



Hungarian University of Agriculture and Life Sciences
Szent István Campus
Stipendium Hungaricum
Engineering Management Master's training education

Applying Lean Technique in a Production Environment

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Abstract:

With an emphasis on the revolutionary projects carried out at the refinery plant of the Alia Golestan Company in Iran, this paper explores the diverse use of lean approaches in the vegetable oil manufacturing industry. Throughout the facility, operational efficiency and resource utilization improvements are accelerated by the use of lean concepts, which place a high priority on waste reduction and productivity optimization.

A carefully planned sequence of strategic interventions, each intended to address a particular facet of the organizational dynamics and production process, is how the project is carried out. Fundamentally, applying 5S principles—which include methodical approaches to workplace cleanliness and organization—lays the groundwork for establishing an atmosphere that promotes effective and productive work. The plant reduces needless movements, idle time, and inefficiencies by establishing a culture of cleanliness, orderliness, and standardization. This opens the door for significant gains in operational performance.

In addition, the project makes use of cutting-edge lean tools and techniques like Poka-Yoke and value stream mapping to methodically find, examine, and remove waste sources in a variety of operational domains. The factory obtains important insights into the information and material flow through thorough value stream analysis, which enables focused interventions meant to improve overall productivity, shorten lead times, and streamline procedures. Poka-Yoke procedures, which aim to eliminate errors and defects at their source, also aid in reducing waste by lowering the possibility of rework and quality problems.

To modernize the plant's manufacturing facilities and improve its technological capabilities, the project also includes considerable infrastructural expenditures and equipment modifications. By installing a centralized control room with cutting-edge sensors and monitoring systems, it is possible to monitor production processes in real time and respond quickly to any deviations or disturbances, which guarantees the efficient and continuous operation of the business. The plant's operational reliability and capacity are further increased by strategically improving key components and production line bottlenecks, which boost throughput and system resilience.

Adopting standardized work practices, which offer clear instructions and rules for carrying out tasks across the business, is essential to the success of these efforts. The plant promotes consistency, dependability, and adherence to best practices by standardizing work processes and procedures. It also makes it easier for staff members to get training, knowledge transfer, and skill

development. In addition to increasing operational effectiveness, this standardized approach gives staff members the confidence to own their responsibilities and participate in continuous improvement initiatives.

When taken as a whole, these efforts result in notable gains for the Alia Golestan Company regarding profitability, production capacity, and market response. In addition to strengthening its position as a leader in the vegetable oil production sector, the company sets the standard for efficiency, sustainability, and operational excellence by adopting lean management practices and a continuous improvement culture. The company exemplifies the transformative potential of lean approaches in promoting long-term success and increasing organizational performance by employing a holistic approach to lean implementation.