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PROJECT VALIDATION – A NOVEL PRACTICE TO IMPROVE OWNER VALUE AND PROJECT PERFORMANCE

by **David Grau,** PE, PhD, Associate Professor

Fernanda Cruz-Rios, PhD, Post Doctoral Researcher

Rachael Sherman, PhD Student

School of Sustainable Engineering and The Built Environment
Arizona State University

Ira A. Fulton Schools of Engineering
Arizona State University

Lean Construction Institute
Transforming the Built Environment

Outline

- Background
- Objectives and Methods
- Project Validation: What, When, Who, & How
- Benefits
- Conclusions
- Validation Guide
- Question and Answer

Background

- Despite multiple planning and design efforts (front end planning, set based design, target value design), an endemic inability of project teams to predict project performance outcomes reliably exists (Grau and Back 2015)

- Recurring cost and schedule deviations (Payne 1995; Flyvbjerg et al. 2002; Isidore and Back 2002; Bordat et al. 2004; McKenna et al. 2006; Liu et al., 2013; Kim and Reinschmidt 2011; Orberlender and Trost 2001; Grau et al. 2014)

- The weight of such deviations has been since early in the XX century “not only by a few percent but by several factors” (Flyvbjerg 2006)

- Overall, such predictability performance problem has become a cornerstone for the construction industry

Objective and Methods

- As a departure from previous efforts, the study presented in this article aimed at characterizing the novel practice of project validation
- Data was collected from eight subject matter experts through phone interviews with an open-ended interview protocol
- Phone interviews lasted between 1 and 2 hours and were audio-recorded

Table 1. Project Sample – Descriptive Statistics

Investment Source	Private = 8 Public = None
Project Sector	Healthcare = 6 Manufacturing = 1 Biotechnology = 1
Experts' Affiliation	Owner = 5 Design and Construction = 3
Total Installed Costs (TIC)	Average = $183.8 million
Completion Time	Average = 36.3 months
Validation Costs (% of TIC)	Average = 0.54%
Validation Schedule	Average = 16.9 weeks

- During the interviews, each expert was requested to select one remarkable project validation, and shared validation aspects such as information inputs and outputs, team and culture, validation steps, or approval solicitation.

Study in Numbers

8

Experts

60+

Years of Validation Experience

598

Minutes of Interviews

83,624

Words Transcribed & Coded

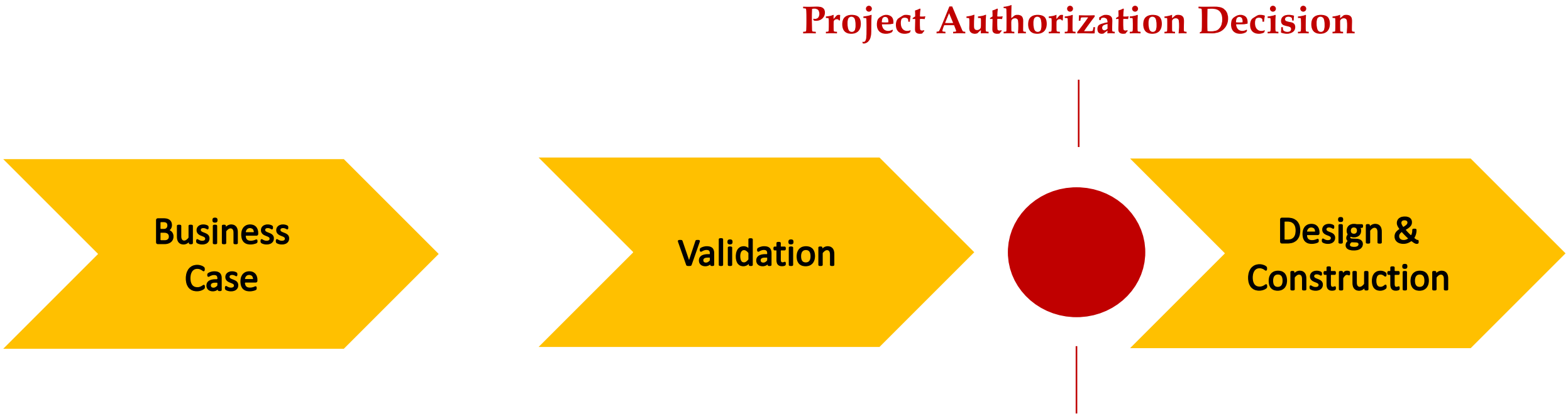
What is Validation? (& What is Not)

