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CHERYL GERBER

# The human side of efficiency

BY SAM BARNES

**Addressing behavioral issues helps bridge production gaps and enhance safety.**

"At Appomattox, we had a lot of strong egos in the room. We were able to bring them together collaboratively and say, 'OK, we have this process. We need to meet the same goal. What's the best way?'"

—STEVE MILLET, project manager, Broadmoor LLC (center), referring to the recently completed buildout of living quarters atop Shell's Appomattox deepwater offshore platform. Pictured with him are, from left, senior superintendent Sal Palmisano and Greg Lusignan, the company's vice president of project management.

There are a variety of high-tech tools on the market for corralling a project's schedule, managing cost and ensuring quality, but these days industrial owners are paying more attention to the human side of the equation.

Petrochemical and oil and gas owners, as well as the companies that support them, are turning to "lean" methodology and other approaches that focus on building communications skills and interconnecting employees at critical stages for maximum project success.

Lean is a respect- and relationship-oriented approach to project delivery consisting of numerous tools and techniques meant to improve productivity.

For Broadmoor LLC in Metairie, which just completed the buildout of the new 150-bed living quarters atop Shell's Appomattox deepwater offshore platform, the implementation of lean allowed it to meet important schedule milestones by cutting through the interpersonal drama that often accompanies large jobs.

"At Appomattox, we had a lot of strong egos in the room," says Broadmoor project manager Steve Millet. "We were able to bring them together collaboratively and say, 'OK, we have this process. We need to meet the same goal. What's the best way? By having them all see the bigger picture, the egos were thrown out the window and everyone realized that this was really a team concept."

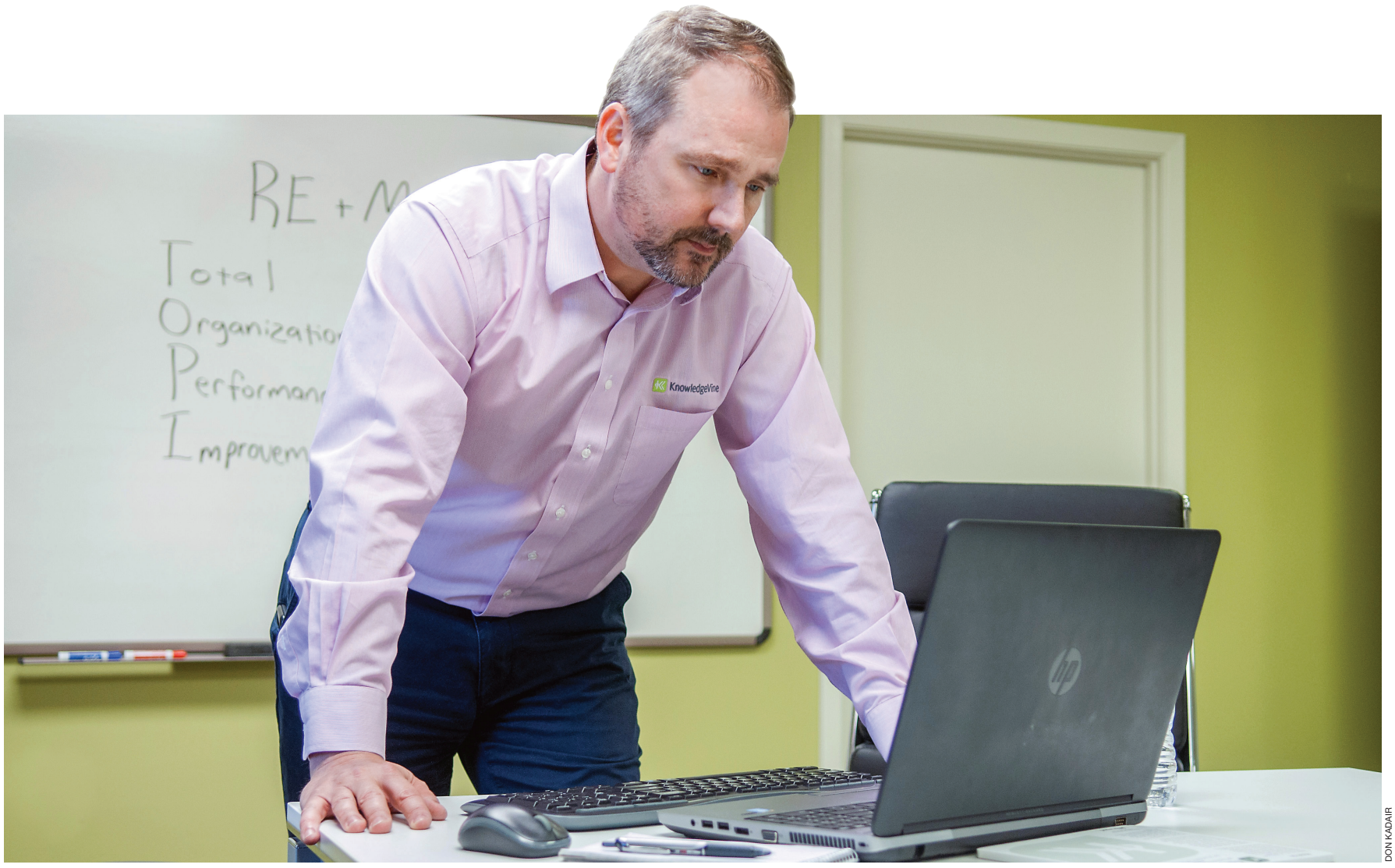
The co-location of the team in a single space, along with weekly meetings, "visual boards" and other lean tools, significantly curtailed problems caused by miscommunication. By having the right people in the same room at the same time—and at the right frequency—collaboration, accountability and problem-solving occurred naturally.

