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# Design and Development of Simulation Models to Optimize Shop Floor

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**Abstract:** Line balancing, throughput maximization and improving overall production efficiency of the facility are major concerns of any manufacturing facility in the current market. Implementing modifications and later analyzing them for improvements can be both time and cost consuming. Simulation serves as an effective support tool in production systems to understand and analyze the changes in a manufacturing environment. Simulation models can be developed based on current and modified production systems and these can be analyzed to determine unforeseen bottlenecks, prevent under or over utilization of resources and to optimize the system performance. This research focuses on developing simulation models for a local company which manufactures blast resistant buildings. Strategies like resource allocation and mixed line production was incorporated in the model and analyzed to improve workstation utilization and higher throughput.

*Keywords:* Line Balancing, Bottlenecks, Mixed Line Production