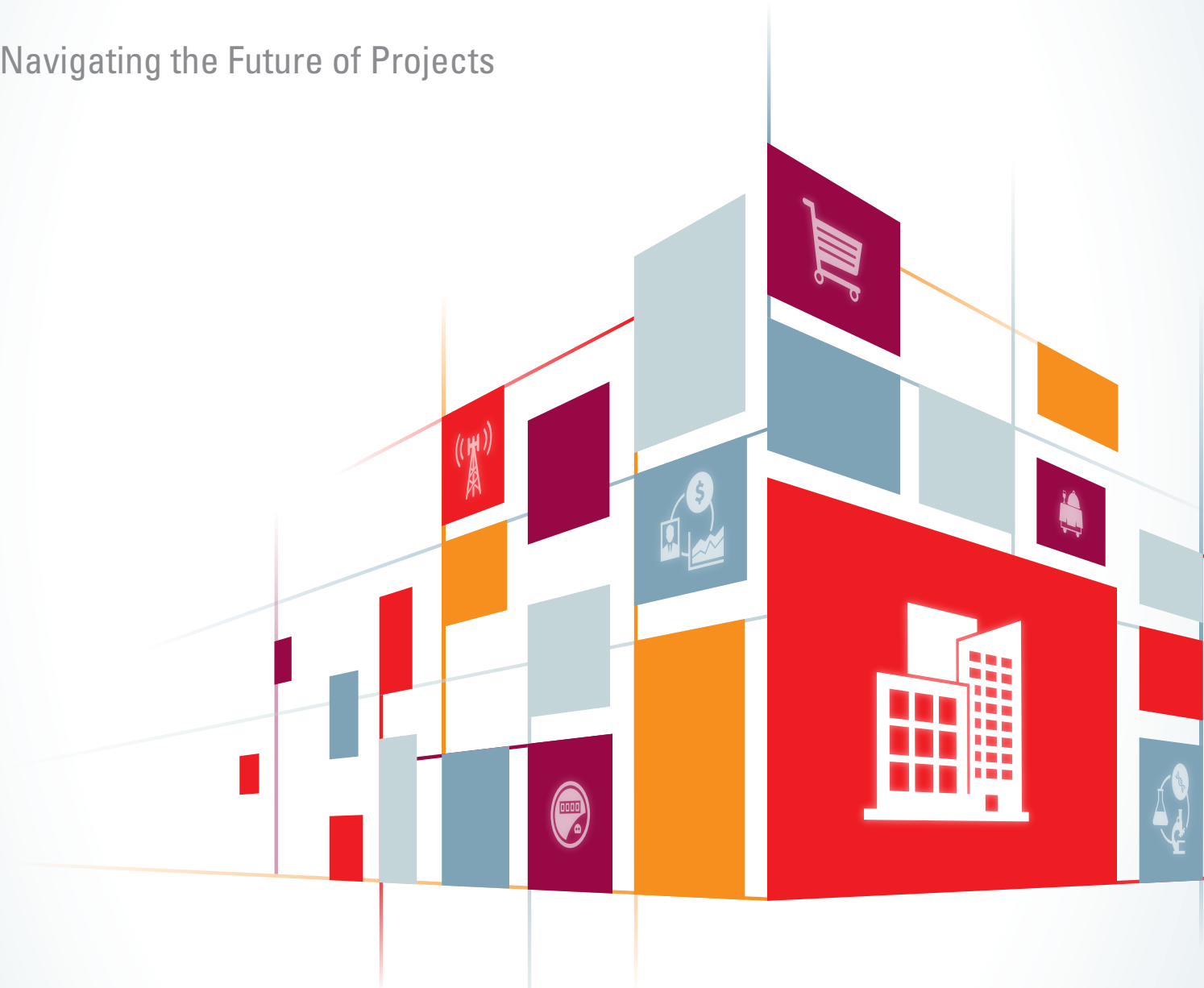# ORACLE
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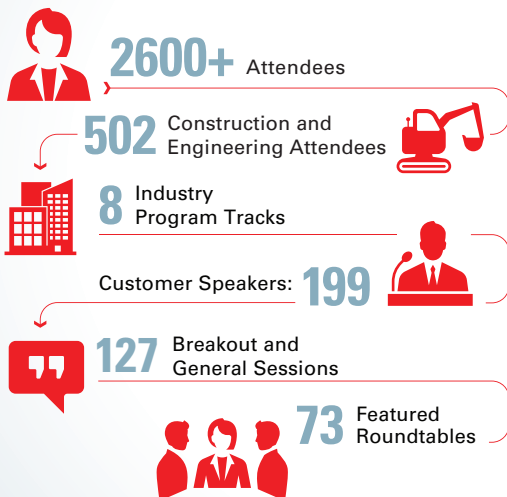
Navigating the Future of Projects

