



Project Delivery Contract Language, Schedules, and Collaboration

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Motivation

- How does the language in different project delivery methods and contractual arrangements influence scheduling practice and collaboration among stakeholders?

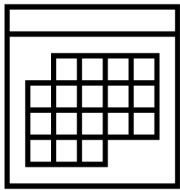
- Working hypothesis:

More traditional delivery methods based on dyadic contractual relationships in general provide few to no opportunities or incentives for people to collaborate, whereas more collaborative and multi-party contracts have more specific language calling for the development of collaborative schedules.



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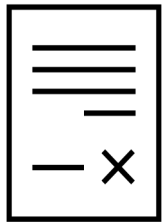
Research Method



Interviews – delivery methods and schedule-related practices per contract

Owners (11), Contractors (7), Consultants (6), Trade partner (1), Supplier (1)

Maturity levels



Contract analysis for different delivery methods

10 DBB, 9 CM/CMAR, 9 DB, and 10 IPD contracts

Types and frequency of clauses

Maturity levels - Scheduling Significance

Statement	Maturity Level		
	Bronze	Silver	Gold
Schedule created primarily...	<i>To define contractual expectations & responsibilities but not used.</i>	<i>To define contractual expectations & responsibilities but was not used by entire project team.</i>	<i>To enable strong project management communication and collaboration throughout project team.</i>
Stakeholders	<i>Were not involved early enough or considered in schedule creation.</i>	<i>Were involved early enough but not all appropriate and necessary.</i>	<i>Were appropriate and involved early enough in creating the schedule.</i>
There were...	<i>Little to no use of scheduling tools and methods utilized company wide (beyond scheduling software, ex. P6).</i>	<i>Use of additional tools/methods to support collaboration during schedule development.</i>	<i>Frequent updates of the schedule across the project; living, integrated document with appropriate tools and methods used (ex. LPS, BIM, 4D, AWP Takt Planning).</i>

(CII 2021)

Interviews – Results



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Participants mentioned....

- Not knowing how to work collaboratively to develop schedules.
- *"The owner does not care about how the project will get built".*
- Use of schedules with differing levels of enforcement depending on the contract payment type.
- Vague or completely absent language regarding schedules and milestones.
- Bright side: specific language being added to their contracts requiring the development of collaborative schedules.

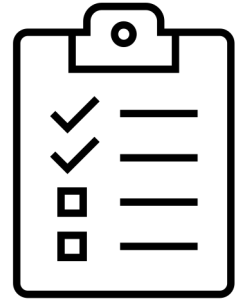
Interviews – Examples

Gold	<i>The contract delivery is design-build which requires a certain level of collaboration. They have pull-planner/LPS verbiage which is something that he introduced in the contracts they have in <location>. Generically, contract says something like: the team members have to allocate two hours per week for pull planning. Even so, the foremen's meeting is centered around planning and identifying road-blocks. During the meetings they look at the plan "did you make it or not"? The scheduler or whoever is taking notes then captures the reasons for non-completion and adds to a report. (Design-Build)</i>
Silver	<i>There is an addendum in the trade partners' contracts with the GC which requires the trade partners to participate in and support collaborative planning meetings at medium- and short-term levels. Not at the long term, because these are not IPD projects. Trade partners were complaining of having to do too much work by attending these meetings; now this is required in contracts. (For the most part CM at Risk)</i>
Bronze	<i>A lot of projects require the P6 schedule, and they want a contractual schedule. The owner doesn't really care how you'll get it done and let you think about the means and methods. (Design-Build)</i>



Contract Analysis - Results

- ✓ Time-related schedules are predominant.
- ✓ Payment schedules are next followed by materials and design schedules.
- ✓ Schedule clauses are overwhelmingly related to **compliance to owner's rules**.
- ✓ **Design-Build (DB) and Integrated Project Delivery (IPD)** contracts have more mentions of collaborative practices regarding the scheduling process.
 - ✓ Schedules are developed and implemented in a more participatory fashion by multiple stakeholders



Contract Analysis – Examples

Bronze (Compliance) – All delivery methods

- *The contractor shall prepare/present/review the <progress, payment, submittal, inspection, etc.> schedule to the owner.*
- *The contractor/architect shall review <progress, payment, submittal, inspection, etc.> schedule for compliance/conformance.*

Silver and Gold (Collaboration)

- *Parties shall jointly develop the schedule, the target cost, project goals, and definitions.*
- *The team shall employ pull planning to develop the schedule, collaboratively developing weekly work plans that are used to track progress.*

A man and a woman are leaning over a table, looking at documents. The man is on the left, wearing a light-colored shirt, and the woman is on the right, wearing a dark top. They are both focused on the papers in front of them. The background is slightly blurred, showing what appears to be a meeting room with a whiteboard and other people in the distance.

Cross Analysis

- **Analysis of contracts** supports the hypothesis: static and prescriptive ways by less collaborative delivery methods and in more dynamic ways by collaborative delivery methods.
- **Interviewees** shared a wide range of possibilities (categorized in different maturity levels) related to schedule development, regardless of the delivery methods used as reference for the interviews.
- **Contrast** between interviews and the contract analysis – participants have the freedom to decide how to develop and implement their schedules on a more ad-hoc fashion, which might or might not lead to collaborative work.



Final Remarks

Leaving this area silent (missing out).

vs.

**Recommending/encouraging
collaboration (taking advantage of
collective knowledge to develop
and implement schedules).**



Thank you!

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Additional details are available at:
[https://www.construction-
institute.org/resources/knowledgebase/10-10-
metrics/result/topics/rt-362](https://www.construction-institute.org/resources/knowledgebase/10-10-metrics/result/topics/rt-362)

