

SYMPOSIUM • MULTITEAM SYSTEMS UNDER DISRUPTION

LAYING THE GROUNDWORK:

PROACTIVE & REACTIVE INTERVENTIONS IN CONSTRUCTION MULTITEAM SYSTEMS

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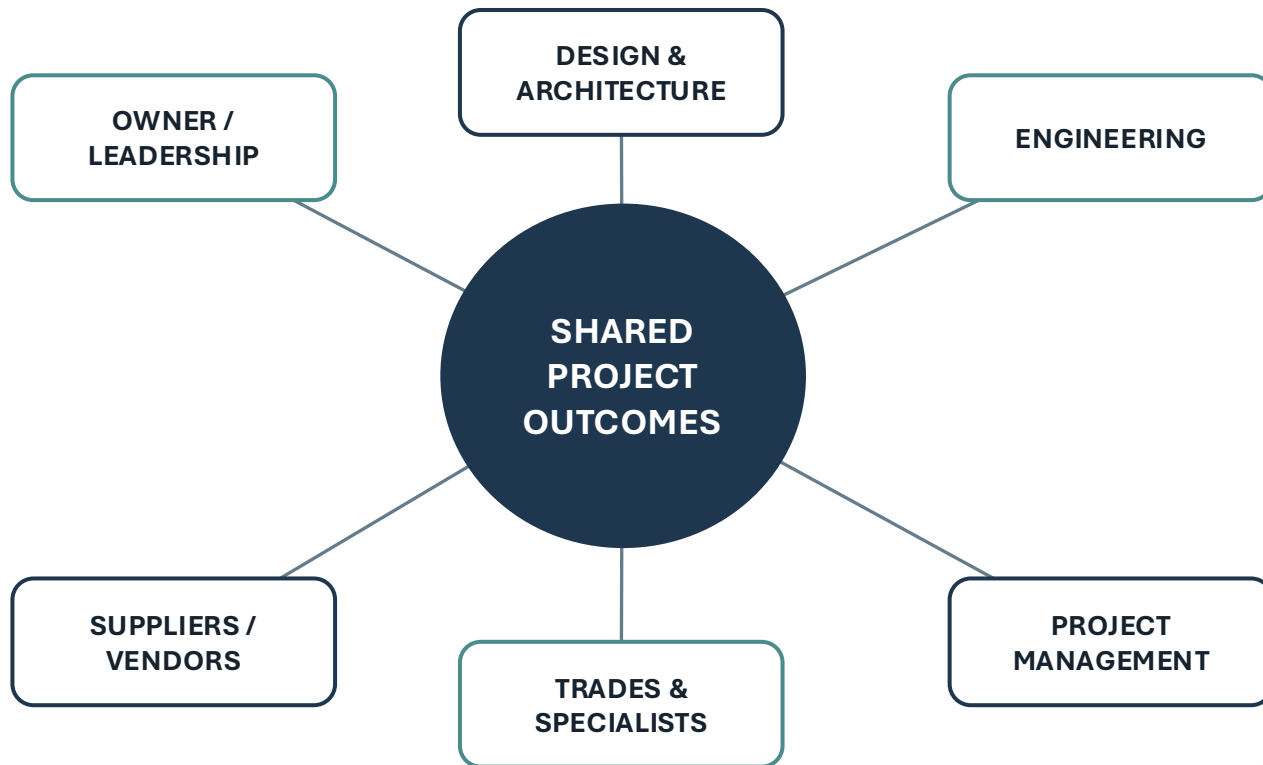
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WHY CONSTRUCTION MULTITEAM SYSTEMS?

Large projects coordinate specialized teams around shared outcomes under high stakes.

CONSTRUCTION MTS ECOSYSTEM



KEY DEFINING CONDITIONS

- 1 SPECIALIZED TEAMS**
DISTINCT EXPERTISE IS DISTRIBUTED ACROSS
ACROSS COMPONENT TEAMS AND
ORGANIZATIONS.
- 2 INTERDEPENDENT WORK**
TEAM OUTPUTS, HANDOFFS, AND DECISIONS
DECISIONS SHAPE THE WORK OF OTHER TEAMS.
TEAMS.
- 3 SHARED DISTAL OUTCOMES**
SAFETY, QUALITY, SCHEDULE, AND BUDGET ARE
ACHIEVED AT THE SYSTEM LEVEL.

The project is not simply a large team. It is a network of interdependent component teams pursuing both proximal and shared system goals.

