

# Transportation Systems Management & Operations (TSMO)

Program Planning &  
Organizational Development

<https://www.fhwa.dot.gov/resourcecenter/teams/operations/index.cfm>

# First Generation TSMO

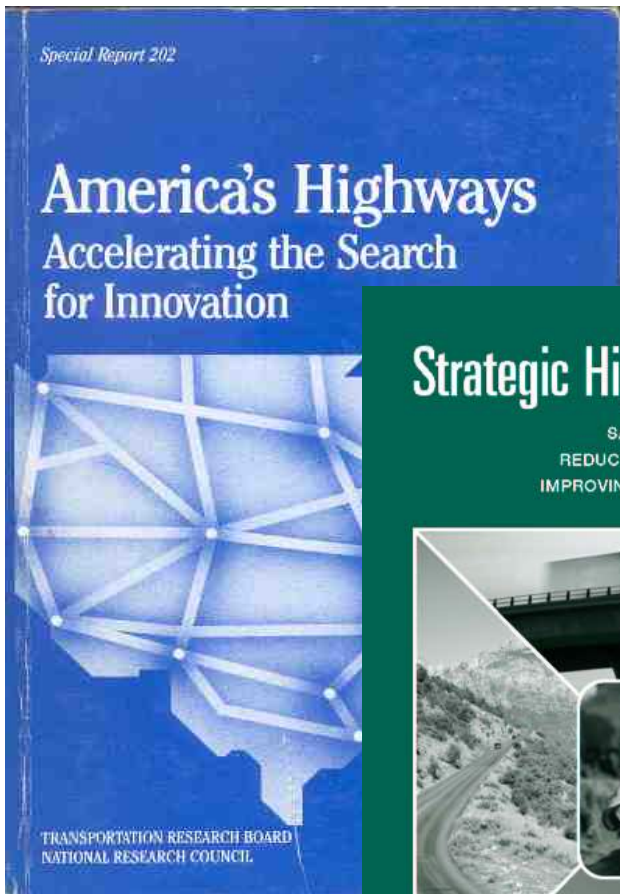


# Transportation System Management

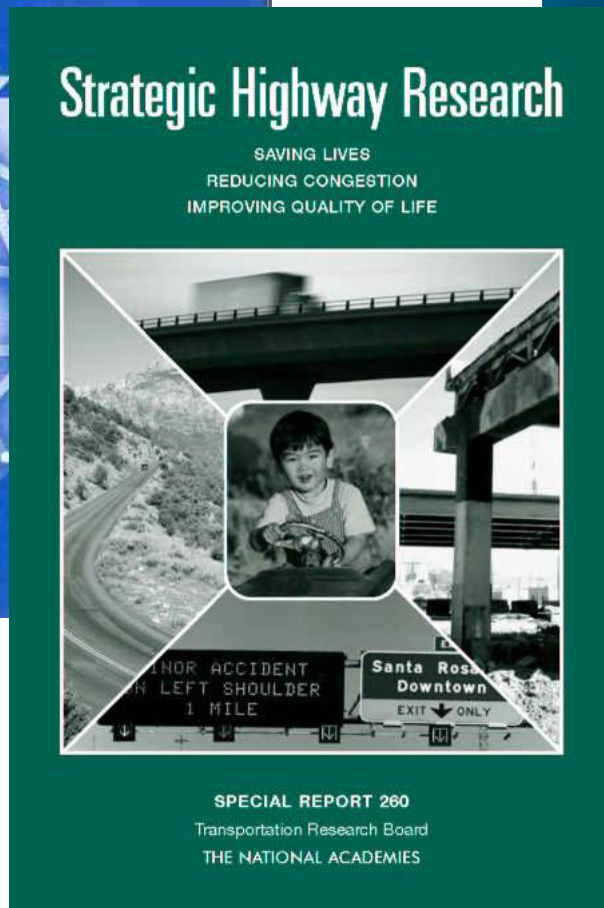
(Caltrans – Wolf)



