



cutting through complexity

Integrated Project Delivery

*Managing risk and
making it work
for all parties*

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Integrated Project Delivery – Managing risk and making it work for all parties

Integrated project delivery (IPD) is a collaborative project delivery approach that involves a more deliberate form of integration among project participants, including the owner, architect, engineers, contractor and subcontractors. Although integrated project delivery, in concept, is not new, the current approach to formalizing the operating parameters through multi-party agreements, pooled risk and reward structures, and trust-based relational contracting are new applications to IPD.

These new applications, along with many of the tools being used in the industry, are changing, not eliminating, the risk profile of projects delivered using IPD. This paper will provide an overview of the current practices and challenges involving


IPD and help practitioners to better understand IPD and its evolving risk profile, offering guidance on how to address the following challenges:

- What does an organization need to do to prepare for IPD?
- What issues should be considered in determining an IPD approach?
- What are the risks and challenges in establishing an IPD delivery model?
- What are the tools and methodologies currently used to help facilitate successful IPD?

Defining Integrated Project Delivery

Simply put, IPD is a collaborative approach between the owner(s), contractors and design professionals in order to plan, design, permit, construct and commission a capital project. Historically, this collaboration has been achieved through many different approaches, including design-assist, design-build, public-private-partnerships and even traditional design-bid-build through early contractor involvement in the design process. The benefits of collaboration are well understood in the industry and can be clearly demonstrated through examples of improved cost estimating, constructability, condensed schedules, reductions in field conflicts and increased value to the owner.

The current form of IPD was born out of the general belief that traditional contracting approaches create barriers to collaboration, transparency and the trust needed to truly collaborate; hence the rise of the multi-party agreement. The intent of the multi-party agreement is to create a contractual vehicle that removes barriers to collaboration (i.e., protecting profit, blaming others, hiding contingency and the mentality of every company for itself). There are many IPD proponents in the industry who believe this environment can only be created through the use of a multi-party agreement in which there is a shared risk/reward pool and no traditional financial cost guarantees. However, having witnessed numerous IPD approaches, we have seen projects succeed and fail with and without multi-party agreements.



The keys to success for IPD projects, not surprisingly, are the same as other delivery approaches: choosing the right project, selecting the appropriate delivery and contracting strategy, engaging the right team (external and internal), understanding the project risks, and having an operating and governance structure in place to support the delivery approach.

IPD Success

Like other delivery approaches, IPD is not a one-size-fits-all approach, and should only be undertaken after careful consideration of the project's characteristics, the organization's needs and capability, and the environment in which it will be delivered. The IPD approach can be extremely beneficial for projects that are significant in size and complexity and require expedited delivery. Listed below are some of the key areas to consider in improving the likelihood of successfully delivering a project using IPD.

Selecting the right project delivery strategy

Selecting the appropriate project delivery strategy is one of the most critical activities an organization can undertake for a major capital project. The delivery strategy will drive project cost, quality of design and construction, maintenance costs, and schedule.¹ Some of the key characteristics that should be considered include project size, complexity and schedule.

In considering the project size, an organization should evaluate the project's duration and cost. These two drivers should be weighed against the cost and time needed to establish an IPD operating system, negotiate a construction agreement, select an experienced integrated team and establish trust among the participants. Embarking on an IPD project can take significantly longer and increase up-front costs, and require greater investment from senior leadership than a more traditional approach. However, executed correctly, the benefits can include greater value for the owner, reduced costs and waste, expedited construction schedule and additional financial rewards for the construction and design professionals.

Project complexity is one of the key drivers to achieving the benefits of deep collaboration and IPD. The project should be significantly complex in order to justify the increased planning and design costs incurred by carrying a larger team through these phases of the project. An organization should carefully weigh the opportunity for production savings during construction (which is driven by design and construction complexity) and evaluate whether the opportunity provides an adequate return on investment (cost, schedule, value, etc.) for the increased planning and design costs.

Schedule is another key driver that should be considered when selecting an IPD approach. Not only should there be a need to expedite the schedule, the project team also should have

fairly unrestricted influence over the schedule. Specifically, when external agencies or stakeholders have significant influences over the cost, scope, schedule and changes, and/or the political process is fraught with potential delays or funding requirements, the ability of the project team to influence the schedule is reduced. These regulatory and political delays can lead to significant cost overruns due to the increased IPD team carrying costs during design and planning. This issue is exacerbated by the need for personnel continuity throughout the project life cycle in order to achieve the full potential production savings during the construction phase. If significant delays occur, under a traditional approach an organization would just halt work; however, when using an IPD approach, sending personnel back to their home office may expose the project to this continuity risk and limit the production savings.