MOTIVATION: DISRUPTION MAKES COORDINATION FRAGILE

Expected and unexpected trigger events can alter task demands, relational states, and coordination patterns.

SUPPLY CHAIN DELAYS

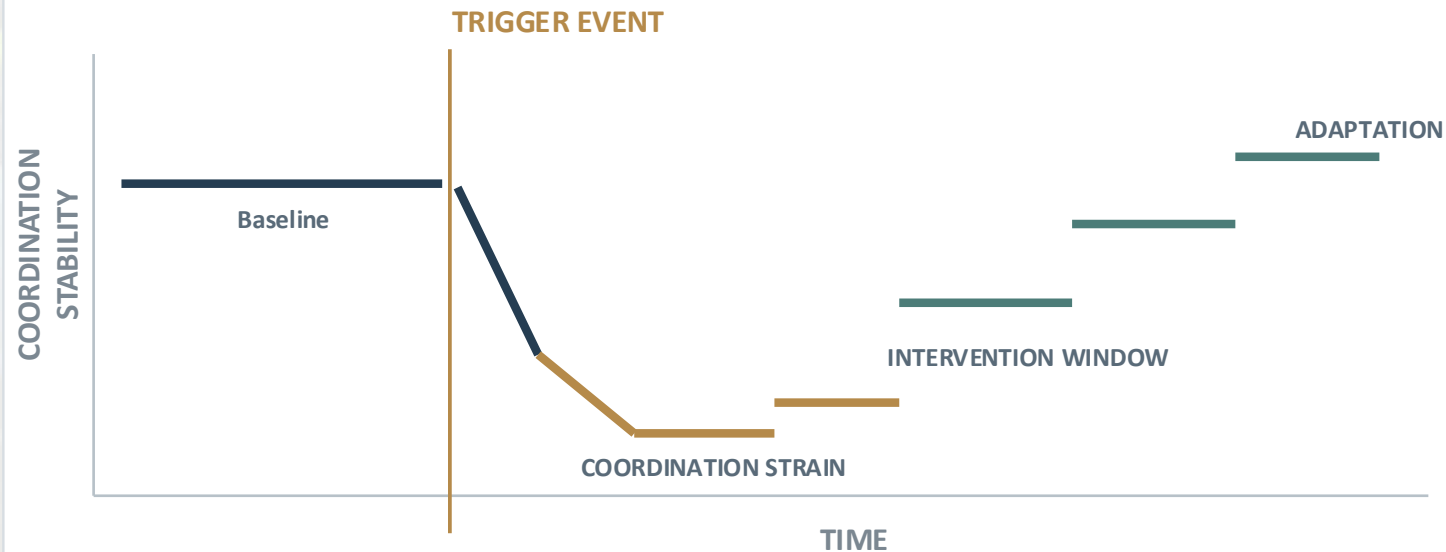
WEATHER EVENTS

CONTRACTING ISSUES

SCHEDULE SETBACKS

TECHNOLOGY SHIFTS

CONCEPTUAL COORDINATION STABILITY OVER A DISRUPTION CYCLE



WHEN COORDINATION IS NOT REPAIRED

