

Exploring and Understanding Organisational Outcomes from the adoption of Digital Collaboration Platforms

A Dissertation Submitted to the University of Hertfordshire in Partial Fulfilment of the Requirement of the Degree of Doctor of Business Administration (DBA)

Ethics Approval Protocol: cBUS/PGR/UH/04641

Submitted: October 2024

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Word count: 78,497
Inc. table/figure headings, exc. Abstract, References and Appendices

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ACKNOWLEDGEMENTS

I would like to offer my sincere thanks to my supervisory team: Professor Jyoti Choudrie and Dr Sunila Modi, for all their guidance and support during the study duration. To Sunila, particular thanks for all your valuable ‘sign posting’ suggestions. I would also like to thank my principal supervisor, Professor Choudrie, for her generosity in making time available to advise, discuss and sometimes, just be a friend, as we advanced through the challenges of the COVID-19 pandemic, together. It wasn’t always easy and sometimes one or the other of us also had health issues to contend with, but we remained loyal to each other throughout. As I have developed as a researcher, I keep in mind this saying by Nietzsche: *‘One repays a teacher badly if one always remains nothing but a pupil’* and I hope you both feel this work is worthy of your efforts, as well as of mine.

It simply would not have been possible to complete this study without the unceasing support of my husband, Keith. Not many students are blessed with a partner willing to shoulder most of the household responsibilities for nearly five years, however, in addition, Keith has been willing to embark on endless discussions as I embarked on the journey of doctoral research, offering insightful counsel. Perhaps the most memorable are his explanations of quantum physics, which helped me grasp and form my own conclusions about one complex theoretical concept that I needed to explore. Thank you for being the most wonderful partner imaginable, Keith.

I would also like to thank my four children: Amy, Ross, Zoë and Ben and their partners, and my many friends, for their encouragement. Thank you all for your endless love and support, it is much appreciated.

ABSTRACT

The COVID-19 global pandemic initiated transformational changes to knowledge work, enforcing remote working and giving rise to increasingly prevalent hybrid work modes. The purpose of this empirical longitudinal study is to explore the impact of mandatory adoption of digital collaboration platforms (DCPs), such as Microsoft Teams, on organisational practices and cultures within this evolving landscape.

An exploratory, inductive inquiry based on a qualitative methodology was conducted, involving three rounds of semi-structured interviews with the same group of 28 knowledge workers of diverse ages and seniority levels from two UK-based organisations. In total, 65 interviews, comprising 58 individual and 7 group interviews, were conducted between 2020 and 2023, following participants in a comparative case study as they navigated the dramatic changes brought about firstly by enforced homeworking and later by hybrid working. Digital artefacts, e.g. organisational announcements, survey results and recorded virtual presentations, were also collected throughout the four-year study and analysed along with interview transcripts, using a thematic analysis.

The findings reveal positive outcomes of mandatory DCP adoption, highlighting a 'level playing field' effect, where mandatory adoption reduces the impact of computer self-efficacy differences, helping to bridge digital divides among diversely aged employees. Enforced adoption also amplifies the network effects of collaborative technology, providing hands-on evidence of collaboration technology's potential. Empirical findings reveal three additional sociomaterial practices - collaborative messaging, composition, and leadership communications - emerging alongside videoconferencing. These practices highlight both challenges and opportunities in hybrid working, including hybrid meeting engagement and the need for inclusive digital practices. The study also casts doubt on knowledge workers' understanding of collaborative composition, suggesting room for improvement in adapting to this practice.

The study finds that collaboration practices are variously adapted or repurposed as a result of liminal tensions arising from the disruption of remote and hybrid working and extends liminal innovation concepts, by introducing competitive tension, which arises on the ground

when legacy or rival applications remain in place, reducing the utility of unified organisational collaboration networks. The development of an extended liminal innovation framework that also incorporates individual and organisational factors provides a novel tool for understanding practice reconfigurations in times of crisis.

While the adoption of DCPs displaced cultural assumptions which privileged face-to-face collaboration, creating existential tension, they also engendered trust in remote working, challenging norms of presenteeism and underscoring the importance of building a digitally skilled workforce. Although DCP adoption can deliver additional organisational capabilities, such as enhanced intra and inter organisational collaboration and extended customer reach, organisational challenges remain, including maintaining cultural integrity in hybrid working models.

Findings from this study significantly extend the body of knowledge on workplace digital collaboration in remote and hybrid working, making theoretical contributions by challenging negative perceptions of mandatory technology adoption, demonstrating that, in the context of DCPs, an approach where all employees adopt together, can yield positive organisational outcomes. The study also sheds considerable light on the sociomaterial dynamics of digital collaboration in the workplace in remote and hybrid working and their impact on organisational cultures, offering key insights into how crisis-driven technology adoption reshapes organisational practices and cultures in the longer term. Extending the liminal innovation framework to include the concept of competitive tension and the individual and organisational influences that reshape practices and culture, offers further theoretical contributions.

This study makes important contributions to practice, by revealing that utilising an adoption approach in which interested early adopters go first, could inadvertently result in widening workplace digital divides that result from differing levels of self-efficacy. Instead, the research advocates for a mass, unified adoption approach for DCPs, to overcome resistance, foster collective learning and maximise network effects, together with the phasing out of legacy systems. The research also emphasises the importance of inclusive digital practices, ongoing training to extend DCP use beyond videoconferencing, and maintaining organisational culture through regular face-to-face interactions and trust-based productivity measures.

KEYWORDS: *Liminal Innovation, Digital Collaboration, Knowledge Work, Mandatory Adoption, Organisational Culture, Remote Working, Hybrid Working, Digital Divide, Microsoft Teams, Workplace Technology Adoption.*

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1.0 Research Background

1.1 Chapter Introduction

This chapter introduces the reader to the research topic and offers definitions of the commonly used terms in the dissertation. The research problem is outlined, and background information provided about the information technology used as the vehicle for the study. The context of the research is explained, and a brief description of the research approach is offered. The important theoretical concepts that underpin and form the framework for the research are introduced and briefly described, and broad research gaps are illustrated, allowing the researcher to justify the claims made later of academic and practice contributions from this empirical research study. This chapter concludes with a summary and explains what the reader can expect to find in the chapters that follow.

Readers may be familiar with the topic of this research and have their own unique experience of the events that unfolded from 2020 onwards. Whilst the researcher does not claim that the interpretation offered will fit all contexts or cultures, it is hoped that not only will this dissertation prove to be interesting reading but also that examination of the findings and sample transcripts would allow another researcher to reproduce comparable and not contradictory, findings, (Koch, 1994, cited in Nowell et al., 2017).

1.2 Research Problem

When the COVID-19 pandemic hit the world, governments around the globe, including the United Kingdom (UK), imposed preventative measures that led to knowledge workers, who use documents and ICT to perform complex tasks, such as problem-solving, creating knowledge, distributing and applying it to achieve results (Surawski, 2019), suddenly having

to become remote workers, “where workers have no personal contact with co-workers but are able to communicate using technology” (Wang et al., 2021 cited in Razmerita et al., 2021:2).

