Work of the Future

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ABSTRACT

Remote and hybrid work has received significant attention in the last years in both academic and industrial contexts, especially due to the COVID-19 pandemic and attendant lockdown. Some of the remaining challenges in current remote technologies include limited embodiment, hierarchy and agency issues, and significant technological limitations. In this workshop, we will, together with the participants, explore how to design socio-technical systems that connect people and artefacts during collaborative activities. The workshop will use provocations, artefacts, and group work to imagine the futures of work with a focus on hybrid work practices.

ACM Reference Format:

1 INTRODUCTION

While geographically distributed work has been around for centuries, new technological opportunities have changed the conditions for how geographically distributed work can be organized and managed. Gerson reminds us that technologies that ‘reduce’ distance and allow for new forms of cooperation change the questions of how people can work together but not necessarily to simpler ones [10]. For example, it can make questions about empathy in distributed work much more pertinent. Core challenges in distributed work include the challenges of creating common ground, working in tightly coupled work arrangements, finding appropriate organizational management which fosters high readiness for collaboration, and the availability of collaborative technologies [3, 15]. Further, we know that the major challenge of distributed collaboration is not the physical distance, but the perceived distance between collaborators [6, 13]. Finding ways to utilize technologies to facilitate the establishment of a shared meaning context is difficult, as miscommunication and breakdowns which emerge in the work practice might be grounded at different contextual levels [4]. The recent COVID-19 pandemic, and consequent lockdown, have demonstrated the potential benefits and possibilities of remote work practices, but also the challenges of re-thinking remote work. For organizations to be able to address crises such as the pandemic requires not only being able to accommodate distributed collaboration, but also to have organization ‘crisis readiness’ as part of the organizational setup [7].

Remote and hybrid work will certainly be part of the future of most work practices, but what should these future work practices look like? Should we merely attempt to fix what we already have or can we be bolder and speculate different kinds of workplace futures? How can we develop technologies for stimulating new ways of working? In this workshop, we explore possibilities of the future of work with a focus on hybrid work. We use speculative techniques and ideas that can help rethink the practices and infrastructures of hybrid work and its future. The focus is on more than just the efficiency of task completion, rather, we seek to foreground and productively support the invisible relation and articulation work that is necessary to ensure overall wellbeing and productivity.

During the workshop, we will discuss the research trajectory to achieve these imagined futures (the stranger the better) by developing and sketching out this research space. The workshop therefore contributes with an exploration of potential special issues, workshop series, test for methodologies for future hybrid imaginaries, future fictions, and a toolkit that will be published on our website for other workshops.

2 HYBRID WORK PRACTICES AND CHALLENGES

The organizational and technological setup [5, 8, 11, 14] issues such as zoom fatigue, resulting from high cognitive loads and intense
amounts of eye contact, are just the tip of an uncomfortable iceberg where the problem of embodied presence remains a stubborn limitation. Distance work can bring the intimate home setting into professional work situations, resulting in new privacy concerns and a myriad of unexpected sources of interruptions [7]. Work settings that are difficult to transfer to a geographical distribution introduce new challenges and need new technologies.

We also know from the Covid-19 pandemic that people ‘leading’ themselves is critical in hybrid work [1]. Others before have emphasized that when people are mainly orienting towards their own role in the overall organization of work they lose sight of other people’s work activities, which allow for the subtle optimization of activities; thus when people know the physical surrounding and the overall processes they can predict what will likely be the outcome of a particular situation and adjust to it what Schmidt refers to as appropriate obtrusiveness [18]. Overall, hybrid work practices introduce a number of complex challenges. Here, we comment on challenges related to hierarchy and representation of participation.

