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Doing CSCW Research in Small and Medium Enterprises: Experiences, Options and Challenges

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Abstract. This ECSCW workshop draws attention to research and development projects (R&D) that deal with cooperative and collaborative practices in small and medium enterprises (SMEs). European companies are for the most part SMEs: nine out of every ten companies can be defined as an SME (Eurostat 2015). They cover a huge variety of branches and fields, including diverse examples such as manufacturing, construction or IT start-ups, and meanwhile, there is again a growing sphere of CSCW projects that recognize the importance of this field. The empirical methods applied in such SME centered projects include qualitative methods with participant observation, interviewing or conducting co-design workshops, but also quantitative methods like the use of questionnaires or eye-tracking systems. In the workshop, we open up for sharing and reflecting experiences of doing research in SMEs and for discussing the characteristics and challenges of this (old and new) field in CSCW.

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Introduction

Why is it interesting for the CSCW research community to study cooperative and collaborative practices in SMEs right now? Referring to pure statistics, it is striking that European companies are for the most part SMEs: There were approximately 25.1 million SMEs in 2018 (European Commission, 2018) or: nine out of every ten companies. They cover very different sectors or branches such as logistics, transportation, industry, production, trade, tourism, financial service providers, banks, estate agencies, IT companies, media enterprises, private health services and agriculture. Despite their burgeoning importance, SMEs are considered different from large organisations, particularly in relation to their peculiar features and limited capabilities (Thong & Yap, 1995). For instance, organisational structures in SMEs are rather simpler when compared to large organisations, the strategic decision making is usually in the hand of owner-manager or fewer decisionmakers (Thong & Yap, 1995; Smith, 2007), and the size of the company significantly influences the awareness, interest and readiness towards modern technology principles and related investments (Sommer, 2015).

Moreover, SMEs are considered disadvantageous when it comes to certain capabilities vis-à-vis large organisations and social perception, e.g. reputation or image. However, they are oftentimes able to capitalize on their core strengths expertise, innovation, supply-chain embeddedness to gain a competitive position in the market (May, 2009: 120). Many of the so-called “hidden champions” (Simon, 1996) are very successful, especially in niche markets, not just on a national level, but also on a global scale and are important due to their extensive economic and innovation performance (Rieckmann et al., 2018; Ludwig et al., 2018; European Commission, 2015).

Besides, SMEs are fascinating as a research and development field as they have to deal with socio-economic and socio-technological challenges, most of all: retaining their key asset, the employees and their working capacity (Ludwig et al., 2018). That includes the preservation of expert knowledge of elderly employees who are about to retire, finding trainees to step into their shoes, supporting the further qualification of the staff with respect to new requirements or to care of their health and working conditions. The need for further qualification often goes along with another challenge: the processes of digitalization, understood as complex, long-term transformations on a technological, economic and social level (e. g. Rogers, 2016; Bockshecker et al., 2018).

These processes are not entirely novel, but nowadays, SMEs are being more confronted with the increasing digitalization in supply, production and sales because of increasing dependency due to international markets and these dependencies have a different impact on SMEs than on large enterprises. Customer requirements, certifications and implementation of standards must always be considered in the light of limited financial, human and timely resources. Their typically limited (time, staff, expertise) resources for instance make SMEs all the more vulnerable to cyber-attacks

(Saleem et al., 2017) and other crises scenarios. Furthermore, their special business requires specific tool support for the particular, often non-standard work practices in rather weekly structured processes. These are only two of the multiple topics that track attention in the again growing sphere of CSCW projects that recognize the importance of this field. Additional challenges are: information transfer, internal and external communication against the backdrop of data security and privacy (use of ICT by the employees, etc.), dealing with fallouts, emergency preparedness and crisis prevention, business continuity management (BCM) plans and many more (see also Ludwig et al., 2018).

The *empirical methods* applied in SME centered projects prefer for the most part quantitative methods like the use of questionnaires, simulations or eye-tracking systems, etc., but projects that are more co-development- or participatory design (PD) oriented, favour also qualitative methods with participant observation, interviewing or conducting co-design workshops (Blomberg & Karasti, 2013; Bratteteig & Wagner, 2014; Flick, 2018). We argue that the use of qualitative methods is often more appropriate to the specific characteristics of SMEs and can highlight their particularities, for instance the smaller number of employees who are familiar with each other over a long time, the skepticism towards “outsiders”, informal practices, etc. (e.g. Gilmore & Carson, 2000; Razmerita & Kirchner, 2011). Nevertheless, the triangulation of different qualitative and quantitative methods seems the most promising way to deal with the complexities of this special field of research and development.

The goal of the workshop is to provide a space to share and reflect experiences with doing research in SMEs and to discuss the characteristics and challenges of this special (old and new) field in CSCW research (e. g. Schmidt, 1991, 2011; Neureiter et al., 2016). But one of many is working with different stakeholders in a setting with well-established hierarchies and with limited time resources – the latter often occurs in lower layers of the hierarchy, e.g. the workers or shift leaders. More generally, we address collaborative and cooperative practices in at least three ways: (1) between the stakeholders within the field (SMEs), (2) between the researchers, developers and the stakeholders in the field and (3) within the research and development teams.

Topics and participation

For contributions, we invite 2-4 page submissions (including references) from researchers, developers or practitioners who are working in and with SMEs until **3 April, 2020**. In order to create a productive setting in the workshop right away, we would like to ask you to include the following aspects in your submission:

- 1) outline of the field of research or/and development you are working in
- 2) short description of the respective SME context
- 3) methods applied in the project (empirical, development and technological)
- 4) personal background (study, training, etc.) and
- 5) open questions, experiences or problems that you are facing.