# Genesis of Strategic Highway Research



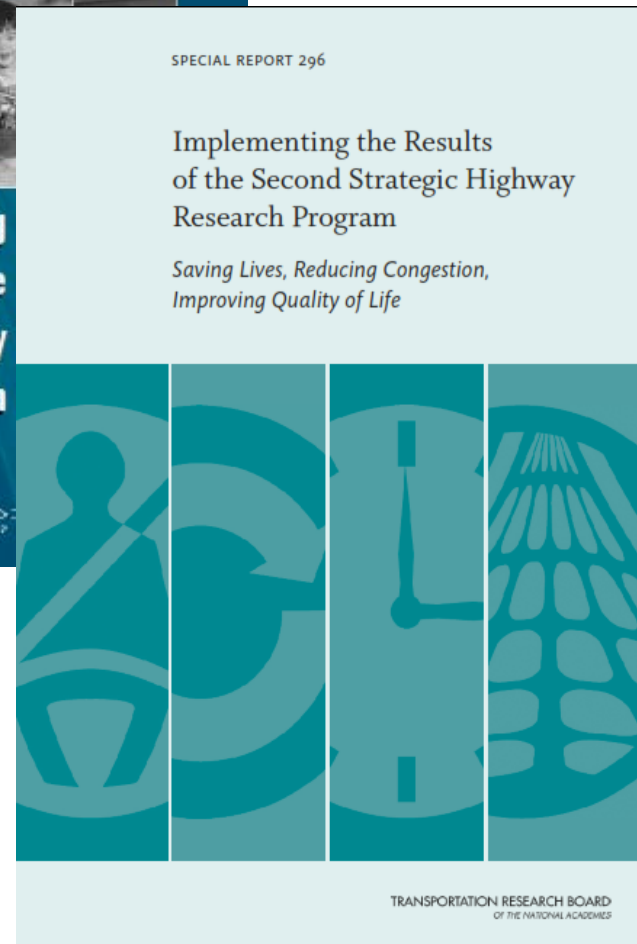
1984



2001



2003



2012

# SHRP2 Focus Areas



**Safety:** fostering safer driving through analysis of driver, roadway, and vehicle factors in crashes, near crashes, and ordinary driving



**Renewal:** rapid maintenance and repair of deteriorating infrastructure using already-available resources, innovations, and technologies



**Reliability:** reducing congestion and creating more predictable travel times through better operations



**Capacity:** planning and designing a highway system that offers minimum disruption and meets the environmental and economic needs of the community

*“To provide reliable travel times by preventing and reducing non-recurring congestion”*



