Digital Project Delivery

For DOTs

Trimble

What is digital project delivery?

Digital project delivery is the digitization of all aspects of construction, from planning and design through completed construction and asset handover. With digital project delivery, paper-based, manual processes are replaced with cloud-based, connected workflows that improve productivity, data access, and decision-making throughout the project. It goes beyond merely adopting technology. It's a collaborative approach to sharing data and handing off tasks between disparate teams.

Elements of digital project delivery

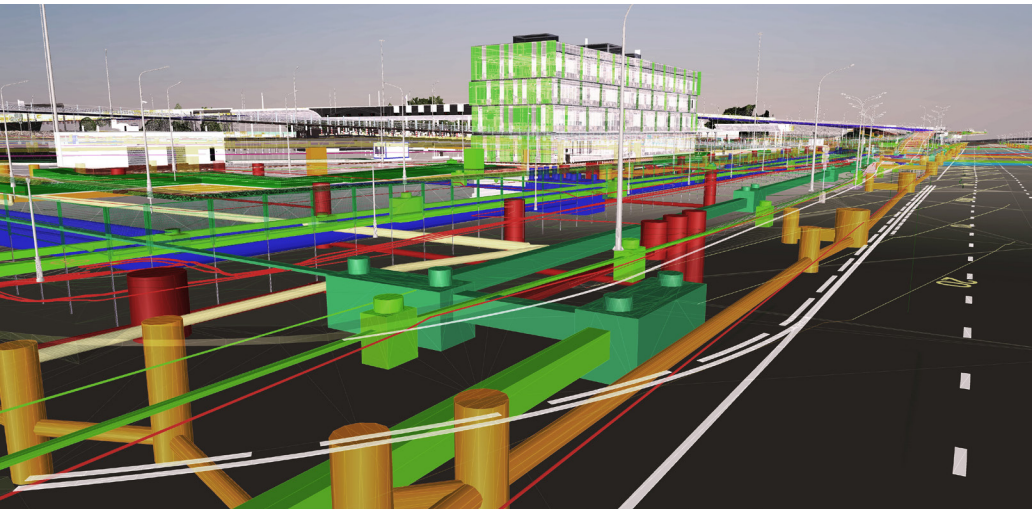
- **Standards:** Guidelines ensure that disparate teams approach technology with the same digital strategy and standards that support interoperability.
- **Technologies:** Connected platforms centralize project data, connect the office to the field, and preserve data for future use.
- **Data:** 3D models, along with existing conditions and as-built data, empower everyone with information to work smarter, faster, and better.

Trimble

Why go **digital?**

Infrastructure budgets are large and complex, raising the risk associated with each project. Inflation and a neverending labor shortage threaten to eat into budgets and cast a negative shadow over the positive impacts of high-profile, high-impact construction projects.

Digital project delivery empowers you to minimize many of the common pitfalls of infrastructure construction. It also allows you to be more transparent to your stakeholders about progress, costs, and outcomes.



One study found that using BIM and digital delivery saves roughly

15%

in change orders.

Trimble

Key benefits of digital project delivery

These benefits...	Increased efficiency and productivity	Better decision-making	Improved transparency and accountability	Expanded application of BIM
Enable you to...	Reduce the errors and miscommunications that lead to rework and waste.	Make data accessible and actionable to assess risk, allocate funds, and evaluate bids more effectively.	Get real-time visibility into the costs and impacts of each project.	Move beyond individual BIM deliverables to shared models and 4D/5D data.
	Minimize the time teams spend hunting down information, managing permit processes, and making corrections.	Empower teams to collaborate with shared data to solve complex challenges, like reducing waste and emissions.	Zero in on the root causes of delays, overruns, and communication errors.	Encourage designs to be made with a higher level of detail, which helps to define model deliverables, milestones, and handoffs.

Trimble

How to get started

The first step to implementing digital project delivery is digitizing your business processes by leveraging technologies that foster efficiency gains. As part of the evaluation of those technologies, make sure they are interoperable with other critical systems within your organization so that data can be leveraged by all stakeholders.

