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Analyzing the benefits of lean manufacturing and value stream mapping via simulation: A process sector case study

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Abstract

The ‘lean’ approach has been applied more frequently in discrete manufacturing than in the continuous/process sector, mainly because of several perceived barriers in the latter environment that have caused managers to be reluctant to make the required commitment. We describe a case where lean principles were adapted for the process sector for application at a large integrated steel mill. Value stream mapping was the main tool used to identify the opportunities for various lean techniques. We also describe a simulation model that was developed to contrast the ‘before’ and ‘after’ scenarios in detail, in order to illustrate to managers potential benefits such as reduced production lead-time and lower work-in-process inventory.





Keywords

Lean manufacturing; Value stream mapping; Simulation; Process industries; Steel

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