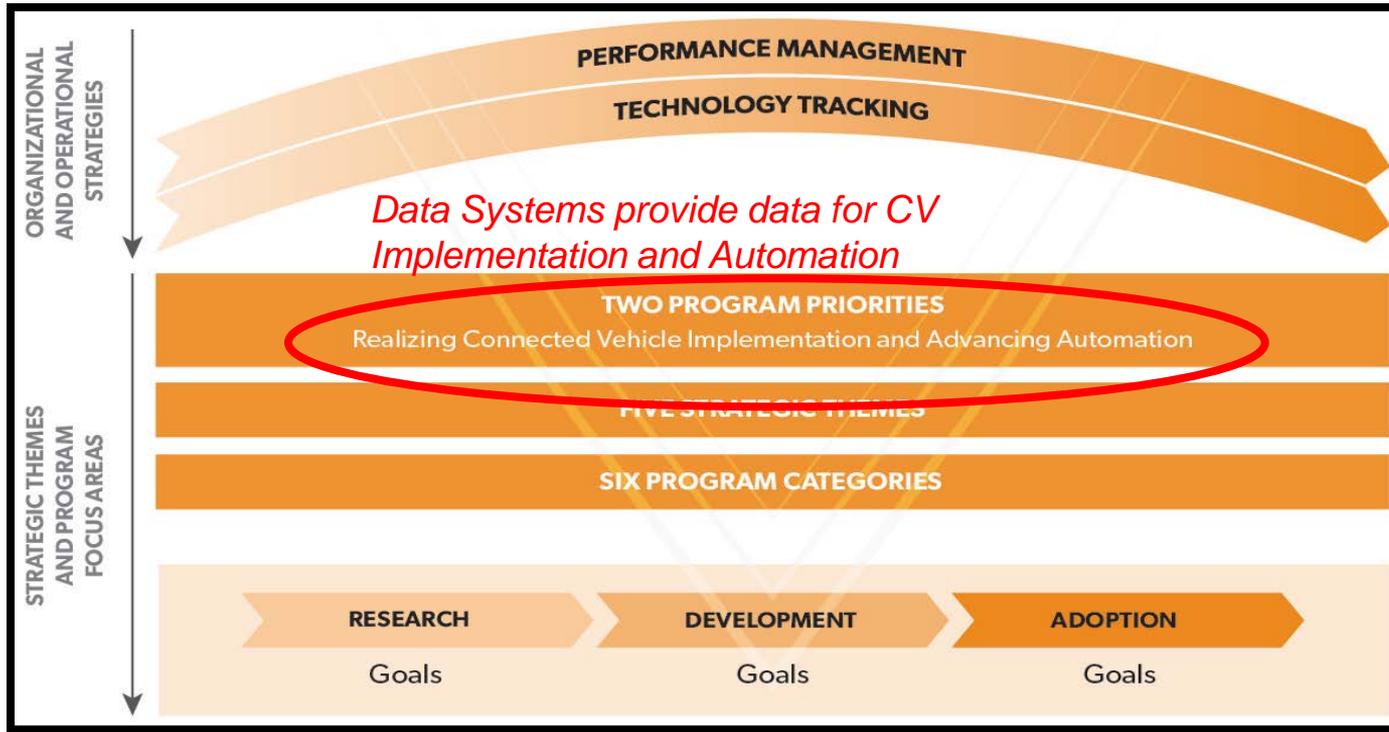




# **ITS Strategic Plan – Connected Data Systems (CDS)**

Dale Thompson  
Program Manager, Connected Data Systems,  
U.S. DOT ITS Joint Program Office

