"If I'm supposed to be the facilitator, I should be the host": Understanding the Accessibility of Videoconferencing for Blind and Low Vision Meeting Facilitators

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ABSTRACT

With remote work becoming a prevalent practice, the use of videoconferencing tools has significantly increased. While the accessibility of these tools in remote work has been studied previously, there is a lack of understanding of how professionals with disabilities conduct meetings using them and what accessibility means in this context. To fill this gap, we investigated the experience and accessibility practices of 18 blind and low vision (BLV) meeting facilitators who regularly use videoconferencing tools. Our findings reveal that BLV professionals undertake several steps to facilitate meetings effectively, including preparing materials in advance, ensuring the security of the meetings, maintaining awareness of attendees' activity, coordinating with co-hosts to overcome accessibility obstacles, maintaining professionalism, and advocating for accessible meeting practices and technology. We discuss how our findings reveal barriers to career advancement for BLV professionals, help understand the interdependent activity of meeting facilitators and co-hosts, and provide recommendations for making videoconferencing more accessible.

CCS CONCEPTS

• **Human-centered computing → Empirical studies in accessibility**.

KEYWORDS

blind and low vision, remote work, videoconferencing, facilitators, hosts, career advancement, accessibility

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1 INTRODUCTION

In the United States, the employment rate for people with disabilities (PWD) is much lower than that of their non-disabled counterparts. In 2022, only 21.3% of PWD were employed, while 65.4% of people without disabilities were employed [40]. Remote work can provide a more accessible alternative for PWD by alleviating commuting-related transportation issues and enabling people to have more control over their work environment [19, 27]. The emergence of videoconferencing technologies (such as Zoom, Microsoft Teams, Google Meet, and WebEx) and their widespread adoption during the COVID-19 pandemic has revolutionized the way people communicate and collaborate at a distance. For example, Zoom had 10 million users per day in December 2019 and surged to more than 300 million daily active users in April 2020 [22]. Similarly, Microsoft Teams has also experienced an unprecedented increase in use, going from 145 million users in 2021 to more than double that number in 2022 [52]. The widespread adoption and sustained use of videoconferencing technology for remote collaboration make it essential to understand the accessibility needs and challenges of workers with disabilities who use these tools at increasing rates.

Despite the growing prevalence of remote work, there are still many pervasive social and technical accessibility barriers for PWD. Blind and low vision (BLV) users of videoconferencing tools, for example, face unique challenges when collaborating remotely, as the tools rely heavily on visual cues [25, 31, 32, 51]. Consider the inaccessible screen-sharing feature, which forces BLV individuals who use screen readers to rely on their sighted peers for visual description or source materials [31, 51]. Additionally, BLV workers encounter accessibility and usability issues when interacting with videoconferencing tools using screen readers and keyboard shortcuts [31]. Trying to concentrate during a meeting while listening to both the screen reader and the speaker is a significant challenge [31, 51]. While these accessibility issues present difficulties for all BLV meeting participants, they are especially challenging for BLV meeting facilitators who are hosting and leading meetings simultaneously. As a meeting facilitator, they have to perform

technical hosting responsibilities such as creating and managing meetings and monitoring various participant activities (e.g., chat, waiting room) as well as leading the meeting itself – each of which poses barriers to accessibility [26, 36]. The complex challenges faced by BLV meeting facilitators while managing hosting and leadership duties, however, still remain unexplored. Yet, the ability to effectively lead and moderate a meeting, including the technical aspects of interacting with videoconferencing tools, is essential for all leaders.

In this paper, we focus on the following research question: *How do blind and low vision workers facilitate meetings with videoconferencing tools and what challenges do they encounter?* To answer this research question, we conducted semi-structured interviews with 18 individuals who are blind or low vision, use screen readers, reside in the US, and have experience with facilitating meetings regularly through videoconferencing tools. Our analysis reveals that even though these professionals are proficient in using a wide range of videoconferencing tools, they still encounter myriad technical, social, and organizational challenges that hinder their ability to effectively facilitate meetings using mainstream videoconferencing platforms. Our findings detail the strategies employed by BLV meeting facilitators, which include taking time to learn, rehearse, and prepare for meetings in advance; ensuring meetings are secure and private, even when these features are not screen reader accessible; maintaining awareness of attendee activity while moderating meetings; coordinating with sighted co-hosts to address accessibility issues inherent in mainstream tools; presenting oneself professionally; and advocating for accessible meeting practices and technologies within and outside their organizations. Based on our findings, we discuss the impact of inaccessibility on the perceived competency and career advancement of BLV meeting facilitators, the ways in which videoconferencing tools could better prioritize collective access and coordination with co-hosts, and recommendations for inclusive virtual meetings and tools that better support the needs of BLV meeting facilitators. The present paper contributes one of the first studies of how the accessibility of videoconferencing technologies shapes the work of BLV organizational leaders and workers who facilitate meetings, highlighting the work they do to achieve access and navigate barriers to career mobility and workplace inclusion.

2 RELATED WORK

Remote work—also called 'telework'—has been studied from different perspectives in a wide range of fields such as management and organizations [16, 17, 27, 41] and computer science [21, 35, 42, 43]. Scholars in Human-Computer Interaction (HCI) have investigated various dimensions such as job productivity and the remote work experience, establishing a deeper understanding of the opportunities and challenges of remote work in diverse contexts [7, 9, 10]. Although remote work has been investigated in the field of HCI for nearly 40 years, comparatively less research has focused on the *accessibility* of remote work, particularly remote meetings, for PWD. In the following sections, we detail prior studies of accessibility, remote work, and mainstream videoconferencing tools as well as workplace accessibility and career advancement for PWD.

2.1 Accessibility of Remote Work

Remote work can offer a range of advantages to PWD. In fact, prior to the surge in remote work prompted by the pandemic, Schur et al. [47] found that PWD were more likely than their non-disabled counterparts to work from home. Beneficial aspects of remote work have been documented for people who are blind and low vision [27], people with limited mobility and dexterity [15, 27, 33], people who are d/Deaf or hard of hearing [27], people with speech disabilities [27], and people who are neurodivergent [19]. Even workers who do not view remote work as an accommodation under the Americans with Disabilities Act (ADA) or who do not identify as having a disability may benefit [33, 39]. Among the advantages are reduction in transportation challenges associated with commutes [15, 27, 33]; flexibility to take rest during times of fatigue [15, 27, 33]; and control over the physical, digital [27, 33], and sensory [19] aspects of the work environment. Though prior work generally aligns with Hesse's [27] conclusion that remote work can 'level the playing field' for PWD, as we see in the next section, there are nuanced ways in which digital technologies can erect usability and accessibility barriers for disabled remote workers.

2.2 Accessibility of Videoconferencing Technologies

Given the importance of videoconferencing technologies in supporting remote work, a growing body of literature focuses on understanding the accessibility of mainstream videoconferencing platforms. Ferraz et al. [23] explored access barriers faced by PWD when using online communication platforms, including difficulty navigating the tools without abundant knowledge of shortcuts. For neurodivergent individuals, a significant amount of mental and emotional effort is required while using videoconferencing platforms for meetings and collaboration [19, 60]. Prior work also explored the experiences of PWD with 'video calling' technology for remote work and observed conflicting access needs [34, 51]. For example, BLV meeting attendees usually choose not to share their video during meetings whereas people who are d/Deaf or hard of hearing (DHH) need other participants to leave their videos on to allow for monitoring facial expressions and lip reading. DHH meeting attendees also reported having to juggle many visual elements, which resulted in challenges in finding an optimal meeting view and being distracted by busy backgrounds that make it harder to focus on visual cues [30, 44]. During videoconferencing, BLV individuals face challenges while handling separate audio streams such as screen reader and speaker's voices [51]. BLV participants also experience difficulties with speaker identification and turn-taking in hybrid meetings using videoconferencing platforms [4].

Related to the focus of the present study, prior works compared a variety of mainstream platforms (e.g., Zoom, Microsoft Teams, and Google Meet) [21, 31, 32] and evaluated screen reader accessibility and usability of different features such as screen sharing, chat, and audio settings [31, 32]. Their findings indicated that Zoom was considered the most accessible and usable tool, while Microsoft Teams was the least used and considered the most difficult to use by BLV participants. Yet, none of the tools evaluated were fully accessible through screen readers, keyboards, or touch-screen gestures. Others have shown that screen sharing on Zoom is inaccessible

through screen readers [26] and that video calling tools on Android (e.g., Line, Skype, WeChat) were also inaccessible for blind and low vision users [35].

While extensive prior research details the accessibility issues of videoconferencing technologies for meeting *participants* with disabilities (e.g., [4, 26, 32, 44]), the unique needs and experiences of BLV workers who are in leadership positions and *facilitate* remote meetings has been largely neglected.

2.3 Disability in the Workplace and Career Advancement

Numerous studies indicate that accessibility challenges can diminish employment opportunities and career advancement for PWD (e.g., [20, 37, 48]). For example, job applications can be inaccessible [28], and some jobs might require the use of inaccessible electronic documents like PDFs [18], both of which can discourage BLV workers from applying to certain jobs in the first place. When BLV professionals do have jobs, they are often required to perform 'invisible' or unseen additional work to understand, navigate, and succeed within work environments [13, 18]. They often deal with inaccessible websites, software, hardware, document editors, and document formats in the workplace, requiring creative self-accommodations (e.g., using multiple headphones to listen to screen readers across multiple monitors) [13]. Moreover, BLV workers may feel the need to communicate accessibility setbacks to co-workers so that delays are not interpreted as incompetency or laziness [13]. PWD more broadly are concerned with losing their jobs due to others' perceptions of their disabilities, and therefore, they may choose to not disclose their disabilities to their employers [49].