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Oracle Industry Connect 2018

Introduction

Oracle Industry Connect is a hallmark event for Oracle Construction and Engineering. It's our premiere opportunity to bring project delivery professionals from an array of industries together to make meaningful connections, share knowledge, see innovation in action, and spark new ideas. When we ask our customers why they come to Oracle Industry Connect, they consistently point to the opportunity to network and share strategies for overcoming business challenges.

This year, our focus was "Navigating the Future of Projects." In exploring that theme, we looked ahead to potential future areas of disruption while also showcasing current frontiers in innovation and the ways organizations are leveraging digital transformation to imagine new and better ways of working.

The engineering and construction (E&C) industry, in particular, is clearly at an inflection point with regard to technology – one of our presenters terms it "the dawn of the digital era" – with development and adoption accelerating as organizations embrace new tools to remain competitive. The internet of things (IoT), artificial intelligence (AI), augmented reality, autonomous vehicles, visualization tools, and other maturing technologies are playing a growing role in how projects are planned and delivered, bringing new levels of productivity, safety, and the intelligence needed to improve decision making and enable the repeatability of success.

A large part of our focus this year was on demonstrating how these technologies and more are helping organizations embrace innovation to address some of their most pressing business challenges, including:

- Increasing productivity

- Maximizing the value of capital assets

- Improving project outcomes across the lifecycle

Oracle Industry Connect - Deconstructed:

2600+ Attendees

502 Construction and Engineering Attendees

8 Industry Program Tracks

Customer Speakers: **199**

127 Breakout and General Sessions

73 Featured Roundtables

Setting the Stage for Innovation: Urgent Need, Unprecedented Opportunity

As Oracle Industry Connect participants prepared for their two-day journey into the future of projects, the Construction and Engineering program began with a deep-dive analysis of digital transformation in E&C. Keynote presenters McKinsey Partners Steffen Fuchs and Gernot Strube painted a vivid picture of both the urgent need and unprecedented opportunity for the industry.

Fuchs shared that productivity lags in the E&C industry cost the global economy upwards of $1.6 trillion annually – roughly equal to the GDP of Canada. He also identified seven levers that the industry can use to achieve productivity gains of 50% to 60% and capture billions in new value:

- Regulation
- Collaborating and contracting
- Design and engineering
- Procurement and supply chain management
- Onsite execution
- Capability building
- Technology

"Of these levers, technology represents the single largest opportunity for closing the productivity gap – offering gains of 14%-15%," Fuchs said.

The McKinsey team also shared successful examples of digital innovation in the E&C industry, including a leading real estate development company that introduced 5D building information modeling (BIM) and achieved $25 million in cost savings from original project estimates while avoiding 3,000 design clashes and reducing masonry by 20%.

Attendees left the General Session with a clear vision and sense of urgency about the potential of innovation in their industry – generating excitement and setting the tone for the two-day event.

Insight, Inspiration, and a Blueprint for Innovation Across Industries

One of the most beneficial parts of the Oracle Industry Connect experience is the cross-pollination of innovative ideas across diverse industries. The magic of this collaboration was evident throughout the event, especially in the general session focused on "Redefining Business Models/Consumer Experience in an Age of Digital Disruption."
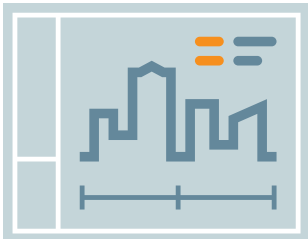
Cory Johnson, former journalist and chief market strategist for Ripple, led a broad discussion featuring innovators from several data-intensive industries, with executives from Con Edison, MGM Resorts International, Meed, and Bechtel Corporation sharing how their organizations are thriving in today's "disrupt or be disrupted" environment.

