

Could the Era of 'Lower-for-longer' Oil Prices Accelerate Progress to Industry 4.0?

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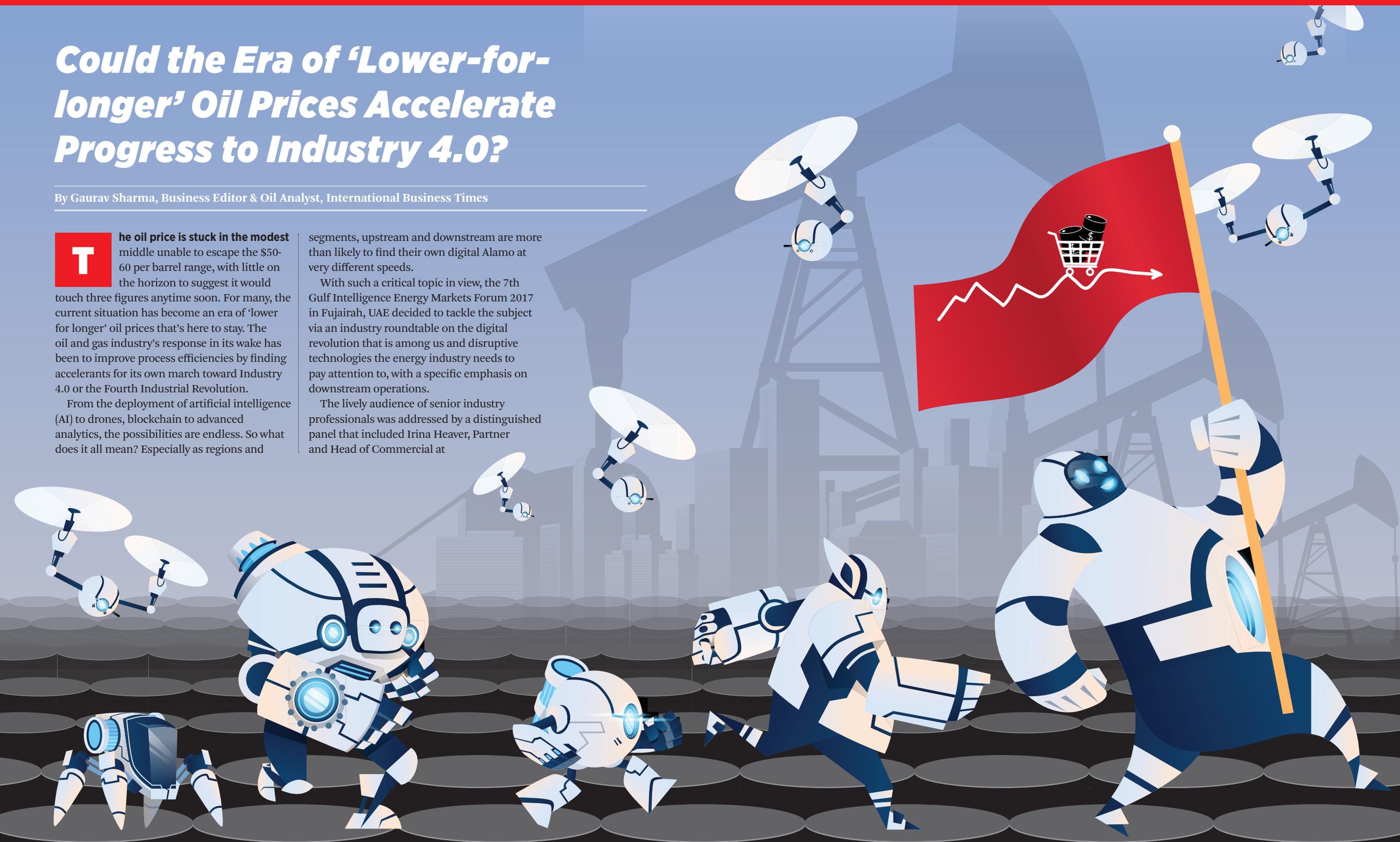
The oil price is stuck in the modest middle unable to escape the \$50-60 per barrel range, with little on the horizon to suggest it would touch three figures anytime soon. For many, the current situation has become an era of 'lower for longer' oil prices that's here to stay. The oil and gas industry's response in its wake has been to improve process efficiencies by finding accelerants for its own march toward Industry 4.0 or the Fourth Industrial Revolution.

From the deployment of artificial intelligence (AI) to drones, blockchain to advanced analytics, the possibilities are endless. So what does it all mean? Especially as regions and

segments, upstream and downstream are more than likely to find their own digital Alamo at very different speeds.