DELAYED DECISIONS

CONFLICTING PRIORITIES

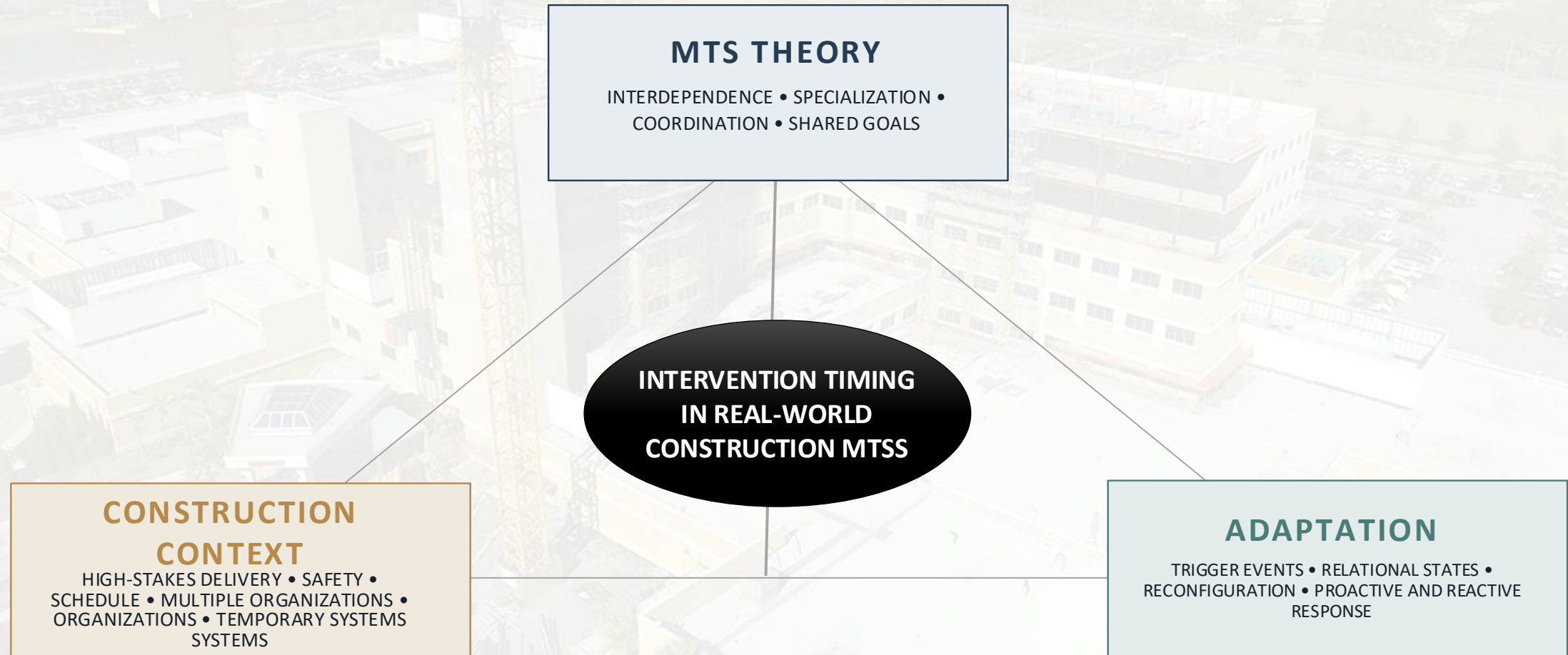
REWORK & SCHEDULE LOSS

SAFETY & LABOR EXPOSURE

Driving Question: How do construction MTs prepare for, absorb, and learn from disruptive trigger events?

WHERE THIS STUDY ENTERS THE LITERATURE

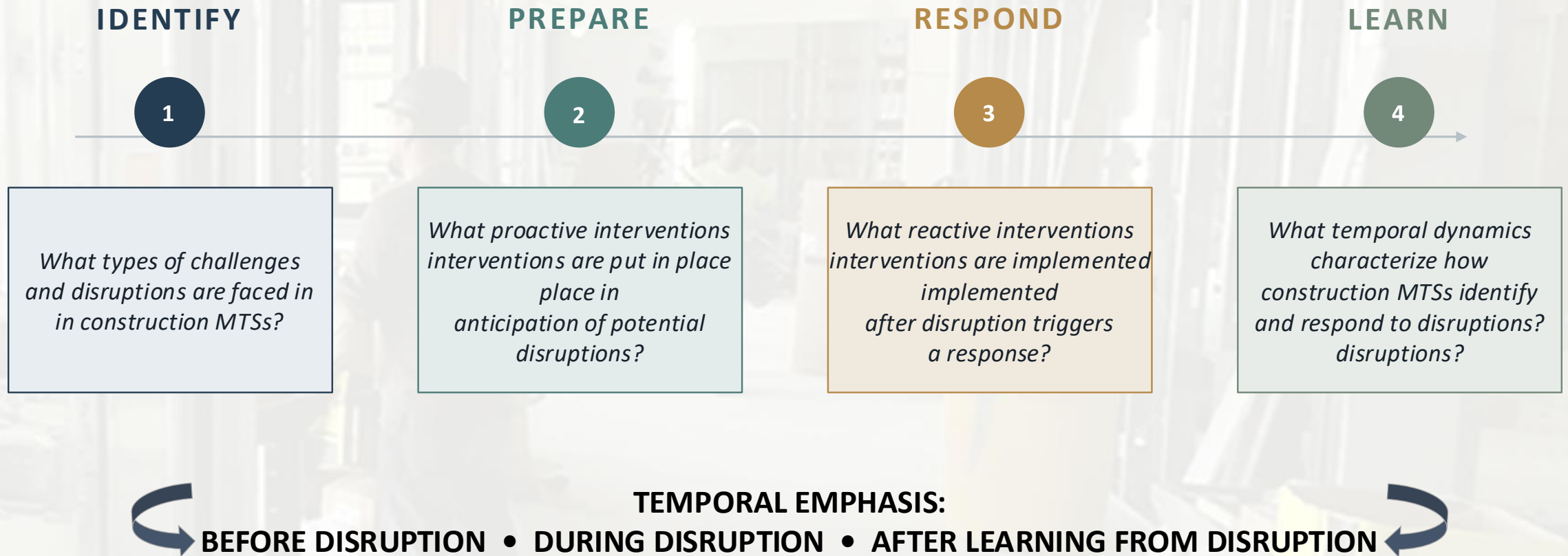
The study bridges MTS theory, construction research, and team/system adaptation.



