

The keys to successful construction project delivery—today and tomorrow



Finding the right approach to digital transformation can make a big impact for builders

A fast-changing industry

Construction firms are experiencing big changes within their industry. Technologies such as drones, artificial intelligence, augmented reality, the internet of things—and the massive volumes of data that projects yield—are defining the industry’s future. With these new tools offering the potential to reduce the overall costs of future projects by up to 45%, it’s no surprise to see construction companies embracing digitization¹.

Driving that future are the challenges of today. One significant trend is that project owners increasingly expect contractors to do more with less, without sacrificing quality. That change, along with growing pressure on already thin margins and the imperative to differentiate in a sea of competitors, means builders are looking for ways to improve productivity and outcomes across all areas of construction project delivery.

Other changes reshaping the construction industry include:

- Wasteful activities being eliminated as companies adopt lean principles, which could contribute up to \$1 trillion in annual savings from infrastructure productivity changes²
- The emphasis placed on the operation of the asset, not just the construction, which requires thorough digital handovers
- A growing focus on sustainability and waste management, including prefabricated assembly, at which nearly half of contractors say they are ineffective or require improvement³
- The need for greater transparency, accountability, and governance in public-private partnerships, so that they can be seen as a viable mechanism to drive major infrastructure projects
- Shifts in the competitive landscape, thanks to consolidation from major industry players



The transformation journey

Put simply, in the face of these and other changes and challenges, builders are looking for a more digitized approach that will deliver much-needed efficiencies, greater visibility, and key business insights across the project lifecycle.

Investment in specialized technology is starting to happen, with McKinsey reporting that the construction technology sector has received \$18 billion in cumulative investment over the last five years⁴. Construction organizations know that many of their competitors are already somewhere down the digital transformation path.

But not everyone can go “all in,” tackling everything at once—39% of companies cite “lack of IT staff” as the most limiting factor in adopting new technology⁵—nor is that always the right approach. Builders fear that taking on too much could have an adverse impact on current projects, or breed disquiet among employees who are resistant to change or feeling “transformation fatigue.” So how do you pivot to deliver the growth your company seeks tomorrow, without risking its ability to continue to deliver successful projects today?

Set the pace

The key to successful transformation is simple: define and control the path and speed of transformation yourself, focusing on areas that return immediate value, with a roadmap of steps to reach your ultimate goal. Figure out where to start, and then build on your successes in accordance with your strategic roadmap.



Incremental changes can deliver significant transformation outcomes, while reducing the risks associated with business change.

Incremental transformation will deliver significant improvements across multiple areas:

- Connecting the entire delivery team: owner organization, general contractor, subcontractors and supply chain
- Leveraging improved collaboration to drive efficiencies and unlock productivity
- Eliminating manual and redundant processes for automated and connected processes, thereby improving accuracy and quality
- Providing greater visibility to all and providing one version of the truth in a common data environment
- Minimizing risk arising from project activities and related business areas
- Standardizing processes to produce repeatable outcomes and audit trails
- Improving project build quality, safety, and sustainability

It can also act as the springboard, or the next step, to a data-centric approach to construction—helping builders and contractors identify genuine insights and using them to continually improve future outcomes, rather than operating on a project-to-project basis.



How to start

The first step is to determine your area of greatest strategic need today. Certain core components of modern digital construction project delivery can improve outcomes significantly. These components can be built up incrementally over time to improve connectedness and control across all processes and teams.

This incremental approach to digital transformation will ensure you're able to make the most of new technologies, while creating a wider, more accurate pool of real-time data that delivers increasingly powerful levels of insight. The approach also supports the sharing of lessons from each project, so relevant best practices can be applied to future projects when the time is right.

So, where to begin?



Scheduling:

What if you could improve your project performance holistically —including integrating scheduling and Lean task management?

Delivery of any construction project starts with the schedule, helping ensure that you have the right resources to support the project timelines—and that you can quickly adjust to changes. Visibility is critical to both.

Improving the communication between your construction execution teams and project schedulers will help increase visibility, boost productivity, and improve quality. While historically, there has been a disconnect between the critical path method (CPM) schedule and the increasingly popular Lean task management method, it is now possible to digitize and integrate these areas. This can give you far greater transparency into activity status, the reason for delays, and any remediation plans.

With a digital approach, visual dashboards support quality collaboration. Your job site employees can quickly see what needs to be done and how; they can request clarifications and communicate details with email notifications and attachments. Teams stay on top of changes with instant status updates. Here, digitization brings greater connectivity, visibility, and control that enhances operational performance.



Project Controls:

What if you had full visibility into all dimensions of your projects—and the ability to address problems before they become critical?

Complexity is growing across all areas of construction, from aligning field and office, to depending on external teams, interpreting vast amounts of data, and making rapid decisions. All of these areas require greater digitization to perform optimally.

