



NUTRIEN: MERGING DATA THE SMART WAY

Founded in 2018 from the merger of two major Canadian agriculture supply businesses, Saskatoon-based Nutrien is the world's largest producer of potash and the second-largest producer of nitrogen fertilizer. When PotashCorp and Agrium merged to form Nutrien, one side of the merger was already on the road to an enterprise-wide approach to data management with the PI System™, while the other had operational data in an entirely different system. By taking a methodical, enterprise-wide approach to data, Nutrien was able to bring all of its historical data into the PI System and is now using data to look ahead to new business opportunities.

REALIZING THE POTENTIAL OF DATA

Nutrien engineers who had worked with the PI System at PotashCorp knew that there was huge potential in harnessing real-time data to react to events as they occurred and predict future trends. But before developing an enterprise-wide plan for data management, they needed to find a way to make full use of the information the company was gathering.

"Everything was based on historical information," said Bob McIntyre, Senior Process Control Engineer at Nutrien. "Yesterday's daily production report, last month's financial report, everything was based in the past. It's like driving a car using nothing but the rearview mirror."

With the help of the PI System and Mera, an OSIsoft system integrator partner that provides services to the mining, oil and gas, pipeline and power generation industries, McIntyre and other Nutrien engineers embarked on an ambitious project to bring all of the company's data under one umbrella.

STANDARDIZE, STANDARDIZE, STANDARDIZE

In a presentation given at PI World 2019 in San Francisco, McIntyre and Mera founder Heather Quale laid out how the company achieved data harmony: by having a plan from the beginning. Rolling out an enterprise-wide tag naming system at the start of the project has proved a major time-saver.

CHALLENGE

A wealth of site-specific operational data from two recently merged companies, but no single source of truth.

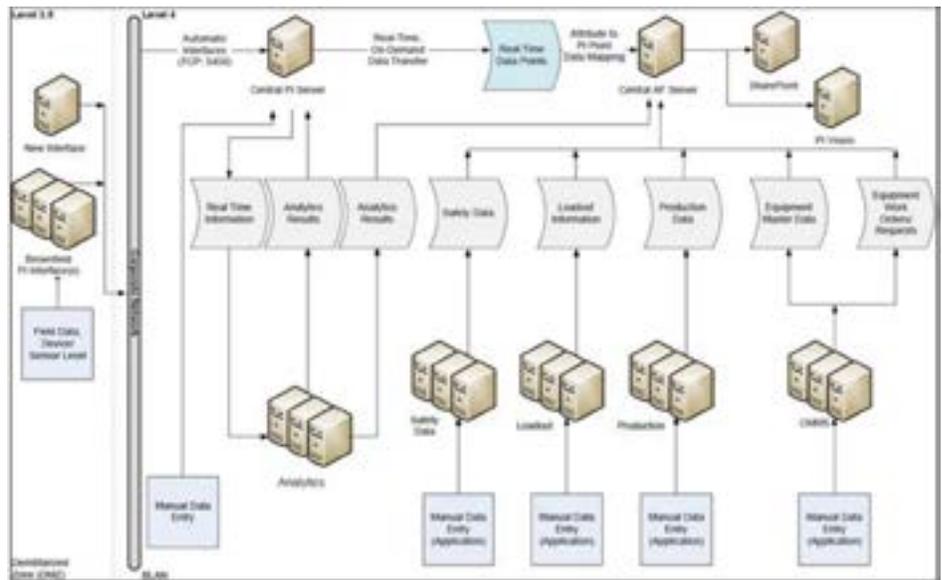
SOLUTION

Asset Framework (AF) gave Nutrien tools to model assets and data in a standardized way across the enterprise.

BENEFIT

The PI System is now a single, centralized source of trusted operational data across all sites.

Nutrien's integrated, enterprise-wide PI System architecture.



“Standardize, standardize, standardize,” said Quale. “It sounds like a lot of work, but it really pays off in the long run.”

By taking a systematic approach, and using OSIsoft’s [Asset Framework](#) (AF), the contextualization layer of the PI Server, to structure data into a unified asset hierarchy across the enterprise, Nutrien was able to marry all of the data from both sides: a massive information store spanning 19 years, dozens of sites, and two entirely different organization systems.

AF has been critical to Nutrien’s enterprise-level data centralization efforts. With AF, Nutrien built a robust model of how all of the company’s equipment, assets, and data are related. Thanks to this virtual model, every new data point generated in the PI System is placed into a rich context.

McIntyre knew the project was succeeding when site managers at the company found that the enterprise-level system was giving them all the data they needed and began shutting off their individual site-specific PI System installations.

With a rich ecosystem of OSIsoft partners offering solutions for advanced analytics, using one system across the whole enterprise means that if one site finds a good tool, other sites have immediate access. “At an enterprise level, it’s one and done. You put it in once, everybody gets it,” McIntyre said.

Nutrien is using several specialized analytical tools, including RtDuet, Seeq, and Visual KPI, that are designed to work with the PI System and offer different kinds of custom analytics.

Compatibility with a wide variety of data sources, as well as third-party solutions for data analysis and visualization, makes the PI System extremely powerful and versatile as a data management system.

“The PI System has always been able to get data in from pretty much any control system that’s been put out in the field in the last 40 years,” Quale said.

REAL-WORLD RETURNS

Taking a holistic, enterprise-wide approach to data management has already proved its worth many times over since the 2018 merger. At one plant, using PI Vision to visualize PI System data brought to light a problem with the brine pumping system; fixing the issue saved the plant \$50,000 a year. Using data to pinpoint the source of another issue with boring machines had a \$3.5 million annual payoff.

“There’s so many of those I quit counting,” McIntyre said. “I’ll be honest, the benefits are way too big to measure.”

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

PARTNERS:



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— Heather Quale, President of Mera Group

McIntyre, Bob and Quale, Heather. “Nutrien Powered by AF” <<https://www.osisoft.com/Presentations/Nutrien-Powered-by-AF--Nutrien-Merax/>>