



The State of Data Strategies in Construction

RESEARCH BY:



Jeffrey Hojo
Research Vice President, Future of Industry Ecosystems and Innovative Strategies, IDC



Navigating This InfoBrief

Click on titles or page numbers below to navigate to each.

Study Background and Objectives.....	3	Quality, Safety, and Financial/Cost Optimization Drive Data Strategy.....	11
Demographics	4	Organizations See Data Playing a Role in Risk Mitigation Efforts	12
Executive Summary	5	AEC Organizations Look to Proactively Address Problems	13
Construction Project Management Produces Massive Amounts of Data.....	6	Most Effective Ways to Improve Use of Project Data	14
Construction Organizations Seek to Leverage Project Data for Predictive Insights	7	Guidance for Engineering and Construction Organizations.....	15
Predictive Analytics Is a Key Initiative	8	About the Analyst.....	16
Data Management Strategy: Works in Progress.....	9	Message from the Sponsor.....	17
Key Pillars of Company Data Strategies Vary	10		

Study Background and Objectives

The data in this presentation is from Oracle's global survey on data in the architecture, engineering, and construction (AEC) market fielded in March 2021 to 405 business, project, and IT executives.

Respondents included general contractors and subcontractors, project managers, mechanical, electrical and plumbing (MEP) engineers, and a smaller percentage of engineering, procurement, and construction (EPC) service companies.

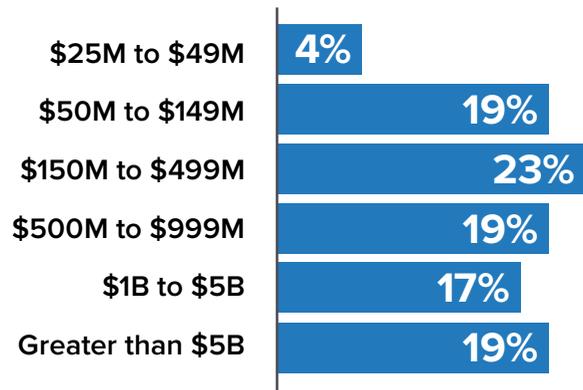
The survey is intended to understand the depth of current and future plans as well as sentiments around data strategy, data capture, and data outcomes in the AEC sector, as identified by key stakeholders.



Demographics

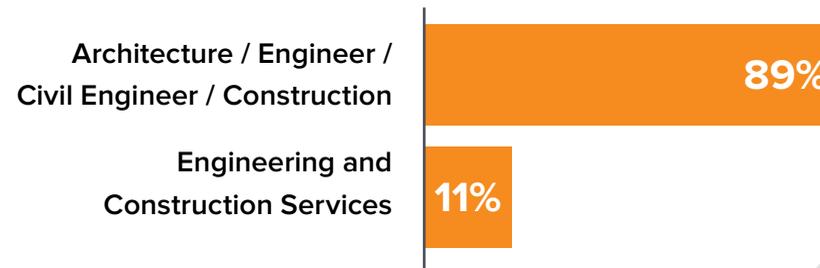
Respondents to Oracle's global survey in March 2021:

Company Type by Revenue (USD)

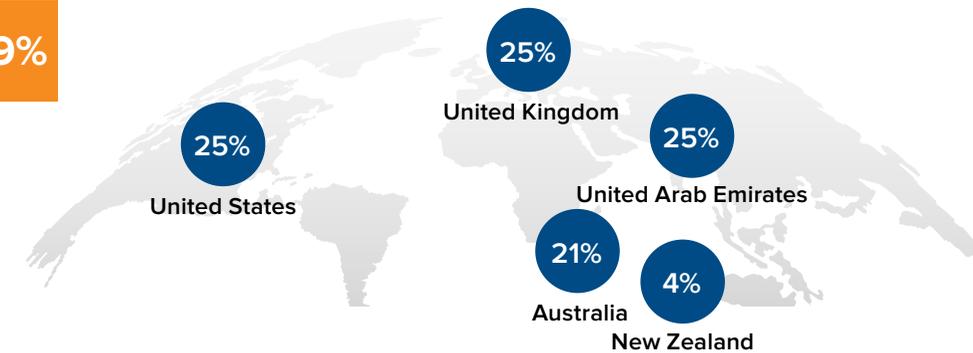


Note: Numbers do not add up to 100 due to rounding.