You can't grow and adapt quickly to today's market if you're still using the legacy systems and spreadsheets historically used to manage projects. Modern, cloud-based project control systems enable you to rapidly deploy new projects, adapt to unique business requirements, and run lean operations, with teams *using* data rather than just collecting it. With robust controls, you can automate, track, and manage budgets, commitments, spend, forecasts, and business processes within your organization and across the supply chain.



These controls can be applied to:

- **Cost management:** A digital approach enables automation, flexibility, and the power to handle complex cost control, cashflow, and fund analysis
- **Contract management:** Digitization enables more efficient and transparent management of subcontractors and the supply chain, improved workflows and communication, and robust audit trails
- **Change management:** Change is a constant in construction projects, and failing to manage change effectively can have adverse impacts on project cost and quality as well as on business relationships. Builders need full, real-time visibility into changes—their root-cause and impact—to ensure proper resolution steps can be taken quickly and plans adjusted accordingly
- **Risk management:** Having the visibility across teams and activities afforded by modern digital project controls lets you model, analyze, and mitigate project risks. You can also spot and address risks on in-progress projects quickly and effectively, before they become major issues



Field Collaboration:

What if field teams could focus on the work, confident in the information they have at hand?

Mobility and digital access to information helps your field workers solve problems quickly and independently, which increases overall productivity. It also allows managers to communicate and reassign priorities easily, while delivering contextual and location-based information (such as specialized knowledge from a colleague) to ensure successful issue resolution. Field teams can capture, distribute, track, and communicate defects and other issues in real time, using mobile devices and the cloud, speeding up site inspections.

Logging incidents and actions means you can keep track of what happened, when it happened, and how fast teams were able to respond. You can track and manage metrics across the enterprise to ensure ongoing successful performance.



Document Management:

What if you could enable trusted document collaboration across the entire construction project delivery chain?

Successful project delivery requires all organizations in the construction project delivery chain to have secure access to current documents—including drawings, BIM models, contracts, reports, schedules, RFIs, and more.

Every project generates a huge volume of documents across its lifecycle. With digital document repositories and processes, you can efficiently manage those documents and ensure that everyone has easy access to what they need, when they need it.

This approach gives everyone on the project a 'single version of the truth' for every document, and streamlines the management of change requests for all upstream and downstream documents. As a result, you can simplify document distribution and workflows, mitigating risk and confusion.

The digitization of document management also creates robust audit trails across all project documents, while enabling a seamless and comprehensive information handover to the owner upon project completion.



Payment Management:

What if you could streamline and standardize subcontractor payment processes—and eliminate the headaches?

Traditional construction payment processes are manual, disjointed, paper-laden and labor-intensive. A great deal of time is wasted chasing information, and errors are common. Shifting to a digitally enabled collaborative approach to payment management streamlines and automates processes, mitigates risk, reduces cost, and improves cash flow for both contractors and subcontractors.

In the cloud, the entire payment process—invoicing, compliance, lien-waiver exchange, approval, and payment—can be digitized, standardizing activities and increasing speed, accuracy and trust across project participants. With the right tools, you can reduce draw-cycle time, ensure draw requests are correct the first time, accelerate payments to subcontractors, and liberate working capital from inefficient processes.



Taking your first (or next) step

In the current environment, standing still isn't an option. But that doesn't mean you have to do it alone or force your organization to rush down the same path everyone else is taking.

Oracle Construction and Engineering has made significant investments over decades to develop a trusted, robust, and secure platform of construction project delivery solutions that improve operations and outcomes across the entire project lifecycle. As you begin to plan your transformation journey, consider the importance of selecting a partner with a platform of solutions, rather than trying to foster true transformation with multiple, unrelated vendors.

As your transformation partner, we are with you through each step of the process, starting at a place that's right for you and at a pace that you can manage. Once your first initiative is complete, you can tackle new areas of change, delivering more connections across more processes and more people.

With each step forward, you'll become more able to make the most of new technologies, and gather more accurate, real-time data that delivers increasingly powerful insights. Everything you need to stay profitable and competitive in today's market.

You only need to decide where to begin.

What if together, we could future-proof your organization?



To learn more about our construction project delivery platform and how we can help you transform your operations, please visit:

www.oracle.com/construction-and-engineering



¹<https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/navigating-the-digital-future-the-disruption-of-capital-projects>
²<https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/infrastructure-productivity>
³https://www.fminet.com/wp-content/uploads/2018/04/FMI-Modularization-Summit-2018_FINAL.pdf
⁴<https://www.mckinsey.com/industries/capital-projects-and-infrastructure/our-insights/seizing-opportunity-in-todays-construction-technology-ecosystem>
⁵<https://jcknowledge.com/2017-construction-technology-report-survey>