





divisions of labor and clear lines of responsibility for managers. It also made the search for cost reduction very limited. When a manufacturer needed to lower costs, managers would simply seek lower-priced suppliers for their Active Pharmaceutical Ingredients (APIs) and excipient (inactive) materials. That approach, however, came with costs: The demand for cheaper materials put a real burden on suppliers, sometimes straining long-established relationships. At best, it was a short-term fix to reduce costs, but not a real solution. As we talked with leaders of pharmaceutical manufacturing plants, we realized that if lower costs were to be achieved, the company's entire manufacturing process needed examination. Simply looking at the work undertaken by each functional silo would be insufficient.

### Case Study: Setting New Priorities for Process

When we first met the leaders of one global pharmaceutical manufacturer, the company recognized that it needed to make dramatic improvements if its long-term prospects were to remain hopeful. They needed results quickly. Over the course of eight months, the company worked with us on 41 distinct projects through to implementation. It achieved nearly two-thirds reduction in manufacturing cycle times, from 86 to 25 days, enabling it to eliminate 45 supply chain positions. Work-In-Progress

inventory fell 66% and gross inventory 41%. Other process improvements led to plant product availability rising from 84 to 99%. The company now fulfilled 98% of customer orders within 48 hours, instead of 69%. Managers established a weekly review of visual metrics to keep their focus and hold departments accountable for performance gaps.

How did the company achieve such a dramatic turnaround in manufacturing efficiency? It reached beyond traditional cost-cutting methods to take a fresh look at how its processes affected the way its products flowed through the manufacturing facilities.

The company had reached a critical point in its growth, but steady price erosion in the industry demanded a cut in its costs of at least \$40 million over the coming year. Nevertheless, the company initially was reluctant to apply Lean Six Sigma lessons across the entire company. It thought costs could be reduced simply by analyzing projects within each functional silo.

Success came, however, when they brought three new approaches to understanding their own business:

1. Mapping core value streams
2. Sizing batches to match customer needs
3. Emphasizing flow over function

### 1. MAPPING CORE VALUE STREAMS

In this highly siloed manufacturing organization, managers were accustomed to focusing on each individual step in a process, and the equipment, time, and people used during that step. As a result, there was very limited visibility into how each step interacted with other steps across the entire manufacturing process. Managers had a very poor picture of how their products flowed through the plant and then, ultimately, to the customer. Each manager had become consumed with the details of his or her own functional responsibility.

Working with SSA & Company, the leaders of the company began to realign their manufacturing process without redesigning the physical layout of the plant. They reorganized the manufacturing process into four core value streams. A “value stream” was defined as anything where 80% of the products flowed through similar processing steps. The company then assigned four managers to track and oversee each value stream, regardless of what functions the value stream passed through. In what amounted to a critical change, the company allowed the managers to schedule production cycles based on the constraining process step(s) within that value stream – something that had proved impossible under the

functional manufacturing system that had previously prevailed. Additionally, all the company’s supporting functions were aligned with the value streams through “dotted line” responsibilities to the managers, keeping the entire organization on the same page. The company also began using the Lean Six Sigma approach to quality and cost – long a staple in the auto industry, for instance – in order to modernize their manufacturing process. The result was that 98% of the company’s orders were now fulfilled within 48 hours, compared with 69%.

### 2. SIZING BATCHES TO MATCH CUSTOMER NEEDS

For a long time, the pharmaceutical industry believed that the best way to improve customer service levels while reducing cost was simply to increase equipment utilization. A traditional process technique in pharmaceutical manufacturing was to increase the batch size to expand the length of time production equipment would be run. With a larger batch size, the hope was that the production process would require fewer changeovers to subsequent orders. The focus was on the manufacturing cycle rather than on what it meant for customers.

Yet as the company began to use the information gained from identifying value streams to understand the impact



“SSA & Company has given us the methods and tools to dramatically improve how we operate as a company. This has helped to embed a more data-driven and performance-focused culture.”

— FRED LYNCH,  
PRESIDENT GENERIC PHARMACEUTICALS, ALPHARMA

