Northwest Construction Consumer Council

Managed Organizational Capability Produces Predictable Results

November 2, 2011

ePM™

Organization Performance by Design™

Managed Organizational Capability Produces Predictable Results

- Organizational capability doesn't just happen
- Design a more predictable organization
- Rehearse the team, measure and adjust
- Two case studies
- Question and answer

Where have we invested in predictability?

Complex ***People*** **Variable**

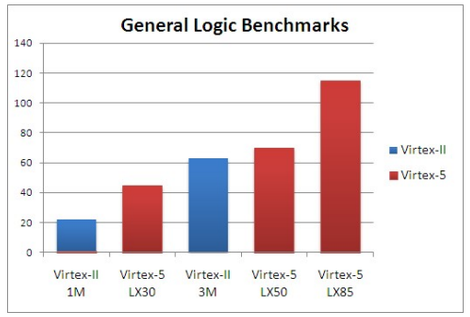
Organizational capability is the largest single opportunity to improve predictability

$ ***Process*** ***Technology*** $

Creating the right conditions improves predictability

Best Practices

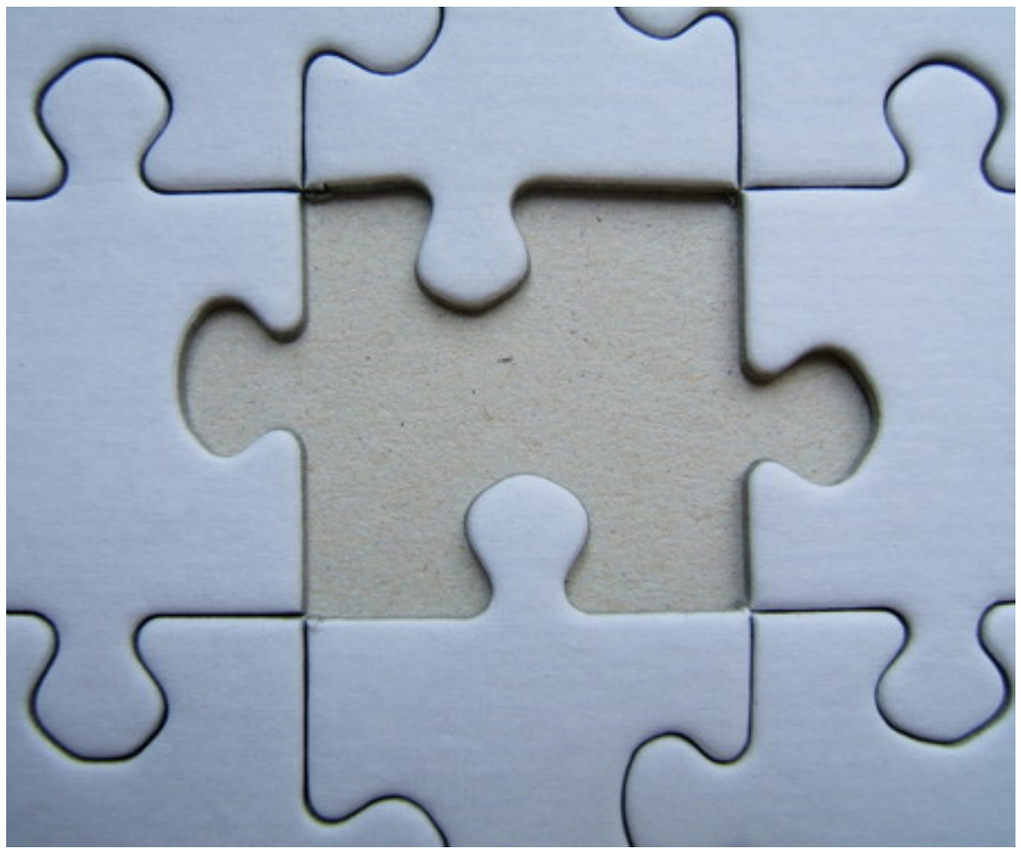
Benchmarks



Experienced People

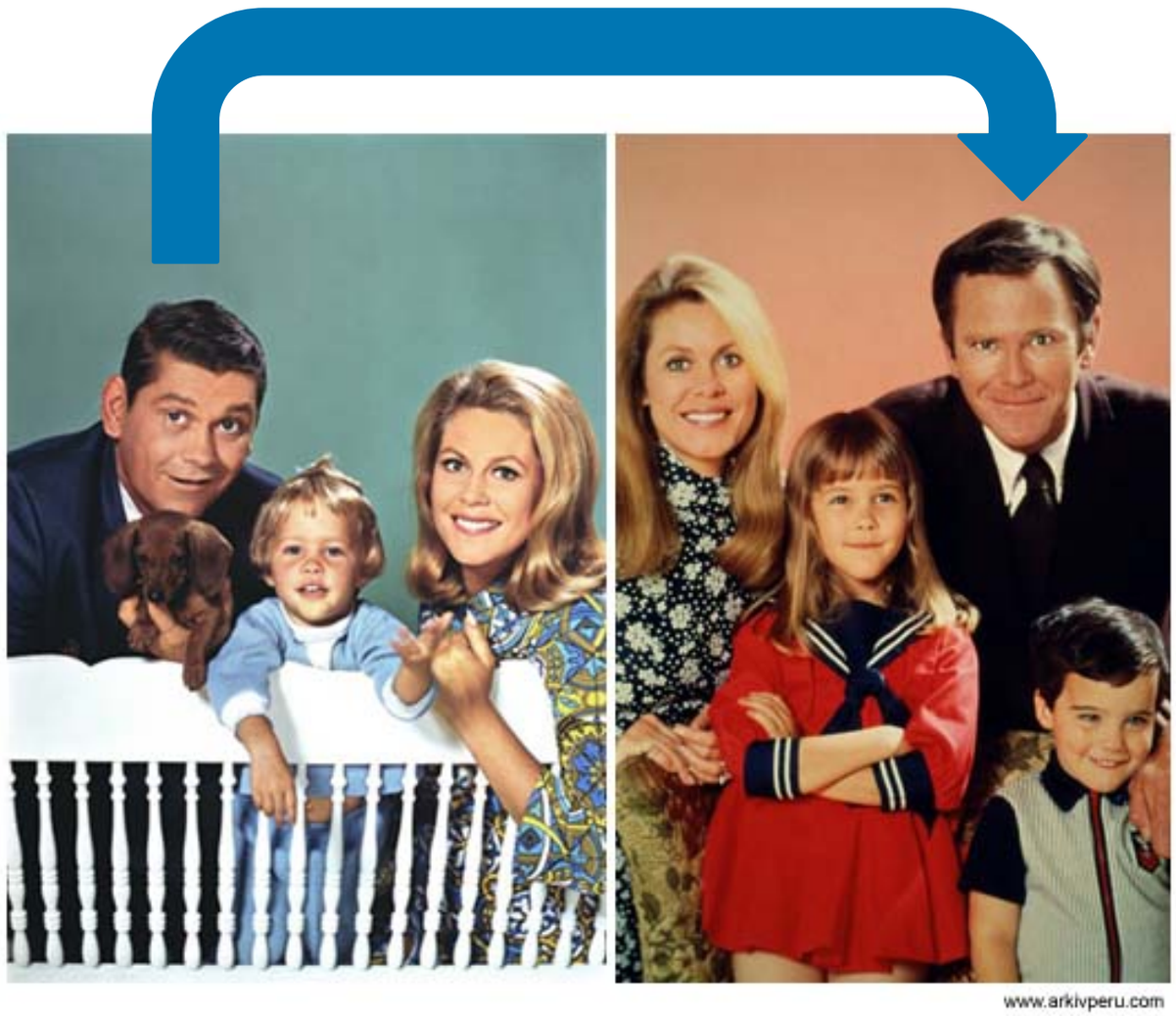
“We get it about 90% right”

Who shows up this time?