Having a leadership role, however, does not automatically remove access barriers for disabled workers. For example, through the lens of interdependence, Bennett et al. [6] illustrate how co-workers 'pool their strengths to achieve shared access' and describe how a worker who is blind in a senior position had to perform years of advocacy work to convince non-disabled co-workers to create accessible PDFs. Those who overcome discrimination and accessibility barriers to reach leadership positions can be met with a continued lack of organizational knowledge about disabilities, leading to an 'absence of physical and technological resources' and increased precarity [57]. While leaders with disabilities have typically been considered as 'fringe' in stakeholder research, recognizing them as both leaders and disabled (i.e. core and fringe stakeholders simultaneously) is crucial to decrease their invisibility in the workforce [46]. A few studies focus explicitly on PWD in management or leadership positions in in-person workplaces [12, 46, 57]. Yet, little is known about PWD in positions of leadership in remote-work environments and how the inaccessibility of mainstream collaboration tools—particularly videoconferencing technologies—affects their work practices and overall career advancement.

3 METHODS

To understand the accessibility of videoconferencing, we conducted interviews with 18 participants who all identify as blind or low vision, use screen readers, and have experience facilitating meetings using videoconferencing applications.

3.1 Participants

We recruited participants who are screen reader users and have experience using videoconferencing technologies through online mailing lists (e.g., National Federation of the Blind [1]), our research network, and snowball sampling. All participants resided in the United States, spoke English, and had experience hosting or facilitating meetings using videoconferencing technologies. Among the 18 participants, 9 (50%) identified as female, 8 (44.4%) as male, and 1 (5.6%) as non-binary; 13 identified as White, 2 as Hispanic or Latino, 1 as Black or African American, and 1 as American Indian or Alaska Native). Among our participants, 9 (50%) were between 30-to-49 years old, 6 (33.3%) participants were between 50-to-64 years old, and 2 (11.1%) participants were between 18-to-29 years old. As for their professional background, 10 (55.6%) participants reported being employed full-time, 3 (16.7%) as employed part-time, 2 (11.1%) as unemployed and looking for work, and 2 (11.1%) as retired. Most of our participants (16, 88.9%) preferred Zoom as their videoconferencing platform, 1 (5.6%) preferred Google Meet, and 1 (5.6%) preferred Discord. The majority of participants reported having experience using VoiceOver (14, 77.8%) and JAWS (13, 72.2%), while some had experience with NVDA, Narrator, and TalkBack. For details of participants' self-reported visual abilities, employment status, and videoconferencing technology use, see Table 1.

3.2 Procedure

We conducted interviews remotely via Zoom. Interviews were conducted between December 2022 and March 2023. Prior to the interviews, we emailed participants a digital copy of the consent form. At the beginning of each interview, we briefed participants on the study procedure and obtained their verbal consent. Participants were informed that they could pause, take breaks, skip questions, or stop the interview at any time. Each interview lasted approximately one hour, and participants received a $40 Amazon gift card after the interviews. The interviews were recorded and later transcribed for analysis. The study was approved by the institutional review board of the University of California Irvine.

To facilitate open discussion about their experiences with videoconferencing technologies, we conducted semi-structured interviews. The topics covered in the interviews involved gaining insights into the participants' overall experience with videoconferencing technologies, including their perspectives on accessibility, hosting experiences, privacy concerns, and expectations for future advancements in videoconferencing technologies. We began by asking participants to describe the meetings they facilitate using videoconferencing platforms. They were also asked to describe their role as meeting facilitators and share any accessibility or usability challenges they encountered while using these platforms. They also discussed their collaboration experiences with colleagues and co-hosts and shared strategies for navigating accessibility and social challenges to make meetings more inclusive. Finally, we asked for their recommendations for improving videoconferencing technologies. The interview protocol is available in Appendix A.

3.3 Data Analysis

To analyze our data, we adopted thematic analysis approach [14]. We started by open coding our transcripts to identify the general

	Self-reported visual ability	Employment Status	Videoconferencing tools used	Videoconferencing tools use frequency
Alan	Legally blind	Looking for work; Previously worked as software developer	Zoom, Google Meets, Webex, Skype, FaceTime	About once a day
Alex	Legally blind	Retired; Previously worked as human resource manager	Zoom, MS Teams, FaceTime	A few times a week
Ben	Totally blind	Full time; Director of Manufacturing in Non-profit	Zoom, MS Teams, Google Meets, Webex, Skype, FaceTime, AT&T Office@Hand	A few times a month
Dan	Blind	Retired; Previously worked as flight mechanic	Zoom, MS Teams, FaceTime	A few times a month
Daisy	Has light perception	Full time; Youth Outreach Specialist in Non-profit	Zoom, MS Teams, FaceTime	A few times a week
Gabriella	Low vision	Part time	Zoom, Google Meets, Skype, FaceTime	A few times a week
Jim	Totally blind	Managing partner of software development company	Zoom, Skype, FaceTime, Discord	A few times a year
Kelly	Completely blind in left eye, and has light perception in right eye	Part time	Zoom, MS Teams, Webex, Skype, FaceTime	About once a day
Louis	Has light perception	Looking for work	Zoom, Google Meets, Skype, FaceTime	Several times a day
Lily	Totally blind	Full time; Assistant Director of disability services at a university	Zoom, MS Teams, Google Meets, Skype	Several times a day
Leah	No usable vision for computer-related tasks	Full time; Program Director in Non-profit	Zoom, Google Meets, Webex, Skype, FaceTime	Several times a day
Mary	Totally blind	Full time; Director of disability resources at a university	Zoom, Google Meets, Webex, FaceTime, Google Hangouts	Several times a day
Nina	No usable sight	Full time; Program Manager at a lobbying firm	Zoom, MS Teams, Google Meets, FaceTime	Several times a day
Noah	Totally blind	Full time; Blind and Visually Impaired Education and Vision Consultant	Zoom, MS Teams, Webex, FaceTime	Several times a day
Sara	Has light perception	Part time; Language Facilitator	Zoom, MS Teams, Google Meets, Webex, Skype, FaceTime	Several times a day
Tina	Blind	Full time; Government Relations Analyst in a non-profit	Zoom, MS Teams, Google Meets, Webex, Skype, FaceTime	Several times a day
Tom	Visually impaired	Full time; Assistant Director of disability services at a university	Zoom, MS Teams, Google Meets, Webex, Skype, FaceTime	Several times a day
Zoey	Totally blind	Full time; Development Officer in Non-profit	Zoom, MS Teams, Skype, FaceTime	Several times a day

Table 1: Detailed information of participants. All participant names are pseudonyms.

social and accessibility challenges experienced by our participants. We wrote analytic memos and compared the data with emerging concepts. We also adjusted our interview questions based on our earlier findings to better understand the emerging themes and explore open areas. For instance, we probed into how BLV meeting facilitators coordinate with co-hosts to ensure effective collaboration during meetings. We also reordered the questions to improve the flow and coherence of the interviews and expanded the list of features discussed to encompass additional accessibility-related aspects mentioned by earlier participants. For example, we included questions to inquire about the accessibility of the raising hand feature, the use of reactions and emojis, and receiving notifications about participants joining or leaving the meeting. Then, we revisited our transcripts to identify instances that either supported or contradicted these themes. We merged and reworked the themes as necessary to ensure their distinctness and avoid overlap. Our analysis revealed several themes related to the experiences of BLV individuals as meeting facilitators, including their preparation, meeting management, and strategies for ensuring smooth facilitation.

4 FINDINGS

Our study participants exhibited a high degree of familiarity with videoconferencing tools and have extensive experience using multiple videoconferencing tools. Participants echoed findings from previous studies that detail the inaccessibility of mainstream videoconferencing features, such as chat, muting/unmuting, raising hands, and screen sharing [31, 32, 51]. Beyond these challenges experienced when joining videoconferencing meetings as an individual

contributor, participants described heightened technical, social, and organizational challenges while hosting or facilitating meetings. As screen reader users, our participants had to balance the demands of serving as the meeting leader or facilitator while also managing the underlying videoconferencing technology and any technical issues that occur during the meeting. Sara explained that in contrast with being a meeting attendee, hosts need to be "on top of things" that are happening in the meeting as well as anticipate what could happen next:

> *"When I'm an attendee, if things don't work out, I mean it's unfortunate. But I have a little more flexibility. ... But when I'm hosting, I have to know what to expect. And I also have to know how to be able to deal with all these other things [features] that people might use. How is it going to affect my speech? How is it going to affect what I'm able to do?"*

Moreover, Nina expressed frustrations for not being able to access features essential to hosting which limits her ability to effectively lead meetings: *"As a facilitator to not have that option, to use this other functionality is kind of demeaning. You're like, oh, here are these things Zoom does to help make sure your meetings, your workshops, the work you do goes better and you can't actually use it."*

Overall, our participants are highly resourceful and proactive in addressing accessibility and usability issues through a variety of workarounds. They prepare and familiarize themselves with features and platforms ahead of time, coordinate with co-hosts to stay informed about meeting activities and maintain awareness, and communicate using back channels during videoconferencing calls. Below we detail the challenges they faced as meeting facilitators and the variety of workarounds they used to effectively coordinate and lead meetings.