The dominant theme was the need to navigate the challenge of investing in an organization's core business while anticipating and delivering new business models. Bob Weiler, executive vice president for Oracle Global Business Units, highlighted the role that the cloud can play delivering next-gen solutions – built around AI, augmented reality, virtual reality, blockchain, and more – as a service. This model can empower organizations to focus even more closely on transforming their business and customer experience models.

David Wilson, chief innovation officer for Bechtel Corporation, defines his role as "disrupting with intent," and said that his guiding principle is, "How do we create a better experience for our builders?" Wilson explained that his organization thought they had a technology problem, but, in reality, they faced a process challenge. "The real question is, 'How can we reshape processes now that we're unencumbered by paper?'" Wilson explained that he sees team members eager to embrace mobile solutions, such as smart watch applications that allow them to simply click and tap to complete their status updates. Wilson shared that Bechtel is now focused on using these technologies and others to more effectively deliver information.

Welcome to the Dawn of the Digital Era for the Built Environment

"For an AEC organization to remain relevant, survive, and thrive over the next 10 years… they need to be investing in innovation right now."

- Darren Bechtel, Founder and Managing Director, Brick and Mortar Ventures

The Bechtel family has a long tradition of leadership in the architecture, engineering, and construction (AEC) sector. One family member, Darren Bechtel, is focused on charting a new path – combining his AEC experience and interest in venture capital and technology to disrupt the way we design, construct, and maintain the built world. Bechtel shared his insights and journey as founder of one of the world's first AEC venture capital firms with Oracle Industry Connect participants.

Bechtel founded Brick and Mortar Ventures in 2015 with the sole purpose of identifying, investing in, and accelerating the growth of emerging companies that develop innovative software and hardware solutions for the AEC and facilities management industries.

"We recognized that the dawn of the digital era for the construction industry was just starting to break over the horizon," said Bechtel. "The industry's need for productivity and safety improvement was clear, and the foundational technologies necessary to connect the field to the office, trailer, and digital world were just starting to become accessible to end users."

The company is built around the team's belief that the global construction industry – a $10 trillion dollar sector expected to grow to $15 trillion by 2025 – will need to realize exponential growth in productivity and significant decrease in project delivery costs in order to meet the $50 trillion in infrastructure demand over the next 12 years.

+ Brick and Mortar Ventures has tracked more than 500 tech start-ups in the AEC sector.

Bechtel highlighted the human capital challenges AEC companies face as an important impetus for disruption. "For an AEC organization to remain relevant, survive, and thrive over the next 10 years, we believe they need to be investing in innovation right now. And much more than just talking about it; they need to be actively seeking out new technologies and learning how to work with the new generation of ever-improving solutions – or they will have a hard time remaining competitive."

Since its creation, Bechtel's firm has tracked more than 500 start-ups in the AEC technology sector and sees innovation accelerating as the technology matures and the need to improve productivity through innovation becomes ever more pressing. His firm's vision for the construction site of the future includes augmented workers; local and remote connectivity; 4D/5D plans and ubiquitous "digital twins;" real-time, data-driven insight and smart schedules and tasks; autonomous and remotely operated equipment; zero-waste jobsites; pervasive off-site fabrication; and a transparent and efficient supply chain.

Elevating Innovation in the Cloud

The cloud is foundational to powering innovation and digital transformation in E&C and across industries. A leader in cloud innovation, Oracle showcased Oracle Prime Projects Cloud Service at Oracle Industry Connect 2018, highlighting how it improves outcomes across the project lifecycle by delivering team collaboration, process integration, and enhanced visibility across activities.

Oracle Prime Projects Cloud Service users detailed their experience with the easy-to-use cloud solution for activities such as next-generation scheduling (including integrated critical path management scheduling and Lean task management), field collaboration, and portfolio planning. Program participants also shared their vision for continuing to expand their use of the solution.

Stephen Libby and Jason Duncan of McCarthy Building Companies are leveraging Oracle Prime Projects to digitize and enhance Lean Construction. "Having a tool that can bring [collaboration and other project tasks] together and to navigate the handoffs between different entities, is really important for us to deliver integrated projects, which (Oracle Prime Projects) allows us to do," said Libby, director of planning and scheduling for McCarthy.

"We want to have the McDonald's of construction, where everything is the same no matter where you are. Oracle Prime Projects gives us the whole picture of what we can be."

