

# Facing Fake-to-Fake: Lessons Learned from Distributed Scrum

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Because of dispersed divisions and consultant activities, the Saxonia Systems AG tries to realize virtual collaboration in order to reduce travel costs and demotivation of their employees. In this experience report we describe our challenges when implementing distributed Scrum and how we solved them. However, the main innovation started from the team members working in agile and distributed projects. Now the main concepts influence the whole company. We come to the conclusion that Agile and distribution is not a contradiction. Even more, we believe that agile principles can compensate some risks of distributed development. The main challenge is that the face-to-face communication is limited which might be experienced as non-natural or "faked". Therefore, we introduced tools to improve awareness and expressiveness of each team member. In this paper, we show what we have learned from past projects and what we have done to support distributed teams.

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## 1. INTRODUCTION

When participating in a video conference, what can we see? Maybe faces on a screen, maybe a room? Finally, only a clipping from the whole scene. Is the scene real or just a special setup for the call? The voice sounds artificial – was the last sentence a joke? The connection is lost, so do we know what our team mates are doing after the call? We cannot see them, they cannot see us, so why bother? Can we trust them? Can they trust us? Of course. Is it real or is it fake? Is it face-to-face or "fake-to-fake"? Stop thinking, keep working! We need to be focused. The right time to get a coffee.

Such thoughts might occur when working in dispersed teams. They have considerable impact on motivation, trust, performance and creativity. However, the Saxonia Systems AG is a mid-size company with about 220 employees in Dresden (Germany) which mainly sends consultants to German-wide customers. It has sub-divisions in Hamburg, Munich, Leipzig and Görlitz. Therefore, performing distributed work with low cost and low stress for employees has always been an essential question. Besides the hints from research, e. g., that trust decreases significantly after eight weeks missing face-to-face communication (Handy 1995), we recognized that virtual collaboration is limited and challenging. Moreover, the rise of agile methods seem to enforce the problem, because distributed agile was not recommended anyway.

It is not without reason that the agile community is skeptical about the implementation of distributed Scrum teams, because distributed teams suffer from slow feedback, lack of emotions and lack of personal contact. These may lead to insufficient knowledge transfer, lack of team cohesion, hidden agendas and loss of key resources which are identified as further main risks in distributed teams (Reed & Knight 2010). Moreover, we found out that we need to cope with more complexity regarding communication and the use of collaborative tools. Finally, critical roles such as Product Owner and Scrum Master cannot be at the same place at any time. Problems, conflicts and impediments may take much longer time until discovered and solved.

However, as agile values suggest to be open to new ideas, we tried to work in distributed teams and collected our experience to share it with our teams and the agile community. Our teams were free to decide whether to work co-located or to save travel time and the management supported them with tools and hardware. This initiated continuous improvement and innovation. Today, we have a package of measures which we like to share. In the first part of this paper, we show our first setup of a virtual project room. Then, we describe how we iteratively improved our concept and we share some best practices according the ETEO concept regarding the project room, the tools, the organization and the team. Finally, we show the impact of these concepts on the whole organization and give an outlook to still appearing challenges.

## 2. HISTORY

In most cases, developers need to travel to our customers, partners and sub-divisions in order to perform their work. Sometimes it was possible to work remotely which is mainly not a problem, when tasks and requirements were clear. However, we could not ignore the fact that agile frameworks such as Scrum become more important. Finally, more and more project teams in our company began to work with Scrum. Finally, we tried to implement Scrum also in distributed teams. In 2010, we started with small in-house projects with team members in Dresden and Görlitz. However, today we also realize projects with our customers in Munich, Hamburg and other locations.

### 2.1 First distributed Scrum project

Because we thought that the missing face-to-face communication is the most important problem for a distributed Scrum team, we initially installed a video conference system which was running the whole day. Figure 1 shows a meeting in such initial room setup. What was the experience? The team found it great to see team mates if they are busy or if they can be contacted. Also, the team felt as working on one topic and to pursue a common goal. However, the image was very small and the sound quality not very good. The microphone could only be activated when someone wanted to talk; otherwise it amplified unwanted sounds such as keyboard, hardware or street noise. Further, the microphone was far away from the speaking person which led to difficult conversation. Finally, some team members felt to be observed instead to work in a familiar project room. In fact some developers could see the monitor of the others all time, while their own monitor and face were hidden. Overall, the atmosphere was not very trustful.