"It calmed all that testosterone that was flowing at that time," Millet says. "It was everyone coming together and being able to see the big picture."

Elsewhere, lean methods are used by large operators such as Suncor, Shell and ExxonMobil to get through turnarounds and projects. They've seen documented improvements in schedule accuracy and attainment by more than 15%, improvements in work order quality by more than 20% and reductions in contractor needs by more than 15%, according to Argo Consulting, a lean proponent and national operations improvement consulting firm.

## ADVANCED SUSTAINMENT

"Technology can provide extensive asset reports and craft efficiency data; however, if the information is overwhelming and does not communicate succinctly a clear 'real-time' message to supervisors and craftsmen, they won't be able to find the root cause of problems, correct actions and improve the efficiency of their work," says Jorge Mastellari, Argo's senior vice president and its oil and gas industry practice leader.

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—DAVID SOWERS, manager of human performance improvement, Knowledge Vine

Lately, Argo has collaborated with the MIT Sloan School of Management in researching the behavioral side of production as it relates to lean. Following the 2005 explosion of BP's Texas City oil refinery, MIT developed the Dynamic Work Design (DWD) theory in an attempt to address the behavioral and communications gaps.

"What technology misses is the effective human interactions that are critical for proper problem-solving and decision-making," Mastellari says. "DWD provides the principles and framework for wiring the work together in a dynamic way."

Argo and MIT are finding ways to marry lean methodology with jobsite behaviors to make the practice more sustainable, which they refer to as "advanced sustainment." "That is where the tools come together with the behaviors and the habits," Mastellari says. "It's anchoring the right behaviors and the right supervisors and superintendents, or the behaviors around the lean techniques or waste elimination techniques, in order to make the process sustainable."

Greg Lusignan, Broadmoor's vice president of project management, agrees that lean won't work without the buy-in of site supervisors. "The most critical thing is to have the right superintendent who has the right cultural mindset to be open to these ideas."

The lean concept has been a natural fit for Broadmoor, since it already had a reputation for continuous improvement and an emphasis on the respect concept.

Since implementing the practice three years ago, Lusignan has become somewhat of a lean champion, and was recently a guest speaker at the Lean Construction Institute's Annual Congress in October. Four Broadmoor managers, including President Ryan Mouledous, attended the week-long conference in Anaheim, California.

