Oracle Playbook

CONSTRUCTION AND ENGINEERING

Build a Better Future

Enabling a resilient and modern organization for the journey ahead

Construction and engineering

Designing and building is universal, spanning every industry and region. 75% of the world's infrastructure that will exist in 2050 has yet to be built. It is estimated that 2.6 trillion square feet of new floor area will be added to the global building stock over the next 35 years. Projects depend on a complex web of suppliers and tradespeople and must adhere to safety and regulatory requirements. Despite best efforts, 50% of projects exceed their deadlines and budgets.

The construction industry is constantly striving to enhance efficiency, mitigate risks, and achieve more predictable outcomes. Technology has proven to be a valuable ally in this pursuit, and digital project management has played a significant role in documenting, sharing, and tracking the vast amount of project information.

Explore owner/capital program solutions

Explore delivery team solutions

Oracle Playbook

Key imperatives for owners

Improve project planning, delivery, and operations

1. A finished asset that meets value, scope, quality expectations, delivered on time and on budget
2. No surprises—predictable outcomes facilitated by connecting people, process, and technology to support insights and visibility
3. Consistency across the entire portfolio by increasing efficiency and ensuring process adherence for continuous performance improvement

Forces shaping construction and engineering

Owners

INDUSTRY CHALLENGES

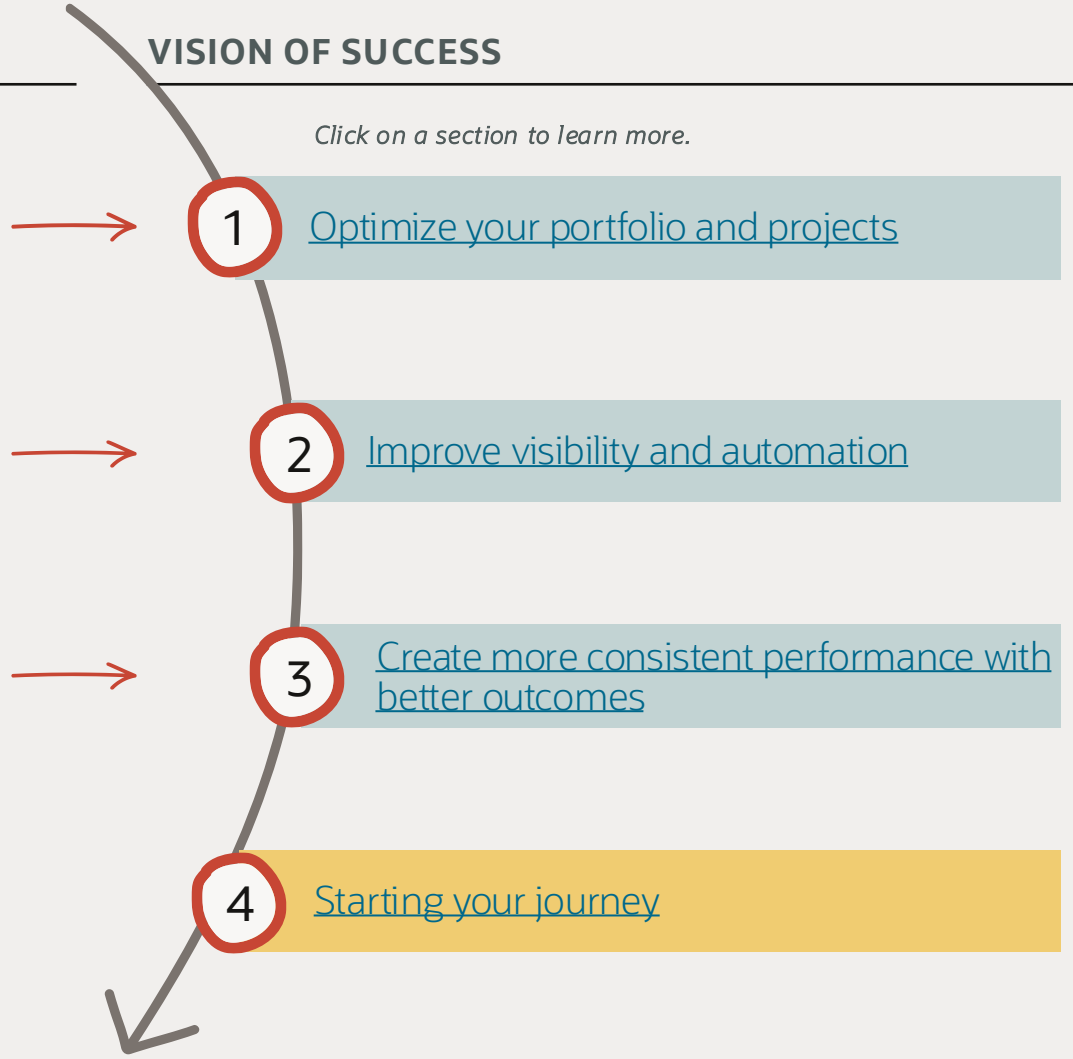
Lack of standardization inhibits portfolio optimization
Project selection and portfolio optimization is frequently inefficient and lacks a central repository for project requests, review, standardized scoring, and ranking. Data is scattered across multiple spreadsheets in siloed systems.

