Bobby Cameron
Mr. Cameron's specialty is transformative technology use that drives business success in the emerging world of business technology, such as IT value creation, technology-based business innovation, and digital business networks.

In the future, ICT technologies will substantially change the entire oil and gas industry. >>

Digital Transformation Is Redefining Oil & Gas

By Bobby Cameron, Vice President and Principal Analyst, Forrester Research

It might be surprising for many to discover how digital technology is transforming the oil and gas industry as well as other core-process industries. At the Huawei Global Energy Industry Summit 2015, held this past August in Almaty, Kazakhstan, the audience quickly became aware of the impact digital technology is having on oil and gas.

Following the conference theme, "Innovative ICT Enables Smart Energy," our keynote themes were the major challenges and opportunities arising from the transformation in digital process control for oil and gas production. The current deep price cut in the cost of crude oil has the industry focused on rapid, targeted responses to an increasingly dynamic market of hydrocarbon supply and demand.

One challenge in legacy oil production operations is the absence of remote sensor equipment at most wellheads. When production is falling, field specialists traveling between sites to inspect, assess for cause, and coordinate repair must monitor pumps closely. By today's standards, non-networked systems are costly, slow, and, when broken, can lead to critical reductions in scheduled pipeline pressures and production volumes.

However, by implementing sensors, the industry can test for key measurements in real time, such as flow-rates, temperatures, and pressure as well as report on production operations. These sensors, which are already in place through British Petroleum's Field of the Future® and Shell's Smart Fields programs, can provide information that enables the production firm to take informed and targeted action.

At the Kazakhstan summit, Dr. Hatem Nasr, a Senior Advisor for oil and gas to Huawei, presented data from three recent projects in the Middle East in which savings as much as 30 percent came within a few months of the sensors coming online. This instrumentation has opened the possibility for substantive, further cooperation between wireless technology providers such as Huawei and sensor vendors such as Honeywell.

The real payback will come from learning to use both the new data as well as the old. On average, firms today use less than 20 percent of their data. But oil and gas companies are starting to accelerate the usage of more data and at higher speeds to produce actionable insights using Big Data techniques across the globe, including for very remote locations. For example, Chevron uses its iField technologies to manage assets in six continents in near-real time. The results certainly will include digital operational excellence — but also will enable production firms to respond to global market opportunities with rapid, smart changes in extracting and moving product to places where capacity and customers demand it. Understanding real-world complexities — and taking advantage of opportunities that appear rapidly — will create winners in the competition for improved oil and gas extraction and production. ▲