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Gaining Transparency in Construction & Engineering

Enterprise Project Portfolio Management software provides owners, contractors and project leader's visibility and transparency across all projects.

In the engineering and construction business, project delays and cost overruns seem to be the norm instead of the exception.

Chicago's Millennium Park (\$258 million over budget) ¹ and Boston's "Big Dig" transportation project (with overruns reported as high as \$12 billion) are just two high-profile examples of an industry that wastes over \$120 billion annually due to out-of-control delays, cost overruns and other inefficiencies, according to author Barry B. LePatner in his book, "Broken Buildings, Busted Budgets." ² But these same inefficiencies permeate construction projects of all sizes.

LePatner places some of the blame for these gross disparities on the lack of technology in the industry. Construction ranks the lowest among U.S. industries in the amount of money invested annually in technology, he writes. Technology could create transparency between all the stakeholders in a project and improve efficiencies at all levels.

Making matters worse, today's construction and engineering industry faces new challenges amid the current economic climate. Capital spending is down, regulatory requirements are up, and all stakeholders involved in projects are looking for better ways to improve efficiencies and save money. The industry must optimize the use of limited capital to meet increasingly rigorous stakeholder demands.

At the same time, the one constant in construction is change. At any moment, a smooth running project can be slowed by differing site conditions, design conflicts, supply chain problems or inspection delays. It's simply impossible to sit back and assume you'll have the data that's needed to meet regulatory reporting requirements on time. It requires a forward-thinking view to anticipate and quickly react to these unexpected changes.

A technology solution can help solve this triumvirate of issues. This White Paper asserts that an enterprise project portfolio management solution provides a standardized approach for creating visibility and transparency into all projects, allows greater agility for managing project changes, and allows for better strategic planning, management, efficiencies and costs savings.

“Our entire reputation is based on our ability to get projects completed on time, within or under budget, and in line with the high levels of quality and safety that our clients expect,”

Stuart S. Richter, Senior Vice President, Hill International

Challenges: Breaking Down the Walls between Project Stakeholders

An E&C firm’s profitability, and an owner firm’s capital investment ROI, are both 100% dependant on successful, as-planned project delivery. The challenge is to get all the stakeholders who are involved in the delivery on the same page.

Each construction project involves an intricate web of relationships between individual owners, contractors, designers, engineers and subcontractors—each with their own relationships, methods and technologies. Yet many best practices, best resources, cost-saving efficiencies and information for regulatory reporting are not shared because the information is siloed. Each new project starts again from scratch.

That disconnect costs all stakeholders time and money. The lack of transparency and visibility prevents stakeholders from making factual, metrics-based project decisions.

Paper Paper Everywhere

Status updates and regulatory reporting requirements, whether health & safety related, Sarbanes-Oxley (or equivalent) mandated, public funding required, or simply any owner required reporting, traditionally involve a lot of paperwork and scrounging for data. Often those in charge of producing these reports cobble together spreadsheets from myriad sources in various formats.

Can’t See the Bigger Picture

At the project level, managers often lack a system of accountability and team coordination. What’s more, they don’t have the ability to proactively manage changes to the project and plan for changes in resources.

E&C firm executives want to maximize project and program profitability, but often they can’t get a clear view across all projects when it comes to resource allocation, cross-project efficiency gains or looming project problems.

Owners and executives also face stringent time-to-market requirements and must make progress payments, but they lack one clear version of the truth from all contractors, designers, engineers and other stakeholders about the progress of the project. At the end of the day these stakeholders want to know what a project will cost, when a project will be done, and that information summed up for *all* of their projects.

If they had a mechanism for looking ahead and anticipating project needs and possible setbacks, they would have the agility to take proactive measures to their plans.

The Solution

An Enterprise Project Portfolio Management (EPPM) solution provides a clear view of project performance from the project level to the executive suite. This transparency and visibility is critical for better business management and strategic planning, within an organization, as well as across project stakeholders where appropriate.

With EPPM, project managers can quickly capture and disseminate project information, such as cost to date, projected cost at completion, project delivery dates, etc. and easily maintain full accountability with individuals and sub-contractors across the project team through easy status updates. Managers have real-time access to all relevant project information and status, including RFIs, submittals, change order requests, and schedule updates. They can focus on managing projects rather than chase down paperwork. The EPPM dashboard shows all available resources, current project resource allocations, as well as a quick status on past performance to quickly bring project resources to bear as they are needed. What's more, these project controls can be extended to all projects across the enterprise.