4.1 Learning, Rehearsing, and Preparing for Meetings in Advance

Our participants engaged in additional forms of accessibility work in order to prepare for meetings: they continually (re)learned new and existing videoconferencing platform features and shared materials in advance in order to ensure meetings run smoothly. As Ben explained:

> *"The biggest challenge is being familiar with all the different platforms. Just really staying up and current on the accessibility features of each of those platforms. They are constantly changing. ... Let's say, 'Hey, everything I'm gonna be hosting is always going to be through Zoom.' And that sometimes has a little bit of a clash with a company that says, 'Well, our preferred platform is AT&T Office@Hand or Google or Microsoft Teams.'"*

Furthermore, videoconferencing technologies are often updated, resulting in layout and navigation changes that affect screen reader users (see also [45, 55]). As a result, screen reader users must adapt to these changes and relearn how to effectively navigate the tools. Daisy said, *"They run updates. And then things that worked, or I knew how they worked yesterday are now different, and it changed. And so then you're trying to figure that all out again."*

Participants also stressed the necessity of learning shortcut keys to be able to effectively facilitate meetings, as tabbing through many user interface (UI) elements and menus is impractical and inefficient when leading a meeting. Shortcut keys provide the hosts with more power and control during meetings, and mastering shortcut keys in advance can help hosts run meetings more efficiently and smoothly. As Sara said, *" It's always a little bit harder when you're the host. ... The more shortcut keys I can learn in advance, the better when I'm a host, because then I don't have to sit there and look around. I can just concentrate on what I'm saying, and what other people are saying, instead of having all the logistical stuff get caught up."* Despite the benefits of shortcut keys, these keys are not standardized across various platforms, making it more difficult for screen reader users to memorize them. Additionally, as Nina notes, these shortcut keys create new expectations for BLV meeting facilitators that are not imposed upon sighted meeting hosts:

> *"I know a lot of the shortcuts. But I don't know every single shortcut. A blind person should not be expected to memorize a list of them because a sighted person does not have to do that. The fact that I had to tab like 12 times, is stupid. There needs to be a way to consolidate that better. It's just not an equal expectation, right?"*

Participants developed workarounds, and they emphasized the importance of practicing and rehearsing before meetings. These strategies may include educating themselves beforehand, reviewing shortcut keys, and doing trial runs before actual meetings. One strategy that Alan employs is creating "fake meetings": *"In Google Meet, I did it once. I make myself host and invite no one. And I try to simulate that situation. 'What happens when I'm in a meeting in Google Meet? How can I explore the page? What are the features? How can I navigate different parts of the page?'"*

In preparation for meetings, participants described creating materials that they would use during the meeting as well as reaching out to other attendees to understand what their access needs are. This preparation may involve distributing meeting agendas in advance or sharing relevant materials that will be discussed or presented during the meeting (practices are important to neurodivergent meeting attendees as well [19]). For example, Tina explained that she will *"try to put links to things or give the slides in advance, just because we all have to take different amounts of time to process,"* acknowledging diverse access needs related to processing information. To make the meetings more inclusive and accessible, our participants regularly ask meeting attendees in advance whether they need any accommodations. Alan said, *"If I see that people with different abilities may join in a meeting if that is something crucial, I would definitely communicate with them in advance. If I know them, to understand, if there are any accessibility needs or accommodations that we could offer to make it more inclusive and usable for all people around the table in that meeting."*

Despite their best efforts to prepare and distribute materials beforehand, participants felt that they lose their flexibility as hosts to adapt to different situations or contexts. Due to the complexity of navigating videoconferencing technology and other digital meeting materials (e.g., shared documents or slides), it may not always be feasible to update materials in real-time, which can limit a meeting facilitator's ability to respond to unexpected shifts in the meeting

discussion or attendee interests. Nina described, *"I set that [activity] up beforehand even though nobody else has to. And what that does is it loses my flexibility to tailor what I'm doing because I have to use whatever I set up beforehand. Even if let's say in that moment you're like, 'Oh, that question doesn't make sense.' ... And I can't just go edit it right then and there. So, I either have to just not use it, not mention that I was going to use it. Or use it and it doesn't really fit the scenario."*

Just before a meeting begins, participants spend extra time and energy preparing their physical and digital environments. This may involve checking their surroundings to ensure that there is no clutter, adjusting their camera angle for optimal visibility, and ensuring that there is sufficient lighting in the room. Lily described being *"mindful of what they're seeing, what I'm projecting. What my setting is and how I look myself and what my surroundings are."* Our participants also mentioned configuring their digital workspace to make it easier to manage during meetings. For example, Lily closed the extra tabs before screen sharing to *"make sure I don't have extra things open that I don't need to have."*

Overall, BLV meeting facilitators engaged in additional 'invisible work' [13, 18] to manage their own accessibility, such as continuous learning of new and existing videoconferencing platform features, preparing meeting materials, and managing physical and digital environments to ensure the smooth running of meetings. Nonetheless, undertaking these preparations is not always feasible, and it may sometimes limit their flexibility as meeting facilitators.

4.2 Ensuring Meetings are Private and Secure

As part of facilitating meetings, participants described configuring meeting settings in ways that help ensure virtual events are private and secure. Yet, they detailed numerous accessibility challenges with using the security features of the platforms, such as setting up meeting passcodes and monitoring the waiting room.

Although using passcodes can enhance meeting security, participants reported that they can cause additional accessibility challenges for the meeting attendees. For example, participants described cases of meeting attendees who join meetings via landlines encountering obstacles when entering passcodes, particularly older adults or those who are new to videoconferencing technology. Tom explained,

> *"I don't like using the password feature much because that's an extra layer that people have to type in. Because some people might log into a meeting and they just type in the meeting ID, or others might click the link. And having a password and having to remember all those extra things, it's just a lot more cumbersome than what I would like."*

To circumvent these obstacles, some facilitators opt to use the waiting room feature and participants reported difficulties in running a meeting while simultaneously monitoring the waiting room. Leah said, *"Finding that waiting room, that 'enter all' thing on the waiting room, can be really hard. Other people come into the waiting room and I'm doing something else, like showing slides, that can be a problem."* She further explained that when *"there are a lot of people coming in from the waiting room all at one time, that just takes over the whole meeting and I can't do anything else."*

While each of the existing privacy and security features present accessibility challenges, our participants underscored the importance of using these features by reflecting on instances of unwanted meeting attendees joining and their experiences with Zoombombing [2]. For example, participants recalled situations where unauthorized individuals joined their meetings without their knowledge. When someone silently joins a meeting, it becomes more difficult for BLV facilitators to detect their presence. Daisy recalled an experience where a colleague who was not associated with the meeting joined without announcing themselves:

> *"[A co-worker] popped into the meeting and didn't let anybody know she was there. And she was just observing, and you know, these were kids! It really irritated me that she didn't even alert us, that she was on the meeting. She just jumped in. I invited people to come to the meeting, but you always should announce yourself when you're in the meeting, cause it was like, 'Oh, I didn't know you were here!'"*

In contrast to these experiences, multiple participants recounted situations regarding intruders intentionally disrupting meetings (i.e., Zoombombing). Tina described this stressful hosting situation that compromised the security of the meeting:

> *"I was Zoombombed once, and I was leading it [the meeting], and the person [Zoombomber] started screen sharing music that was really loud, and it overpowered my screen reader. It was very very stressful because there were other attendees. ... So, I just ended the meeting so that it'd be easier to get rid of them. It was really scary. They were playing really inappropriate music, drawing inappropriate things. And the only reason I knew about the drawing is 'cause one of the attendees, or a few of them had some residual vision and were able to see it."*

To prevent such situations from occurring, organizations implemented policies and security measures, and some of our participants emphasized the importance of being vigilant to ensure the safety and security of their meetings. Kelly indicated the importance of features such as waiting room and creating password-protected meetings to prevent Zoombombers, *"I make sure that there's a waiting room so I know everyone who's coming in and I can manage that. I make sure that there's a password because that's important to make sure there's less Zoombombers."* Tina adopted additional security measures such as using the *"organization Zoom link"* and *"creating a new link for every meeting."* Additionally, others reported receiving cybersecurity training from their organizations and ensuring that their security settings are properly configured to create a secure meeting environment for their attendees. Lily explained, *"We used to have a lot of training on that as well, like cybersecurity, both at the school level and the university. Because we did work with young students, that was specifically a requirement. Just be very mindful of security features when you're using web conferencing. So, we made a point of always checking those."*

4.3 Maintaining Awareness of Attendee Activity while Moderating Meetings

Another challenge our study participants reported is that meeting facilitators must maintain awareness of attendee activity, including the meeting chat and moderating turn-taking among participants. Monitoring the meeting chat using a screen reader requires dividing attention between multiple channels of aural information as the screen reader announces chat messages and other information aloud while people are speaking. Mary elaborated:

> *"If I'm hosting a meeting, it can be difficult sometimes because people want to use chat, and I'm getting all these chats, and I'm trying to host the meeting and figure out who's leaving and who's entering. If it's a group meeting and I'm the host and a lot of people are using chat, that can be challenging."*

Therefore, sometimes, BLV meeting facilitators decide to disable screen reader notifications during meetings to be able to focus on the spoken component of the meeting. This can cause facilitators to miss out on vital information during the meeting. While this is also true of meeting participants [31, 51], this is especially difficult for meeting facilitators because they want to be aware of all of the streams of communication during meetings to lead effectively. Gabriella explained:

> *"Chat drives me crazy. I typically, disable my screen reader alerts when I go into a meeting, and if I can hear that they're using chat, I will turn off those alerts. ... I really can't stand it when people are asking to put something in the chat box, because again, people, they're operating from the ability to be able to talk and read at the same time. But because I can't, like I have to choose. 'Do I read what's in the message box right now using my screen reader? Or do I listen to who's talking right now?' So either way, I'm missing out on some type of context or information that's being given."*

Beyond managing multiple streams of information, BLV meeting facilitators also experience challenges identifying and monitoring who is speaking. Videoconferencing technologies do not currently offer notifications to indicate who is speaking during a meeting, which becomes especially problematic when they are unfamiliar with meeting attendees and do not recognize them by voice alone. Noah explained, *"As long as I know who was in the room, I know who was speaking. But if I don't know all the folks in the room, I don't know how to determine who is speaking."* Currently, screen reader users must traverse the participant list to identify who is speaking. This is impractical when they are running the meeting and especially inefficient in large meetings. Alternatively, Tina suggested that *"a shortcut command to know who's talking"* would be helpful to provide the information when needed.

