



# Technology + Service Coordination = Improved Mobility

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# Outline

- Introduction and History
- Intelligent Transportation Systems (ITS)
- ITS and Human Service Transportation (HST)
- Travel Management and Coordination Center (TMCC)
- Best Practices
- Resource Links

# Introduction and History

- Prior to 2004, FTA and DHHS Coordinating Council
- Feb. 2004: Executive Order on Human Service Transportation Coordination (Executive Order 13330)
- 2005: Mobility Services for All Americans (MSAA) as part of United We Ride (UWR)
- 2006-14: MSAA Foundation Research, Phase 1 and Phase 2
- 2015: Selection of New MSAA Grantees



# Why Intelligent Transportation Systems (ITS)?

- Help integrate disparate systems
- Provide greater visibility and situational awareness
- Improve coordination of transit, paratransit and human service transportation

# Common ITS in Coordination

- Fleet scheduling, dispatching and routing systems
- TMCC customer interface (e.g., telephone, IVR, internet, etc.)
- Better traveler information and trip planning systems, particularly for customers with accessibility challenges
- Vehicle communications (e.g. Mobile Data Computers and other mobile communications devices)
- AVL and other systems to assist operations of demand-response door-to-door service
- Integrated fare payment and management (payment, collection, and processing) systems
- Eligibility certification and billing systems

# Travel Management Coordination Center (TMCC) Solution

- Coordinated one-stop, customer-based travel reservation, information, and trip planning service
- Mechanism for integrating technologies
- Essential component in delivering coordinated human services transportation management and operations across various:
  - Social welfare programs and service providers
  - Modes
  - Geographic areas

# TMCC Benefits

- Gives human service agencies ability to coordinate transportation needs across service providers and modes
- Gives transportation providers:
  - Methods for matching schedules and capacity with requests
  - Ability to efficiently process financial transactions
  - Opportunity to eliminate redundancies
  - Tools to ensure security and customer eligibility to use services

# ITS Implementation Challenges

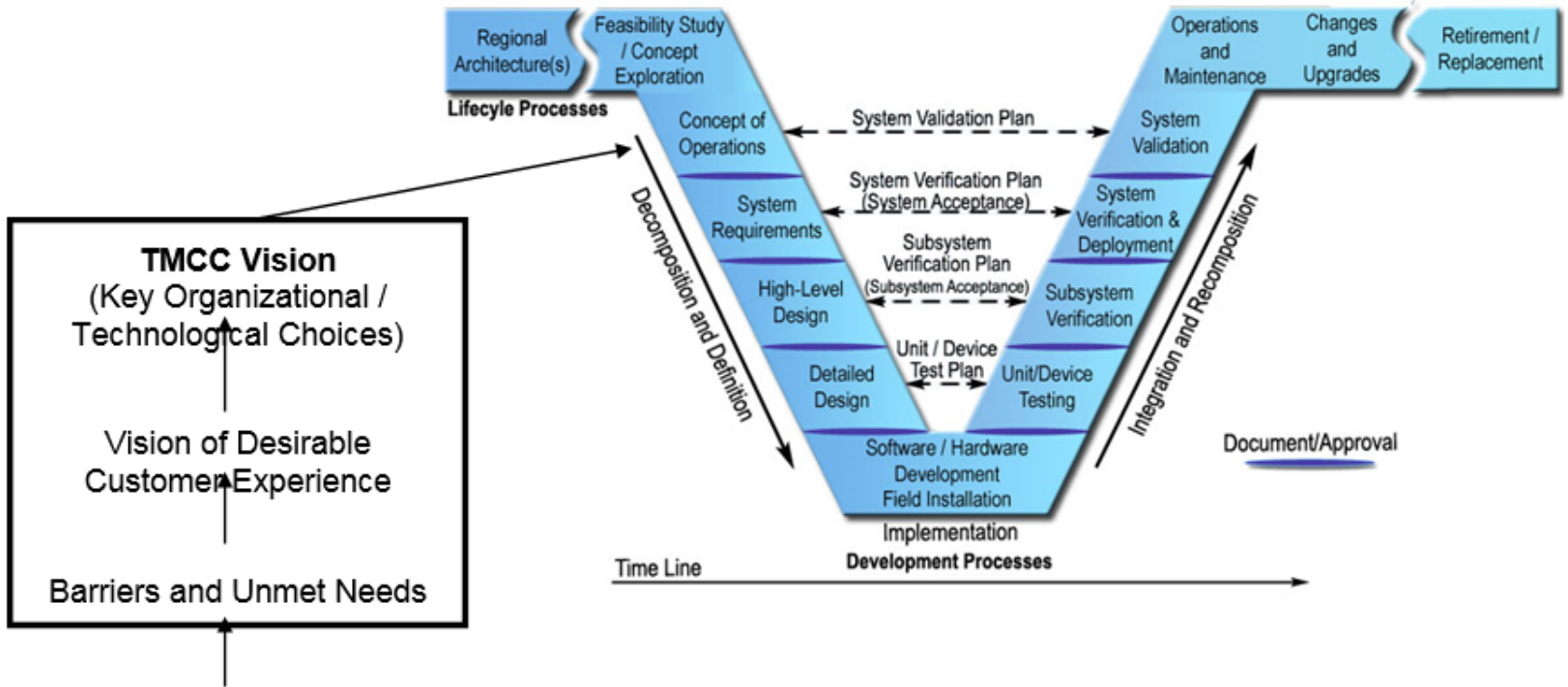
- Many past ITS deployments:
  - Have been delayed
  - Failed to fully meet expectations
- User needs not clearly articulated
- Failure to engage stakeholders early enough in process
- Lack of a champion to move effort forward
- Lack of understanding / appreciation for potential institutional and technical barriers
- Overselling of benefits



