How agricultural machinery manufacturers develop agilely with Scrum

Faster to the destination

Although the conversion to the new Scrum methodology is a very ambitious task, it saved an important project for an agricultural technology manufacturer. However, one has to know how to proceed.

In some projects, there is simply something wrong. Time and costs get out of hand. The results remain disappointing and the growing pressure from management does not really help. A large agricultural machinery manufacturer had to make such an experience during the development of a new planting machine. The unpleasant mixture of a high degree of organisational and technical complexity, unrealisable schedules and cost plans, changing requirements and a meanwhile frustrated development team had led to an important development project threatening to fail at the long-established agricultural machinery company. Project was in danger of failing. Particularly due to the lack of clarity in the project, it no longer seemed possible to identify concrete causes for the poor progress. There was therefore no question that something had to change. In this situation, the idea arose to approach the project anew with agile methods.

Agility is a question of culture

In addition to other providers, the experts from CO Improve, a consulting firm specialising in the agile development of complex mechatronic products, were invited for initial preliminary discussions. As part of an 'Agile Awareness Day', a working day was initially dedicated to the topic of 'Agile Corporate Culture' in order to discuss it with all members of the management. The aim was to make everyone involved aware of what an agile pilot project means for the entire company and top management as a consequence. CO Improve project manager Gerrit Gerland explains: "Our experience has shown that many companies are interested in agile working but are not really prepared to create the necessary framework conditions. This would mean that failure would be programmed. Instead, all those responsible should understand in advance exactly which approaches they are introducing into their company and how leadership and work culture will change." The management of the agricultural machinery manufacturer was finally convinced by this careful approach and the concept of the agile Scrum methodology. Thus, the project could be implemented step by step.

Step one: Implementation of the change team

In order to determine exactly where there is a need for change and how the obstacles can be removed, an overarching 'Change' project team was first formed. This team was first familiarised with the iterative approach of Scrum. "Central elements of Scrum are clearly defined roles for all team members and the organisation of work in so-called sprints, which always lead to a useful result," adds Gerland.

The 'product backlog', which defines all the requirements for the product and the goals of the project, serves as orientation. In consultation with the so-called 'product owner', the developers draw from these comprehensive requirements for each sprint the tasks that they can master in the given time according to their experience. The team is supported by the "Scrum Master", who has the task of helping the team to apply Scrum practices correctly, to remove obstacles and to provide the team with the resources and means it needs to complete the task in the specified time. The team is supported by the Scrum Master, who is responsible for helping the team to apply Scrum practices correctly, removing obstacles and providing the team with the resources and means it needs.

Step two: Reducing complexity

Very quickly, the change team identified the already overflowing complexity of the planned project as a crucial obstacle. "Therefore, a division was made in the overall project; from then on, the project included a number of modules and functional assemblies," Gerland continues. Modules and assemblies were then handled by module teams and a functional team, making the development task per team much more manageable and clearly defined. The higher-level control was taken over by a team with responsibility for the overall machine.

Step three: Focusing and prioritising

In order to give all the developers involved the opportunity to focus on the tasks at hand, the project had to be clearly prioritised in the company as a whole. This means that all team members must devote at least 80 per cent of their resources, i.e. at least four days per week, exclusively to the project. In order to implement this focus in practice, a spatial separation was carried out: The development teams were housed in a separate building.

But that alone was not enough. In fact, prioritisation had a significant impact on other parts of the company as well. Even the 80 per cent rule meant that other employees had to take over team members' old tasks. This rule caused no small amount of resentment among department heads and colleagues. Together with the consulting partner, the change team developed a communication concept to convince all levels of the company and to get all stakeholders on board.

Step four: Redefine your own understanding of your role

A certain amount of convincing was also required vis-à-vis the management. Even though their members had consciously decided in favour of the agile project, it was not always easy to leave aside the usual control impulses and routines in the context of an agile culture. It was not always easy to leave aside the usual control impulses and routines, to show trust and appreciation for the team and to give clear and constructive feedback within the framework of an agile culture.

Gerland: "In this context, it was helpful to agree that the management was only informed about the current project status in the regular so-called sprint reviews and only here was given the opportunity to give feedback to the team. Feedback from the team to the management proved to be just as decisive as feedback to the team." After all, in an agile culture, the leadership level primarily takes on the role of empowering employees so that they can solve their tasks. "This clearly outlined the task setting of the company's management team," explains Gerland. "This is: to strengthen the personal responsibility of the employees, to remove obstacles from their path and to create the best possible framework conditions for them."

Agile success is shared success

As a result, the project is now running smoothly within a realistic time and cost framework. What is surprising is that the unrealistic original date for the presentation of the newly developed product only had to be postponed by almost six months. The guarantee for success is the complete restructuring of the project and the cultural change in the management circle. What is even more pleasing is that due to the successful agile cooperation, all participants, i.e. team members and stakeholders, can now identify one hundred percent with the project and the new product development method. The company plans to continue working on other tasks in an agile way in the future. Overall, the company is aiming for a hybrid structure in which simple tasks are handled conventionally and complex challenges are handled agilely.