



TRANSOCEAN: MAKING DATA THRIVE IN A HARSH ENVIRONMENT

A typical offshore deep-water rig may be two or three hours by helicopter from land, making it one of the most hostile and logistically challenging environments on the planet. Deep-water rigs cannot be moored, and must be kept in place with huge thrusters to counteract the pressure of the wind and waves. The rigs are loaded with large, expensive and potentially dangerous equipment from many different manufacturers, each with its own proprietary data interface. Satellite communication with the mainland can be spotty, and bandwidth for exchanging data is a precious resource.

Transocean operates a fleet of 47 drilling rigs worldwide, each with up to 250 workers living and working on a rig at any given time. As a result, they turned to OSIsoft's PI System to help improve well performance, enhance worker safety, enable greater automation, and move toward condition-based maintenance of critical equipment.

OSIsoft worked with Transocean to hone in on only the most essential data that unlocks business value. Out of more than 14,000 data streams, the company identified about a hundred that could be used to drive better performance outcomes.

The results have been dramatic: In the first ten months of deploying the PI System, Transocean was able to improve nonproductive time on their rigs by roughly 40 percent. The company also challenged its rig operators, who now gained access to real-time performance data, to improve KPIs by 20% to further drive down inefficiencies.

According to José Gutierrez, Transocean's Director of Technology and Innovation, the shift toward using data analytics to drive operations is uncharted territory for Transocean, and for the deep-water drilling industry at large.

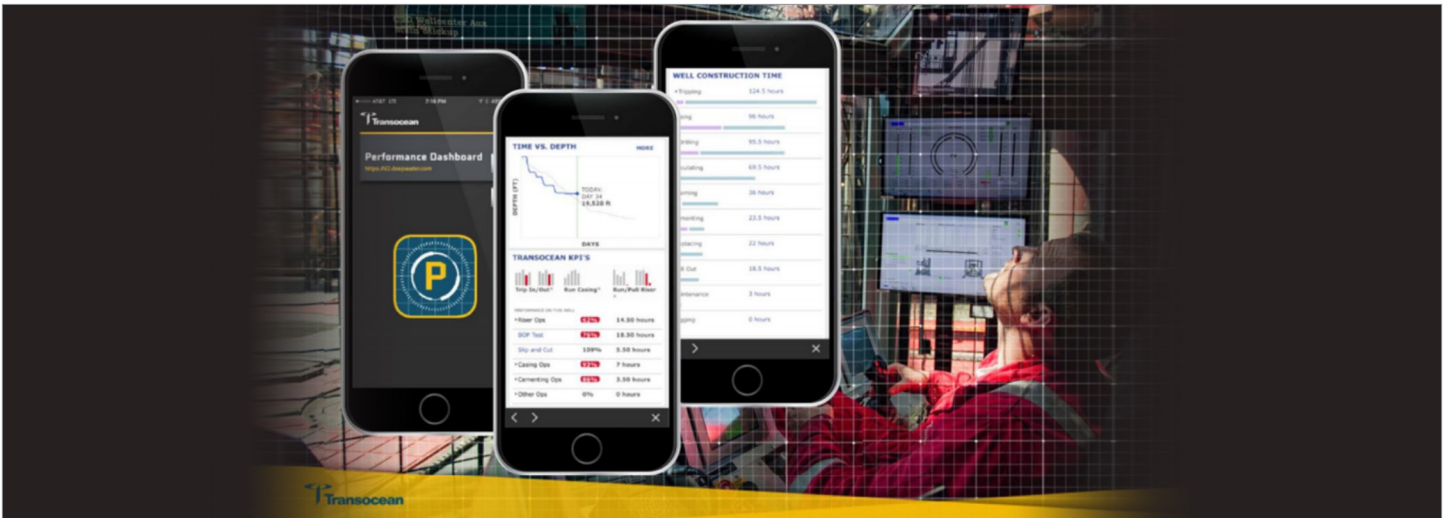
"This digital transformation, for us, is really really new," Gutierrez said during the 2017 OSIsoft Regional Seminar in Houston. "You are in the middle of nowhere, relying on satellite communication, and satellite is expensive. There has been little motivation to actually transport the data from the rig down."

HIGHLIGHTS:

Decreased nonproductive time on rigs **by 40%**

Improved well performance, operational **efficiency and safety**

Remote monitoring **reduced number of personnel offshore**



Transocean relies on performance dashboards enabled by real-time data.

The culture of offshore drilling has long been focused on mechanical equipment — “things that can kill you if they drop on the floor,” as Gutierrez said, not entirely joking. But as the oil and gas industry becomes ever more competitive, that culture is beginning to open up to more digital tools.

One of the most critical tasks for the success of any data project is cleaning the raw data that comes in from the rigs. Sensors get disconnected. Temperature shifts between day and night introduce wild swings into the data. Raw sensor data often needs to be transformed before it can be used in an analysis. “Data is incredibly noisy,” Gutierrez says. “More than 80 percent of the time of my team is cleaning data.”

Because of the expense involved in collecting, communicating and cleaning data from the drilling rigs, it is important to Transocean to keep a tight focus on collecting data that drives real performance outcomes, rather than gathering as much information as possible. Equally important, according to Gutierrez, is picking the right software vendor. With hundreds of IoT vendors jockeying for the

attention of businesses like Transocean, it’s critical to pick one that will deliver long-term results.

“OSIsoft, I believe, is one of the jewels,” said Gutierrez. “We did a lot of analysis during our journey to actually pick them, and we feel good and well supported.”

As the company gains experience with data analysis, Transocean will use the PI System to drive an enterprise-wide “System of Systems” approach to its offshore operations: to stitch together a comprehensive strategy and increase performance out of the separate systems now managing wells, the rig fleet, drill floor equipment and other assets.

The ultimate goal for Transocean is to establish a “golden well” – the standard benchmark against which all of the company’s drilling operations can be measured. By using the PI System in a focused, performance-oriented way, Transocean is proving that a smart approach to data can help set the standard higher.

[For more information about Transocean and the PI System, watch the full presentation here.](#)

PI System Components Used:

PI Server

- Data Archive
- Asset Framework
- Notifications
- Event Frames
- Asset Analytics

PI Vision

Enterprise Agreement (EA)



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— José Gutierrez
Transocean’s Director of
Technology and Innovation

Gutierrez, Jose. “On Digital Transformation for O&G Drilling”
<<https://www.osisoft.com/Presentations/Keynote-Address--On-Digital-Transformation-for-Upstream-OandG/>>