- Every project and team is different enough
- Every work requirement that isn’t matched by a capability incurs a 15% productivity penalty

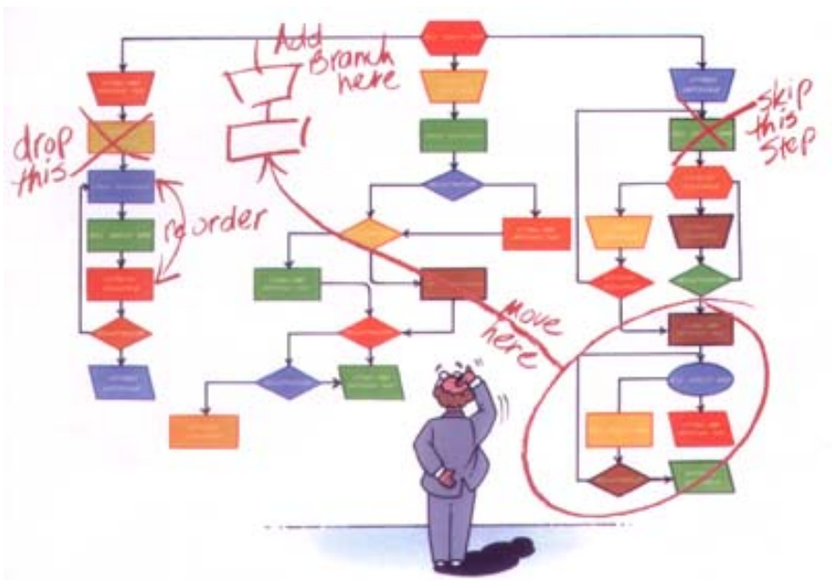
We can fix the other 10% on the fly



- Failure is attributed to individuals or sub-teams
- Continual reworking is accepted as inevitable
- Exchanging people for others “more qualified” is expected

Manage organizational capability

Match the Organization to the Work

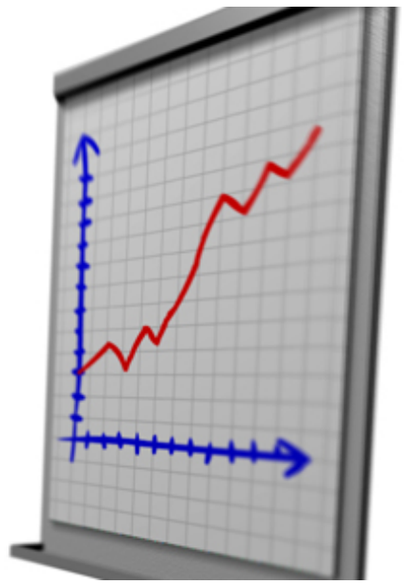


- Understand gaps and mismatches
- Design for an uninterrupted flow of work

Rehearse the Team and Learn

- Conference room pilots
- Computer simulations

Measure and Adjust



- Project phase transitions
- Disruptive events and conditions

Rehearsals, conference room pilots and table top demonstrations

- Good for single business processes
- Anticipate and prepare
- Respond rather than react
- Develop and test solutions to known or likely failures

Computer simulation of complex organization behavior

- Apply to entire team and project scope
- Design prior to execution
- Adjust to adverse conditions and test solutions
- Identify unknown risks and weaknesses

A ten-minute rehearsal prior to surgery dramatically improved predictability

- Wrong site surgeries eliminated
- Improved patient recovery rates
- Nursing turnover rate decreased from 23 percent to 7 percent
- Positive perceptions of teamwork doubled