Next, mandate that project teams agree to principles that ensure the continuity and accuracy of data and processes. Here are a few example policies to consider:

- **New technologies should use standards that support interoperability, which allows you to share information regardless of the technology vendor.**
- **3D models should be geo-located to provide additional context to the design.**
- **Project teams may use the technology of their choice as long as they are able to meet the requirements of their phase of the project.**
- **All stakeholders should play a role in deciding which technologies are used and how data is shared between teams.**
- **Participants agree to use automation that supports efficient workflows.**

Technology alone isn't a solution. In addition to these policies, it's important to seek out technology partners who think about the big picture. Seek out technology vendors who work in collaboration with consulting firms and industry organizations to establish digital project delivery best practices.

Trimble

DOTs Can Use Real-time Data to

Transform Transportation Construction Projects

Departments of Transportation (DOTs) have an unprecedented opportunity to modernize the nation's infrastructure. According to the American Society for Civil Engineering,

37% of the nation's bridges need significant repair and preservation work.

Long overdue roads and bridges projects can finally go from the to-do list to in-progress. However, there are significant challenges to executing projects efficiently and ensuring they meet the promise of safety, resilience, and reliability for the public.

Infrastructure Project Challenges

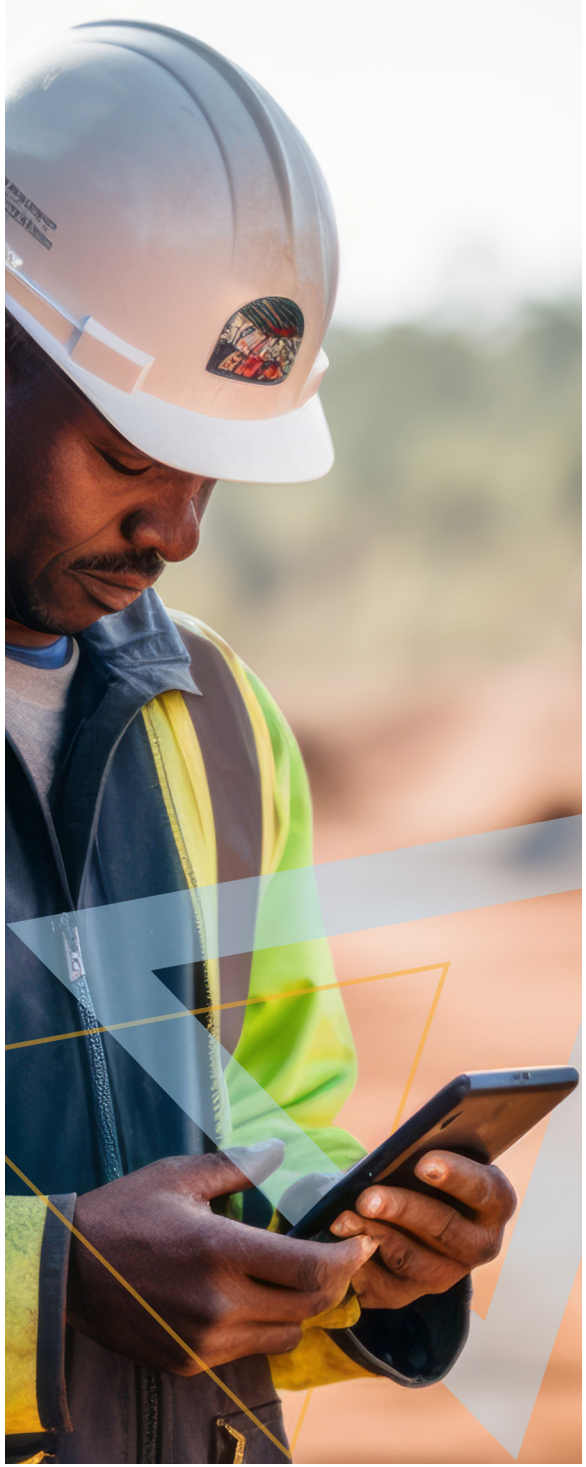
- **Rising Costs:** Highway construction costs are rising faster than other goods, causing project costs to spiral.
- **Spending Scrutiny:** Constituents and government watchdogs are monitoring spending closely to ensure funds are used wisely.
- **Outmoded Processes:** Construction projects often rely on outdated, disjointed processes that increase the risk of errors, waste, and rework.

By working through these challenges, DOTs have a chance to elevate the way they build and manage assets.

Opportunities

- **Secure Funding for Advanced Technologies:** Through the Advanced Digital Construction Management Systems (ADCMS) Program, you can win funds that modernize the way you manage construction projects.
- **Improved Handovers:** By building the right foundation with up-to-date project data, you can enable asset managers to leverage digital as-builts for predictive maintenance.
- **Specialized Grants:** Specialized grants like SMART and RAISE enable you to advance progress on issues like sustainability, equity, and asset connectivity.

