

An Optimization of Inbound Logistic Flows at Haldex by Applying Consolidation and Monitoring to a Distribution Network.

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Throughout history the same factors have been of major importance regarding the transportation of goods between companies: costs, speed and reliability. Nowadays these factors are even of increased importance as supply chain networks become more and more global and contain more diverse companies and products, the complexity of transportation increases. Although complex, companies still want their transportation to be performed as fast, cheap and reliable as possible. This means that both incoming and outgoing flows need to be well set-up and monitored to ensure that operations are formed in an optimal way. This is not as easily said as done as different supply chains have different characteristics. Various actions and methods can be required for different supply chains to transfer logistics into a strength instead of a weakness.

Haldex AB, a disc brake manufacturer, is one of the companies looking into improving their supply chain. Haldex sees potential cost savings and other improvement opportunities for the way they currently handle their transportation. One way to achieve those cost-savings is implementing a consolidation strategy to the intercontinental transportation. At the same time, information on future incoming loads is badly shared between departments resulting in unprepared departments and less-than-optimal smoothening of processes. This report aims to tackle these problems by suggesting possible implementations to Haldex's processes and its supply chain.

The results show that Haldex can further improve the inbound goods flow by increasing its reliability, transparency and most of all efficiency. It demonstrates that there are consolidation opportunities and what are the best ways of implementing these in practice. Furthermore, it serves as a best practice for similar industries and shows the enormous potential of consolidating items if the circumstances are appropriate and how it, combined with other process changes, can benefit a company on a strategic, tactical and operational level. The project combines a single case study with a simulation study. Both quantitative (data from databases) and qualitative (interviews) data are used as input for analysis and solution findings. The simulation study is performed by usage of a popular simulation tool called ExtendSim, which enables comparison of different scenarios. The simulation is used to calculate the exact costs of a consolidation policy that groups inbound loads from Chinese suppliers for combined transportation. As different scenarios come with different costs, the total savings depend on different factors but transportation costs should can be reduced with numbers up to 40 to 50%.

To reach these cost savings, a new process of purchasing components is proposed to enable the consolidation strategy where four different ports in China are used as consolidation hubs. But Haldex would not only reduce costs, it would also reduce necessary inventory levels and their emissions, thus benefiting Haldex on multiple levels. A link with consignment stock has shown that consignment stock and consolidation go hand-in-hand if consignment stock is applied to the items with the below average demand.

Other improvements can be made by better monitoring the flows and their arrival times as this will smoothen operations. A monitoring tool is proposed in this report that can be implemented to assist these improvements. The tool would display data on the future incoming loads and therefore assists the receiving staff in their preparations for the upcoming days. Finally, a more optimal arrival scheduling process is suggested to create a more stable workload which smoothenes the operations at the unloading area of Haldex.