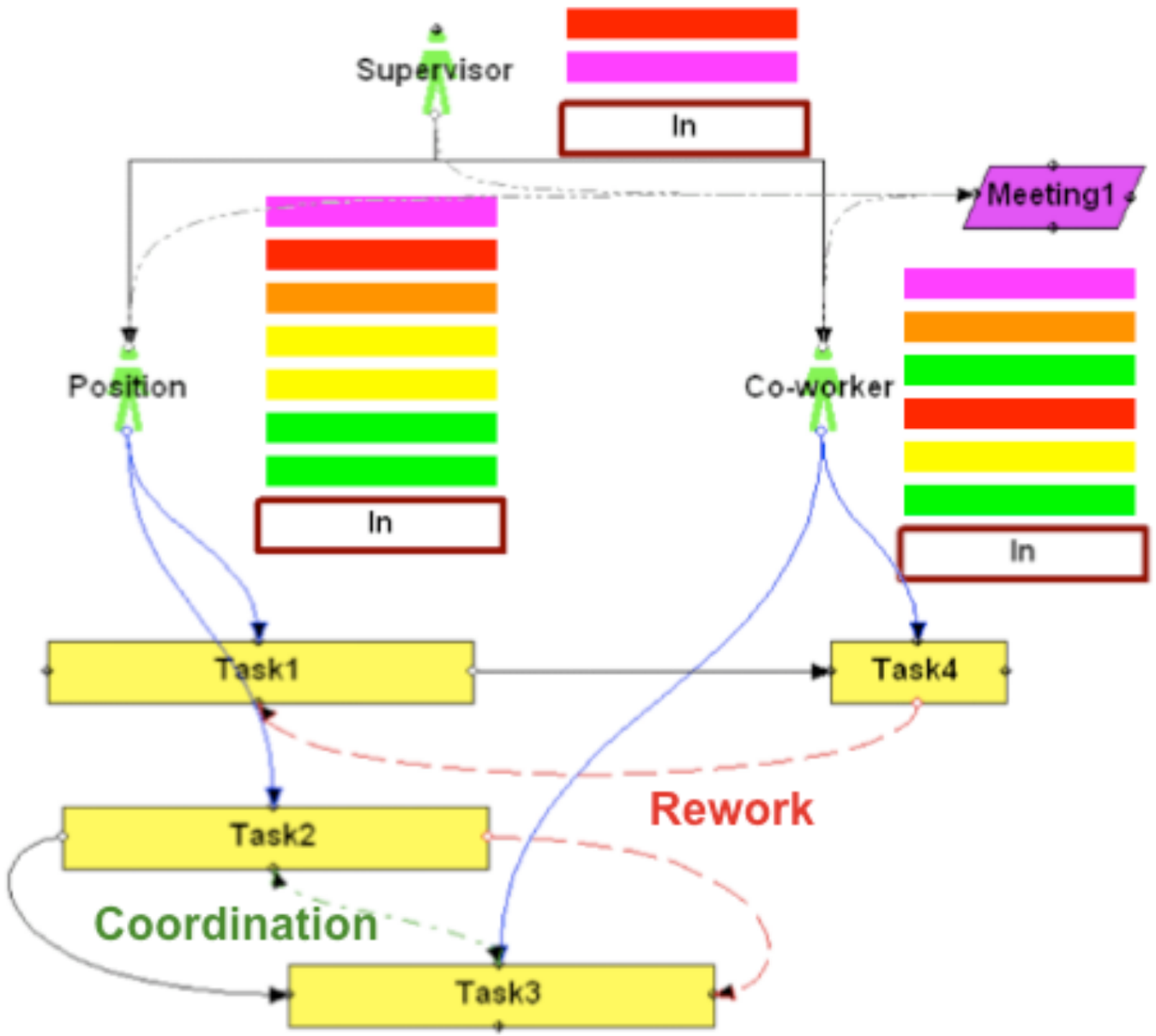
Simulate project teams at work

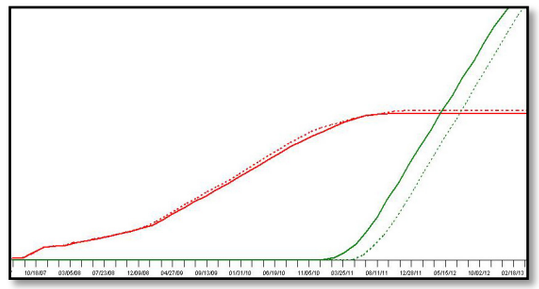
SimVision® Technology

People, Skills, Experience

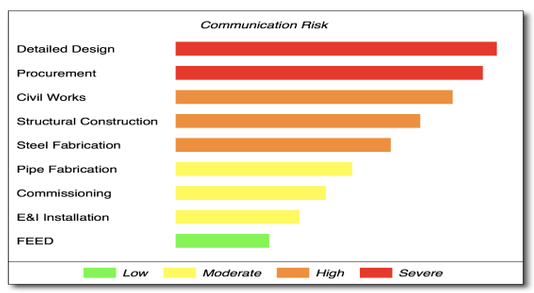
Organization Culture and Leadership

Work Processes

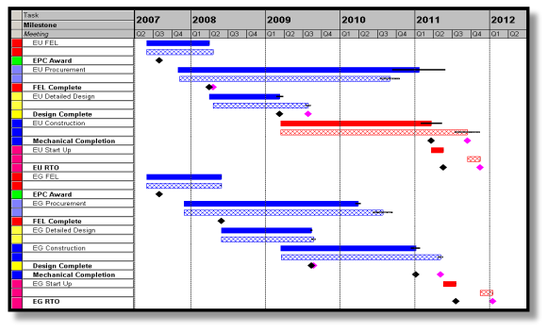




ROI



Quality and Safety



Predictable Timing

Test three jobsite organization strategies on a real project and real team

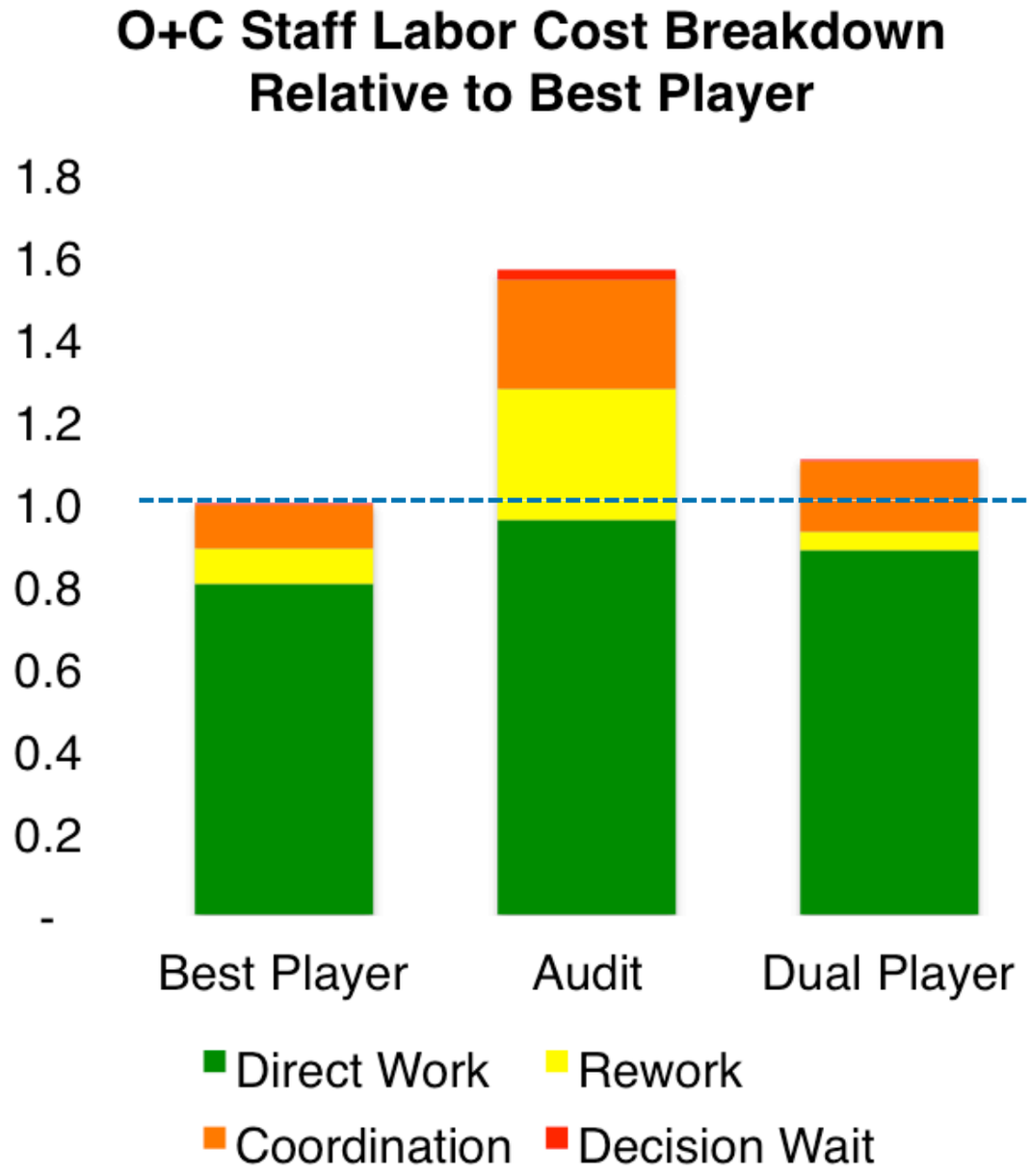
- Use a project from the CII RT261 study population as a test bed
- Simulate different owner-contractor relationships
  - Compare project outcomes
  - Quantify quality risks
- Look for advantages under different conditions and contractual arrangements

Quantify and compare the results

Best Player	• Jobsite staff is a **hybrid** of Owner and Contractor personnel • Staffing of each function is determined by core experience • Take maximum advantage of available expertise • Intended to be lowest-cost
Audit	• Contractor staffs jobsite functions • Owner team **reactively** audits performance and seeks corrections and improvements • Intended to be highest-quality
Dual Player	• Contractor staffs jobsite functions • Owner team works **proactively** to remove barriers, prevent delays and enable superior outcomes • Intended to minimize schedule variance

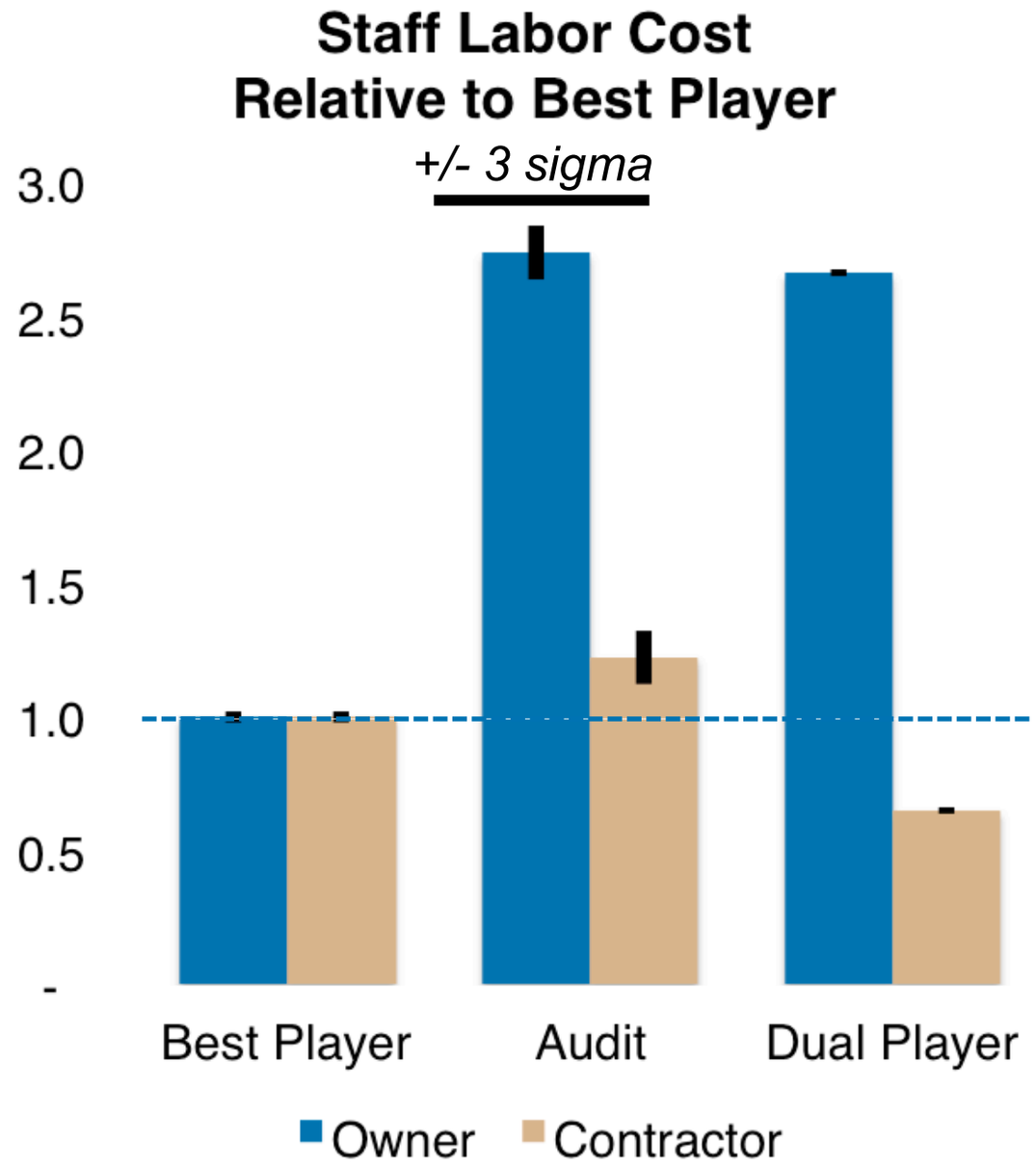
Audit and Dual Player have a 20% to 50% higher staff cost than Best Player

