

ONE-SKY-BY-ONE-SYSTEM

HOW A “SOFTWARE FACTORY” HELPS TO IMPLEMENT SKYGUIDE’S VIRTUAL CENTRE STRATEGY



MARCO SIEBER

Head of Data Services, Software Integration Lead

Marco Sieber leads a team of 120 people and is responsible for implementing and operating the software components of the skyguide Virtual Centre Tranche 2 (VCT2) Programme. His challenge is to gradually transform the existing Air Traffic Control systems into a new service-oriented architecture while assuring availability of the systems, 24/7 – without significantly increasing skyguide’s IT workforce. Marco firmly believes that the Programme can only be successful by introducing best-in-class IT practices into the company and by improving IT development in the form of a “Software Factory”. As Marco explains here, this framework promotes a new, more fluid way of developing, implementing and integrating IT solutions and a quicker way of delivering value to his internal customers.

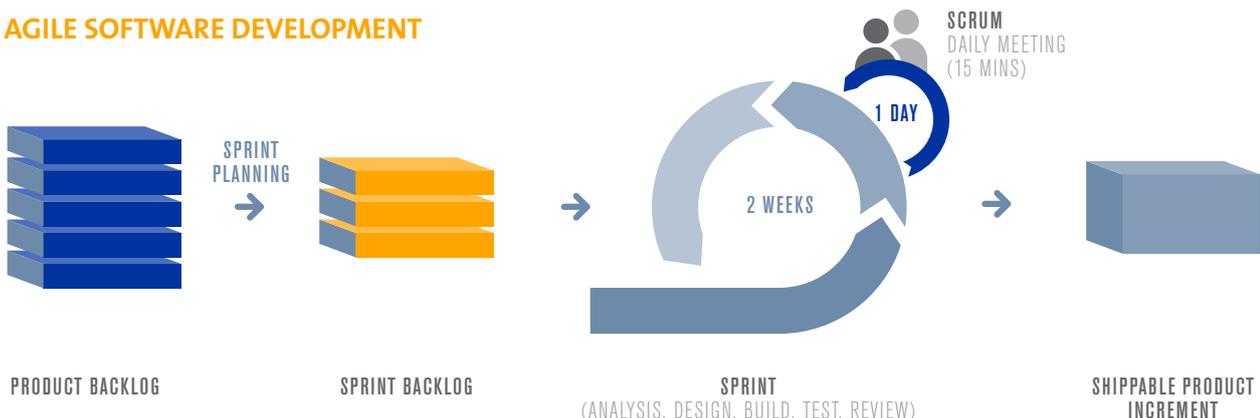
SKYGUIDE What is an IT “Software Factory” and how does it work?

MARCO SIEBER Over the last 10–15 years, the software industry has become more mature and industrialized by adapting and integrating key concepts from the manufacturing world. Two of the main concepts that have emerged are Agile Development and DevOps. A Software Factory is not a physical factory, but rather a software engineering framework rooted in best-in-class approaches. It defines the principles, methods and tools for how we build, integrate, test and deploy software. It also helps us manage innovative projects we are working on, such as the Virtual Centre, and classic IT projects. The Agile principles help us to focus on gradually delivering value to our clients, and increase the project success rate by keeping costs and planning stable, by improving transparency and

adaptability, and by reducing the risks. In “Scrum”, which is the most common Agile practice, projects are broken down into pieces of functionality, prioritized by business value, and delivered in short two-to-three week cycles called “sprints”; software is built incrementally from the start of the project, rather than being delivered all at once near the end. Cross-functional teams take full responsibility to deliver the agreed scope of each sprint. The Agile approach, which is time-boxed, more naturally allows for change. It also allows for more predictability in terms of cost and time, which is essential on a programme as broad and ambitious as Switzerland’s Virtual Centre.

While Agile helps us to develop the “right” system in an efficient way, the DevOps principles allow us to bring the software components into production more smoothly,

AGILE SOFTWARE DEVELOPMENT



efficiently and safely. DevOps bridges the gap between the development and the technical operations units by improving collaboration and communication, through integrated processes, tool-chains and more automation.

You are working with a new strategic partner to develop the Virtual Centre. Does this add extra complexity?

To fulfill all the tasks we need to complete, and to migrate to a new platform, the capacity and the capabilities of SkySoft and skyguide simply weren't enough: we couldn't build and implement everything ourselves. We decided to team up with Tata Consultancy Services (TCS), a branch of the large Indian-based conglomerate, Tata Group. TCS is a really strong partner that has had huge success in similar wide-ranging IT transformations. They are true partners on this project, and are based alongside us, in-house. We are now building cross-functional teams composed of skyguide, SkySoft and TCS employees. This close partnership will help us to internalize the know-how from TCS, which we require in order to maintain the new solutions in the future.

“ A SOFTWARE FACTORY IS A FRAMEWORK THAT BRINGS BEST-IN-CLASS SOFTWARE ENGINEERING PRACTICES TO SKYGUIDE, WHICH IS NECESSARY TO SUCCESSFULLY IMPLEMENT OUR BOLD VISION. ”

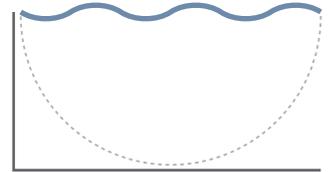
What changes or challenges have you experienced in VCT2 so far?

We have used Agile principles on a variety of projects for a few years now, and we have seen improved collaboration with our clients and better quality software with a predictable cost and time plan. And this is great! Using these principles on a larger scale – e.g. the scale needed to implement the Virtual Centre – does not come automatically, though. Implementing the “Agile and DevOps way” is not just about implementing new processes, methods and tools – it demands a cultural change. And it requires a learning organization and continuous improvement. We have only just started the journey. Showing successes along the way will increase acceptance of the new principles across all levels of the organization and will support this cultural, internal shift. Despite the learning curve, we

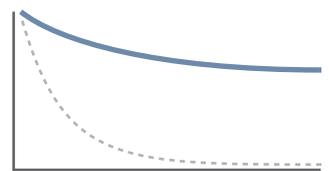
AGILE DEVELOPMENT
Value proposition

— AGILE DEVELOPMENT
- - - - - TRADITIONAL DEVELOPMENT

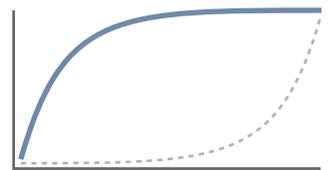
VISIBILITY



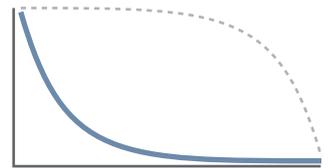
ADAPTABILITY



BUSINESS VALUE



RISK



are delivering value faster and increasing the quality of what we are producing too. Management enjoys greater predictability about when we deliver value at which cost. But they do not get a large, detailed document at the beginning of the project describing what we will deliver! This does create some uncertainty. The yearly review and approval cycle is the answer to this concern. We now need to prove that, through close collaboration between clients and the engineers, we are able to choose the right scope and deliver maximum value to the company.

I am convinced that, through continuously living and breathing this “new way” to deliver projects, we will create more success stories, have more people on board, and become even more confident that we are on the right path. This will create more and more momentum for positive change. ■