Although the idea of a future where employees are no longer tied to office spaces has been anticipated since the 1980s (Awada et al., 2021), remote working prior to the COVID-19 pandemic was not a common practice, with only 2.9% of European workers working from home in 2015 (Parent-Thirion et al., 2017, cited in Wang et al., 2021) and UK workers rarely exercising the choice to work from home (Felstead et al., 2006). Yet, nearly four decades later, to mitigate the risk of spreading the COVID-19 pandemic, millions suddenly found themselves plunged into mandatory working from home (Kniffin et al., 2021), “inadvertently leading to a de facto global experiment of remote working” (Kniffin et al., 2021 cited in Wang et al., 2021: 17)

As a result, the way in which employees collaborated drastically changed, causing a sudden surge in the use of digital communication and collaboration platforms (Schoch et al., 2023), such as Microsoft Teams (Teams), which saw dramatic increases of 894% in the number of users between March and June 2020, resulting from global adoption following the spread of the COVID-19 pandemic (Shewale, 2023). Not only were knowledge workers forced into remote working, many were also forced to adopt new ways of using digital technologies to carry out their tasks and interact with colleagues (Waizenegger et al., 2020). Moreover, the abrupt, ‘big bang’ approach that had to be taken to the adoption of remote working practices meant organisations were caught off guard (Savić, 2020) and had insufficient time to train those affected in the use of the adopted technologies (Carroll and Conboy, 2020).

Prior literature highlights the importance of adaptation in practice change (Ansari et al., 2010) and the need for virtual teams to receive training on both technology and new working processes in order to facilitate rapid adaptation (Rice et al. 2007). However, prior workplace

eCollaboration studies carried out pre-COVID 19, do not occur in a setting wherein a) the adoption of technology and new working practices were enforced wholesale in organisations and b) those affected were simultaneously required to work from home, without proximal access to their colleagues. It is in this unique context, wherein enforced adoption of workplace eCollaboration took place in enforced home working, that the research study commences.

Prior research also indicates that forced, or mandatory adoption of IT systems can lead to negative outcomes such as dissatisfaction, low morale, decreased productivity, reduced work quality, and even project failure (Markus, 1983; Hirschheim and Newman, 1988 cited in Bhattacharjee et al., 2018). Additionally, operational changes from mandatory adoption may be less enduring (Brown et al., 2010). Employee resistance can occur (Hsieh et al., 2011), which may be more noticeable amongst older individuals (Vodanovich et al., 2010).

Exploring and understanding the outcomes from mass enforced technology adoption, this study is able to offer valuable theoretical and practical contributions to the field of post-adoptive IS behaviour and usage, which can help practitioners in accommodating new situations beyond COVID-19.

Although the research study commences with enforced lockdowns, it follows research participants as they experience another new phenomenon; ‘hybrid’ working, where some days are spent working in the office with others spent working from home. The new normal for many organisations is hybrid working, or “being employed to work both at home and also in an organisational setting, using ICTs to maintain workloads”, which also “raises new questions that lead beyond the sum of existing debates about tele working and virtual organisations” (Halford, 2005: 20). Prior research conducted during the pandemic era has predominantly focused on well-being aspects during the period of mandated homeworking (Carroll and Conboy, 2020; Hacker et al., 2020; Waizenegger et al., 2020; Razmerita et al.,

2021; Vidolov, 2022), and has rarely followed participants into sustained hybrid working, leading researchers to call for studies that foreground the digital artefact, not just during homeworking but into the new normal, on the basis such research is scarce (Zamani et al., 2022).

Taking a longitudinal approach, this comparative case study follows the same participants in two organisations with different cultural values over four years, capturing their experiences as they navigate the challenges of digital collaboration. In doing so, it addresses the lack of longitudinal research on post-adoption changes in user behaviour with collaboration software (Schoch et al., 2023). Such a rare empirical study offers a novel and valuable perspective, making significant theoretical and practical contributions to an evolving area of knowledge, particularly since the relevance of digital collaboration tools has not only increased but is likely to increase further as working from home becomes the new normal (Schoch, et al, 2022).

One clear area of knowledge regarding what is offered by digital collaboration platforms is illustrated by the crucial role videoconferencing played in maintaining team collaboration during COVID-19 homeworking, evidenced by a growing body of literature (Hacker et al., 2020; Waizenegger et al., 2020; Razmerita et al., 2021; Vidolov, 2022). However, the focus on videoconferencing, particularly the popularity of Zoom - evidenced by terms like ‘Zoom fatigue’ (Forster et al., 2020) - appears to have overshadowed the other collaborative practices offered by eCollaboration applications like Microsoft Teams. It may also explain why many people have mistaken perceptions of what collaborative applications like Teams offer, thereby remaining unaware of the opportunities for organisational transparency and simplified business processes (Simon, 2021). To illustrate why eCollaboration consists of more than just videoconferencing, consider the term *collaborate*, which originates from the Latin ‘laborare’, meaning ‘to work together’.

Mayrhofer et al. (2003) define Workplace eCollaboration as: -

“The computer mediated process of two or more (dislocated) people working together on a common purpose or goal, where the participants are committed and inter-dependent and work in a common context, using shared resources, supported by (Web-based) electronic tools” (Mayrhofer et al., 2003:3).

Or, more simply, "electronic technologies used by different individuals to accomplish a common task" (Kock, 2008:7). Software applications that support digital or ‘eCollaboration’ in the workplace have historically been referred to in different ways, for example, computer-supported cooperative work (CSCW) and enterprise unified communication systems (Riemer et al., 2009), but these, together with specific applications like e-mail and videoconferencing, all fall under the umbrella term of collaboration technology (Brown et al., 2010). Thus, videoconferencing is just *one of the technologies* which might exist as a constituent feature within an eCollaboration system. Figure 1 provides details of all of the various software applications that form the building blocks of an eCollaboration system (Riemer et al., 2009).

Communication	Coordination	Collaboration
- eMail	- Group calendars	- Wikis
- Text chat	- Project management	- Group editors
- Instant Messaging	- Workflow management	- Electronic whiteboard
- Audio chat or conferences	- Social networking	- Application sharing
- Video chat or conferences	- Voting	- Shared Office solutions
- Discussion boards	- Document archives	
- Weblogs (Blogs)	- Version management	

Figure 1 - eCollaboration features and system building blocks (Riemer et al., 2009)

Figure 1 demonstrates that eCollaboration features facilitate various inter-personal interactions, such as communication through multiple media including email, instant messaging, video/audio calls, coordination of joint tasks and processes via applications such as project and workflow management, and, importantly, collaboration on and storage of,

shared objects like documents (Riemer et al., 2009). Therefore, by adopting a technology such as Microsoft Teams, other collaboration practices beyond videoconferencing, should be possible.

Rather than eCollaboration, later researchers have preferred the terms ‘synchronous remote collaboration’ (Constantinou et al., 2024) and digital collaboration platform’ (DCP), (Singh et al., 2021); (Goldthorpe and Choudrie, 2021), to describe workplace collaborative systems like Microsoft Teams. For the purposes of this dissertation, the terms eCollaboration system and Digital Collaboration Platform (DCP) are variously used to describe Microsoft Teams. Moreover, the abbreviations ‘DCP’ and ‘Teams’ are used interchangeably throughout, to mean the same thing.

