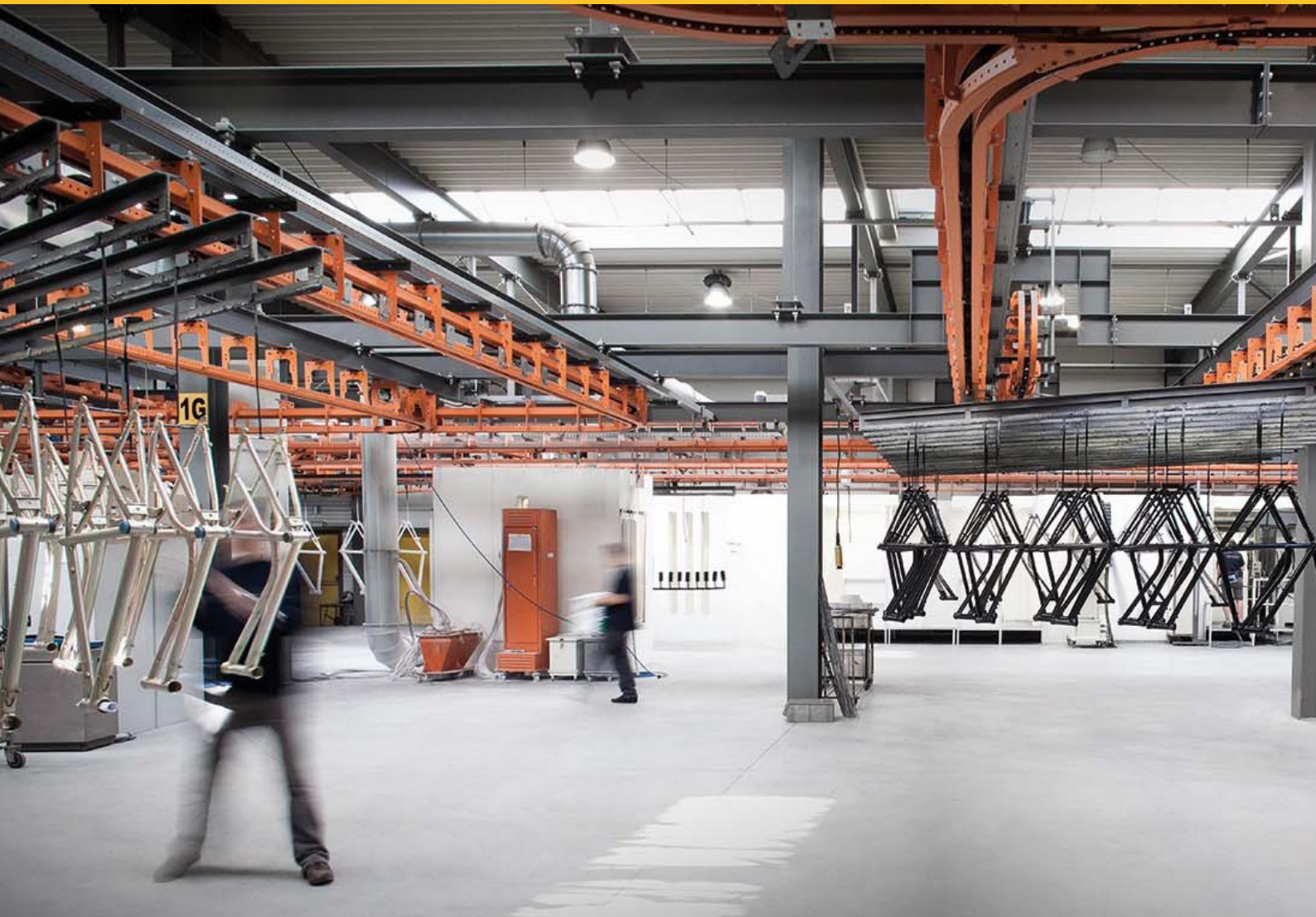


# Success Story

## Supply chain and warehouse optimization

Oxford Bikes & VDB Parts, BEL



# Supply chain and warehouse optimization

## Company description

In 1925, Alfred Van Den Berghe started the production of his first bicycles in Sint-Niklaas. Now, 3 generations later, Van Den Berghe NV has grown into a leading company within the Belgian bicycle sector. Oxford focuses on the production of a wide range of recreational and electric bikes. Around 8000 bicycle frames are kept in stock. The bike is built around the frame, which is primarily made of aluminium. The production process starts with the selection of the components for the frame. Afterwards, they are powder coated in the paint shop. After an extensive quality check, the frames are ready for assembly and handlebars, carriers and mudguards are mounted. Wheels are assembled. All bicycles that leave the assembly are stocked by type and await shipment to the Oxford dealers in Belgium and the Netherlands, where the cycling pleasure for the new owner can begin.