Figure 2 shows a daily meeting from our colleagues in Dresden and Görlitz. We see a nice nearly face-to-face communication. However, the TV could not show all members in real size. Further, an important tool was missing – the Scrum board. The teams tried first to synchronize paper-based task boards. However, this was a tedious and time-consuming task for a 15 minute meeting. Therefore, we tried some tools such as Jira to perform the Daily meeting. However, because a screen was missing, we needed to use our laptops. This was not useful because our colleagues needed to turn around and to use the mouse to move tickets. Finally, it was time-consuming and the real meaning of the Daily meeting was in danger.



Figure 1. 1st version of the distributed project room



Figure 2. 1st version of the daily meeting

### 2.2 Second distributed Scrum project

Our first approach seemed to be promising. However, the main lessons we learned are that we cannot keep the microphones on and the daily is complicated. As a result of a missing tool for the Daily meeting, some developers created a first version of a digital Scrum board which fully synchronizes as many instances as required. The first version was an add-on to Jira and could be used to change task states and to discuss details of the task without to interrupt the meeting. In the last two years, the digital Scrum board evolved to mature software and is used in our teams as a collaboration tool mainly for the daily but also for planning and grooming sessions. It provides the transparency regarding the work status which is essential in a distributed team. Today, the Scrum board is product of Saxonia Systems AG which can also be used in conjunction with Jira Agile from Atlassian and the Team Foundation Server (TFS) from Microsoft.

The second thing we have done was to extend the video conferencing hardware to give the team the impression of an extended project room. This can be seen in Figure 3. Further, we rotated the tables, so nobody can see the monitor of others. The digital Scrum board in the background plays now an integral part of the project room and provides transparency and instant feedback to the current progress. The daily is now performed in the front of the board. When the cameras are aligned in the right way, we can simulate a half circle as shown in Figure 4. Because of the high-definition video screen, it appears that the persons in the other project room are watching at the same Scrum board. During the meeting, non-verbal signals play an important role and we can be sure that everyone is following attentively.



Figure 3. **The 2<sup>nd</sup> version of the distributed project room**

This has been our first experience and improvements regarding the work of distributed Scrum teams. Further, several teams have worked with this setting. Since, it gets more and more important to our company, we decided to collect systematically the challenges and best practices from our teams.

### 2.3 Harvesting experience

The most valuable thing is the experience of our teams working distributed. Since the team members do not want to travel much, they have a high motivation to get things right when working together. By the agile philosophy our teams also tried new things to cope with the lack of communication. To collect this experience, we created interview guidelines regarding the team, tools, project room and organization.

One question was about the general project setting, e. g., how many locations and how many team members are working at each location. Other questions asked something about the project room setup, the hardware, the tools, and how the team has communicated. We asked what problems have occurred and how the team has solved them. Finally, we asked how the team has organized its meetings and what processes and rules they applied and what they wished from their organization. We conducted 15 interviews and transformed the answers to a triple of experience, hypothesis and concrete action to solve the problem or to enhance the collaborative work.

In Table 1 we list some examples. In many times, team members have already tried actions, which we collected in our best practice catalog. The final question in the interview was, if the virtual project room helped to stay in touch with other team members and if they would work again in such a project setup. The answer was mainly positive and this motivates us to continue our efforts. When we look back, we have already two versions of our collaboration setup. Although, we can use mature tools and a high quality video conferencing system, something was still missing. Team members got tired and inattentive during the meetings, not balanced teams in knowledge and organization led to dissatisfaction. Therefore, besides project room, tools and roles, we decided to extend our knowledge with focus on the team aspect. Altogether, this builds the ETEO concept, which is introduced in the following section.