Lack of transparency, creating uncertainty and doubt
Asset owners have traditionally been on a need-to-know basis and given limited visibility into project status, schedules, and progress information. Lack of transparency left them them surprised when change orders showed up for review and approval, often coming with an increased cost and impacts to the delivery date.

Inconsistency in performance across portfolio
Inconsistent outcomes with broken transitions throughout the asset lifecycle have been the industry norm. Owners need consistent and predictable outcomes across all their projects with solid transitions throughout the asset lifecycle.

VISION OF SUCCESS

Click on a section to learn more.



Optimize your portfolio and projects

Leverage data insights to augment skills and decision-making, predict risk, and drive continuous improvement. Dynamic, continuous capital planning and resource allocation maximizes your returns, considers risk, and helps you proactively react to changes.

Recommended actions:

- Modernize operations tools to improve efficiency
- Provide a 360-degree view of all project requests across the organization
- Standardize project request process and scoring criteria
- Have clear organizational goals and initiatives to support project selection decisions
- Streamline the review process workflow
- Implement technology that supports these actions

How to get started:

- Implement a single repository for projects with a standardized project request process, scoring criteria, and review and approval workflows
- Select the projects that align with your initiatives and organizational goals by using evaluation scenarios (with your scoring criteria) and tools to rank and prioritize projects across your portfolio
- Manage the budget and all funding from various sources to address compliance

Oracle capabilities enabling strategic goals

Capital planning and portfolio management	Capital program management	Budgets and funding	OCI integrations	AI and analytics

Improve visibility and automation

Asset owners have stated they often have limited visibility into the status, schedule, and progress information as projects are being built. Lack of transparency results in surprises when change orders (often with increased cost and impacts to the schedule) show up for review and approval.

Recommended actions:

- Modernize operations technology to support cross-organizational collaboration that support your preferred workflows
- Provide a 360-degree view of project data across the portfolio
- Establish seamless integration to support interoperability across your organization
- Minimize risk through early visibility and business process automation
- Reduce errors with automated contract management to help align contracts, cost codes, and the cost sheet

How to get started:

- Implement a platform of connected solutions that can unify data for better visibility and faster decision-making
- Identify the key data sources necessary for a complete picture of risk and operations and ensure integration of applications to allow for maximizing insights
- Analyze errors for biggest efficiency and margin improvements

Oracle capabilities enabling strategic goals

Capital planning and portfolio management	Capital program management	Schedule	AI and analytics	Budgets and actuals	OCI integrations

Create more consistent performance to support better outcomes

Inconsistent outcomes with broken transitions throughout the asset lifecycle have been the industry norm. Owners need predictable outcomes with solid transitions throughout the asset lifecycle.