Company Type



Region

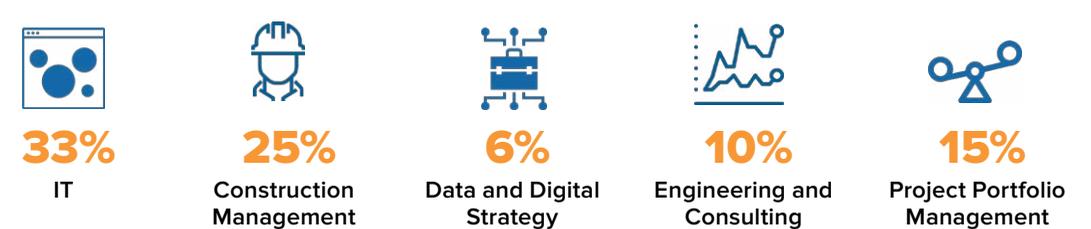


Current Title or Role



Note: These responses represent the top five titles/roles.

Functional Area



Note: These responses represent the top five functional areas.

Executive Summary

Virtually all companies see value in a data strategy and are evolving their use of digital tech.

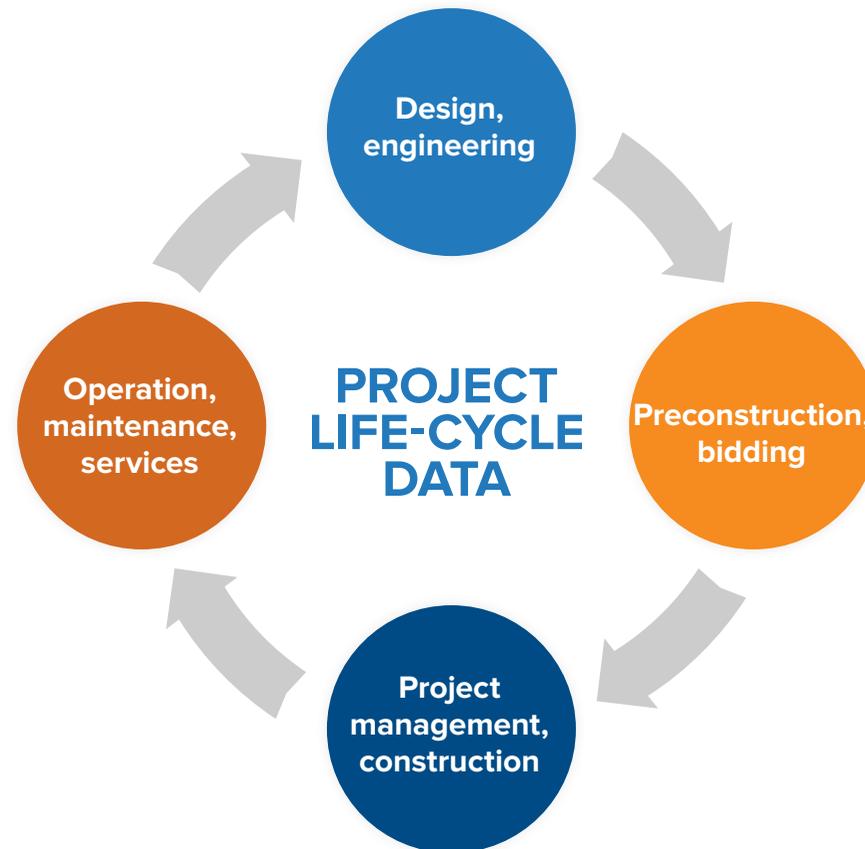
- ▶ Quality, safety, and financial/cost optimization (largely to mitigate risk) are primary drivers of data strategy today.
- ▶ Data often is siloed and inaccessible across the construction project life cycle and not used for future planning, but companies recognize the opportunity and the need to change this.
- ▶ Predictive analytics is a key investment initiative for construction organizations in the next 12 to 24 months.

The construction project life cycle will continue to grow in complexity, and there will be a corresponding increase in use of digital tools to make sense of data. A cloud-based analytics and collaboration platform is critical.

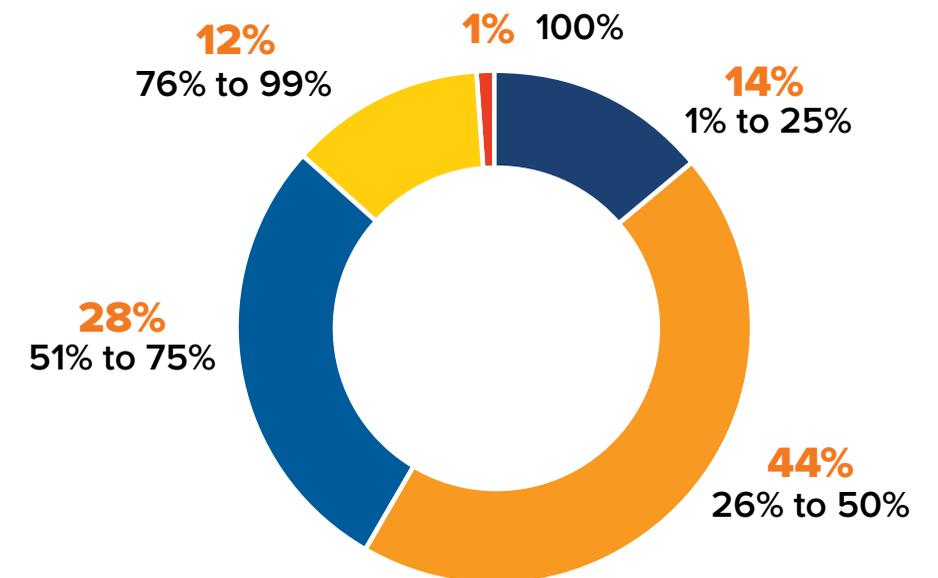
Construction Project Management Produces Massive Amounts of Data

