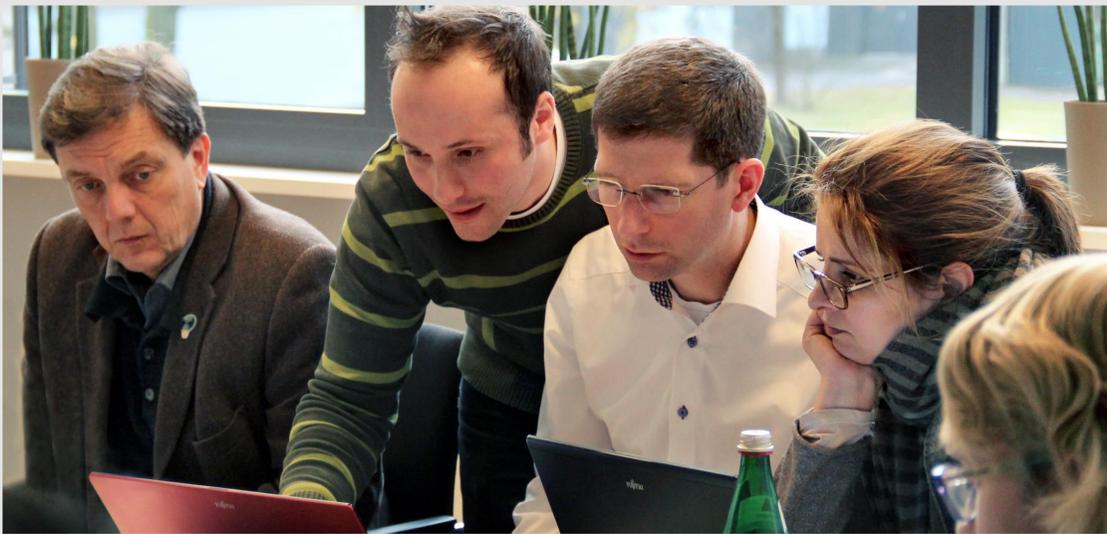


Using Knowledge Exchange Workshops to analyze the DLR Software Engineering Community



Group discussion during a knowledge exchange workshop among DLR scientists.

Software Development at DLR

The German Aerospace Center (DLR) is a large research organization with over 8.000 employees, conducting research in aeronautics, space, energy, transportation, and security. Software development increasingly became part of the daily work of many researchers. Particularly, they are faced with software engineering challenges for which they are not trained. In 2005, DLR started the DLR software engineering initiative [1] to support their researchers addressing these challenges. A core element of the initiative is the creation of an active software engineering community.

Knowledge Exchange Workshops

Knowledge exchange workshops on software engineering have been established since 2014 and focus on a different topic each year. The workshops are organized by members of the community and are highly interactive to create an active network and a living community. A workshop consists of networking elements and group discussions for community building, social event and multiple breaks for networking, experience reports and technical presentations for knowledge transfer and lightning talks to give opportunities for presentation of new ideas or current challenges. These workshops can be considered as the annual DLR software engineering community event and offer therefore a good starting point to analyze the community.

Research Questions

We analyzed the attendance data of participants of the knowledge exchange workshops on software engineering [3] regarding the following questions:

- How stable is our community?
- Is the focus of a workshop relevant for attendance?

Both aspects shall give us a better understanding of the status of the community and a basis for designing future workshops.

Results and Discussion

Table I provides an overview about all workshops including information about workshop date, number of participants, and the workshop main topic.

Table I: Knowledge exchange workshops since 2014.

Year	Participants	Topic
2014	57	Kick-Off
2015	56	Tools & Processes
2016	53	Open & Inner Source
2017	52	Software Architecture
2018	47	Embedded Systems

The kick-off workshop has been used to select the topics of interest for the DLR software engineering community. The topics have been addressed in the following workshops. Overall, 265 persons attended the workshops, among them 189 unique participants [3].

Figure 1 shows the attendance rates of the core group and one-time participants for every workshop. Overall, we identified 30 participants as members of the core group, that is about 16% of the unique participants. We included participants into this group, if they attended more than one workshop and

did not skip more than one workshop in a row while still working at DLR [3]. Overall, the trend of the attendance rate of the core group illustrates its steady growth over the workshops. The rate drop of the last workshop indicates that the topic did not resonate well with our core group. One-time participants are participants attending only one workshop. The one-time attendance rate of each workshop is between 53 and 62%. The last and the first workshop show the highest one-time attendance rates. The very specific topic of the last workshop can be seen as a reason for this peak.

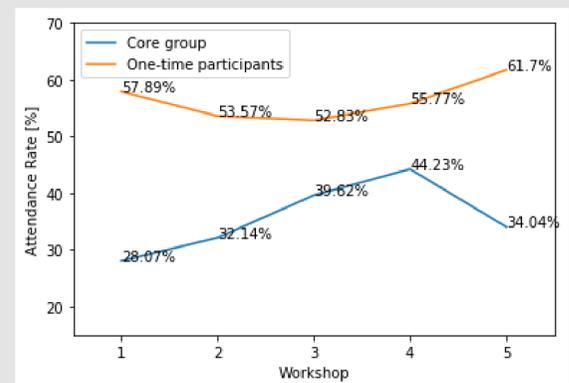


Figure 1: Participant attendance rates of the two main groups for each workshop.

Conclusions

We analyzed the participation data of the knowledge exchange workshops to get insights into the DLR software engineering community. The results show that the community consists of a small, stable core group, some non-regular visitors, and one-time participants.

The main workshop topic seems to influence the participant attendance. The ongoing topic specialization results in a slowly decreasing number of participants and an increasing rate of one-time participants. Particularly, the last workshop on embedded systems makes this development quite obvious.

References

- [1] C. Haupt, T. Schlauch, and M. Meinel, "The software engineering initiative of DLR - overcome the obstacles and develop sustainable software," in 2018 ACM/IEEE International Workshop on Software Engineering for Science, June 2018. [Online]. Available: <https://elib.dlr.de/120462/>
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- [3] T. Schlauch and C. Haupt, "Analysis of the DLR Knowledge Exchange Workshop Series on Software Engineering," June 2018. [Online]. Available: <https://doi.org/10.5281/zenodo.1301253>