Another related challenge is that participants reported difficulties with moderating turn-taking and knowing when to speak during meetings. BLV facilitators find it challenging to lead meetings because they cannot easily determine when someone unmutes themselves or uses nonverbal cues such as facial expressions to indicate their desire to speak. Noah said, *"As a blind person, you can't really tell when they're done unless they explicitly pause or if someone else is about to jump in. I feel like people maybe get a look on their face or I know you all can kind of see when someone's unmuted themselves. But because you're trying to pay attention to the meeting, and I try not to navigate as much. So, I think knowing when the appropriate time to talk is can sometimes be a bit challenging."*

Some videoconferencing technologies have introduced the 'raise hand' feature to address this issue, along with shortcut keys for BLV screen reader users. However, our participants have found it challenging to identify who is raising their hand when multiple participants use this feature. Nina described:

> *"It's very difficult for me as a pretty seasoned facilitator to see whose hands are raised. If I happen to catch it in time, I can hear it say 'Alice raised her hand.' But if I have five people with their hands raised, unless I don't know how to do it, and again, I am a pretty seasoned person. So, it must not be that obvious if I didn't figure it out. I can't tell who are the six, seven, or eight people with their hands raised."*

Overall, BLV meeting facilitators require more attention than participants to be aware of various situational information and activities of attendees, but existing videoconferencing technologies do not fully support their accessibility needs.

4.4 Coordinating with Meeting Co-Hosts or Human Assistants

Given the inaccessibility and poor usability of multiple critical videoconferencing features, many BLV meeting facilitators described working with co-hosts, often sighted colleagues who act as "wing person", to help run meetings. Working with a co-host required meeting facilitators to set expectations for co-hosts' responsibilities, train them to help provide better support, and effectively coordinate and communicate during meetings.

Many participants in our study described working with meeting co-hosts to manage technical hosting responsibilities such as monitoring the waiting room, admitting attendees, muting/unmuting attendees, starting and stopping the recording, monitoring chat, and raised hands. Having a co-host allows meeting facilitators to focus on leading without worrying about technical issues and inaccessible platform features.

The number of co-hosts usually depends on the meeting size, and assigning co-host responsibilities in advance helps BLV facilitators to lead meetings effectively. For example, Leah described how she decided on the number of co-hosts for her meeting, *"If it's a large meeting, I always have a second person, at least. If it's a really big meeting, I want a third person."* Sara opts to delegate the responsibility of monitoring attendees' activities and taking necessary actions to co-hosts while speaking or presenting, *"I asked them if they would be willing to look at the chat and see if anybody had raised their hand, or if there was anybody in the waiting room. Especially when things got going. Because then, I'm trying to talk."*

Participants also mentioned relying on their sighted colleagues while presenting or sharing screens to provide them with visual context such as whether they have shared the correct screen or contents, whether shared contents appear as expected, and whether their camera angle is appropriate. For example, Mary delegates the task of advancing slides to her co-host as it is a lot of work for

her to read notes, host the meeting, and keep track of the slides simultaneously. In order to gauge the audience's reactions during the meeting, Ben emphasized the importance of developing trust with his co-host so that, *"I can say, 'Hey, keep me in the loop on what's going on.' Or 'Are you losing people, are you boring people, or wrap, come on wrap things up.'"* Additionally, Sara described asking her co-host to confirm her camera's angle, *"If I'm not quite sure if I'm centered, I may ask, 'Am I centered? Okay, can you see me? Or are you just seeing my shadow?'"*

Our participants established alternative methods of communication and practices for effective coordination and communication with co-hosts to ensure meetings run smoothly. They highlighted the use of "back channels" such as Slack or phone text messaging to communicate in real-time with their co-hosts during meetings, rather than the in-platform chat. Nina provided an example, *"We'll have a Slack, it's called Back of House Channel. And they'll be writing to me and it'd be like, 'Jim, John, Jen, and Kim have their hands raised FYI.'"* Participants sometimes establish policies outlining what information the co-hosts should convey through back channels and what they should handle by themselves. Alan said, *"We try to lay out a policy to make sure that for example, the chat area is read or back channeled to me in a way if I needed that. ... They [co-hosts] would take care of it in a professional manner, and I guess depending on the meeting nature."* Ben expressed a preference for having co-hosts who are located "in the building", so they can provide physical assistance when necessary, *"Just for sound and reverberation, I usually try not to sit in the same room, or the same area [with co-hosts]. But when worse comes to worst, the person that's helped me out or I'm kind of doing this with they're in the building somewhere, and so they can physically either come down or give me a sign that way."* Furthermore, to enhance the efficacy of back-channel communication, Tina mentioned using dual audio sources, one for each ear, during meetings, *"It can be kind of hard to communicate with them [during the meeting]. So, we were texting each other. I can have my headphone in for Zoom, but then I can have an AirPod in my other ear connected to my phone."*

Sometimes, unexpected situations arise in videoconferencing meetings that cause BLV facilitators to have to reluctantly relinquish their host responsibilities to their sighted colleagues. Kelly recounted an incident where admitting people from the waiting room was not working, *"For some reason, it didn't register that I was clicking on admits. ... And I actually had to pass over my host baton. I had to give someone else the host feature because I could not admit anyone."* Moreover, our participants felt uncomfortable relying on co-hosts to address accessibility issues. Kelly described:

> *"I don't like it because as a visually impaired person, I want to be able to host whatever meetings I want to host. So it felt kind of disappointing to have to pass something over due to lack of accessibility, that shouldn't be a thing. So, if I'm supposed to be the facilitator, I should be the host. And so that felt uncomfortable with me not being able to be the host as a facilitator"*

Participants encountered difficulties in finding qualified co-hosts for their meetings, as some co-hosts failed to show up or inaccurately claimed to know how to perform their designated tasks. Sometimes, BLV facilitators need to put in extra effort while coordinating with co-hosts, leading to frustrating situations for them. Leah explained, *"They don't show up or ... they say they know how to do something but then don't. I have had a couple of disasters actually. I had a facilitator show up to do a session once who had told me that he knew how to screen share and he did not."* To avoid such situations, participants typically delegate the tasks beforehand to the people they already know or ask the co-hosts to demonstrate their skills before the meeting if they are unfamiliar with the co-host. Mary elaborated, *"I like to know who the person is though. I wouldn't just say to someone at the last minute, 'Hey, can you do this?' Usually when I've done it, it's been people that I've worked with before."*

Moreover, who the co-host is matters for certain meetings. Alex leads a men's support group for a blind organization and described a challenging situation when finding a meeting co-host. At first, a female staff member was designated as the meeting co-host as the organization is run by primarily female-identifying staff, but members of the men's group shared privacy concerns. Alex elaborated:

> *"We deal with everything and anything you can imagine that men would be concerned with. ... And the guys feel very protective of their privacy. When the Teams platform requires a staff member to be on the call, we almost had a mutiny. They [members] didn't want to participate. They got very vocal with the staff at [organization]. They didn't think that a support group should have somebody sitting in on it unless they had a vested interest in the support group. So, it was a big hurdle to overcome."*

The only other sighted man at the organization was the janitor, who then became the ongoing meeting co-host for this particular group.

Our participants also described doing *"double work"* (Nina) to manage co-hosts and experienced unexpected situations while coordinating with them. Nina commented on coordinating with an assistant to set up a meeting, *"I'm still pulling double work because I have to write exactly what I want in it. I have to write exactly what questions, what fields. I might as well have just been doing it myself. And it's frustrating. Because then if there's a mistake, I need to tell her to go fix that mistake versus being able to just fix it myself."* Nina also recounted a frustrating incident in which her co-host overlooked her accessibility requirements and requested her to undertake an inaccessible task. Being the facilitator of that meeting, Nina felt worried that such a situation could adversely affect her professional reputation:

> *"They're [co-host] like, 'I'm sharing slides. Would you mind reading off the whiteboard?' And then I have to, in the middle of the meeting in front of everyone, be like, 'Oh, unfortunately, whiteboards aren't accessible'. And it's very awkward and uncomfortable since I'm a leader of it. ... In that moment [I] felt like I wasn't doing my part as a co-facilitator because they asked me for a favor and I couldn't do it. And so, we needed to pull in a third hand when it really didn't need to be that way."*

Although co-hosts can reduce the workload of BLV meeting facilitators, coordinating and managing them can require extra effort. BLV facilitators also feel uneasy about being obligated to have

co-hosts due to the accessibility limitations of videoconferencing technologies, which can harm their professional reputation.