Recommended actions:

- Standardize and streamline your business processes
- Implement a program management system that is configurable to support your processes
- Leverage a seamless integration to support interoperability across the asset lifecycle

How to get started:

- Implement a configurable program management application that can connect applications and processes, unifying project data for maximum insights
- Configure the system to your business processes and leverage the dynamic routing to enable intelligent and efficient review and approval cycles so nothing falls through the cracks
- Address regulatory and other requirements are met through scope visibility, program control and insights, and have a complete asset record at handover

Oracle capabilities enabling strategic goals

Capital planning and portfolio management	Capital program management	Schedule	AI and analytics	Budgets and actuals	OCI integrations

Internal questions to get going

Portfolio Optimization

How do you currently gather, evaluate, and prioritize new project requests?
What are the biggest challenges in consolidating project data and inputs across departments?
Is there a central system or repository for tracking all projects in your portfolio?
What tools are you currently using to score and rank proposed projects, and how consistent are these methods?
How much manual effort is required to compile portfolio data for leadership review and decision-making?
How does information scattered across spreadsheets or siloed systems impact your ability to optimize your project portfolio?

Transparency

How do asset owners and stakeholders access project status, schedule, and progress information today?
How frequently do change orders surprise stakeholders with unanticipated costs or schedule delays?
What mechanisms are in place to provide ongoing updates to stakeholders throughout the project lifecycle?
Have you experienced negative consequences from limited visibility into project execution? Can you share an example?
What information do stakeholders most often request or feel they lack during a project?

Consistent Performance

What challenges have you faced in achieving consistent project outcomes across your portfolio?
How do you measure and track project performance across the asset lifecycle?
Can you describe the handoff process between project phases or teams? Where do breakdowns typically occur?
How standardized are your project delivery processes across different teams or business units?
What impact do inconsistent processes have on cost, quality, or schedule adherence in your projects?
How do you ensure learnings from one project are shared and adopted across others?

Oracle Playbook

Key imperatives for delivery teams

Construction and engineering projects

1. Safety first
2. Efficient subcontractor management and collaboration
3. Effective project management that delivers quality and compliance
4. Client satisfaction and consistent strong performance that reinforces their brand
5. Continuous improvement and adaptability to stay competitive in a highly dynamic industry

Forces shaping construction and engineering

Delivery teams

INDUSTRY CHALLENGES

Productivity, ROI, and margins
Inefficient output, high risk, and constant change can result in poor margins and ROI. Complex funding allocation across projects and programs can lead to cost overruns and inefficiencies.

Disconnected teams and data
Disconnected internal and external stakeholders, processes, and data create project delays and cost overruns which impede work and decision-making. It can be difficult to keep up with increased project speed, complexity, and new contract types.

Labor and knowledge shortage
The industry can expect continued trade labor and knowledge shortages. Attracting and retaining the next generation of talent will require creative new strategies.

Supply chain disruption and volatility
Unexpected material shortages, transportation problems, supplier challenges, and rapid fluctuations in material and labor costs can quickly cause project schedules and budgets to change. Managing large volumes of contractors can make onsite logistics complex.

Sustainable construction practices
Looking ahead, the industry is expected to face growing regulatory, economic, environmental, and social pressures to build more sustainably.

Multidimensional risks
Other industry challenges include identifying and mitigating jobsite safety risk, contractual disputes, IT risks, and security vulnerabilities more effectively with limited resources.

VISION OF SUCCESS

Click on a section to learn more.

1 Drive performance and predictability
2 Collaborate effectively at scale
3 Transform the workforce
4 Connect field and back office for greater agility
5 Build the future sustainably
6 Improve risk prevention and mitigation
7 Starting your journey

Drive performance and productivity

Inefficient output, high risk, and constant change can result in poor margins and ROI. High performing delivery teams are connected to information and technology that empower accurate decisions at speed, minimize rework, and the risk of delays and increased cost that can impact margins and negatively affect the company's brand.

Recommended actions:

- Have a collaboration culture
- Leverage technology to inform and empower accurate decisions at speed
- Implement workflow automation especially between your field and back office to improve efficiency and ensure compliance

How to get started:

- Implement technology that provides the ability to make swift, accurate, data-informed decisions
- Leverage data insights to augment skills and decision-making, predict risk, and drive continuous improvement
- Implement dynamic, continuous capital planning and resource allocation that maximizes returns, considers risk, and adjusts to changes
- Connect field execution applications with your enterprise financial systems for a single source of truth

Oracle capabilities enabling strategic goals

Project management, documents, and collaboration	AI/insights	Payment workflows	Supply chain management	Integrations	Finance

Collaborate effectively at scale

Connected internal and external stakeholders, processes, and data improve project delivery, prevent delays and cost overruns, and create better project outcomes. Delivery teams often state that it can be difficult to keep up and synchronize information as projects speed up, complexity increases, and/or new contract types are introduced.

Recommended actions:

- Modernize operations applications to support interoperability across teams
- Promote a collaborative environment
- Provide secure access to documents, drawings, 3D models, and communication threads

How to get started:

- Implement technology that provides efficient and effective cross-organizational collaboration
- Support seamless collaboration between owners, general contractors, and subcontractors with control across project and asset lifecycles using secure cloud solution
- Access to shared analytics to predict schedule and workflow risks, inform decision-making, and support continuous improvement

Oracle capabilities enabling strategic goals

Project management, documents, and collaboration	Construction intelligence cloud	Trusted payment workflows

Transform the workforce

Labor and knowledge shortages have been significant challenges for the construction industry as the experienced workforce retires and fewer candidates are entering the industry. Organizations have turned to incentives, apprenticeships, and professional development to attract and retain the next generation of construction and engineering talent.

Recommended actions:

- Optimize project resourcing strategy
- Upskill talent to offset retiring workforce
- Develop partnerships with local educational institutions and vocational schools
- Invest in employee skill enhancement to boost morale and loyalty and reduce churn
- Leverage contingent project labor
- Foster a positive company culture that values diversity and employee well-being
- Use agentic AI to automate routine tasks

How to get started:

- Implement automation to help increase productivity, allowing employees to focus on more strategic tasks
- Enhance your relationships with subcontractors and suppliers with technology such as payment apps for prompt payment and secure document sharing with 3D models
- Use HCM solutions that can help improve recruiting and retention of talented employees and help you attract the next generation of workers

Oracle capabilities enabling strategic goals

Human Capital Management	Project management, documents, and collaboration	AI/insights

Connect field and back office for business agility

Unexpected material shortages, transportation problems, supplier challenges, and rapid fluctuations in material and labor costs can quickly cause project schedules and budgets to change. Managing large volumes of contractors can make onsite logistics complex.

Recommended actions:

- Reduce the number of systems that manage costs and schedules
- Foster a strong supply chain through trusted payment workflows to ensure prompt and accurate payment
- Plan for meaningful integrations to better connect the back office with field
- Consider cloud solutions to facilitate best practices and future-proof your IT investment

How to get started:

- Implement cloud solutions for contracts and document control
- Implement secure subcontractor payment workflows with early payment options
- Implement cloud applications for planning and scheduling.
- Integrate ERP financials and project management applications for a seamless data flow
- Use data and intelligence to transform supply chain tracking and improve agility

Oracle capabilities enabling strategic goals

Scheduling, resource, and risk management	Project management, documents, and collaboration	AI/insights	Integrations	Supply chain management	Finance

Build the future sustainably

The industry is feeling the pressure from governments, investors, and even the general public to reduce its carbon output. As prices of sustainable materials have softened, owners don't have to choose between cost and sustainability. Many owners are finding new ways to implement more ecofriendly practices, including the design-build contract method, collaboration, 3D models, and automated workflows. All of these can help reduce carbon emissions by preventing rework that results in wasted materials.