Broadly speaking, it makes sense that organisations can be successful if their employees collaborate effectively, in a synergistic manner (Strang, 2009); the technology allows the exchange and integration of information between individuals and teams during task execution which can boost creativity (Ma et al., 2023), together with productivity and learning (Fink, 2007). Moreover, organisational values might be reshaped in a move to transparent and open communications, encouraged by team members abilities to react to and comment on one another’s posts, promoting the expression of different opinions (Lane et al., 2024). On the other hand, tensions might emerge as a result of the persistence of content on such platforms, with some exercising power by deliberately choosing not to participate, thereby hindering effective teamwork Gibbs et al., (2013); Neeley and Leonardi (2018) cited in Lane et al, (2024). A culture of self-management could be fostered by individuals’ ability to form their own teams but these abilities might also lead to issues of information security as a growing amount of content, left unmanaged, could become unwieldy and poorly organised (Leonardi et al., 2013). Thus, while digital collaboration platforms could have transformative and broader effects on organisational outcomes, enhancing an organisation’s agility, supporting a

collaborative culture, and driving long-term growth and competitiveness, they also present challenges, which require greater understanding. For example, research conducted during COVID-19 imply that the broader organisational impacts of DCPs are less well understood than the day to day challenges of working remotely (Razmerita et al., 2021); (Ågerfalk et al., 2020) and a call for more consideration of changes to organisational culture, on the basis that people are enablers or inhibitors of digital transformation, was echoed by Choudrie et al. (2021). It is a view which echoes earlier research regarding organisational change, for example, “Organisations don’t change – people do” (Quirke, 2005:106, cited in Hughes, 2006).

What prior literature also reveals is that it is important to consider organisational outcomes beyond the initial disruptive event. This is because periods of disequilibrium, such as those imposed by the disruptive pandemic, make it possible for deep, new organisational forms to occur (Corbo et al., 2018), but researchers have questioned whether the outcome of practice transformations during enforced homeworking are sustainable in the long-term (Carroll and Conboy, 2020). Orlikowski and Scott, (2021) suggest the liminality of crisis, or being on the threshold between one state and the next (Turner, 1964), “produces conditions of possibility for transformative change to be enacted in practice” (p.2) but likewise, these researchers question whether such transformation will be ‘epoch-defining’ or merely transitory.

COVID-19 provides a unique opportunity to study the use of eCollaboration tools and their wider organisational impact; research that considers both practices and culture is a valid approach when studying eCollaboration (Riemer et al., 2009). The circumstances brought about by mandatory working from home instructions presented a massive natural experiment, unprecedented in the course of human history, and also led to ‘the most significant organisational design change in our lifetime’ (Treacy, 2022), meaning the move to more

flexible working conditions for millions. This motivated the researcher to form the research aim and research questions detailed in the next section.

1.3 Research Aim and Research Questions

The aim of this research is *to explore, understand and explain reconfigurations to practices and culture, arising from the mandatory adoption of digital collaboration platforms, in a disruptive crisis.*

To fulfil the aim of the research, the following research questions were developed: -

1. *Why and how do mandatory DCP adoption policies influence adoption outcomes?*
2. *Why and how are collaborative working practices reconfigured because of liminal innovation opportunities generated by a disruptive crisis?*
3. *Why and how does crisis driven change to collaborative practices affect organisational cultures?*

In addressing these questions, the theoretical framework of liminal innovation is employed to explore the reconfiguration of organisational practices in a time of crisis (Orlikowski and Scott, 2021). Addressing the research questions contributes significantly to the existing bodies of knowledge in the eCollaboration research domain and their mandatory adoption.

The 4-year empirical research study employs a longitudinal approach; following the same employees, diverse in age and seniority level in their respective organisational hierarchy, as they navigate both enforced homeworking and later, sustained hybrid working. As evidenced in [Chapter 2 - Literature Review](#), this approach is rarely found in prior literature conducted during and after the COVID-19 pandemic. As such, this empirical study offers a novel and valuable perspective, yielding significant theoretical and practical contributions.

This study will offer a contribution to practice by helping to inform policymakers in similar organisations considering implementation of DCPs, especially if a mandatory approach is

under consideration. It will also provide scholars with suggestions for future directions into new areas, such as the impact of digital collaboration on differently abled employees and the longer-term study of blended organisational cultures.

1.4 Research Context

This research is conducted in the context of the workplace with employees who were collaborating on an inter and intra organisational basis. This is defined as professional collaboration (Wahl and Kitchel, 2016). Two settings are utilised, a private company and a public institution (i.e. partially funded by the UK government) (Cabinet Office, 2024). The technology adoption context for Microsoft Teams was mandatory in both settings and therefore provides a substantial match to the chosen research topic (Walsham, 2006). Moreover, comparing the experiences of a public and a private company could provide important insight on their respective similarities and differences. For example, Rainey et al. (1976) reported consensus views amongst prior literature that government institutions tend to be characterised by cautiousness, inflexibility and lack of innovativeness, whilst pointing out that consensus is not proof, and questioning whether private organisations really are more flexible and innovative than government (Rainey et al 1976). Readers should be aware that, whilst one setting is a higher education institution, this is not a study of teaching and learning, i.e., collaboration between academic and student, rather it is a study of collaboration practices between employees. This is reflected in the choice of research participants, most of whom are not academics.

1.5 Research Approach

A qualitative, longitudinal, comparative case study of two UK organisations is conducted, which follows the same two groups of diversely aged knowledge workers occupying a span of role grades over the course of four years as they navigate their way through the sudden

move to homeworking and eventually into hybrid working, following their challenges and opportunities as they adapt to the enforced adoption of Microsoft Teams. Semi-structured interviews and focus groups are utilised to collect primary data from a group of 28 participants, 14 from each organisation, covering an age range between 18 and 60+. A total of 65 semi structured interviews, consisting of 58 individual and 7 group interviews, were conducted between 2020 to 2023, covering the enforced move to mass remote work, into a partial return to the office in 2021 which saw the emergence of a hybrid approach, and beyond, to 2023 when all participants had been working in ‘the new normal’ or hybrid mode for more than one year. Secondary data includes company survey results, Intranet postings, leadership communications and recorded online presentations. Section 1.5 has outlined the research approach taken, while [Chapter 3 - Research Methodology](#) provides full details of the research methodology.

1.6 Research Storyline

Figure 2 provides a visual representation of the research study, which illustrates the study’s overall storyline. This storyline demonstrates how the research questions introduced in this chapter are linked to the literature that is examined in [Chapter 2](#), and later to the study’s findings and discussion chapters. It acts as a ‘golden thread’ for the study, appearing in subsequent chapters to aid clarity and provide a visual guide that serves to orientate the reader to where they are and what is to follow.