| Category           | Experience  | Hypothesis  | Action  |
|--------------------|---|---|---|
| Video conferencing | The video conference system is only used when problems have occurred or for formal meetings. Finally, it always triggered a negative feeling. | The video conference system has been avoided because it has been only used for problem solving.   | Use the video conference system also for fun and informal conversation.   |
| Video conferencing | If the duration of meeting lasts more than an hour, we got tired and less attentive.  | Because of the use of a video conference system, we need to be aware of exhaustion.   | Define fix time slots and make breaks, before everybody gets tired.   |
| Room setup         | When the window is in the back of person, the persons is not recognizable.  | We need to place the cameras and align the desks in a proper way in order to see all persons well.                                      | Windows and lights need to be to the left or to the right and never in the back of a person.  |
| Tools              | When we use devices such as laptops and smartphones the quality of conversation is reduced.   | We need to avoid electronic devices in meetings. Touch-based interaction on a digital board which can be seen by everyone should be ok. | Avoid electronic devices in meetings. Use collaboration tools where all members can participate in a visual manner.   |
| Organization       | The Scrum Master cannot be at the same place at any time. Solving of problems is delayed.   | We can support the Scrum Master by selecting representatives in each team. Both should be more proactive to avoid communication lacks.  | Select supporters for the Scrum Master at each location. The Scrum Master and the team needs to be more active. Mention problems or bad feelings instantly. |
| ...                | ...   | ...   | ...   |

Table 1. Examples of collected experiences, hypothesis and actions

### 3. EIN TEAM EIN OFFICE – ONE TEAM ONE OFFICE

The experience from our teams shows that working in distributed Scrum implies more challenges than just to find the right hardware and tools. Besides the project room, we determined that it affects also the organization and the mindset of the team. We believe that only this holistic view gives us the right foundation for distributed and efficient team work. We decided to give the whole concept a name: ETEO (which is a German acronym for "Ein Team Ein Office" and means one team one office). It has been firstly mentioned by Bernd Grams sketching out the main challenges and ideas for a distributed Scrum teams (Grams 2013). In this section, we focus on the four main aspects of the ETEO concept.

#### 3.1 Project Room

First of all, we consider the project room. We already discussed the benefits of virtual project room and sketched out some best practices. The project room surrounds the team and is the base for all team work, decisions and discussions. We think that it is very important to establish a feeling of trust by imitating a real project room with the help of the video conference system. In general, the project room should satisfy some requirements. For example, the room should be quiet and not too small. Because of the use of microphones, noise from the outside should be avoided, e. g., by closed windows. Therefore, the room should have a silent air condition because all the hardware can get very hot in the summer. Further, the room should have facilities for sound absorption, e. g., with the help of carpets and curtains. Lights should be never placed in the back of any person, because nothing would be seen than the light. In the following we describe the room setup with its hardware. The project room setup is illustrated from the bird's eye view in Figure 4 and consists of the three areas: 1) work area, 2) meeting area, and, 3) daily area which are described in the following.

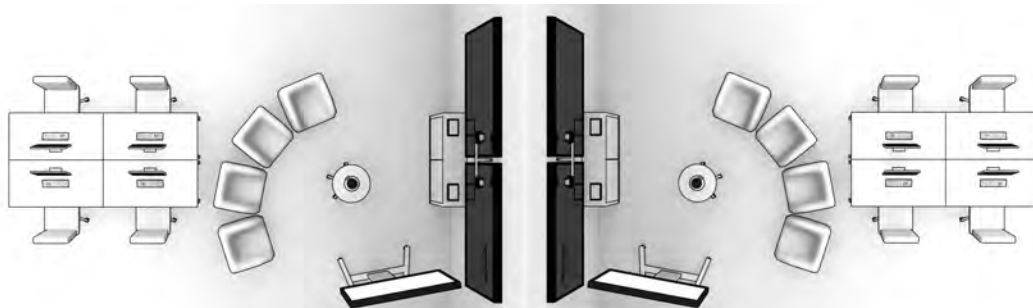


Figure 4. The distributed project room concept

The working area contains a desk for each the member. As we mentioned above, the desks and monitors are aligned orthogonally to the cameras. Nobody should hide behind monitors and nobody should sit with the back to the camera. Similar to an open-plan office we can see if team members are working and how busy they are. The meeting area provides facilities to perform longer meetings. This means, team members can take a seat in front of the cameras. If the cameras are well positioned, you can get the impression of a conversation circle. Further, the video conference system can be used to share presentation material. The daily area consists of the video conference system and a digital task board. During the standup all team members stand in front of the board. They need to make sure, that all can be seen by the camera. The life size video conference gives us the impression that all team members are standing in one circle as suggested in Figure 5.