Recommended actions:

- Prioritize sustainability into your organizational goals and communicate with the entire team
- Incorporate sustainable materials into the project scope
- Plan sustainability into the asset lifecycle, including decommissioning
- Reduce waste and rework though unified schedule and task, collaboration, and a connected field and back office

How to get started:

- Implement an information management application that allows for cross-organizational collaboration and document and 3D model coordination
- Leverage technology for efficient review and approvals to address regulatory and scope requirements are met
- Enforce documentation across the lifecycle to achieve a complete asset record at handover for efficiency of operations and maintenance

Oracle capabilities enabling strategic goals

Scheduling, resource, and risk management	Project management, documents, and collaboration	AI/insights	Integrations	Supply chain management	Finance

Improve risk prevention and mitigation

Identify and mitigate jobsite safety risk, contractual disputes, IT risks, and security vulnerabilities more effectively with limited resources. Better allocate contingency funds and resources.

Recommended actions:

- Use modern technology such as edge-captured images, video, and sensor data on all jobsites and AI to review images and notify of anomalies or potential safety risks
- Align your contracts with industry-leading templates from AIA, NEC4, or FIDIC to reduce risk of disputes
- Ensure up-to-date system security and compliance through an always-current cloud infrastructure

How to get started:

- Implement “always-on” onsite and remote jobsite monitoring with intelligence to interpret, predict, and mitigate safety risks
- Monitor construction site and workforce data to use in predicting incidents
- Be sure your jobsite safety plans are understood by all team members and anyone entering the jobsite
- Track and report working conditions to improve safety protocols and prevent future incidents

Oracle capabilities enabling strategic goals

Scheduling, resource, and risk management	Project management, documents, and collaboration	AI	Integration	Supply chain management	Enterprise communications

Internal questions to get going

Productivity, ROI, and Margins

How do you currently measure productivity and ROI across your projects and programs?
What are examples of project inefficiencies that led to cost overruns or margin loss?
How do you forecast and manage risks that could impact project profitability?
What tools or processes are in place to monitor project financial performance in real time?

Disconnected Teams and Data

How do teams and stakeholders currently share project information and updates?
How do you coordinate work between internal teams, contractors, and partners?
What systems or processes do you have for managing increasingly complex and fast-paced projects?

Labor and Knowledge Shortage

What are your biggest challenges in finding and retaining skilled labor for your projects?
How do you train and onboard new team members, and transfer knowledge from experienced workers?
What strategies are you exploring to attract the next generation of construction professionals?

Supply Chain Disruption and Volatility

What methods are you using to forecast and manage fluctuating material and labor costs?
What challenges do you encounter when managing multiple contractors and onsite logistics?

Multidimensional Risks

How do you identify and assess risks across jobsite safety, contracts, IT, and security?
What processes are in place to mitigate risk with limited resources?
How are you using technology to improve risk management and compliance?
Have you experienced any challenges integrating risk data from various sources into a single view?

Oracle for Construction and Engineering

Comprehensive solutions for projects, programs, asset lifecycle management, and enterprise functions

Construction & Engineering Capabilities

Capital program management

- Project ideation & selection
- Project capital planning
- Project budget & funding management

Construction project management

- Critical path scheduling
- Task scheduling
- Resource management
- Project risk management
- Collaboration & design co-ordination
- Project controls
- Jobsite inspection and safety
- Construction contract management
- Document and information management

Facilities management

- Maintenance management
- Lease & inspection management
- Property data and lease management

Corporate & Business Support Capabilities

Utilities solutions

- Global accounting
- Consolidation & close
- Procurement & sourcing
- Project financials
- Receivables management
- Cash management
- Expense & payables management
- Planning & budgeting

Facilities management

- Inventory management
- Asset maintenance
- Manufacturing
- Logistics

Facilities management

- Sales
- Services
- Quotation & order Mgmt.
- Marketing

Facilities management

- HR operations
- Recruitment & onboarding
- Payroll & benefits
- Talent management

Insights & intelligence

- Descriptive analytics
- Predictive & prescriptive intelligence
- AI models

Oracle Cloud Infrastructure

Compute | Networking | Storage | AI/ML | Security | Database | Compliance

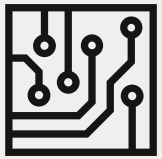
Public Regions | Sovereign Regions | Dedicated Regions | Multicloud | Edge

Why Oracle?