2.1 Challenges to Hybrid Work Contexts

2.1.1 Hierarchy of Participation. As hybrid events and meetings connect participants from both collocated and remote settings, the hierarchy among the participants can be affected. This can be both due to technical hurdles and social context, as the remote attendees do not have the same level of social presence as the collocated people due to their lack of embodiment. This can result in asymmetry in interaction, and create an unequal and unfair environment for the remote participants [17]. People in the collocated environment forget about the remote attendees, as they are aware of the remote attendees even less than the remote attendees are able to be a part of the local environment [19].

Related to this is the notion of a “backchannel”, often in the form of text communication through either dedicated media or more generic social media. Rae et al. divide stakeholders in a hybrid event into their level of presence (remote or local) and their role in the event (user, party member, bystander) [16]. Backchannel messaging between the different participants can be used to equalize the relationship [16] as it connects the local and virtual attendees by creating a shared discussion. People do this to create a sense of engagement, signaling one’s presence, feel a part of the process and “be mentally there” [12].

2.1.2 Representations of Participants. A second set of challenges emerge as work becomes hybrid and multiple screens and systems are introduced to the setting: With multiple screens representing different remote participants, how should a potential main context (i.e., where the majority of participants are physically present) be represented? As a set of tiles with individual people or as the room as a whole? Many video conferencing systems today already include meeting room cameras rooms that automatically zoom in on the active speaker, however, not flawlessly and not always ideal depending on the context. One of the foundational technical challenges is also that the camera capturing participants is not “inside” the screen, but rather on top or below, leading to the gaze never aligning when actually communicating with remote participants.

A related challenge is communication technology’s option for using avatars in video conference settings. Particularly before cameras became ubiquitous within computers, this was a better option, often implemented in ways where the individual chose their own avatar to present themselves. Research showed that using informed eye-gaze in avatars significantly improved conversation quality when the eye gaze followed the conversation in terms of turn taking etc. [9] The use of avatars for real-time communication also has benefits in terms of privacy and research shows that both video and avatar facilitated communication increase “perceived intimateness, co-presence, and emotionally-based trust”, compared to text-only communication [2].

3 SCHEDULE

The workshop will be divided between talks, presentations, group work, and discussion. The structure of the workshop can be seen from the timetable (table 1).

### Table 1: Timetable for the workshop

<table>
<thead>
<tr>
<th>Time</th>
<th>Description of activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00 - 09:15</td>
<td>Introductions and expectations</td>
</tr>
<tr>
<td>09:15 - 10:45</td>
<td>Presentations of the participants’ contributions</td>
</tr>
<tr>
<td>10:45 - 11:00</td>
<td>Break</td>
</tr>
<tr>
<td>11:00 - 12:00</td>
<td>Discussion of the future fictions and other alternative contributions</td>
</tr>
<tr>
<td>12:00 - 12:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>12:30 - 14:00</td>
<td>Group work with creative exploration and sketching of the design space</td>
</tr>
<tr>
<td>14:00 - 14:15</td>
<td>Break</td>
</tr>
<tr>
<td>14:15 - 15:30</td>
<td>Discussion of the research trajectories of imagined futures</td>
</tr>
<tr>
<td>15:30 - 15:45</td>
<td>Break</td>
</tr>
<tr>
<td>15:45 - 16:45</td>
<td>Presentations and discussion</td>
</tr>
<tr>
<td>16:45 - 17:00</td>
<td>Final discussion and wrap-up</td>
</tr>
</tbody>
</table>

4 WORKSHOP PARTICIPATION

We invite researchers and practitioner working within various fields to enhance the multidisciplinarity of the discussion. We encourage both young and experienced researchers to contribute and participate with their work and ideas on the topic.

