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# The Art of Optimizing Warehouse Design

written by **Jeffrey Buijk**

**O**n Monday 6 April, Dirk Baltussen and I talked to Rob Besten to find out what it is like to work at Groenewout. After successfully defending his master's thesis in Business Analytics and Operations Research at Tilburg University, Rob joined Groenewout as a consultant. He was particularly attracted to the firm due to the opportunity to analyze logistics processes, plus the idea of working on diverse projects appealed to him.

Founded in 1966, Groenewout is a consultancy firm specialized in engineering and optimizing logistics networks, including the necessary technical and data-driven analysis. Right from the start, Groenewout has always been focused on offering its clients a comprehensive range of solutions in support of their new-build and logistics redesign projects.

In this process, the company always acts as transparently as possible towards its clients in order to meet – and preferably exceed – their expectations. Groenewout currently employs around 25 people. Their roles and backgrounds vary,

ranging from business administration or econometrics to pure mathematics or engineering. Groenewout works with many different clients, but the majority of them are medium-sized companies or multinationals based in the Benelux. The scope of these projects can be European or global, however the client has its supply chain basis in the Benelux, UK, Switzerland or Germany.

## Supply Chain Projects

Groenewout works on many different supply chain projects like networking and feasibility studies.

**1)** As a first step, through computer simulation it is determined how the European supply chain footprint should look like, i.e. multiple warehouses versus one single warehouse and the corresponding route-to-market strategy. As a second step networking studies are consequently aimed at identifying the optimal strategic location for a newly planned warehouse. There are three different approaches in a networking study.

**a.** The first approach is based on the client's shortlist of possible locations for the new warehouse. In this case, Groenewout evaluates the shortlist to decide on the best location for the new warehouse.

**b.** In the second approach, Groenewout uses its knowledge of the logistics hotspots to draw up its own shortlist of possible locations for the new warehouse.

**c.** In the third approach to a networking study, the location for the new warehouse is not based on any geographical preferences. Instead, the main focus is on minimizing the costs in relation to the various inbound and outbound logistics flows. This entails analysis of the road and water infrastructure surrounding the potential warehouse location in order to ensure optimal accessibility, for example.

**2)** In feasibility studies, Groenewout analyzes the logistics inside a warehouse, such as when a company has outgrown its existing warehouse or when the internal processes are organized inefficiently. Groenewout's starting point is the core of the operation: the warehouse processes. Then, moving beyond the logistics systems, the firm also assesses the IT systems, the building and its technical equipment.

In general, the kick-off starts with a tour of the warehouse so that Groe-

newout can gain an understanding of all the relevant processes. After the data-gathering phase, the data is validated and analyzed. In the next step, several alternatives are designed, modeled and evaluated. In the final step, Groenewout works together with the customer to select one or two alternatives and subsequently provide a detailed calculation of them. If the customer is staying in their current warehouse, any restrictions are taken into account.

If, on the other hand, the customer is building a new warehouse, there is more freedom to design the building first and foremost to support process efficiency. In that case, Groenewout is able to propose some minor changes to the building design if they will optimize the operational performance.

#### Project Team

Groenewout always starts every project by simulating the client's current situation. This reveals the process bottlenecks as the basis for technical analysis and the proposed solutions. There are always at least two – and usually three – Groenewout employees involved in every project, including one lead consultant. Groenewout's engineering specialists provide input into the technical analysis whenever necessary. Additionally, if Groenewout is also to be involved in the realization of the warehouse, that aspect is always handled by a consultant with an engineering background.

#### Different and Interesting Projects

According to Rob, one of the best things about working for Groenewout is the opportunity to see a process evolve from start to finish. He also enjoys the sense of satisfaction when a warehouse project is completed and the results are clearly visible. Since Groenewout has many different types of clients, each with their own unique processes and approaches, no two projects are the same. Change is a common thread running through most of the projects.

"When working at Groenewout, you will deal with many different projects. Each project will take approximately three to four months to complete," explains Rob. "A Groenewout consultant typically works on three or four different projects for different clients at the same time. Each project is usually unique, which means that at the start of every project you have to sit down with the client to discuss what they want to achieve from the project. After that, because Groenewout does not work with a standard package, tailored analysis and models are set up. Groenewout's employees are given a lot of autonomy while also being part of a team at all times. As an econometrician at Groenewout, you will have the possibility to use the data analysis skills that you've learned during your studies. Working on so many different and diverse projects is the ideal opportunity to enrich yourself." ●



**Rob Besten**

**Graduated from Tilburg University in 2018**