



SUMMARY

Marathon Oil

Industry

Oil and Gas

Business Value

- Business Intelligence
- Predictive Maintenance
- Operational Insight
- Performance Optimization
- Process Controls
- Risk Management

PI System™ Components

- PI Server™
 - Data Archive
 - Asset Framework (AF)
 - Event Frames
 - Analytics
 - Notifications
- Developer Technologies
 - PI Web API
- PI Integrator for SAP Hana
- PI Visualization Suite (PVS)
 - PI Manual Logger™
 - PI Vision™1
 - PI ProcessBook™
 - PI DataLink™
 - PI WebParts™
- PI Cloud Connect™

Insight on Demand: How the PI System and SAP HANA Accelerated Analytics at Marathon Oil

Headquartered in Houston, Texas, Marathon Oil is a petroleum and natural gas exploration and production company that produces 438,000 barrels of oil per day. As commodities prices have fallen in recent years, it's more important than ever for this Fortune 500 company to optimize every asset and do more with less.

Using the combination of the PI System and SAP HANA®, Marathon Oil:

- Combined OT and IT data for a complete view of the organization
- Substantially reduced data preparation time and workload
- Quickly provided operators and engineers with critical insights
- Optimized oil field production to increase profitability

Data, Unite!

With disparate systems collecting data across the organization, Marathon had no single source of information. Engineers spent extraordinary amounts of time chasing data, resulting in latency between data collection and the generation of actionable insights. Often, this lag time prevented them from understanding the root causes of things like downtime and well status issues. "In these times, it's very critical to analyze data and create information that is helpful to engineers so operators can do the best with less," said Varun Garg, Enterprise Architect at Marathon Oil, during the 2017 OSIsoft Users Conference in San Francisco.

To combat these latency and productivity issues, Marathon opted to merge all operational data into the OSIsoft PI System and use it in conjunction with SAP HANA. However, data convergence is only one part of the equation. The data must tell a story. By connecting the OSIsoft PI System with SAP HANA through the SAP HANA IoT Connector by OSIsoft, Marathon was able to tell those stories by applying analytics and visualization to all IT and OT data.

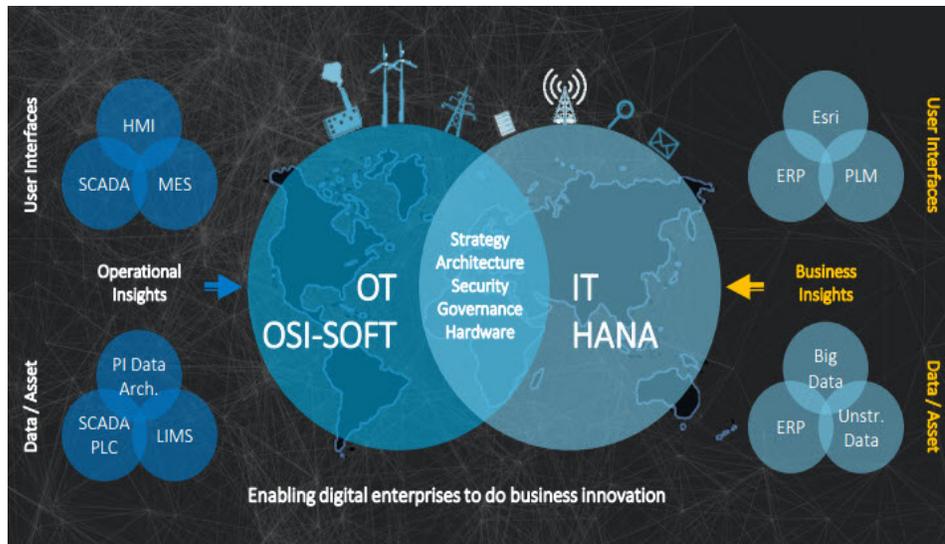
A Rapid Implementation

Traditionally, merging multiple systems into one comprehensive database is no small feat, and implementation timelines can stretch for very long periods of time. For Marathon, the project kicked off in December of 2015, and the company was generating the insights needed by March of 2016. "If we didn't choose the right technologies, like the PI System and SAP, we couldn't do it," Varun noted. "It is key to choose the right technologies for a fast deployment."

A Digital Oil Field

After the two systems were connected, the result was a digital oil field production and

surveillance system located on the SAP HANA platform. Now, with an infrastructure that is collecting over 700,000 data points that are being fed into a system that updates 1,400 times per second, latency a thing of the past. Marathon Oil has a single source of truth for its IT/OT data, and insights are available in near real-time, in one place. With this comprehensive view of all assets and performance data, Marathon can quickly and easily make necessary changes to optimize production.



“We are now very agile. Before, we were on a two to three month analytics cycle. Now, we’re down to three weeks, so we are truly moving with the business.”

– Varun Garg
Enterprise Architect

An IT/OT Convergence: With a single source of truth for IT and OT data, Marathon Oil now has the insights needed to maximize production efforts.

The Turning Point

After the PI System deployment, the project reached a turning point with the help of Asset Framework (AF). Data can now be viewed in relation to a particular asset, allowing the team to turn data into valuable information on both a micro and macro level. Additionally, Marathon used the PI Web API to create AF templates and write a dynamic solution that would automatically create AF elements when a new attribute is added. Between ease of use and asset level data, Marathon can quickly make necessary changes to keep production healthy.

Additional Data-Driven Benefits

For Marathon, the combination of the PI System and SAP HANA provided engineers with a single source of truth for data. The result was a visual system and a trustworthy process that increased productivity and decreased downtime.

Not only is Marathon Oil spending less time generating better insights, prior latency has all but disappeared. Before the PI System implementation, Marathon’s analytics cycle was two to three months, and it is currently down to three weeks. With more information available faster, Marathon can make decisions to keep production operating efficiently in an uncertain market.

¹ PI Coresight was renamed to PI Vision in 2017

Garg, Varun. *The PI System and SAP HANA: Operating at the Speed of Business*. OSIsoft.com. 22 Mar. 2017. Web. 16 June 2017. <<http://www.osisoft.com/Presentations/The-PI-System-and-SAP-HANA--Operating-at-the-Speed-of-Business/>>