



SUMMARY

PetroSA®

Industry

Oil and Gas

Business Value

- IT/OT Integration
- Asset Health Monitoring
- Performance Modeling
- Real-time Analysis
- Production Accounting

PI System™ Components

- PI Server™
 - Data Archive
 - Asset Framework (AF)
 - Event Frames
- PI DataLink™
- PI ProcessBook™

A centralized data repository helps PetroSA extend well field life and generate revenue

As the national oil company of South Africa, PetroSA's business spans the entire petroleum value chain. The company refines diesel, gasoline, kerosene, and specialty products as well as more than 1 Tcf of natural gas. Although PetroSA has used the PI System for over 20 years, it recently re-evaluated its role while centralizing and standardizing a diverse range of operational and business functions. PetroSA's Senior Business Architect Rubin Boer discussed the impact of evolving the PI System from historian to real-time operational repository had on overall performance of PetroSA's operational and business processes.

Boer opened the talk by describing the PetroSA's diverse functions across "the upstream, midstream, and downstream of the petroleum value chain." Prior to 2002, the company "had an upstream [company] and a production unit company." Today, "those entities are one," and Boer's Vice President charged his team to provide a system that would serve the vast expertise and diverse requirements of each group. "My Vice President said, "[information and reporting] need to be centralized. He wants one window into the world. He doesn't want to go all over the place."

To deliver that single window, Boer and his team "started having a conversation with the business side" to inquire about their data needs and "say that we understood their model... that we understood planning, exploration appraisal, development, operations and maintenance." The business side responded, "we need to automate. We want visualization on every device. When we look at a report, whether it's a production accounting report, a heat flux report, or an E&P well performance report, the visualization must be such that we know what we are looking at. We want [IT] to simplify stuff for us," recalled Boer.

Results of confining the PI System to a historian function

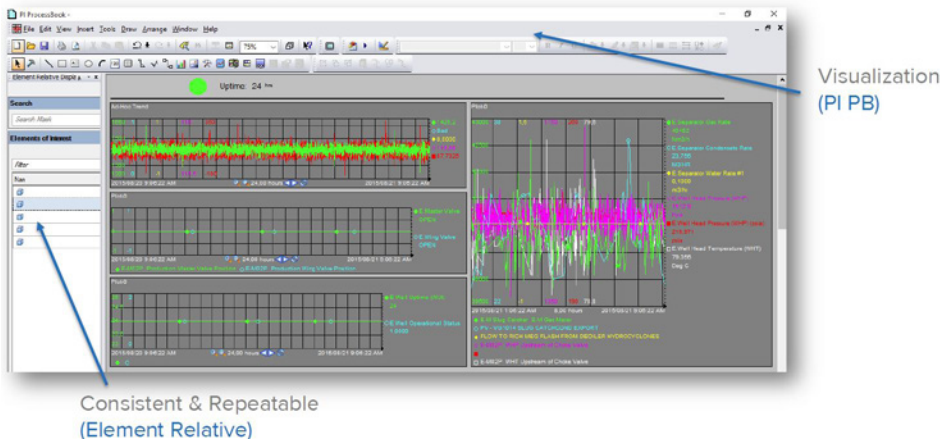
Throughout the company's 20+ year history with the PI System, PetroSA had primarily used it as a historian. "Excel and SNS had become the logical environment for bringing everything together, applying analysis, and then coming up with some kind of answer," he said. "Which was fine, but it was all localized. Everyone had their own Excel spreadsheet." As a result there was no single standard for defining what was good or bad.

Boer recalled some of the symptoms of maintaining localized systems "This stuff you're doing... sending emails, excel spreadsheets and collating is just a mess," recalled Boer. As a result, PetroSA began to rethink how it used the PI System. "That was a painful experience," recalled Boer. "You have been using something for 20 years and now, all of a sudden, you have to look at it as if it were brand new."

The PI System as a dynamic, real-time operational repository

Nevertheless, PetroSA “changed the conversation” around the role of the PI System. “It’s no longer a historian. It is a platform that answers your questions,” said Boer. “In other words, the only place you will get your data is the PI System.” Instead of relying on static rules, analysis and algorithms with localized awareness, PetroSA used the PI System to implement a dynamic, real-time, always-online operational repository. “No more [local] Excel spreadsheets representing assets and direct tag references,” he said. “[We now have] a modeling environment that actually represents a logical asset infrastructure.” By deploying an enterprise data infrastructure, operational states are now determined by “an analysis rule, and if something violates a threshold, you will be notified. We now have operational intelligence within our repository.”

Well Monitoring



“We ended up with a process that the whole business actually built together. I think that’s the right way to do it.”

– Rubin Boer
Sr. Business Architect

PetroSA’s new data infrastructure delivers value for multiple stakeholders

A well monitoring screen (shown above) offers an example of the new system. “We simplified and standardized the system,” explained Boer. “We are more consistent and repeatable by using the library and the templates. We automated all of the business rules with analysis, and it is centralized and secure. The result is we have real-time analytics. Now, we are looking at well health and performance on demand. Information is coming from AF so everyone knows it is consistent. You are looking at the data the way the company wants you to look at [it]. It is consistent. It is repeatable. It is element-relative.”

PetroSA’s revenue is tightly tied to well performance. By “creating a single operating environment” Boer stated that “what we are doing right now is extending the life of field of these wells. In essence, we are extending the life of the company,” summed up Boer. “We’ve migrated from a diverse Excel environment into a single operating infrastructure. The business challenge of our use of multiple Excel spreadsheets – gone. Rework and margin errors that were excessive in production – gone. The tedious method – gone. Inconsistency in our process infrastructure – gone. Now it’s standardized and codified in AF. As a result we have saved days,” said Boer. “We’ve improved operational budgeting because now we have higher quality information and everyone has access to the same information.”

Boer, Rubin. *Diverse Requirements, One Platform*. OSISOFT.com, 14 Oct. 2015. Web 02 December 2015. <<http://www.osisoft.com/Presentations/Diverse-Requirements--One-Platform,>>