In addition to the production of bicycles, VDB Parts is a wholesaler that distributes spare parts for the aftermarket with around 10.000 items on stock, and provides a 24-hour service to its customers and bicycle dealers.

## Motivation and challenges

The continuous growth of both Van Den Berghe NV and VDB Parts leads to a necessity to store more article references in their warehouse as well as more stock per article reference. In addition, there is a need to buy higher volumes in order to get better buying prices as well as securing deliveries in a very challenging context (Corona). The warehouses' occupation rate (filled locations versus total available locations) today is above 98%.

Both companies thrive on quality performance: quality of product, traceability of their products through the supply chain and service level for their customers. To keep improving, there is a need for higher throughput whilst also improving their quality of services. The supply chain processes today are supported by ERP systems with limitations in terms of inventory management, warehouse flows and system quality control.

Consultancy agency De Putter & Co was assigned to propose best fit solutions for these challenges. By auditing the logistics flows, site layout and ERP functionalities and with analysis of the logistic data, De Putter & Co proposed an optimized design for the warehouse layout, a roadmap for the future logistic flows and recommendations for a new ERP and Warehouse Management System.

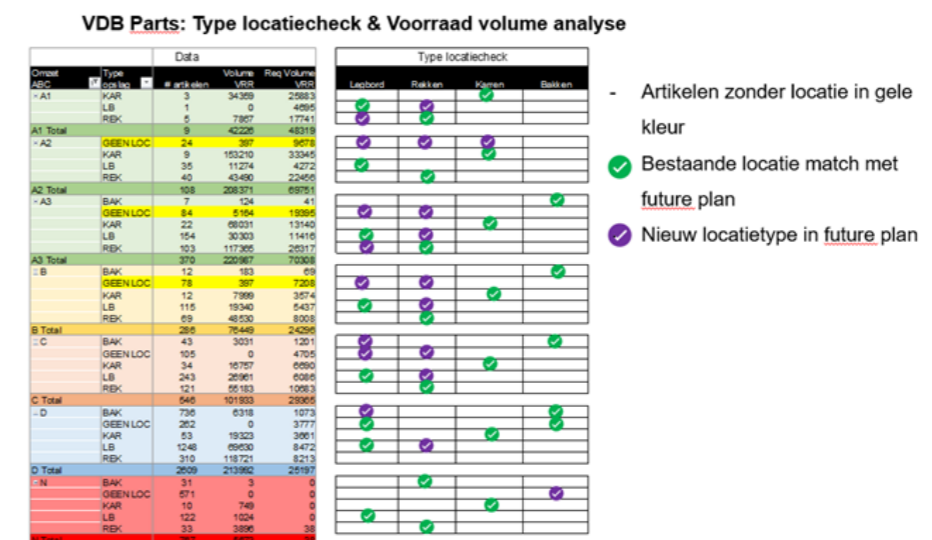
## Analysis

Most of the warehouse activities for Van Den Berghe NV and VDB Parts are paper based, either with direct ERP printouts or by modified excel extracts out of the ERP systems. Processes and flows are very people driven. A high knowledge level of employees in both back office as well as those executing orders is required to eliminate defects and work efficiently.

Inventory management is difficult: the ERP systems only hold the active location of articles and not the replenishment locations. There are no replenishment triggers and scanning of articles or bins is not supported. And finally, rotation parameters (ABC of FSN) are not calculated and thus not used.

Also, each company also has a separate ERP system, hindering synergy opportunities and creating additional workload and stressing the need for employee knowledge even further.

Both companies have a very good ABC ratio, only 15% of articles generate +80% of their sales/production requirement. Currently, an FSN ratio cannot be calculated, This ratio would be an even better indicator for most optimal placement of articles in the warehouse locations.