With such a critical topic in view, the 7th Gulf Intelligence Energy Markets Forum 2017 in Fujairah, UAE decided to tackle the subject via an industry roundtable on the digital revolution that is among us and disruptive technologies the energy industry needs to pay attention to, with a specific emphasis on downstream operations.

The lively audience of senior industry professionals was addressed by a distinguished panel that included Irina Heaver, Partner and Head of Commercial at



Fichte & Co., a seasoned legal industry expert who has of late turned her attention to the introduction of emerging technology by traditional businesses.

Alongside her were entrepreneur Rabih Bou Rashid, Chief Executive Officer of Falcon Eye Drones, the first company of its kind providing drone services to the energy industry in the Middle East; and Salman Yousuf, Managing Director of TAKELEAP, an award-winning specialist in the virtual and augmented reality space.

Popular perception that the oil and gas sector is lagging other segments of the economy when it comes to digitization was certainly not popular among the attendees.

To quote one delegate, the sector has always deployed huge volumes of data, well before the expression ‘big data’ even gained the currency it has today. Additionally, robotics has been a constant keen component of offshore exploration – from unmanned submarines to mechanical claws.

A Question of Resources

However, in 2017 and beyond, the sector’s challenge is to take digital adoption to the next level for myriad deployments from digital applications aimed at increasing reservoir limits to an accentuation of the utilization of 4D seismic imaging, using smart procurement management software to improve material price variance to connected petrochemical plants.

And it doesn’t end there – smart analytics premised on information gathered from sensors pegged to infrastructure can revolutionize operations, help reduce health and safety incidents, assist in water conservation and aid in reduction of CO₂ emissions.

Virtual and augmented reality (AR & VR), and the usage of drones in aiding and enhancing health and safety practices is also undeniable.

While enthusiasm is one thing, actual adoption and allocation of resources is quite another and it is the latter that is of concern.

For instance, many roundtable participants opined that the usage of drones for inspecting downstream infrastructure in the Middle East is still in its infancy and often viewed with suspicion, compared to other regional markets. Some also said there is often an unnecessary attempt to reinvent the wheel, by requesting an AR or VR solutions where none are required.

A major challenge is the issue of resources – in trying times for the industry; many decision makers seem reluctant to trigger capital expenditure on a platform that is unlikely to yield short-term returns.

Additionally, for those willing to invest, especially in AI and connected plants – thereby endorsing the industrial internet of things (IIoT) – the testing phase, given the oil and gas sector’s rigorous emphasis on health and safety, makes deployment much slower compared to other sectors.

By that token, labeling the sector as a digitization laggard comes across as an oversimplification rather than an accurate description of the situation.

Of Transparency and Blockchains

At a time when there is renewed emphasis on data transparency, for instance by the Port of Fujairah in its quest to become a global storage hub, many on the roundtable felt blockchain is fast becoming an invaluable tool.

In simple terms, a blockchain is akin to a digitally distributed ledger that can be replicated and spread across many nodes in a peer-to-peer network, thereby minimizing the need for oversight and governance of a single ledger.

Each transaction on the ledger is recorded and added to the previous one. These additions result in a growing ‘chain’ of information. The technology underpinning it – used by cryptocurrencies like bitcoin – could become key to transparent contracts, data processing and much more.

In the eyes of many, blockchain holds the potential to freshen up processes and standards and become integral to circular collaborative ecosystems in the oil and gas industry, and by extension in the utilities market.

Since no single party is entrusted with all the information, blockchain essentially self-monitors, providing data reliability, and even address issues of fraud and corruption. Many on the roundtable viewed blockchain as part of a more efficient “new normal.”

Furthermore, delegates felt blockchain was not so much the transfer of payments, but rather the smart coding of contracts that self execute; an enticing digital development in the current climate. That said, there was recognition that mass adoption of blockchain within and beyond the Middle East still has some way to go akin to cognitive computing to predictive analytics in the oil industry.

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Ultimate Objective of Boosting Efficiencies

The roundtable found widespread acknowledgement that digitization is not an end goal but a constant process, and the ultimate objective remains one of boosting process efficiencies. Therefore, narrowing the focus down to five disruptive technologies oil and gas companies in the Middle East ought to take notice of was hard.

However, based on the deliberations, participants narrowed it down to the following, in no particular order: (1) Digital risk management using data analytics (2) Incremental usage of robotics, including inspection drones (3) Artificial Intelligence (4) AR and VR usage for health and safety training and (5) blockchain.

Whether it’s a case of developing new digital technologies or simply adopting or fine tuning existing technology, remains open to conjecture, but underpinning all of the above is innovation and the industry’s appetite for it, which in the eyes of many is growing by the day. The key takeaway was glaringly obvious – innovate or die. ■

