Integration of industry 4.0 technologies and lean management techniques to optimize enterprise performance

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The current industrial context requires flexible processes that can adapt to fluctuant market demands. Both, Lean and Industry 4.0 can achieve the company's objectives separately, however, several studies have shown that the combination of these two concepts is appealing to companies.

The target of this thesis is to thoroughly study the combination between Lean management tools and Industry 4.0 technologies. Different paths are possible to achieve optimization in factories/enterprises and Supply chains. The aim is to browse the existing studies subscribing path 1 (where I4 technologies are essential followed by LM techniques) and those subscribing to path 2 claiming that LM tools are a prerequisite to initiate Industry 4.0 transformation. The thesis will first provide a cartography with the possible combinations and the impacts on performance objectives of path 1 and path 2 configurations. The final objective is to provide a decision aided tool based on the algorithm of paths identification to assist managers in their decision-making process.