85% of respondents use at least 25% of the project data they collect.

During the construction life cycle, a massive amount of data is created across the various stages. But much of that data is not put to use during a typical project, nor is it utilized to inform future projects.

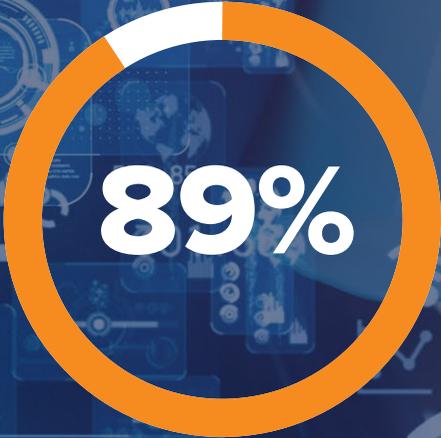


Please estimate how much of your project data you use to inform current decision making, or future projects.



n = 405 All Respondents. Note: Managed by IDC's Quantitative Research Group; Data Not Weighted; Use caution when interpreting small sample sizes. Numbers do not add up to 100 due to rounding. Source: Oracle AEC Survey, IDC, March, 2021

Construction Organizations Seek to Leverage Project Data for Predictive Insights



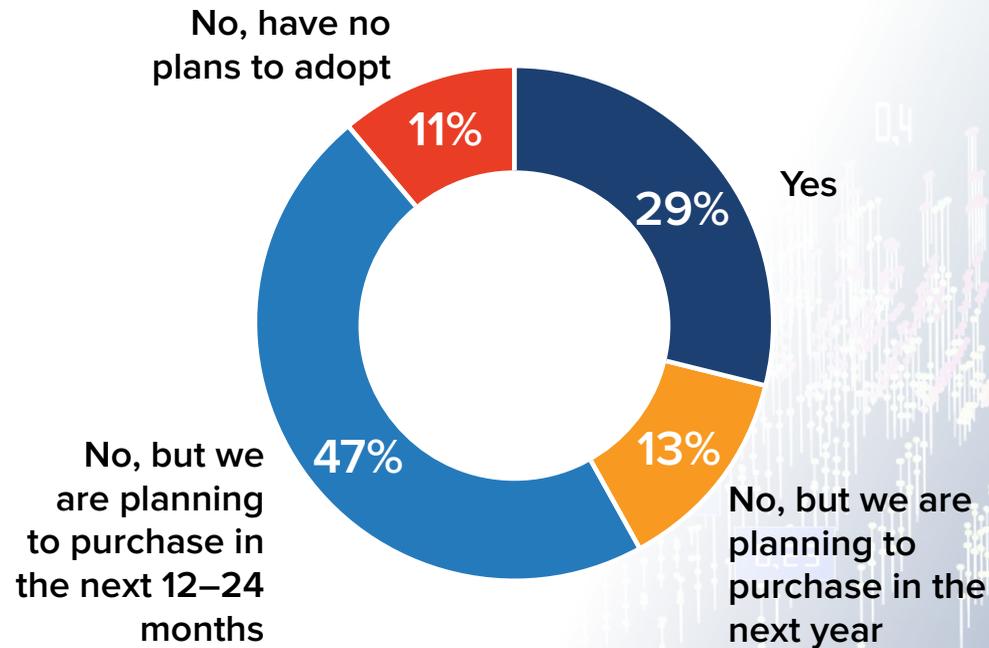
89%

of respondent organizations have or plan to acquire predictive analytics tools in the next 12 months.

Predictive Analytics Is a Key Initiative

For many AEC organizations, investment plans are on the horizon.

Does your company have an existing tool for predictive analytics?



