Lucerne University of
Applied Sciences and Arts

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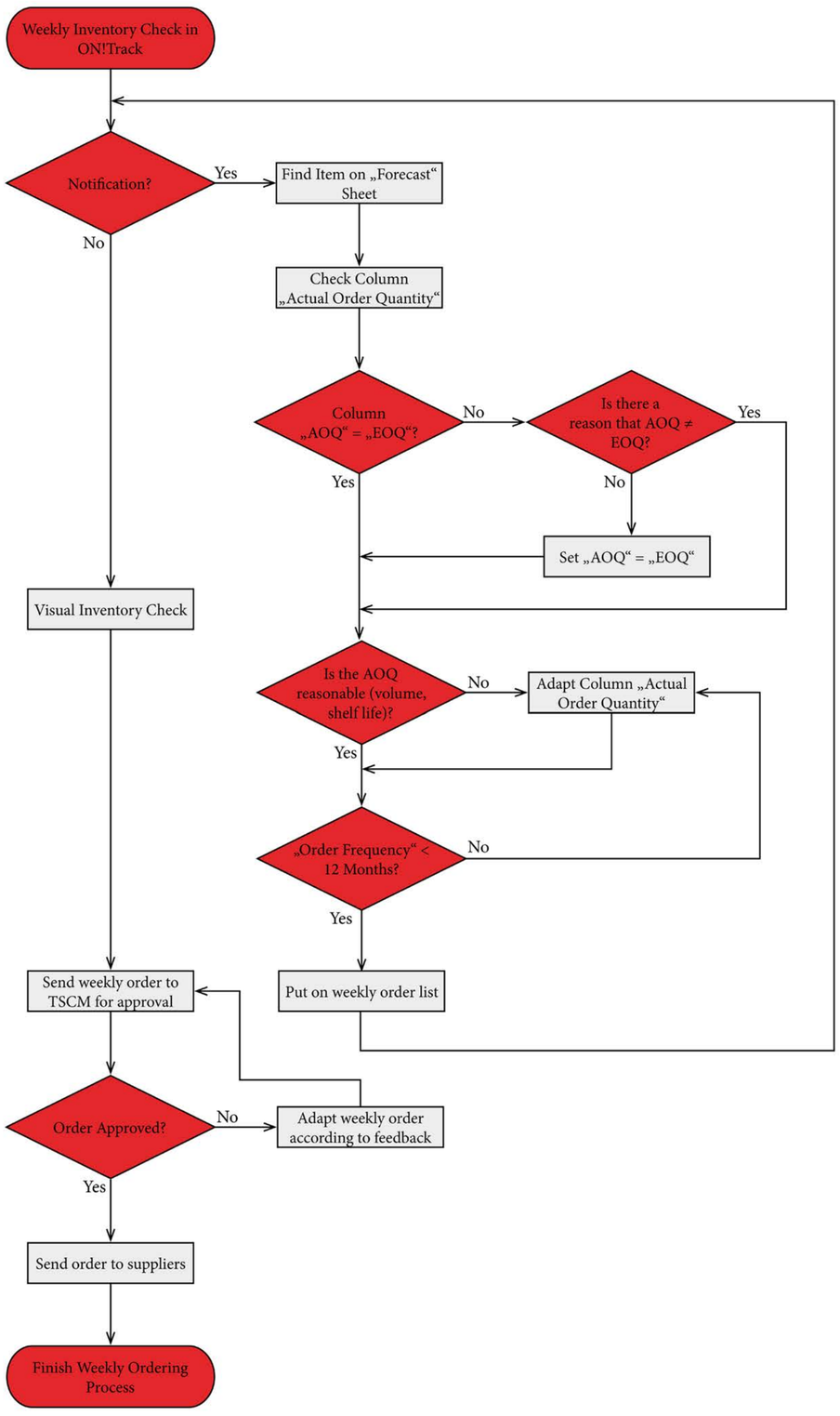
Technik & Architektur

