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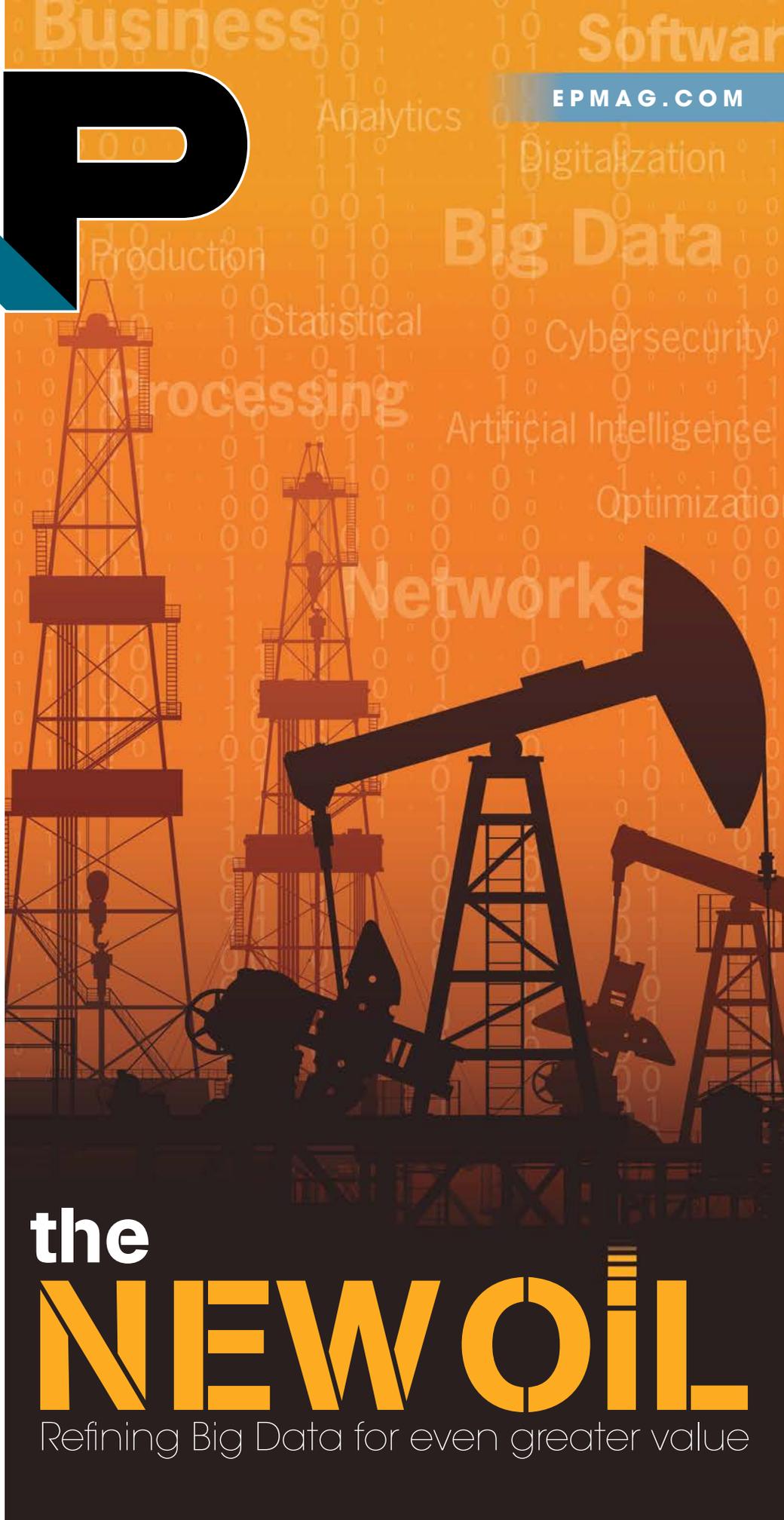
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Removing key barriers enables faster technology adoption in the oil and gas industry.

Mahesh Konduru, ProSep

The historical slow pace of technology adoption in the oil and gas industry is not a new issue by any means. Articles surrounding technology adoption tend to increase amid a commodity price downcycle. The current downcycle, from 2014 to present, is no different. There have been multiple passionate calls for lowering production costs per barrel via the use of various technologies in the past three to four years.

Some operators seem to have achieved tremendous efficiencies, with at least one major reporting a breakeven price of \$30/bbl for a new offshore platform. It does give hope that there is a definite commitment to lower costs. At the same time, it is far less challenging for a large operator to achieve said efficiencies than for a small supplier.

From ProSep's perspective, the challenges faced by smaller suppliers fall into three critical categories.

Serial No. 2

Operators want the best and latest technology but refuse to buy the first of its kind (Serial No. 1). In some situations, case studies are not enough; neither are operating units in different geographies. From an operator's risk assessment perspective, it is understandable that with millions of dollars at stake, it would not be prudent to deploy something that does not have a track record. One solution would be to empower decision makers (technical, procurement and engineering) to granularize risk factors rather than use an age-old uniform corporatewide template and treat each technology on a case-by-case basis.

Commercial terms and conditions

It is no secret that large operators have teams of legal and commercial experts on staff to address all possible risk factors in contracts. Contracts, depending on

dollar amount and scale of the project, can be complex and need the appropriate risk assessment and ring-fencing. Concurrently, when dealing with smaller suppliers, the scale and complexity are not large. Operators still tend to use one-size-fits-all commercial terms. This results in unnecessary delays in the project award time line and execution, increase in costs and, in some cases, failure to deploy an impactful technology. There are lots of smart individuals on hand at every company who are more than capable of executing this job.

Financial criteria

To be specific, most operators have boilerplate procurement criteria to qualify suppliers (e.g., approved vendor lists). Innovation tends to occur at smaller companies with limited financial history and weaker balance

sheets. Most times, it is hard to qualify financially to be on the approved vendor lists, and if suppliers qualify, they are asked to provide expensive and hard-to-secure financial instruments. It would be prudent to segment approved vendor lists documents by company size and use appropriate criteria to speed up technology deployment. Procurement teams also should be empowered to evaluate off-script risk mitigation measures including the transfer of ownership and periodic in-person audits. Furthermore, it would be beneficial to design and implement simpler financial

instruments by pooling risks and lowering costs instead of letters of credit.

Advancement of humanity has witnessed significant step changes—historically when technology deployment occurred within a short time frame. Tremendous advancements in underlying infrastructure technologies, computing speed for one, have allowed us to improve technologies in various walks of life including oil and gas. Let's all work together to remove the barriers and speed up the adoption. **ESP**

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