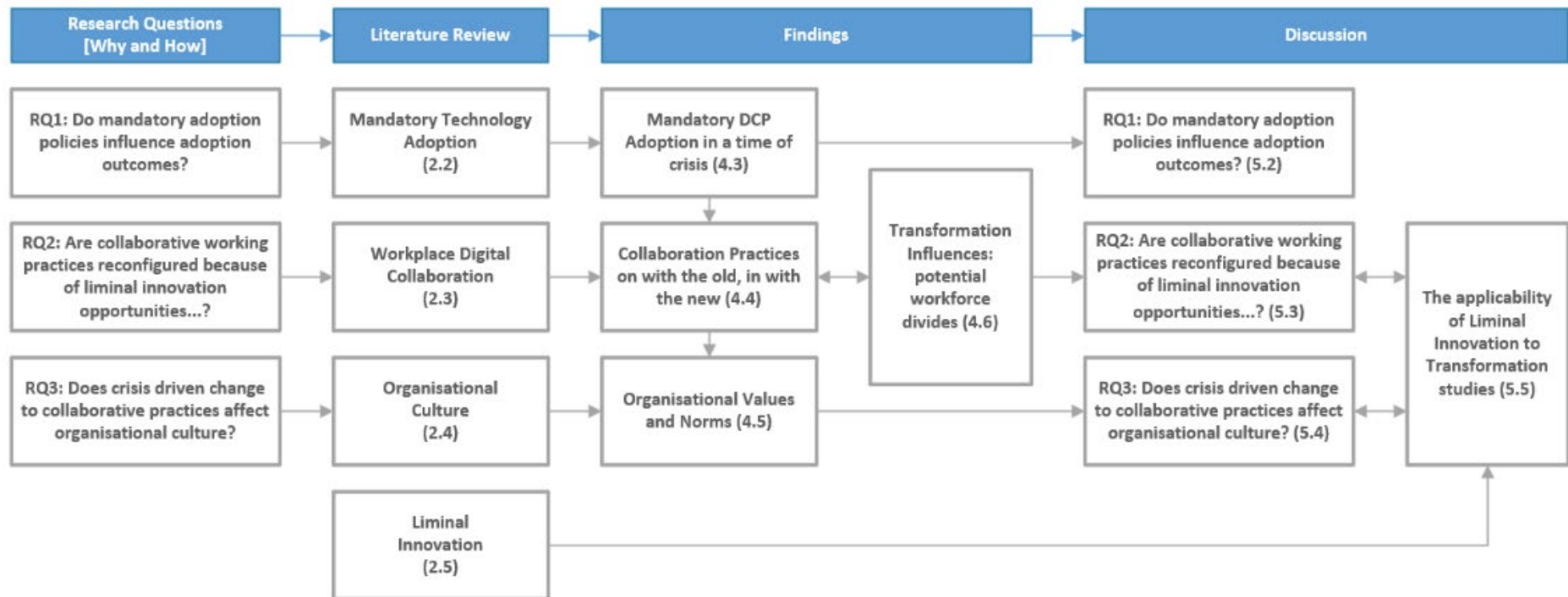


Figure 2 - Research Storyline – full story

1.7 Chapter Summary

This chapter introduced the reader to the study, providing the research problem and the selected information technology used for the study. The research was situated within the eCollaboration research domain, and the main theoretical concepts used to underpin the research were briefly introduced, together with broad research gaps. The research context was described, together with a summary of the research approach. A visual story line for the research was presented, which the reader will encounter in later chapters. Table 1 provides a description of each subsequent chapter's contents and quick links to the chapter heading.

Table 1. Dissertation Chapter Contents and quick links

Chapter Number	Chapter Heading	Chapter Contents
Chapter One (Word Count 3381)	Research Background	Describes the background and context to the research problem. Introduces and defines the research domain where contributions are later made. Explains the technology that is the focus of the study, and the terms used thereafter to describe it. The storyline of the overall study is visualised. Broad research gaps are identified but refined thereafter in Chapter 2.
Chapter Two (Word Count 14689)	Literature Review	Critically reviews literature in the domain of mandatory adoption of digital technologies, digital collaboration (pre and post COVID-19), relevant concepts from organisational culture and liminal innovation. Synthesises gaps in the literature to produce a conceptual framework. Chapter 3 follows and explains how the research questions were operationalised.
Chapter Three (Word Count 7514)	Research Methodology	Different ontological viewpoints and corresponding epistemological approaches are described, and the study clearly situated. The research design is justified, including participant sample and the data collection strategy. Data analysis techniques are illustrated using a sample of findings, presented thereafter in Chapter 4.

Chapter Number	Chapter Heading	Chapter Contents
Chapter Four (Word Count 27454)	Research Findings	Findings are organised into a thematic map, presented at the chapter start to orientate the reader to the structure that follows. Results for each theme follow, presented by data collection period (T1, T2, T3). A comparative summary of both organisations is offered for each theme. A longitudinal summary of findings for each time period, for each organisation presents a useful summary of findings for the reader's convenience and ends each theme. Results are discussed in Chapter 5.
Chapter Five (Word Count 20309)	Discussion	Provides the interpretation of Chapter 4 findings, preceded by a reminder of the research problem and questions for the reader's convenience. The significance of the study's findings to the relevant fields of research are explained and implications are elaborated. Table 21 provides a summary of the study's main contributions and explains whether they confirm, contradict or offer new knowledge. Conclusions and limitations follow in Chapter 6.
Chapter Six (Word Count = 5697)	Conclusions and Limitations	Provides conclusions, study synopsis and synthesised findings demonstrating how research aim, and questions are addressed. Contributions to theory and practice are emphasised and implications and recommendations detailed. Future research directions are offered. A reflexive account follows in Chapter 7.
Chapter Seven (Word Count = 2839)	Reflexivity and Learning	Completes the dissertation, offering a personal reflexive and reflective account of the doctoral journey, using examples of journal entries maintained over the study duration. The researcher offers examples of how learnings have been applied to practice.
Appendices		Provides interview and e-form questions, sample transcripts, additional literature, published conference papers from the study, awards received, data analysis examples, ethics approvals, practice-based dissemination activities.

2.0 Literature Review

2.1 Chapter Introduction

This section provides a review of the existing literature in the areas which serve as the theoretical underpinning for the study. Search terms including mandatory adoption, forced adoption of digital technology, digital collaboration, workplace collaboration, collaboration and COVID-19, culture and digital collaboration, organisation culture and COVID-19 were amongst those employed to search peer viewed articles and books within the University of Hertfordshire's eLibrary, subject specific databases and Open Access articles. Following a review of existing studies of interest in each area, which highlights research gaps, the gaps are synthesised to produce a conceptual framework for the study. Figure 3 provides the theoretical 'pillars' reviewed in this chapter and identifies how the chapter contents are organised.