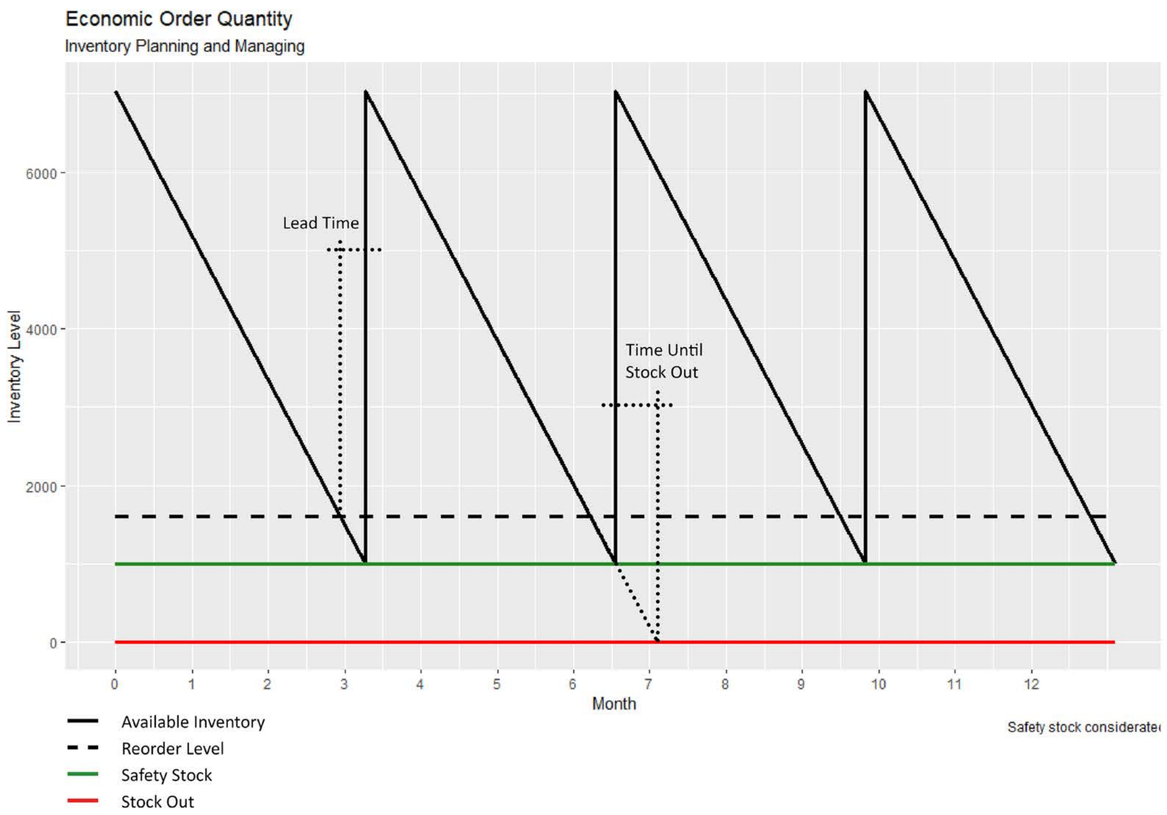
FH Zentralschweiz

Bachelor's thesis in Business Engineering | Innovation

Hilti Auxiliary Material Project in the TSC Glasgow

Order Process





Rouven Brazerol

Abstract

Recent incidents like the Suez canal blockage and the international cardboard shortage fortify the increasing importance and complexity of reliable supply chain management. Nevertheless, the most reliable supply chains cannot function if the companies expected material demand is erroneous appraised.

Because of that missing fundamental knowledge of the own material demand aims this report to improve the structure and transparency of the procurement, storage, and consumption processes of auxiliary materials in Glasgow's Hilti Tool Service Centre.

To date, the exact demand is widely unknown, and orders are irregularly placed when workers report low stock levels. This practice has led to stock-outs in the past, negatively impacting the centres ability to meet deadlines for repairs.

Alternative processes regarding procurement, storage and consumption were designed (picture left) to assign responsibilities and increase the transparency and traceability of the material flow through the TSC. These processes are supported by a software solution (picture top right) providing a digital twin of the physical inventory levels and an inventory model based on historical invoice data from Hilti's reporting system.

Calculations based on the model suggest that these changes introduce significant yearly savings in ordering costs and inventory holding costs while increasing the overall transparency (picture bottom right). These processes can be scaled up for implementation in all Hilti Tool Service Centres, leading to uniform and transparent auxiliary material handling and enabling benchmarking between the Centres for further optimisation.

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Semester:
FS 21

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