

# VIRTUAL WORK DURING COVID-19 LOCKDOWN – LESSONS LEARNED

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## Abstract

*The COVID-19 lockdown forced a large proportion of Norwegian office employees into virtual work and collaboration through computer-mediated communication, such as digital meetings. For many organizations, extensive use of virtual work and digital meetings was a novel experience they were not necessarily prepared for. For many employees, the situation entailed handling unfamiliar systems, adopting new work practices, and facing completely new challenges.*

*In this paper, we explore what we might learn from this unique case. We conducted interviews with 29 members of the administrative staff in the higher education sector, in order to find out how they perceived the situation. We find that virtual work and digital meetings were perceived as productive and flexible, but that the change to virtual work also entailed downsides and challenges. Furthermore, our findings indicate that central challenges could have been alleviated through specific measures. Based on the findings, we conclude on four recommendations that we propose apply not just during a period of lockdown, but for organizations today in general.*

Keywords: Virtual work, digital meetings, digital management, digital transformation

## 1. INTRODUCTION

This study investigates the effects of large-scale virtual work on work and collaboration. With virtual work, we refer to a situation where professionals use information and communication technology to work independently and interdependently across space and time. *Independently* relates to telecommuting – an alternative work arrangement in which the employee travels or commutes to work via technology (Narayanan et al., 2017). *Interdependently* relates to collaboration, for instance through digital meetings – where synchronous communication face-to-face takes place over distance by the means of video and web-conferencing (Lindeblad et al., 2016). Thus, in this study we combine and build upon two research streams.

Amid the COVID-19 outbreak, the Norwegian society went into a lockdown period from March 12, 2020. A large proportion of Norwegian office employees were sent home to telecommute and to collaborate using computer-mediated communication. Drawing on virtual digital technologies, most sectors seemingly continued their work without significant interruptions. However, while some were already used to virtual work and collaboration; this was a completely new experience for others. The ensuing public debate showed large variations of opinion on whether virtual work is positive for organizations and employees. While some perceive virtual work as beneficial and express a wish to continue working this way, others are more skeptical, and have stated that they are looking forward to returning to their offices.

Among the sectors which had to completely change their ways of working as a result of the COVID-19 outbreak was the higher education sector. For administrative staff in this sector, the sudden lockdown largely entailed an immediate and forced pivot from office work to virtual work from one day to the next. As such, administrative staff in the higher education sector represents a rather unique case of rapid and forced implementation of large-scale virtual work, also involving the adoption of new digital platforms.

The research field on virtual work or telecommuting is extensive. However, there is still a lack of conclusive theoretical and empirical understanding of the effects of virtual work (telecommuting and digital meetings) and of the conditions necessary to make large-scale virtual work productive and positive to the organization and its employees (Allen et al., 2015; Golden & Gajendran, 2019). Also, the extant literature on virtual work and telecommuting has predominantly focused on workers that are (i) used to virtual work and (ii) engage in virtual work voluntarily (see e.g. van der Lippe & Lippényi, 2019). Thus, our study takes a novel approach to research on virtual work.

Moreover, much of the research on virtual work relies on older technologies possessing limited features, and thus treats technology as a hindrance rather than an asset (Raghuram et al. 2019). Recent advances in digital technology available for supporting virtual work and collaboration might have rendered some of the findings from previous research outdated. The last decade has seen immense improvements in internet bandwidth technologies, there has been a general increase in computer literacy, and new platforms completely altering the foundation for virtual work and communication have emerged. The recent outbreak of the COVID-19 pandemic has made the usage of video conferencing systems skyrocket. There is thus a need for updated knowledge about how virtual work influences work and collaboration. Therefore, we ask the following research questions:

*RQ1. How did administrative employees in the higher education sector perceive the effects of virtual work during COVID-19 lockdown?*

*RQ2. How can organizations through different measures prepare for productive virtual work?*

In order to answer our research questions, we conducted an exploratory study where we interviewed 29 members of the administrative staff in the higher education sector.

In the following, we start by presenting literature on virtual work relevant to this study (section 2) and describe the research methods we have applied (section 3). We then present our findings (section 4). Based on these findings, we propose and discuss four effective measures for facilitating virtual work (section 5).

## **2. LITERATURE**

Thanks to the rise and diffusion of information and communication technologies that allow for easy access to and sharing of information with colleagues, time and space no longer represent a constraint for workers that can virtually work anywhere and at any time (Leung & Zhang, 2016; Narayanan et al., 2017; Tarafdar et al., 2011). This has led to the introduction of different work arrangements such as telecommuting or virtual work,

and to new methods of collaboration among employees who do not work side by side, but interdependently for instance in virtual teams (Lindeblad et al., 2016; Tarafdar et al., 2011).