4.5 Maintaining Professionalism during Meetings

Participants expressed concerns about how technical issues during meetings could affect their professional reputation as meeting leaders. They fear being perceived as unprofessional or less competent due to technical glitches and malfunctions, which added pressure to the already challenging task of hosting a meeting. Leah shared:

> *"Sometimes when something goes wrong like that, I feel like it might reflect differently on me. So there was one thing that happened, I want to share a video, and the goddamn system voice kept coming into the sound. And then what happens, of course, is people start talking to each other, which means I can't hear my screen reader. ... I feel sometimes more stress because I feel like people always assume, 'Oh, they're blind. They don't know what they're doing,' or, 'They're not as skilled as I am'. That does add a layer of stress onto it."*

In addition to stressful, unexpected technical glitches, the extra, time-consuming steps required in tabbing and listening to screen readers made them feel less professional. Nina explained, *"It's tough because I run a tight ship when it comes to meetings and workshops. When I, let's say, have a link or something that I'm going to paste in the chat. And it takes me 30 seconds to get to it, it's frustrating, and it's a noticeable difference versus someone who goes like this, and that's it."*

Our participants also expressed concerns about accidentally sharing personal or sensitive information during meetings [3], which could harm their professional image. For example, screen sharing in videoconferencing platforms depends on visual cues to identify which screen or window is being shared and its contents. Without any audio feedback from the platform, our participants find it challenging to ensure that no sensitive information is shared during a meeting. For example, Lily was concerned about any unintended sharing, *"My mom sends me a lot of pictures. What if I accidentally pin something to my taskbar and I'm sharing my whole screen and I have whatever pictures of me in the pool with my nephews?"*

Participants were also concerned about others hearing their screen readers audibly announcing personal or extraneous information during meetings. Gabriella described a situation when she didn't want other people to hear what her screen reader was announcing, *"If I try to go back and look through my notes, they're hearing all the stuff that I'm listening or looking at. It doesn't feel professional. I want to be able to refer to my notes and tell them specifically if I want to share versus them hearing all of the notes I have before I get to what I want."*

To prevent such situations, participants used various workarounds such as setting their phones to 'do not disturb' mode, wearing headphones, disabling screen readers, splitting audio via headphones, and keeping a finger on the control key to stop the screen reader from talking when necessary. For example, Dan shared his personal strategy for dealing with such scenarios, *"When I'm on Zoom, I usually keep my finger on the control key, because when it starts to read the heading of an email, I hit that control button to stop it from talking."* Gabriella mentioned feeling confident when she knows that other people can't listen to her screen reader during a meeting, *"People can't hear it because Apple has created some type of technology where you know the microphone is not picking up my VoiceOver which makes me feel more confident."*

4.6 Advocating for Accessible Meeting Practices and Technologies

In addition to fulfilling their roles as meeting facilitators, our participants advocated for more accessible videoconferencing tools and meeting practices. For example, Noah provided guidelines to participants before starting meetings to maintain focus and order:

> *"I ask people to raise their hand to be recognized before speaking. In larger meetings I ask them to identify themselves when they do speak. I ask people to remain muted if they are not speaking so that we eliminate or decrease background noise. And I ask people to let one person finish before another person begins to speak. Those are some of just the very basic things. And if you get far beyond those four or five things that I just listed, it's more than people can comprehend and keep in their mind without something to look at."*

Participants also noted the importance of having a policy for sharing presentation materials prior to meetings. It ensures that all attendees have access to the materials and can follow along, especially those who are BLV. However, as facilitators, they need to consistently remind others to share materials in advance. Lily described, *"I always mention, and we've made policy of this like, 'If you're going to be doing a presentation, please include that in your invitation,' 'When you send the link to the meeting, please make a point of including whatever you're going to present.'"*

As part of the meeting etiquette, our participants also emphasized that people should refrain from chatting while someone is presenting during virtual meetings. Leah mentioned, *"I think that teleconferences should run parallel to in-person meetings. You wouldn't chat to your neighbor if you were in the middle of a meeting. You don't send texts to people. At least, I hope you don't. Why is it okay to do it here?"* Mary usually prefers Q&A over chat and requests meeting attendees to refrain from chatting during meetings, *"I'll ask people to not use the chat in training because I find it really distracting. I can turn off the notifications with the screen reader, but then everyone else is seeing things that I'm not. I like it when people use the question and answer box instead."*

Our participants often feel excluded during meetings when communication relies heavily on non-verbal cues. For instance, instead of providing a verbal response to a question, individuals may simply nod their heads. Mary further explained,

> *"I think people forget that I'm blind in these meetings. They just nod a lot. I swear however many times I say something, people will just sit there and nod their head. People do that when you're in person too, but I feel like they tend to do it more over Zoom because they're already muted, and it's just easier for them to do some nonverbal thing, and then I don't know what the response is."*

Similarly, Mary further added how she feels uncomfortable when people join or leave the virtual meetings abruptly without saying 'hello' or 'goodbye'. Mary explained, *"People enter meetings and everybody's on mute and no one says anything. But then the meetings end so abruptly, and if you were in person, people would say goodbye to each other. I think it's really cold and abrupt, why don't they say goodbye? And then some people said, 'Oh, well, people are waving goodbye, you just can't see them.' Well, but to me, I'm in the meeting, so why do you act as if I'm not blind?"*

Meeting accessibility is not just shaped by group dynamics during meetings but also influenced by organizational decisions about which technologies to use. Despite their managerial positions, participants faced challenges with inaccessible platforms, such as using their organization's licensed platform instead of preferred platforms like Zoom, which led to a sub-optimal meeting experience. Lily shared an experience when her organization required her to use Microsoft Teams, which she found inaccessible for her young students who faced challenges logging into Teams without assistance. However, when Lily raised her concerns and suggested using Zoom instead of Teams, the organization was not very receptive. Lily described her experience,

> *"I had to go to upper management because they were pretty like, 'I don't know what to tell you because this is our policy.' So, I would just go to my supervisor in the special occasion team and say, 'Hey, you see what you can do and how you can talk to the school itself. But this is what we need to do. And it's because of an accessibility concern. It's not because of a preference thing.' So that's our justification. I mean, it's about compliance. It's about the ADA."*

Along with establishing guidelines for virtual meetings and advocating for accessible tools within organizations, participants also provided feedback directly to videoconferencing platforms, such as Zoom, in order to address accessibility issues. In addition to reporting accessibility issues, they also made suggestions for potential accessibility features. For example, Leah reached out to Zoom to add *"a hot key to make the participant list freeze, so you can actually find somebody to mute them when they're making too much noise and also to make the chat window freeze, so that you can actually grab a link or whatever somebody's posting and copy it to the clipboard."*

Participants highlighted the significance of virtual meeting etiquette to foster inclusivity at work. As meeting facilitators, they advocated for accessible meeting tools within their organizations and provided feedback to videoconferencing platforms to address accessibility issues.

5 DISCUSSION

Our analysis of how BLV meeting facilitators use videoconferencing technologies reveals how inaccessible technology shapes their professional work, further highlights the importance of collaboration and coordination to address accessibility issues, and provides insights into improving interactions with widely used videoconferencing technologies.

5.1 The Impact of Inaccessibility on Professionalism and Career Advancement

As our findings and those of others show [18, 45], mastering mainstream, widely-used software tools create new expectations for professional competency for BLV professionals. BLV professionals must master mainstream software tools (e.g., videoconferencing platforms, collaborative document editors, and complex audio editing software) as part of their professional practice while also learning to navigate these partially accessible tools and create workarounds to increase efficiency. Others have argued that 'technically accessible' software is not necessarily fully accessible, easy to use, or efficient for BLV professionals [8, 18]. Our results suggest that poor accessibility and pervasive usability of mainstream videoconferencing tools have a real material impact on BLV professionals and their ability to thrive in positions such as leadership roles that may include facilitating meetings. For example, navigating menus by tabbing is time-consuming, so participants stressed the importance of learning keyboard shortcuts. Participants reported needing to refresh their memories of various features and relearn to use different platforms since they all update regularly and have different features, layouts, keyboard shortcuts, and menu structures. Spending time and energy on additional, preparatory accessibility work affects productivity in other areas of their jobs, leading to potential job losses or fewer job opportunities [13, 18].

Furthermore, our findings reveal how inaccessible and difficult to use software affects BLV workers' professional self-presentation and perceived competency. For example, features that are not designed for easy and efficient use by screen readers users, such as waiting rooms, participant lists, speaker identification, and hand raises, make it difficult for BLV facilitators to maintain awareness of who is doing what during the meeting – an essential task for meeting facilitators. Many study participants felt forced to have a co-host help manage technical aspects of videoconferencing tools, including helping monitor participant activity during meetings and helping with technical issues. Participants were concerned that their inability to moderate the meeting and handle technical issues on the fly would *"reflect differently"* (Leah) on their professional competency. This finding echoes prior work that indicates that professionals with disabilities do extra work to demonstrate their competency in order to not be perceived as unworthy of their position [12, 13, 46]. Moreover, PWD may be concerned about losing their jobs due to others' perceptions of their disabilities, and therefore, choose to not disclose their disabilities to their employers [49]. Similarly, a 2022 report by the American Foundation for the Blind [50] showed that BLV workers reported being denied accessibility requests, reassigned jobs, and even terminated as a result of being unable to use mainstream tools, such as videoconferencing platforms. Further, the report revealed that one in five BLV workers considered not requesting accommodations because they feared backlash from their employer, coworkers, or clients. Thus, requesting accommodations can be a risk to their employment [18]. When disability is not disclosed, employers are not required to accommodate PWD, leading to further invisible work of self-accommodation [13] and barriers to career advancement. While remote meetings can be a way for meeting participants to keep disability hidden and reduce stigma [4], remote work does not afford the same opportunity for BLV

meeting facilitators, whose abilities to use inaccessible software and effectively convene virtual meetings become hyper-visible to all participants.

