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Effective Project Alignment for Construction Success

Construction Industry Institute

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Effective Project Alignment for Construction Success

**Prepared by
Research Team 310, Improving Engineering and Procurement
Alignment in Coordination with Construction**

**Research Summary 310-1
December 2015**

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Executive Summary

CII chartered Research Team (RT) 310, Improving Engineering and Procurement Alignment in Coordination with Construction, to explore improvements to project alignment and coordination for successful construction execution. In its review of alignment for construction success, RT 310 identified three areas for improvement: 1) project execution planning (PEP) (as a basis for alignment in the field); 2) project procedures (to ensure effective execution); and 3) supplier engagement (to increase the likelihood of successful execution). The research team collected data on each area and found many opportunities for improvement in typical implementations.

The data the team collected on project execution planning indicated broad agreement on which elements should be included in plans, to increase the chance of successful field execution. The findings also indicated that these elements are not fully included in execution planning documents on a routine basis. Similarly, although companies include aspects of alignment in project procedures, the results show that they commonly fail to consider alignment in fundamental areas such as team building, information dissemination, and continuity across phases.

These results on project execution planning and project procedures were complemented by findings on supplier engagement. These findings identified opportunities for increased engagement of suppliers in project planning, and show shortfalls in common practices (e.g., adequate scope description and clear requests for supplier information in RFQs and POs). **Overall, the data indicated that the industry has difficulty accomplishing basic alignment with common practices—from FEP through construction.**

Collectively, the research suggested a need for a **“back to basics” review of provisions for alignment throughout the project life cycle**. RT 310 members were surprised by the research data showing many fundamental gaps and shortcomings—including those found in detailed

reviews of their own companies. Thus, RT 310 general recommends that organizations review their internal procedures and provisions for alignment. The research team's specific recommendations regarding project execution planning, alignment procedures, and supplier engagement are detailed in this document. These recommendations are presented as practical guidance in Implementation Resource (IR) 310-2, *Effective Project Alignment for Construction Success*, in five sections:

1. Project Execution Planning
2. Alignment Procedures
3. Supplier Engagement
4. Alignment Behaviors
5. Automation.

The team included additional resources, such as checklists and audit tools to facilitate implementation. After conducting its research, RT 310 concluded that "alignment doesn't just happen," and recommends that, for construction success, the industry should revisit and reinvest in its provisions for alignment.

Introduction

Since CII chartered RT 310 to investigate alignment of engineering and procurement (E-P) for construction (C) success, the research team initially explored issues, mechanisms, or processes to improve current practice at the E-P to C interface. Yet, it was soon clear that, because so much of what requires alignment in the later project phases is or should be set up in FEP, the research also had to address early alignment. **The data indicate that, from FEP through construction, the industry has difficulty accomplishing basic alignment using common practices.** The team was surprised that its review of project processes uncovered remarkably inconsistent execution of alignment fundamentals. (Early results from the CII 10-10 benchmarking program support this broad and important finding.) Lack of alignment basics also blocks adoption of leading practices for improved construction outcomes, e.g., Advanced Work Packaging (AWP) or modularization. To both fulfill the original charter and address this neglect of basic alignment practices, the team focused on three areas in which better alignment will significantly improve construction success: 1) project execution planning; 2) project procedures; and 3) supplier engagement.

The research indicated that the industry's neglect of specific FEP practices—particularly in its project execution plans (PEPs)—limits effective alignment and coordination in later project phases. Indeed, the team found that many of these standard alignment-promoting practices (ranging from project scope to interface management) are routinely left out of PEPs. In addition to reinforcing such alignment fundamentals in PEPs, the RT 310 recommendations for project execution planning also advance the industry by urging project teams to incorporate emerging best practices like AWP into their plans. In presenting a template for a PEP table of contents that focuses on alignment-related activities for construction success, the research team has provided a foundation for multi-phase alignment for success in the field.

