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The intelligent construction platform is here

What you need to know about the new generation of construction software

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The next construction technology leap

In construction, project and portfolio performance is determined by thousands of interconnected decisions made every day, at every level, across multiple organizations. The impact of each decision ripples through the project and asset lifecycles. At the same time, teams, information, and processes historically have been largely disconnected. This has inhibited collaboration, impaired performance, and made it hard for organizations to make decisions effectively.

Over the last two decades, builders and owners have increasingly turned to technology to improve how assets are planned, constructed, and operated. In the first phase of this digitization, point solutions brought some improvements in efficiency and standardized certain workflows for specific individuals and departments. But because these solutions are by their nature disconnected, they created information silos and communication gaps between teams and phases of construction.

Organizations later began to adopt cloud platforms that integrate point solutions to connect teams and applications across specified workflows. But data continues to be locked in specific applications, proprietary formats, and project silos. As such, it's difficult to gain a complete view of performance across projects, processes, or portfolios. First-generation platforms have brought better collaboration, faster decisions, and fewer errors. But barriers remain to achieving needed levels of automation as well as to unlocking more extensive data-driven insights to drive decision-making and better understand project and portfolio performance and risk.

Enter the intelligent platform.

The intelligent platform

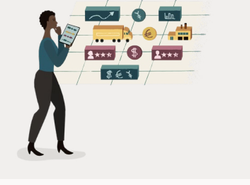
A new breed of intelligent platforms build on the foundation laid by previous technology, and take collaboration, insights, and synchronization to new levels to further improve performance. With an intelligent platform, more data—both structured and unstructured—is brought together to enable a holistic view of projects and programs. Centralized access to this data connects teams and equips them with the information they need to optimize work at every stage of a project. Consolidated data from across teams brings down barriers that have limited analysis and impaired efforts to improve processes from one project to the next. And AI and machine learning can yield predictive intelligence that takes the guesswork out of decision-making, enabling teams to learn from the past, succeed in the present, and improve the future.

With the right intelligent platform in place, owners and delivery teams can work together to make decisions with confidence and orchestrate projects with greater ease and flexibility. Let's examine how.

The key is bringing processes, applications, and data together across the project and asset lifecycles to:

Connect teams around the processes and information they need to work collaboratively, productively, and safely

Empower those teams with analytics and predictive intelligence that leverage all data, past and present, to improve decision-making at every step



Synchronize activities and resources, ensuring all parties are working together according to the central project schedule

Accelerated performance requires intelligent platforms

Point Solutions Solved Targeted Pain Points

- Basic efficiencies
- Standard workflows

First GenPlatforms Connected Teams

- Faster decision
- Fewer errors

Intelligent Platforms Synchronize & Empower

- Unlock data
- Automate processes

Individuals & departments

Project teams

Highly responsive ecosystems

Connecting teams—one project team from many

Historically, project owners and delivery teams worked in their own separate systems which required manual processes and systems to share information with each other. This approach created duplicative work for delivery teams, left gaps in data and visibility between teams during planning and construction, and limited the information owners could carry forward into the operations and maintenance stages of their assets.

An intelligent platform that provides and connects capabilities spanning the plan, build, and operate phases of the asset lifecycle (see box) eliminates the disconnects and brings the entire team together, increasing productivity and reducing errors.

With such a platform, the entire project team can be involved from the beginning, with planning and design to clearly visualize the project and coordinate across scope, schedule, and cost to reduce complications down the road. An open common data environment (CDE) allows teams to access the information they need and over time builds a trusted source of project information, including data captured from outside applications.

As work progresses, the platform accumulates data from across all activities, and connected workflows enable team members to collaborate around shared information. This information is used to generate a comprehensive and indelible project record, including a digital twin that asset owners can use to inform both future projects and asset operations.

In the next section, we'll explore how an intelligent platform can unlock new insights into project and portfolio performance—and improve decision-making across teams.

Connected workflows in an intelligent platform

- As owners prioritize, select, and initiate projects, budgets, contracts, and schedules are created in the appropriate applications and routed to the appropriate reviewers and approvers.
- As change happens, RFIs, updates to drawings and models, and change orders are routed for approval and communicated to all involved parties.
- As projects progress, schedule, payment, budget, and cashflow updates must be maintained and updated, easily published for visibility and control.
- As projects complete, the final digital twin, having been continuously updated throughout the project, is easily published and available to the operations and facility management team members.