5.2 Understanding Meeting Facilitation as Interdependent Work

Scholarship on accessibility and disability studies has highlighted the importance of interdependence, which attends to the relational nature of access between individuals and technologies as well as the invisible work of access [6, 53, 56]. In this context, we revisit our research findings to enrich our empirical and theoretical understanding of how the interaction between BLV meeting facilitators and co-hosts creates accessibility as well as the challenges of relying on others for meeting support. While many people work with co-hosts when facilitating meetings [44, 58], our BLV study participants explained that having co-hosts is often necessary due to accessibility issues rather than optional. The concurrent tasks of leading and hosting a meeting are particularly challenging for BLV individuals, and thus, co-hosts provide essential support in managing the technical aspects of the videoconferencing platform while enabling the facilitator to maintain situational awareness. To coordinate effectively with their co-hosts, our participants described using back channels (e.g., Slack, phone texting), delegating tasks to co-hosts prior to and during the meeting, providing co-hosts with training, and taking extra steps to correct any mistakes made by co-hosts. Consequently, working with co-hosts increases access to meetings for BLV facilitators while also creating a significant amount of invisible work [13]. Further, while co-hosts can alleviate some of the technical responsibilities of the meeting facilitator, such as admitting participants and monitoring chat and raised hands, our participants expressed discomfort with relinquishing hosting responsibilities to co-hosts as a solution to pervasive accessibility issues with videoconferencing platforms. Hence, an interdependence perspective should also attend to how the social context of professional work and expectations for competency may lead individuals to feel obligated to rely on others for support as a workaround to inaccessible technology – particularly when this support is related to maintaining professionalism and productivity. Future videoconferencing platforms need not only easy to use screen reader support but also features that normalize the interdependent work that occurs between meeting facilitators and co-hosts.

5.3 Towards Inclusive Virtual Meeting Tools and Practices

Our study contributes to a growing literature on recommendations for making remote meetings more accessible for PWD. We review recent work in the context of our findings involving BLV meeting facilitators and discuss recommendations for technical, social, and organizational changes.

5.3.1 Improving Platform Accessibility and Usability. One clear area of required improvement involves the implementation of screen reader functionality in mainstream videoconferencing technologies and the difficulty meeting facilitators have with using essential features. Our study participants emphasized the importance of using keyboard shortcuts to efficiently navigate videoconferencing technologies, yet keyboard shortcuts are inconsistent and not easily accessible across all platforms, requiring extra time to learn and practice using these features. Participants also raised concerns around meeting privacy and security, features that are essential but exceedingly difficult for BLV facilitators to use. Other basic improvements, such as designing an optional feature of having the system read a participant's name when they start talking [4], using optical character recognition (OCR) to provide automatic access to screen shared materials [32], and implementing gesture detection capabilities (e.g., recognizing raised hands, waving hands, and nodding) through automated means would help not only BLV facilitators but also BLV participants. Participants also suggested incorporating a built-in camera adjustment feature that provides audible guidance on positioning oneself at the center of the camera (similar to Jayant et al. [29]). Proper labeling, grouping of controls, and ensuring consistency across platforms can further enhance usability (also suggested by [5, 24, 32]), along with quality documentation and tutorials to assist users. Finally, the most significant and pervasive problem for BLV meeting facilitators (and meeting attendees alike [32, 51]) involves being able to simultaneously monitor chat conversation alongside real-time participant conversation. Features that support better separation of audio between these channels and fluidly switching between these information streams could improve the experience for BLV users.

5.3.2 Promoting Accessible Meeting Practices and Norms. Participants in our study identified multiple practices that are important to ensuring meetings are accessible. First, as other work suggests [19], BLV facilitators encourage people to communicate their access needs in advance of a meeting. With this information, the facilitator can better prepare and make the necessary accommodations prior to the meeting. As our findings reveal, adapting on the fly during a meeting can be difficult for BLV facilitators, and understanding participant access needs in advance helps them prepare and smoothly run meetings. Second, our findings echo prior studies [19] and best practice resources (e.g., W3C guidelines [54]) that recommend distributing meeting materials in advance of the meeting to allow people adequate time to review materials and surface any unexpected access needs. Meeting facilitators in our study described attaching slides and handouts to meeting invitations to ensure all participants had early access to meeting materials [11, 38]. Moreover, all materials shared during the meeting should be made accessible and conform to accessibility standards (i.e., WCAG) [54]. Third, BLV meeting facilitators emphasized the importance of promoting accessible meeting norms related to participants identifying themselves before speaking [4], avoiding nonverbal cues (e.g., waving hello, nodding head) [4], avoiding chatting when someone is speaking, and minimizing distracting background noises or sounds [19] that could impede the facilitator's ability to follow conversations and listen to their screen reader. However, some accessibility practices that would help blind people might pose unexpected accessibility conflicts for other disabled participants. For example, individuals who are d/Deaf or hard of hearing (DHH) and those who stutter heavily rely on nonverbal cues and chat messages as a means of communication during meetings [30, 59]. Therefore, future research should focus on promoting accessible practices for virtual meetings

considering the diverse access needs and trade-offs within various disabled communities.

5.3.3 Supporting Access at an Organizational Level. One point of frustration for many BLV meeting facilitators is that they have little or no say over which videoconferencing platform they use to convene meetings (similar to findings by Das et al. [18] regarding collaborative writing tools). Increasing organizational awareness of the accessibility trade-offs of various platforms is essential to promoting more equitable work environments. Another way organizations can better support BLV leaders who facilitate meetings is to understand the suboptimal workarounds required to use inaccessible tools and how a human assistant can be trained and made available to augment this work. With an effective and well-trained co-host, BLV facilitators are able to focus on leading the meeting and worry less about the logistics of managing the waiting room, muting and unmuting participants, and monitoring the chat. Yet, organizations should be aware the BLV workers may have to "pull double work" to train and instruct meeting co-hosts. Organizations could make co-hosts more aware of their role and how to coordinate with BLV meeting facilitators in ways that support access rather than inadvertently creating additional accessibility issues and educational work. Although having a co-host was a common practice [44, 58], we cannot ignore the fact that this practice is out of necessity due to inaccessible tools and increasing demands placed on BLV workers. Participants described relinquishing their duties to a co-host as "demeaning" and wanted fair opportunities to host and facilitate meetings regardless of access needs, which highlights the importance of necessary improvements to system accessibility as well as an organizational understanding of barriers to inclusive workplaces and career mobility for BLV professionals.

5.4 Limitations and Future Work

We acknowledge that our study on BLV facilitators with videoconferencing technologies may not fully capture the access needs of other disability groups. Future research should examine the requirements of facilitators with diverse disabilities, such as d/Deaf or hard of hearing, and neurodivergent professionals. Additionally, our participants' experience in facilitating meetings in ability-diverse groups was limited, highlighting the need to investigate the conflicting access needs of facilitators and attendees with disabilities during videoconferencing. Our interviews exclusively involved participants who rely solely on screen readers, thereby limiting insights on potential variations in the hosting experience based on residual vision. Future studies should explore the differences in hosting experiences and workarounds based on varying levels of visual impairment and their assistive technology use (e.g., people who use magnification). Moreover, our findings are limited to virtual meetings and do not reflect the challenges associated with hybrid meetings. Previous research has identified additional accessibility barriers for PWD in hybrid meetings [4], so future studies should examine the challenges faced by PWD when facilitating meetings in hybrid settings.

6 CONCLUSION

Our investigation into the meeting facilitation practices of BLV screen reader users has uncovered the complex process of creating and navigating accessibility in virtual meetings. We observed that the accessibility and usability issues of videoconferencing technologies present unique challenges for BLV professionals who facilitate meetings. To ensure accessibility and smooth meeting management, BLV facilitators take additional measures to prepare in advance and maintain awareness of attendees' activities during meetings. They also coordinate with co-hosts and establish shared norms and strategies. Our analysis sheds light on these accessibility nuances and (in)visible work practices of remote meeting facilitation, the interdependence between BLV facilitators and co-hosts, and opening new opportunities for inclusive videoconferencing technologies.

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REFERENCES

[1] 2023. National Federation of the Blind. www.nfb.org. last accessed in March 2023.
[2] 2023. Zoombombing. https://en.wikipedia.org/wiki/Zoombombing. last accessed in April 2023.
[3] Taslima Akter, Bryan Dosono, Tousif Ahmed, Apu Kapadia, and Bryan Semaan. 2020. "I am uncomfortable sharing what I can't see": Privacy Concerns of the Visually Impaired with Camera Based Assistive Applications. In *29th USENIX Security Symposium (USENIX Security 20)*. 1929–1948. https://www.usenix.org/system/files/sec20-akter.pdf
[4] Rahaf Alharbi, John Tang, and Karl Henderson. 2023. Accessibility Barriers, Conflicts, and Repairs: Understanding the Experience of Professionals with Disabilities in Hybrid Meetings. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. Association for Computing Machinery, New York, NY, USA, Article 605, 15 pages. https://doi.org/10.1145/3544548.3581541
[5] Abdulaziz Alshayban, Iftekhar Ahmed, and Sam Malek. 2020. Accessibility Issues in Android Apps: State of Affairs, Sentiments, and Ways Forward. In *Proceedings of the ACM/IEEE 42nd International Conference on Software Engineering* (Seoul, South Korea) *(ICSE '20)*. Association for Computing Machinery, New York, NY, USA, 1323–1334. https://doi.org/10.1145/3377811.3380392
[6] Cynthia L. Bennett, Erin Brady, and Stacy M. Branham. 2018. Interdependence as a Frame for Assistive Technology Research and Design. In *Proceedings of the 20th International ACM SIGACCESS Conference on Computers and Accessibility* (Galway, Ireland) *(ASSETS '18)*. Association for Computing Machinery, New York, NY, USA, 161–173. https://doi.org/10.1145/3234695.3236348
[7] Rachel Bergmann, Sean Rintel, Nancy Baym, Advait Sarkar, Damian Borowiec, Priscilla Wong, and Abigail Sellen. 2022. Meeting (the) Pandemic: Videoconferencing Fatigue and Evolving Tensions of Sociality in Enterprise Video Meetings During COVID-19. *Computer Supported Cooperative Work (CSCW)* (Nov. 2022). https://doi.org/10.1007/s10606-022-09451-6
[8] Jeffrey P. Bigham, Irene Lin, and Saiph Savage. 2017. The Effects of "Not Knowing What You Don't Know" on Web Accessibility for Blind Web Users. In *Proceedings of the 19th International ACM SIGACCESS Conference on Computers and Accessibility* (Baltimore, Maryland, USA) *(ASSETS '17)*. Association for Computing Machinery, New York, NY, USA, 101–109. https://doi.org/10.1145/3132525.3132533
[9] Judith Willemijn Borghouts, Gloria Mark, Alex C. Williams, and Thomas Breideband. 2022. Motivated to Work or Working to Stay Motivated: A Diary and Interview Study on Working From Home. *Proc. ACM Hum.-Comput. Interact.* 6, CSCW2, Article 396 (nov 2022), 26 pages. https://doi.org/10.1145/3555121
[10] Vaishnavi Borse, Wricha Mishra, and Gareth Loudon. 2022. Sorry You're on Mute: Towards Determining the Factors That Impact the Productivity and Job Motivation of Remote Workers and a Conceptual Framework. In *Proceedings of the 12th Indian Conference on Human-Computer Interaction* (Virtual Event, India) *(IndiaHCI '21)*. Association for Computing Machinery, New York, NY, USA, 47–58. https://doi.org/10.1145/3506469.3506475
[11] Sarah Botterill. 2022. How to host an accessible online meeting. https://abilitynet.org.uk/news-blogs/how-host-accessible-online-meeting. last accessed in April 2023.
[12] Carlene Boucher. 2017. The Roles of Power, Passing, and Surface Acting in the Workplace Relationships of Female Leaders With Disability. *Business &*

