Adding Value to Design

Architectural and engineering firm SSOE uses accurate predictions of available project resources to help its clients be successful. By Roseann McGrath Brooks

A large energy company needs to upgrade its distribution center, including building new structures, creating on-site roadways and rebuilding pipelines. Or a chemical company needs help with executing on its vision for expanding design and construction projects. To whom do those companies turn?

Many such organizations look to SSOE Inc., a 1,000-person international design firm headquartered in Toledo, Ohio, that is ranked eighth in its market in the United States (according to *Building Design and Construction* magazine, 2008). This full-service organization boasts 60 years of architecture and engineering consulting experience, has clients in both industrial and commercial industries, and

has managed projects in 32 countries and 48 states.

Organizations in fields that include chemical/petrochemical, food, automotive, glass and general manufacturing, are drawn to SSOE partly because of the firm's ability to schedule, plan and predict the resources required for design projects.

"Our mission statement says that 'we make our clients successful by delivering the highest-value engineering, architectural and professional services,'" points out Alan Lynch, manager of project controls in the Industrial Process business unit at SSOE. "Providing more accurate predictions on what it takes to complete a project brings an added value to our clients."

TECHNOLOGY FOR TRACKING RESOURCES

Projects in the organization's Industrial Process operating division include both updated and new construction – everything from piping and pressure vessels to support facilities and plant sites. The company has long been a leader in using technology to support those projects. Years ago, it was one of the first architecture and engineering firms in the Midwest to use in-house computers in the design process.

In addition to design, SSOE provides services from conceptual development to procurement and technical field staffing, to the final approval process. The firm relies on Oracle's Primavera to keep track of the resources needed to perform these activities, and to anticipate and change resources as a project progresses.

"We use Primavera P6 internally to track our progress on engineering packages, as well as to come up with a staffing and spending plan," explains Rick Fox, assistant project manager in the Industrial Process division. "We use the software for scheduling, staff planning, earned value tracking and status reporting. We also enter information from our accounting system to track actual hours and dollars spent versus the original budget."
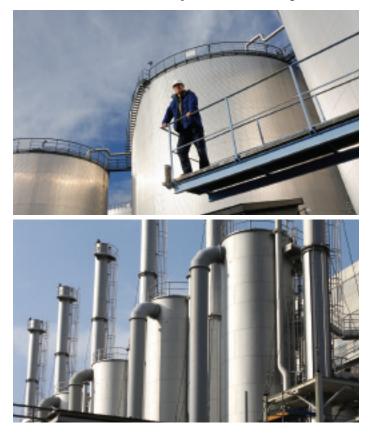
In addition, the division tracks the cost performance index, schedule performance index and estimate to complete for projects, which, Fox says, helps keep his group on time and on budget. "We integrate all our actual expendi-

tures into P6, so that we can factor this information into our planning. This makes us more efficient and enables us to grow as we determine our resource availability to take on additional work." Overall, SSOE has had three consecutive years of growth of more than 20 percent.

PLANNING AND PREDICTING

SSOE uses Primavera software throughout the company and currently manages six major projects within the Industrial Process division. However, the division originally adopted the software "while in survival mode," says Lynch. Four years ago, a large chemical company came to SSOE with an aggressive road map for its design and construction projects. The team at SSOE needed to quickly identify staff availability and schedules to determine how it could meet the needs for a project of a bigger magnitude than they were used to in the time frame needed.

"We initially chose P6 for this large client because of its scheduling and multiple reporting capabilities, which would enable us to report earned value and give our man-

agement information about budget and schedule," says Fox. It soon became evident, however, that P6 had predictive capabilities, as well.

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>
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client," says Lynch. "What started out as our own internal tool to manage budgets and staffing has developed into a reporting tool that we share with our client to show how we're doing."

Primavera enables SSOE to "be fluid" in managing resources, such as architects, designers, engineers, schedulers, procurement staff and so on, continues Lynch. "We can use Primavera software as an external tool so that when the client sees a project coming or the scope of a project changes, we can help it determine the best resourcing plan for moving forward."

MANAGED INFORMATION

Information managed in P6 for the chemical client includes scope documents, equipment specifications and installation details. "We need to have clear delivery dates for equipment needed on-site, among other things," explains Fox. "And the system makes sure that nothing slips through the cracks."

The division provides weekly reports to both the client and its own management. The dashboard in Primavera gives SSOE executives access to project information via an internal, password-protected company website. Reports include earned value graphs, estimate to complete spreadsheets and key milestone information. "This enables internal checks and balances of actual and planned resources," says Fox. "It lets us know how we're working against our schedule."

"If we were doing this with Microsoft Excel, for example, it would be so cumbersome and time-consuming that it wouldn't be worth it," says Lynch. "For our chemical client, we are tracking approximately 250 construction bid packages at one time."

Lynch points out that its system shows clients that SSOE can:

- understand what it takes to complete a project
- forecast schedules and costs
- respond to changes, and more accurately predict the impact of changes
- manage professional staff effectively

This latter is one that also helps make SSOE an attractive company in which to be employed – the company boasts a 96 percent retention rate. This is helped along by its ability to schedule resources accurately and, as a result, staff a project appropriately and not require extended excessive overtime. "Our predictive capabilities tell us when we need to talk with clients about adding additional staff, which, in turn, helps our employees maintain work/life balance," says Lynch. "It's a win-win situation for both employees and clients."

Expanding on that win-win situation, the team plans to integrate P6 with its accounting software so that SSOE can automatically pour information about actual hours spent into the project information in Primavera. "This would eliminate our having to manually enter those numbers," says Fox. "We would also like the budgets in our accounting system to automatically update the budgets in P6. This would eliminate the need for us to update budgets in two different places, and it would keep our projects up to date with the most current project plan."

Among the Industrial Process division's goals is to continue loading more SSOE projects into Oracle's Primavera P6, as well as encourage other divisions to take advantage of the software solution. "We want to spread these project management capabilities of our division to other areas of the company," says Lynch. "We're the disciples, getting others to see the benefits of using Primavera as a staff planning and earned value management tool. Being able to show where we stand and to predict where a project is headed helps us prove to our clients that we are the best provider. We are the firm that they want to work with."

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