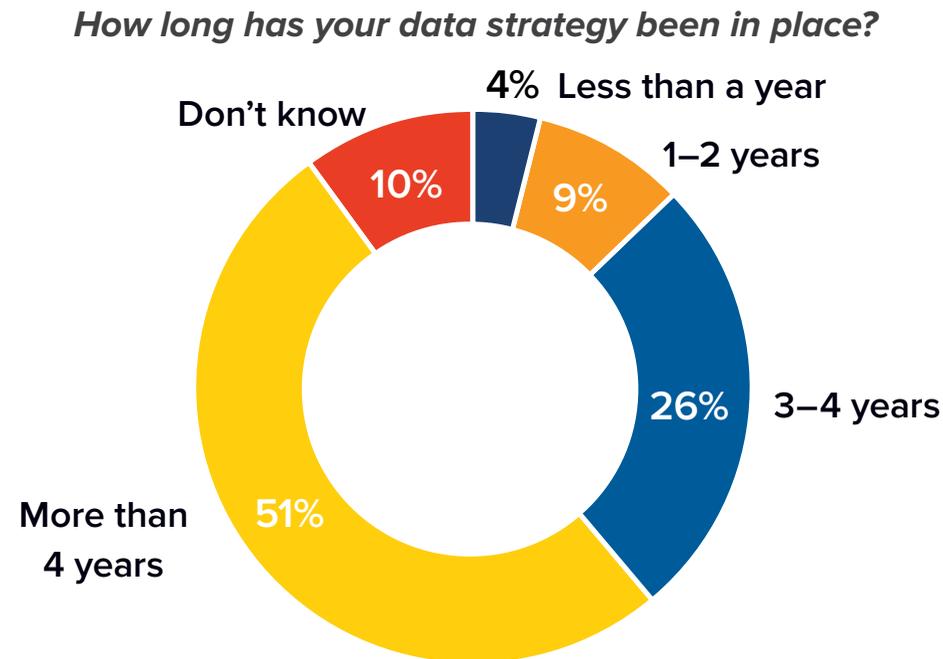
n = 405; Source: IDC's Oracle AEC Survey, March 2021

Organizations are looking for a predictive view of operations, changes, quality and performance. They want the ability to leverage historical data to predict delays and changes, and to develop budget forecasts.

Data Management Strategy: Works in Progress

Most AEC companies (77%) have had a data strategy in place for three or more years, and an overwhelming majority (81%) of respondents see unifying their data in one project and portfolio management system as a key initiative.

Organizations recognize that deriving value from disparate data is a challenge. They collect data sets from multiple sources, but lack tools with predictive decision support capabilities.



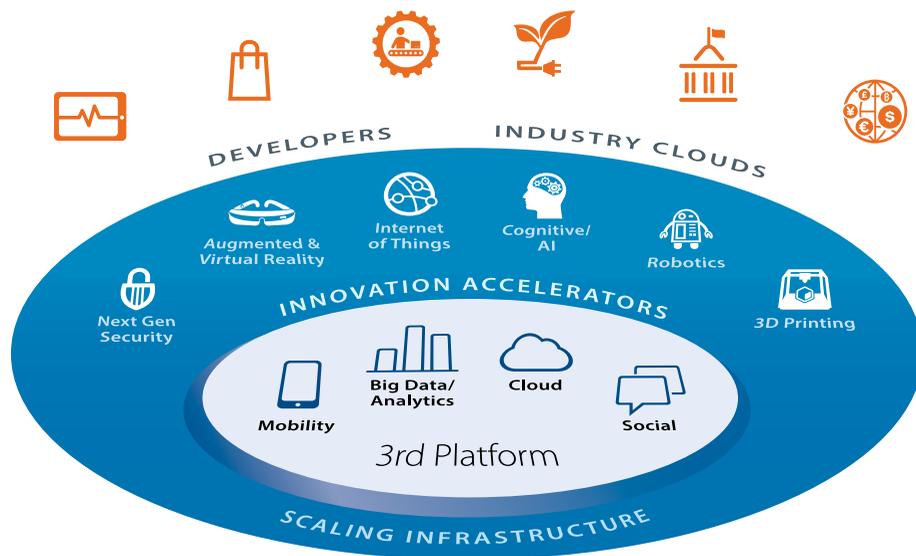
n = 405; Source: IDC's Oracle AEC Survey, March 2021

63% of respondents say their organization's data strategy **is driven primarily by the C-suite.**