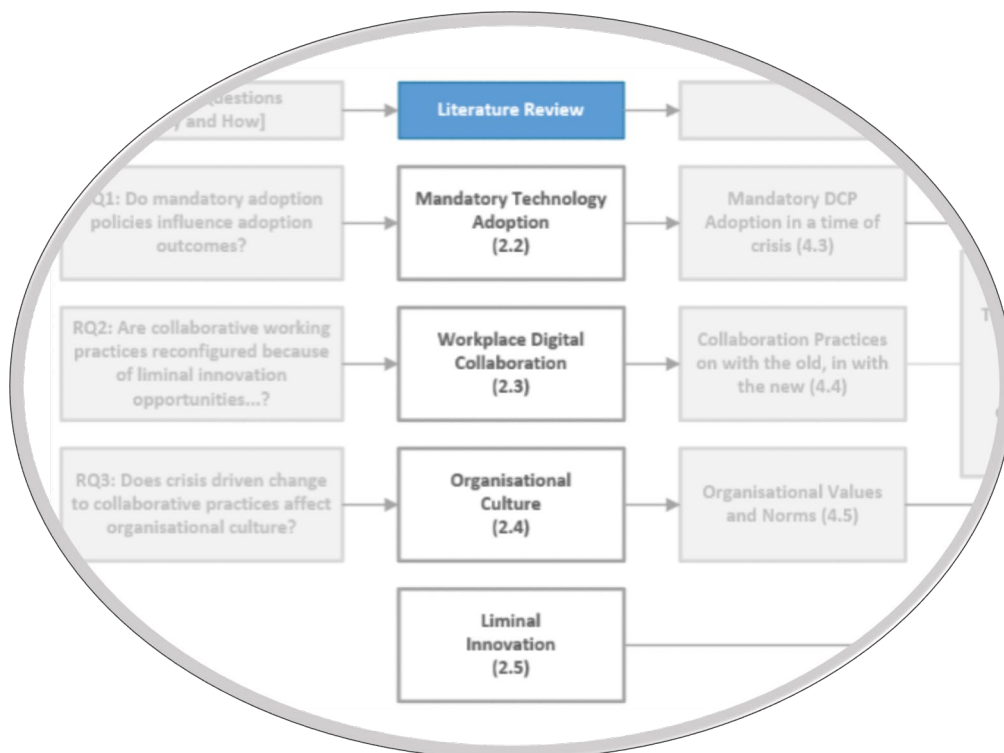


Figure 3 - Organisation of Literature Review

2.2 Mandatory Technology Adoption

Models of Technology adoption typically incorporate three stages: preadoption, the adoption decision and post-adoption activities (Rogers, 2003) with the majority of research having been conducted in the earlier stages (Jasperson, et, al, 2005). Jasperson et al. (2005) utilise the term ‘mandatory’ to describe a scenario whereby an organisation adopts a technology and then “embeds the IT application within a work system, thus forcing the user to adopt the application to complete his/her work assignments” (Jasperson et al., 2005: 532). A broader perspective, omitting the need for the technology to be embedded in work practices, applies the term mandatory adoption to mean when users “have no choice other than to use the prescribed organisational IT, regardless of their personal perceptions or intentions of use” (Koh et al., 2010, cited in Bhattacharjee et al., (2018: 396). While both research articles consider the impact of post-adoptive technology usage, Jasperson et al (2005) aim to elucidate factors that influence users to exploit the different features of IT applications, while Bhattacharjee et al (2018) apply empirical findings to provide a taxonomy of post-adoptive behaviours in mandatory settings, thus respective definitions may serve differing purposes. Post adoptive behaviours are *“the myriad feature adoption decisions, feature use behaviors, and feature extension behaviors made by an individual user after an IT application has been installed, made accessible to the user, and applied by the user in accomplishing his/her work activities”* (Jasperson, et, al, 2005: 531).

Although researchers vary in their definitions of mandatory adoption, one thing they appear to agree on is the significance to research findings from the ‘adoption context’, i.e. whether users are using IT voluntarily or whether they are forced to use it (Jasperson, et, al, 2005; Bhattacharjee et al., 2018). Consequently, research designs that do not differentiate between these two contexts are considered to have limited explanatory power (ibid).

Bhattacharjee et al. (2018) and Jaspersion et al. (2005) further agree that research designs based on the Technology Adoption Model (TAM) (Davis et al., 1989) and the Unified Theory of the Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2012) only explain the voluntary adoption context, not the mandatory context. Their lack of explanatory power in the context of mandatory adoption stems from the fact that they are variance theories, used primarily in quantitative research to assess the extent to which various factors might produce differences in an individual's decision to adopt a technology. However, when the decision to adopt is not within an individual's locus of control but rather a decision made by the organisation, or an 'authority decision', both TAM and another seminal theory, the Diffusion of Innovation Theory (DIT) (Rogers, 2003), have been criticised for a lack of applicability (Gallivan, 2001). Moreover, the suitability of all three models for the study of 'post adoptive' behaviours, where the decision to adopt the innovation has already been made and the innovation is available for use, has also been challenged (Jaspersion et al., 2005) thus rendering TAM, UTAUT and DIT as unsuitable choices for this post-adoptive study of mandatory technology adoption.

Table 2 synthesises prior mandatory adoption literature. Various digital technologies are included, and literature is drawn from a variety of industries.

Table 2. Themes in Mandatory Adoption literature

Themes	Author	Setting	Approach	Findings
Mandatory Adoption Influences	Venkatesh et al, (2003)	Banking and Public Administration	Longitudinal Surveys	Social influence significantly affects behavioural intention to use in early stages of mandatory adoption unlike voluntary adoption.
	Hartwick and Barti (1994), cited in Jaspersen et al. (2005)	Various industries	Longitudinal Surveys	Authors use source to argue that mandatory adoption may still allow users to choose which features of the application they will use.
Resistance Responses	Bhattacharjee et al. (2018)	Hospital	Longitudinal Case Study	User resistance to mandatory adoption can be classified as engaged, compliant, reluctant or deviant.
Negative Outcomes	Markus (1983); Hirschheim and Newman (1988), cited in Bhattacharjee et al. (2018)	Accountancy, Insurance	Single Case Study Single Case Study	Based on the cited sources, authors argue forced use often leads to user dissatisfaction, low morale and resistance and organisational loss of productivity and effectiveness.
	Brown et al. (2002), cited in Lui et al. (2023)	Banking	Case Study	Authors use source to argue that mandatory use can result in less lasting change to business operations.
	Hsieh et al. (2012), cited in Lui et al. (2023)	Telecoms employees	Longitudinal Surveys	Authors use source to argue that mandatory use can lead to more operational interruptions such as employee resistance.
	Nah et al. (2004), cited in Hsieh et al. (2011)	Public Institution	Case Study	Authors use source to argue that mandatory technologies must provide a good fit to the organisational context, if not, it can result in superficial use.
Positive Outcomes	Lehmann et al. (2023)	Higher Education	Survey	Positive outcomes experienced from the forced adoption of remote teaching and learning during COVID-19.
	Lui et al. (2023)	Manufacturing companies	Longitudinal Archival Data	Positive financial outcomes experienced from mandatory adoption, especially among late adopters.

Venkatesh et al. (2003) find that prior to adoption, the effects of social influence and effort expectancy on an individual's intention to accept and use technology are stronger in mandatory settings and more salient for older workers, however, a note of caution is offered in that social influences change over time. Hartwick and Barki (1994) cited in Jasperson et. al (2005), suggest that an IT application will offer more features than those mandated for use, thus a mandatory adoption may still allow users some choice. Moreover, the mandatory setting is a valuable focus since organisations might be able to realise considerable benefits by encouraging users to extend their use of already implemented systems (Jasperson et. al, 2005).

Also in the early stages of the adoption process, Hsieh et al. (2012) and Bhattacharjee et al. (2018) argue that resistance to change occurs in mandatory settings. Resistance is defined as “an adverse reaction to a proposed change” (Hirschheim and Newman, 1988: 398).

Resistance can also occur once the technology has been adopted, i.e. in the post adoption context, and has been claimed as a deliberate choice made by individuals, perhaps in response to technology features as interpreted by those experiencing them (Suchman, 1987, cited in Choudrie and Zamani, 2016). In this way, resistance may be less about ‘human nature’, rather it is a rational response to situations that require change (Schein, 2017). Therefore, scholars have argued that resistance should not always be seen in a negative light (Lapointe and Rivard, 2005, cited in Choudrie and Zamani, 2016) but can be seen as “a useful clue to what went wrong and how the situation can be righted” (Markus, 1983: 441). Nonetheless, in contrast to the more neutral stance adopted by academia, practitioners often regard resistance as negative behaviour which must be managed (Martinko et al., 1996 cited in Lapointe and Rivard, 2005).

Even in post adoption situations where there is no out and out refusal to use the technology in question, there may still be examples of ‘resigned compliance’ (Lapointe and Rivard, 2005)

or ‘reluctant acceptance’ (Bhattacharjee et al., 2018), although users beliefs and attitudes to the technology in question may change over time (Bhattacharjee and Premkumar, 2004). It has also been suggested that older people either resist or have some difficulty accepting technology (Vodanovich, et. al 2010), although this resistance appears to be directly related to age and not to the adoption context.