- Jeff Davis, Director of Quality, White Construction

Prime Projects Customer Panel
Early Adopter Program

Heather Leide, senior project manager of airport development for the Metropolitan Airports Commission, shared how her organization is introducing Oracle Prime Projects to support portfolio management.

Jeff Davis, director of Quality for White Construction, discussed how the builder is transforming field inspections and reporting, thereby accelerating project completion. "We want to have the McDonald's of construction, where everything is the same no matter where you are. Oracle Prime Projects gives us the whole picture of what we can be," Davis said.

All four panelists echoed a single sentiment when asked what they would have done differently: They wish they had begun their Oracle Prime Projects and digitization journey even earlier.

Innovation at the Worksite:
The Future is Here Today

Science fiction is the new reality at some of today's most progressive E&C jobsites. Next-gen technologies, such as drones, autonomous vehicles, exoskeletons, and augmented reality devices, are rapidly becoming part of the new landscape and bringing positive disruption to the field.

Such innovation and transformation are essential as the industry faces unprecedented labor shortages and rising costs, while doubling down on its drive for greater efficiency and intelligence and its commitment to jobsite safety. Oracle highlighted some of the most important and promising technology innovations throughout Oracle Industry Connect.

In just the last two years, the use of drones has increased considerably on the jobsite. Panelists from the E&C and energy industries joined innovators from drone technology and data companies to examine the current and potential applications of drones in improving project delivery and outcomes. An important theme was how drone technology is changing the way organizations interact with data – from collection to analysis to decision making. Thought leaders from Uplift, ComEd, and Reconstruct – companies representing every stage of this data journey – demonstrated how drones are transforming the way E&C professionals complete work, make decisions, and deliver results.

"Creating an environment where play is okay can lead to groundbreaking transformations."

- Charlie Dunn of DPR Construction

Caterpillar, a leader in providing automation solutions, also shared its journey. Today, the company operates the largest single fleet of fully autonomous Cat haul trucks in the world. Michael Murphy, chief engineer, Caterpillar Inc., provided an overview of Caterpillar's initiatives to collaborate with technology providers to develop equipment that enables interoperability, communication across the enterprise, and integration with existing systems.

Improving productivity and safety are paramount priorities in the E&C sector, and the use of exoskeletons is helping to advance both. Russ Angold, founder of EksoWorks, guided participants through the fascinating evolution of exoskeleton technology over the last 12 years – and how this technology is improving productivity, quality, and safety at a growing number of jobsites, while helping to extend workers' careers.

Many E&C companies want to be innovators, but not all are built for the task – at least not yet. Others, like DPR Construction, have worked to develop a culture where creativity and innovation can flourish, and this is helping the company leverage disruptive technologies to reimagine its jobsites and end-to-end business. Charlie Dunn of DPR discussed the firm's "innovation culture" and related quest to drive new levels of productivity. He focused on innovation in construction techniques – such as the company's work to pursue a strategy of building and inspecting on the ground and then flying modules into place – and how Oracle's Primavera P6 Enterprise Project Portfolio Management helps to support its goals. Dunn's presentation also explored the role of play in sparking innovation. Technologies such as 4D modeling and virtual/augmented reality can create an atmosphere where play is okay, he explained, noting that this mindset helps enable transformation.

Oracle Powers Innovation and Insight

Oracle Construction and Engineering announced several initiatives to accelerate innovation and digital transformation across the E&C industry during this year's Oracle Industry Connect. Oracle is working closely with the broader E&C ecosystem to bring new innovations to its platform, enabling customers to benefit from:

- The Connected Job Site: Oracle is working with Triax to develop and deliver a unified platform for construction professionals that integrates data from Triax's flagship Spot-r system with Oracle's Prime Projects Cloud Service project management platform. Customers will be able to create a seamless, connected job site that uses technology and real-time data to enhance safety and enable greater visibility, insight, and, ultimately, smarter building. In addition, Atlas RFID and Oracle are working to deliver materials management solutions leveraging sensor-based data.

- Model-based Scheduling: Assemble and Oracle are collaborating to integrate Oracle's project management solutions with BIM data, enabling 4D scheduling. The new integration will allow users to easily create simulations, cost-loaded schedules, micro-schedules, and manage constant project changes.