***reduce the variability of travel time through  
reducing the underlying causes***



**Advanced Operations  
Strategies**



**TSM&O Organizational  
Capabilities**

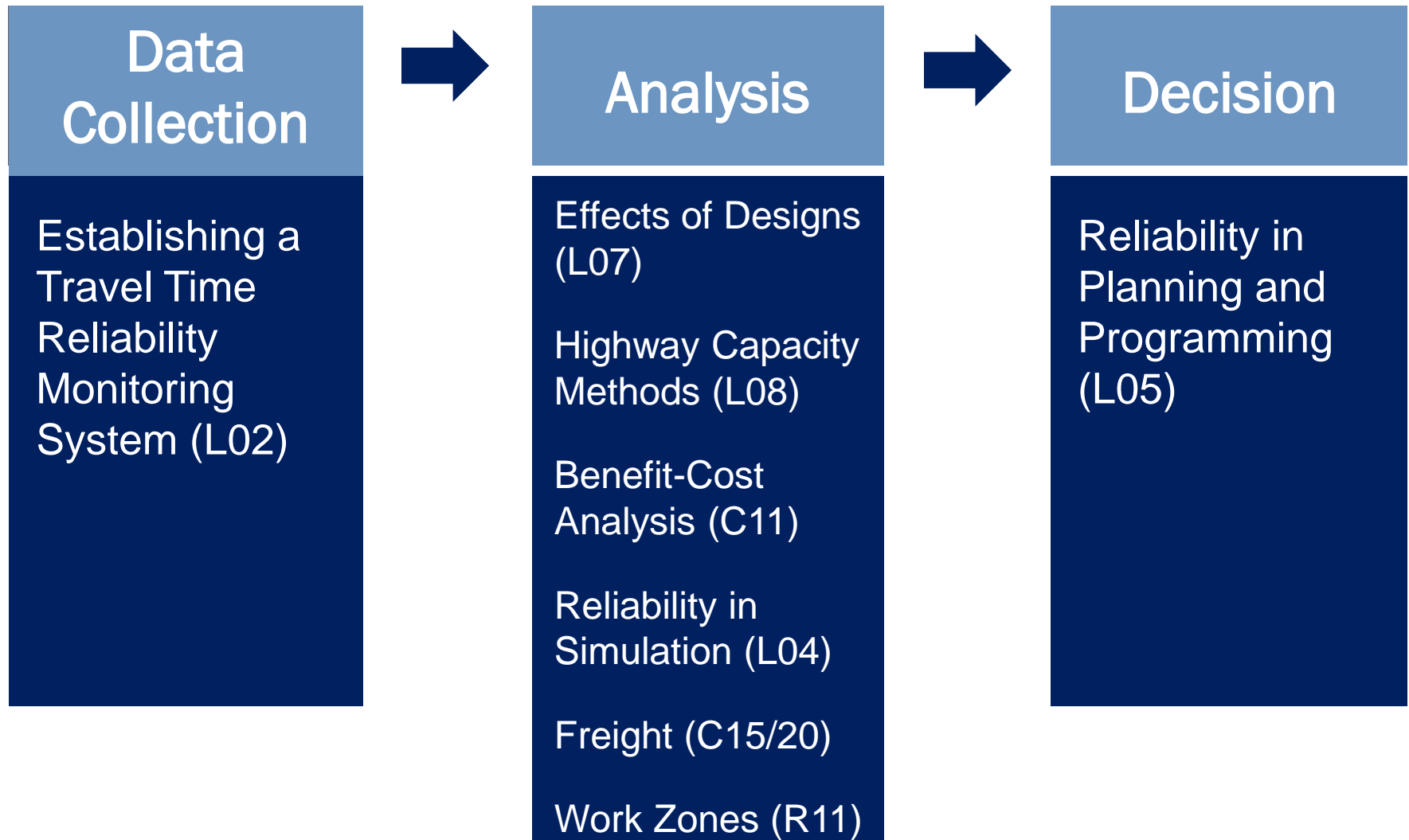


