

LEAN MANUFACTURING IN PHARMA





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Individualized medicine, aging population, globalization and governmental cuts in health care systems: Without doubt, the pharmaceutical industry is facing challenging years. Due to cost pressure and the requirement to react flexibly on customer demands a highly flexible production with competitive costs is absolutely necessary. In order to meet the standards of operational excellence every single step of the value chain has to review their processes. Many companies lack measures required to achieve “Operational Excellence” and therefore do not tap their full potential.

Mission

The Lean Manufacturing approach, established by Toyota, has been revolutionizing discrete manufacturing industries since the early 90's. But pharmaceutical companies have been hesitant to adopt these tools. It is argued that the process industry's special production environment hinders the direct implementation of lean techniques. Hence, Lean techniques have to be adjusted to fit pharmaceutical production processes. Employees of the Fraunhofer IML developed a method pool, which supports the needs of the pharmaceutical industry in every step of value creation.

Approach

“Intelligent Optimization of manufacturing” is the principle of the departments “Production Logistics” and “Health Care Logistics” in the Fraunhofer IML. Intelligent optimization means capturing the whole production with respect to the company's individual capabilities and targets. Many reorganization approaches in the pharmaceutical industry have an isolated focus and hence lack a holistic view.

Cost-, time-, and service-benefits can only be achieved by analyzing the whole system of processes, employees and

technologies as well as by adjusting the whole system on the customer's individual needs. The Fraunhofer IML works process- and system-orientated and examines the work flows in an appropriate depth – always in view of the actual market demands. According to the Fraunhofer philosophy we work as a neutral and independent consultant. Individually staffed project teams develop sustainable solutions in manufacturing processes endorsed by your company's employees.

Your benefits

- Pharma-specific manufacturing concepts precisely tailored to your manufacturing requirements
- Holistic interaction of all your company's resources
- Effective, flexible and customer orientated manufacturing
- Enhanced competitiveness in global competition

Our service

We accompany you non-stop, from developing a strategy to detailed planning and realization, with our modularly structured business consulting solutions.



Analysis of the potential for Lean Pharma

- Examination of your status quo (process-mapping and data-acquisition)
- Drafting of a basic concept
- Appraisal of expected benefits

Holistic reorganization concept

- Detailed planning of a lean material flow concept
- Configuration of a production system using Lean Manufacturing principles
- Guidance during implementation

Simulation

- Validation of performance
- Stochastic simulation to check robustness
- Analysis of future developments

Our area of consulting

We offer you orientation and a competent guidance during selection and realization of Lean Manufacturing methods. Thus we support long-term corporate success by fitting different methods into a holistic production system. Thereby we work in the following areas:

Production of Active Pharmaceutical Ingredients (API)

For manufacturing pharmaceutical companies API production is regularly the first step of value creation in the manufacturing process. Hence this part of the value chain is the first to be affected by changing market conditions. To overcome these obstacles, achieving a greater flexibility by reducing batch-sizes and cycle times is essential. Instead lots of API producers try

to buffer fluctuating market demands by boosting their stock levels. Restructuring the prevalent multi-purpose-factories in dedicated and partially dedicated facility networks, according to the Lean Manufacturing principles, allows companies to achieve the needed flexibility with significantly less inventory.

Drug production

Increasing complexity in production is caused by market differentiation of dosage forms.

An increasing number of variations in dosage forms must be handled by existing machinery, which is the reason for smaller batch sizes. This again leads to an increase in time-consuming change-overs. Along with variable routing of work flows and unbalanced capacities of single machines this finally results in a batch-and-queue production. To address this problem a fixed routing and customized lean methods will help raise your production efficiency.

Packaging

The times of blockbuster production in which high volume packing machines were predominant are long gone. Customer specific packaging for each country leads to a low volume/ high mix production, which is accompanied by an increasing need of small lot sizes. Besides a shift from high performance packaging machines to flexible machines, a reorganization of production concepts is needed. Lean manufacturing methods help by reducing change-over times, standardizing work flows and increasing machine availabilities. Finally, this is essential to achieve operational excellence in packaging, even for very small lot-sizes.

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