"Our industry has been broken for a long time because we are working in silos," Lusignan says. "The traditional method of design-bid-build sets you up for failure, because the designers are off in a silo designing, and then you've got to bid in a silo and build in a silo."

At the Appomattox site, the uniquely collaborative atmosphere gave Broadmoor the ability to integrate best practices from previous projects. "Lean is a lot about planning, pre-planning and just challenging the plan in general," says Sal Palmisano, Broadmoor's senior superintendent on the job. "The teams got together in collaboration and based on past experiences fine-tuned the plan, then went out there and followed the process."

In the end, Broadmoor has reached milestones that would have otherwise been unattainable. "We've always finished jobs on time, but too often we'd find ourselves doing three months of work in the last month. Now, we're striving to hit every milestone along the way," Lusignan says.

## AN ONGOING PROCESS

To help bridge the behavioral gap, Argo actively engages with its clients at the corporate and jobsite level, simultaneously implementing lean tools and coaching the behaviors necessary to support them.

While petrochemical, oil and gas companies spend significant sums of money in training and development, the techniques are not being applied effectively at the jobsite.

Therefore, Argo utilizes the "idle learning" method by observing behaviors and coaching managers on how to handle particular situations. The use of visual boards during daily and/or weekly standup meetings is a critical part of the process. As such, Argo observes how effectively a team uses the tool.

"We want to see how the craftsmen are actually presenting their issues. Are they being open about them or are they being selective about the way that they present the issues? Communication has to be very open, honest and transparent." Argo also looks for common behaviors that might get in the way of effective communication, such as conflict avoidance, evasiveness or a victim mentality.

Lusignan says the implementation of lean has been an evolving process at Broadmoor. "In stressful situations, the guys who have been in the business for a long period can still resort back to old habits. My job is to go around to the jobs and try to coach, and make sure we try and stay in alignment with those priorities."

Even though Broadmoor is not one of its clients, Argo must often address similar legacy behaviors before moving forward with the integration of lean into a company's processes. That's when management support is crucial. "One of the things that we do in every project is give everyone a chance," Mastellari says.

"Whether it is a mechanical supervisor, superintendent, general maintenance, etc., if there is someone that doesn't believe in it or that is openly being a barrier, we're not going to write them up immediately. What we do is confront the issue directly and invite those people to participate and be part of the effort. After experiencing the work and seeing how people become more engaged, they usually convert quickly."

## A VITAL PART OF SAFETY

On the jobsite, lean methodology has also become a critical part of Broadmoor's safety culture.

"That means building an environment of respect and trust, and not being the safety police out there," Lusignan says. "The lean concept is leadership from the bottom up, and truly getting the idea to the guys out there in the field on how we can be safer and more efficient."

David Sowers, manager of human performance improvement at Knowledge Vine, an organizational alignment consultant in Baton Rouge, says failures in safety can usually be traced to one of several "human performance traps," such as time pressures, distractions, overconfidence, mental stress and vague guidance.

Lean's emphasis on communication and collaboration can be a vital tool for circumventing these traps.

"Human error is only about 30% of the problem," he said, addressing a group at the Louisiana Governor's Safety & Health Conference in New Orleans in August. "Most of the time, there are also some latent organizational weaknesses that contribute to it. Sure, everyone says, 'Safety First,' but then you start driving that schedule, right? Production, production, production is what really matters."

While rules and protocols—personal protection equipment, safety training, safety oversight, well-maintained equipment and overall work environment—are intended to produce a safe work environment, there is often a failure to address certain hidden factors that contribute to human error.

Sowers says there are both individual and team behavioral approaches that an owner can implement to minimize safety failures, most of which involve the enforcement of procedures, thorough self- and team-checking of tasks, and effective communications.

"Stop. Think. Act. Review," he says. "Before you do the task, stop everything else you're doing. Stop thinking about all those other tasks. Think about what you're going to do and make sure the communication is clear." ■