

# Abstract

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## **Time compression in ETO Production Networks: A Case Study of a Norwegian shipyard**

The main objective of this study is to investigate the ability to compress the time in ETO production networks of a Norship shipyard. The scope of the analysis focuses on conducting time analysis on the production networks of Norship shipyard, followed by narrowing down the scope of the analysis to be focused on one production network that executed by a key supplier. Value stream mapping used as a lean manufacturing tool to integrate the value stream of the key supplier into the one of Norship shipyard and to develop a future state map that reduced and mitigated the non-value added activities from the integrated value stream. This study is an exploratory case study, where action research was conducted by the author to observe the problem in Norship shipyard, followed by understanding the causes of the problem and suggesting solution to counter it down. The unit of analysis of this study is the total cycle time. The empirical findings show that there are significant wastes due to the nature of the buyer and supplier relationship, buyers' feeble project planning, and a mismatch between planning and execution. All these findings show that the total cycle time of Norship shipyard's production networks is increasing and there are opportunities to compress the total cycle time by integrating the key supplier's value stream into that of the shipyard. Thus, alternatives of the way forward have been presented to reduce the total cycle time. In addition, a current state value stream map has been drawn and a future state map of the supplier activities in the buyer value stream has been developed as a model to achieve the value stream integration of a key supplier into Norship shipyard.