For owners and executives, EPPM provides one version of the truth with real-time data across all projects and rolled up to divisions or group, with clean and relevant reports. It enables them to maintain accountability across all stakeholders to mitigate and avoid claims. By providing a framework to standardize and codify business processes and project best practices, EPPM enables owners to reduce overhead and drive productivity.

Stakeholders know exactly where projects stand, and assess quickly proactive measures to ensure capital projects meet time-to-market requirements. What's more, EPPM gives easy visibility into real time contractor performance across time and projects to optimize long term supply chain relationships. "The key to any project is the speed and accuracy of the information and the ability to deliver that information to the people who need it," says Shawn Pressley, vice president of project management systems for Hill International Inc., the largest independent construction management firm in the United States.

Hill's EPPM system's role-based dashboards provide summary views of project status that make it easy for project managers to monitor the status of each project quickly and easily. "If I see a red light on my dashboard, I know that's the issue I need to act on first." With the dashboard, Pressley ensures that his team stays on schedule, addresses delays and consistently marks important project milestones. The staff works more efficiently, and he can detect and resolve potential problems early on.

Hill's senior executives are under immense pressure to make sure their staff members meet deadlines and complete projects successfully. They must also maximize resources, improve profitability and ensure quality service for future growth. "Our entire reputation is based on our ability to get projects completed on time, within or under budget, and in line with the high levels of quality and safety that our clients expect," says Stuart S. Richter, Hill senior vice president.

By using Oracle's Primavera EPPM solution, "our project teams collaborate even more closely now that executives and project managers have their own personal view into project details. With every employee keeping an eye on the big picture, as well as their own project information, we can be sure that all of our activities are completed right the first time," Richter adds.

What's more, standardizing business processes within EPPM has helped eliminate the "seat-of-the-pants" approach to project management and driven Hill's internal metrics to ensure that projects are successful for its customers.

The bottom line: With an EPPM solution, Hill saved \$80,000 on individual program installations by using a Web-based EPPM system that provides access for all employees. What's more, it reduced the time spent by executives and senior staff gathering program information by 200,000 hours, and reduced the time responding to RFIs by 40%. Hill also reports a 25% increase in planning productivity and 30% reduction in the IT effort required to maintain data. Going forward, these improved business processes allow Hill to increase its competitive margin in bidding price and profit.

In another case, Cannon Design in Buffalo, N.Y. wanted to take advantage of its "single firm, multi-office" structure and share best practices via a more collaborative, virtual work environment.⁴ The international architectural, engineering and planning firm also wanted to ensure timely responses to thousands of requests for information and submittals, which is the process by which a contractor seeks architect approval for specific products, to avoid project delays and liabilities, as well as improve the productivity of the professional staff.

The firm chose Oracle's Primavera EPPM solution that allowed architects, engineers, and construction managers to coordinate with owners and contractors around RFIs, submittals, change orders, project finances, and more—regardless of their physical location. It streamlined the RFI and submittal management process, enabling Cannon Design to maximize productivity of the professional staff and reduce overall operational costs. Oracle also enabled the firm to precisely track more than 2,000 documents each month, spanning more than 150 projects, and provided real-time monitoring of compliance with internal best practices and industry standards, producing analytical data that resulted in a process of continuous improvement in performance.

The bottom line: By using Oracle's Primavera EPPM solution, Cannon Design improved its average turnaround time on submittals and RFIs by 35%, and in doing so reduced its liability and gained competitive advantage in the market.

Conclusion

Having a clear view ahead – through transparency and visibility – is no longer just an option for navigating the changing dynamics of project delivery in the engineering & construction industry. While the industry cannot predict every mishap, supply chain delay or economic downturn that may affect a project, it *can* adopt the tools that enable them to look forward into upcoming projects, proactively plan for potential problems and have scenarios in place that lets them react to setbacks quickly.

An EPPM solution does this and more -- enabling engineering/construction organizations to gain efficiency by standardizing operations in an automated format, and providing visibility and accountability across projects, programs and the enterprise.

SOURCES:

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Oracle Corporation
World Headquarters
500 Oracle Parkway
Redwood Shores, CA 94065
U.S.A.

Worldwide Inquiries:
Phone: +1.650.506.7000
Fax: +1.650.506.7200

oracle.com



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Hardware and Software, Engineered to Work Together