Complete Suite

Best-of-breed apps designed and built based on customer needs—with AI throughout.

Industry-specific apps, finance, HR, supply chain, manufacturing, marketing, sales, service, and analytics built to work together.



Best Cloud Technology

Next-generation Oracle Cloud Infrastructure (OCI) with the performance, security, and availability to run your mission-critical operations.

Cloud regions worldwide for commercial and government needs.

Award-Winning Design

Award-winning consumer-grade+ user experience built with Redwood Design System.

The same tools for all developers to easily personalize, extend, and build applications.

Self-learning and self-improving applications.

Committed to Your Success

Oracle Customer Success Services helps you maximize your cloud investment with proactive support, expert guidance, and comprehensive tools and best practices.

Committed to your success

Oracle Cloud Success Navigator: An interactive digital platform to help guide you

Get your bearings

Understand what's possible with your cloud solution using preconfigured starter environments to support your design decisions.

Chart a proven course

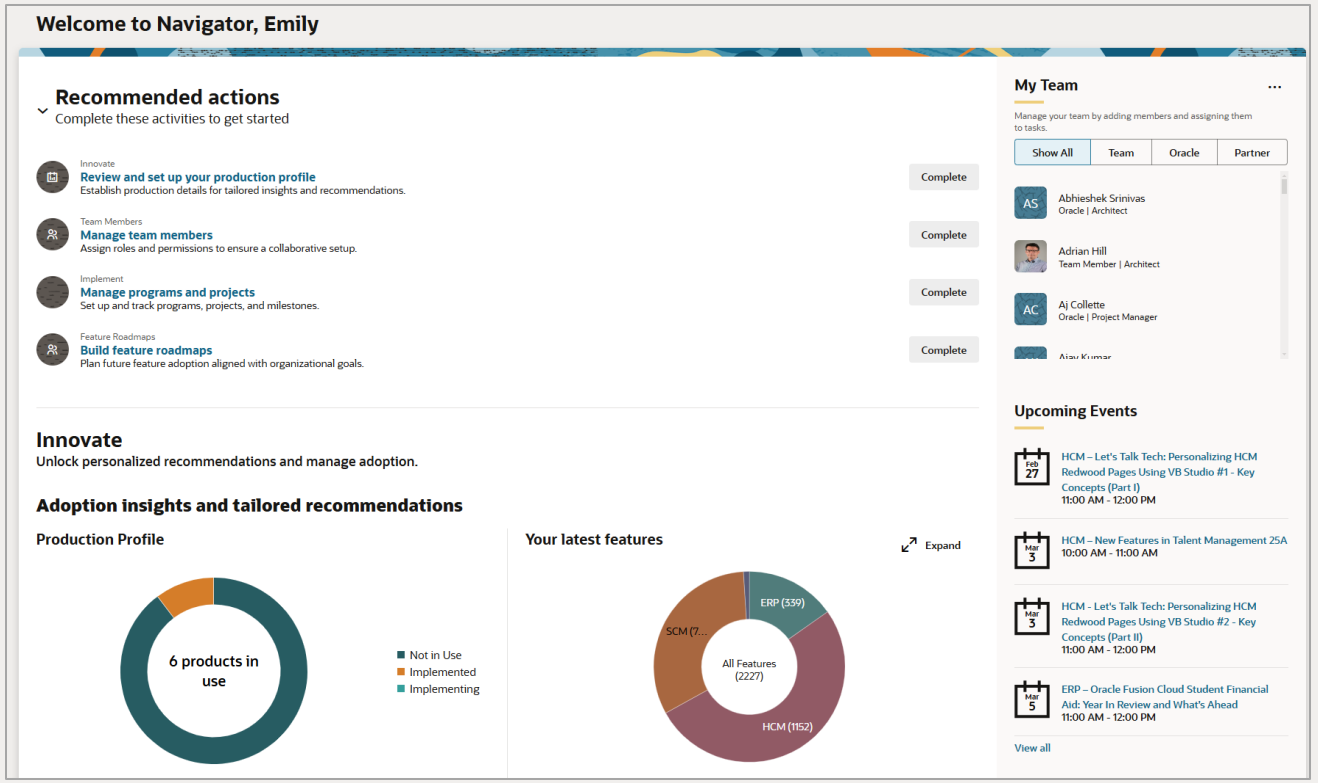
Access Oracle expertise, reference Oracle Modern Best Practice, and use Cloud Quality Standards to inform your implementation approach.