# ITS Strategic Plan's Framework



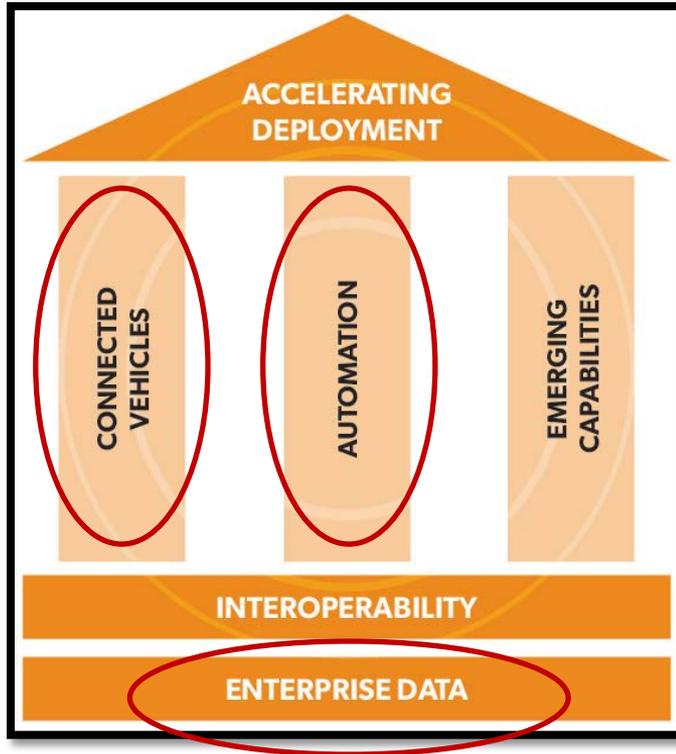
# Connected Data Systems Supports Strategic Priorities

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- Two Strategic Priorities reflect a sense of where the bulk of transportation research and innovation is heading.
  - ***Realizing Connected Vehicle Implementation***
    - builds on the substantial progress made in recent years around design, testing, and planning for connected vehicles to be deployed across the nation. **Connected Data Systems provides data for research and testing applications for deployment, and is prototyping Operational Data Environments**
  - ***Advancing Automation***
    - shapes the ITS Program around research, development, and adoption of automation related technologies as they emerge.  
**Connected Data Systems will collect and provide data for research and testing automation applications**