Key Pillars of Company Data Strategies Vary

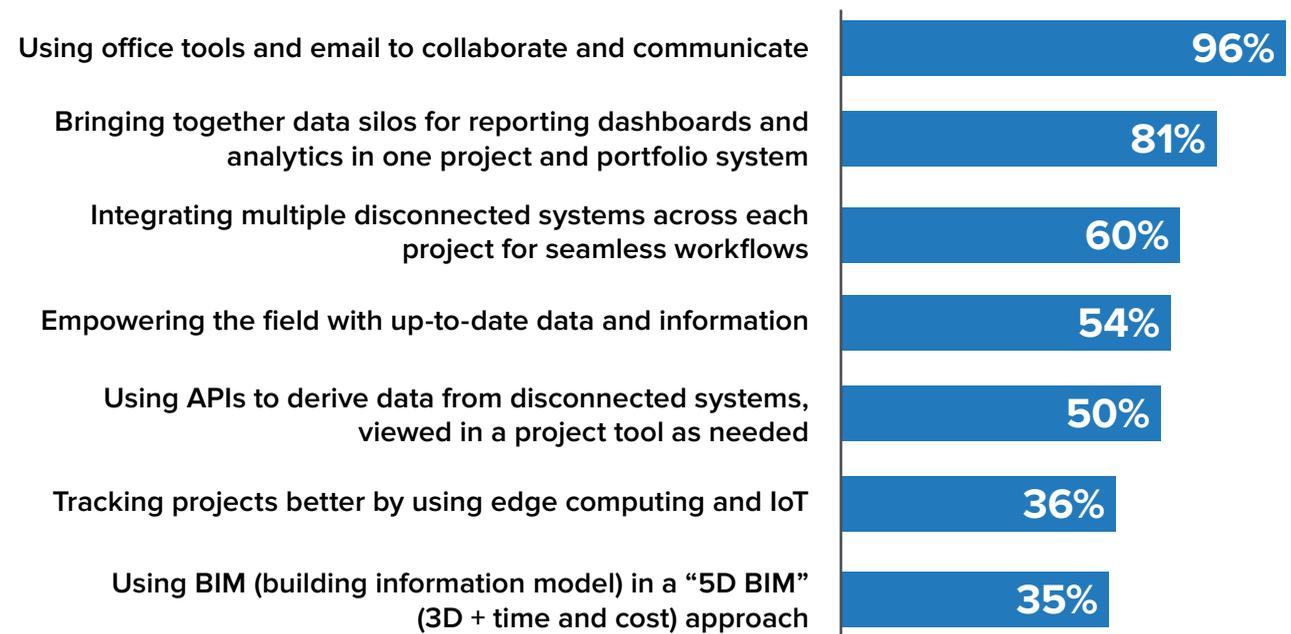
Although respondents see the value, there is currently evolving investment in digital, 3rd Platform tech such as Internet of Things (IoT) and artificial intelligence (AI). Investment will accelerate in 12 months or longer as companies cite the importance of improving construction management and operations.

Advanced Digital Technology



Source: IDC

Q: Which of the following are part of your company's current data strategy?