**Reliability Analysis Tools  
(TSM&O Decision Support)**



**National TSM&O  
Community**

# Reliability Data & Analysis Tools (RDAT): From Data to Decisions

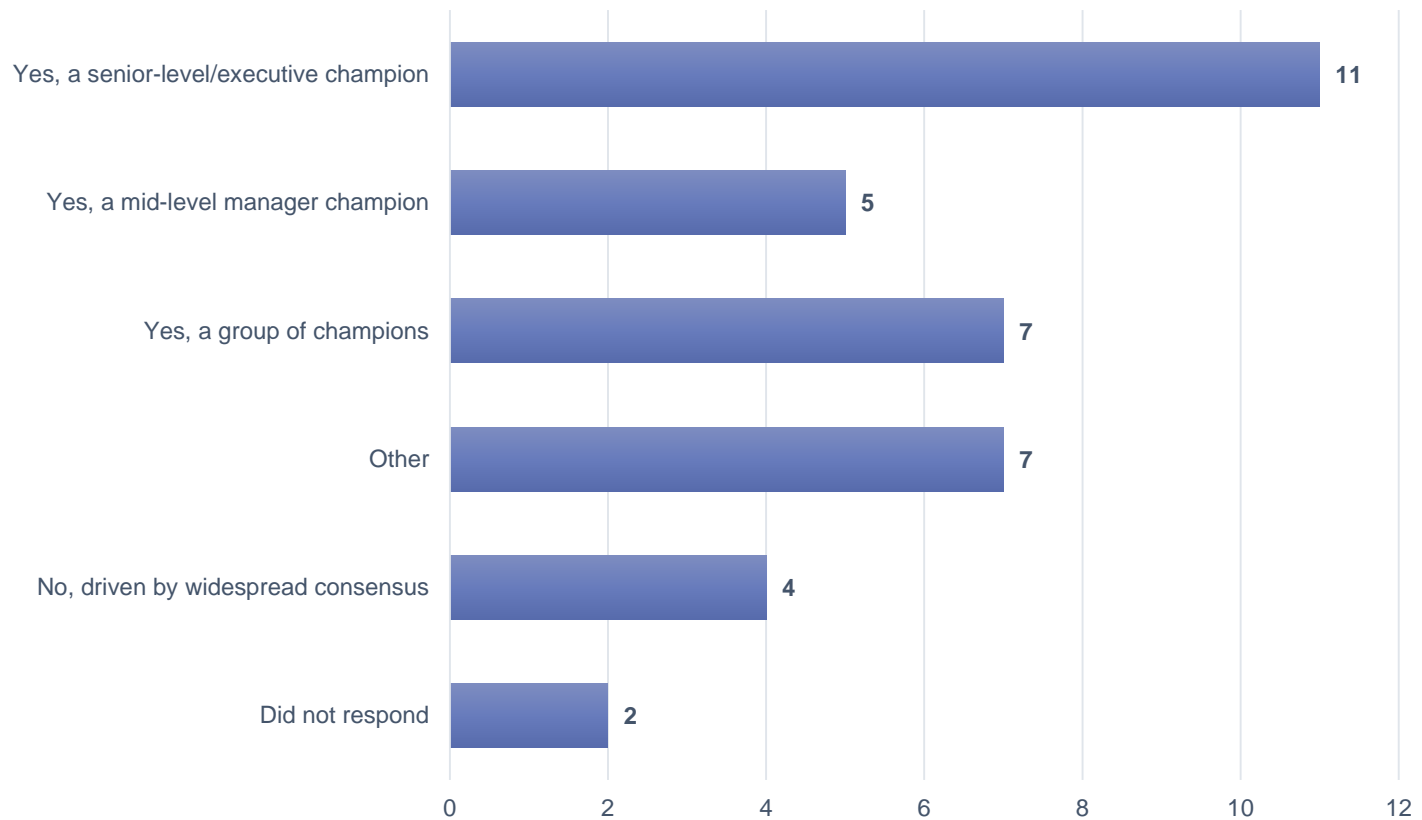




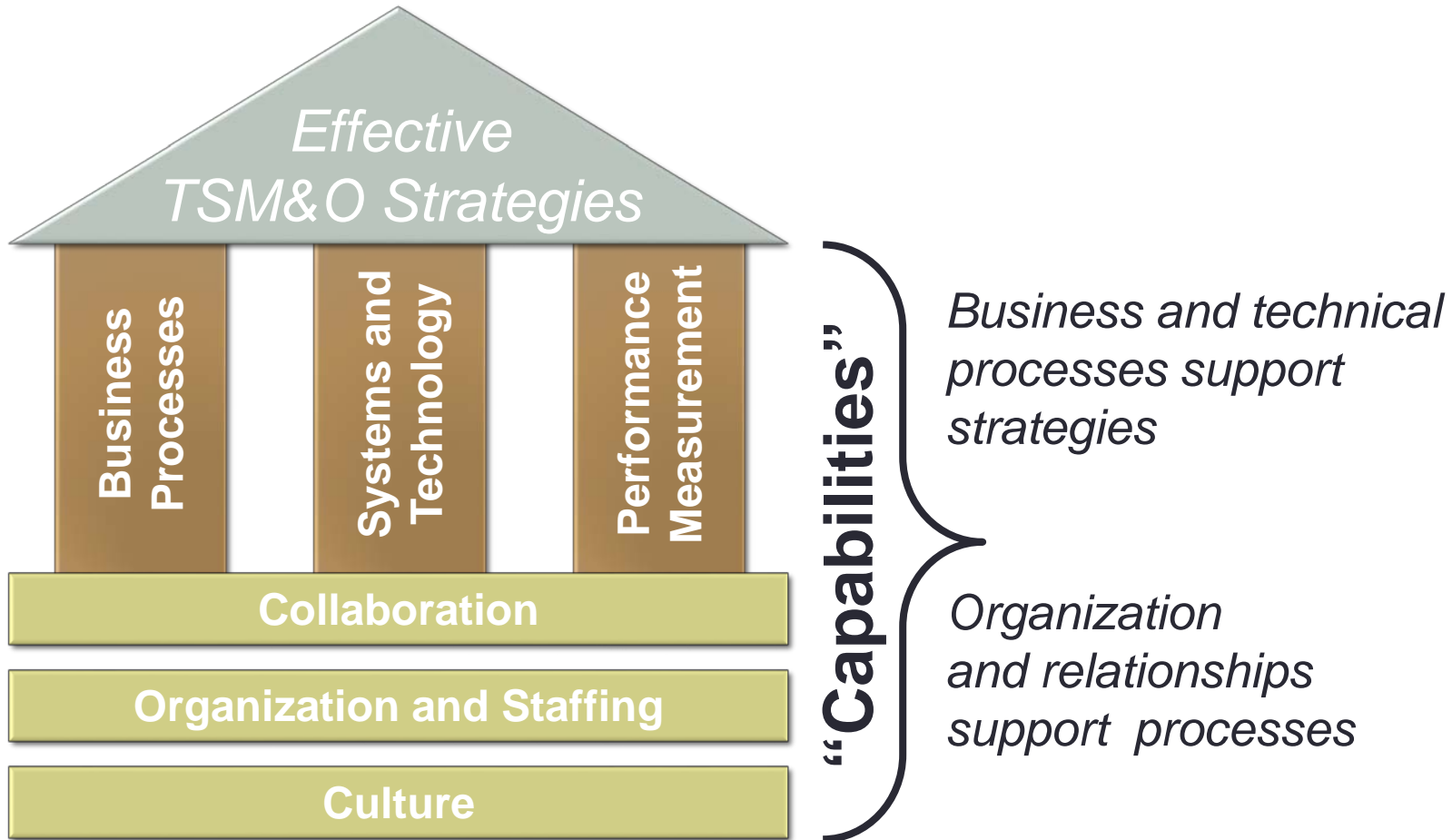