According to a recent report conducted in the US, an increasing number of workers (a 115 % increase since 2005) has seized the opportunity of telecommuting (Global Workplace Analytics, 2017). Despite the multiple available definitions, telecommuting – also known as remote work or telework – can be explained as an alternative, flexible work arrangement where employees travel or commute to work via technology (Leung & Zhang, 2016; Narayanan et al., 2017) allowing them to perform their tasks outside their conventional location (Bailey & Kurland, 2002). In most cases, work is done at home (Baruch, 2000), but the work setting can be practically any place (e.g. a satellite office, a hotel, and so on).

Telecommuting was introduced as a means of reducing pollution and traffic congestion as well as offering employees more flexibility and an improved work-life balance (Kurland & Bailey, 1999; Narayanan et al., 2017). Over time, studies have yielded mixed results regarding the effects of telecommuting at both individual and organizational levels (Baruch, 2000; Leung & Zhang, 2017). Some studies emphasize that employees who telecommute benefit from greater schedule flexibility, less time spent commuting, fewer workplace distractions, less work-family conflict and greater job satisfaction (e.g. Bailey & Kurland, 2002; Golden, 2009; Kurland & Bailey, 1999). Other studies reveal negative consequences such as increased workloads, anxiety and stress, mental fatigue, role ambiguity, and family-to-work conflicts, as well as fear of social and professional isolation and of limited opportunities for career development (e.g. Cooper & Kurland, 2002; Kelliher & Anderson, 2010; Tarafdar et al., 2010). At an organizational level, research shows that telecommuting may be a good business strategy. Organizations that offer telecommuting benefit from increased employee productivity, retention, organizational commitment, and job performance (Apgar, 1998; Baruch, 2010; Gajendran & Harrison, 2007; Kurland & Bailey, 1999). However, these benefits might be counterbalanced by a possible lack of control of the employees, and by difficulties in organizing the work between those who telecommute and those who do not, in building team synergy and in instilling a common organizational culture (Kurland & Bailey, 1999; Kurland & Cooper, 2002). Moreover, research on the impact of telecommuting on performance remains inconclusive (Golden & Gajendran, 2019; van der Lippe & Lippényi, 2019).

Research on virtual collaboration has mainly followed two different perspectives: a technological perspective where the main focus has been on collaboration efficiency through the selection of the appropriate online tools related to the task at hand; and a managerial perspective where the main obstacle towards collaboration is a lack of structure that can be dealt with through leadership that brings team structure and cohesion (Karoui et al., 2010). Digital meetings are a central element in and driver for virtual collaboration (Lindeblad et al., 2016), and ICT has enabled the replacement of many physical meetings with digital meetings (Arnfolk & Kogg, 2003).

Digital meetings have been defined as “a synchronous communication mediated by ICT, making it possible for two or more geographically remote people to interact” (Arnfolk, 2002). Research has concluded that when digital meetings substitute for other meetings that involve travelling, they permit cost efficiency and lower environmental impacts (e.g. Arnfolk et al., 2016; Lindeblad et al., 2016; Mokhtarian, 2002). However, when digital meetings constitute a complementary form of meeting, they can result in higher employee and organizational productivity, and an increased economic activity that might reverse the impacts on the environment (Arnfolk et al., 2016; Mokhtarian, 2002). Positive effects like cost efficiency, increased collaboration between peers and partners, improved flexibility for employees and increased productivity are frequently mentioned in the literature, although the real effects of digital meetings have not been evaluated systematically (Lindeblad et al., 2016). Moreover, researchers have suggested that increased use of digital meetings will affect the organization’s geographical and logical structure, i.e. how organization’s activities, responsibilities and projects are organized and managed (Lindeblad, 2012). Over time, digital meetings can result in a change in work methods that will become more adaptive and agile, but they can be also perceived as a challenge by leaders that face increased complexity in controlling and following up employees, as well as handling employees’ conflicts and personal matters (Lindeblad et al., 2016). Other studies have investigated challenges of conducting successful digital meetings, for instance in terms of training and information about

options available that will make the employees more prone to a technology shift (Arnfolk & Kogg, 2003). Also, digital meetings might require more preparation, a clearer agenda and a more structured way of working compared to face-to-face meetings (Arnfolk, 2012), indicating that conducting digital meetings efficiently and effectively can pose a challenge. Based on a case study, Lindeblad et al. (2016) contend that the presence and magnitude of organizational effects of digital meetings partly depend on the level of the organization's virtual maturity.