Society 56, 7 (2017), 1004–1032. https://doi.org/10.1177/0007650315610610 arXiv:https://doi.org/10.1177/0007650315610610

[13] Stacy M. Branham and Shaun K. Kane. 2015. The invisible work of accessibility: how blind employees manage accessibility in mixed-ability workplaces. In *Proceedings of the 17th International ACM SIGACCESS Conference on Computers & Accessibility*. ACM, 163–171. https://doi.org/10.1145/2700648.2809864

[14] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative research in psychology* 3, 2 (2006), 77–101. https://doi.org/10.1191/1478088706QP063OA

[15] John C Bricout. 2004. Using telework to enhance return to work outcomes for individuals with spinal cord injuries. *NeuroRehabilitation* 19, 2 (2004), 147–159. https://doi.org/10.3233/NRE-2004-19209

[16] Erik Brynjolfsson, John J Horton, Adam Ozimek, Daniel Rock, Garima Sharma, and Hong-Yi TuYe. 2020. *COVID-19 and Remote Work: An Early Look at US Data*. Working Paper 27344. National Bureau of Economic Research. https://doi.org/10.3386/w27344

[17] Sheshadri Chatterjee, Ranjan Chaudhuri, and Demetris Vrontis. 2022. Does remote work flexibility enhance organization performance? Moderating role of organization policy and top management support. *Journal of Business Research* 139 (2022), 1501–1512. https://doi.org/10.1016/j.jbusres.2021.10.069

[18] Maitraye Das, Darren Gergle, and Anne Marie Piper. 2019. "It Doesn't Win You Friends": Understanding Accessibility in Collaborative Writing for People with Vision Impairments. *Proc. ACM Hum.-Comput. Interact.* 3, CSCW, Article 191 (November 2019), 26 pages. https://doi.org/10.1145/3359293

[19] Maitraye Das, John Tang, Kathryn E Ringland, and Anne Marie Piper. 2021. Towards accessible remote work: Understanding work-from-home practices of neurodivergent professionals. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW1 (2021), 1–30. https://doi.org/10.1145/3449282

[20] N. Ann Davis. 2005. Invisible Disability. *Ethics* 116, 1 (Oct. 2005), 153–213. https://doi.org/10.1086/453151 Publisher: The University of Chicago Press.

[21] Javier Díaz, Ivana Harari, Ana Paola Amadeo, Alejandra Schiavoni, Soledad Gómez, and Alejandra Osorio. 2022. Higher Education and Virtuality from an Inclusion Approach. In *Computer Science – CACIC 2021*, Patricia Pesado and Gustavo Gil (Eds.). Springer International Publishing, Cham, 78–91. https://doi.org/10.1007/978-3-031-05903-2_6

[22] Bob Evans. 2020. The Zoom Revolution: 10 Eye-Popping Stats from Tech's New Superstar. https://accelerationeconomy.com/news/the-zoom-revolution-10-eye-popping-stats-from-techs-new-superstar/

[23] Reinaldo Ferraz and Vagner Diniz. 2021. Study on Accessibility of Videoconferencing Tools on Web Platforms. In *2021 16th Iberian Conference on Information Systems and Technologies (CISTI)*. IEEE, 1–6. https://doi.org/10.23919/CISTI52073.2021.9476571

[24] Raymond Fok, Mingyuan Zhong, Anne Spencer Ross, James Fogarty, and Jacob O. Wobbrock. 2022. A Large-Scale Longitudinal Analysis of Missing Label Accessibility Failures in Android Apps. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems* (New Orleans, LA, USA) *(CHI '22)*. Association for Computing Machinery, New York, NY, USA, Article 461, 16 pages. https://doi.org/10.1145/3491102.3502143

[25] Barry Ginley. 2020. Working remotely if you are visually impaired. *British Journal of Visual Impairment* (2020).

[26] Marion Hersh, Barbara Leporini, and Marina Buzzi. 2020. Accessibility evaluation of video conferencing tools to support disabled people in distance teaching, meetings and other activities. In *Proceedings of the International Conference on Computers Helping People with Special Needs (ICCHP '20)*. 133–139.

[27] Bradford W. Hesse. 1996. Using telework to accommodate the needs of employees with disabilities. *Journal of Organizational Computing and Electronic Commerce* 6, 4 (1996), 327–343. https://doi.org/10.1080/10919399609540283

[28] Madison Hoff. 2022. How Americans with Disabilities are Underrepresented as Managers and Professionals, in One Glaring Chart. https://www.nod.org/how-americans-with-disabilities-are-underrepresented-as-managers-and-professionals-in-one-glaring-chart/. last accessed in April 2023.

[29] Chandrika Jayant, Hanjie Ji, Samuel White, and Jeffrey P Bigham. 2011. Supporting blind photography. In *The proceedings of the 13th international ACM SIGACCESS conference on Computers and accessibility*. 203–210. https://dl.acm.org/doi/10.1145/2049536.2049573

[30] Raja S Kushalnagar and Christian Vogler. 2020. Teleconference accessibility and guidelines for deaf and hard of hearing users. In *Proceedings of the 22nd International ACM SIGACCESS Conference on Computers and Accessibility*. ACM, 1–6. https://doi.org/10.1145/3373625.3417299

[31] Barbara Leporini, Marina Buzzi, and Marion Hersh. 2021. Distance meetings during the COVID-19 pandemic: are video conferencing tools accessible for blind people?. In *Proceedings of the 18th International Web for All Conference (W4A '21)*. 1–10. https://doi.org/10.1145/3430263.3452433

[32] Barbara Leporini, Marina Buzzi, and Marion Hersh. 2023. Video Conferencing Tools: Comparative Study of the Experiences of Screen Reader Users and the Development of More Inclusive Design Guidelines. *ACM Transactions on Accessible Computing* 16, 1 (2023), 1–36. https://doi.org/10.1145/3573012

[33] Maureen Linden and Karen Milchus. 2014. Teleworkers with disabilities: characteristics and accommodation use. *Work (Reading, Mass.)* 47, 4 (2014), 473–483. https://doi.org/10.3233/WOR-141834

[34] Kelly Mack, Maitraye Das, Dhruv Jain, Danielle Bragg, John Tang, Andrew Begel, Erin Beneteau, Josh Urban Davis, Abraham Glasser, Joon Sung Park, et al. 2021. Mixed Abilities and Varied Experiences: a group autoethnography of a virtual summer internship. In *Proceedings of the 23rd International ACM SIGACCESS Conference on Computers and Accessibility*. 1–13. http://doi.org/10.1145/3441852.3471199

[35] Nutnicha Maneesaeng, Proadpran Punyabukkana, and Atiwong Suchato. 2016. Accessible video-call application on Android for the blind. *Lecture Notes on Software Engineering* 4, 2 (2016), 95–98. https://doi.org/10.7763/lnse.2016.v4.231

[36] Stephanie Marhefka, Elizabeth Lockhart, and DeAnne Turner. 2020. Achieve research continuity during social distancing by rapidly implementing individual and group videoconferencing with participants: key considerations, best practices, and protocols. *AIDS and Behavior* 24 (2020), 1983–1989. http://doi.org/10.1007/s10461-020-02837-x

[37] Mary E. McLaughlin, Myrtle P. Bell, and Donna Y. Stringer. 2004. Stigma and Acceptance of Persons With Disabilities: Understudied Aspects of Workforce Diversity. *Group & Organization Management* 29, 3 (June 2004), 302–333. https://doi.org/10.1177/1059601103257410

[38] Alex Mooc. 2023. Tips for Hosting More Accessible Meetings. https://blog.zoom.us/host-more-accessible-meetings. last accessed in April 2023.