- *Project validation aims at proving or disproving **with limited or no design** whether the team can deliver a project that satisfies the owner's business case and scope within the owner's allowable constraints of cost and schedule and with an acceptable level of risk*
    - It sets the commitment of the team towards achieving project goals and accepting the shared risks of failing to do so

- Validation **is not design**
    - It aims at establishing the basis of design and conceptual estimate
    - Validation is the time to stay fluid and open, collaborate and innovate, identify opportunities, add value, and build certainty.

- Noted confusion as to what validation is among industry practitioners

When?


Project Authorization Decision
Business Case
Validation
Design & Construction
Integrated Form of Agreement or Other Contractual Agreement

Team Driven

- Disciplines expected to provide information continuously must be represented in the team
- Each partner must allocate one or more experts that secure the estimating and design expertise and volume of work that validation requires
- Team members must possess conceptual estimating skills

"I think the soft side, behavioral skills, the kind of things you can't necessarily teach people, getting the right people in the room is absolutely paramount."

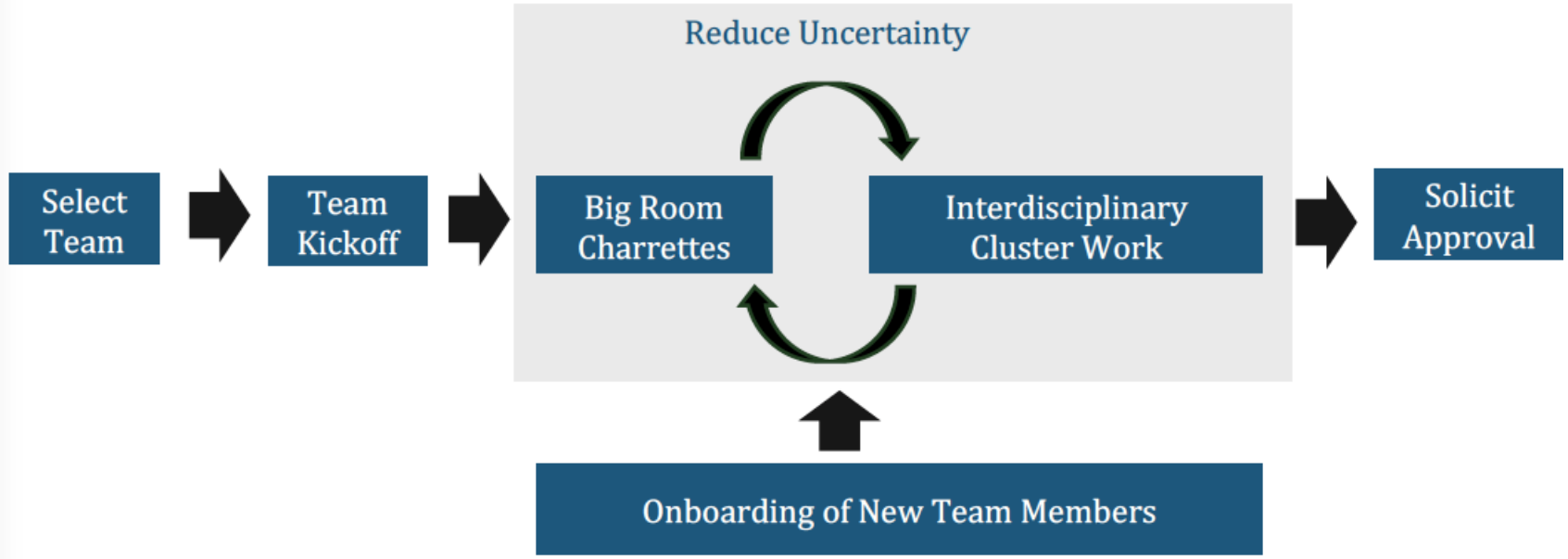
"Be responsive, be respectful, be professional, be accountable, be collaborative."