Overall, based on a review of the literature, we conclude that further research is needed in order to uncover how organizations may secure the benefits and reduce possible downsides of virtual work and digital meetings, for instance through understanding how to most effectively exploit required technology (Golden, 2009).

### **3. METHODS**

The COVID-19 pandemic and the concomitant responses to the situation represent an unprecedented case along several dimensions. As we intended to obtain a rich and complex picture of a unique case (Lee & Baskerville 2003), and to allow for rich and open-ended responses to our research questions, qualitative in-depth case studies seemed appropriate. This approach is suitable for understanding how a phenomenon develops and emerges (Langley 1999; Van de Ven 2007).

#### **3.1 Research setting**

The higher education sector roughly consists of two professional groups: scientific researchers and administrative staff. In total, the Norwegian sector consists of 49 accredited institutions (public and private), employing nearly 18,000 scientific workers and 10,000 administrative workers (Diku, 2019). We interviewed representatives from four of these institutions, three public and one private. The smallest of the four institutions employs around 400 employees, while the largest employs more than 4,000. In this study, we chose to focus on administrative staff. While scientific researchers enjoy large degrees of flexibility in terms of work location, administrative staff has normally been bound to an office during working hours. However, the COVID-19 outbreak forced this group of workers to work remotely – a change that happened overnight. Consequently, we viewed administrative staff in the higher education sector as a highly relevant and interesting group to study in investigating how organizations through different measures might facilitate productive virtual work.

#### **3.2 Data collection**

The present study draws on the responses from in-depth semi-structured interviews. Most interviews were conducted using virtual technologies as Zoom or Microsoft Teams. Informants were selected based on a purposeful sampling strategy (Marshall 1996) to yield “information rich” cases (Patton, 2002). In this process, we targeted employees from several institutions to ensure a variety of perspectives and insights (see table 1 below for detailed information). Often in a qualitative study we might also draw on observational data. However, rules and regulations following the COVID-19 outbreak prevented us from undertaking direct observations. Yet, as the purpose of study is to assess experiences with virtual work (which often is conducted in solitude), we advocate that lack of observations do not impede the study's trustworthiness (Cuervo-Cazurra et al., 2016). The interviews were conducted between May 19 and June 29. During this period, all informants were still working remotely, thus ensuring that the informants still had their experiences with a new work setting fresh in mind. The average length of the interviews was 40 minutes.

In the interviews, we asked informants to describe their experiences with virtual work and digital meetings. Questions included which platforms and systems they had used, whether they had been offered any training in these, the modes of collaboration they engaged in, and perceptions of benefits and challenges related to virtual

work and digital meetings on aspects such as productivity, collaboration, engagement, relations, work-life balance etc. In addition, at the end of each interview, we presented each respondent with six statements regarding virtual work. Each informant was asked to indicate to what degree they agreed with the statements on a five-point scale (1=strongly disagree, 3=indifferent, 5=strongly agree). The most relevant answers from this short survey will be presented in the findings section.

Institution A	Institution B	Institution C	Institution D
Senior consultant	Advisor	Senior advisor	Senior advisor
Senior consultant	Advisor	Senior consultant	Advisor
Senior consultant	Advisor	Advisor	Advisor
Senior consultant	Advisor	Manager	University staff support function
Senior advisor	Manager	Manager	Practical coordinator
Senior advisor	Manager	Manager	
Manager	Manager		
Manager			

Table 1. Overview of informants

### 3.3 Data analysis

The study followed a six-step process (see table 2 below). *First*, we conducted a literature review of the relevant literature. *Second*, we developed an interview guide based on the literature review. The interview guide consisted of open-ended questions to the informants, allowing for information-rich and complex explanations. *Third*, we conducted semi-structured interviews with 29 respondents from four different institutions, some of which consist of several campuses. Consequently, the data material is based on a heterogeneous group of respondents within the higher education sector. *Fourth*, four researchers involved in this present study analysed the collected data individually. During this process, the researchers undertook a structured analysis in accordance with Gioia et al. (2012) when analysing the data. *Fifth*, we arranged a collective discussion and analysis of the key findings that each researcher had identified during step 4. We agreed on the overarching and important themes for further analysis. *Sixth*, after writing a rough first draft the agreed themes were highlighted. We further crystallized the most important themes in a joint discussion. During this session, we identified four key measures that might alleviate some of the challenges for organizations that rely on virtual work.