Please submit following the provided template (available as [MS Word](#), [RTF](#) or [LaTeX](#)) at <https://ecscw.eusset.eu/2020/index.php/workshops/>.

We welcome submission from different PhD and PostDoc stages and particularly encourage people from the practical field to hand in a short statement paper and to take up the opportunity to discuss their experiences with us. According to the variety of empirical methods applied in SME research, interesting topics might be (but are not limited to the following): experiences with

- standardized questionnaires
- simulations
- the use of eye-tracking systems
- participant observation
- dealing with long-term, well-established hierarchies in SMEs
- interviewing in SMEs (informal, semi-structured or structured interviews)
- expert workshops
- participatory design workshops: designing for or/and designing with?

Some more concrete questions for the workshop might be (but without limitation):

- How can a time-consuming ethnographic approach be conducted with little irritation of the daily SME business?
- How can researchers and developers operate in these settings, especially when there are no legal constraints as in a formal research project?
- How can the cooperation, goals etc. be negotiated between the researchers, developers and stakeholders from the field?
- How can researchers keep track of what is going on in the company in their absence?
- How can SMEs with no or little IT knowledge use and improve prototypes developed in such projects use persistently?

The participants will be recruited following the distribution of our call via the key mailing lists of the ECSCW and CSCW, HCI and adjacent communities, the website of the workshop (<https://ecscw2020methods.yolasite.com/>), on different social media platforms as well as through the organisers themselves and their networks. The position papers of the applicants will be reviewed by the organisers.

We would like to limit the number of participants to a maximum of 15 in order to provide a setting with an appropriate time frame for presentations, collaborative work and group discussion.

Goals and schedule

The temporary schedule of our one-day workshop will be as follows (will be modified based on the number of contributions):

- (1) *Welcome and introduction* (approx. 30min)
The organisers give an overview of the key intentions and goals of the workshop, outline the schedule, methods applied in the workshop and open up for the introduction round of all participants.
- (2) *First session: Getting to “work”*
Based on the position papers, all participants shortly present their work, motivation and expectations for the workshop (5min each). The organisers are going to give a *Pecha Kucha* presentation with examples of field work in SMEs and open questions that they would like to address in the workshop; a short break is included in that session.
- (3) – lunch break –
- (4) *Second session: Group work (number depending on the number of participants)*
In order to allow enough time for intense exchange, we’ll have a group discussion session. In reference to our overall topic, we are going to work on the “methodological toolbox” for doing projects in SMEs and collaboratively collect best practices.
- (5) – coffee & cake break –
- (6) *Plenary session*
Getting together after the group work; reporting shortly about the different discussions and outcomes in the groups.
- (7) *Closing and “take-away” session*
Summing up the topics discussed, recapitulate interesting take-away-insights and suggest options for further collaboration amongst the participants and organisers.

We are going to close the day with dinner and drinks in an informal gathering of the group (for interested participants) in one of Siegen’s nice restaurants in the historic part of the town. This is another chance to continue the day’s discussions and networking in an informal way.

The materials from the workshop will be published on the website of the workshop – given the permission of the participants and with taken into account data protection law. The organisers will also discuss the option for a joined publication with the participants in order to address the lack of literature about the outlined topic for the CSCW community.

Organisers

Marén Schorch (corresponding chair) is a Postdoctoral researcher and leader of the BMBF junior research group KONTIKAT at the University of Siegen. She holds a PhD in Sociology from the University of Trier, is specialized in qualitative research methods and experienced in mixed methods. She has been involved in multiple projects at the University of Siegen. Her current research deals with emergency preparedness, continuity and (digital, social, economic) change. She has published a wide range of articles, co-organised a number of CSCW-related workshops such as on ECSCW 2011, CSCW 2014 and CSCW 2017, COOP 2016 and GROUP 2016, held two master classes at ECSCW 2019 and also regularly reviews for ECSCW, CSCW, GROUP, CHI etc..

Fabienne Seifert is a PhD student and member of the BMBF junior research group KONTIKAT at the University of Siegen. She studied Sociology in Magdeburg, Bielefeld (Germany) and Vienna (Austria). Her dissertation deals with the perspective of emergency forces in crisis situations by the means of qualitative methods of social research (interviewing and participatory observation). Her thesis empirically carries out the attainment of routines in various crisis situations. In addition to the use of technical devices during operations, which is particularly relevant for CSCW research, the everyday work of firefighters is in focus.

Hussain A. Syed is a Ph.D. researcher in the BMBF junior research group KONTIKAT at the University of Siegen. He is a computer scientist with a specialization in software technology and data science. His interests include HCI, CSCW, model driven software development (MDSD) and machine learning (ML). His current research focus is to tailor and adapt the disaster resilience practices of big enterprises like BCM to the context of SMEs. He works in close liaison with the enterprises employing the qualitative and quantitative research methods to generate steady requirements for sustainable crisis technology.

Christoph Kotthaus is a research associate and PhD candidate at the chair of Computer Supported Cooperative Work and Social Media at the University of Siegen. He graduated in information science and completed his thesis in an SME. He worked in SMEs for more than ten years. At the University, he worked in and (partly) lead projects regarding crisis management and real-time production scheduling and is currently involved in the participatory design of shop floor tools to support various activities within the SME 4.0 competence center Siegen. He was co-organiser of the conference Wirtschaftsinformatik 2019.

Volkmar Pipek is Professor of Computer Supported Cooperative Work and Social Media at the University of Siegen, Germany and has widely published books and articles in the field of CSCW, with a specific interest in infrastructuring. He is also the co-leader of the project “INF-Infrastructural Concepts for Research in Cooperative

Media” at the Collaborative Research Center 1187: Media of Cooperation and mentor of the BMBF junior research group KONTIKAT at the University of Siegen.

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