- Both require more Owner-Contractor coordination
- Audit creates more rework to be performed by the Contractor
- Dual Player facilitates the Contractor's job and proactively avoids rework



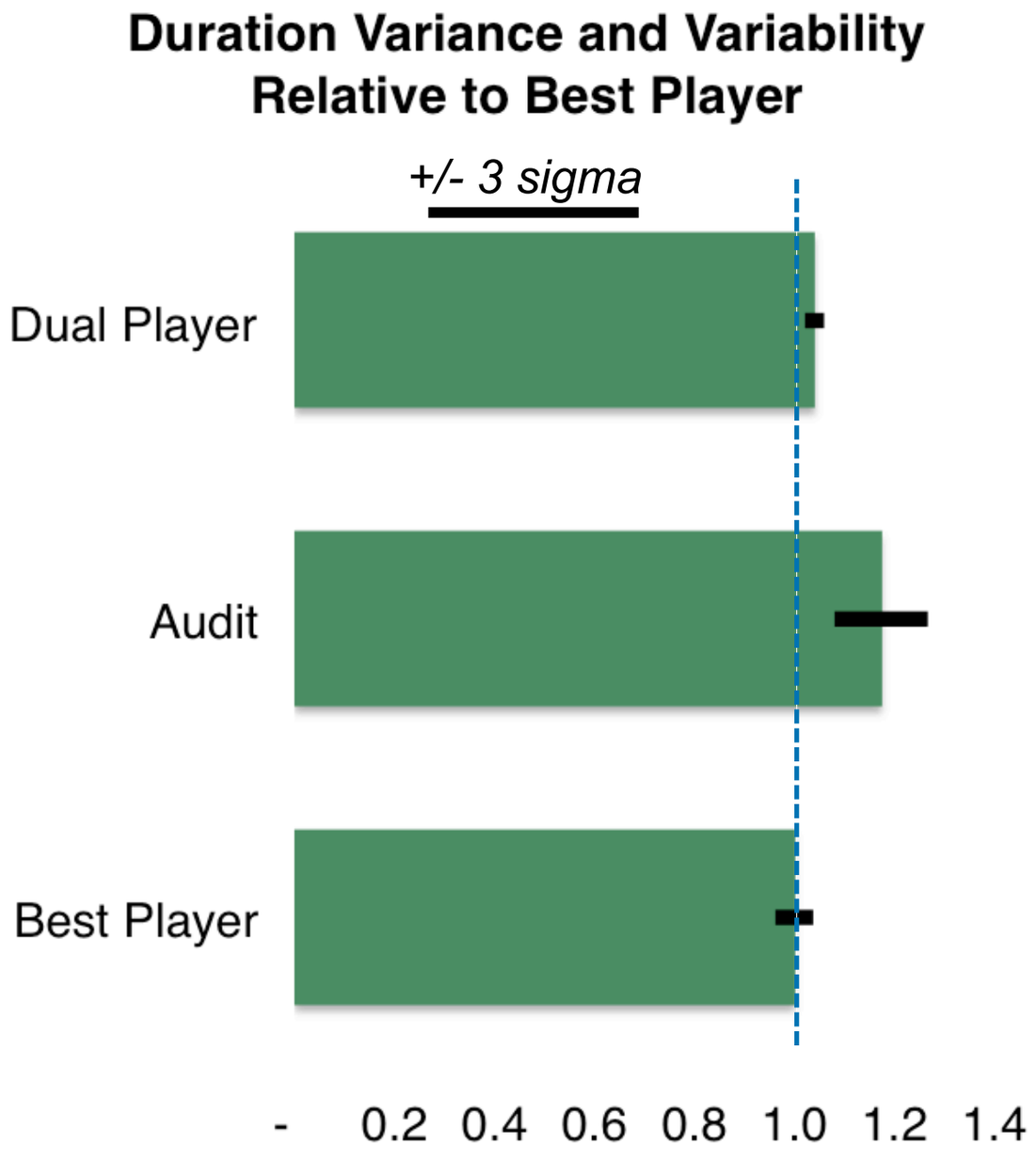
Audit and Dual Player impact staff cost and predictability in different ways

- Audits increase Contractor costs and uncertainty
- Dual Player makes the Contractor's work more predictable and about 25% less-costly
- Owner adds staff in both cases



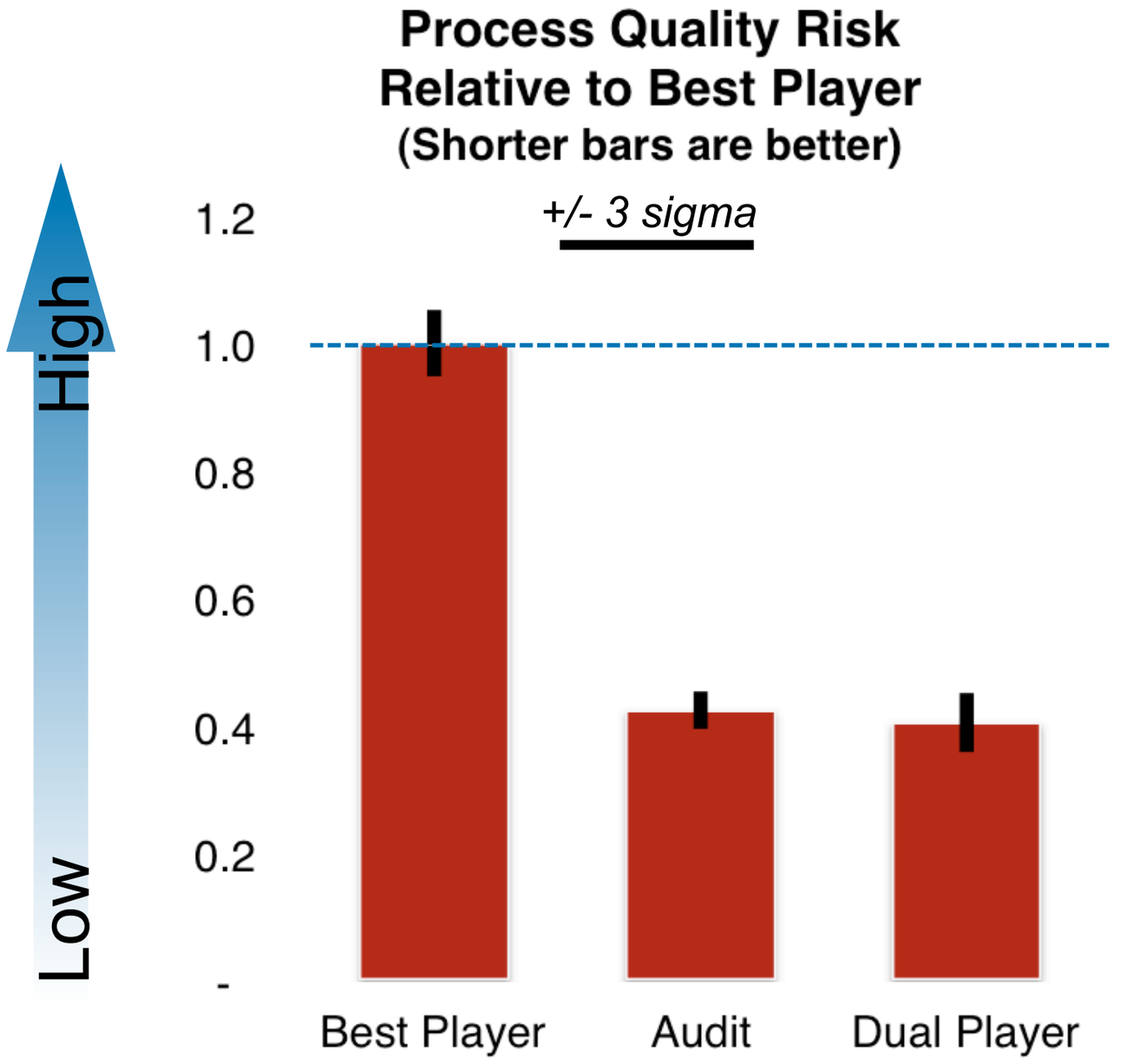
Audit makes the schedule less predictable