FIELD GAP | Limited evidence exists to explain how MTSSs use proactive & reactive interventions for coordination when disruption changes task demands.

RESEARCH QUESTIONS

The study moves from diagnosis to preparation, response, and learning over time.



STUDY DESIGN: MIXED METHODS ACROSS TWO PHASES

Exploratory fieldwork informed a targeted survey and follow-up qualitative analysis.

PHASE 1 • EXPLORATORY DISCOVERY

PHASE 2 • TARGETED SURVEY + QUALITATIVE DETAIL



SAMPLE: CONSTRUCTION AND FACILITIES PROFESSIONALS

Perspectives span leadership, project management, facilities, design, and technical roles.

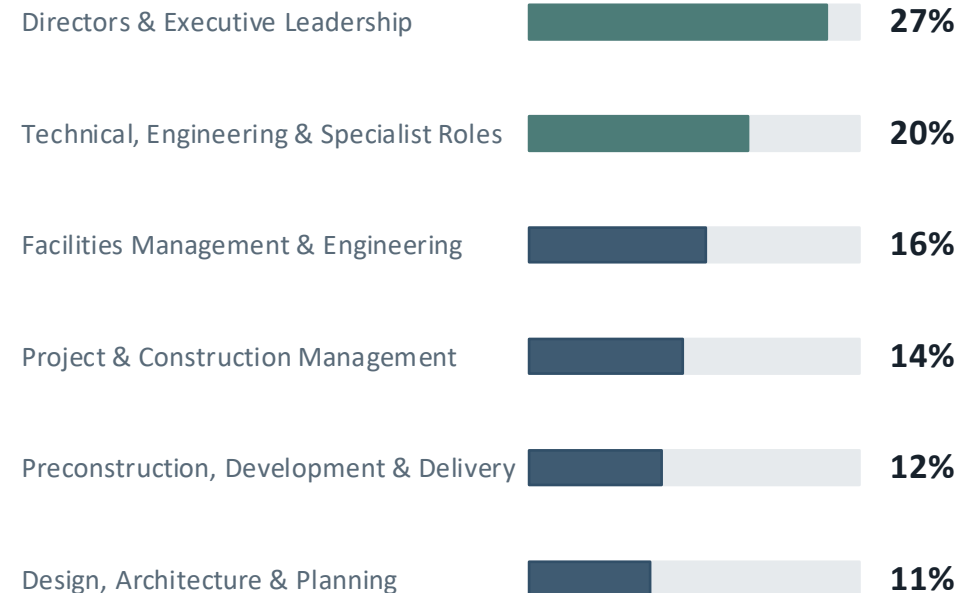
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SURVEY
RESPONDENTS

LOCAL • STATE •
FEDERAL
PRIVATE • NONPROFIT

FIELD-RELEVANT,
PURPOSIVE SAMPLE

RESPONDENT ROLE BREAKDOWN



Interpretation: exploratory and theory-building rather than population estimates.

RECRUITMENT CHANNELS

INDUSTRY ASSOCIATIONS

DBIA

ASHE

COAA

SAME

PMI

ESTABLISHED PARTNERSHIPS

Federal Agencies
Private-sector Stakeholders
Professional Networks

FINDING 1: DISRUPTIONS ALTER COORDINATION DEMANDS

Construction MTSSs repeatedly update in response to expected transitions and unexpected shocks.

