intelligent Services	• Self-adapting ATIS to improve user mobility • Self-learning algorithms and business intelligence models to capture and process longitudinal data	Weak Moderate
Improved HMI	• Improved in-vehicle and mobile applications • Human factor/distraction studies	Weak Strong
Manager Influence	• Promoting public-private partnerships • Data governance/market facilitation	Moderate Moderate

Leading the way in road user charging and advanced transportation management