For example, Onyechi and Abeysinghe, 2009, claim that older workers appear to resist the use of collaborative social networking software, such as Yammer, in the workplace.

However, the researchers fail to describe how their survey data was analysed yet still conclude a direct correlation between the acceptance of the software and the age of the users, with older workers (in their case, those aged 35 and over) unwilling to accept the technology, and younger workers aged 23 to 34, prepared to use it. In this study, the researchers are at pains to point out it was not a mandatory adoption in either of the study’s two cases, using this to claim it proves an earlier point made in an Opinion paper, namely, for these technologies to be successful in an organisation, the pace of adoption must allow for natural evolution (Gilchrist, 2007). If natural evolution is the way forward, yet resistance to an issue amongst older workers, it leaves the question of how organisations, who regularly have implementation targets, if not deadlines in mind, are to persuade older users to adopt and use collaboration technologies, unanswered.

The prevailing view in the literature on post-adoptive mandatory technology adoption suggests that forcing people to adopt technology often leads to negative outcomes, with only a few studies reporting positive effects. Nah et al. (2004) cited in Hsieh et al. 2011) suggest that when IT use is obligatory, but users have mentally rejected it, it will result in superficial use. Lui et al. (2023) find that the adoption context is likely to result in different outcomes at the organisational and individual levels. For example, when an organisation is forced to adopt an IT system due to external pressures, it can have the effect of reducing flexibility and

diverting resources away from other productive uses, which can result in less lasting change in operations (Brown et al. 2002, cited in Lui et al., 2023).

Bhattacharjee et al. (2018) cite a number of authors to support their argument that forced use often leads to user dissatisfaction, low morale and resistance and organisational loss of productivity and effectiveness (Markus, 1983; Hirschheim and Newman, 1988), cited in Bhattacharjee et al. (2018). However, a closer examination of the cited sources often reveals there are accompanying reasons why the specific implementations were unsuccessful, for example, in Hirschheim and Newman's 1988 study, poor system quality, lack of training and the disruption of prior relationships were all contributing factors. In Markus' 1983 study, the redistribution of power amongst head office and divisional accountants is spotlighted as the primary reason for project failure and resistance. Thus, the adoption context may not be the underlying reason for negative implementation outcomes.

Furthermore, contrast these earlier studies to emerging studies, which have reported some positive effects from the forced adoption of digital technology. Lui et al. (2023) investigate mandatory adoption of radiofrequency identification (RFID) technology in the context of manufacturing and find that mandatory adoption was particularly financially beneficial for organisations who were late adopters, thereby challenging 'conventional wisdom' that suggests early adopters always reap more benefits. Researchers are advised "to be aware of any mandatory pressure that could have distorted the impact of IT adoption, and thus, the mandatory pressure should be either controlled or the focus of the study in the research design" (Lui et al., 2023; 11). In the current investigation, there is a deliberate focus on the mandatory pressures in the research design.

Lehmann et al., 2023, in a study on the mandatory adoption of digital technologies for teaching and learning during COVID-19, find positive outcomes; an improvement in

students' self-efficacy i.e., the belief that any challenge can be overcome through personal effort (Bandura, 1977). This challenges prior literature suggesting negative outcomes from the rapid shift to digital learning (Händel et al., 2020; Traus et al., 2020 cited in Lehmann et al., 2023); on the contrary, the majority of students positively evaluated their self-efficacy and attainment with emergency remote teaching and learning.

Despite the increasing appearance of studies that focus on COVID-19, few have explored the relationship between the mandated adoption of digital technology and post-adoptive usage or behaviours. Furthermore, researchers have long advocated for insights derived from real-world data, longitudinal studies, and detailed post-adoption analyses at a fine-grained feature level (Jasperson et al., 2005; Bagayogo et al., 2014, cited in Schoch et al., 2023), thus presenting a research gap that this empirical, longitudinal study helps to address.

The next section of this literature review examines literature on the post-adoptive use of digital collaboration in the workplace.

2.3 Workplace Digital Collaboration

2.3.1 Background of eCollaboration

The foundation for ICT-based collaboration began with the introduction of personal computers and networks, but it was the widespread adoption of the Internet, along with advancements in speech technology and mobile devices, that truly enabled the development of eCollaboration systems (Riemer et al., 2009). Workplace eCollaboration has generally been understood as taking place between individuals who are not physically co-located with colleagues (Riemer et al., 2009; Wahl and Kitchel, 2016). The needs of geographically dislocated teams are said to be similar to co-located teams, for example, creating and storing outputs, and in so doing, collaborating with others, but when teams are geographically distributed, they still need to be linked together somehow and thus collaborative technologies

are critical (Mayrhofer et al., 2003). On that basis, it could be argued that organisations who are co-located have no pressing need to adopt eCollaboration systems. However, the literature suggests there have been other preventative factors; in 2009, despite a rapidly developing technological landscape, organisational eCollaboration was found to be “a complex, precarious and too often rather ineffective undertaking” (Riemer et al., 2009: 181).

This is not to say organisations had previously failed to adopt eCollaboration applications.

The body of workplace eCollaboration literature, dated prior to the COVID-19 pandemic and summarised in Table 3, includes research on electronic brainstorming, instant messaging, blogs, and collaborative document editing. These applications, like Microsoft Teams, are based on Web 2.0 technologies, characterised as “facilitating communication, information sharing, interoperability, user-centred design and collaboration on the Web” (Wagner and Bolloju, 2005). An important difference between Web 1.0 applications, which had static webpages and limited user interactivity and Web 2.0 applications, is the role of the user; in Web 2.0 applications, users are enabled to create, define, and distribute content, and correspondingly, the emphasis changed from knowledge storage and transfer to knowledge creation and sharing (Cheung and Vogel, 2013).

Table 3. Themes in Digital Collaboration Literature - Pre COVID-19

Themes	Author	Tool	Setting / Approach	Outcomes
Adoption Influences	Brown et al., 2010	Instant Messaging and proprietary eCollaboration System	Surveys: cross sectional. Workplace in Finland.	Social presence, immediacy and concurrency influence acceptance/use of eCollaboration. Those with higher self-efficacy perceive the tools as easier to use.
Efficacy of Digital Collaboration	Shaw et al., 2007	Instant Messaging	Mixed methods: Longitudinal. Global workforces	Instant Messaging improves productivity, reducing voice mail. Potential drawbacks like 'idle chit-chat' and frequent disruptions. Presence technology useful.
	Onyechi and Abeyasinghe, 2009	Social Media	Surveys and Case Studies: cross sectional. Global workforces	Social Networking software improves organisational collaboration but presents a risk to information security. Preferred by younger users.
	Johri, 2011	Instant Messaging and Blogs	Multiple Methods: cross sectional. Distributed Workforce: USA	Although blogs and IM were popular, it was not possible to get rid of email entirely, due to the need for privacy.
	Ogbeide et al., 2013	Various communication channels, inc. blogs, Twitter, email, face-to-face	Surveys: cross sectional Global 'Millenials' (aged 18-30)	Millenials prefer face-to-face, email and instant messaging for events and meetings. Intended as a workplace survey but 79% respondents were students.
	Dulipovici and Vieru, 2015	Microsoft Sharepoint Server	Qualitative: cross sectional Workplace in USA	Cultural changes identified as more daunting than use of the technology. Mixed reactions found, including refusal to use the technology.
	DeRosa et al, 2005	Electronic brainstorming.	Meta-Analysis and 'quasi' experiment. HE employees.	Electronic brainstorming more productive than face-to-faces for large groups, however effect sizes may be overestimated.
	McGrath et al., 2016	Virtual whiteboarding	Quantitative: cross-sectional Managers: Switzerland	A growing number of R&D practitioners prefer virtual whiteboarding to face-to-face for idea generation.