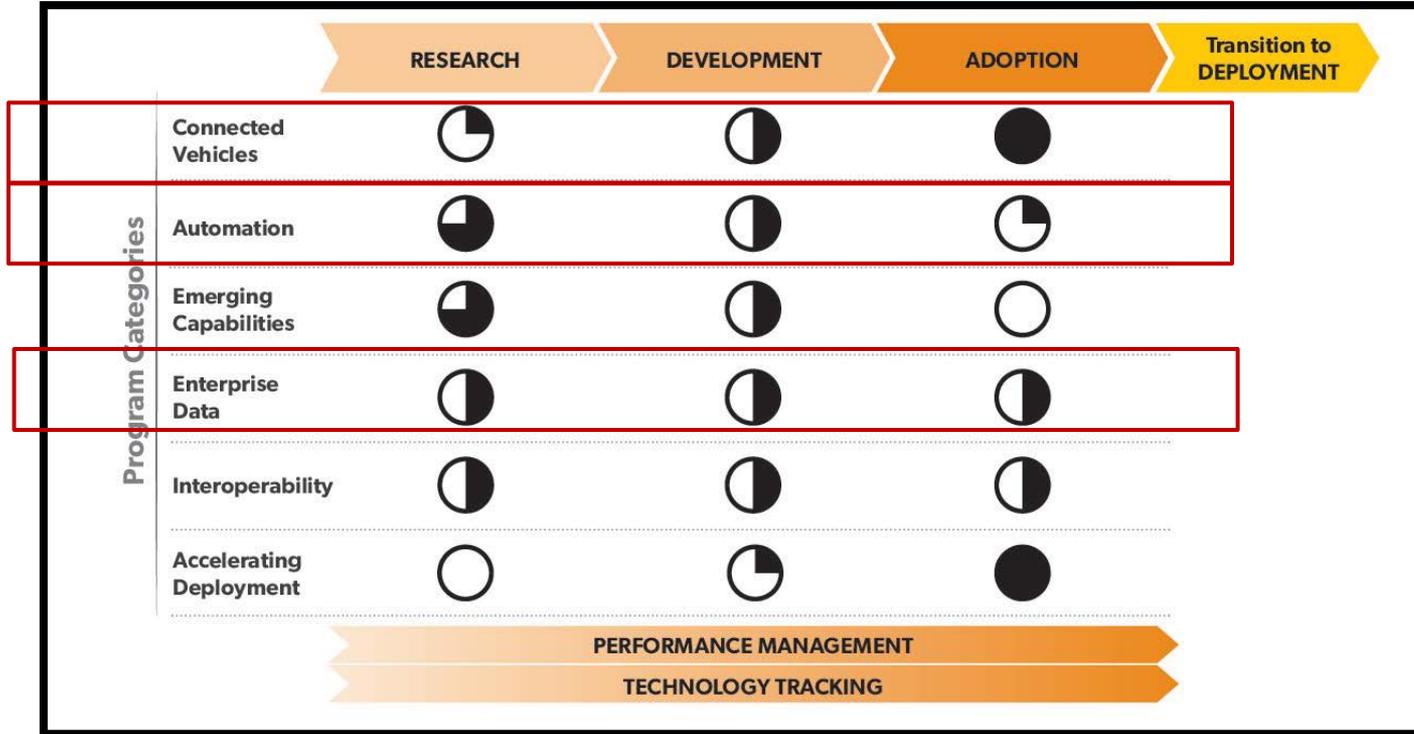
# Program Categories Supported by CDS



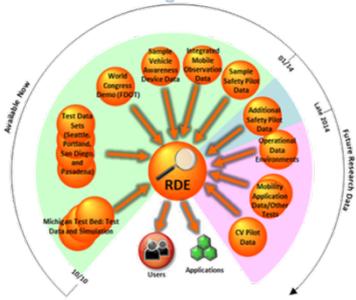
- **Connected Vehicles** program category will be primarily focused on adoption and eventual deployment of the system.
- **Automation research** will focus on topics related to automated road-vehicle systems and related technologies that transfer some amount of vehicle control from the driver to the vehicle.
- **Enterprise Data** programs will continue existing efforts in operational data capture from stationary sensors, mobile devices, and connected vehicles, and expand into research activities involving the development of mechanisms for housing, sharing, analyzing, transporting, and applying those data for improved safety and mobility across all modes of travel.



