

PFIZER

OPERATIONAL EXCELLENCE IN CONTINUOUS, PHARMACEUTICAL MANUFACTURING

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In 2014, Pfizer began developing Portable Continuous Miniature Modular (PCMM) technology with the goal of accelerating its pharmaceutical portfolio through continuous manufacturing. Historically, pharmaceutical drug product is manufactured through a batch process, which consists of several unit operations akin to an assembly line. In contrast, PCMM technology allows for continuous manufacturing which transforms raw material into tablets using a single equipment train. Continuous manufacturing has advantages over batch processing, such as improved quality, reduced costs, and a faster R&D timeline.

As the PCMM progresses towards becoming the industry's standard manufacturing platform, Pfizer recognizes the need to establish operational excellence within the PCMM. The ultimate goal is to enable Pfizer's portfolio by increasing PCMM availability via operational excellence.

To achieve this goal, the Tauber team created an operational excellence framework and identified applicable metrics with which to analyze and measure the PCMM's operational performance. By analyzing the current state and identifying operational gaps, the team implemented a series of solutions and made long term recommendations to bridge operational gaps and increase operational excellence. The solutions implemented by the team included a visual communication tool, a schedule adherence tracker, a Kaizen sprint project focused on the organization of the PCMM's workspace, and an in-depth analysis of task dependency of PCMM operations. These implementations decreased single-lot production cycle by 30%, increased OEE by 8%, and increased manufacturing availability by 50%. Long term recommendations include establishing a value stream manager, continuing workspace improvement efforts, and exploring clean-in-place technology.

Due to the work done by the Tauber team to improve communication, scheduling logic, and operational efficiency, Pfizer will save an estimated \$5.85 million/year, and the PCMM will better enable Pfizer's portfolio by supporting the development of two additional compounds per year.