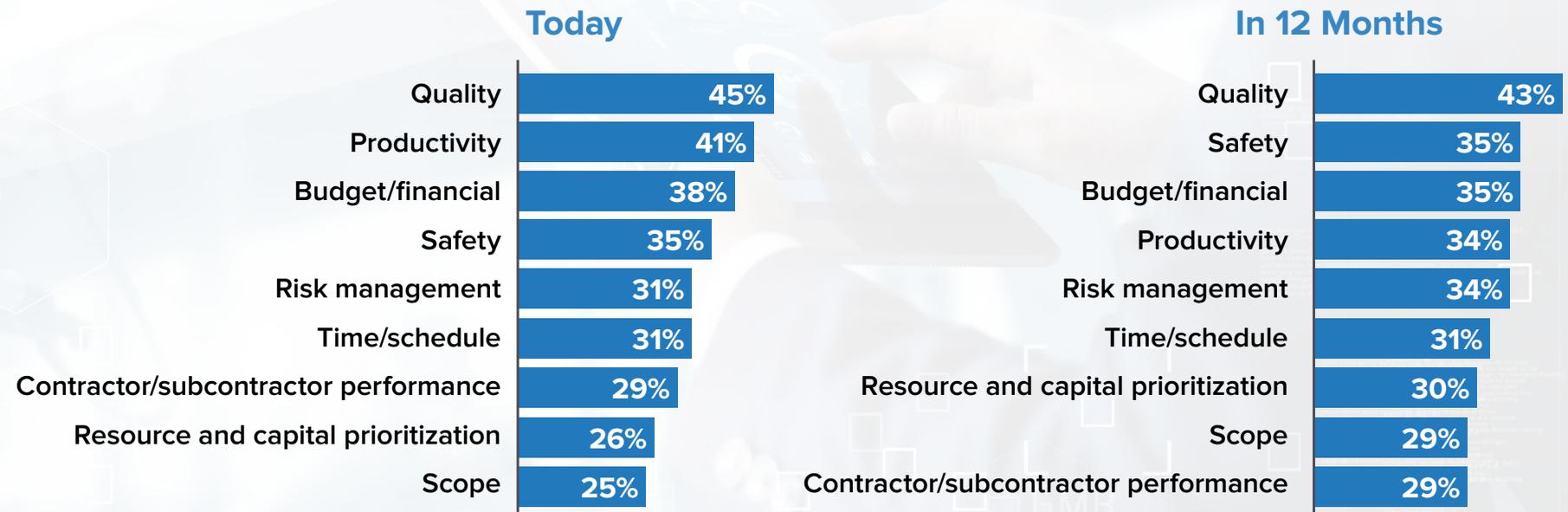


n = 405; Source: IDC's Oracle AEC Survey, March 2021

Quality, Safety, and Financial/Cost Optimization Drive Data Strategy

- ▶ Construction quality, project and cost optimization, and change minimization are all key goals. These will remain important in 12 months.
- ▶ Risk management, although important now, increases in importance in 12 months, likely due to prioritization.
- ▶ Quality is key for all organizations, regardless of the maturity of their data strategy, while financial and process efficiency are most important to companies with newer data strategies.

Q: What are the most important types of data your company currently/plans to capture and measure across the plan, build, and operate process? (Select top three).



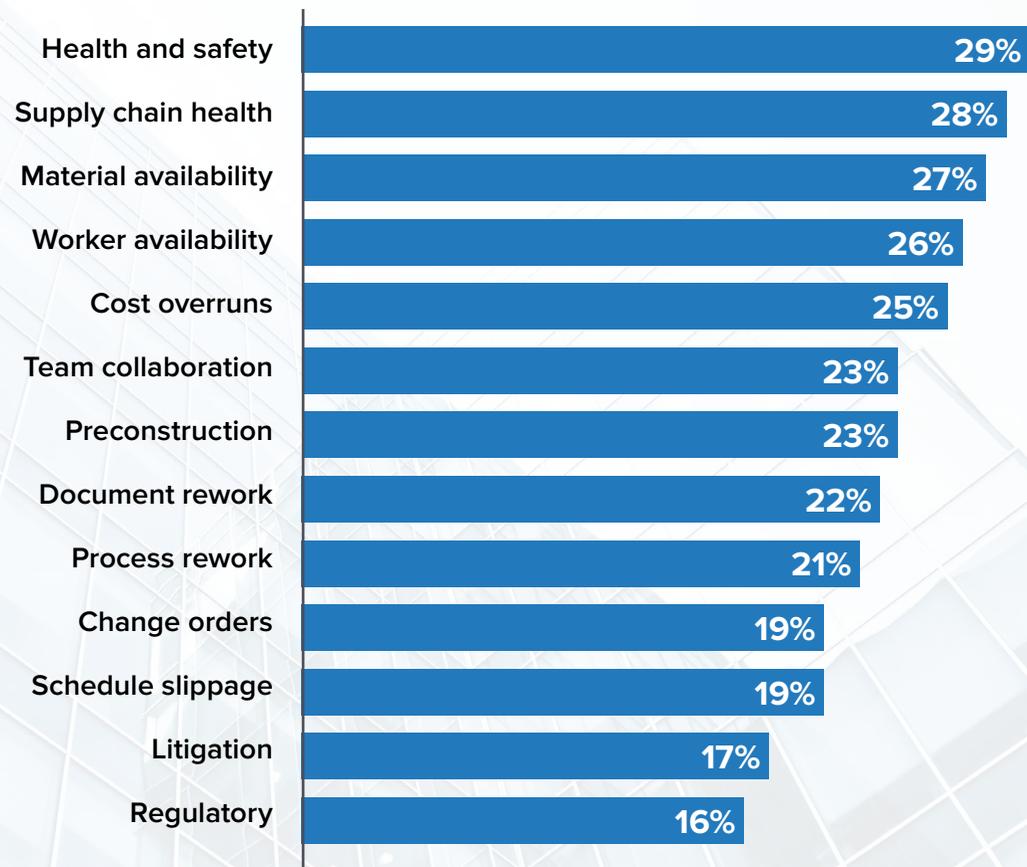
n = 405 Source: Oracle AEC Survey, IDC, March, 2021

Organizations See Data Playing a Role in Risk Mitigation Efforts

Key Findings:

- ▶ Health and safety, and supply chain health are the top two risks that can be mitigated with data.
- ▶ Material availability, related to supply chain health, is critically important for construction teams to meet financial goals and delivery deadlines.
- ▶ Cost overruns is a top project risk for all construction organizations that the unification of data can mitigate.

Q: What are the highest risk areas of your projects that you feel a data strategy can help mitigate? (Select up to three responses).



n = 405; Source: IDC's Oracle AEC Survey, March 2021

AEC Organizations Look to Proactively Address Problems

- ▶ Reducing change, predicting budget blowout, and proactively managing risk are the most important leading key performance indicators (KPIs) for all construction organizations. These KPIs can guide optimal future project approaches and predict outcomes.
- ▶ More mature companies are focused on supply chain and budget forecasting, while companies with a less mature data strategy rated reduced changes and variations, as well as preempting safety incidents, as critical leading indicators.

