Leveraging and Coordinating Information Technology (IT) Resources for Transportation System Management and Operations (TSMO)

October 6, 2020

Office of Operations
Federal Highway Administration
1200 New Jersey Avenue SE
Washington, DC 20590

U.S. Department of Transportation
Federal Highway Administration
Agenda

Purpose of the webinar.
- Project goals and objectives.

First Panelist Presentation – Michigan DOT.

Project summary.
- Products and deliverables.
- Schedule.
- Outreach and stakeholder involvement.

Panelist Presentations.
- Virginia DOT.
- Florida DOT.
- New Hampshire DOT.
- Caltrans.

Reference Document.

Q&A and Discussion.
Project Goals and Objectives

Goals

• Improve coordination between IT and TSMO activities.
• Bridge gaps between IT and ITS/TSMO.

Objectives

• Provide helpful information and effective practices.
• Develop tools to support State and local agencies.
• Provide technical outreach to increase awareness of issues and knowledge of resources.
Panelist Remarks

Collin Castle, Michigan DOT
Products/Deliverables

- Literature review / synthesis of practice.
- Listening session and summary (2).
- Interview notes.
- Reference document.
- Presentations and webinars.
- Technical assistance meetings/webinars.
- Flyers on noteworthy practices (5).
Why a Project on Leveraging and Coordinating Technology Resources?

Growing intersection between TSMO and IT

- Expanded use of technology in transportation.
- Expanded use of real-time computing.
- Expanded cybersecurity threats.

Common experiences across agencies

- Challenges.
  - Disconnects and misunderstandings.
  - Conflicts in priorities and risks.
- Opportunities.
  - Increased collaboration.
  - Leverage skill sets.
  - Advantages in procurement.

These challenges are not unique to transportation!
Concerns Outside Transportation

Challenges or issues between Operations and IT

- Governance.
- Oversight versus carrying out operational objective.

Statements from industry:

- Operations and IT: “could not be more diametrically opposed.”
- Operations frustration: IT has “little experience with industrial systems.”

These challenges and frustrations have led industry to convergence between IT and Operations.

- How to better coordinate/integrate IT and Operations.
Why is coordination between IT and Operations important?
– What are the pitfalls of poor coordination?
– Increasing need for coordination.

Understanding the other discipline.

How can IT-related operations challenges be overcome?
– Effective practices.

How to prepare for future challenges?
Common Understanding of IT and TSMO

Areas where common understanding is critical.

- Governing Principles.
- Domain Components.
- Risk Management & Security.
- Industry Standards.
- Asset Management.
- Future Technologies.
Challenge Categories

- Cultural.
- Staff/Financial Resources.
- Organizational.
- Policy.
- Strategic Planning.
- Procurement.
- Systems and Technology.
- Risk/Security.
Effective Practice Categories

- Collaboration.
- Staffing.
- Planning/Programming.
- Program Delivery.
- Equipment/Systems.
Panelist Remarks

Murali Rao, Virginia DOT  
Raj Ponnaluri, Florida DOT  
Susan Klasen, New Hampshire DOT  
Nick Compin, Caltrans
CHALLENGE – EFFECTIVE PRACTICE MATRIX
# Cultural Challenges General Approaches

**Cultural**
General Approaches/Practices beneficial to Cultural challenges:
*Conduct regular meetings between IT and TSMO staff, Clarify roles and responsibilities, and Establish staffing needs.*

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Clarify roles and responsibilities
In large agencies, it is important for the roles and responsibilities of each group and/or unit to be clearly defined to avoid confusion. This is particularly important as it relates to shared facilities and/or functions as can be the case between TSMO and IT.
## Cultural Challenges – Culture 1

**Cultural**

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There may be a lack of mutual understanding between TSMO and IT staff.

TSMO units and IT units, like many areas within a transportation agency, are separate not only in function but also in location. The physical and functional separation can limit interaction and ultimately limit the understanding and familiarity of the other unit. Staff shortages in some agencies can further distance the groups by reducing the available time to meet and coordinate. While several of these contributing factors are addressed individually in other challenge areas, the resulting lack of mutual understanding is a common challenge that inhibits progress.
### Cultural Challenges – Culture 1

**Effective Practice**

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6.1.1 Integrate IT staff within TSMO
Agency staff is typically assigned to separate and distinct departments that focus on their own missions and business processes. Creating opportunities for IT staff to work within the TSMO structure on current activities can enhance collaboration and improve their understanding of the TSMO mission as well as the end-user experience of data and software platforms.
Questions?
Achieving Better Coordination Between Operations and IT – Part 1

• Recording at:
  – Or go to transportationops.org and search for “Achieving Better Coordination.”
    • Click on “Webinar Series, Part 1” next to “Presentation.”
    • On the page that comes up, click on “Downloads.”
    • The recording and the presentations are available
Thank You!

• Contact
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    jim.hunt@dot.gov
    (202) 680-2679