Theme	Authors	Tool	Setting / Approach	Outcomes
Synthesis of existing knowledge	Rierner et al, 2009	Literature Review	N/A	Adoption and use of eCollaboration systems is situational. Empirical research needed to understand usage in the context of use e.g. in virtual teams.
	Jones, 2012	Literature Review	N/A	Reference point offering definitions of collaboration technology for academic and organisational use.
	Wahl and Kitchel, 2016	Systematic Literature Review of Collaboration Technology	N/A	Email the most prevalent collaboration tool. No research identified addressing use of videoconferencing or document collaboration in professional settings.
Theory Development	Turban et al., 2011	Social software e.g. blogs, forums, LinkedIn, Twitter, Yammer.	N/A	Fit Viability Model developed; a theoretical framework for assessing the viability of organisational social networking software.

2.3.2 Pre COVID-19 Digital Collaboration

From Table 3 it can be seen that empirical research pre COVID-19 primarily investigates what influences users to adopt digital collaboration, or, for post adoptive studies, what it offers an organisation in practice. A cross-sectional approach is used most often, with few longitudinal studies undertaken. Only one study (Brown et al, 2010) focused on an integrated eCollaboration system that contained multiple features. This was built in-house and included chat, audioconferencing, videoconferencing, shared whiteboards and multimedia meeting notes; integrated e-collaboration tools were not yet scalable (Mayrhofer et al., 2003). Brown et al., (2010), studying knowledge workers, find that *social presence*, *immediacy*, and *concurrency* significantly influence the adoption of collaboration technology. Social presence depends on the technology's ability to convey nonverbal cues, immediacy on the speed of communication, and concurrency on multitasking ability. Like immediacy, concurrency is both a social and technological phenomenon. The technology must enable concurrent use, while the user must possess the skills and motivation to use it alongside other tasks. Additionally, the social norms of the user's environment must allow for concurrent use, which could mean the user must be willing to challenge established norms. Brown et al. (2010) also compare email, face-to-face communication, and telephone use, noting that while face-to-face offers more social presence, it requires synchronicity, whereas email is asynchronous, and instant messaging can be either, depending on usage. Contrary to the UTAUT model, which argues that computer self-efficacy does not affect technology use, Brown et al. (2010) find that individuals with higher computer self-efficacy perceive collaboration technologies as easier to use. They call for further research on factors like organisational culture and voluntariness, highlighting a gap that this study, with its focus on mandatory adoption, could address.

In post-adoptive studies, researchers often report paradoxical results, identifying both benefits and drawbacks. The most frequently studied tools are standalone applications such as instant messaging and social media. For example, Shaw et al. (2007) find that business-oriented instant messaging improves communication among colleagues, customers, and partners, balancing the formality of email with the intrusiveness of phone calls. Stand-alone instant messaging complements phones and email, while presence technology, which allows users to detect online status, enables discreet 'back-channel' conversations or 'whispering' (Hambley et al., 2007). Although Shaw et al. (2007) acknowledge a bias toward its positive effects, such as increased productivity, they note potential drawbacks like 'idle chit-chat' and frequent disruptions though constant messages.

Johri (2011) examines the use of Blogs and Internet Relay Chat (IRC), the forerunner to instant messaging, as organisational alternatives to email, arguing that extensive reliance on email has led to issues like email overload. The study finds blogs to be the most frequently used, useful, and preferred medium for workplace communication amongst their participants. While IRC was popular among software developers, administrative staff did not appreciate the lack of privacy and continue to use email for private conversations. Conducted within an organisation aiming to eliminate email, the study, titled "Look Ma, No Email! Blogs and IRC as Primary and Preferred Communication Tools in a Distributed Firm," concludes that despite some success, email could not be fully removed, surprising results given the organisation studied developed the blogging software themselves.

Onyechi and Abeyasinghe (2009) investigate the use of social networking tools in organisations, aiming to understand why scepticism existed regarding the apparent business benefits of improved communications, productivity, and knowledge retention. They conclude that organisational social networking does offer improved communication and collaboration amongst stakeholders, but present a perceived risk to information security, requiring

organisational policies specific to social media use and protection of digital content. They suggest organisations should be certain their culture encourages collaboration before deploying such tools and should not expect them to be successful without management intervention (Onyechi and Abeysinghe, 2009). Furthermore, users should determine which tools are adopted, rather than management (ibid). Whilst this is an interesting viewpoint, it is unlikely, in this researcher's opinion, to find favour with organisational IT management.

Few empirical studies explore technology usage differences between differently aged workers; one exception is a study of Millennials, born between 1979 and 1994, often described as having innate technological know-how due to their exposure to rapidly evolving technology (Ogbeide et al., 2013). However, others argue that Millennials are more technology-dependent than tech-savvy (Dorsey, 2009, cited in Ogbeide et al., 2013). Although the study focuses on motivating Millennials in the workforce, 79% of participants were college students. The study found that Millennials preferred face-to-face communication, email, and text messaging although the study does not explore the relative merits of technology versus face to face. It also suggested that online relationships can develop without traditional face-to-face cues, a finding that might have been helpful to organisations entering enforced homeworking and one which was subsequently reinterpreted as 'virtual togetherness' during the pandemic (Hacker et al., 2020). Although age was not the main focus of Onyechi and Abeysinghe's 2009 study, they nonetheless find a direct correlation between the acceptance of organisational social networking software and age, with those over 35 less accepting than those aged 23-34. Furthermore, they suggest that while younger employees are in tune with emerging technologies, senior managers present a challenge to the organisational adoption of social media (ibid).

Less frequently researched standalone applications include electronic brainstorming and virtual whiteboards. DeRosa et al. (2007) investigated electronic brainstorming (EBS), a

digital collaboration tool for workplace idea generation. Their findings showed that groups using text-based EBS generated more and higher-quality ideas than face-to-face groups, especially in larger groups (8+ people). These findings led the authors to suggest that face-to-face ideation should be eschewed in favour of the digital alternative. Despite this, the authors noted limitations, including assumptions about effect sizes and potential publication bias, as many of the analysed studies were authored by the researchers themselves.

McGrath et al. (2016) studied virtual whiteboarding for collaborative ideation; whiteboards could be thought of as visual, electronic brainstorming applications and researchers suggest a growing number of practitioners prefer using these over meeting face-to-face (Samuel, 2015) on the basis that brainstorming works better online (McGrath, 2006). However, recommendations are mainly aimed at R&D professionals rather than office-based knowledge workers.

A PhD thesis explores the use of document collaboration amongst professionals; a qualitative case study was conducted with a US based IT company, surfacing the ‘allure’ of collaboration tools to business executives (Rozwell and Sussin, 2012, cited in Dulipovici and Vieru, 2015) but suggesting that confusion and risk aversion was preventing their successful use for inter and intra organisation collaboration. Moreover, the “cultural and behavioural changes that would lead to new ways of working and thinking” are suggested as “more daunting than the deployment of the technology” (Dulipovici and Vieru, 2015:3).