Q: Which of these leading indicators do you think are most valuable? (Select up to three responses).



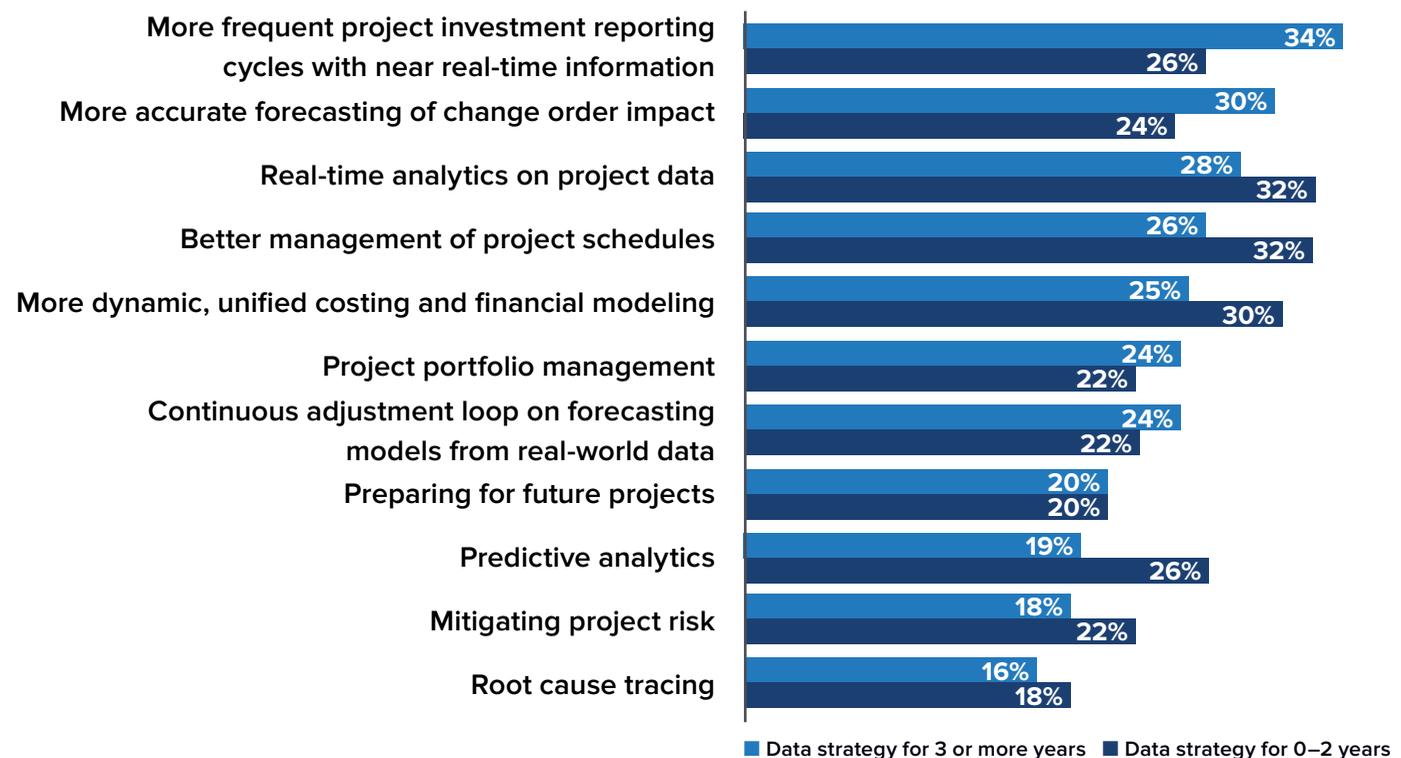
n = 405 Source: Oracle AEC Survey, IDC, March, 2021

Most Effective Ways to Improve Use of Project Data

Access to data is important for collaborating and decision making for cross-domain construction teams.

- ▶ For decision support, there is a need for real-time, predictive analytics and a unified data environment – a top focus for maximizing project data over the next one to two years.
- ▶ Predictive intelligence can help address key concerns, including understanding change order impact and improving management of project schedules.
- ▶ AI and machine learning technologies represent a strong opportunity to derive predictive insights from historical project data.