# Champions vs Culture

*NCHRP 20-7/365 "TSMO Program Planning Experiences"*

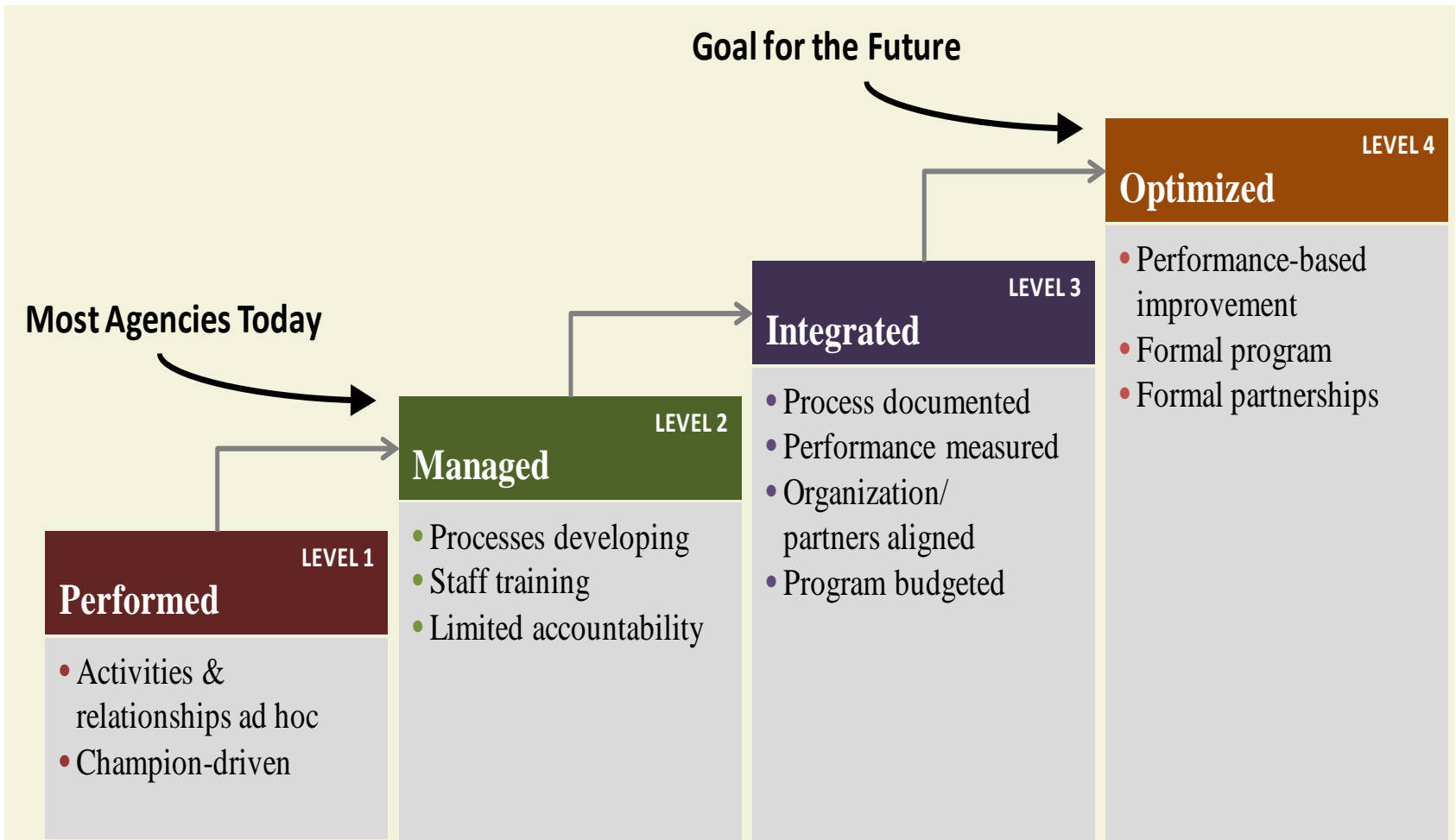
In your opinion, has the progress of TSMO activities in your agency been **largely** due to an internal champion?