EXPECTED / PLANNED



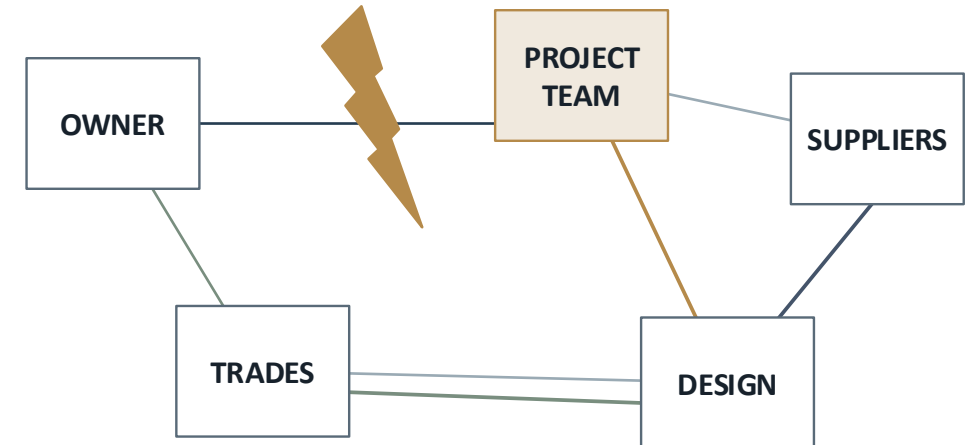
Known stage gates and planned shifts in expertise allow deliberate changes in interdependence.

TEAM ROTATION

STAGE TRANSITIONS

ROLE HANDOFFS

UNEXPECTED / EMERGENT



Weather, supply issues, contracting problems, scheduling setbacks, and technology shifts demand rapid rewiring.

TRIGGER EVENTS MAY SHIFT

INTERDEPENDENCE

TRUST

COMMUNICATION

EXPERTISE NEEDED

COORDINATION TIES

FINDING 2: PROACTIVE INTERVENTIONS BUILD COORDINATION READINESS

Proactive interventions prepare the MTS context for future coordination demands.

PROACTIVE FOUNDATION

MISSION ALIGNMENT + OWNER ENGAGEMENT

SHARED
LEADERSHIP
STRUCTURES

STRATEGIC
PROJECT
MEETINGS

TECHNOLOGY-
Y-ENABLED
SHARED
KNOWLEDGE

PREPARED COORDINATION CONTEXT

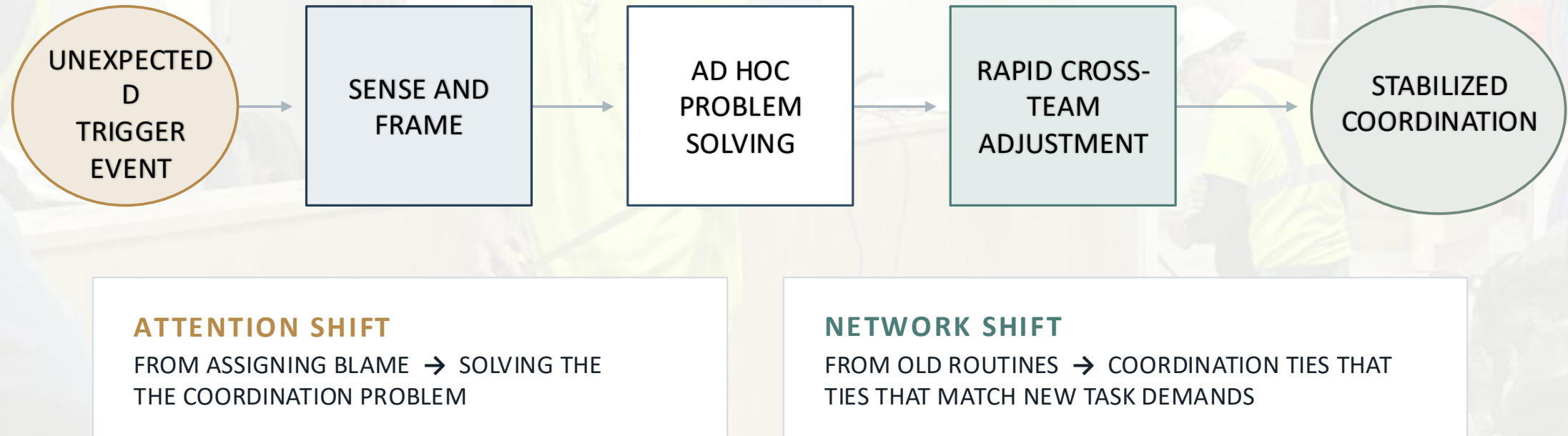
READINESS INDICATORS

- Shared Priorities
- Clear Roles
- Reusable Knowledge
- Early Warning

Proactive work does not eliminate disruption. It increases the system's capacity to detect, interpret, interpret, and coordinate around it.