As mentioned above, we decided to display the team mates from other locations in life size. This gives us the best feedback from our Scrum teams regarding the missing face-to-face communication. When standing in front of the TV, we are likely to feel to be very close to the person we are speaking. Facial expression and gestures can be well perceived. However, this requires a big TV or monitor with about 80-inch screen and a minimal resolution of 1920x1080 (Full HD) pixels. If the budget allows, one should consider to install two conference systems to use the full wall and two TV sets. However, one system is also sufficient for small teams.

In Figure 6 we illustrated the position of the cameras and monitors. The monitors should be aligned in that way, that the eyes of each person are nearly at the same height. This applies also to the cameras, which should be in the height of the eyes. For this, they can be fixed in front of the TV. Otherwise, one would get a bird's eye perspective which automatically leads unknowingly to superior or inferior misinterpretations.



Figure 5. 2<sup>nd</sup> version of the Daily meeting

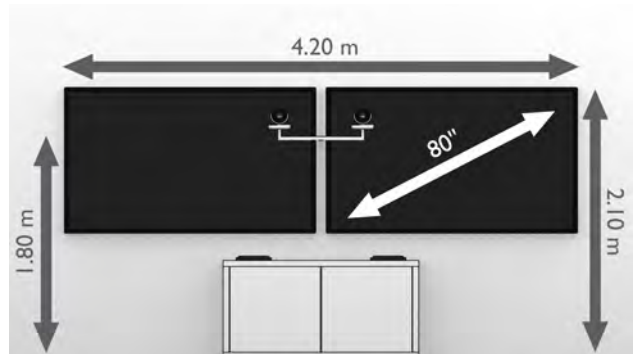


Figure 6. TV and camera setup

However, we know that the project room cannot equally replace a real room. From our experience we identified some rules which are essential when working in the distributed project room. Some are as follows:

- Always check that you are visible for others.
- Always check and change the camera settings.
- Try to capture the whole room with the camera.
- Never hide yourself since this can be harmful for trust. Use camera pre-sets for each meeting situation.
- Only one person should talk at once. If you want to say something, give a non-verbal signal. Stand in front of the camera and make sure everybody else is ready to hear you.
- Check your communication quality and the communication of others. Give feedback or encourage them to speak loud and clearly.
- Check that the microphone is always in the middle of the conversation circle. Do not shout since the microphone and the speakers amplifies your voice.

Because it was very disruptive when two persons tried to speak at the same time over the video conferencing system, we introduced hand signals and flags. If someone wanted to say something, he or she raised a hand. Each team should cultivate its own rules and flag system.

## 3.2 Tools

In our projects we tried several tools and come to the conclusion that a distributed team needs at least a set of common collaboration and development tools. Many tools are state of the art as a build server or an IDE. However, in the following we mention the tool classes and why they matter for us.

