



## SUMMARY

### Michelin

### Industry

Petrochemicals

### Business Value

- Operational Insights
- Performance Optimization
- Waste Reduction
- Key Performance Indicators

### PI System™ Components

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

## How Michelin Used the OSIsoft PI System to Optimize Elastomer Production

At its plant in Bassens, France, Michelin manufactures the high-tech synthetic elastomers for its tires. In the past, Michelin's engineers struggled to track equipment in real time, which is critical for reducing off-spec production and resource waste. With the PI System, Michelin was able to develop easy-to-use tools for plant operators to track complex processes and keep them within optimal parameters. Efficiency improvements driven by the PI System saved the company €4 million in less than a year, and enabled the plant to recover from a 2,000-ton disruption in material production within six months.

### Complex Processes, Simple PI Tools

In the early days of auto manufacturing, tires were solid chunks of natural rubber. Modern tires are complex, with carefully engineered structures and layers of high-tech components that help them stand up to the wear and tear from the environment. More than 200 raw materials go into the production of a tire, including metals, textiles, plasticizers and both natural and synthetic elastomers.

Synthetic elastomers currently make up more than 60 percent of the raw materials in tire manufacturing. Michelin has three elastomer plants: one in Kentucky, USA; one in Bassens, France; and one slated to open in 2018 in Cilegon, Indonesia.

In recent years, Michelin has been integrating OSIsoft's PI System into its elastomer manufacturing processes and relying on the platform's powerful data tools to track and manage production in real time. In a talk at OSIsoft's 2015 EMEA Users Conference, Thomas Forest, the Plant Process Manager at Michelin's Bassens plant, described how the PI System has helped crews react to change in real time, streamlining production and saving the company millions of euros in the first six months of implementation.

The elastomers Michelin produces in Bassens are highly technical, and the process of manufacturing them is complex. A typical operator in the Bassens plant may be overseeing a process with roughly 2000 tags and 200 control loops. If processes are not kept within strict parameters, too much off-spec product will be made, and valuable materials will be wasted.

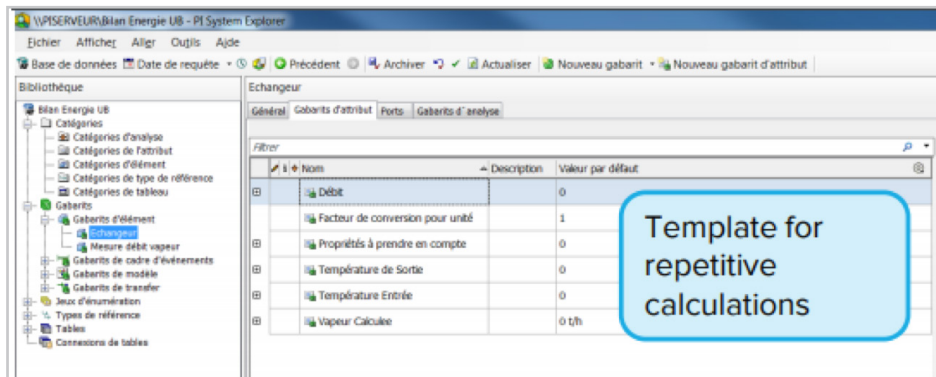
Before incorporating advanced data management tools into their manufacturing process, Michelin engineers struggled to track production in real time. One engineer, whose job was to monitor a machine running two different processes, would literally run back and forth across the factory floor to track the state of equipment on the other side of the plant.

"These guys... have just too much information to cope with," Forest said. "It was

quite a nightmare to know in real time where we are in terms of quality.”

Enter the PI System, which combines thousands of fluctuating real-time variables across the plant into displays that convey, at a glance, data that plant operators can act on immediately.

Prior to implementing the PI System, Bassens engineers were using a massive Visual Basic spreadsheet with more than 350 equations to track the amount of steam being used by different production units. The file was unwieldy and difficult for users to parse. Now, the plant monitors steam with the PI System and relies on OSIsoft's Asset Framework to structure the data based on a simple hierarchy that Forest said even his eight-year-old could understand.



Using Asset Framework engineers organized all their data streams into a digital twin of the entire plant with asset-centric models and templates.

“What PI offers us today is a very efficient tool to highlight the important data [and]... give meaning to data,” Forest said. “In one glance, in one glimpse, you know if you are doing well... and where you are outside of the lane.”

## The Power of PI: From Data Insight to Bottom-Line Value

In early 2015, the Bassens plant suffered a disruption that cost Michelin 2,000 tons of material production. Plant managers decided to treat the temporary setback as an opportunity to see how much lost ground they could recover with smart data management. By integrating the PI System into the manufacturing process, and by using data to track and optimize production in real time, the plant was able to recover the lost 2,000 tons in six months through better start-up management, real-time KPIs, and rapid response based on operational intelligence.

“It’s just massive. We’re talking about €4 million,” Forest said. “There is a rapid payback. It’s so easy, it’s so visual that as soon as you’re making a tool someone is using it. It gives immediate progress.”

Today, the PI System is making life easier for Michelin’s Bassens engineers, while the value of real-time data is reflected in the company’s stronger bottom line.

To learn more about Michelin and the PI System, watch the full presentation [here](#).

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– Thomas Forest,  
Manufacturing  
Process Manager

Forest, Thomas. Enhancing Manufacturing Decision-Making Process Through Real-Time KPI. OSIsoft.com. 13-15 October 2015. <<https://www.osisoft.com/Presentations/Enhancing-Manufacturing-Decision-making-Process-through-Real-time-KPI>>