## Optimizations

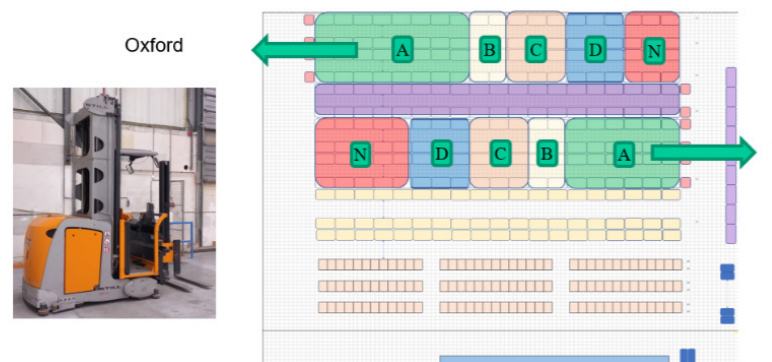
To improve space utilization - which can support higher inventory levels in both number of articles as volume per article - warehouse layout changes are critical. For rack locations, a very narrow aisle (VNA) racking type will provide +60% additional rack locations. By turning the current layout with 90 degrees the number of required aisles is reduced by 20%.

A new material handling vehicle - a combi truck - will perform the putaway and replenishment movements in these VNA racks.

Magazijn layout TO BE



The 90 degree turns also helps to improve the warehouse flows for both companies. For VDB Parts packing stations can be setup close to the staging and shipping area. A fast pick zone (Golden zone) for very high runners can be setup near these pack stations. For Van Den Berghe NV a drop zone for the production lines will allow the storage of production carts where the entire Bill of Material (BOM) for a production sub-flow is managed.



A new ERP system will replace both current ERP systems, which will improve the many synergies between both companies. In addition, the ERP system will be upfitted with a Warehouse Management System (WMS) layer in order to allow:

- scanning throughout all warehouse flows
- batch (multi order) picking by area type
- management of both active and replenishment locations
- replenishment triggering
- FSN calculations and reshuffle (optimizing of storage location for articles based on number of picks) activity triggering
- system driven priority and activity management
- cycle count embedded in daily activities
- reduced requirement for quality control activities
- easy to understand communication of warehouse performance indicators and dashboards informing both employees and management of status and trends

As a result, Van Den Berghe NV and VDB Parts will have the ability to store much more inventory, manage inventory more efficiently and increase their supply chain efficiency, quality and throughput whilst simplifying their processes and thereby reducing the risks due of employee turnover.

## Interview

### Were your expectations fulfilled – supply chain and warehouse optimization and support through De Putter & Co?

**Mario Rottier, co-owner Van Den Berghe / VDB Parts:**

“Thanks to the in-depth analysis of the supply chain with an experienced and independent approach by the team of De Putter & Co and Flanders Make in the frame of the Cotemaco project, we gained solutions and insights as how to organize and automatize our warehouses along with the new ERP implementation.

Rotating the existing warehouse layout 90 degrees, with the positive impact of increasing the available space and thus the additional available rack locations by 60%, was a real eye-opener.

This project has shown us as management where we can optimize our logistic flows and embed them in our new ERP and Warehouse Management System so that we can implement them in the near future.”

### How could COTEMACO support you?

Via the SME support programme, COTEMACO engages with SMEs from the automotive and food sectors through field labs. These regional field labs in the UK, the Netherlands, Belgium and Germany are showcasing key production steps in the automotive and food industries, in order to tackle current low sectorial awareness and knowledge gaps. The field labs will exchange knowledge on different manufacturing tasks, such as handling and (un)loading.

With the COTEMACO programme, manufacturing SMEs are guided through the process of adopting collaborative robotic and shop floor digitalisation technologies, from the exploration of technological opportunities to the detailed definition of a business plan.



## What is COTEMACO?

The project, which is an initiative of Interreg North-West Europe, aims to support around 60 SMEs in the automotive and food manufacturing industries with so-called „test environments“ and to encourage them to integrate collaborative robotic systems and digital technologies into their business. Accordingly, in addition to increasing production flexibility, the relocation of production abroad will be curbed and the number of jobs in manufacturing increased, which will generally lead to an improvement in the competitiveness of the companies involved.

In the project new technologies are implemented in application examples - the aim is to move from the prototype in the laboratory environment to the transfer to production, taking into account the legal situation and certifications.

**You want to become part of COTEMACO too?**

**You are interested in further Best Practice implementations?**

Then visit our website at:

**[www.robot-hub.org/cotemaco](http://www.robot-hub.org/cotemaco)**

Implementation partner:

