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# Trends in Industrial Engineering Applications to Manufacturing Process


 Springer


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# Chapter 5

## Improving Distribution Process Using Lean Manufacturing and Simulation: A Seafood Packer Company Case



Julian I. Aguilar-Duque, Jorge Luis García-Alcaraz ,  
Juan L. Hernández-Arellano, and Guillermo Amaya-Parra

**Abstract** During last decades, production systems have developed strategies to increase their competitiveness in a global market in manufacturing and services, and lean manufacturing and simulation methods have been consolidated as tools that support that. This paper reports a case study in a food packer company where a simulation model was applied to reduce waste time due to a poor layout in operations and transportation areas. The company has detected problems on layout that avoid fulfilling the market demand. The simulation model was aimed to test different scenarios and layout designs as alternatives for a better distribution without modifying its facilities and run in Promodel<sup>®</sup> simulation software. The production systems' scenarios were evaluated using the production system performance as percentage of used locations, percentage of resources utilization, number of finished products, and the level of work in process (WIP). Finally, the verification and validation stages were performed before running the scenarios in the real production area. After implementing the best simulated scenario, company reports an increase of 68% in production capacity as well as a reduction of 5% in the WIP.

**Keywords** Production system · Simulation manufacturing process · Simulation model · Work in process

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