Impacts of Technology Advancements on TMC Operations

U.S. Department of Transportation
Federal Highway Administration
January 2013
Overall Principals

- Communication
- Coordination
- Cooperation
Eight TMC Operations Top Trends

Emerging from Within the Transportation Community

- A Nimble Service-Oriented Program Mindset and Organizational Structure
- Active Transportation and Demand Management (ATDM) Concept and Toolkit
- Accommodating Toll and Other Pricing Operations in TMCs
- Performance Monitoring and Management

Trends and Technologies that TMCs Can Adapt and Take Advantage of from Outside the Transportation Community

- Automation Tools and Related Tools to Increase Efficiency
- Involvement of Third Parties in Data Collection, Data Analysis, and Provision of Traveler Information
- Mobile Communications and Wireless Networks
- Social Media for Traveler Information and Crowdsourcing
Nimble Service-Oriented Program
Mindset and Organizational Structure

Represents the framework of being positioned to successfully select and rapidly adopt changing technologies and processes.

- Foster and agency culture of embracing technology change
- Create training program
- Promote a culture of open communication
- Adopt standards on equipment and processes
- Use open-source or non-proprietary when possible
Active Transportation and Demand Management (ATDM) Concept

Using a variety of tools at one’s disposal to proactively make operations more efficient, including through staff and technology.

- Implement a suite of emerging transportation concepts, coordinating as necessary
- Active Traffic Management (lane control, variable speed limits, hard shoulder)
- Real time transit, parking, traffic info
- Ramp metering, signal timing
- Road weather integration
- Opportunities to share resources (communications networks, cameras)
Accommodating Toll and other Pricing Operations

Integrating pricing in operations encourages obtaining revenue through tolling and financing infrastructure expansion.

- Develop protocols for operations
  - Pricing
  - Incident management
- Start early in feasibility planning
Performance Monitoring and Management

Increasing data collection and analysis can lead to improved operations, enhanced customer service and documented effectiveness.

- Use results of performance monitoring related to agency goals to support funding requests
- Performance measures to support staff performance, fulfilling agency goals
- Outputs vs. Outcomes
Automation Tools and Related Tools to Increase Efficiency

New technologies that improve system management and cost-effectiveness thus resulting in greater productivity.

- Increase operator efficiency
- Develop decision support systems
- Specify automation
- Predictive analysis and forecasting anticipating congestion
- Consolidate across agencies
Involvement of Third Parties in Data and Traveler Information

Utilizing data services that third-party vendors provide to manage roadway traffic and deliver traveler information to the public.

- Develop pre-qualifications or standards regarding data accuracy and validation (data received and sent)
- Provide real-time data to third party app developers
- Share data among agencies
Advances in wireless technology provide options when it comes to modernizing field equipment and increasing data coverage.

- Coordinate with IT staff to develop firewalls and other security protocols that are effective without limiting functionality.
- Efficiently expand field device coverage and operations cost using wireless.
- Allow appropriate remote access with partner agencies.
Using social networking tools to receive and distribute information among agencies, travelers, and third parties.

- Develop procedures and protocols for use of social media.
- Foster relationships among public relations groups.
- Partner with private sector to facilitate social media outlets and realize cost efficiencies.
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