FINDING 3: REACTIVE INTERVENTIONS STABILIZE THE SYSTEM

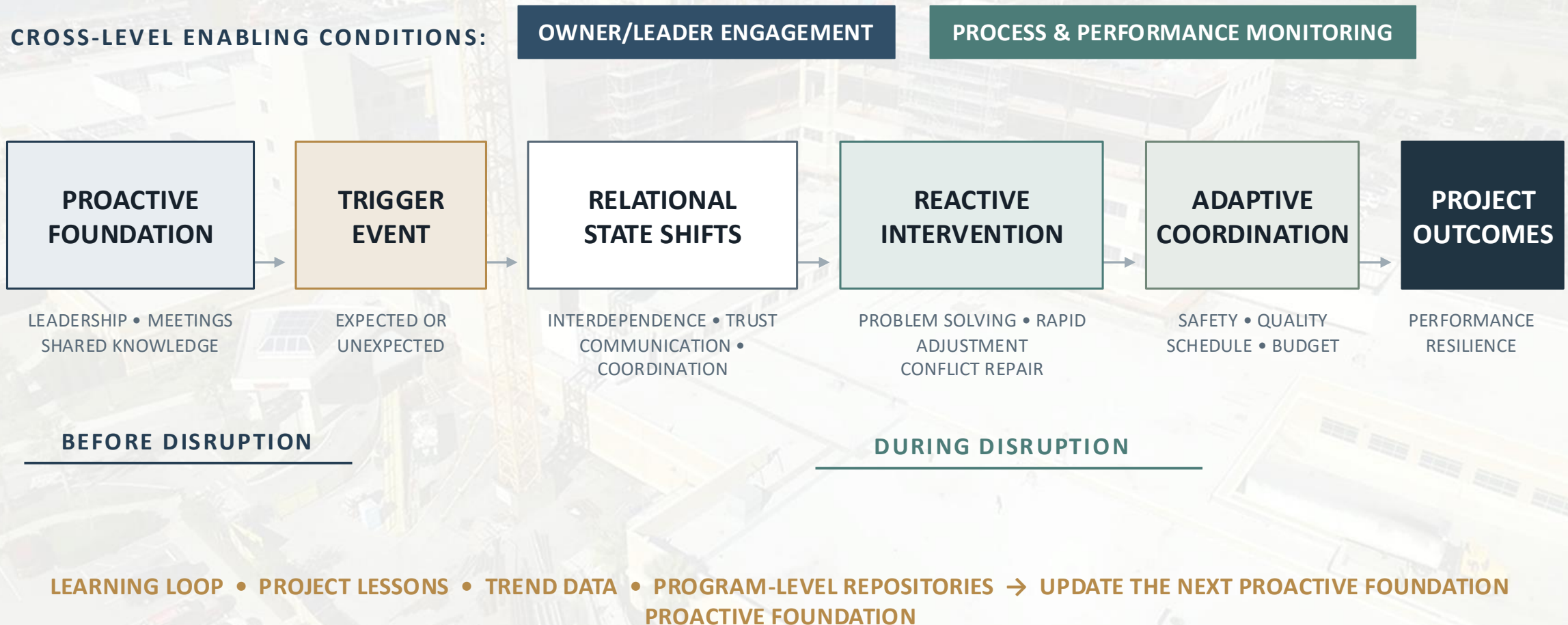
Reactive interventions target ongoing MTS dynamics when unexpected challenges arise.



REACTIVE WORK IS NOT IMPROVISED FROM NOTHING; IT DRAWS ON THE PROACTIVE FOUNDATION ALREADY IN PLACE.

EMERGENT FRAMEWORK: INTERVENTION TIMING IN MTS ADAPTATION

A field-grounded framework to organize how proactive and reactive interventions jointly sustain MTS coordination.



FIELD STUDY FINDINGS COMPLEMENT THE INTERVENTION FRAMEWORK

Owner-side practices clarify how readiness, targeted action, and learning are enacted.

MISSION ALIGNMENT

Create a clear mission, communicate repeatedly, and test alignment.

PROACTIVE READINESS

OWNER/LEADER ENGAGEMENT

Show up, stay engaged, clarify roles, and address address conflict early.

CROSS-LEVEL COORDINATION

SYSTEM-LEVEL COLLABORATION & COORDINATION

PROCESS & PERFORMANCE MONITORING

Use data trends to detect issues and decide when to monitor versus act.

