Bulletin No. JM 12
File: Job Management

Bulletin

Integrated Project Delivery (IPD)

Introduction

Our industry today appears to be evolving at a faster pace than we have experienced in the last 30 years. Customers are demanding greater value, technology—both hardware and software—is evolving rapidly, and our need to increase productivity is driving profound changes in how we execute our scope of work in the construction industry.

Lean concepts traditionally used in the manufacturing industry are alive and well in the construction industry. At the core of Lean is the elimination of waste. Through this drive to eliminate waste, owners and general contractors (GCs) are seeking new contracting methods to aid the overall Design/Bid/Build process. The Integrated Project Delivery (IPD) method is becoming the dominant contracting strategy to assist in streamlining all aspects of the construction process and aid in the drive to eliminate waste from the system.

The IPD methodology is rooted in the idea of truly integrating all parties (owner, designer, GC/CM, and subs) in the planning, design, and construction process at the earliest possible moment. The assumed outcome, if all parties are brought into the integrated and collaborative model, is maximized efficiency at all stages of the design and construction process.

To best understand the concept of IPD, we will compare and contrast common traits of traditional project delivery methods versus traits of the IPD method. We will also look at some of the benefits to the various parties involved. Then, we will address some of the basic principles of IPD and show the varying levels of IPD.

Common Traits of IPD

The best comparison of traditional project delivery vs. IPD comes from *Integrated Project Delivery: A Guide*, version 1, © 2007, AIA National I AIA California Council. The table on the next page shows the comparison of six specific areas associated with either method (Teams, Process, Risk, Compensation/Reward, Communication/Technology, and Agreements).

Traditional Project Delivery		Integrated Project Delivery
Fragmented, assembled on "just-as-needed" or "minimum-necessary" basis, strongly hierarchical, controlled	**Teams**	An integrated team entity composed of key project stakeholders, assembled early in the process, open, collaborative
Linear, distinct, segregated; knowledge gathered "just-as-needed"; information hoarded; silos of knowledge and expertise	**Process**	Concurrent and multi-level; early contributions of knowledge and expertise; information openly shared; stakeholder trust and respect
Individually managed, transferred to the greatest extent possible	**Risk**	Collectively managed, appropriately shared
Individually pursued; minimum effort for maximum return; (usually) first-cost based	**Compensation Reward**	Team success tied to project success; value based
Paper-based, 2 dimensional; analog	**Communications/Technology**	Digitally based, virtual; Building Information Modeling (3, 4, and 5 dimensional)
Encourage unilateral effort; allocate and transfer risk; no sharing	**Agreements**	Encourage, foster, promote and support multi-lateral open sharing and collaboration; risk sharing

Source: *Integrated Project Delivery: A Guide*, version 1, © 2007 AIA National I AIA California Council.

As you can see, the Traditional Project Delivery method is a very silo-based and individualistic model in which risk is passed down to the lowest level and information is shared on an only-as-needed basis. It does not encourage or foster any kind of team effort, but rather an atmosphere in which contractors focus on covering their risk and not considering the needs or success of other stakeholders.

On the opposite end of the spectrum is the IPD delivery method. It focuses on leveraging the knowledge base of all stakeholders where everyone is collaborating to ensure the overall success of the project and each of the stakeholders. It drives a more welcoming and friendly atmosphere, which ultimately drives a more favorable, "fun" culture while eliminating impediments throughout the lifecycle of the project.

Benefits of IPD

Benefits that arise from the use of the IPD delivery method are vast and impact all parties involved in the construction process. Designers benefit from the expertise contractors provide by participating early in the design process. Documentation time is streamlined, and IPD leads to better cost control and budget management. Contractors benefit from cleaner design drawings that reduce change orders and RFIs and allow for early pre-planning that can increase productivity and lead

to more effective adoption of fabrication and modularization techniques.

The owners are winners as well with IPD since the project team better understands the owners' goals. This facilitates schedule consistency, a streamlined process for evaluating cost options, more accurate budgeting, better forecasting and easier management of costs, schedules and quality.

Basic Principles

At the core of the IPD delivery method are collaboration and planning. To achieve a higher level of collaboration and planning, the IPD method increases the number of participants involved in the early planning and design phases of the project. In addition to the traditional team of owner, architect, designer, and GC/CM are major and minor subcontractors. The team might also include major equipment suppliers. Through a process called “on-boarding,” the team begins to redefine a typical project team by empowering team members with the tools to work together in a manner that requires mutual respect, trust, open communication, and collaborative, innovative decision-making.