- Task Management System (TMS): When we are not working at one place, an analogue task board is not practical. Further, we might want to store more information in tickets, assign persons and create comments. The use of TMSs such as Jira is the state of the art also in many agile teams. However, in distributed it is even more important to store tasks in a place which all team mates can access and which represents the current state of work. Therefore, a TMS is one essential tool.
- Task Board: A TMS is complex and provides much information. Therefore, there are many reasons to use a paper-based task board regarding clear arrangement and simplicity. However, we tried first to synchronize the state of our task boards and it became more and more difficult. Therefore, we decided to develop and to use a digital board, the eteoBoard as can be seen in Figure 7, to perform our daily meetings. It gives us the transparency which is needed especially in distributed teams. We use a TMS as back end and the task board as visual front end which is optimized for touch-based interaction.
- Planning Board: In case we perform planning meetings not in a face-to-face manner, we need a tool to discuss user stories. We can also do it with a TMS in addition to screen sharing. However, we also use our eteoBoard to plan sprints. We instantly open user stories and in a synchronized fashion amongst all team locations and it gives us an overview about what is possible to get done. Moreover, we can add tasks in Planning II directly on the board.
- Whiteboard: There are several situations where we need to sketch something to illustrate a fact. We often tried to use a classic flipchart. However, the camera need to zoom in while the participants vanish. Finally, the flipchart is not well readable and the team mates from other location cannot perform any changes. Therefore, we tried to sketch things with the help of screen sharing tools or the whiteboard which is shipped with the MondoPad.
- Instant Messenger: The instant messenger (or chat tool) allows the exchange of informal and quick messages with any content. However, the team needs to decide which information is ok there and which one should be better structured in a wiki. One thing we discovered is the group chat. For example, a team member can use it to ask for help without disrupting any work or shouting in the project room. Further, we used the chat to share funny pictures or songs. Overall, we consider the instant messenger as an important tool for distributed teams. We use Skype for Business in any of our projects. Similar tools are ICQ or Jabber.
- Screen Sharing: In fact, instant messenger often also provide screen sharing ability. We use it mainly for pair programming or to show our team mates a malfunction of our software. Furthermore, we use it to discuss concepts or figures. For example, we use Skype for Business. Other tools are TeamViewer or WebEx.
- Video Conference System: The video conference system is the heart of the distributed project room. It needs to be permanently active and people should be shown in natural size. We need a semi- or professional system to guarantee calibrated audio and video. For example, we use LifeSize Room 220 or a similar system in any of our projects. It allows also to share screens.
- Planning Poker: Usually, we use simple cards to estimate user stories and turn them to the camera. However, sometimes they are difficult to read. One could consider to use distributed planning poker such as [planningpoker.com](http://planningpoker.com) for estimation in distributed teams.
- Test Management: The test management should also be an integral part of any agile team. However, it should be accessible from all other locations and provide feedback about which test cases have failed. For example, we use Zephyr or Expecco.
- IDE: The Integrated Development Environment (IDE) is the standard tool for each developer. Depending on the project type, we use Eclipse, IntelliJ or Visual Studio. The main purpose is to implement source code and to execute unit tests. It is nice, when we can also use the IDE in conjunction with a version control system to see differences and authors. Some IDEs also provide an interface to TMSs. However, it is not a collaboration tool in the first place. When we want to do pair programming, we also use a screen sharing tool. With the help of a headset we can really concentrate on the code. We can also focus on our partner and we can share control. Some persons stated that this is rather a better way to perform pair programming than face-to-face with one device.
- Version Control: In a distributed team the code need to be stored in a place where everyone can access and change it. Git provides the required flexibility and stability since every working directory is a complete

repository with version-tracking capabilities. Therefore, each developer has its own copy and is working on feature branches which are merged in the develop branch.

- Build Server: That the code is stable can be guaranteed by a build server. The build server can also perform automatic tests and checks of code quality. For example, we use Jenkins in our Java-based projects. If something happens all developers are notified which is essential in a distributed team. Each developer need to rely on a stable code base and the team need to be sure that the product is stable. The impact of merging some code becomes instantly obvious.
- Code Review: Code review tools allows us to propose and to evaluate code changes to the team. The effect is twofold. On the one hand, the team is responsible for its own code, we can ensure code quality. On the other hand, it allows us to share knowledge and to encourage each other to give feedback. While we do this, we get an idea of the decisions of a team mate and we learn something about the architecture of the software. Additionally, we started to use one-to-one meetings with screen sharing and headphones to talk about questions when reviewing the code which helps us to focus on this task. For example, we use Stash in our projects which allows review and asynchronous commenting of code lines.
- Wiki: A wiki allows us to simply create any information which should be shared besides the source code. This can be project documentation, team rules, build rules, definition of done, etc. Traditional documents, e. g., in a shared directory tend to become outdated very fast. However, a wiki is also used to share ideas and photos of team events. Be aware to provide a secure area, wherein the team is protected from prying eyes. For example, we use Confluence in any of our projects.