# Program Categories and Technology Lifecycle



# Data Capture & Management Program Builds Toward CDS



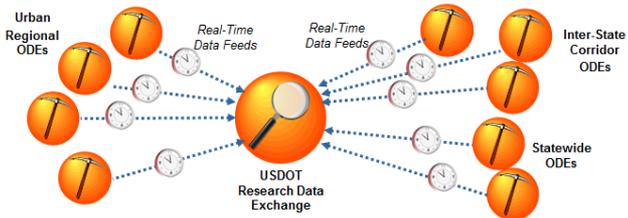
Research Data Exchange



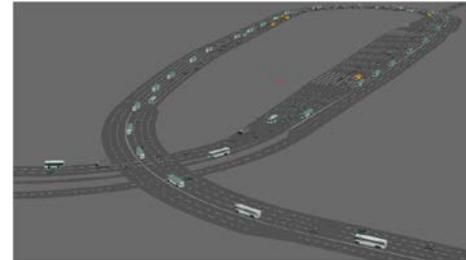
Big Data Analytics Study



U.S. / Europe / Japan Probe Message Coordination



Prototype Operational Data Environment



Basic Safety Message Emulator

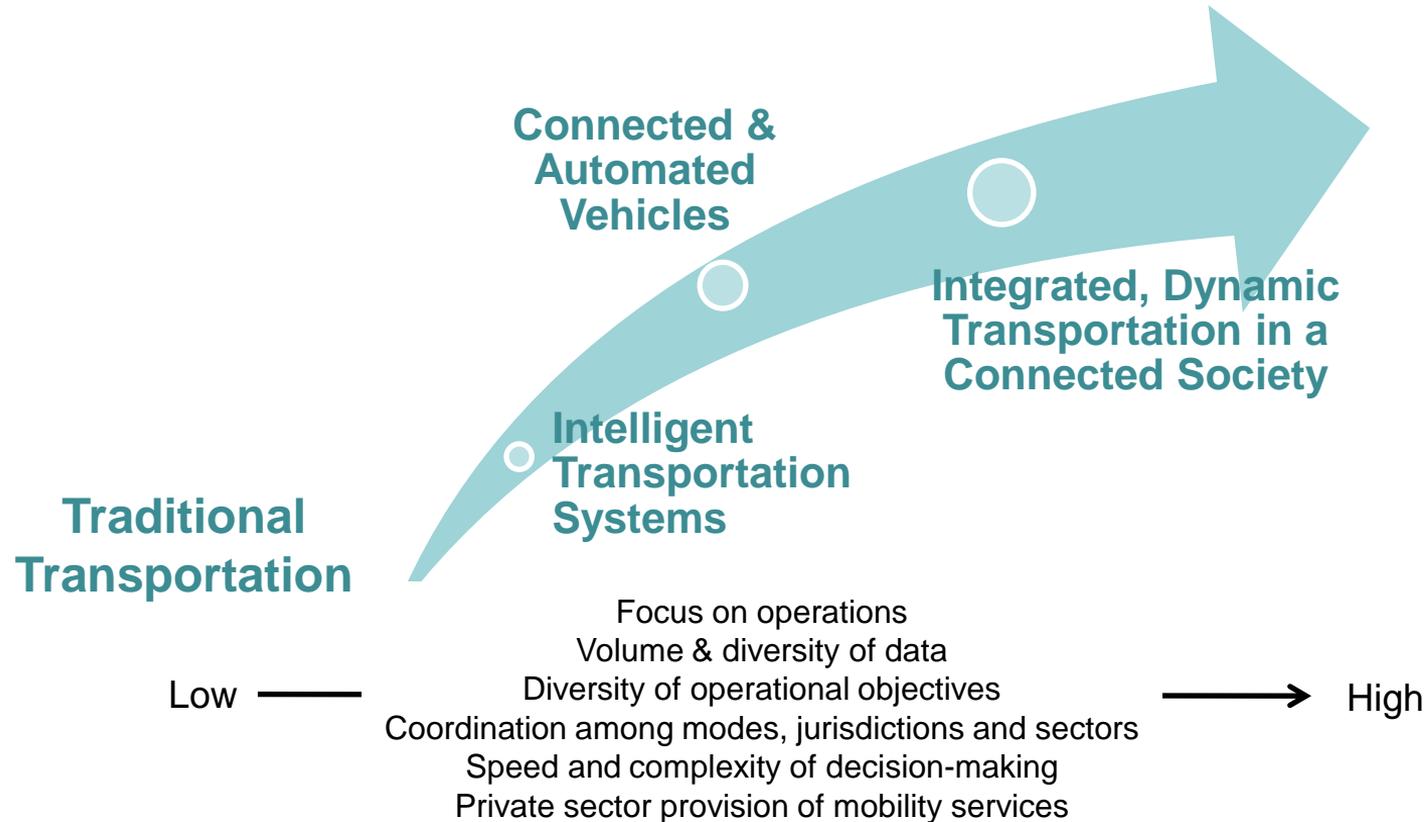


# Feedback from DCM Stakeholders March 2014

- The DCM Program's project portfolio and policy agenda should move to an operations focus.
- Develop a multi-year work plan that provides the direction and provides the framework for the initiatives, projects and program activities.
- Pursue big data approaches, but there is no need to save most of the data being generated.
- Connected vehicle and connected traveler data will be of interest to many non-transportation agency users, from OEMs to telematics stakeholders, to other (non-transportation) public agencies.



