1 INTRODUCTION

Every day, sub-optimal planning in retail translates to mountains of food waste, excessive amount of trucks transporting goods between warehouses and stores and too high storage needs. RELEX Solutions, company founded in 2005, has set out to utilize the latest technology and research to solve the toughest challenges in grocery retail: demand forecasting, inventory and transport optimization, and replenishment automation.

Customers around the world use RELEX systems to optimize their store replenishment to minimize excess stock levels while keeping shelf availability of their products on the level required by consumers. As the result, many retailers have been able to significantly cut their food wastage, CO2 emissions and total logistics costs while at the same time increasing their sales. Among the customers of RELEX are many of the world’s leading retailers and suppliers including S-Group, Coop Denmark, Rossmann, Morrisons, and WHSmith.

RELEX Solutions employs around 500 people at its offices in the UK, Germany, Sweden, Norway, Denmark, France, Italy, Spain, in the US and at its Helsinki headquarters.

During the year 2015 Aalto University software project course the RELEX Goes Mobile team won the quality award and year 2017 RELEX Cruncher made it to the top three.

In Grocery retail, a typical grocery store has deliveries incoming from dozens of different vendors, e.g. dairy products and bread delivered from closest dairy and bakery, local fruits and vegetables directly from local producers and farms, frozen articles delivered separately in refrigerated transport, and rest of the articles from retail chain’s own central and local warehouses.

Each of these vendors typically have only certain weekdays when they do the transportation to a specific region and store. A sample case is a local tomato producer delivering their tomatoes every day to the stores in nearby big city, but only every other day or every three days to more distant smaller towns in the region. Or refrigerated transport for ice cream that needs to take place every day to hypermarkets during the summer because of high demand, but in smaller stores and during the winter even delivery just once per week is enough, and thus optimized transportation schedules save transportation costs.

In a grocery retail chain with hundreds of stores spread over the entire country and dozens of local and regional vendors supplying the stores, the number of different delivery schedules grows huge. And it is not only about having them defined once: For any bigger bank holiday weeks such as Midsummer, Easter, or Christmas, there are changes needed in these calendars to allow for right products to be delivered on time for each day.

To some extent the selection of best delivery days can be optimized, and the logic exists as part of current RELEX application, but in many cases, vendors have restrictions on possible transportation days and such restrictions need to be maintained somewhere before the actual replenishment can be optimized.

In many grocery retailers this maintenance work is done with simple, unintuitive tools that are not supporting the work properly and require a lot of work and easily lead to costly mistakes or at least suboptimal scheduling. The tools for the maintenance are also very often self-made, meaning any further development of them would be costly or difficult, and special cases such as bank holiday weeks are quite often simply planned with Excel.

Building a tool for delivery calendar maintenance would significantly reduce the amount of work required for such maintenance, allow for better visibility on special cases where too frequent or infrequent deliveries
would cause excessive stock, spoilage, CO2 emissions or other costs, and secure against human mistakes. Many of RELEX customers are already on the line waiting for an improved tool to plan their delivery calendars.

The main end user group for such tool would be transportation management and store replenishment teams in retail chains. In a typical case, a small team is dedicated for maintaining the calendars and agreeing on changes in them with vendors and own warehouses and transportation logistics.

2 PROJECT GOALS

Retail Delivery Calendars application would be a powerful and user-friendly tool for maintaining delivery days and lead times on different aggregation levels and time periods.

The application:

1. ...must have a user-friendly and intuitive user interface
2. ...must be capable of maintaining calendars for 2000 stores with 200 vendors in each store and for a year into the future
3. ...must have analytics for easily spotting problematic and erroneous calendars
4. ...should have a basic integration to RELEX replenishment system
5. ...should be developed in co-operation of our project teams working directly with customers
6. And the most important goal: The project team should try their best and have fun while doing it! 😊

3 TECHNOLOGIES

The team can propose the technologies they are most familiar with or which would suit the project goals best. RELEX software development team can help with tool selection and support with any tools familiar with.

4 REQUIREMENTS FOR THE STUDENTS

High motivation, desire to learn new and willingness to create a real tool for real users. Vision extending over the scope of this project.

Currently RELEX application frontend is built with React, and it is preferred (but not mandatory) technology for application frontend. Basic JAVA understanding is a benefit.

The scope of the project is quite flexible. Minimum viable product for basic calendar maintenance is relatively easy to achieve, but capabilities to cover special bank holiday weeks properly can be considered challenging.

5 LEGAL ISSUES

Intellectual Property Rights (IPR):

2. THE CLIENT GETS ALL IPRS TO THE RESULTS.

Non-disclosure agreement (NDA):

2. SIGNING THE NDA INCLUDED IN THE AALTO’S CONTRACT TEMPLATE IS REQUIRED.
6 CLIENT

The RELEX team consists of Product Owner, Solution Expert and steering group. Technical specialists are available on demand and UX team is very willing to help steering the UX of the tool.

The team will be given a cloud server to develop and run the application. Laptops are available for the team, if needed. Rooms can be booked on demand.

Product Owner
Antti Toivonen
Antti.toivonen@relexsolutions.com
+358 40 8656 947
Postintaival 7, 00230 HELSINKI

Solution Expert
Ville Ääri
Ville.Aari@relexsolutions.com

Steering
Mikko Minkkinen
Mikko.minkkinen@relexsolutions.com

Steering
Tapio Pitkäranta
Tapio.pitkäranta@relexsolutions.com

7 OTHER

Documentation and all presentations in English.