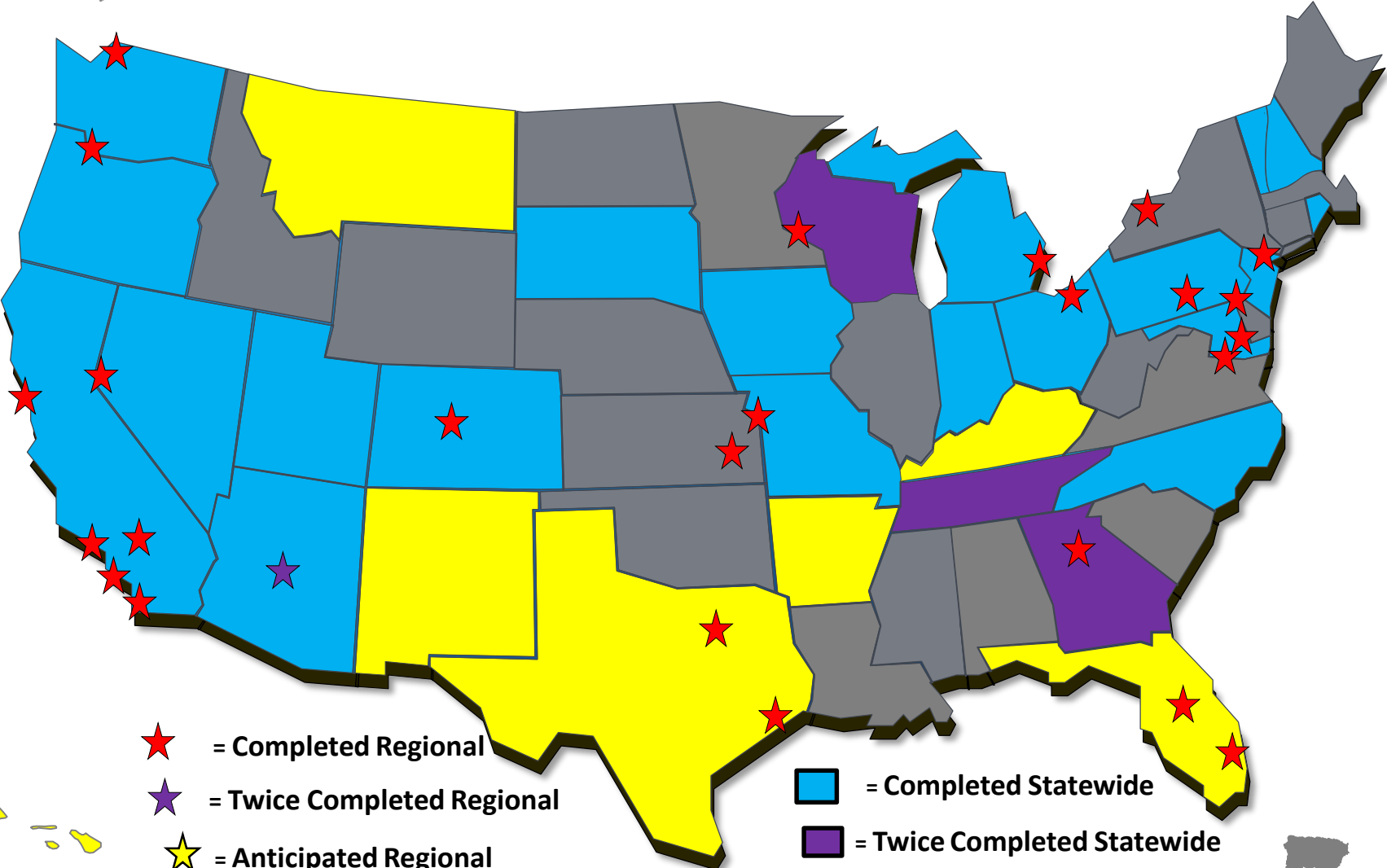
# The “Dimensions” of Capability



# Levels of Agency Capability Maturity



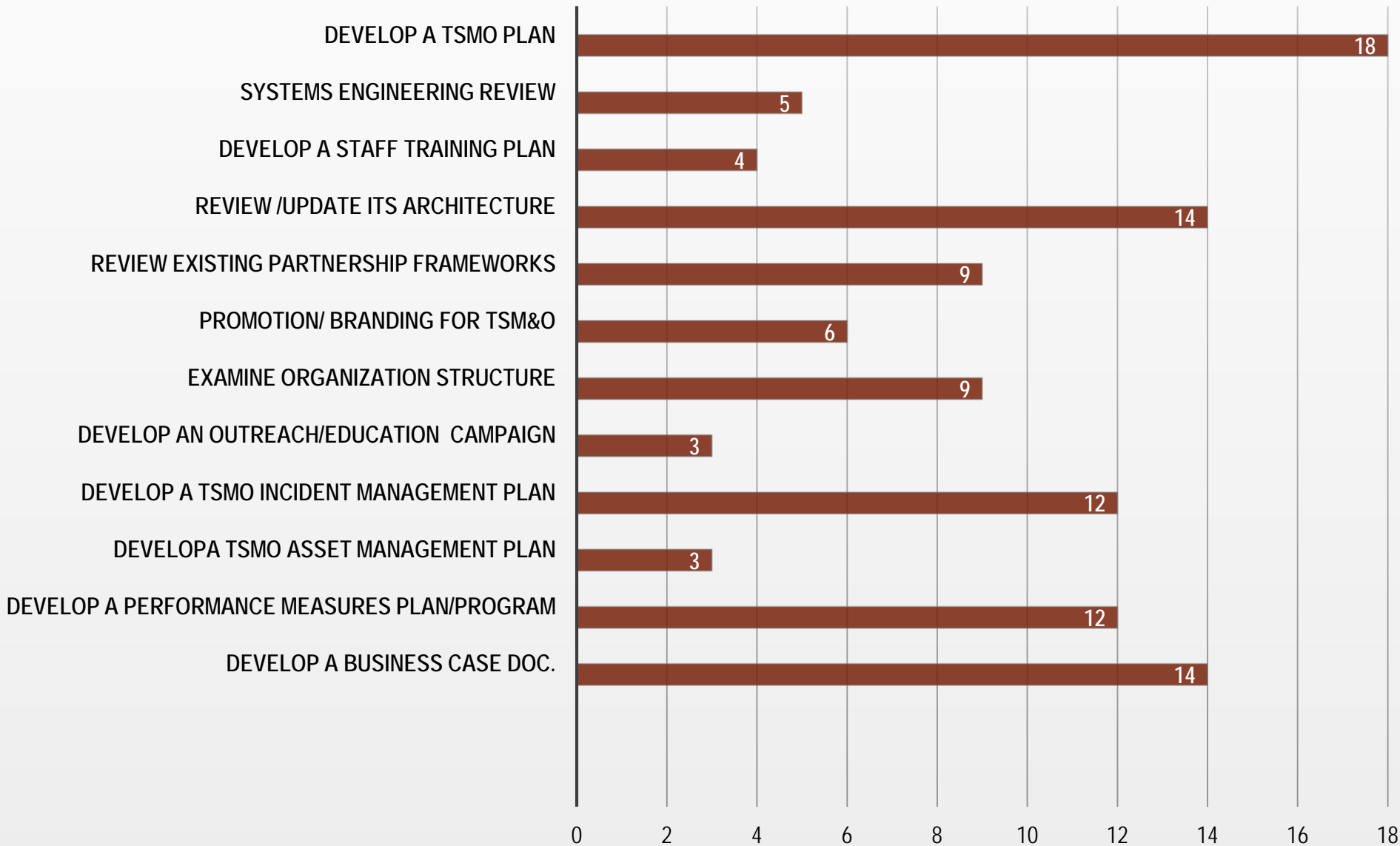
# CMM Workshop Sites



- ★ = Completed Regional
- ★ = Twice Completed Regional
- ★ = Anticipated Regional

- = Completed Statewide
- = Twice Completed Statewide
- = Anticipated Statewide

# CMM Implementation Actions



# Context of TSMO Program Planning

- Strategic Highway Safety Plans
- Congestion Management Plans
- ITS Deployment Plans
- Regional & Statewide ITS Architectures
- Regional Concepts of Transportation Ops
- Strategic TIM Programs
- SHRP CMM Method
- ...