Find value at every turn

Get more from your quarterly releases using AI assistance and preview environments to experience and adopt the latest features that matter to you.

Blaze new trails

Build your own cloud roadmap based on your organization's goals keeping you focused on the capability you need for today and the road ahead.



Extensive partner ecosystem

+20,000

Partners and ISVs

accenture

Deloitte.

IBM

pwc

tcs TATA CONSULTANCY SERVICES

argano

cohere

Palantir

Peloton CONSULTING GROUP | Digital Transformation Realized.

Red Hat

aws

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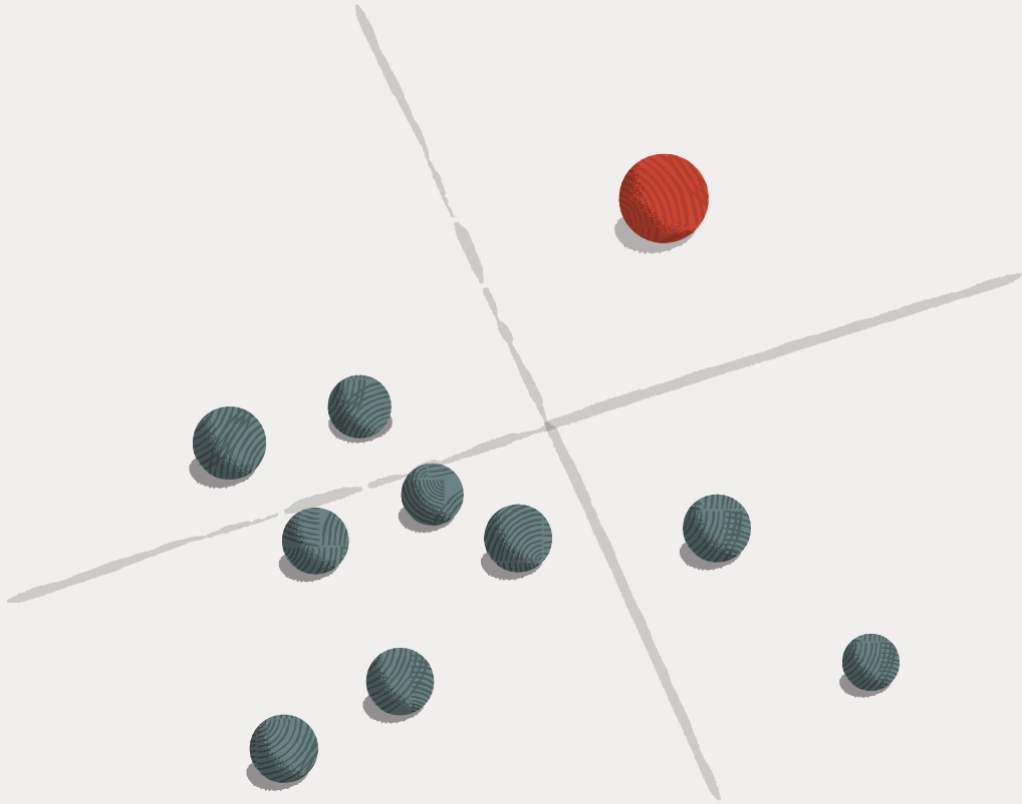

Thank you

To learn more, please visit:
oracle.com/construction-engineering