Step 1	Conduct a literature review of relevant literature
Step 2	Develop interview guide based on literature review
Step 3	Conduct interviews with all 29 informants
Step 4	Individual reading and systematization of collected data material
Step 5	Collective discussion and analysis of collected data material --> Write 1 <sup>st</sup> draft of findings
Step 6	Collective discussion and analysis of findings --> Write 2 <sup>nd</sup> draft of findings and extract key learning points

Table 2. The process of data collection and analysis

## 4. FINDINGS

### 4.1 Keep calm and carry on

Lockdown was announced in the afternoon Thursday March 12, after which date most employees in the higher education sector were not permitted access to their regular workplace, merely a brief entry to pick up necessary documents and equipment. Though the lockdown has been characterized as one of the most dramatic events in Norway since WW2, the situation seemed to entail relatively little drama for the employees thrown into virtual work. Informants described themselves as operative already the following day. They experienced few technical issues representing major obstacles, with exception of informants working at a smaller institution where VPN was not installed. Slow internet connection was also a frustration for some from time to time. Otherwise, informants had access to required systems and were generally able to perform tasks as needed.

Most of the informants had limited experience with virtual work before the lockdown. After working from home for two months, informants were able to describe several pros and cons of working remotely. Most informants appreciated not having to commute, and many reported that working from home and not commuting significantly lowered their stress level. Others missed dressing up, getting out of the house, and using the commute to clear their head and ease the work-home transition. Some experienced a feeling of increased work autonomy. However, separating work from leisure time and family life was an issue for some, particularly during the period when schools also were in lockdown and parents had to take on the responsibility of homeschooling their kids. “It’s like you’re always online”, one of the informants commented, and continued: *“Even while I’m making dinner or while I’m on my way to the car to drive my kids to soccer practice, I check the computer if I receive a notification. Often, it’s something I can fix quickly, but suddenly ten minutes have passed. So, my family is not happy about that”*.

Naturally, contact among colleagues was more limited than with everybody present in the office. However, informants experienced that platforms of virtual communication to a large extent enabled collaboration and information sharing adequately. Some remarked that in particular, communicating with other parts of the organization seemed easier online: *“I think it works very well. Finance, HR, and other departments have seemed more available than when in the office. Now we actually manage to have one-on-one conversations. I think the organization becomes more efficient”*. Some expressed that virtual communication could not replace encounters in the hallway or by the coffee machine where more informal information sharing, discussions and gossip often take place. As a result, they felt that they had a bit less overview of what was going on, what colleagues were working on, and which decisions had been made. Moreover, social interaction through virtual platforms was limited, though attempts were made to invite colleagues to online coffee breaks, lunches and quizzes. Still, most of the informants did not report a feeling of loneliness, as their social needs were met through contact with their family, though some expressed concern for young colleagues living alone. Informants were satisfied with the interaction they had with their leaders during the lockdown period. They did not feel that the relation was different, and some even found it easier to contact their leader – at work they would have to seek out the leader in the office - often in vain during a busy day; now a little green or red dot in the digital platforms would signal their availability.

Informants reported varying working facilities at home. Some had a designated office space, others sat with a laptop at the dining room table. Despite the differences, informants generally perceived virtual work as equally productive as working in their regular office. When asked to indicate on a scale from 1 to 5 their level of agreement with the statement *‘The virtual work, with only digital contact between me and my colleagues, has increased the productivity of my workday’*, 24 of 29 informants indicated 3 or higher (cf. table 3). At home, informants were better able to concentrate on tasks, as interruptions were fewer (except for employees with children at home during the period of school/daycare lockdown). Equally many respondents expressed agreement with the statement *‘When we are back to normal, I would like to work more from my home office’*. Though few would like to engage in virtual work full-time, a large majority of respondents expressed that in

the future they would prefer the flexibility of balancing virtual work with presence in their regular workplace. Leaders were also more positive: “*Before the lockdown, I was not too pleased to have staff working from a home office. Now, I see that it works*”.