# Impetus for TSMO Program Planning

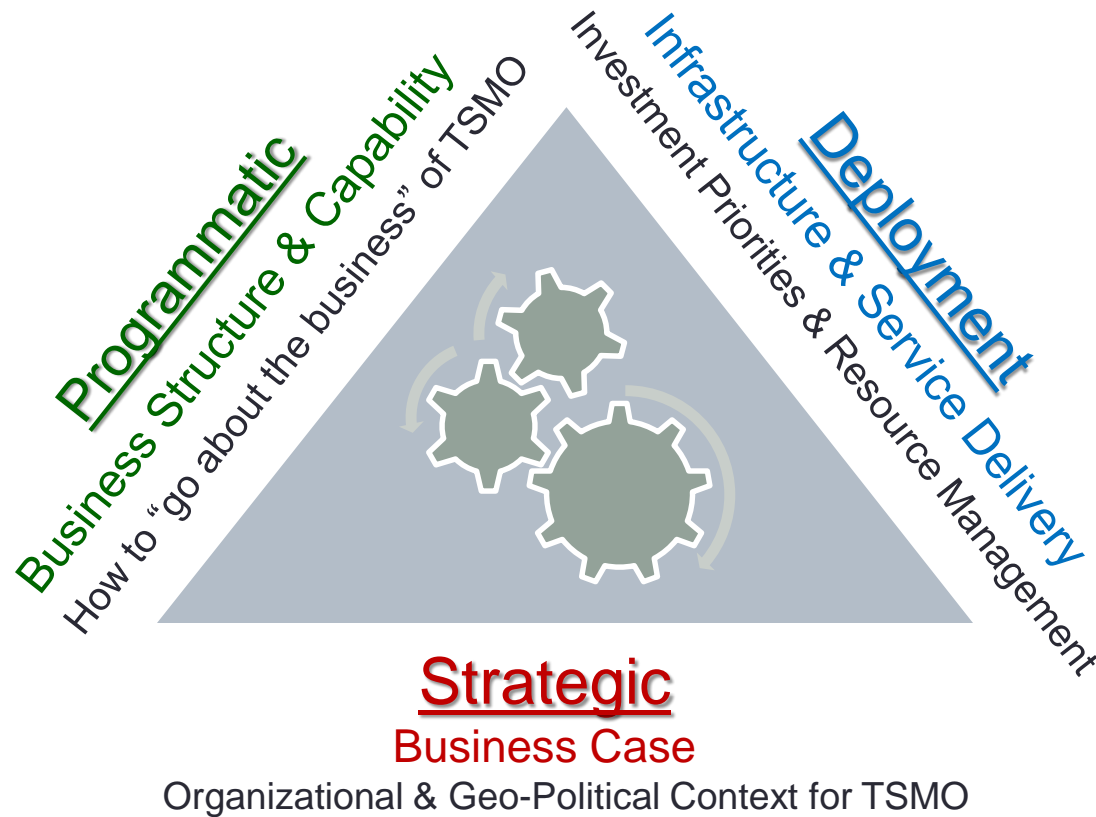
1. Recognizing Organizational **Culture** as the Challenge & **Transcending Champions**
2. “Systematizing” TSMO **Organizational Development**  
(...beyond CMM)
3. Penetrating the **System Planning** Process(es) & Institutionalizing **Systems Engineering** Principles
4. Accommodating Dynamic Public-Private **Business Models**

# Purposes of TSMO Program Planning

- A. Define (or clarify) program mission, vision, goals, objectives, and performance measures
- B. Describe, contextualize, & interconnect program components and subcomponents
- C. Establish (or clarify) organizational roles, responsibilities, & strategic relationships (internal/external)
- D. Recommend & prioritize actions to improve program components & commit resources
- E. Inform and influence internal stakeholders, partners, policy-makers, & customers
- F. Facilitate change management in refining the DOT's roles & responsibilities



# TSMO Program Planning Core Elements



# Considerations

- A. Business Process Analysis Methodology (SHRP L01)
- B. TSMO Decision Support Systems & Reliability Data Analysis
- C. Regional Operations Forums, Workforce Development Initiatives, & State DOT TSMO Training Programs
- D. Connected & Automated Vehicle Planning
- E. End of SHRP Implementation

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