	High	Low
Technical Skills		
Conceptual Estimating (*)	❑	❑
Basic Design (*)	❑	❑
Detailed Design	❑	❑
Experience		
Similar Projects (*)	❑	❑
IPD	❑	❑
Lean Construction	❑	❑
Behavior		
Team Building (*)	❑	❑
Commitment (*)	❑	❑
Problem Solving (*)	❑	❑
Time Management (*)	❑	❑
Accountability (*)	❑	❑
Leadership	❑	❑

(*) Core competency

Project Validation Process

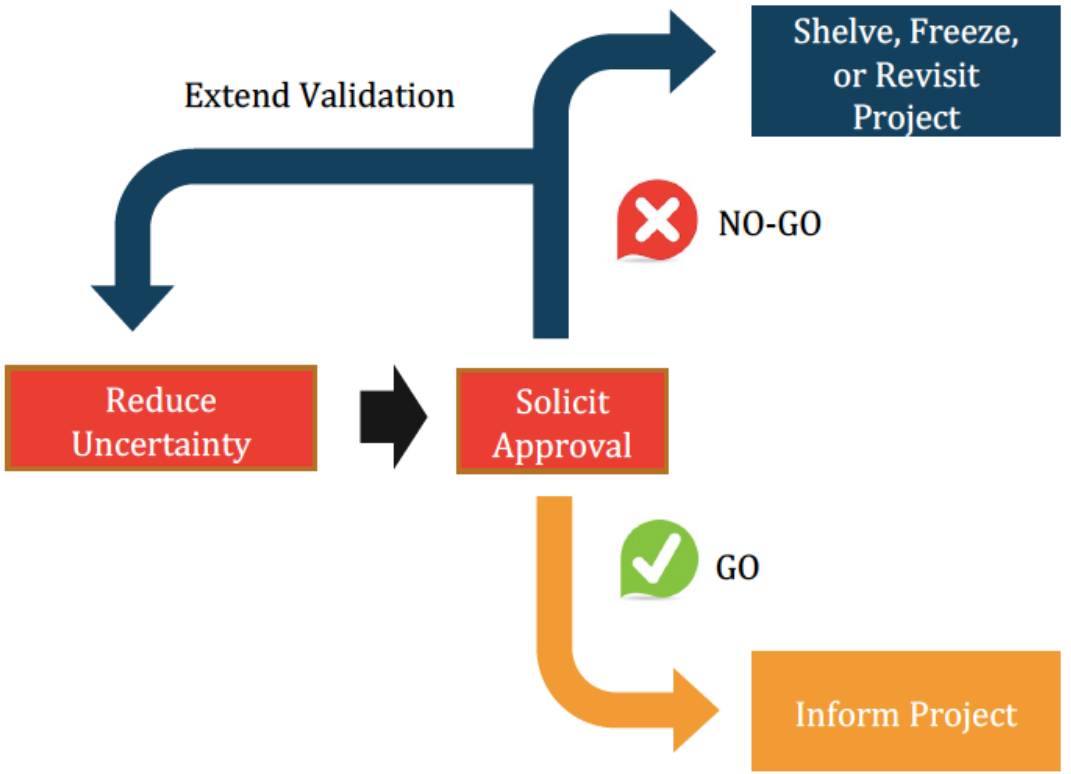
- Iteration between big room sessions and remote work by interdisciplinary cluster groups that rapidly builds knowledge and certainty
- Allowing the coexistence of multiple sets of options without necessarily settling on one enables the team, later on when design information is available, to make design decisions that ensure the cumulative impact of such decisions and thus add further value
- Dedicated team, budget and schedule



"Don't settle on one solution yet. It's too early. If you can just put in your best solution, but don't say that whatever is in validation is the end product. There's still an opportunity to make adjustments as the project goes on"

Approval Solicitation and Go/No-Go Decision

- At approval solicitation, the Validation Study is presented to owner stakeholders with the objective to obtain the authorization for the project and corresponding release of funds
- Stakeholders evaluate the team commitment and the certainty that the team can meet such a commitment
- When not authorized, validation enables the owner's informed decision about the project



"That's how we knew we were done, the owner said, "If you're prepared to commit to that, we're prepared to move forward""