<i>Statement</i>	<i>Average</i>	<i>Disagree (1-2)</i>	<i>Neither agree nor disagree (3)</i>	<i>Agree (4-5)</i>
1: The virtual work, with only digital contact between me and my colleagues, has increased the productivity of my workday.	3,5	17,2 %	41,4 %	41,4 %
2: Due to the use of digital meetings (through Teams, Skype, Zoom etc.), I have more contact with my colleagues now than I used to at the office.	2,5	55,2 %	20,7 %	24,1 %
3: Due to the use of digital meetings (through Teams, Skype, Zoom etc.), I have more contact with my leader now than I used to at the office.	2,6	44,8 %	34,5 %	20,7 %
4: Digital meetings (through Teams, Skype, Zoom etc.) are more efficient than physical meetings.	4,1	10,3 %	17,2 %	72,4 %
5: When the situation normalizes, I would like to replace physical meetings with digital ones.	3,3	10,3 %	55,2 %	34,5 %
6: When the situation normalizes, I would like to work from home to a larger extent than before.	4,0	17,2 %	3,4 %	79,3 %

Table 3. Overview of the informants’ indications of level of agreement with different statements

## 4.2 The digital ‘Wild West’

Findings indicate that the digital maturity of the sector can be characterized as moderate. Several informants expressed frustration that colleagues seemed to be locked in outdated systems and working methods, and that the general understanding of digital tools and possibilities in their organization was inadequate. “*This is a sector with a lot of digital anxiety. Some are not even comfortable using email or MS Office tools*”, an informant commented. Others remarked that the lockdown and experience with virtual work and new digital tools had boosted the digital competence: “*it’s like we’ve been through a crash course in digitalization: I believe we’ve accomplished the equivalent of 2-3 years of technological development during these few months*”.

Besides email, Microsoft Teams was the collaboration platform most informants used for written communication (posts, messages, chat) and file sharing. Teams had been implemented by most of the organizations before the lockdown, though the intensity of its use varied, and many were just in the starting pit. For digital meetings, informants used Teams, Skype or Zoom. Zoom was a platform for video conferencing that few had heard of before the lockdown, however after the lockdown it quickly became widely used.

Formal training related to these platforms was limited. Some institutions provided a webinar or brief written documentation. Still, informants reported that they were able to use the digital platforms, mostly because their use seemed rather intuitive. How the platforms best might be used in order to support productive collaboration, was not equally obvious. The institutions provided no formal guidelines as to the choice of platform, nor a standardized practice for how the platforms should be used. Informants saw this as an obstacle to optimal use, adequate competence, and productivity. One of the informants elaborated: “*We experience an identity confusion. We are on minimum three different platforms. It is like multilingualism, we acquire competence related to several systems, but we don’t become smart users.*” At an institution where Microsoft Teams had

been used for a while, the lack of central directions and control had resulted in a plethora of teams and practices risking to undermine the use of the system: *“Teams was fantastic in the beginning, but now I’m in 32 teams whereof 28 active. It’s a jungle, with a lot of overlap between the teams. I search and pounder “where was it this document was stored”. It drives me crazy. Now, I’ve started asking people to send me an email instead; there I have my own system.”* Informants considered it too easy for anybody to establish new teams, and called for central control: *“I have some friends working in the private sector, and according to them, Teams is a wonderful tool if you are properly trained to used it. Those I talk to in the private sector who love Teams work for organizations where the access to establish new teams is restricted”*. Informants also described unresolved issues related to document sharing and decision making through Teams. Discussions in chats could be inefficient, as sometimes people would answer only after several days, thus *“dragging the discussion on into eternity”*. Some informants were not comfortable with decisions based on a discussion in the chat, as they felt uncertain that important dimensions had been sufficiently covered, and that all the relevant parties had been heard. Others experienced difficulties regarding collaboration through file sharing and editing, as colleagues kept editing documents long after predetermined deadlines: *“Where we usually set a deadline, say Thursday at noon, I now discover that employees have edited the document the following Saturday night at 11.30 p.m. How are we then supposed to know when the task is finalized?”*

### **4.3 The uncharted territory of digital meetings**

Before the lockdown, administrative staff in the sector attended digital meetings infrequently. Many were thus not accustomed to digital meetings, neither to the functions of the digital platforms employed, nor to best practice as for how digital meetings should be conducted. Informants reported an increased frequency of meetings during the lockdown period compared to a normal situation. With digital meetings, where none of the participants had to travel to a meeting location, the threshold for planning and conducting a meeting was lowered. Many also found it more expedient to make an impromptu video call than writing an email. Some invited colleagues to informal and social meetings. As a result, informants gained considerable experience with digital meetings through videoconferencing platforms. Overall, their experience was positive. Informants describe digital meetings as more efficient and to the point than regular meetings. Functions in the videoconferencing platforms contributed to the efficiency, for instance, the possibility of adding a fact or a brief correction in the chat (*“the number you mentioned, it was 60 million, not 40”*), or a ‘thumbs up’ to voice an agreement. Not having to travel to a different location in order to participate in meeting also contributed to a more productive working day. Most informants stated that they would like for some types of meetings to remain digital also when the situation goes back to normal. In particular, the experience had been an eye-opener as to replacing meetings otherwise involving travel between different cities or even between campuses within the same city with digital meetings. Also, informants found it natural that large, formal meetings involving larger parts of the organization remained digital. Within their own section or team, informants found it natural to go back to regular meeting. Likewise, informants commented that they would not recommend digital meetings as the norm for job interviews, nor for difficult conversations between leaders and employees.

