STMicroelectronics Deploys TIBCO Spotfire as a Key Data Analytics Component at the Heart of Its Manufacturing

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1,500+
reports developed and in production

5,000+
analytics users, a 150% increase in 3 years

12
industrial-scale advanced-analytics deployments

Challenge

STMicroelectronics is a worldwide creator and manufacturer of semiconductors, technologies, devices, and solutions for vehicles, industrial equipment, personal devices, and more. Considering the complexity of semiconductor production, it's no surprise that its engineering teams regularly tackle production challenges and issues. And each issue demands consensus-driven resolution in the shortest possible time. The company knew it needed an industrial-scale deployment of an advanced analytics solution to support these efforts.

An analytics solution would help increase operational performance by industrializing interactive reports, improving data governance, and supporting the company's evolution to what it calls "big data-driven manufacturing." At first, the company developed an in-house tool, but this led to maintenance, usability, and data governance issues. It then launched an evaluation of analytics solutions on the market to choose one that would address its needs and meet its performance, interactivity, and scalability goals.

Transformation

After a careful selection process, STMicroelectronics chose TIBCO Spotfire software and deployed it worldwide across 12 fabs. This includes seven front-end facilities, responsible for wafer manufacturing, and five back-end sites involved in chip cutting, assembly, and packaging. The company credits the deployment as a key enabler of its migration to big data-driven manufacturing.

STMicroelectronics

STMicroelectronics designs and manufactures semiconductor devices, technologies, and solutions. With over 48,000 employees, the company works to make a positive contribution to people's lives, incorporating data and sustainability into industrial-scale manufacturing.

As Guillaume Deschamps, STMicroelectronics' data and analytics subject matter expert states, "With TIBCO Spotfire software, we have brought in new analytics practices and methods. Sharing across sites and organizations is now much easier. We are ready for the next era!"

As part of this new era, the company states that knowledge sharing and governance of analytics have strongly improved at all its production sites. Spotfire analytics is connected to the company's manufacturing data cloud and has become its analytic rendering brick.

According to Franck Dupont, data analytics solutions manager, "With Spotfire analytics, engineering teams can now develop their own field-level analyses. This improves operational efficiency enabling them to be more reactive when facing manufacturing issues."

Since adopting the Spotfire solution, STMicroelectronics teams achieved their data analytics objectives and completed an industrial-scale deployment of advanced analytics. Spotfire deployment was also fully supported by the company's IT department, which resulted in three important gains:

1 Analytics are fully governed.

2 Upgrades are integrated seamlessly into existing systems.

3 Standardization of the design interface ensures optimal consistency across the company.

Benefits

Semiconductor manufacturing is itself a data-intensive process. In an industry where data processing is fundamental for manufacturing, STMicroelectronics has developed a unique, business-oriented analytical platform, one supported 24/7 by the IT department. And with TIBCO software, the data is accessible throughout the business and strongly governed.

This effort has also paid off in countless other ways, with those benefits only starting to be fully measured. One example: With TIBCO, STMicroelectronics digitized its visual performance monitoring (VPM) process and transformed it into interactive visual performance monitoring (iVPM). Inside manufacturing clean rooms each day, Spotfire visualizations displayed on giant touchscreens allow team leaders to easily share safety information, equipment updates, and production priorities for the coming shift. Spotfire historic and real-time visualizations deliver immediate insight and actionable guidance.

The interactivity and speed of Spotfire analytics helped spur STMicroelectronics to achieve broad adoption of analytics across the organization, which was previously lacking. The company is now more data-driven. Plus, sharing across sites and organizations is easier, leading to faster decision-making

and a higher service level for end users. In parallel with these gains, STMicroelectronics is equipping itself with artificial intelligence and machine learning tools as part of its embrace of big data manufacturing.

The company acknowledges there was a learning curve after replacing its in-house tool, but also notes that Spotfire use cases have better maintainability, easing the support teams' daily workload. The numbers back this up: More than 5,000 active users within less than three years, a 150% increase. The eager adoption of the solution across STMicroelectronics's global organization shows the value and ease of its embrace of analytics.

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