



ROTHBAUM
CONSULTING ENGINEERS



EPPA
The European Trade Association
of PVC Window System Suppliers

Network Design combined logistics

Structures and processes for co-operative
reverse logistics for large load carriers
within Europe



An overview

With Supply Chain Design, an integrated network was developed for the reverse logistics of large load carriers, in which transport, storage and handling take place in a cooperative manner. For this purpose, existing structures and processes of the participating companies were harmonised and supplemented with new locations and relations. The aim was to reduce overall costs and the resulting CO2 emissions.

The companies

- Seven leading manufacturers of PVC-U window systems
- Consolidated annual turnover of over EUR 3 billion with more than 15,000 employees*
- Co-operation within the framework of the European PVC-U Window Systems Association (EPPA)

Services

- Modelling the reverse logistics of the seven participating companies
- Development of cooperative structures and processes for collaborative logistics using a brownfield approach
- Design of an optimal logistics network in terms of cost and service level using linear optimisation in AnyLogistix

Results

- Design of a cooperative logistics network that utilises synergies in transport, storage and handling
- Reduction of total logistics costs in the corridor of 14 to 25 % possible compared to the status quo
- Reduction of CO2 emissions by up to 28 %



Project description

PVC-U window systems are distributed in high-quality long goods racks in a closed loop. The seven participating companies each operate their own multi-stage reverse logistics system for returns. The costs of returns in these logistics networks amount to an annual sum in the double-digit millions. The industry association EPPA is therefore striving for more co-operation and commissioned Rothbaum to design the complex network and determine the savings in a valid way.

— Procedure

Firstly, Rothbaum generated transparency about the status quo in the seven companies in an extensive data analysis. Then the model was created, which could be approximated to within 0.4% of reality. Rothbaum then developed co-operative structures and processes, integrated these into the model, created the best possible setup of the logistics network in the supply chain design and evaluated the savings.

— Results

Rothbaum developed a two-stage implementation plan to establish the integrated network:

In stage 1, the transports and consolidation locations are used cooperatively. To this end, Rothbaum defined new collection areas and transport modes. In some cases, new routes were created. Significant savings can already be achieved in this first stage. As the realisation can be achieved by reallocating existing resources, only minimal investment is required.

In a second stage, new, dedicated network locations will be created at selected locations and integrated into the logistics network. This measure can create further synergy effects and significantly increase savings. The network can now be operated by a joint venture company.

‘Rothbaum's methodical approach and analytical expertise have decisively advanced our integrated logistics project.’

Charlotte Röber,
Managing Director EPPA



I look forward to your questions!



Dr.-Ing. Kai Philipp Bauer

Business Unit Manager Supply Chain

Rothbaum Office Hamburg

kai-philipp.bauer@rothbaum-consulting.de

+49 151 113 115 23