



SUMMARY

Eli Lilly and Company

Industry

Pharmaceuticals

Business Value

- Business Intelligence
- Operational Insight
- Performance Optimization
- Process Controls

PI System™ Components

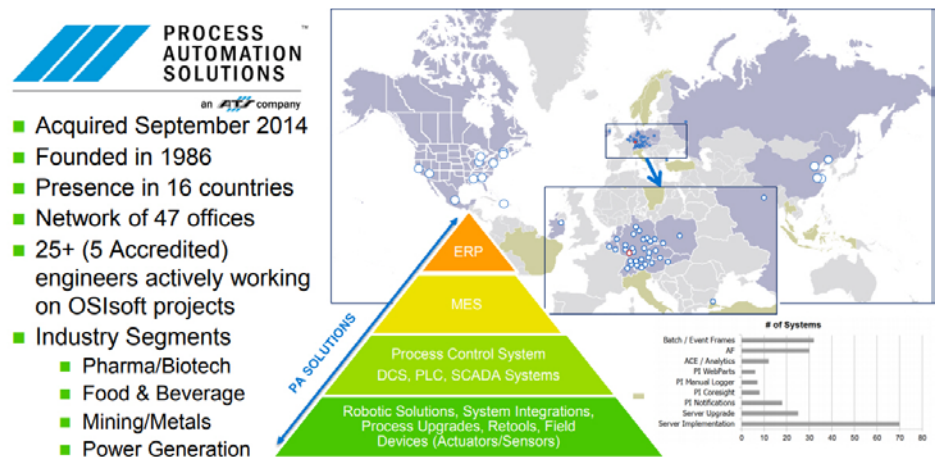
- PI Server™
 - Data Archive
 - Asset Framework
 - Event Frames
 - Analytics
 - Notifications
- PI Cloud Services
 - PI Cloud Connect™
- PI Vision¹

Breaking Down Barriers in Medicine with the PI System

Recently, Eli Lilly and Company (“Lilly”) launched an innovative pilot program to monitor the production of insulin pens, including assembly, injection molds and other equipment used to produce the pens. Production takes place at contract manufacturers (CMs) and Original Equipment Manufacturers (OEMs), and the OSIsoft PI System with PI Cloud Connect is being used to gather data to identify areas of improvement in the production process and machinery. As Brian Golder, Manufacturing IT Consultant at Eli Lilly, explained at the 2017 OSIsoft Users Conference in San Francisco, the real-time visibility enabled by the PI System will potentially allow Lilly to not only reduce manual data collection, the new process can elevate OEM/CM performance and allow the brand to scale production while maintaining its high standards of quality.

A Rich History in Health

For 140 years, Eli Lilly has been at the forefront of medicinal breakthroughs. As the developer of the Polio vaccination as well as insulin, Lilly generates over \$19 billion in annual sales while helping individuals all over the world lead normal lives. A PI System user since 1995, Lilly currently has over one million tags generating operational data from 22 manufacturing facilities. With the goal of producing cost effective, high-quality insulin pens, the medical device group opted to use the PI System to gain insights into all aspects of production.



Assembly an Insulin Pen

An insulin pen is made up of four-to-five parts. Not only does Lilly work with CMs to produce the pens, the company custom designs and owns the machines used to produce the parts for insulin pens. That machinery is produced by OEMs and shipped to CMs who manage pen production and assembly, but Lilly maintains ownership of production machinery throughout this entire process. While OEMs and CMs have enabled Lilly to scale insulin pen production, the remote nature of the facilities means lack of visibility and control.

Connect the Process with the PI System

To gain remote visibility into both the machine production and pen production/assembly processes, the Lilly team used PI Interfaces and PI Cloud Connect bring data from both the OEM and CMs into one central location. “We can do this remotely with PI Cloud Connect technology, so now our Lilly engineers can analyze this data remotely in near real-time,” said Goldinger. “That saves us on travel, but also allows for a broader analysis of our data.”

With this influx of real-time data, Lilly engineers can now ensure that custom machinery is not only properly built, they can set benchmarks around machine performance while the equipment is still at the OEM. In addition, this connected approach allows Lilly engineers to use PI System data to optimize insulin pen production at the CMs.

New Insight Bring Increased Confidence

Previously, engineers had to wait at least a week to receive any asset data, but with the PI System, engineers can look at various parts of the production process to determine if machines are working properly and operators are following procedures. Using Asset Framework, engineers can visualize machine downtime and drill down into data and get to the root of any downtime or production issues. “We have data that we couldn’t get before, it’s freeing up resources of the CM, and we have increased confidence in the voracity of the data,” said Goldinger.

From Proof of Concept to Connect CMs

While the program is still operating as a proof of concept, the robust insights, reporting and dashboard capabilities will allow Lilly to increase future insulin pen production at CM facilities, without sacrificing quality. “PI Cloud Connect not only allows us to connect one CM, we can connect many CMs,” noted Abel Padilla, Senior System Integrator, Process Automation Solutions at Eli Lilly. “As you can see, this is a very scalable solution.” With a web-based, connected approach, Eli Lilly is breaking through previous production barriers in the pharmaceutical industry to bring important prescription drugs to patients all around the world.

¹ PI Coresight was renamed to PI Vision in 2017.

Goldinger, Brian, et al. *Data Sharing in a Contract Manufacturer Environment*. OSIsoft.com. 22 Mar. 2017. Web. 26 July 2017. <<http://www.osisoft.com/Presentations/Data-Sharing-in-a-Contract-Manufacturing-Environment/>>.

Goldinger, Brian, et al. *Data Sharing in an OEM Environment*. OSIsoft.com. 22 Mar. 2017. Web. 26 July 2017. <<http://www.osisoft.com/Presentations/Data-Sharing-in-an-OEM-Environment/>>.

“The PI Cloud Connect was really ideal for us because sometimes getting a VPN established with a small, lean OEM facility takes just as long as we were planning on having them build the asset. I don’t have 3-4 months to work through IT teams to spend on the project.”

– Paul Turvey
Manufacturing IT
Consultant, Eli Lilly & Co.