The rapid implementation of Zoom and other video conferencing platforms was not followed by any formal directions or recommendations for their use, rather it was up to different groups *“The meeting culture is not something anybody decided - it just grew organically into what it has become”*, an informant explained. As a result, the practical usage of the platforms differed, resulting in issues and disruptions that decreased the productivity of the meetings. A common complaint was black screens and uninformative usernames, making other participants guess who was hiding behind the screen. An informant elaborated:

*“During this period, we’ve seen a steep development as to meeting culture and practices. For instance, not turning on the camera is now almost considered impolite. Before that was not the case. But I react on black screens, and people have started asking: “Are you there? Why won’t you show yourself?” There are some unwritten rules that we adhere to now. Everyone has the camera and microphone turned on at the start of the meeting, and we say hello etc. Afterwards you might turn them off.”*

Informants concluded that in meetings with many participants, turning off the camera seemed more acceptable, particularly for those playing a passive role in the meeting, for instance in a webinar or an information meeting. Another visual issue was that while some might be uncomfortable in front of the camera, others seemed slightly too relaxed, forgetting that they were on camera – “*some people yawn openly while others are talking*”.

Informants also described audio issues. Many had to be reminded to turn on the microphone when it was time to talk, others had not learned when it was appropriate to turn the microphone off (at all other times):

*“And the issue of muting – OMG. In the beginning, you might experience during a two-minute coffee break that somebody forgot to mute their microphone, and suddenly you’d hear stuff you were not supposed to hear when they were standing in the kitchen and talking to their spouse. You need a muting-culture.”*

As participants in the meetings were not accustomed to digital meetings and how to signal that they had a comment, several people would often start talking at the same time. Structuring the conversation was challenging. An evolving practice of using functions in the digital platform such as ‘raise hand’ or the chat to signalize a comment or question helped facilitate the conversation. However, some also discovered new possibilities in the chat function, not necessarily to the benefit of other participants or contributing to a productive meeting. Informants described participants engaging in a parallel discussion in the chat, thus distracting from the actual discussion: “*I find the chat function as a disturbance and a hinder to active participation in the meeting. A separate meeting might take place in the chat parallelly to the meeting on screen.*” Some were also frustrated that some participants seemingly felt free to use the chat for voicing opinions otherwise uncalled for:

*“I’ve experienced that some use the chat for a ‘metadiscussion’, commenting on the discussion, maybe humoristic comments on others’ contributions, so for the person leading the meeting it is challenging to follow two parallel tracks. Somebody told me: “Wow, it’s amazing to be able to comment on the things other people say, in a regular meeting we wouldn’t be able to do that”. I thought to myself, but refrained from saying out loud: ‘Well, maybe you ought to understand that you shouldn’t do so...’”*

Finally, while people in regular meetings were used to a culture where multitasking during the meeting was not accepted, informants concluded that in a digital meeting it seemed easier to ‘hide’ and not partake fully in the meeting. “*I know that some – myself included – multitask during the meetings, answer emails etc. You know that nobody can see what you’re actually doing.*”

#### **4.4 Summing up the findings**

Overall, we might conclude that for administrative staff within the higher education sector, the transition to virtual work and digital meetings went rather well, and that most seemed to work productively and – under the circumstances – surprisingly contentedly during the lockdown. The findings however also illuminate several challenges and issues that might have been alleviated through different measures, which we discuss in the following section.

## **5. DISCUSSION**

Virtual work is expected to radically change organizational structures and work practices. Extant research has focused heavily on the challenges and consequences for individuals but is inconclusive of how virtual work influences employees’ work productivity and wellbeing (Maruyama & Tietze, 2012). At the organizational level, research reveals that virtual work may be a good business strategy, but that many organizations hesitate to allow employees to telecommute because they fear they will lose control and that employees will slack off without visual supervision (Martin & MacDonnell, 2012; Noonan & Glass, 2012). The use of virtual work poses significant leadership and management challenges for organizations (Mukherjee et al., 2012).