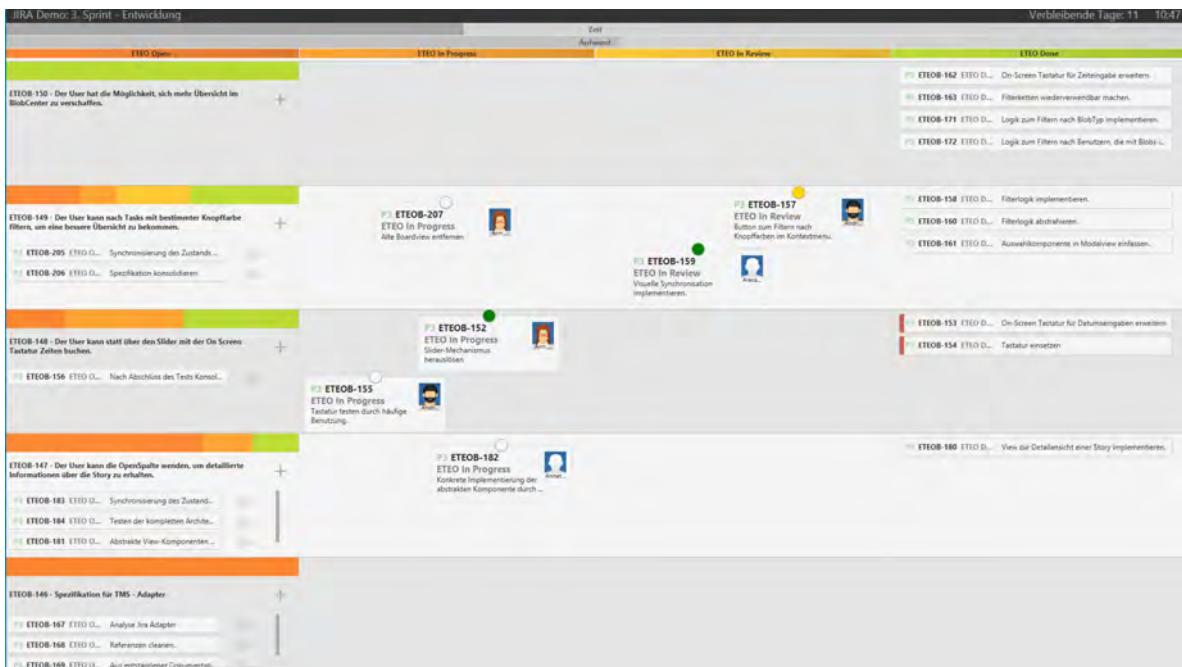


Figure 7. eteoBoard - the digital and collaborative task board

### 3.3 Team

As already mentioned, we need also to consider the implications of distributed team work regardless which tool or hardware we use. In fact, the communication is and will always be limited. That is why, we need to develop further skills to compensate the risk of virtual communication.

The basic part in virtual teams is of course the individual who needs to be more attentive regarding communication problems and the implications of distributed work. Further, the team member needs to respect others, be open and collaborative. We need team members who are motivated to work with colleagues at different locations and who are more proactive and expressive. To speak in front of a camera and to point to communication problems requires more courage than in traditional teams. Therefore, we need to pay attention to how we speak and if we understand each other. If there is a doubt, we ask to repeat a sentence and repeat the content in our own words.

We extend the questions in the Retrospective by “How well did we virtually collaborated?” To support this, we asked our teams about their essential values in Scrum and which one seem to be most important in distributed teams. Therefore, we extend the Scrum values consisting of focus, courage, openness, commitment and respect by the new values identity, empathy, collaboration, trust and simplicity for virtual teams. Regularly, we reflect ourselves in the retrospective regarding the quality of our virtual communication. For this, we created a value compass which allows the team to rate the fulfillment of each value as suggested in Figure 8. According to this, we can identify problems and discuss strategies how to improve them.



