SUMMARY

MOL Pic®

Industry
Oil and Gas

Business Value
- Supply Chain Management
- Process Safety
- Trend Analytics
- IT/OT Integration
- Energy Efficiency
- Yield Improvement
- Risk Mitigation
- Process Standardization

PI System™ Components
- PI Server™
  - Data Archive
  - Asset Framework (AF)

How the PI System and AF Have Enabled Business Transformation at MOL Pic

Headquartered in Budapest, Hungary, the MOL Group is a leading Central and Eastern European oil and gas company. Over its 75-year history, the MOL Group has expanded to employ over 30,000 people across its facilities in over 40 countries. In the last 18 years, OSIsoft's PI System has played an increasingly important role in the company's rapid development. At OSIsoft's recent 2015 EMEA Users Conference, Tibor Komroczki, Head of Process Information and Automation, spoke about the evolution of the company's use of the PI System and, in particular, the crucial function the PI System's unified data infrastructure and Asset Framework (AF) have played in standardizing downstream activities across multiple sites.

Komroczki opened the talk by describing how MOL's PI System implementation has grown over time. "Year by year, we are implementing new application programming and processes based on the PI System," noted Komroczki. "We implemented the PI System in 1997 in our Danube Refinery and started the individual program application development in the refinery team," he recalled. "After the MOL acquisition, we implemented the PI System at the Bratislava and Rijeka Refineries...and to [monitor] petrochemical activity in the downstream. We are now building enterprise modules which provide [visibility] not only [to downstream] refinery activity, but also support supply chain management, retail activity and calculating tank inventory."

A unified software architecture simplifies MES standardization

This year, the PI System has been used to support refinery business process re-engineering supply chain management activities. The company has also developed a high availability solution for upstream applications and launched a new process safety project called Safety First. A key part of the new PI System-centric downstream program is Manufacturing Execution System (MES) standardization at the MOL Group level. "We believe the PI System supports MES standardization between the layers in the refinery and globally in the MOL group," said Komroczki. This new standardization effort will identify separate group and local level responsibilities, set standardization goals according to a common set of principles, establish a unified software architecture based on the PI System, ensure equivalent PI System structures in the MOL Group refineries, and create an efficient contract management system with vendors.

"It's very important to create a good integration strategy for implementing the MES portfolio," he noted. "We need to allocate many resources on the IT (Information Technology) and OT (Operational Technology) sides. We not only support the refinery, but REGIS (Refinery Information System) activity, logistics activity, and supply chain management activity in the refinery." Today MOL has installed the PI System across all its value chains. Next year, the company expects to roll out a crucial implementation of the PI System on the logistics side to support standardized inventory management.

Broad Asset Framework deployment supports standardized analytics

To further standardize solutions development across its multiple locations, MOL began implementing AF in its refineries in 2010 and has rapidly expanded that practice since then. "Two years ago, we started intensive usage of AF," Komroczki explained. "We have implemented many support activities with AF for process safety management, yield improvement, energy efficiency and monitoring and loss reduction actions in the refinery."

Using AF, the MOL team has developed a number of new applications including one that improves asset integrity with new advanced corrosion analytics. "After the Tisza refinery accident, we analyzed the investigation report and found some problematic points in the refinery," said Komroczki. "In less than a week, we created a new system in the asset structure and were continuously tracking hydrogen corrosion in the refinery. This asset framework includes pipeline class, hydrogen content, temperature, and partial pressure, so it is a complex analytics function that has increased process safety in our refinery."

MES standardization in MOL group level

One of the biggest challenges MOL has faced was standardizing analytics across four refineries, two petrochemical units, and various logistic sites each with different languages and cultures. "Very important to the standardization function of the PI System is its common data and common data analyses," said Komroczki. "This is also very important to tracking downstream objectives in the refinery. Earlier we had only a limited database to track this action or limited calculation using Excel®. Now we have moved this calculation to AF."

Benefits and Future Directions

Using AF and the PI System in its new downstream program, MOL expects to increase yields more than 5%, decrease energy consumption year by year by 2%, and reduce hydrocarbon losses in the refinery by 30%. "A very important utilization in the refinery is the yield improvement, and we would like to improve the white product yield and decrease the other product yields," explained Komroczki. "We believe the new downstream program next year will deliver similar value, more than a $500 million increase through the earlier downstream program."

Looking ahead, Komroczki sees many exciting new analytics applications. "We would like to support predictive modeling for predictive maintenance, asset monitoring, production monitoring and energy demand forecasting on the maintenance side," he said. At the center of each of these new efficiencies lies the MOL Group's ability to utilize the PI System.

> "Installing the PI System infrastructure across our fuel value chain was fundamental to our new downstream program and the significant [the] performance and sustainability improvements we have seen."
>
> - Tibor Komroczki
>   Head of Process Information and Automation

Komroczki, Tibor. *PI System (and PI AF) – Enabling Business Transformation*. OSIsoft.com. 13 Oct. 2015. Web. 18 November 2015. <http://www.osisoft.com/Templates/item-abstract.aspx?id=12788>.