- The retrospective nature of Audit creates significant schedule growth and uncertainty
- Dual Player improves predictability and might increase total time



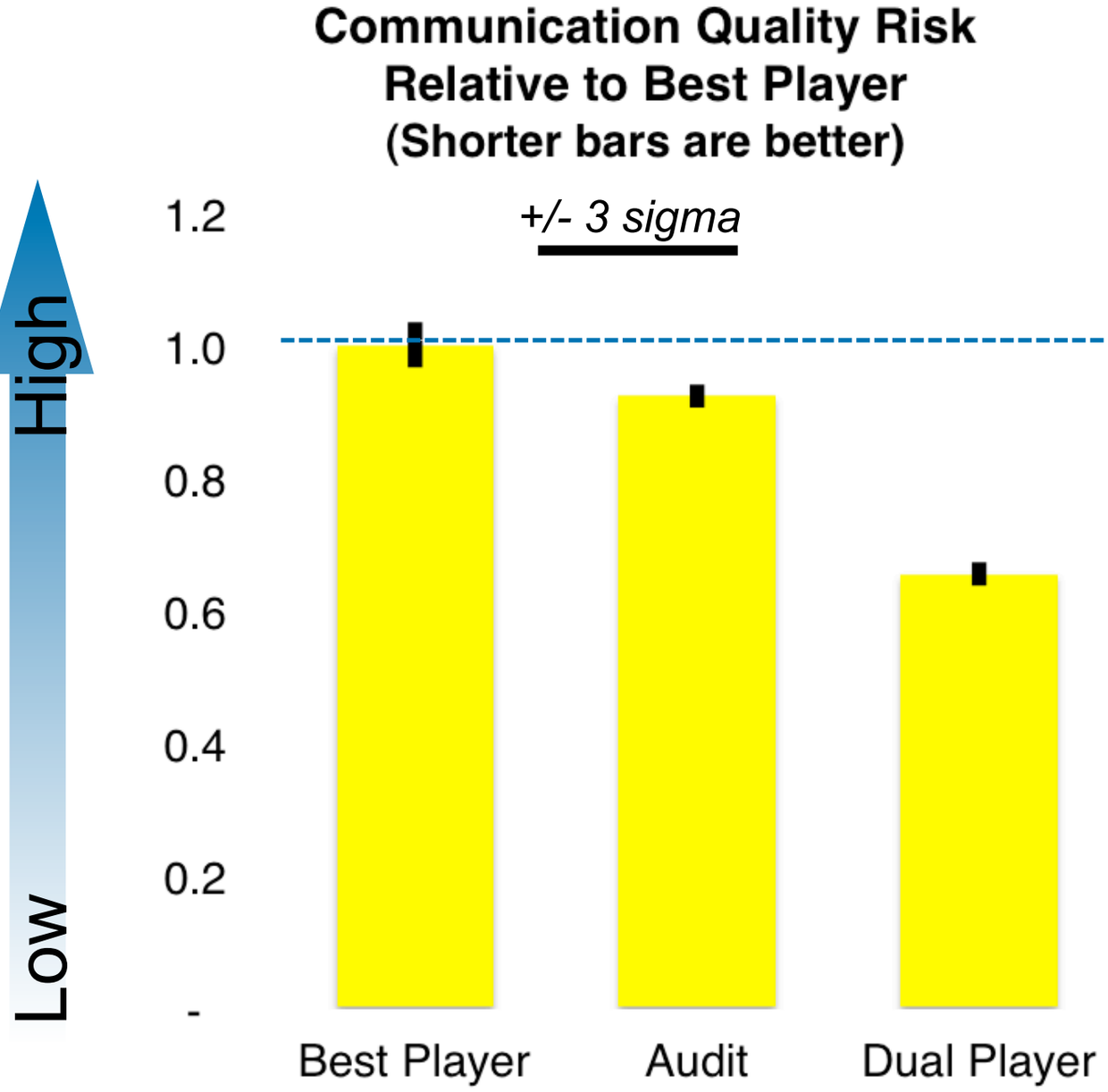
Audit and Dual Player produce a significant quality advantage

- Predictable results
- Complies with standards
- Performed according to plan



Audit and Dual Player improve communication and safety

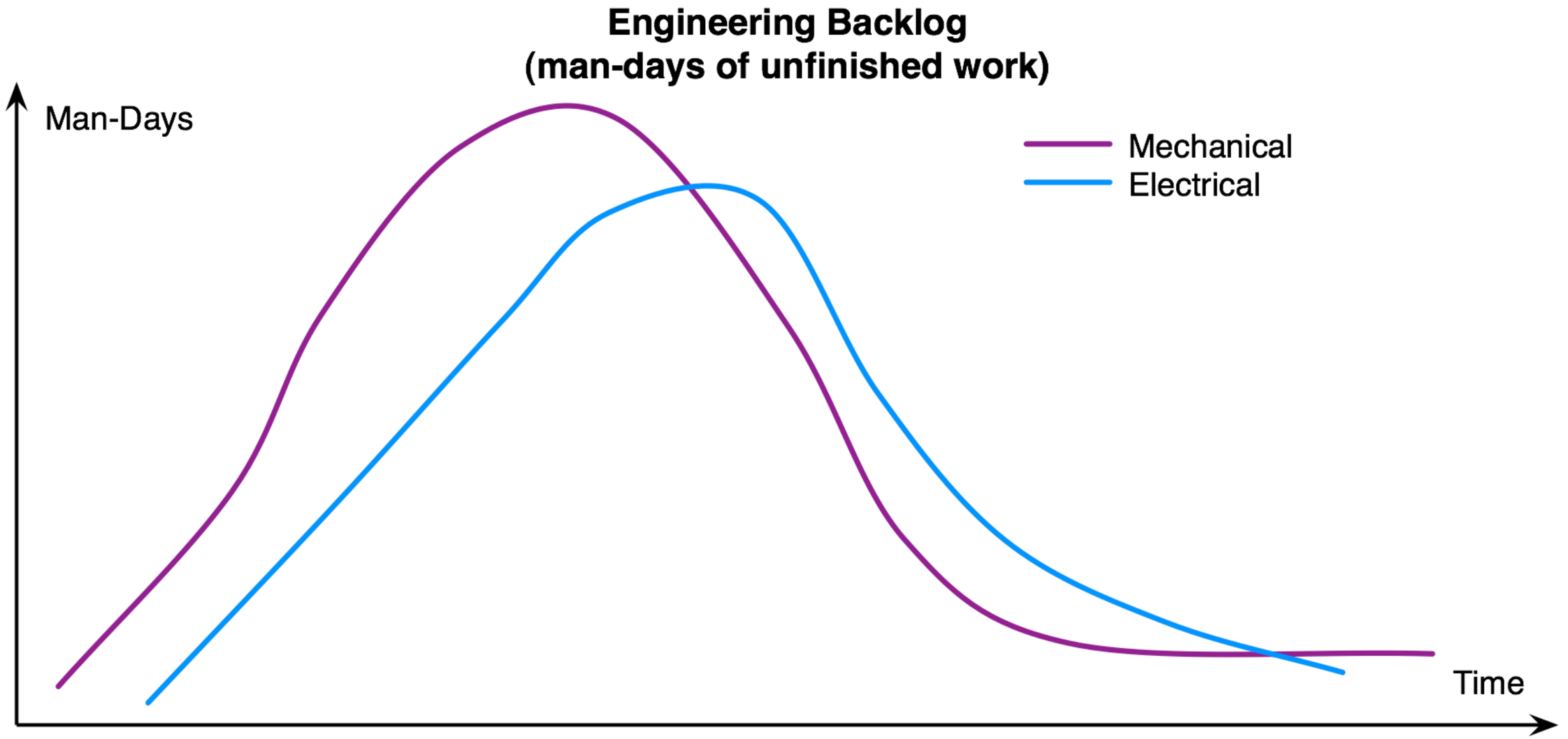
- Communications are clear, timely and beneficial
- Information is available where and when its needed
- Communication is more carefully planned and managed