TARGETED REACTIVE ACTION

PROGRAM LEARNING

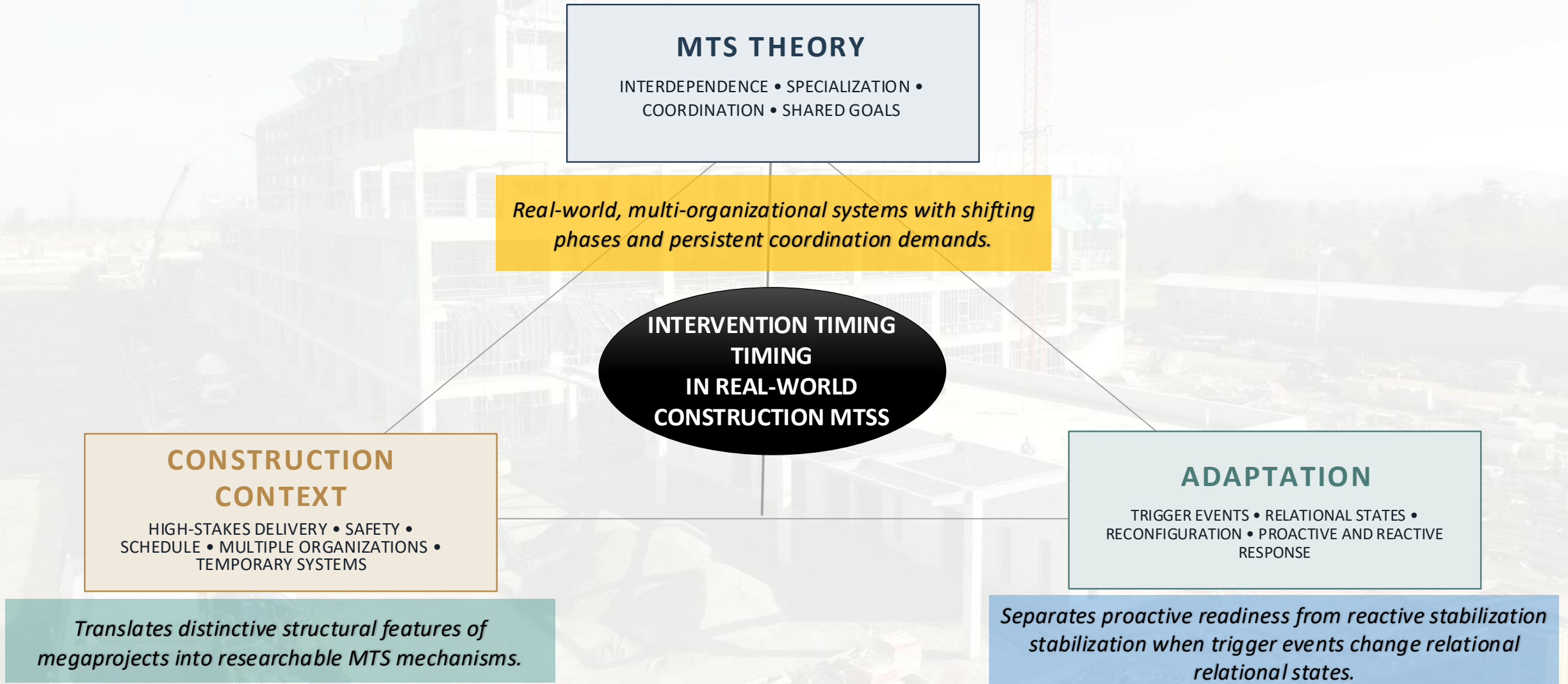
Capture what worked and transfer lessons across current and future projects.

LEARNING LOOP

TOGETHER, THE FOUR MECHANISMS CLARIFY HOW THE INTERVENTION MODEL IS ENACTED ACROSS THE PROJECT LIFECYCLE.

THEORETICAL CONTRIBUTIONS

The study locates intervention work in real-world, high-stakes, temporally dynamic settings.



PRACTICAL IMPLICATIONS: MANAGE COLLABORATION ACROSS THE DISRUPTION CYCLE

DISRUPTION CYCLE

Actionable implications differ before, during, and after disruption.