Oracle Industry Connect also showcased the first E&C technology firm to be accepted into the Oracle Scaleup Ecosystem, a nonresidential, virtual-style acceleration program for startups geared to enable next-generation growth, business development, and to drive cloud-based innovation for startups. Reconstruct is a visual data analytics platform provider whose breakthrough web and mobile products seamlessly integrate reality capture, BIM, and scheduling. When combined with Oracle project delivery solutions, customers can manage their projects in a visual environment that is easy to use, accurate, and predictive – increasing efficiency and mitigating risk.

By collaborating with these organizations and others, Oracle is helping customers to unlock additional value from their Oracle solutions via capabilities around IoT technologies, BIM-based scheduling, and more.

Powering Project Success with Data Insights

E&C organizations generate a lot of data across multiple complex projects – from work practices and schedules to materials inventory and expenses. But as the McKinsey keynote presentation noted, companies are "data rich but insight poor." Recognizing this challenge, leading organizations are working to harness their data effectively to make smarter business decisions and drive exceptional outcomes – and then replicate them over and over to maintain their competitive edge.

John H. Pierce, senior vice president, Design & Construction for New York City's Rockefeller Group, spoke about his company's use of Oracle's Primavera Unifier to manage very large-scale, multi-year projects across the real estate developer's portfolio.

"We have been able to vastly reduce our project control resources while greatly increasing our project data integrity. We also can forecast outcomes much more accurately than we could before," Pierce said.

The Rockefeller Group can now access consistent data by region, industrial segment, or by each project across its annual capital expenditures of $250-$300 million in a dozen states and five geographic regions. The company has unified standards and a paperless process that makes company-wide reporting a nearly painless process.

Sarina Moss-Tenan, project management consultant for NextEra Energy, also highlighted Primavera Unifier's ability to help centralize data, improve communication, and drive efficiency throughout her organization.

"Our vision was for Primavera Unifier and Primavera P6 EPPM to work together, with Unifier providing information back to P6," Moss-Tenan said.
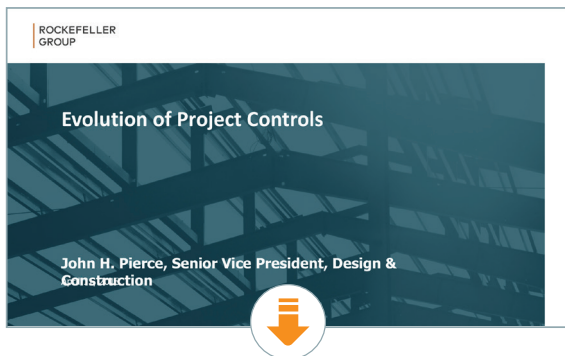
Since deploying the solution – which is currently rolled out to the company's wind and solar groups – NextEra has significantly reduced misses, cut time spent locating project documents and data, and strengthened communication through better checklist management. NextEra deployed the solution in the cloud to enable both internal and third-party users to access the information they need.

Diane Jackier, chief of capital strategic initiatives for New York City Department of Parks and Recreation, took the stage at Oracle Industry Connect to discuss her department's journey and the complexity of their work. In the current fiscal year, the department will manage 530 capital projects, and Jackier expects that number will grow to 600 next year.

"Our goal is to build better transparency – for the general public and government officials – into the progress of projects in our city's beloved parks," Jackier said.

In just over four months, the department used Primavera Unifier to launch a Capital Projects Tracker that allows the general public, elected officials, and administrators to get up-to-date, easy-to-digest updates on project progress. The tool also has helped the department complete nearly 20% of construction projects more than a month ahead of schedule in fiscal year 2017.
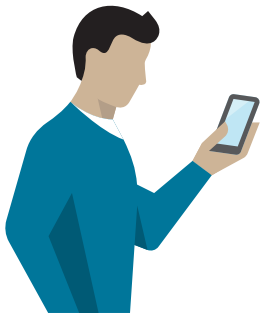
In another application of data-driven insight, Swinerton has achieved dynamic enterprise reporting that automates real progress from the field to the fingertips of decision-makers anywhere. Michael Murphy, vice president and corporate manager of project controls for Swinerton, discussed how the international E&C firm leverages Primavera P6 EPPM in the cloud to deliver insights that are tailored for different levels of the organization beyond just project teams. The implementation is a blueprint for true organizational collaboration from project level to the C-Suite.