# ITS Implementation Challenges (cont'd)

- Failure to benefit from experience of others
- Perception of technology looking for a solution

# TMCC Design and Deployment Using Systems Engineering Process



Ongoing institutional structures and processes to pursue coordination of human services transportation in the community

From Brendon Hemily, *Draft Guidebook for the Planning and Design of Travel Management Coordination Centers (TMCC)*, April 30, 2013, page 18.

# How to Approach Design?

- Describe characteristics of proposed system from viewpoint of individuals who will use that system
- Use Concept of Operations (ConOps) to communicate quantitative and qualitative system characteristics to all stakeholders

# Why a ConOps?

- Ensures all users and supporters have same understanding of TMCC
- By providing description of components and operations:
  - Stakeholder misunderstandings can be reduced
  - Expectations can be managed
- Clearly defines conditions for use of TMCC, which will minimize risks associated with operating TMCC



# Components

- Non-technical descriptions of all TMCC users
- Data and information needed to operate and use TMCC
- Conditions under which they use this data and information
- Operational needs of users without defining specific technical issues

# Components (continued)

- Operational needs and proposed characteristics for proposed TMCC
- High-level user expectations and functional requirements for TMCC
- Information sharing across programs and operators

# ConOps Key Elements

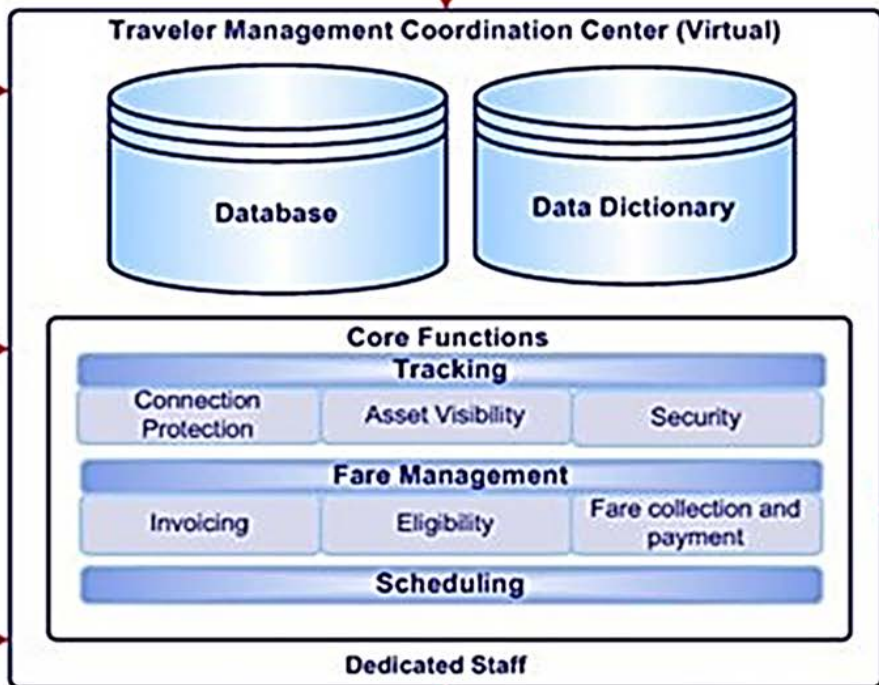
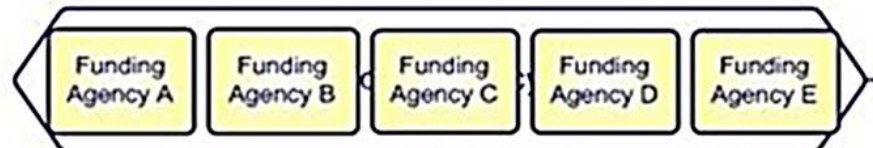
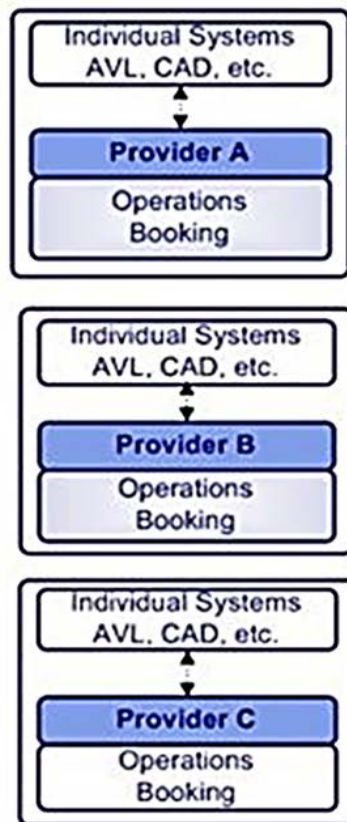
- Scope
- Use cases
- Operational needs
- System design
- Operational scenarios
- Operational and support environments

# Best Practices

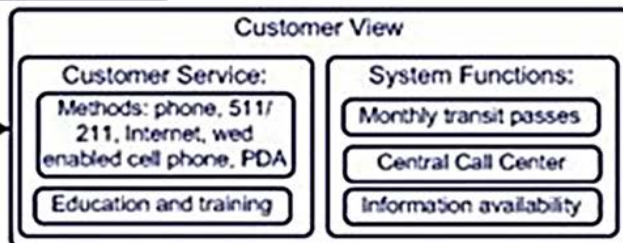
- Assess barriers and key unmet needs
- Develop a vision of desirable customer experience
- Develop TMCC Vision among stakeholders defining key organizational and technological choices
- Conduct ITS Systems Engineering project process



↔ Communications Network



**Customer**



# Resource Links

- MSAA Web Site
  - <http://www.its.dot.gov/msaa/index.htm>
- Generic TMCC Concept of Operations
  - [http://www.its.dot.gov/msaa/TMCC\\_ConOps.htm](http://www.its.dot.gov/msaa/TMCC_ConOps.htm)
- Systems Engineering Guidebook:
  - <https://www.fhwa.dot.gov/cadiv/segb/>
- ConOps Process:
  - [https://www.fhwa.dot.gov/cadiv/segb/views/document/sections/section8/8\\_4\\_5.cfm](https://www.fhwa.dot.gov/cadiv/segb/views/document/sections/section8/8_4_5.cfm)
- ConOps Template:
  - [https://www.fhwa.dot.gov/cadiv/segb/views/document/sections/section8/8\\_4\\_5.cfm](https://www.fhwa.dot.gov/cadiv/segb/views/document/sections/section8/8_4_5.cfm)

# Thank You!

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