Photo: Subsea 7

TOW OUT: Subsea 7 is exploring ways to increase the length of its towed bundle technology to as much as 15 kilometres in a single tow. Pictured is the launch of a 4.5-kilometre flowline bundle for BG Group's Knarr field.

tie-backs, and surveillance and integrity management of subsea systems and equipment.

Additionally, Subsea 7 has reorganised its life-of-field business line and increased investment in related R&D, which includes the company's AIV (autonomous inspection vehicle).

"We're taking it to the pilot phase and learning from the experience offshore," he says of the autonomous vehicle. In 2015, the AIV conducted a full field inspection trial at three Shell installations in the UK North Sea.

"It's probably the most advanced autonomous subsea vehicle in the world," Sunde says of the AIV. "It has a pre-programmed knowledge of the field and the architecture there. It is agnostic and will inspect and interpret. If it sees something new that wasn't there before, it will make a close visual inspection of it. It's a pretty fantastic piece of kit."

The goal is to reduce the number of tasks that currently require vessel-based operations and crew, he says. In a greenfield development, the AIV, subsea docking station and topside controls would be integrated into the infrastructure design — another example of how early engagement in the field concept and design can produce long-term benefits.

Subsea 7's access to a wide range of technologies has its advantages, he says. By not being wedded to any particular technology or methodology, the company has a lot of leeway to develop appropriate and cost-effective solutions for clients.

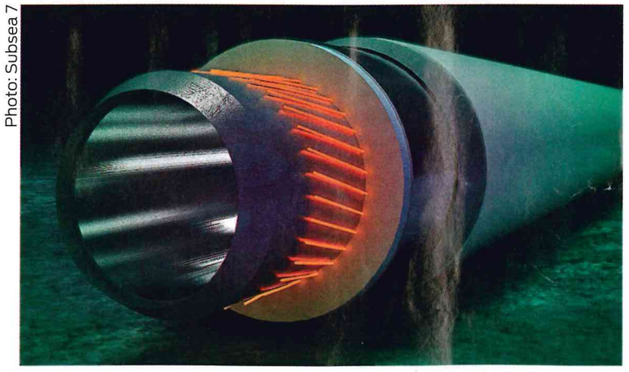
"We cover all aspects of installation — we have S-lay, J-lay, reel lay and tow-out solutions. So we're independent of the methodology of installation. And we're independent of a single manufacturer. We're not linked to a single flexible (pipe) manufacturer, trying to sell as much flexibles as possible. We have access, we can buy flexible in the marketplace. That was a strategic decision."

Technology options will continue to grow, and to be refined, he says. While the oil and gas industry has taken some hits in the current slump, it has not abandoned its commitment to innovation. Despite, or perhaps because of, the downturn, "the adoption of new technology is accelerating — there's an openness far beyond what we saw before," Sunde says.

"If you look at the changes made based on technology development over the last three decades, I don't think any other industry can match that.

"I think we often talk ourselves a bit down, saying we're a very conservative industry. I think it's rather that we manage the risk, because the downside is so big if you don't manage it. We're in a position now to manage the risk and still adopt new technology. Execution of our technology projects is key to this, but stepping back from that, it's about understanding where the market is driving us. And that's where Subsea 7 will focus its technology investment."

Photo: Subsea 7



POWER SAVER: Recent R&D has focused on electrically heat traced flowline (EHTF) technology, including a pipe-in-pipe system that combines high-performance insulation with EHTF.