The data also showed that project procedures in all phases, from FEP through construction, are lacking both in basic provisions for alignment and in the specifics of execution processes that align E, P, and C. Many of the significant findings here indicate a lack of broad procedural provisions for alignment; and, because the poor performance of these basic procedures blocks successful implementation of more detailed processes, RT 310 chose first to address these more general failings. The alignment procedures checklist developed by the team highlights the most readily deployable actions the industry can take to close the most typical and important gaps in practice.

Given that the research also found weak supplier engagement in the industry, and considering that previous CII research on procurement has largely been conceptual, the research team saw a need for more practical guidance. After interviewing 25 suppliers, RT 310 identified a number of opportunities for increased partnership with suppliers, formulating ways to improve clarity on scope and expectations of deliverables during procurement. The RT 310 Supplier Engagement Checklist provides a clear path forward for these improvements.

This summary presents the team's research methodology, findings, and recommendations on these three areas. It also gives an overview of IR 310-2, which contains tools and more detailed recommendations for each area. In addition to this basic practical guidance, IR 310-2 also offers further considerations for effective alignment behaviors and a discussion of automation for better alignment. While most of the data were gathered from the industrial construction sector, some were collected from the commercial and heavy civil sectors. And, although details may vary across sectors, the findings and recommendations are broadly applicable to all major sectors of the capital projects industry.

Research Approach

To meet the research objective of finding ways to improve alignment and coordination between engineering and procurement for improved construction performance, RT 310 reviewed industry alignment challenges, focused on areas of potential high impact, and collected data to generate research findings, recommendations, and tools. Figure 1 illustrates the overall research approach.

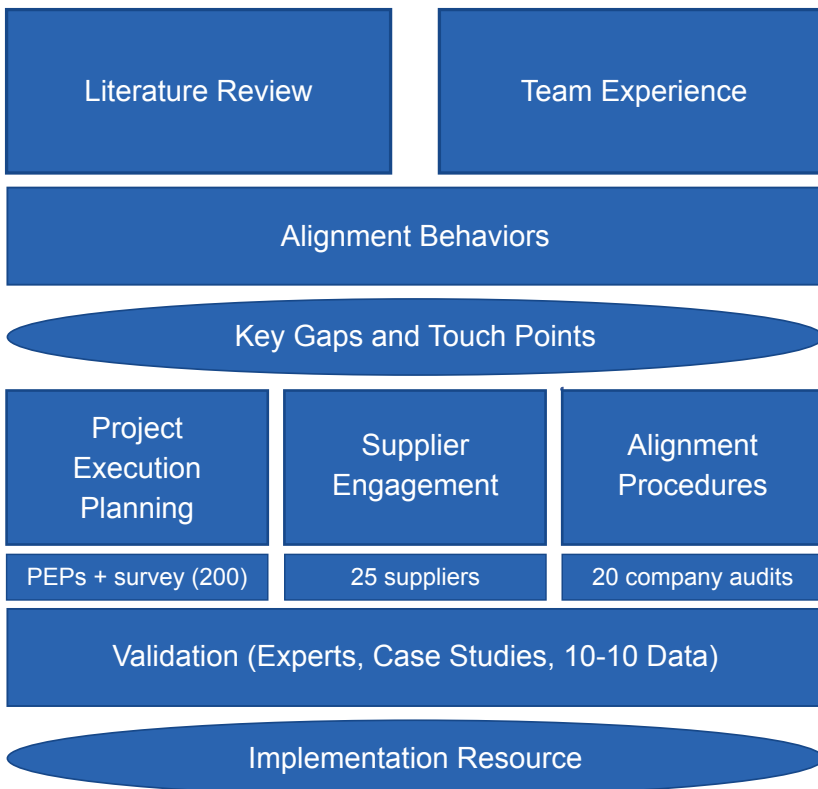


Figure 1. RT 310 Research Methodology