Q: When you think about how to improve your organization’s use of project data, what are your focus areas in 12–24 months? (Select up to three responses).



n = 405 Source: Oracle AEC Survey, IDC, March, 2021

Guidance for Engineering and Construction Organizations

- 1 Mature your data strategy to include predictive insights:** Most respondents see value in using predictive analytics tools to sharpen decision-making and improve project outcomes.
- 2 Invest in advanced digital tech such as IoT and AI:** Our survey shows they are not yet extensively in use as part of data strategies, but plans are to expand near term. Faster adoption creates opportunity for competitive advantage.
- 3 Elevate data strategy ownership:** Nearly two-thirds of respondent organizations have already started driving data strategies at the C-level.
- 4 Start with predicting and minimizing budget blowout/cost overruns:** Predictive analytics tools can help identify risks early in projects to prevent or moderate issues that result in cost increases.
- 5 Leverage project data to support multiple initiatives, today and in the future:** Risk mitigation, minimizing change, and reducing budget overruns will remain critical goals for AEC companies in leveraging their project data.

About the Analyst



Jeffrey Hojlo

Research Vice President, Future of Industry Ecosystems
and Innovative Strategies, IDC

As Research Vice President, Jeffrey Hojlo leads one of the nine new Future Enterprise practices at IDC — the Future of Industry Ecosystems. This practice focuses on three areas that help create and optimize trusted industry ecosystems and next-generation value chains in discrete and process manufacturing, construction, healthcare, retail, and other industries. The areas are: Shared data and insight, shared applications, and shared operations and expertise. Jeffrey also manages a group focused on the research and analysis of the design, simulation, innovation, product life-cycle management (PLM), and product life-cycle management (SLM) market, including emerging strategies across the discrete and process manufacturing industry such as product innovation platforms and the closed-loop digital thread of product design, development, digital manufacturing, supply chain, and SLM.

[More about Jeffrey Hojlo](#)

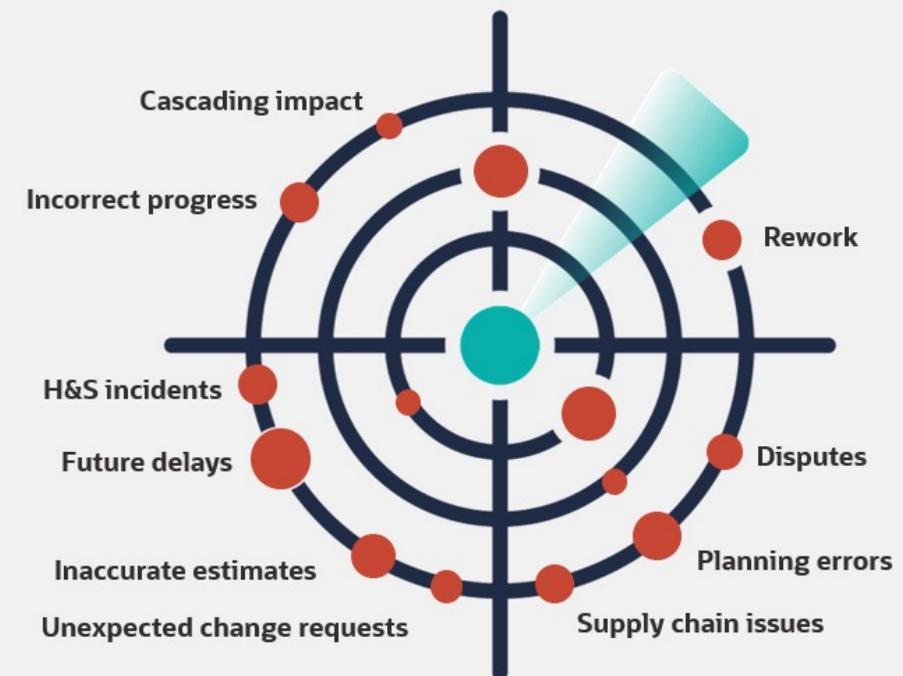
Message from the Sponsor

The Oracle Smart Construction Platform connects project teams, turns data into intelligence to empower better decisions, and synchronizes activities for smooth project delivery. Our Construction Intelligence Cloud Advisor solution uses predictive AI to analyze project data, spot potential areas of risk, and improve decision-making.

Now, you can start to see what tomorrow might look like and decide what actions to take today. Visit [Oracle Construction and Engineering](#) to begin your journey to active project intelligence.

[Learn More](#)

Oracle Construction Intelligence Cloud Advisor: A “risk radar” for your projects



IDC Custom Solutions

This publication was produced by IDC Custom Solutions. As a premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets, IDC's Custom Solutions group helps clients plan, market, sell and succeed in the global marketplace. We create actionable market intelligence and influential content marketing programs that yield measurable results.



 [@idc](#)

 [@idc](#)

[idc.com](#)

© 2021 IDC Research, Inc. IDC materials are licensed for external use, and in no way does the use or publication of IDC research indicate IDC's endorsement of the sponsor's or licensee's products or strategies.

[Privacy Policy](#) | [CCPA](#)