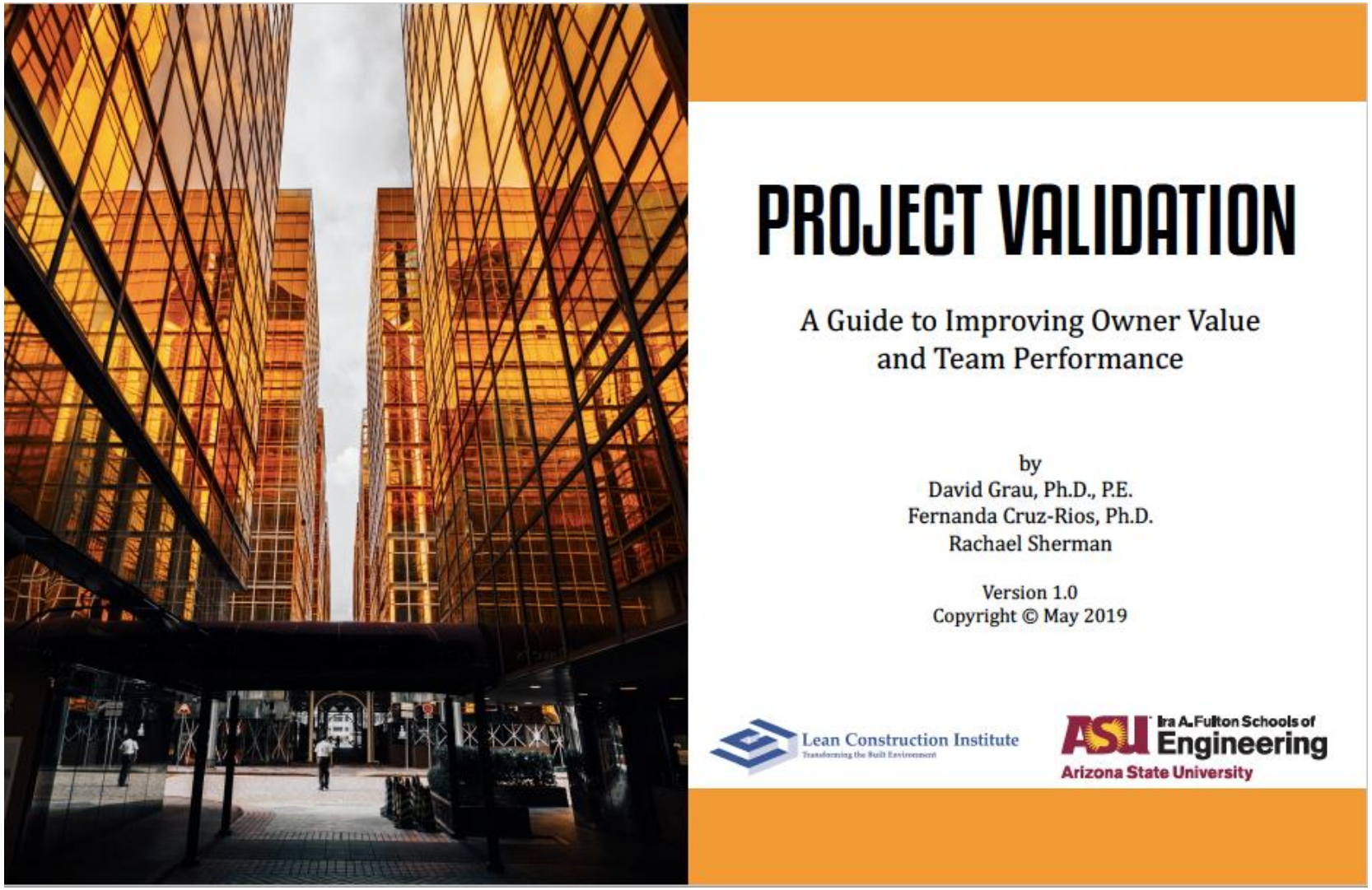
Benefits

- **Continuous Learning and Alignment.** Validation sets the soft skills and dynamics within the team.
- **Business Case Evidence**. Validation confirms, modifies, or denies the owner's business case.
- **Scope Definition**. By focusing on clarity, validated projects often avoid scope changes during design and construction.
- **Enhanced Value and Innovation**. Validation enables the generation of value to the owner and team and the reduction of waste during the project delivery process
- **Cost and Schedule Predictability**. SMEs express that the combination of validation and IPD virtually eliminates cost and schedule overruns.
- **Streamlined Design**. By setting the basis of design, validation reduces information loops during design.

