

Quick Guide to Digital Project Delivery for Owners of Critical Assets

Demystifying DPD to deliver more
successful infrastructure projects



Owners are under intense pressure to meet sustainability requirements, prove the value of infrastructure investments, and demonstrate accountability and transparency throughout the asset lifecycle.

Digital project delivery (DPD) provides the data access and sharing needed to help them meet these new and evolving expectations, and ensure the successful delivery of projects.

What is Digital Project Delivery (DPD)?

The Construction Management Association of America (CMAA) defines digital project delivery as a way of working in which projects are planned, designed, constructed, and operated in an interactive digital space that all stakeholders can access.

By enabling the digitization of project data and making that data easily shareable among teams, DPD provides the conditions for stakeholders on large capital projects to collaborate and communicate more effectively, and realize a host of improvements across the project lifecycle, from planning and design through construction to operations and maintenance.



How does digital project delivery work?

DPD starts with a **common BIM model**. A common BIM model allows modelers to collaborate around a single, shared BIM model, facilitating stronger communication and cooperation during the project's design and construction.

Taking the BIM model a step further, a **constructible model** is a coordinated and content-enabled model that includes all of the data and details required for construction. By making it possible to design and build more accurate and detailed construction-ready projects, constructible models increase efficiency and profitability, and enable the use of safer and more sustainable construction methods.

A **connected data environment (CDE)** serves as a central (often cloud-based) repository for constructible models and project data. When everyone involved in the project has access to the CDE, they can upload and access a nearly limitless range of valuable project information, including:

- Construction documentation
- Material specifications
- Estimates and change orders
- Schedules
- Contracts
- Warranty information and more

A **project management information system (PMIS)** helps owners store, organize, and control the flow of project data. A PMIS provides real-time data insights into performance and potential risks across the project lifecycle so assets can be planned, designed, built, and operated more efficiently.

The CDE also makes it possible to develop a **digital twin**. A digital twin is a digital representation of a physical asset, such as a bridge, roadway, power plant. By centralizing both historical data about the project's design, construction, and operation, as well as real-time asset data gathered by IoT devices and sensors, a digital twin makes it easier to efficiently monitor and maintain assets, as well as simulate and test potential situations to assess their impact.



What are the benefits of DPD?

DPD centralizes project teams around digital, data-driven processes. By enabling data collection and sharing, and streamlining workflows, DPD helps each stakeholder work more effectively and efficiently. The resulting advantages across the asset lifecycle include:

- Greater visibility and transparency
- Better communication and collaboration
- More streamlined and connected workflows
- Fewer cost and schedule overruns
- Increased sustainability
- More efficient operation and maintenance
- Data-driven decision making

Shared visibility saves time and money

Digital product delivery allows team members to visualize models and project data, and gain a shared understanding of the project. This shared visibility makes it possible to correlate project management workflows to cost management practices to improve budgeting and forecasting. Shared data access also facilitates the identification of potential delays, conflicts, and other problems earlier and more easily — before they spiral out of control. Teams can make adjustments and reallocate resources to minimize the impact on the project budget and schedule.

Data access increases transparency and sustainability

With access to the right data at the right time, owners can provide transparency about project status with all stakeholders, from design and construction teams to the general public. When data is combined with analytics and simulation tools, owners can also conduct lifecycle assessments and identify opportunities to limit environmental impact and optimize energy efficiency.

Centralized data sharing improves communication and productivity

With a common BIM model and CDE in place, changes can be easily captured and made accessible to all stakeholders, giving them the information they need to make better and faster decisions. At the operation stage, asset monitoring via IoT devices and sensors gives operators the data needed to promptly identify issues and implement corrective measures. By minimizing the potential for miscommunication and missing information, teams across the lifecycle are able to use their time most productively.

Meet the modernization imperative with data-driven decision making

Owners and public agencies can increase transparency, predictability, and sustainability by requiring digital project delivery. Digital project delivery can help owners reduce risk, increase visibility, and gain greater control over schedules and budgets by giving project stakeholders the data they need to make better and faster decisions.

To discover more about the advantages of data-driven decision making,

READ THE WHITE PAPER