Leadership is made up of principles held by each team member and decisions are made as a group with buy-in by all parties required to move forward with an idea. A common feature in an IPD project is the lack of any company affiliation. The project team is viewed as one organization in and of itself; this helps to break down the walls and silos found in more traditional project delivery models.

Compensation strategies in an IPD world are typically GMP or T&M. The key components are those of mutual benefit and reward for all parties and are typically designed around shared savings plans where risk is spread across all parties.

Through early goal definition the team can set the ground rules for tracking throughout the project, and those rules are owned and agreed to by all stakeholders. This sets the stage for how the team will measure its success.

Once the on-boarding process is complete, the team focuses on planning because the IPD methodology believes increased planning will result in better efficiency during each stage of the project. Planning is also seen as a key area to drive collaboration in the design phase which will ultimately reduce the execution (construction) phase.

Planning processes include such task areas as schedule, performance tracking, BIM execution, fabrication, etc. Essentially all aspects of the design and construction process are followed by all parties throughout the lifecycle of the project. The components of the plan will be tracked to ensure adherence and measured to ultimately gauge project success in safety, schedule, quality and budget.

Technology plays an important role in the IPD world as it is typically used to aid in streamlining processes and maximizing both functionality and interoperability. Use of BIM, heavy fabrication, and modularization can typically be found due to the increased collaboration of trades and the early entry into the project and design process.

Levels

While the term “Integrated Project Delivery” may be fairly new, the concepts are present in a variety of contracting strategies or delivery methods that we are more used to seeing. A joint effort of the National Association of State Facilities

Administrators (NASFA), Construction Owners Association of America (COAA), APPA: The Association of Higher Education Facilities Officers, Associated General Contractors of America (AGC) and the American Institute of Architects (AIA) published a document titled, *Integrated Project Delivery For Public and Private Owners* in 2010.

This document attempts to provide a better understanding of IPD, and includes definitions of the different levels of IPD. The chart below, which was developed for the publication, provides a glimpse into how we see IPD concepts at play in other, more common delivery methods. The publication further explores the concept of IPD as a philosophy or as a delivery method.

	Level One **"Typical" Collaboration**	**Level Two** **"Enhanced" Collaboration**	**Level Three** **"Required" Collaboration**
Level of Collaboration	Lower	↔	Higher
Philosophy or Delivery Method	IPD as a Philosophy	IPD as a Philosophy	IPD as a Delivery Method
Also known as	N/A	IPD-ish; IPD Lite; Non-Multi-party IPD; Technology Enhanced Collaboration; Hybrid IPD; Integrated Practice	Multi-Party Contracting; "Pure" IPD; Relational Contracting; Alliancing
Delivery Approaches	CM at-Risk or Design Build	CM at-Risk or Design Build	Integrated Project Delivery
Collaboration	Typical; collaboration not contractually required	Enhanced; some contractual collaboration requirements (early participation of stakeholders, use of BIM, and sharing of models, etc.)	Required; collaboration required by a Multi-Party Contract
Common Contract Type	Open Book, cost-plus with a Guaranteed Maximum Price (GMP); fixed fee	Open Book, cost-plus with a Guaranteed Maximum Price (GMP); fixed fee	Multi-Party, Open-Book, cost-plus without a Guaranteed Maximum Price (GMP); shared financial risk/reward tied to project outcome
Common Procurement Methods	Design; Qualification Based Selection (QBS) Construction; QBS or Best Value (fees)	Design; Qualification Based Selection (QBS) Construction; QBS or Best Value (fees)	Design; Qualification Based Selection (QBS) Construction; QBS or Best Value (fees)

Whether IPD is being used as a philosophy or as a delivery method is largely determined by whether or not collaboration is contractually obligated. Owners who choose to fully implement IPD as a delivery method and contractually obligate all parties to the collaboration levels necessary will see the greatest benefits. Using IPD-ish or IPD as a philosophy can still result in some benefits to the owner, but it is unlikely to provide the full range of benefits.

IPD is a product of the natural evolution of the construction industry. Those that have experienced IPD as a delivery method see components that are evident on most of our projects today, such as BIM, design-build, fabrication, modularization, last planner, etc. IPD takes these individual ideas or technological advancements and combines them with a culture of open communication, collaboration, mutual respect, mutual reward, and goal setting to provide benefits to all stakeholders in the construction process. It does require a different view on resource allocation due to the early involvement of key project personnel, but the benefits appear to be well worth it.