Getting Started: Selecting the Right Delivery Method for Your Project
Your Presenters

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What is a Project Delivery System?

An approach to the organization of a project to address:

- The selection of project team members
- The timing and sequence of on-boarding those team members
- The definition of the scope of services and roles and responsibilities of those team members
- The extent of interaction and collaboration among those team members
Types of Project Delivery Systems

- Design-Bid-Build
- Design-Build
- Design-Build-Operate-Transfer
- Construction Manager at Risk
- Construction Manager Agent
- Multi-Prime
- Integrated Project Delivery
Design-Bid-Build

• Owner Retains Architect to Design Project
• Architect Hires Most Design Consultants
• Architect Prepares Construction Documents for Bidding
• General Contractor Selected Based on Winning Bid
• Linear Process
Design-Bid-Build

- Architect/Engineer
- Owner
- General Contractor
- Subcontractors
- Material and Equipment Suppliers
Perceived Advantages:

• Owner Control Over Design
• Flexibility to Defer Commitment of Construction Funds Until Design Complete
• Price Competition Based on Bid Documents
• Clearer Definition of Scope of Work for Contractors
• Widely-Understood Approach
Design-Bid-Build

Perceived Disadvantages:

• Lack of Collaboration
• Time-Consuming Process
• Misalignment of Interests
• Finger Pointing
Main Features:

• Owner Retains Single Entity to Design and Build
• Design-Build Entity Usually Contractor-Led
• Architect Under Contract to Design-Build Entity
• Owner Provides Certain Program and Design Criteria
• Design-Builder Delivers Design and Cost Proposal
• Owner and Design-Builder Amend Agreement to Allow Construction
Design-Build

- Owner
- Design-Build
- Subcontractors
- Material and Equipment Suppliers
- Architect/Engineer
Perceived Advantages:

• Single Point of Responsibility for Design and Construction
• Contractor and Architect More Aligned
• Faster Timeline from Inception to Completion
• Lower Cost of Finished Project
Perceived Disadvantages:

• Lack of Owner Control Over Design

• Risk of Compromises When Design Completed to Allow Design-Builder to Increase Margins
Design-Build-Operate-Transfer

Main Features:

• Usually on Public Projects – P3
• Contract for Design and Construction Similar to Design-Build
• Concession Agreement – Post Construction Operation and Maintenance
• Revenue from Operations = Return for D/B and Concessionaire
CM at Risk

Main Features:

• CM At Risk Hired During Design Process
• Collaborates with Architect to Provide Input on Constructability, Cost, Value Engineering, Schedule, Long Lead Items
• Establishes Price (Usually GMP) at Agreed Design Milestone
• Role and Responsibility of CM At Risk During Construction – Similar (Identical) to General Contractor
CM at Risk

- Architect/Engineer
- Owner
  - Construction Manager At Risk
  - Subcontractors
  - Material and Equipment Suppliers

Architect/Engineer

Owner

Construction Manager At Risk

Subcontractors

Material and Equipment Suppliers
Perceived Advantages:

• Collaboration with and Input from Contractor During Design
• Ability to Expedite Projects
• Facilitates Fast Tracking
• Avoidance of Certain Disputes Addressed During Pre-Construction
Perceived Disadvantages:

• Owner Commits to CM Early – Lack of Options for Pricing Competition

• Overall Cost of Finished Project May Be Higher
CM Agent

Main Features:

• Owner Contracts with CM Agent During Design Phase
• CM Agent collaborates with Architect to Provide Input on Constructability, Cost, Value Engineering, Schedule, Long Lead Items
• Owner Enters into Construction Contract with GC or Trades
• CM Agent Manages Contractor(s) During Construction
• CM Agent Does Not Take Risk on Price, Schedule or Quality of Construction
CM Agent

- Architect
- Owner
- Construction Manager
- Contractor
- Subcontractors
- Material and Equipment Suppliers
Perceived Advantages:

• Collaboration with and Input from Contractor During Design

• CM Agent More Aligned with Owner than CM At Risk
CM Agent

Perceived Disadvantages:

• Lack of Risk on CM Agent Results in Misalignment

• CM Agent’s Role May Interfere Rather than Facilitate Project Goals

• Cost of CM Agent Not Worth the Return
Multi-Prime

Main Features:

• Owner Enters into Contracts with All Trades – No General Contractor
• Owner or CM Agent Manages Trades During Construction
• Trade Contract Awards Usually Based on Construction Documents
Multi-Prime

Architect
Owner
Construction Manager
Contractor
Contractor
Contractor
Material and Equipment Suppliers
Perceived Advantages:

• No Additional Fee and General Conditions from General Contractor
• Owner has More Hands On Role in Managing Trades
Perceived Disadvantages:

• Risk of Scope Gaps Between Trade Contractors

• Risk of Lack of Coordination in the Field
A Brief History of Project Delivery . . .
Integrated Project Delivery
Integrated Project Delivery

- 975 Projects
- Average project size = $65M

Only 30% of projects meet/exceed their cost and schedule goals!