Empowering teams to make better decisions at every step

As construction organizations amass more and more data, a growing number recognize the opportunity to use this data to improve how they operate.

According to a recent IDC InfoBrief (see box), which detailed findings from a global survey of Architectural, Engineering, and Construction (AEC) professionals, more than three-quarters of AEC organizations have had a formal data strategy in place for more than three years, with many elevating such efforts to the C-level.

Driving this work is a desire to better measure and understand project performance—across dimensions such as quality, safety, cost, and duration—in order to improve performance going forward. Importantly, these organizations recognize that data silos represent a primary obstacle to making better use of their data.

Intelligent platforms by design remove this obstacle by connecting data captured across project and asset lifecycle activities. These platforms handle massive amounts of data, both structured and unstructured. That means bringing together a broad array of data sources—flat files and multi-dimensional data files—to mine across schedule, safety, RFI patterns, rework, litigation, supply chain partners, budget overruns, and cash flow, and more.

Questions to consider:

- **Is information sharing between owners and delivery teams sufficient and efficient on my projects?**
- **Do I have all the information needed at the end of a project to build the next one better?**
- **Are there gaps in information that inhibit collaboration on my projects?**

Data strategies in focus

Key findings from the IDC InfoBrief "The State of Data Strategies in Construction" include:

77% of surveyed AEC organizations globally have had a data strategy for more than three years

81% of respondents see unifying their data in one project and portfolio management system as a key initiative in their data strategy

58% say they are able to use at most 50% of their data today

89% have or plan to acquire predictive analytics tools in the next 24 months

Consolidating information with an intelligent platform, and pulling in data from both past and present projects, creates two significant opportunities for organizations using the platform:

- They can see more broadly and deeply into what is happening on their projects and portfolios today to measure performance and health across their own KPIs at whatever level of granularity is needed
- They can see what is likely to happen next, using predictive intelligence

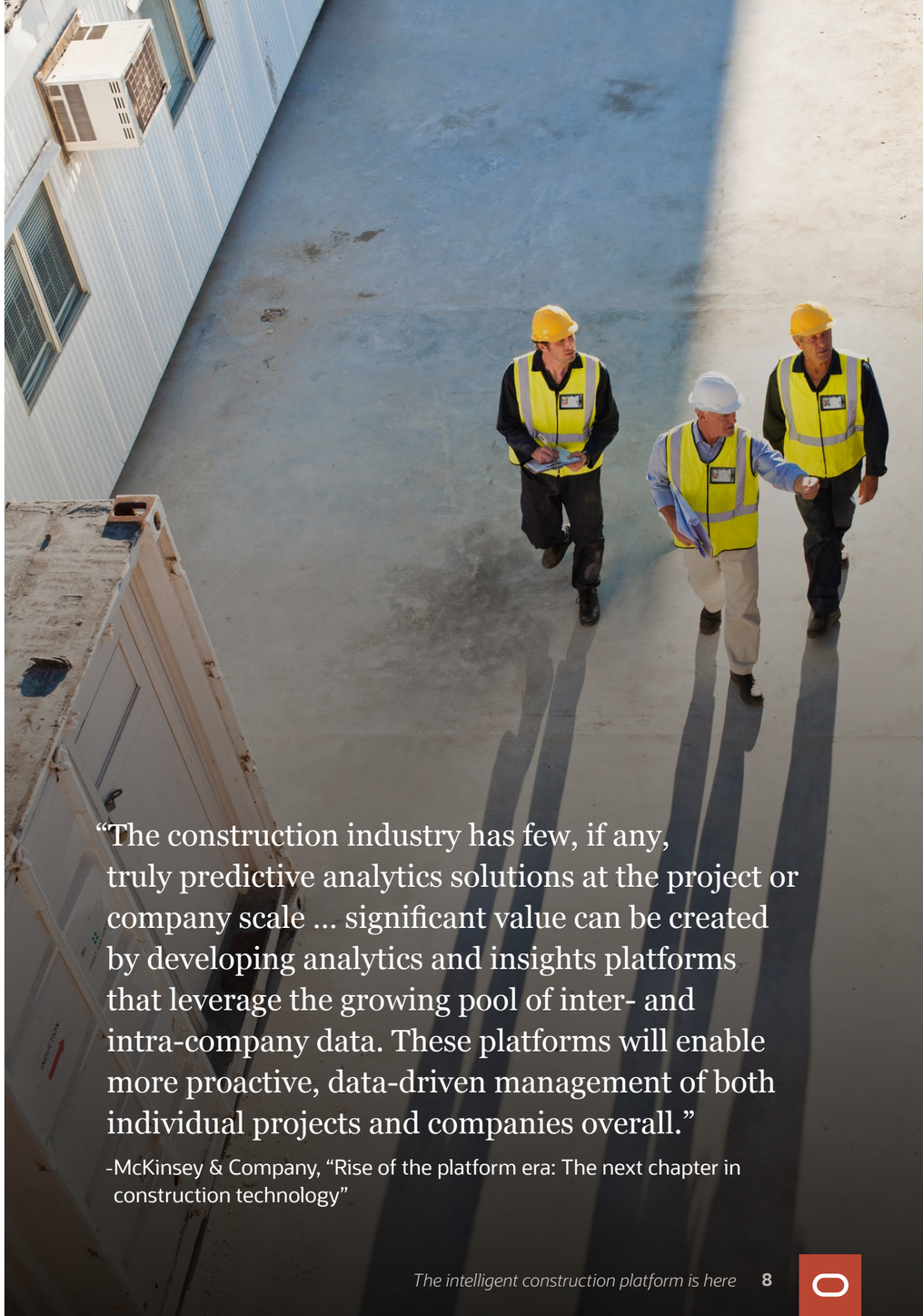
The latter is enabled by AI and machine learning (ML), which can dynamically analyze both historical and new data to spot conditions that indicate a high probability of risk. This kind of "risk radar" yields active intelligence that alerts teams about potential risks, allowing them to weigh options and make adjustments to prevent or mitigate adverse outcomes. ML algorithms become smarter as they consume more data, helping further sharpen decision-making around such areas as:

- The factors that might delay a project
- The probability of delay on a project
- Amount of predicted delay
- Likelihood (and severity) of a cost overrun
- Hidden risks around safety, design, rework, and litigation

Enabling organizations to comprehensively their leverage data to assess performance today and predict risks tomorrow is central to the value of an intelligent platform.

Questions to consider:

- **How effectively is risk managed on your projects today?**
- **Are your teams usually able to anticipate risks with enough time to act?**
- **Are your project schedules generally accurate from the start?**



"The construction industry has few, if any, truly predictive analytics solutions at the project or company scale … significant value can be created by developing analytics and insights platforms that leverage the growing pool of inter- and intra-company data. These platforms will enable more proactive, data-driven management of both individual projects and companies overall."

-McKinsey & Company, "Rise of the platform era: The next chapter in construction technology"

Synchronizing activities to orchestrate projects

Despite the significant improvements technology has brought to construction, it's not uncommon for teams today to struggle with communication and coordination challenges, disjointed processes and information, and difficulties easily adjusting to change that arises on projects.

To truly orchestrate all the moving parts on projects and drive meaningful performance gains, organizations need to find ways to better synchronize activities across the entire construction supply chain. From designers and consultants to material suppliers and contractors, all parties need to be able to work together according to the central project scope, schedule, and cost goals, with needed visibility into changes.

Key to this process is the project schedule, the complex and detailed plan that dictates where worksite teams need to be at any given time to keep the work moving forward in the right sequence and at the right pace. Unifying schedule and field task management data removes a common and critical information barrier, uniting planning and construction teams around the shared information needed to work optimally. In addition, by ensuring that the schedule data is fully integrated into project information processes helps ensure that planning and project management all teams have more visibility into change—and more time to manage it effectively.

Questions to consider:

- **Is my organization able to easily adjust to change on projects?**
- **Are scheduling and field teams coordinating effectively today?**
- **Is project information such as documents and models well organized?**

Leave the past behind with the intelligent construction platform of the future

Ultimately, the new breed of intelligent platforms enables true project orchestration by:

Democratizing information and insights across all teams

Connecting workflows across stakeholders to improve visibility and collaboration

Delivering the right updates to the right people at the right time to optimize resources

Owners and construction organizations are at the cusp of a new era in data-driven performance. The intelligent platform connects teams, processes, and data in new and better ways to empower decision-making and synchronizing activities at every step. It's time to build smarter.

Ready to take the next big step forward with the Oracle Smart Construction Platform?

Learn more

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