Figure 8. Value compass for distributed teams

To support individuals in their self-expressiveness, we further provide initial coaching in groups to train emotional intelligence and presentation capabilities. We use techniques wherein the participants can experience themselves how they perform in front of the camera and how they are perceived by others. Especially, we see the Scrum Master in the role to additionally observe the team spirit and its communication skills. He or she should give valuable feedback to each individual, e. g., to reflect his or her efforts to overcome the limitation of virtual communication. However, this can just be an initial training. In fact, the team needs to observe and to improve its behavior continuously regarding communication.

However, the team is embedded in organizational structures. Therein it acts and shapes its roles and activities. This is discussed in the next subsection.

### 3.4 Organization

The organization means both institution(s) wherein the team works as well as the processes and roles which need to be considered. All stakeholders should be aware that working with distributed teams is time-consuming and requires much more attention. Empathy for the team and the respect for the increasing effort by each role is important. One major mistake we made, was to create unbalanced teams. This means both, regarding the skills and the number of team members without trying to talk about it or to compensate it.

For example, the team in Dresden often consisted of the main knowledge leaders and had the shortest path to infrastructure support or anything else. However, here we can see how the principles of Scrum helped to indicate and to solve the problem. The first symptom was, that the team members did not talk very much in the Daily meeting and in general. This was mentioned in the Retrospective meeting and very quickly it turned out that the other part of the team felt like a support team which is only responsible for bug fixes. However, we concluded that the other team should also work on important User Stories. They also needed to be integrated in ownership of code, responsibility and receive appreciation for their work. Finally, the best way was to work together, e. g., with the help of pair programming to underline the fact, that we are all one team. This is just one example, how the organization affects distributed work. It is important that each team feels equal to another. Similar problems may occur when the salary is different. Further, cultural differences can also be a challenge. However, we should not eliminate all difference, but we should aware of them and cope with them when they seem to be a problem.

The Scrum Master plays an important role in distributed teams. Besides ensuring the agile principles, he or she needs to coach the team permanently in its communication skills and needs to ensure good team spirit. During video conferences the Scrum Master should behave like a director, e. g., if some team mates are very impulsive. Also the Scrum Master is encouraged to evaluate the value compass to improve the collaborative work. However, one major problem is that the Scrum Master cannot be at the same time at different locations. We suggest that he or she selects a team member or another Scrum Master for some specific task at the remote location. Also it can be useful, if the Scrum Master travels to the locations regularly. Finally, he or she needs to be in close contact to each team member and listen to them carefully.

One main aspect in distributed teams is to make sure that both part teams are equal regarding number of persons, skills, and infrastructure as well as tools. The motivation of one team is in danger, if it permanently feels inferior. It is important to ensure knowledge transfer, e. g., by choosing different types of tasks. If the team



mates need support from others, it is an opportunity to cultivate conversation. As already mentioned, one team sometimes seems to be the "headquarters" because it is nearer to the management or it has the most experience. Then it is even more important to integrate and to appreciate the "remote" team. Finally, it is very useful if team mates occasionally change their location and work as a "delegate" in other teams. This is the most efficient way to create trust, to reduce prejudice and to transfer knowledge amongst all team members.

The Product Owner has a similar problem like the Scrum Master. Usually, it is one person. However, in distributed teams it is difficult to be in touch with the whole team. Therefore, we suggest that also the Product Owner visits all teams regularly. However, this is not necessary if the team gets together, e. g., at the end of a sprint for planning and review. Alternatively, but not really recommended is the installation of a "Proxy Product Owner" who is in close contact to the real Product Owner and is mainly available for the part team.