BEFORE DISRUPTION

- *Deliberate shared leadership*
- *Mission clarity + repeated testing*
- *Strategic project meetings*
- *Shared knowledge infrastructure*

DURING DISRUPTION

- *Rapid cross-team adjustment*
- *Ad hoc problem solving*
- *Conflict repair*
- *Monitor collaboration signals*

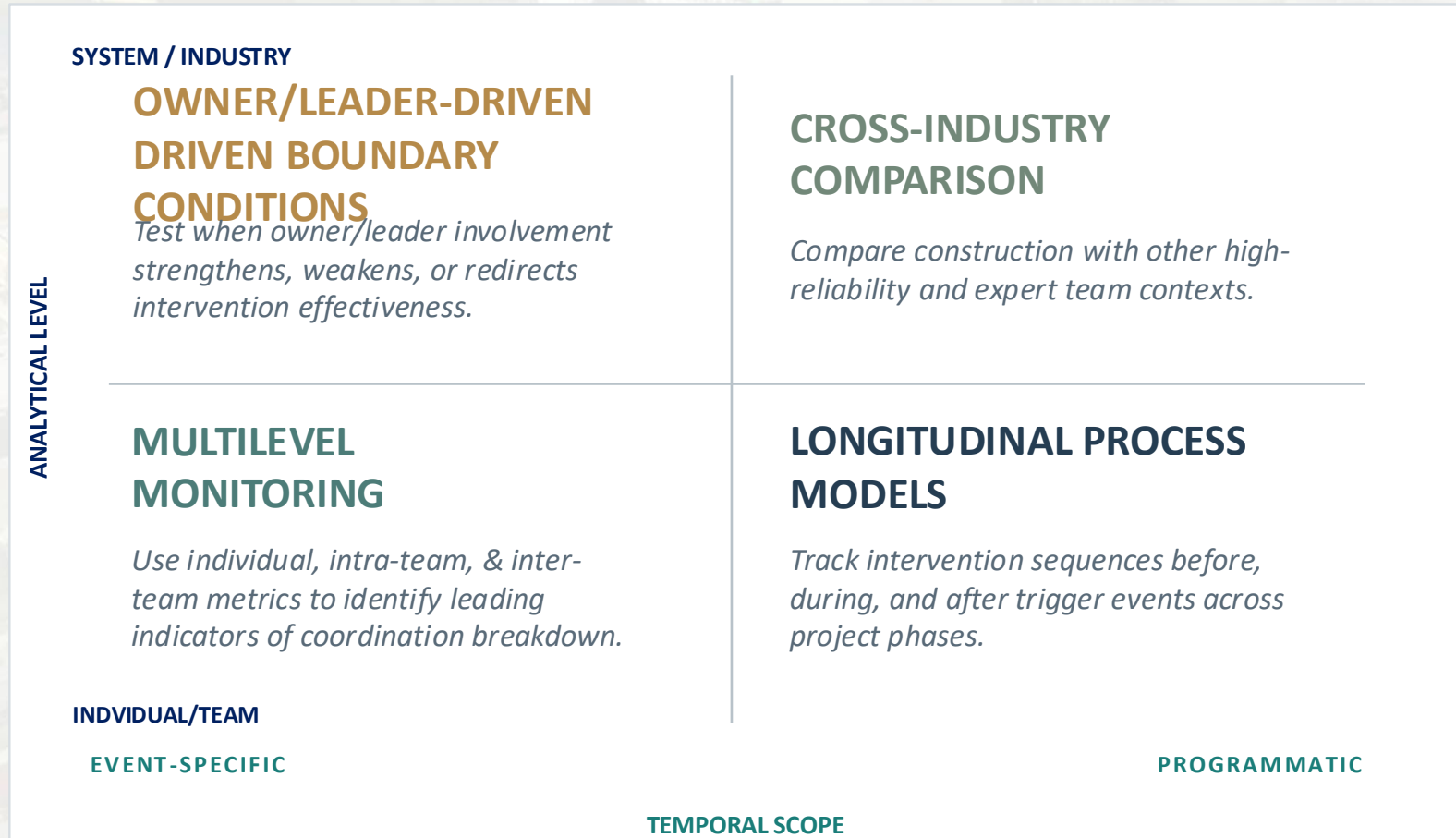
AFTER DISRUPTION

- *Capture lessons learned*
- *Update governance routines*
- *Assess intervention effects*
- *Build a program-level repository*

LEARNING UPDATES THE NEXT PROACTIVE FOUNDATION

FUTURE RESEARCH AGENDA

Turning field insights into longitudinal, testable models of intervention dynamics.



WHAT TO TEST

**WHEN DOES THE
SAME
INTERVENTION...**

HELP?

FAIL?

BACKFIRE?



THANK YOU

Questions?

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