Completion delays will cost the owner several million dollars per day in lost revenue if not corrected

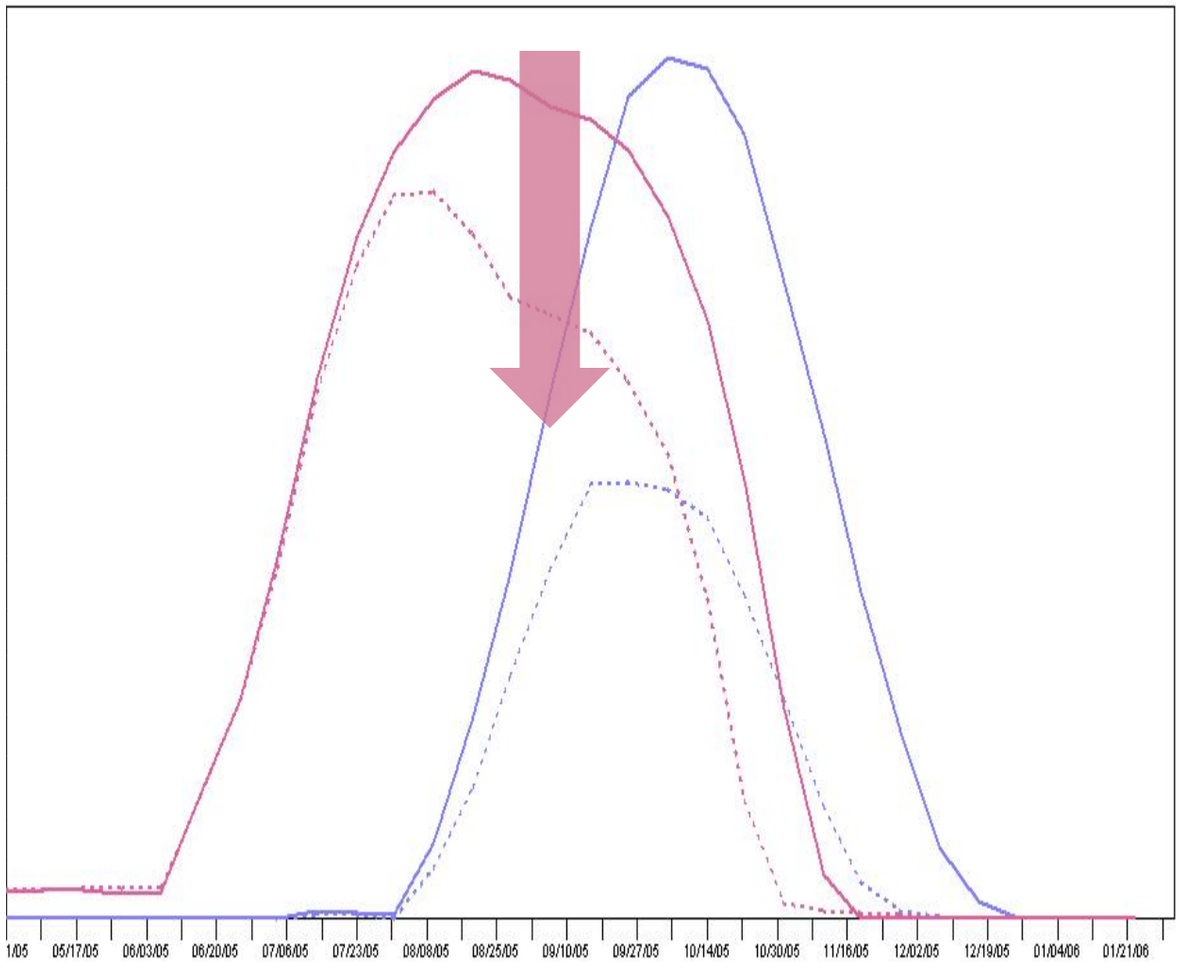
- Procurement is 3 to 6 months behind schedule
- The management team is divided over two possible recovery strategies
  - Supplement design manpower with more contractors
  - Form integrated procurement teams to streamline the work process

The Design Team does not have sufficient capacity to accomplish planned work on time