Project Excellence in Action: PROMTEL Expands and Accelerates Internet Connectivity in Mexico

A single telecommunications provider, Telmex, owns 70% of the market in Mexico. In 2016, the Mexican legislature, seeking to open the market to more providers – and bring internet access to all corners of the country – created the Telecommunications Investment Promotion Agency (PROMTEL), a public-private partnership that would create a shared network. Multiple carriers would use the network to deploy mobile broadband nationwide.

After 11 months of deployment, the project already is a success, covering more than 30% of the Mexican population – 36 million people – and leading new providers to consider operations in Mexico.

Alejandro Chavarri Rodriguez, engineering, supervision and project controls unit director, knew that to truly excel in project execution, he needed Oracle's Primavera P6 EPPM on the job from the start.

"When I was offered this job, I told the director general that I would only accept the job if I could introduce Primavera P6," Rodriquez told the Oracle Industry Connect audience. "This has been a game changer."

PROMTEL embraced a "fully in the cloud" model, using Primavera P6 EPPM to manage this large-scale, multifaceted initiative and Primavera Unifier for management of site inspections, enabling a real-time view of installation and objective evaluation of progress. The Primavera implementations began in October 2017 and were operational three months later.

"You get everything into a BIM model and get it into P6…and follow through with a tool like Unifier – and get the analytics to respond to the questions you get every day on a project," Rodriquez said.

The solutions enabled robust project management and accelerated PROMTEL's move to paperless operations – which just three other agencies in the government have done.

Ultimately, the Primavera solutions helped PROMTEL automate processes, operate with about 20% of the staff of a typical government agency, and save 60% of its total budget. Those cost savings enabled the agency to invest in other systems that will improve operations.

Reducing Risk and Unlocking New Efficiency with Payments and Supply Chain Finance Transformation

Approximately $3.5 trillion in working capital is tied up at any time due to unpaid invoices, according to Lex Greensill, co-founder of Greensill, a provider of short and long-term structured finance for companies globally. What's more, U.K. construction contractors are increasing bids by as much as 5% to account for uncertainty around when they would be paid, Greensill shared with the Oracle Industry Connect audience.

Late payment and slow transactions can delay projects and have a negative impact on the fiscal health of vital trades – which, in turn, can ripple through the entire industry. To help E&C firms change the supply chain finance equation, Greensill and Oracle formed a supply chain finance partnership. The offering combines the power of Oracle's technology and Greensill's capital solutions to accelerate payments, improve cash flow, and enable better working capital management in the construction industry.

Payment management in construction has historically been defined by inefficiency and a lack of transparency – as well as risks arising from both characteristics. As a result, numerous general contractors and owners have turned to the Oracle Textura Payment Management Cloud Service to improve processes in the cloud. One such company is Lendlease, an international property and infrastructure group with operations in Australia, Asia, Europe, and the Americas. Lendlease has significantly improved payment outcomes for the general contractor and its subcontractors by streamlining, automating, and standardizing processes with the solution.

"Through our use of Oracle Textura, we've been able to increase our productivity, which stems from a standardized process workload – everyone (subcontractors, owners, and management) is on the same page," said K. Michael Mull, vice president, Finance Systems Integration Manager, Lendlease Americas.

STREAMLINE OF SUBCONTRACTOR PAYMENT PROCESS WITH TPM
OIC Conference – April 11, 2018

Skanska-Walsh, the joint venture managing construction of the LaGuardia Airport Redevelopment project, uses Oracle Textura Payment Management Cloud Service to ensure an efficient, scalable subcontractor payment process. The solution enabled Skanska-Walsh to streamline and automate payment activities, including invoice review, lien waiver collection, and electronic payment. Additionally, Skanska-Walsh integrated Oracle Textura Payment Management with its existing JD Edwards EnterpriseOne enterprise resource planning system, improving payment efficiency and transparency, while boosting team productivity.

+ For more highlights, we invite you to enjoy our Day 1 and Day 2 wrap videos.

It's a Wrap

While Oracle Industry Connect 2018 is over, the quest for innovation and digital transformation continues – and Oracle Construction and Engineering is focused on delivering innovations to help your organization stay ahead of the curve as you plot a course into the future of projects.

About Oracle Construction and Engineering

Oracle Construction and Engineering helps companies reimagine their businesses. With best-in-class project management solutions, organizations can proactively manage projects, gain complete visibility, improve collaboration, and manage change. Our cloud-based solutions for global project planning and execution can help improve strategy execution, operations, and financial performance. For more information, please visit www.oracle.com/construction-and-engineering.

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