Trimble



Interoperable, connected systems can lead DOTs down **the road of success**

To navigate these challenges and opportunities, DOTs need to replace traditional construction processes with digital processes that capture the right data at the right time. The key is to use data to inform decision-making from the earliest planning stages through the hand-off to operations and maintenance.

Digital project delivery allows you to connect data throughout the construction project lifecycle so you can:

- **Improve accountability and transparency around project costs, schedules, and resource consumption.**
- **Reduce the time spent transferring data between the office and the field.**
- **Facilitate better collaboration with colleagues from sister agencies, railroads, and utilities.**

Trimble

Advance your digital transformation journey

Each infrastructure project comes with intense pressure to spend funds wisely, improve asset sustainability, and increase construction efficiency — all while navigating the realities of rising material costs and labor shortages.

Owners are in a unique position to lead digital transformation and help drive the adoption of digital project delivery across the ecosystem. You can be the catalyst for frequent collaboration among stakeholders and ensure teams are maximizing their impact and efficiency during the project.

You can reduce risk, increase visibility, and gain greater control over schedules and budgets by helping everyone involved work together more effectively and efficiently.

To continue learning about digital project delivery,

START HERE

Trimble

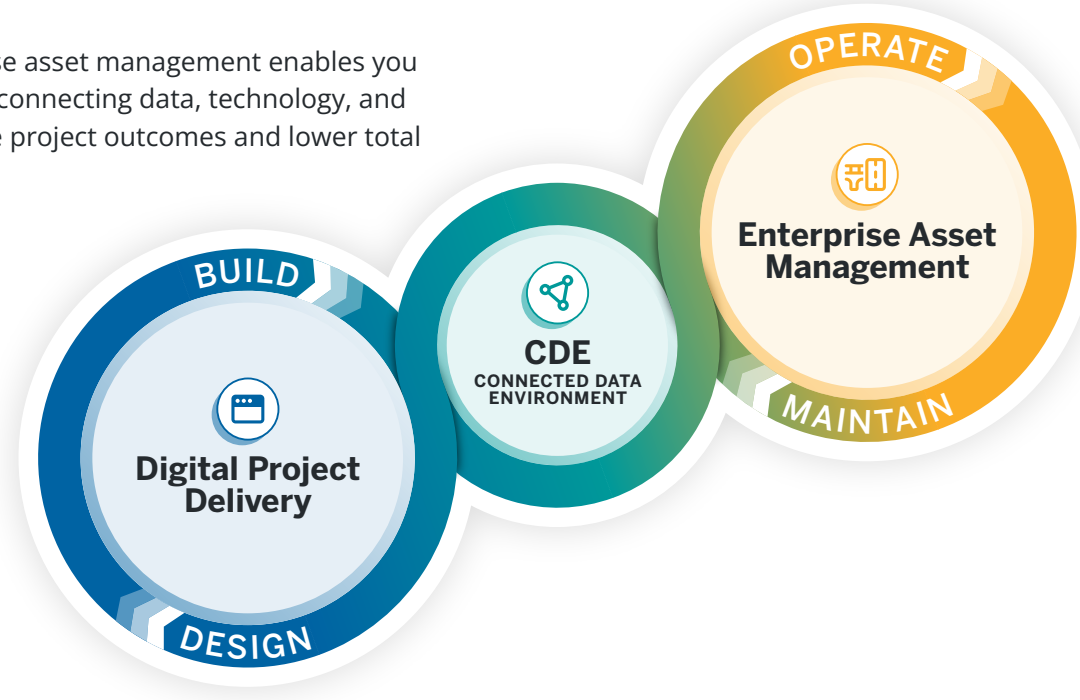
The bigger picture:

Asset Lifecycle Management

Once you digitize your construction project management, you can begin to connect all phases of the asset lifecycle, from design and construction through operations and maintenance. This strategic, holistic approach to infrastructure construction, management, and maintenance is known as asset lifecycle management.

Implementing digital project delivery in conjunction with enterprise asset management enables you to share data throughout the continuum of the asset lifecycle. By connecting data, technology, and processes across all phases of the asset lifecycle, you can improve project outcomes and lower total asset costs.

Learn more about asset lifecycle management.



Trimble