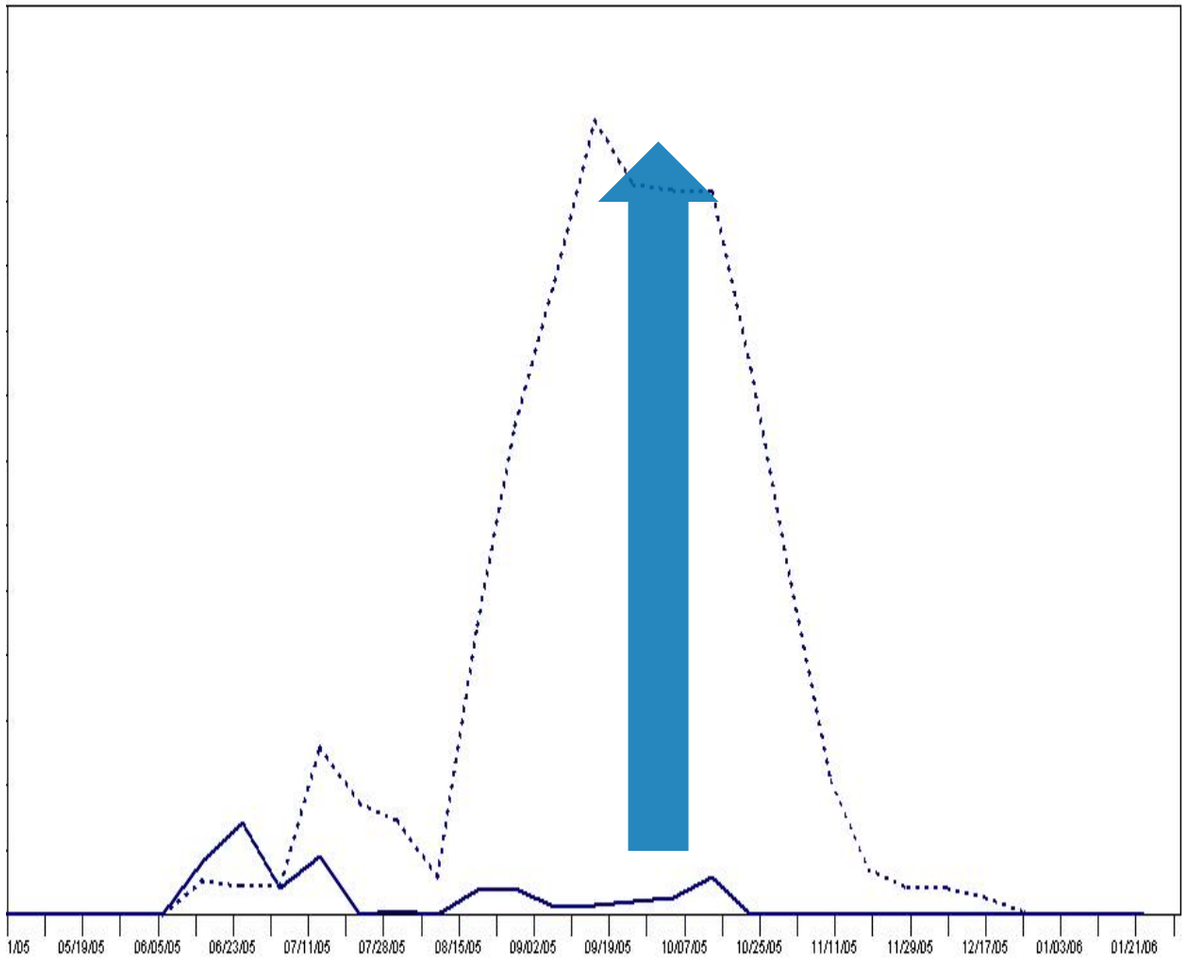


Hiring more designers would shift the work backlog onto the project engineers

Reduce the Design Department's backlog

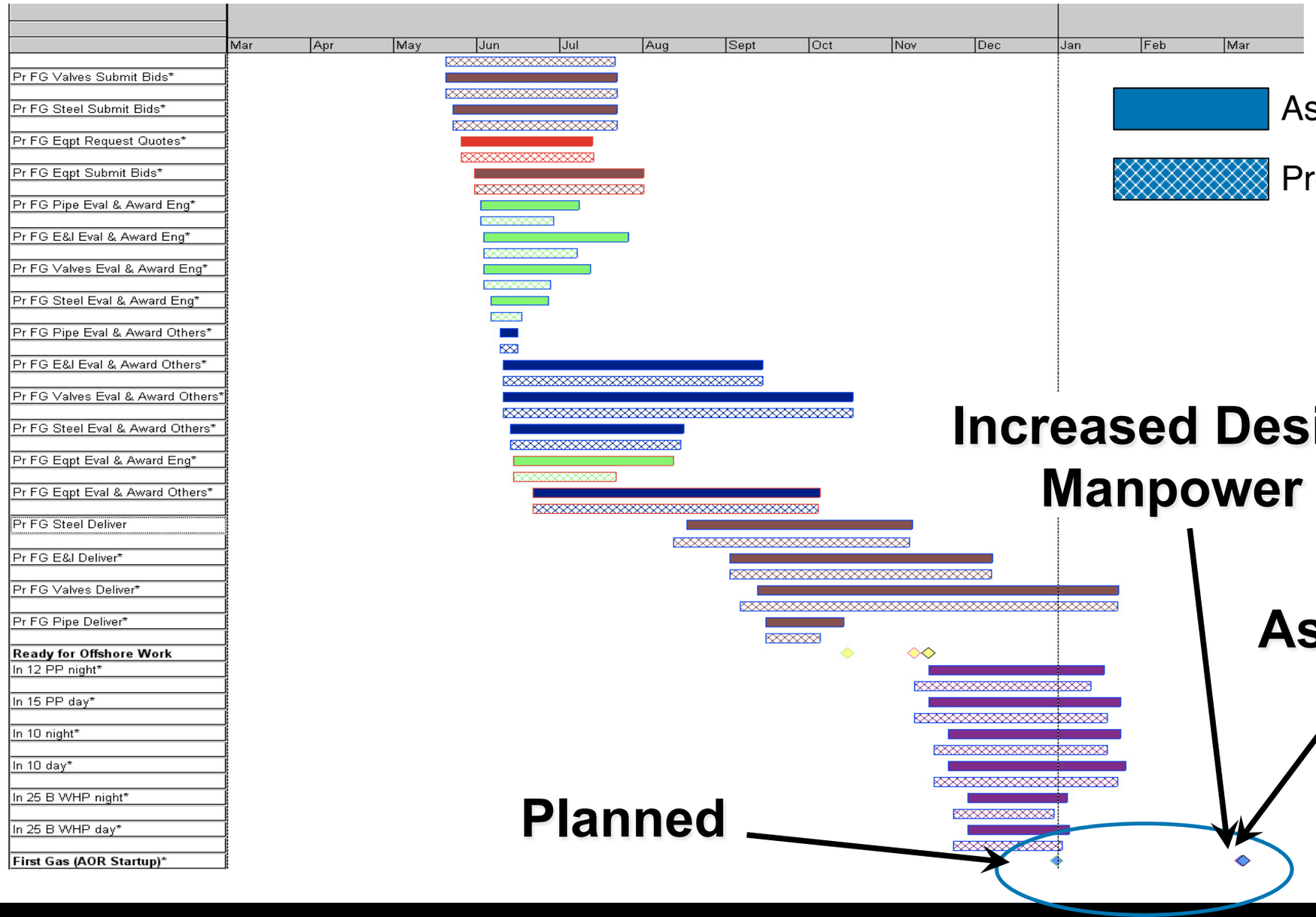


Shift the backlog to the Project Engineers 2-3 months later



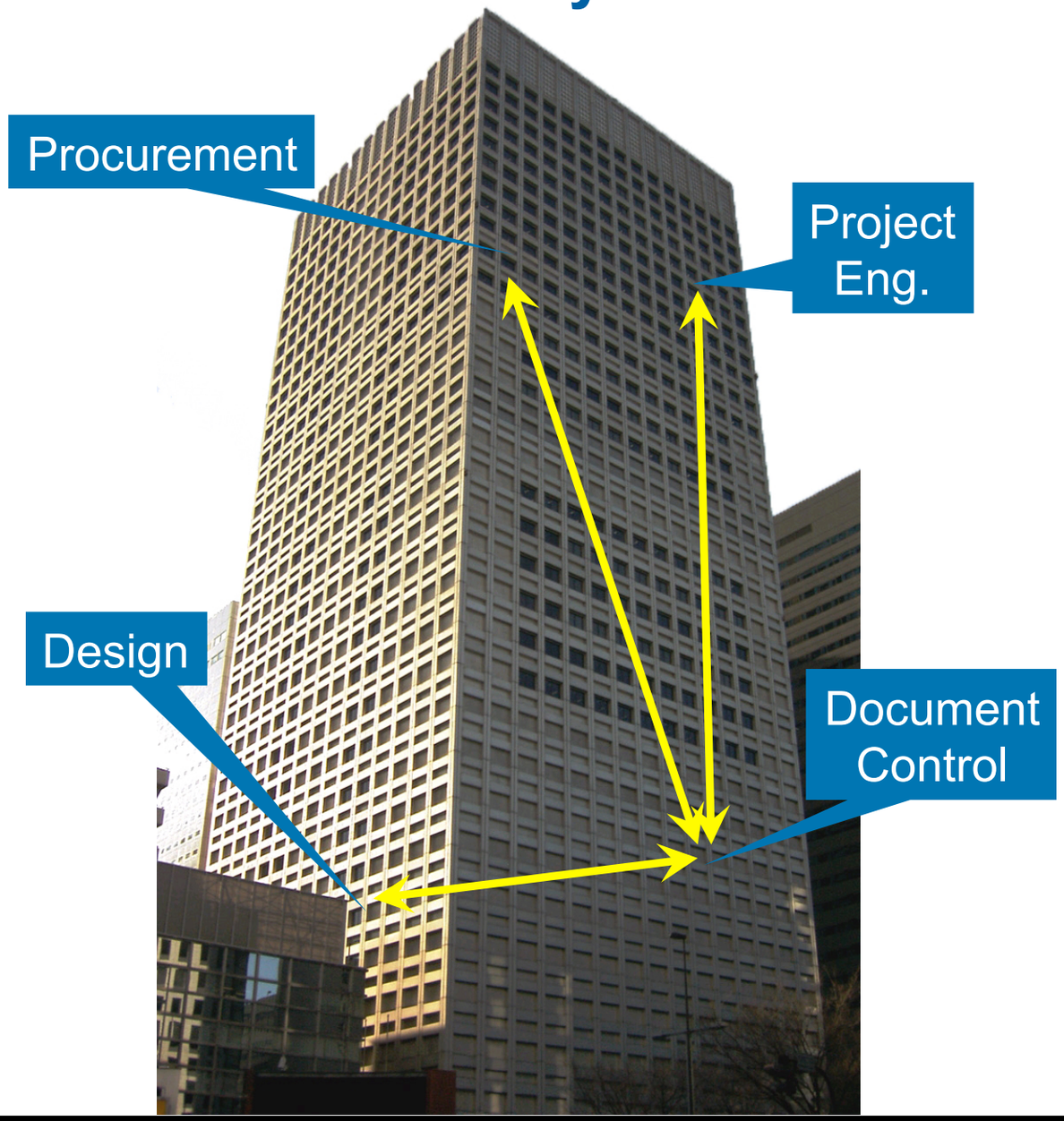
… and have no effect on the schedule slippage