[39] Nathan W Moon, Maureen A Linden, John C Bricout, and Paul Baker. 2014. Telework rationale and implementation for people with disabilities: Considerations for employer policymaking. *Work* 48, 1 (2014), 105–115. https://doi.org/10.3233/WOR-131819

[40] Bureau of Labor Statistics US Department of Labor. 2023. Persons With A Disability: Labor Force Characteristics — 2022. www.bls.gov/news.release/pdf/disabl.pdf. last accessed in April 2023.

[41] Margrethe H. Olson and Sophia B. Primps. 1984. Working at Home with Computers: Work and Nonwork Issues. *Journal of Social Issues* 40, 3 (1984), 97–112. https://doi.org/10.1111/j.1540-4560.1984.tb00194.x

[42] Paul Ralph, Sebastian Baltes, Gianisa Adisaputri, Richard Torkar, Vladimir Kovalenko, Marcos Kalinowski, Nicole Novielli, Shin Yoo, Xavier Devroey, Xin Tan, Minghui Zhou, Burak Turhan, Rashina Hoda, Hideaki Hata, Gregorio Robles, Amin Milani Fard, and Rana Alkadhi. 2020. Pandemic programming. *Empirical Software Engineering* 25, 6 (Nov. 2020), 4927–4961. https://doi.org/10.1007/s10664-020-09875-y

[43] Paige Rodeghero, Thomas Zimmermann, Brian Houck, and Denae Ford. 2021. Please turn your cameras on: remote onboarding of software developers during a pandemic. In *Proceedings of the 43rd International Conference on Software Engineering: Software Engineering in Practice (ICSE-SEIP '21)*. IEEE Press, Virtual Event, Spain, 41–50. https://doi.org/10.1109/ICSE-SEIP52600.2021.00013

[44] Jazz Rui Xia Ang, Ping Liu, Emma McDonnell, and Sarah Coppola. 2022. "In This Online Environment, We're Limited": Exploring Inclusive Video Conferencing Design for Signers. In *Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems* (New Orleans, LA, USA) *(CHI '22)*. Association for Computing Machinery, New York, NY, USA, Article 609, 16 pages. https://doi.org/10.1145/3491102.3517488

[45] Abir Saha and Anne Marie Piper. 2020. Understanding audio production practices of people with vision impairments. In *Proceedings of the 22nd International ACM SIGACCESS Conference on Computers and Accessibility*. ACM, 1–13. https://doi.org/10.1145/3373625.3416993

[46] Daniel Samosh. 2021. The Three-Legged Stool: Synthesizing and Extending Our Understanding of the Career Advancement Facilitators of Persons With Disabilities in Leadership Positions. *Business & Society* 60, 7 (2021), 1773–1810. https://doi.org/10.1177/0007650320907134

[47] Lisa A. Schur, Mason Ameri, and Douglas Kruse. 2020. Telework After COVID: A "Silver Lining" for Workers with Disabilities? *Journal of Occupational Rehabilitation* 30, 4 (Dec. 2020), 521–536. https://doi.org/10.1007/s10926-020-09936-5

[48] Janki Shankar, Lili Liu, David Nicholas, Sharon Warren, Daniel Lai, Shawn Tan, Rosslynn Zulla, Jennifer Couture, and Alexandra Sears. 2014. Employers' Perspectives on Hiring and Accommodating Workers With Mental Illness. *SAGE Open* 4, 3 (July 2014). https://doi.org/10.1177/2158244014547880

[49] Kristen Shinohara and Jacob O. Wobbrock. 2011. In the Shadow of Misperception: Assistive Technology Use and Social Interactions. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (Vancouver, BC, Canada) *(CHI '11)*. Association for Computing Machinery, New York, NY, USA, 705–714. https://doi.org/10.1145/1978942.1979044

[50] Arielle M. Silverman, L. Penny Rosenblum, Elizabeth C. Bolander, Carlie R. Rhoadsand, and Kelly Bleach. 2022. Technology and Accommodations: Employment Experiences of U.S. Adults Who Are Blind, Have Low Vision, or Are Deafblind. The American Foundation for the Blind. , 81 pages. https://www.afb.org/research-and-initiatives/workplace-tech-study

[51] John Tang. 2021. Understanding the telework experience of people with disabilities. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW1 (2021), 1–27. http://doi.org/10.1145/3449104

[52] Lionel Sujay Vailshery. 2023. Microsoft Teams daily active users worldwide 2022. www.statista.com/statistics/1033742/worldwide-microsoft-teams-daily-and-monthly-users/. last accessed in April 2023.
[53] Beatrice Vincenzi, Alex S Taylor, and Simone Stumpf. 2021. Interdependence in action: people with visual impairments and their guides co-constituting common spaces. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW1, 1–33. https://doi.org/10.1145/3449143
[54] World Wide Web Consortium (W3C). 2023. Accessibility of Remote Meetings. www.w3.org/TR/remote-meetings/#w3c-guidance-relevant-for-accessible-remote-meetings. last accessed April 2023.
[55] Brian Wentz and Jonathan Lazar. 2016. Exploring the impact of inaccessible redesign and updates. In *Designing Around People: CWUAAT 2016*. Springer, 3–12. https://doi.org/10.1007/978-3-319-29498-8_1
[56] Glen W White, Jamie Lloyd Simpson, Chiaki Gonda, Craig Ravesloot, and Zach Coble. 2010. Moving from independence to interdependence: A conceptual model for better understanding community participation of centers for independent living consumers. *Journal of Disability Policy Studies* 20, 4 (2010), 233–240. https://doi.org/10.1177/1044207309350561
[57] Dana Wilson-Kovacs, Michelle K. Ryan, S. Alexander Haslam, and Anna Rabinovich. 2008. 'Just because you can get a wheelchair in the building doesn't necessarily mean that you can still participate': barriers to the career advancement of disabled professionals. *Disability & Society* 23, 7 (2008), 705–717. https://doi.org/10.1080/09687590802469198
[58] Jordan R Wlodarczyk, Erik M Wolfswinkel, Melissa M Poh, and Joseph N Carey. 2020. Defining best practices for videoconferencing in the era of telemedicine and COVID-19. *Journal of Craniofacial Surgery* 31, 6 (2020), e658–e660. https://doi.org/10.1097/SCS.0000000000006890
[59] Shaomei Wu. 2023. "The World is Designed for Fluent People": Benefits and Challenges of Videoconferencing Technologies for People Who Stutter. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*. 1–17. https://doi.org/10.1145/3544548.3580788
[60] Annuska Zolyomi, Andrew Begel, Jennifer Frances Waldern, John Tang, Michael Barnett, Edward Cutrell, Daniel McDuff, Sean Andrist, and Meredith Ringel Morris. 2019. Managing Stress: The Needs of Autistic Adults in Video Calling. *Proc. ACM Hum.-Comput. Interact.* 3, CSCW, Article 134 (November 2019), 29 pages. https://doi.org/10.1145/3359236

APPENDIX

A INTERVIEW PROTOCOL

1. Would you walk me through your most recent experience using videoconferencing applications (such as Zoom, Microsoft Teams, or FaceTime)?
    a. What was the purpose of the call?
    b. How many people were there? How many joined in person and virtually?
    c. What features did you use?
    d. What was your role (e.g., host or participant)
    e. What is your most preferred platform?
2. Thank you for sharing your experience with videoconferencing applications. Now, would you mind telling me your opinion on the accessibility of videoconferencing applications as a screen reader user?
    a. What is your opinion on the accessibility of [the most used application of the participant]?
    b. What features of [the application] do you find accessible or inaccessible?
    c. How accessible are these features (e.g., recording, chat, emojis, breakout room, polls/quizzes, notifications about people joining or leaving, unstable internet connection, and closed captioning) for you?
3. Sometimes the apps are accessible through screen readers but they might not be easier to use. Do you find [the application] easier to use?
    a. What do you like about using [the application]?
    b. What do you not like about using [the application]?
4. Who usually determines the platforms you use? How was that determined?
    a. Do you communicate with the [organization/peers] if the platform is not accessible to you?
    b. (If yes) How do you communicate with them to share your accessibility needs?
5. Have you ever experienced a challenging situation when things didn't go as planned during your videoconferencing meetings? (If yes) Can you tell me about what happened?
6. Do you make any adjustments to your videoconferencing application settings to make them work better for you?
7. Do you make any adjustments to your physical environment before videoconferencing meetings?
8. Would you tell me about your most recent experience of hosting a business meeting using videoconferencing applications?
    a. What was accessibility like for you when you joined the meeting?
    b. Are there things you wished your collaborators would do differently to make communication more clear or more comfortable?
    c. As a host, are there things you wished you would do differently to make communication more clear or more comfortable?
9. Did you have any assistants or co-hosts to help you during the meetings?
    a. Can you please walk me through your experience of working with a sighted assistant or co-host during these meetings?
    b. How do you feel about having a co-host during the meetings?
    c. What are your expectations from the sighted assistant to make the meetings accessible for you?
10. As a host of the meetings, have you ever conducted meetings using videoconferencing applications where you have people with a range of abilities getting together (e.g., there are both disabled and non-disabled folks involved)? If yes, can you please describe the meeting for us?
11. As a host of the meetings, how do you ensure that the meeting tools or resources are accessible to your attendees?
12. Can you compare the accessibility of these tools when you are an attendee as compared to when you are a host of the meeting? How easy do you find using these applications as a host as compared to as a participant?
13. Have you ever experienced any privacy concerns while using videoconferencing applications?
    a. Can you walk me through your most recent experience when you were concerned about your privacy while using videoconferencing applications?
    b. Have you ever experienced any situations where strangers or unrelated people joined your meetings without prior notice? [if yes] Can you please describe the incident for us?
14. Do you have any suggestions on improving the videoconferencing applications to address your accessibility needs?