Conclusions

- The value of validation rests in establishing certainty and enabling an informed decision, whatever the decision is, on behalf of the owner and the team at a fraction of the expenditure than traditional design and estimating approaches require
- Validation offers owners what likely is the “biggest bang for the buck” in today’s capital delivery landscape
- Organizations with validation expertise regard it as a competitive advantage

Project Validation Guide



https://grau.engineering.asu.edu/validation-guide/

When is Validation Performed?

Validation follows the development of the owner's business case and precedes the contractual agreement to design and build the project. The business case justifies why the owner wants to build a building/facility. It establishes the owner priorities such as scope and programmatic/operational functions that the project is to enable and the allowable cost and schedule. In doing so, the business case informs validation. Complementarily, validation precedes and informs the resolution by the owner on whether or not to authorize and fund the project. Validation engages the project team in the analysis of the gap between project objectives/expectations and owner priorities. When authorized, validation informs the contractual agreement, design, and construction. The Validation Study or similar deliverable from validation becomes a touchstone for the duration of the project.

In its leanest approach, validation sets the basis of design and conceptual estimate —i.e. without traditional design, which only starts once validation has been completed and the project authorized. See Figure 1. In an alternative approach, though, the owner can require the team to advance schematic design during validation. See Figure 2. Commonly, such approach aims at either reducing project completion time when an expectation exists that the project will be authorized or aims at further increasing certainty. In such case, schematic design is limited to attain the required level of certainty. However, the reader wants to notice that there is nothing new in reducing uncertainty and increasing project performance predictability through design.

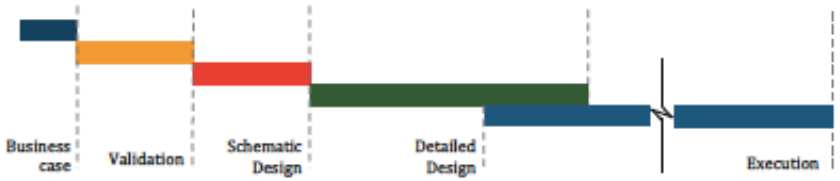


Figure 1. Validation in the Delivery Process

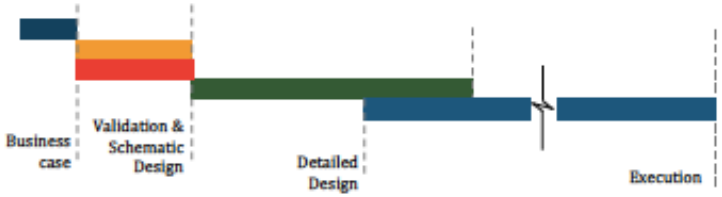


Figure 2. Concurrent Validation and Schematic Design

Approval Solicitation & Decision

At approval solicitation, the Project Charter and the supporting information in the Validation Study are discussed and presented to owner stakeholders with the objective to obtain the authorization for the project and corresponding release of funds. Stakeholders evaluate the team commitment and the certainty that the team can meet such a commitment. Validation culminates in an informed decision by the owner on whether to authorize (go) or not (no-go) the project. See Figure 4. The ultimate value rests in establishing certainty and enabling an informed decision, whatever the decision is, on behalf of the owner and the team at a fraction of the expenditure than traditional design and estimating approaches require.

"That's how we knew we were done, the owner said, "If you're prepared to commit to that, we're prepared to move forward""

What does a Go decision imply?

Validation is over. The owner is satisfied with the team's commitment to execute an agreed-upon scope within a target cost and completion time. The owner authorizes the project and funds are released. The owner and the team contractually agree to the project based on the shared commitment that the success criterion can be met. The IFOA captures each stakeholder's share of profit/loss, which has been negotiated at the end of validation. The project is designed, built, commissioned and started. At completion, losses or profits are shared among team partners.

"The final go, no-go, is based on the team's capabilities of ensuring that we can get the project at the scope that we were approved by the board, at the budget, or below"

What is next for the Team?

The validation team transitions at the core of the project team that delivers the project. Such transition aims at anchoring alignment, dynamics, commitment, and project knowledge. We have documented owners

"Validation was also understanding all of the key trade partners that were going to be a part of the project work authorization, and what their percentage of contribution was to the project work authorization itself. Because that defined what their portion of reward would be on getting below the target value of the project, and it would become a risk if they didn't hit the target value"

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Questions?

david.grau@asu.edu

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