Predicted Project Schedule – Production Startup Milestone



Model the integrated teams

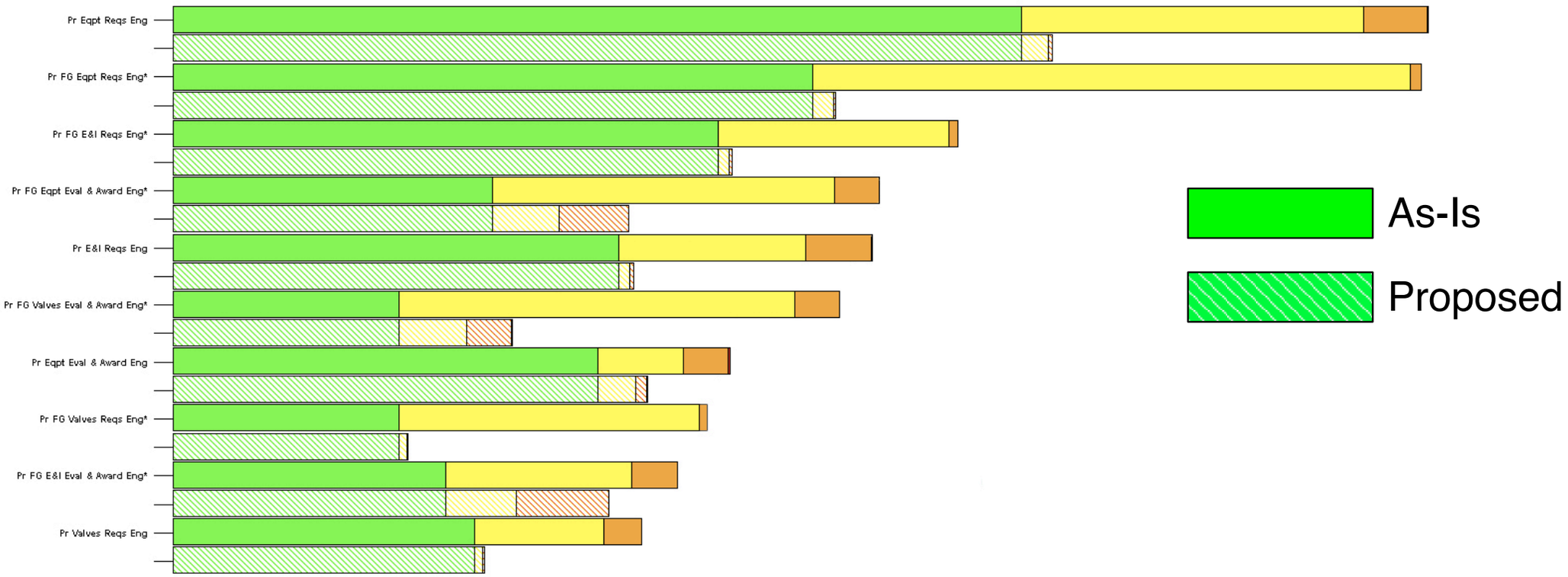
As-Is: Fragmented Team, Many Rework Cycles



Proposed: Integrated Co-located Teams

Integrated procurement teams would be 25% more efficient on this project

Procurement Tasks Work Breakdown Comparison (FTE-days)

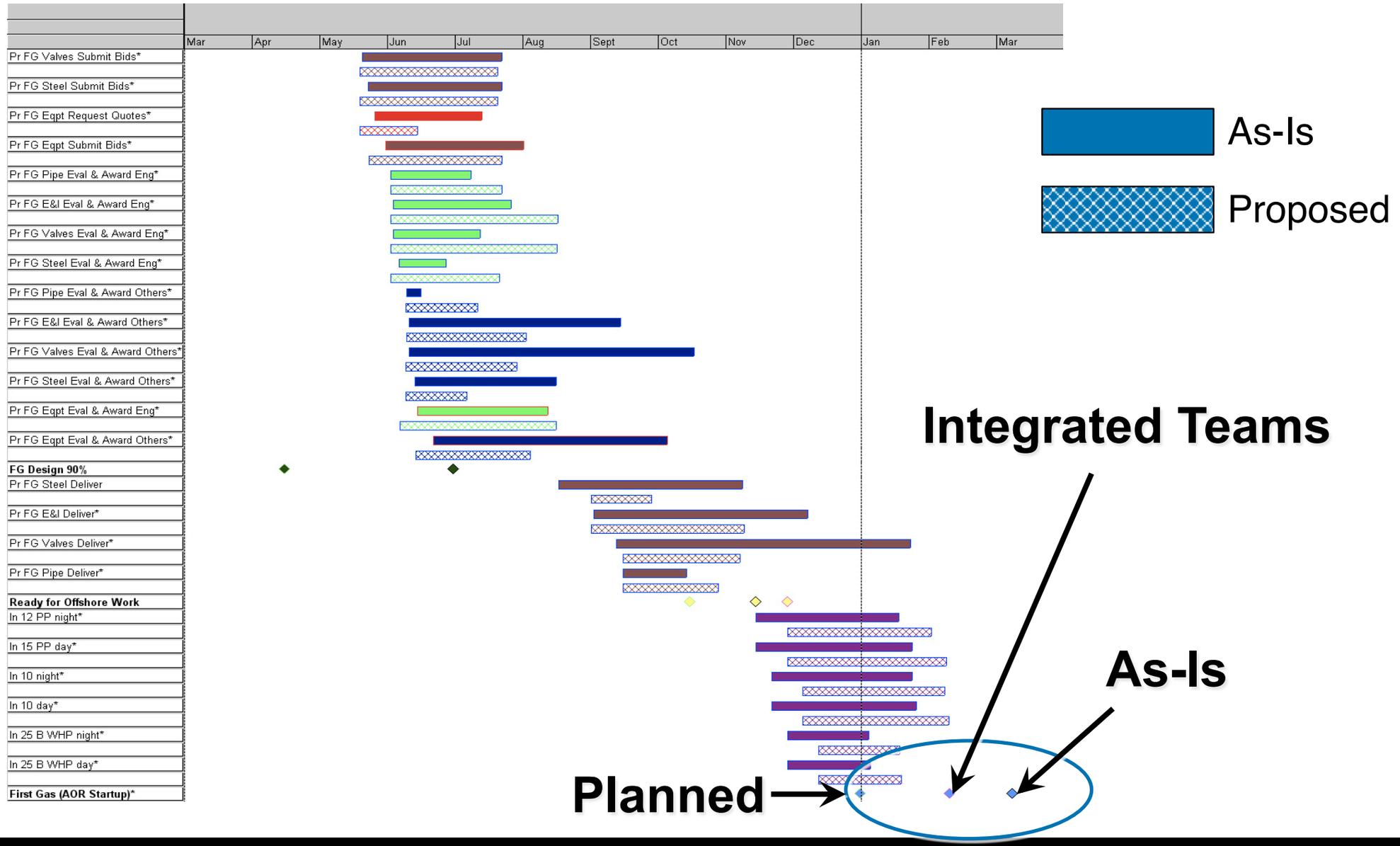


"Drag" is a function of organization capability and complexity

Direct Work *Rework* *Coordination* *Decision Wait*

… and could recover about half of the time lost

Predicted Project Schedule – Production Startup Milestone



Simulation and rehearsal are most valuable when organizations are transition

Capital Projects

- Planning to Front End Engineering and Design (Feed)
- FEED to Execution
- Construction to Commissioning

Business Operations

- Mergers and acquisitions
- Restructuring and transformation
- New ventures and major programs

Question and answer

- This presentation is available at www.epm.cc
- Construction Industry Institute research reports are available at www.construction-institute.org