## **5.1 Theoretical contribution**

In this study, we have explored how administrative staff in the Norwegian university sector perceive a (for them) very new situation – how it is to be working from home and to collaborate through digital meetings. By studying this unique and highly interesting case, we contribute to extant research on virtual work and digital meetings in several ways. Our study is based on a case where not only select employees work from a home office on a voluntary basis, but which involves large-scale virtual work. Also, our study contributes by updating research on new technologies that entail different features and opportunities than those studied in many previous studies of virtual work and digital meetings. Our findings indicate that as the support these technologies provide to virtual work and digital meetings is markedly different from the technology available at the time much of previous research was conducted, some of the conclusions research has drawn should be reconsidered. Furthermore, our study reveals important measures related to implementing and exploiting these new technologies.

In discussing this study's practical implications, we return to the research question: how can organizations through different measures prepare for productive virtual work? Based on the literature and evidence from our data, we see four effective measures.

## **5.2 Maturing a digital and virtual culture**

First, organization-wide virtual work requires cultural changes. In organizations, and especially incumbent firms, there is evidence that the traditional separation between those who provide the technological solutions (the IT department) and those who make use of the solutions, is so grounded that it becomes part of the organization's value set (Haffke et al., 2017). This has led to a state where managers and employees consider everything related to IT, such as implementation, learning and training, process change etc. as the responsibility of someone else (e.g. the IT-department).

In order to make virtual work effective, organizations must motivate manager and employees to assume the initiative related to IT-use traditionally outside their role. Organizations must create an environment where employees are eager to continuously learn and gain digital experiences (Feher & Varga, 2017), and are willing to change their working styles and work practices (Kane et al., 2017) and to collaborate with others through digital technology (Mukherjee et al., 2012). In the context of virtual work, managers must ensure that organizational members develop a digital mindset, as well as the skills required, in order to form a digital workforce (Colbert et al., 2016). Moreover, organizations must create communities where employees can share experiences and ideas, and thus learn from each other. Employees need to see the potential benefits of virtual work, for themselves individually, for their team and for the organization collectively (Svahn et al, 2017). Virtual work must become a core part of the organization's business strategy (Kane et al., 2019) and supported by management (Arnfolk & Kogg, 2003).

## **5.3 Standardizing on technical platform**

Second, organizations need to standardize on the technology employees should use for different purposes. As technology is constantly evolving, this is a continuous task (Tilson et al., 2010). As our analysis revealed, many organizations utilize overlapping technologies, and management is not clear on which one their employees should use in a certain situation and for a certain purpose. For example, organizations may have acquired both Skype, Teams, and Zoom, and employees are using them all for synchronous communication and meetings at various occasions. It is up to the individuals to decide which one to use in each case. The same holds for asynchronous tools. For instance, employees may choose to use e-mail or chat to exchange messages and files, and to store shared documents at various places. Differing practices unfold.

This is unfortunate for several reasons. First, it is not effective in relation to building competence and skills. Employees are becoming jack of all trades, and master of none, as one of our informants expressed. Second, as

different platforms provide different functionalities, communication and meeting practices need to be adjusted accordingly. Third, in the case of asynchronous communication, people lose control and overview of their correspondence, and of where documents are stored or archived. Lastly, technological redundancy is neither cost effective in terms of licenses, implementation and maintenance, nor support. Our informants asked for fewer alternatives and a conscious strategy on the matter.

#### **5.4 Standardizing on policies and practices**

Third, from our analysis it is evident that organizations need to put effort into developing organization-wide policies and guidelines for virtual work. Increased use of virtual work influences communication and meeting practices, relationships between individuals, work processes, and organizational structure (Vroman & Kovachich, 2002; Lindeblad et al., 2012). Moreover, running a meeting with digital technology is very different from running a physical meeting. Digital meetings require more preparations, a clearer agenda and more structure than in-person meetings. The skill sets required for managing digital meetings effectively are more complex than the skill sets required for managing traditional meetings (Berry, 2011). Moreover, as we found in our study, organizations are moving from a situation where meetings were scheduled, predictable and time restricted, to a situation where meetings are immediate and continuous. The ability to work and meet virtually increased the frequency in communication among colleagues and team members. The new way of working may be more adaptive and agile (Lindeblad et al, 2016).

As our analysis revealed, although management had to approve and stimulate virtual work in their organizations because of COVID-19, it did not manage and control the transition. The lack of guidelines and training was particularly evident in our study. Individuals and groups could - and had to - establish their own rules and practices, and as collaboration and group-membership varied, individuals and groups continuously needed to adjust their mode of working. This is unfortunate, and an issue our informants repeatedly commented on. This study emphasizes that organizations need to develop ground rules for effective virtual work.