To attend the workshop submit a 2-3 pages position paper (not including references) in the ACM format. The paper should present your background, relevant activities, and a position statement reflecting ideas that they would like to present at the workshop. This could present provocations, different envisionings of what a future of work might look like, considerations of current challenges in new hybrid work arrangements, proposals for solutions, changes, refigurings and fabulations of work arrangements, or touch upon one or more of the following topics (though not limited to):

- Expressions of agency and hierarchy
- Multimodality
- Network work (unpaid work work)
- Algorithmic surveillance
- Work during Covid-19
- Ethics
• Trust
• Privacy
• Design
• Design Processes
• Imagining the future of work
• Hybrid work technology solutions

You are also welcome to bring sketches or artefacts that communicate your ideas and work, though this is not a requirement. The position papers will be published on the workshop’s website to be read by the participants before the workshop. We will accept up to 20 presenting participants for the workshop.

4.1 Hybrid Participation
This workshop will be hybrid. For the participants who will attend the workshop remotely, we will focus on enabling a forum for discussions across participants. One of the organisers will act as an ‘online chair’, which will facilitate the online group work and the bridging to the in-person workshop activities across the day. Further, the online chair will establish guidelines based on how participants like to engage in the beginning of the workshop. A backchannel is offered as a forum for informal conversation.

4.2 Recruitment of Participants
We will promote the workshop to all our universities and collaborating partners. All the organizers have connections in the international HCI network and can distribute the call for participation through social media, personal communication and email lists. Moreover, we will share pre-event content on our academic and social media platforms, as well as the official DIREC website. The workshop will also have its own website.

5 WORKSHOP OUTCOMES
This workshop will (i) explore possibilities of the future of work with a focus on hybrid work. (ii) Develop and sketch out this research space. (iii) Discuss the research trajectory to achieve these imagined futures. (iii) Explore potential special issues, workshop series, future fictions for our website and as a toolkit for other workshops, and methodologies for future hybrid imaginaries.

6 ORGANIZERS’ BACKGROUND
All the organizers are a part of the DIREC’s ReWork project, which researches the “Futures of Hybrid work.”

Melanie Duckert is a PhD student at the Computer Science Department, IT University of Copenhagen. From an HCI perspective, she studies how digital technologies can enrich hybrid work arrangements.

Eve Hoggan is an Associate Professor at Aarhus University, focusing on multi-sensory collaborative systems. She also investigates interaction techniques, and multimodal interaction, with a particular passion for haptics. She currently leads the DIREC ReWork research project on ‘The Futures of Hybrid work’, and also has experience of planning and conducting workshops.

Louise Barkhuus is a professor at the IT University where she researches the interaction between socio-technical systems and people’s perceptions and behavior. In particular, her research focuses on privacy and ethics in relation to location and context sensitive systems, as well collaborative systems. She has extensive experience in planning and conducting workshop and has previously conducted three workshops at ACM conferences.

Pernille Bjørn is Professor and Deputy Head of Department for Research at DIKU. Her research is situated within CSCW and HCI, in particular virtual teams and global work (including global software development; global engineering; entrepreneurial activities). She is expert on design interventions including sociomaterial-design and intertextual design and founder of Femtech.dk and AtariWomen.org - gender diversity & inclusion in CS education and industry.

Nina Boulus-Rødje is an Associate Professor in the Sustainable Digitalization Research Group, and the Director of Studies for Informatics (BSc) and Digital Transformation (MA/Cand.it), at the Department of People and Technologies, Roskilde University. Her research is situated within CSCW and HCI, with special interest in digital transformation, sustainable digitalization, tech entrepreneurship in conflict areas, ethnographies of technologies.

Susanne Bodker is Professor at the Department of Computer Science at Aarhus University. She researches in Participatory Design and CSCW, with particular focus on computer mediated work.

Naja Holten Møller is Assistant Professor at DIKU where she researches on cooperative work in complex, professional work domains, and the relationship with technology-support.

Irina Shklovski is Professor of Communication and Computing at the University of Copenhagen and an expert in responsible design, ethical computing and speculative interventions through critical technical practice. She studies ethics in technology development, privacy, data leakage on mobile devices, creepy technologies and the sense of powerlessness people experience in the face of massive personal data collection.

REFERENCES

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