

Stand Out from the Digital Crowd

Secure, independent automation ecosystems are key to growth.

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The oil and gas industry is on the cusp of a major shift, from standing on the sidelines of industrial automation to holistically embracing it. With more than 20 billion devices estimated to be connected, dependence on automation is expected to double by 2020. Initiatives to digitize oil fields also have accelerated as budgets consistently favor opex over capex, and technological leaps in artificial intelligence (AI) are leading to a radically new operational landscape.

At the influx point of digital transformation, automation driven by reservoir data is the catalyst for massive growth. Within the megatrend of IT and operations technology convergence in automation platforms, this new digital operations model combines reservoir intelligence with digital automation to tackle inefficiencies and boost operational performance.

The new reality is that reservoir intelligence is at the fingertips of decision-makers, with a perpetual real-time update of all asset variables across the value chain. Genuine organizational renewal is critical in determining whether complex centralized organizations can adjust. The ability to combine a transformational mindset for the digital age with industrial platforms that are robust enough to leverage digital applications becomes key.

This transformation path faces additional challenges. As several Industrial Internet of Things (IIoT) ecosystems shape up and compete to gain market share, two main trends have started to emerge, the first of which is the digital transformation rebrand. As strategists steer organizations to adopt digital transformation, some have tried to simply pin digital processes on existing ventures by developing IT programs and branding them as “digital transformation.”

Organizations waste time and resources on such initiatives while missing a narrow window of opportunity to adopt genuine transformation. Make no mistake, digital transformation must be across the organization. It requires

a shift in mindset and the building of an ecosystem with new behaviors, values and decision drivers, from investing in strong digital foundations in the cloud and adopting as-a-service business models to retraining the workforce.

The second trend is the emergence of the Monopolist-in-Disguise, a so-called “open platform,” but where the data, cloud service, well equipment, and data processing and interpretation are controlled by the provider. In this scenario, where the network effect of the business is the only competitive differentiator, operators are forced to choose between their control of how, where, when and who accesses their data and the available emerging platforms. In those data exchange gray areas, risks for operator-vendor conflict of interest may arise. Lessons are being learned from recent data breaches in digital platforms within industries that have digitally transformed long before oil and gas.

Standing in contrast is Emerson’s sustained investment in creating an end-to-end software platform for interoperability and automation. At the core of this secure independent ecosystem is the adoption of an open cloud-based platform with decision-driven cloud applications, open data management, Big Loop orchestration, machine learning intelligence and high-performance computing. This com-

prehensive system is designed to translate huge volumes of data into meaningful intelligent information leveraged for decision-making in real time.

Open standards, in contrast to proprietary alternatives, encourage interoperability and flexibility and are ideal for guaranteeing the security of encryption solutions. They also ensure that companies are not locked into a single vendor’s products or subject to proprietary standards that might become obsolete in time.

This next-generation platform will enable organizations to accomplish true digital transformation, providing cloud-based collaboration and open connectivity while keeping their data secure.

The combination of reservoir intelligence through AI-aided cognitive modeling and the power of IIoT makes it possible to proactively provide the right technology for every asset. However, technology alone will not provide the solution. While digital transformation is set to revolutionize the operational landscape, its ultimate success will require facilitators to converge processes, people and technology with a customer-centric mindset that prioritizes the security and autonomy of customers’ data above all.

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OBN continued from page 5

employing mid-water docking and active heave controls on HSL and ROV systems. The increased deployment rates mean that two source vessels are required to keep the survey in balance. Simultaneous source acquisition is the enabling technology that allows efficient acquisition of OBN surveys using ZXPLR.

FairfieldNodal recently completed the first deepwater OBN survey using ZXPLR and simultaneous source acquisition in the Gulf of Mexico. Compared to previous deployments, ZXPLR deployment rates were increased by 200%. The system’s compact design allows the HSL to carry up to 80 nodes, significantly reducing the number of HSL transits through the water column per day. ROV payloads also have been increased from 8 to 40 nodes. The entire system has been made faster and more efficient by powered and piloted thrusters on the tether management system and HSL (Figure 1). The net effect of all system improvements means that total survey duration can be reduced by nearly 50% while maintaining high safety and quality standards.

For more information, visit FairfieldNodal at booth 1420. ■

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A view of the drilling pipe on the Deepsea Stavanger drilling rig, from which the wells for the Maria field were spudded into the depths of the Norwegian Sea.

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