# CDS Supports Evolution of Transportation Technology



# Connected Society

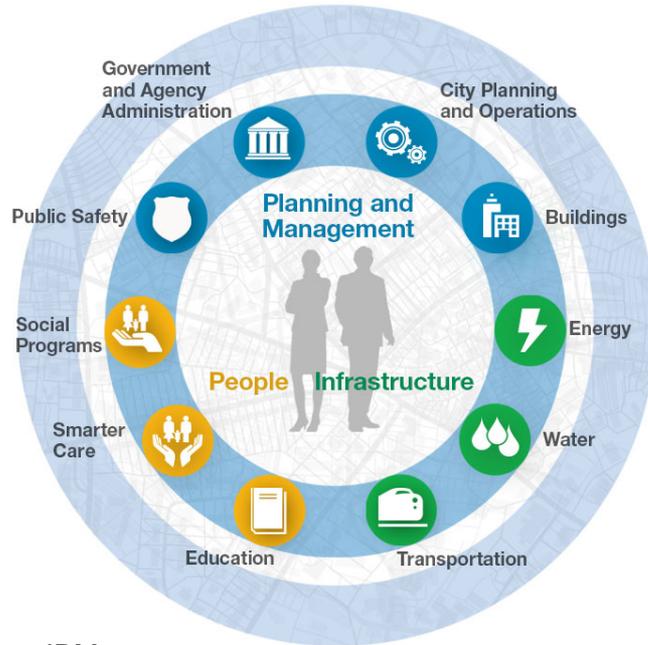


Image: IBM

- A Connected City is a system of interconnected systems that **communicate** with and **leverage** each other to provide synergistic benefits.
- This system of systems is tied together by:
  - **Data and infrastructure;**  
and
  - diverse, connected and coordinating public and private **Operators and Users**



# Proposed Vision for Connected Data Systems

*The U.S. DOT connected data systems will operationalize scalable data management and delivery methods exploiting the potential of high-volume multi-source data to enhance current operational practices and transform future surface transportation systems management.*



# Providing Data – U.S. DOT Role

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- Providing data from prototype deployments and pilot tests for testing and research
- Modeling performance of current and proposed U.S. and international standards for information exchange
- Collecting experience deploying standards and advocating for standards development
- Prototyping collection, quality checking, aggregation, integration, and provision of data in real-time for connected vehicle and automated vehicle applications



# Example Research Questions for Data to Support Connected Society

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## Collecting and Providing Data

- How can valuable data be collected from new sources, including connected citizens?
- How can captured data be integrated and kept at manageable size?
- How can data be transmitted securely and efficiently?



## Using Data

How can more and better data be visualized, integrated, and used to drive better transportation system management strategies?

- Safety
- Personal mobility
- Commercial efficiency
- Environmental responsibility



# Proposed Data System Research Tracks

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## 1. Develop Big Data Analytics and Visualization Methods

- Data discovery, data integration, data exploitation



## 2. Conduct Crowdsourcing/Mobile Device Field Test(s)

- Integrating data across thousands of connected mobile devices



## 3. Conduct a Dynamic Interrogative Data Capture (DIDC) Field Test

- Dynamic optimization of how much data to keep and transmit



## 4. Develop and Deploy a Connected Data Operational System (CDOS)

- Data collector / integrator / distributor to pave the way for deployment



# For More Information

[www.its.dot.gov](http://www.its.dot.gov)

The screenshot shows the homepage of the Intelligent Transportation Systems Joint Program Office. At the top, there is a navigation bar with links for About, Research, Tech Transfer, Library, Press Room, Training, and Contact Us. Below the navigation bar, there is a main content area with several sections:

- Knowledge Resources:** A section with a video player showing a highway scene. The text reads: "Your comprehensive resource for informed decision making – with over 15 years of information about the benefits, costs, lessons learned, and deployment status of ITS." Below the video is a pagination bar with numbers 1 through 7 and a right arrow.
- Free ITS Training:** A blue box with a photo of a woman in a hard hat and the text: "Free ITS Training. Excel at your career."
- Public Meetings:** A blue box with a photo of a man and the text: "Public Meetings. All ITS JPO meetings and webinars are free and open to the public. View meetings."
- Connected Vehicle Technology:** A section with four icons representing different vehicle technologies and the text: "CONNECTED VEHICLE TECHNOLOGY" and "Connected Vehicle Test Beds".
- CV Pilots Deployment Project:** A purple box with a car icon and the text: "CV Pilots Deployment Project".
- Stay Connected:** A section with social media icons for Facebook, Twitter, Email, and RSS, and a "Share" button.

On the left side of the page, there is a "Spotlight" section with the title "New Website Helps Local Communities Prepare for Connected Vehicle Pilot Deployment Program" and a "Read more..." link. Below this, there is a list of news items:

- Connected Vehicle Architecture (SET-IT) Software Released 7/10/14
- Release 2 of the Research Data Exchange (RDE) is Now Available! 7/1/14
- U.S. Department of Transportation is Seeking Proposals for the Establishment of a New Certification Environment Based on Wireless Communications 6/25/14

At the bottom of the Spotlight section, there is a "More News>>" link.

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