#### **5.5 Allowing for individual flexibility**

Fourth, as virtual work is employed across an array of contexts, firms must allow for individual flexibility. Our analysis shows a large variation as to how the informants experienced virtual work - some were highly content to work from home, others could hardly wait to get back to the office – though most of the informants would like to continue working from home to a larger extent than before. Organizations tend to establish directives that are to apply for every employee. In the Norwegian public sector, the trend has been to demand everybody's presence in the office. An organization's staff does however not constitute a homogenous group, but is typically characterized by a variety of personalities, preferences, roles, tasks and collaboration forms. Telecommuting might be beneficial for some people and for certain activities but may be ineffective for others and for other tasks. In the short run, health authorities have also counseled that allowing employees to work from home when feasible is an important contribution to slowing a pandemic they warn will last for at least another couple of years. In a longer run, an increased extent of virtual work can be part of a solution to issues related to traffic, public commute, and local and global pollution. Moreover, in a public sector in competition with the private sector over high-skilled talents, and sometimes struggling with retention, flexibility can be a valued perk. Managers should consequently develop policies that are flexible and sensitive to the employee's personal situation (e.g. family situation, living conditions), and fit to the employee's role and tasks and the preconditions of the work group they belong to. This requires that managers deepen their understanding of employees' and of when virtual work and virtual meetings are desirable and feasible, but also that they remain aware of possible downsides, and of the measures and technologies required for alleviating these.

## 6. CONCLUSION

In this paper, we have investigated how a sudden shift to virtual work has influenced the work and collaboration among administrative workers in the higher education sector in Norway. Following the COVID-19 outbreak, Norway went into a lockdown situation that forced administrative workers to work remotely – a hitherto unfamiliar situation for this group of professionals. By studying how this group coped with virtual work, we were able to investigate their experiences of having to rely on ICT to work both independently and interpedently across space and time. Our case illustrates that most institutions involved in the study demonstrated impressive responsiveness and operative capabilities in order to continue with their core activities. The successful continuation of core activities may partly be explained by the shared sense of urgency within every institution. However, despite the apparent successful handling of the lockdown situation, our study also reveals four measures organizations should consider when preparing for effective virtual work in the future.

First, our findings indicate that virtual work not only requires technological changes, but also *cultural changes*. Cultural change entails creating an environment where employees are eager to expand their digital competence, collaborate in new ways and share experiences. Second, we find that organizations should consider *standardizing on technical platforms*. Many informants expressed frustration of unclear guidelines and expectations in terms of which platform to use for which purpose. When employees use a number of (sometimes overlapping) digital platforms and tools, it hinders the development of deeper digital competence related to each platform. Third, our analysis reveals that organizations should also *standardize on policies and practices*. We find that our informants experience digital meetings as very different from physical meetings; people work in different ways and at different times. This calls for new policies and practices tailored to a virtual work environment. Managers need to be present in developing ground rules for effective virtual work in order to avoid adverse effects of laissez-faire management. Forth, our study indicates that effective virtual work *allows for individual flexibility*. Organizations should aim to give their employees discretion in deciding on their own work arrangement (e.g. telecommute or not) when this is applicable. Our findings demonstrate that tailor-made work arrangements yield higher work commitment among workers.

### *Suggestions for further research*

Future research on virtual work could take many directions. First, we see a need for more longitudinal studies that can document the long-term effects of virtual work. The short-term effects of virtual work mapped out in this and other studies might change over time. Future studies could for example investigate how organizations create and maintain a strong organizational culture when employees primarily rely on virtual work. Moreover, the long-term effects of virtual work on employee well-being are important to investigate. Second, issues related to management control will be important in the future. Many of our informants report that the transition to large-scale work virtual work was relatively frictionless and productive because most employees understood the urgency of the COVID-19 situation. However, it remains unclear how employee productivity will develop once organizational activity returns to normal. If managers then observe a decline in productivity, will they turn to increased employee monitoring? Will managers have trust in their employees and keep high levels of freedom and flexibility, or will new monitoring and reporting technologies become the solution? Lastly, future research could study the fairness aspect of large-scale virtual work. If telecommuting becomes the norm in the future, employees who live in spacious accommodations might have facilities that make virtual work a pleasant experience, while employees who live on limited space might find it challenging to telecommute on a regular basis. Organizations needs to address and cope with these and related issues in the near future. In summary, there are several avenues for future research in this area, at the individual, organizational and societal level.

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