Besides team balance and roles, the meetings are a challenging task in virtual teams. In general virtual meetings should be well prepared and time-boxed. The communication with the help of a video conference system is hard and exhausting. Further, we try to stay away from any laptops and to change the context, when we begin a meeting. Otherwise, we do not know if everybody is attentive to the discussed topic. The team should keep this in mind and split up too long conversations. Further, we propose the following meetings:

- Informal Meetings: We suggest to establish informal meetings in front of the camera. Place your coffee machine in the project room or create time boxes where you are not talking about the work. Team events can also be performed virtually, e. g., with the help of video games. However, meet as often as you can in the real world!
- Pair Programming: We strongly suggest to perform Pair Programming since this is a way to get into discussions and to share knowledge with the help of deeper discussions.
- Code-Review: We suggest to perform Code Reviews since this is another way to get into discussions and to share knowledge.
- Retrospective: We suggest to extend the retrospective to the topic of virtual collaboration. For this, the value compass can help to give instant feedback which values might not be considered sufficiently. Each team member should be able to evaluate the realization of each value. The Scrum Master is then able to use a coaching tool box regarding the value or to consult any other team coach to address this issue.

#### 4. SUMMARY AND OUTLOOK

In this paper we have shown our motivation and experiments to realize distributed Scrum. We used agile principles to iteratively improve our concepts in close collaboration with our teams. Finally, we are still learning. For example, we start to incorporate team coaching activities to sensitize our teams for the work in distributed settings. We address the "fake" aspect by clear language and stronger self-expressiveness. We encourage each team member to live the agile mindset and to be more courageous, to be more empathic and to be more active regarding knowledge transfer and informal communication. The permanently activated high-quality video conference and the digital task board are two more contributions to reduce "faked" communication, but to see real working people all the time. This helps to build trust and team culture.

Agile and distribution is not a contradiction because we see how distributed Scrum can solve the main issues if they are willing to. The agile principles such as optimization by self-organization, commitment and openness are essential drivers. Moreover, the required communication in agile teams fosters better virtual collaboration. This is because, a) agile teams must communicate in order to survive, b) the Scrum process provides activities for communication and improvement, c) transparency leverages trust and openness. In contrast to this, we think, that virtual teams without agile mindset are more likely to risk de-motivation and isolation. However, every project and every team is unique. At the end, whatever works has a right to exist.

Nevertheless, we also discovered that a team cannot work dispersed for long without meeting each other. We think, that a team should meet one day in a month to go out and to have fun. Our ETEO concept can reduce the effects of missing face-to-face communication but not eliminate them. Finally, all efforts may fail, if the team is not motivated to cope with the challenge of distributed work. Self-motivation and will are essential parts for each Scrum team. However, the Scrum Master and the Product Owner play also their role as coach and motivator. The success of distributed teams depends on all involved persons and the organization.

Finally, this leads to another aspect which is not in the main scope of ETEO. While our Scrum teams try to improve their distributed work, Saxonia Systems as company gets inspired by its mindset and collaboration facilitators. Today all staff members in all divisions are invited to participate in a collaboration and invention strategy. The main question is the same as in our Scrum teams: how can we bridge the gap amongst our competences and sub-divisions? With the beginning of this year, we identify strategic aims which are

represented by product backlog items. These are refined in cooperation with all colleagues and realized in long-term sprints in about four months by the item owners and their teams. Every second week, there is a standup meeting which can be followed by everyone with the help of ETEO and the eteoBoard (Figure 9 and Figure 10). Further, the eteoBoard reflects the state of a strategy sprint which can be seen by everyone at any time. For example, an instance of the board is permanently visible in the coffee kitchen. This leads to more transparency and participation and finally to responsibility and more work and ideas.



Figure 9. Strategy stand-up with eteoBoard



Figure 10. Strategy stand-up with video conference

While this is an ongoing process we also want to increase the support for our distributed teams with initial team coachings and workshops to get ready for their work in their virtual project room. Recently, a team started with a Daily the first time and run into problems with the video conferencing system. Since they have been pressed for time, they did not use the cameras as needed and, finally, they left frustrated with the meeting. This needs to be avoided and therefore we plan kick-off workshops and to prepare tools and hardware. We incorporate these procedures in the whole process model for new projects and want to standardize the initial project phase with teambuilding and tool introduction. We are curious about the impact in the next version of our ETEO concept.

## 5. ACKNOWLEDGEMENTS

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