2012 CII Performance Assessment Study
Integrated Project Delivery

Constructing the Team (Latham Report 1994)

The rationale behind the development of an integrated process is that the efficiency of project delivery is presently constrained by the largely separated processes through which they are generally planned, designed and constructed. These processes reflect the fragmented structure of the industry and sustain a contractual and confrontational culture.
...[W]hat “optimized projects” using “optimized processes” should look like. At their core, such projects are implemented by fully collaborative, fully integrated, and thus highly productive project teams guided by principles of true collaboration, open information sharing, owner leadership, team success tied to project success, shared risk and reward, value based decision making, and use of full technological capabilities and support.
Labor Productivity

Index of Construction Labor Productivity, 1964-2012
based on various deflators
in comparison to labor productivity in all nonfarm industries

- 30 deflated by annual construction labor cost index, 1964=100
- 30 deflated by annual consumer price index, 1964=100
- 30 deflated by annual construction wage index, 1964=100
- 30 deflated by house price index, 1987=100
- 30 deflated by price index of new one-family house under construction, 1964=100
- 30 deflated by price index of new one-family house under construction, 1964=100
- 30 deflated by building value in place index, 1964=100

The Economist

Efficiency eludes the construction industry

American builders’ productivity has plunged by half since the late 1960s

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IPD Business Structure

- Profit Separated from Cost
- Profit at Risk
- Cost Guaranteed
- Change Orders Restricted
- Final Profit Based on Project, not Individual Outcome
- Risk/Reward Plan Tuned to Goals
Value Enhancement Model
IPD Contract Structure

• Single or Interlocked Contracts
• Early Involvement of Key Parties
• Joint Management
• Liability (Mostly) Waived Amongst IPD Parties
• Joint Validation of Goals
Governance

By Contract

Majority

Senior Management Team

Unanimous

Project Management Team

CFT*

CFT*

CFT*

In Practice
In the Field

• Early Involvement of Key Parties
• Co-located, Cross-Functional Teams
• Target Value Design
• Collaborative (Pull) Scheduling
• Joint Project Management
• Lean/Agile Processes
  • PDCA
  • A3
  • Choosing By Advantages
• Metrics Driven
Owner Satisfaction Survey

LCI/Dodge Data & Analytics (2016)
What Drives the Selection of Project Delivery Systems?

It Starts With the Owner – What Type of Owner?

• Sophisticated or Inexperienced
• Commercial Developer
• Institutional Owner (schools, hospitals, museums)
• Public or Private
What Drives the Selection of Project Delivery Systems?

What Goals Take Priority and How Do You Strike a Balance?

- Quality of Design
- Speed of Project Delivery
- Initial Project Cost
- Life Cycle Cost
- Initial Project Cost + Life Cycle Cost
What Drives the Selection of Project Delivery Systems?

Human Factors

• Inertia – “If it Ain’t Broke, Don’t Fix it!”
• Fear of the Unknown
• “How Do I Look Good?”
• The Path of Least Resistance
• The Last Disaster
Why Do Project Delivery Systems Fail?

• Misalignment of Project Delivery System with Most Important Goals
• Institutional Cultures Resistant to Different/Newer Project Delivery Models
• Contract Language That Fails to Capture Goals and Related Allocation of Risk and Reward
• Wrong People – Wrong Time
• Miscommunication
• Lack of Coordination
How Can Selection Be Improved?

• Identify Goals

• Identify and Honestly Evaluate Resources

• Understand Challenges – Legal, Capital, Talent

• Evaluate Goals, Resources and Challenges
IPD Resources

IPD Agreements

• Proprietary
  • Hanson Bridgett LLP
  • Sutter Health

• Association
  • AIA C-191
  • AIA C-195
  • Consensusdocs CD300
  • Canadian Contract Documents Committee CCDC 30
  • ACA PPC-2000
  • ACA FAC-1
IPD Resources

Other Resources

• Integrating Project Delivery, Fischer, Ashcraft, et. al., Wiley (2017)


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