If a project does not meet all these characteristics, it does not mean that it will not benefit from a collaborative approach. However, it does beg the question of whether or not an alternate contracting or delivery approach may be a better fit to manage the unique risks on the project.

Team selection

Selecting the right team with experience and knowledge of IPD principles is likely the most important activity an organization can undertake. This applies to both external vendors (architects, engineers, contractors and subcontractors) and internal personnel (project managers, project controls, project executives, etc.). The skill sets should be equally balanced between the parties so that roles and responsibilities can be shared and allocated equally amongst the parties. Heavy reliance on one party can result in unintended influences that limit the value of an IPD approach.


One of the major pitfalls in this area happens when the project team, management and key stakeholders within the organization agree on an IPD approach and then implement the IPD project with inexperienced personnel or without a thorough understanding of the key principles and core objectives of IPD. Mitigating controls include aligning individuals with IPD experience to critical roles. In addition, there should be a rigorous training program for project participants that includes contractual terms, operational procedures and teaming principles.

¹ Source: KPMG International, Project Delivery Strategy: Getting it Right, 2010

Choosing the right contract

There are many contract options that can be leveraged to implement IPD. As previously mentioned, a relatively recent development in the industry is the use of a multi-party agreement. Several industry organizations, including the American Institute of Architects (AIA), have multi-party agreements available for adaptation. Organizations should consider leveraging these existing contracts and soliciting IPD-savvy legal advice prior to customizing.

Another effective option is using a traditional cost-based contract and referencing operating or joining agreements that outline the operating principles of the integrated project team. This allows for the unique risks and functions of the different participants (architects, contractors and subcontractors) to be managed using known and tested contract terms and compensation methods. It also allows for issues around insurance, compensation terms and incentives to be specially addressed based on the participants' risk exposure and ability to control outcomes.



IPD and other delivery approaches are not one-size-fits-all solutions. Undertaking an IPD approach should be carefully considered from both a risk and benefit perspective.

Establishing the compensation structure

In principle, the compensation structure should include three components: 1) actual costs, 2) corporate overhead and profit, and 3) incentive or risk-/reward-sharing. The challenge is that many of the professional services participants and the subcontractors are not typically compensated in this manner. In many cases, this is one of the most difficult changes for new participants in an IPD project to implement. It's critical that the compensation method is clearly defined in the contract, that participants have been trained in how this is different than their typical approach and that a pre-assessment of their project finance/cost systems has been conducted in order to determine that the organization is ready to track project cost performance accordingly.

As noted previously, some of these compensation challenges can be addressed through a traditional contracting approach. However, each organization that will be part of a risk/reward program will need to be able to adhere to the three-pronged compensation approach described above. This includes providing full transparency and access to financial information including all costs, corporate overhead and profit.

Performing early up-front audits of the IPD participants' financials, labor rates, equipment rates and regular project cost reconciliations helps to create the transparency needed to build trust between team members.

Implementing an operating and governance structure

In the IPD environment, the traditional separation of designers, contractors, owners and subcontractors is significantly reduced. One of the core principles of IPD is that participants make decisions in a collaborative way that benefits the project, not the individual organization. This approach requires that a different operating model be adopted for executing the project.

Conclusion

Integrated Project Delivery can provide an organization with significant opportunity for value creation, and allow for shared reward among the contractors and professional services firms engaged to deliver a project. However, IPD is not a one-size-fits-all delivery model for all construction projects. The risks and benefits of using IPD should be clearly understood

The operating model needs to consider collaboration methods/tools; decision-making and governance procedures; IPD performance objectives and metrics; quantifying and tracking value; variance tracking and reporting; and risk/reward incentives. Many organizations utilize existing tools within the industry and lean construction practices to help create this operating environment. Common practices include:

- Target cost pricing
- Co-location
- Building information modeling
- Lean training
- Use of cross functional groups and core group
- Tracking accountability for reliable commitments
- Choosing by advantages (CBA)
- Lessons learned
- Value creation tracking
- Decision documentation process
- Value stream mapping
- Incentives linked to behaviors and measurable outcomes

The key to success is developing the operating model and governance structure early on in the project, aligning the procedures with the appropriate roles and responsibilities, training the project participants and then regularly monitoring compliance with the policies and procedures.

and documented prior to selecting this delivery approach. In addition, each organization must be willing to invest at the onset of a project in order to select the right team, develop internal resources, establish the operating model and perform rigorous training and monitoring of the project throughout its life cycle.



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