



TALLINNA TEHNIKAÜLIKOOL  
TALLINN UNIVERSITY OF TECHNOLOGY

---

Department of Mechanical and Industrial Engineering

# IMPLEMENTATION OF LEAN-DRIVEN PERFORMANCE INDICATORS IN INDUSTRIAL PURCHASING PROCESS: A CASE STUDY

LEAN-PÕHISTE TULEMUSINDIKAATORITE JUURUTAMINE TÖÖSTUSLIKUS  
OSTUPROTSSESSIS: JUHTUMIUURING

MASTER THESIS

EM70LT

Student: Iren Saava

Student code: 144235MARM

Supervisor: Kashif Mahmood

Tallinn, 2017

Confidentiality clause: strictly for Ericsson internal use

## SUMMARY

Efficient and effective supply chain management is one of the most discussed topics in literature nowadays as many business organisations, especially globally operating manufacturers consider it as a strategic mean to introduce new products to market before competitors, meet rapid changes in customer requirements and adapt to market demand fluctuations.

As it revealed from the literature review on the contemporary business theories and practices, the businesses' recognition of the importance of SC performance measurement generally high and researchers' focus on the supply chain measures and metrics improved remarkably in 2000s.

Still, majority of the SC-metrics in place today are pre-dominantly cost-oriented and applied to measure overall SC performance (like SC lead time, rejected goods, undelivered orders etc.) which are not suitable to measure supply chain internal (often cross-functional) performance. At the same time, some practical SC initiatives already in place to face the increasing need for elaboration of performance metrics and indicators (like SCOR, and others).

The ability to elaborate sustainable effective performance management frameworks is somehow vague and evidence of successful implementation in publications is very limited. Nevertheless, a few industrial case studies were identified to benchmark the SCPM and particularly the KPIs for cross-functional processes. Together with the extensive literature review on modern PM theories and other strategic management concepts (like LEAN) these case studies form a framework for comparison and company-specific research of the thesis.

The objective of this thesis is to investigate potential of lean-driven (i.e. waste-avoiding) performance indicators for a core part of industrial SC – new product introduction phase purchasing process, in connection with related functions of design/engineering, strategical sourcing and others. This research concept was studied and tested in a qualitative case study at ESST.

The primary research data builds on a panel interviews, documents and observations with an aim to define the cross-functional linkages between NPI purchasing and other functions. Additionally, a detailed process mapping was done to identify connections between potential waste areas and processes, with the following waste analyse. Author defined six significant waste areas within NPI purchasing process and other cross-linked functions: defects, overproduction/duplication, delay in provision, inventory, human potential and transportation. The findings of process mapping and waste analyse of initial performance metrics were peer-reviewed by expert panel (consisting of the NPI purchasing specialists).

The case study ultimately resulted in six PM (cross-functional) areas with potential KPIs (taken from literature and industrial benchmarking). After assessing them against the waste analyse findings the final list of seven KPIs was elaborated by author for approbation in-site.

Finally, the managerial implications and recommendations were formulated in terms of organisation of PMS and data collection (particularly – the automatic data collection) and integration the KPIs into the ERP. For a further validation of KPIs, the investigation and comparison of recommended KPIa is possible to carry out on other Ericsson's sites.

The further process analyse is recommended on the basis of the current flowchart, using value stream mapping tool.

Due the novelty of the research concept, the feasibility of new KPIs is uncertain before approbation period.