



CUSTOMER CASE STUDY

Syensqo: Structuring manufacturing data at scale

Syensqo - syensqo.com

Industry - Manufacturing

Challenges

- Enable rapid replication of digital solutions across its plants while meeting individual site needs
- Maximize the value of centralized activities while still developing local initiatives and allowing sites to retain autonomy
- Develop a digital ecosystem that delivers immediate value but also evolves and supports incremental use cases across plants

Solution

- Deployed the AVEVA™ PI System™ portfolio, particularly AVEVA™ PI Server's asset framework and AVEVA™ PI Vision™, as the core of its digital infrastructure to optimize asset maintenance

Results

- 25% reduction in maintenance costs and OEE breakdown losses by 50% in less than one year
- 60% reduction in batch duration variability in just three months
- Maintenance solution replication across plants is four times faster

AVEVA

Syensqo is a newly established multinational materials company, originally a part of Solvay. It specializes in advanced polymers, composites, and materials for batteries, green hydrogen, renewables, and biotech. The company employs 13,000 people around the globe, spread across more than 60 sites and 12 research centers. In Syensqo's polymers division alone, it has 30 plants—none of which produce the same product. The company needed a way to optimize maintenance activities that took into account each production site's particular needs while allowing solutions to be replicated across plants. And it knew that a strong data foundation was key to meeting this goal.

“To make replicability possible from one site to another, we had to structure our data. We said we absolutely need a data foundation sufficiently well-structured, so we could replicate faster and increase the value we deliver.”

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Antoine Roy

Industrial Digital Manager, GBU Specialty Polymers, Syensqo

A central-to-local approach: Collaboration across sites

Syensqo's digital transformation journey started in 2016. The digital team was making progress on a site-by-site, problem-by-problem basis, but they came to the point when replicating solutions from one site to another required structuring their data. How could they standardize solutions by contextualizing and centralizing operations data—without ignoring the nuances of individual plant needs?

Part of the challenge of optimizing maintenance across Syensqo's various sites was finding an approach that allowed them to replicate solutions across different plants quickly. But, as Antoine Roy, Industrial Digital Manager of GBU Specialty Polymers at Syensqo says, “None of our sites are producing the same product. They are different plants, different products. Therefore, we cannot just copy and paste.”

So Syensqo developed a central-to-local digital approach that includes central data management and local site data managers. The centralized team creates templates and asset hierarchies that are standardized to use across plants, while local teams—familiar with sites' specific issues and challenges—build solutions based on the corporate templates for elements, assets, and events. This approach is more circular than a traditional top-down hierarchy, with local teams collaborating with central data managers to find solutions that meet local site needs but can serve multiple sites with minimum adjustment.

“When we said we wanted to replicate, we immediately understood there is a place for centralizing things. But at the same time, we absolutely need the dynamic and momentum of local teams and all their energy.”

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Antoine Roy

Industrial Digital Manager, GBU Specialty Polymers, Syensqo

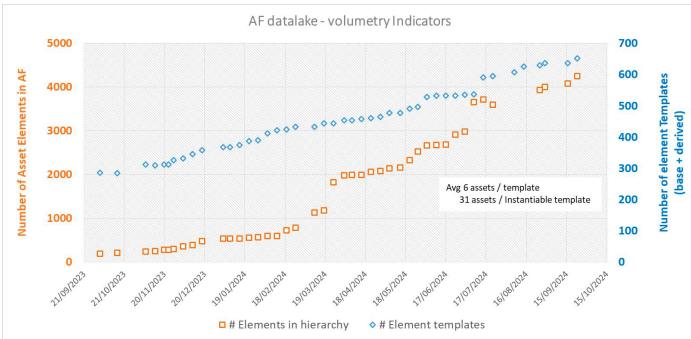
AVEVA PI System adds structure and context to data

AVEVA PI System is key to Syensqo's central-to-local digital approach, particularly AVEVA PI Server's asset framework function. Real-time and historical data is collected from Syensqo's production equipment via DCS and equipment sensors and then aggregated in AVEVA PI Server. There, AVEVA PI Server's asset framework—which contains templates of assets as well as batch phases—adds structure and context to that data.

From AVEVA PI Server's asset framework, this operational data flows into various tools and analytics platforms such as Seeq and Ekhosoft, with AVEVA PI Vision dashboards for Syensqo's “batch watcher” and process anomaly detection. In the span of one year, Syensqo's specialty polymer division went from 200 elements to over 4,000, with 600 templates and 60,000 data points in AVEVA PI Server's data archive.

Using this architecture, central data managers and local teams, with input from process experts, co-construct solutions for different use cases. This collaboration strives to create solutions that are generic enough to be adapted to other contexts, and that can be easily replicated, give or take a few parameters. For example, one of Syensqo's sites has hundreds of PCM pumps, and the local team wanted to monitor the wear of these pumps, so they needed a condition-based monitoring solution to detect when they should plan maintenance over a period of time.

The local site team collaborated with the central data team to create a solution that can be replicated across other sites. Condition-based monitoring for PCM pumps might not be a priority for another site that only has a few of these pumps, but it is now low-hanging fruit—it can be built with already-created templates. In this way, all sites can solve for their own priorities, but the solutions they find can be used by other sites. Since not all sites can work on all their challenges or issues at once, this approach allows each site to tackle its primary issues while also taking advantage of others' solutions. This creates a true digital culture because everyone is involved in the process.



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The results are in: 25% reduction in maintenance costs and 50% in breakdown losses

“The game-changer is replicability,” Antoine Roy says. “This replicability is made possible thanks to the architecture [of the solution], but also with the organization, central-to-local, which is, to us, a good balance.” Using this approach, the Syensqo team can replicate solutions four times faster.

In one year, the team reduced maintenance costs by 25% and breakdown losses by 50%. They reduced the variability of batch duration by 60% in only three months. And because the time to replicate is four times less, their OEE tracking solution has gone from 26 weeks to five weeks, and for their internal batch watcher solution, which monitors batch duration variation, the time to replicate has gone from 11 weeks to four weeks.



Using dashboards in AVEVA PI Vision to monitor batch processes, Syensqo reduced batch duration variability by 60% in just three months.

Conclusion: A true digital culture

Because operational efficiency—in addition to saving the company time and money—is also good for the environment, Syensqo is lowering its carbon footprint through reductions in energy consumption and CO₂ emissions. Additionally, the team is introducing more advanced AI tools and using the AVEVA™ PI Data Infrastructure offering with aggregate tag licensing to get even more value out of the solution. Because of their foundational layer of structured data—and the agnostic capabilities of AVEVA software—they can get more quality insights from these additional digital tools. This allows Syensqo to have a true digital culture, one that continues to embrace collaboration and internal expertise while harnessing intelligent industrial software solutions to innovate faster.

Citation:

Kewes, Eloi and Antoine Roy. “Syensqo structures its manufacturing data to support its 2030 vision.” aveva.com/en/perspectives/presentations/2024/syensqo-structures-its-manufacturing-data-to-support-its-2030-vision