

Practical, flexible and agile

Contargo develops its own software using the Scrum method

Mannheim, 15 August 2016 – Contargo is currently planning its own Terminal Operating System, a comprehensive software system to optimise operational processes at its container terminals. To develop this software, the company has formed two teams, made up of its own employees plus the personnel of a service provider. The project is being realised with Scrum, a method for the management of agile software projects. Contargo has been using this method since 2010 and has developed many high-performance products with it.

“Scrum” comes from the world of rugby and describes the intense interaction of the teams at close quarters. Similarly to the sport, the teams of software developers work as small, self-organised units. The external input simply specifies the general direction of play. It is the teams themselves who determine the tactics for achieving their common objective.

Specialist knowledge meets technical expertise

The starting point in the Scrum method is the “product owner” (the customer), who specifies what is required from the product, in what is known as the “product backlog”. Contargo’s approach differs from the usual Scrum method in that there are both specialist and technical product owners. A feature of Contargo’s approach is the close collaboration of the specialist (logistics) employees in a user group, supporting the specialist product owners and contributing their experience to the project. The user group is largely responsible for the function of an application, because every project is preceded by a requirement analysis. This Requirements Engineering team also supports the project throughout the development phase, by giving user feedback on the current version of the project.

Teams develop software step by step

The developer teams receive individual work packages in the product backlog from the product owners, every two weeks. The teams are cross-functional,

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meaning that each contains logistics specialists and technical software experts, developers, supporters, etc. It is very important to Contargo that the developers should consider not only technical aspects, but also the product owners' specialist vision. In daily meetings, each team decides itself who is working on what, and what problems may arise. Every week a cross-team meeting takes place. Due to the distances involved, various participants at Contargo may take part by videoconference.

Regular feedback enables incremental improvements

Every two weeks, the teams presents its results live in the system to the product owner and the future users. Users' feedback flows back as an input into the planning for the next work package, and the procedure begins all over again – until a finished product is obtained.

Once all the basic requirements have been met, the software is tested out in a pilot phase at a small site. Here, more users become familiar with the software and pass on their first impressions from daily use to the developer team. However, even later on when the program is in use at all terminals, it is never finally finished – because it can be repeatedly adapted to changing framework conditions.

This sounds rather complex, but it is not without reason that Contargo made the decision to develop the software in-house: "With central IT systems, it is the long-term security of investment which is decisive for Contargo", explains Heinrich Kerstgens, Co-Managing Director of Contargo GmbH & Co. KG. "Thus with systems like a Terminal Operations System, we need to have the source code available. A call to tender made it clear that no well-known manufacturer was prepared to meet this requirement. So we decided to develop the TOS software ourselves."

This is what employees say about Scrum:

"The software for the operation of the Container Yard at Daimler's Consolidation Center in Speyer was developed with Scrum. I took part as a specialist Product Owner and I am strongly convinced by this method, because you don't have to spend endless time on theories, but the first results are soon there, and then they are gradually expanded and improved. Another advantage is that if new demands arise – like the recent requirement to weigh containers – the software can be extended without any problems."

Ulrich Weiss, Shift Supervisor Contargo Wörth-Karlsruhe GmbH

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"As a specialist Product Owner in a Sales context, I am responsible for our quotation and price systems. I am in contact with the development team every day by videoconference, so that we can always meet new challenges promptly here. Via our sales team I can quickly gather feedback on our developments, and can also pass on ideas from Sales as an input. Our customers also use our systems intensively and contribute ideas."

Elena Mirolevska, Product Owner, Contargo GmbH & Co. KG

"I am involved as a specialist Product Owner in the development of the Terminal Operating System for Contargo. So far we have defined the specialist requirements and developed User Stories. I am working with Scrum for the first time, but I anticipate that with this method we shall be able to start much sooner with the testing of the software at small sites."

Sven Zölle, Terminal Manager Contargo AG

"I supported the development of software for the DCC in Speyer as technical PO. Not only did I experience at first hand the way the software grew bit by bit – I also saw how happy the customer was with our fast, precisely tailored solutions."

Gert Lohmüller, Product Owner, Contargo GmbH & Co. KG

"I have been working for two years as Scrum Master. In this time I have come to realise that the strength of Scrum lies in its flexibility – the product adapts to the wishes of customers and users. Moreover, the customer and user proximity makes the whole of the product development more transparent. The result is: more confidence in the development, and higher acceptance of the product when it is delivered. The product quality minimises the number of complaints and increases customer satisfaction. Conversely, the positive feedback from customers and users is motivating for the team. This results in an absence of the typical project delays."

Frederick Meseck, Scrum Master, Synyx GmbH & Co. KG

"In my work as a developer, it is my aim to simplify the customer's daily work by providing the appropriate software, while at the same time satisfying my own personal standards for high quality software. What I particularly appreciate about Scrum is the possibility for continuous improvement."

Aljona Murygina, Software Developer, Synyx GmbH & Co. KG

About Contargo

With an annual transport volume of 2.3 million TEU, Contargo is one of the largest container logistics networks in Europe. Contargo integrates container transport between the western seaports, the German North Sea ports and the European hinterland. The enterprise has 25 container terminals at its disposal in Germany, France, Switzerland and the Czech Republic. Contargo also operates its own barge and rail lines. In 2015 the workforce of 868 employees achieved a turnover of 405 million Euro.

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Scrum Glossary

Daily Scrum

Short daily update meeting of the team.

Product Backlog

A list of requirements from the product, arranged in order of priority, drawn up and updated by the → Product Owner. The requirements are formulated in → User Stories.

Product Backlog Refinement

During the whole process, the → Product Owner and → Team continue to develop the → Product Backlog. They order, prioritise, remove items, add details, summarise, etc.

Product Owner

The customer, who specifies and prioritises the requirements, and later assesses their realisation in terms of functionality, performance and usability.

Scrum Master

The Scrum Master is coach, moderator and facilitator. He organises the process, makes sure the rules are kept to, and removes obstacles, but he does not give any work instructions.

Sprint

Scrum projects are developed by building them up step by step (incrementally). The individual work steps are called Sprints.

Sprint Backlog

is the work package for the next Sprint

Sprint Planning Meeting

At the start of every → Sprint it is held as a kick-off. The aim is to take a work package from the → Product Backlog and create a → Sprint Backlog from it.

Sprint Retrospective

Meeting for feedback from a Sprint, and for drawing relevant conclusions for improvements.

Sprint Review

At the end of every → Sprint the → Team presents the results of its work to the → Product Owner and all interested → Stakeholders, "live" in the system. The feedback flows back into the subsequent work.

Stakeholders

People who have an interest in the project results (financiers, users, or others people affected by the project).

Team

The interdisciplinary Scrum Team converts the product requirements into functionalities. The team, consisting on average of eight people (developers, Scrum Master and Product Owner) is self-organising.

User Story

A requirement, expressed in everyday language, which formulates a field of application in plastic terms, and considers what role a requirement is intended to perform within an organisation, in order to attain a specific goal.

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