Profile

GlaxoSmithKline (GSK), headquartered in the UK, is the second largest pharmaceutical company in the world, capturing 7% of the world’s pharmaceutical market. GSK has a leadership role in four major therapeutic areas—anti-infectives, central nervous system, respiratory and gastrointestinal/metabolic. In addition, it is a leader in the production of vaccines and has a growing portfolio of oncology products.

In 2001, GSK had sales of $29.5 billion, 100,000 employees worldwide and 107 manufacturing sites in 40 countries. GSK's Irvine, Scotland manufacturing facility, one of the largest production plants in Europe, provides a key component of the pharmaceutical value chain by producing bulk forms of drugs, such as Augmentin® and Paxil®. Considered a GSK “Automation Center of Excellence”, the Irvine site sets the automation standard for GSK’s primary manufacturing facilities.

Business Challenges

GSK was looking to optimize its primary manufacturing facilities. The efforts were driven by the Automation Team, consisting of a team of IT and engineers tasked with finding the optimal automation solution. The Team sought a solution that would provide accurate, consistent process data to support a plan of continuous improvement activities, enabling modifications to be measured and benefits quantified.

The solution would also need to address the following business challenges:

• Enhancing collaboration between research & development and the manufacturing facilities
• Accelerating product development and speed-to-market
• Increasing process knowledge through a better understanding of manufacturing capabilities/capacity
• Providing real-time information to end users throughout the enterprise

Solution

After a lengthy review of internal and external systems, GSK selected AspenTech® as its key supplier for data analysis and process improvements. According to the Process Business Systems Manager at GSK, "We selected Aspen Technology for the superiority of its product roadmap, best-of-breed application functionality, deep technology and process knowledge, and proven project delivery with strong reference accounts."

InfoPlus.21® has been successfully implemented at GSK sites in Scotland, England, Singapore, Ireland, and the United States, through a "bottom-up" approach. InfoPlus.21 serves as the process data historian and link between the control and business systems. Client tools are available on any desktop, providing user access to real-time and historic process data and production information. "InfoPlus.21, built upon a foundation of accurate and reliable instrumentation and control systems,
has provided a step change in the quality of data collected. This has enabled enhanced process understanding and accelerated process improvement. We consider AspenTech's solution to be a key building block of our infrastructure that is built around operational excellence," remarked the Process Business Systems Manager.

**Business Benefits**

Many of the benefits GSK achieved were due to an enhanced level of visibility and collaboration. "AspenTech's solution has allowed GSK to realize 5 times return on investment (ROI), with significant recurring benefits annually. In addition, the solution provides increased visibility into the manufacturing process and creates more opportunities for collaboration with research and development by supporting operations and providing accurate data back to our chemists and technical specialists."

GSK divides the benefits of using AspenTech's solution into 3 different areas:

**Process Improvements**

- Reduction of raw material usage through the adoption of a new control strategy
- Improvement in fermenter batch performance through the rectification of root cause issues

**Compliance**

- Reduction in fermentation process variability through real-time availability of data and reports
- Ability to evaluate multiple batch data

**Cost Avoidance**

- Decreased travel expenses through remote systems monitoring by a technical support team
- More efficient resource allocation:
  - Lengthened the amount of time between routine maintenance activities from weekly to monthly
  - Eliminated 780 hours per year of manual calculations
  - Eliminated 208 hours per year of report preparation

Many of the benefits above were achieved because AspenTech's InfoPlus.21 solution provided the visibility needed to eliminate bottlenecks in the manufacturing process. For example, following the deployment of the solution, it was possible to conduct a detailed analysis of a filter drier operation. Through the analysis of historical data collected by the system, modifications were made to the process to remove the filter drier as the rate limiting step, increasing throughput significantly.

**Vision**

InfoPlus.21 has enabled chemists, process and control engineers to have a better understanding of the many key issues affecting GSK’s production processes. The next step is to enhance communication further between R&D and manufacturing by expanding the development scientists view of live data from the manufacturing process. By enhancing their view, scientists can then proactively assist with production issues.

**About AspenTech**

Aspen Technology, Inc. is a leading supplier of enterprise software to the process industries, enabling its customers to increase their margins and optimize their business performance. AspenTech's engineering solutions, incorporating Hyprotech's technologies, help companies design and improve their plants and processes, maximizing returns throughout their operational life. AspenTech's supply chain manufacturing solutions allow companies to run their plants and supply chain more profitably, from customer demand through to the delivery of the finished product. Over 1,200 leading companies rely on AspenTech’s software every day to drive improvements across their most important engineering and operational processes. AspenTech's customers include: Air Liquide, AstraZeneca, Bayer, BASF, BP, ChevronTexaco, Dow Chemical, DuPont, ExxonMobil, GlaxoSmithKline, Lyondell Equistar, Merck, Mitsubishi Chemical, Shell and Unilever. For more information, visit www.aspentech.com.