The study focused on Microsoft’s SharePoint server, equivalent to Google Docs and integral to Microsoft Teams' real-time collaborative editing. The research revealed mixed reactions to SharePoint, ranging from excitement to resistance due to perceived effort (Dulipovici and Vieru, 2015). It is unclear if resistant groups were involved in the definition of new practices, which is said to make change more acceptable to individuals (Thomas and Hardy, 2011).

Dulipovici and Vieru (2015) conclude that the perceived impact of technology on knowledge-sharing goals is more important than its features. They, along with Cheung and Vogel (2013), emphasise the need for training and skills development in new knowledge-sharing practices to align expectations between project groups and management. However, given the level of resistance experienced, it is unlikely additional training would succeed without additional management interventions.

Moving away from the scant empirical literature, researchers also apply themselves to the synthesis of existing knowledge and development of theoretical models. Riemer et al., 2009, introduce a German phrase, '*Nutzungsoffenheit*' to suggest that collaboration technologies exhibit "a form of openness, whereby the technology and its set of features do not precipitate its forms of usage" (Riemer et al., 2009:186). In doing so, they argue that the true potential of collaboration technology is realised only when individuals understand and integrate these technologies into their daily work routines. This is because features provided can be applied for a diverse range of work practices, in which some features are drawn on in enabling new, or transforming existing practices, while other features are ignored. On this basis, the authors call for empirical research to be conducted in the workplaces of people in virtual teams which "should be directed towards a better understanding of the effects, implications, and ways of usage of such systems, as well as the factors that drive adoption" (Riemer et al., 2009:186).

Jones (2012) provides some explanations and definitions of collaboration technologies in a potted history of how workplace collaboration 'has become' digital. Synchronous collaboration is explained as 'all parties working together at the same time, usually in the same space', an explanation that no longer applies to technologies such as videoconferencing where individuals are working together in different spaces. Asynchronous collaboration (email falls into this category) is suggested as 'utilising different time and space zones' (ibid). Digital collaboration 'tools' are suggested to work well to enhance asynchronous

collaboration but are not suggested as necessary in situations where synchronous collaboration is dominant (Jones, 2012), which presumably means when face-to-face is the dominant method of collaboration.

A 2016 systematic review examined articles from 2002 to 2015 focused on ‘professional collaboration’, excluding studies on collaboration tools in education and healthcare (Wahl and Kitchel, 2016). While professional collaboration wasn't explicitly defined, the review emphasised the need for workers, including teleworkers, to be proficient with digital collaboration tools (Davies et al., 2011, cited in Wahl and Kitchel, 2016). The researchers identify email as the most prevalent computer-mediated communication (CMC), despite being considered older technology. The review identified Webex, GoToMeeting, and Zoom as web conferencing systems but found limited research on their use for professional collaboration and no studies comparing them to face-to-face collaboration.

Google Docs, later integrated into G-Suite and Google Workspace, was noted for its real-time collaborative editing capabilities. However, Wahl and Kitchel (2016) pointed out a lack of research on best practices for real-time professional collaboration and the benefits and drawbacks of internet-based tools. The review also highlighted the absence of an integrated digital collaboration platform combining instant messaging, web conferencing, and real-time editing, which is unsurprising given that it predated the 2017 launch of Microsoft Teams by a year (Microsoft, 2018).

Riemer et al. (2009) identify three technology-enabled practices in e-collaboration: communication, coordination, and collaboration within (intra) and between (inter) organizations. However, Turban et al. (2011) argue that the line between collaboration and communication is very thin due to various definitions of collaboration. They propose a fit-viability model to assess the suitability of social software, such as blogs, forums, and social

networks like LinkedIn, Twitter, and Yammer, for decision-making in virtual teams. These tools, termed Collaboration 2.0, offer low-cost, user-controlled options for unstructured collaboration but face criticism for potential downsides, such as wasted time and security risks. Despite reported productivity gains, many doubt Collaboration 2.0's business value. They point to a lack of empirical evidence regarding the value of social software as an aid for group decision making in virtual teams (ibid) and unfortunately, their research similarly fails to provide new empirical evidence either way.

There has been much attention paid to the challenges experienced by knowledge workers during the COVID-19 lockdown, when increased research focus arose from the sudden plunge into remote working. This review moves now to digital collaboration literature conducted in the context of the COVID-19 pandemic or in post pandemic conditions.

2.3.3 COVID-19 Digital Collaboration

Despite a new familiarity with the terms 'Zoom' and 'Teams', which have been incorporated into everyday lexicon as a result of their widespread personal and organisational use (Kodama, 2020), many people were initially unfamiliar with web conferencing systems (WCS) and lacked technical proficiency (Hacker et al., 2020). Moreover, these findings contradict claims that use of Microsoft Teams (Teams) was common pre-pandemic (Hacker et al., 2020; Fraser-Strauss, 2023). Figure 5 shows that the greatest rises in Teams active daily users actually occurred to coincide with the onset of enforced working from home that commenced in 2020 (Shewale, 2023). An exponential surge in Teams Meetings was seen from March 16th, 2020, when 900 million meeting minutes were recorded globally, to March 31st, 2020, when this figure surged to 2.7 billion meetings minutes (Spataro, 2021 cited in Schoch et al., 2023). This event and subsequent moves to hybrid working has greatly increased the relevance of Microsoft Teams (Schoch et al., 2023).

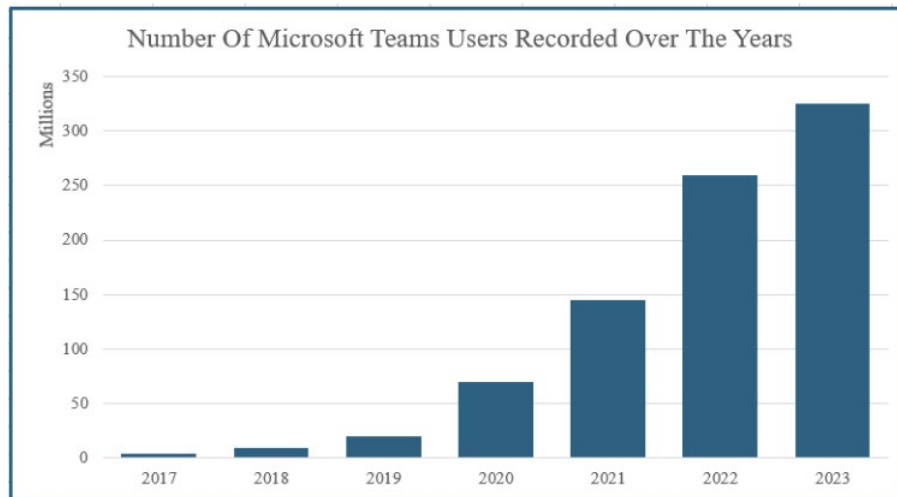


Figure 4 - Growth in Teams Users since launch (Microsoft, cited in Shewale, 2023)

While it is undoubtably true that both Zoom and Microsoft Teams offer videoconferencing /web conferencing (Wahl and Kitchel, 2016), nor is there any doubt that Microsoft “focused on videoconferencing to allay Zoom’s meteoric growth during the pandemic” (Curry, 2024), Zoom is designed for videoconferencing, at which it excels, whereas Teams is designed to be a comprehensive eCollaboration system, offering the possibility for both inter and intra organisational collaboration (Figure 6).

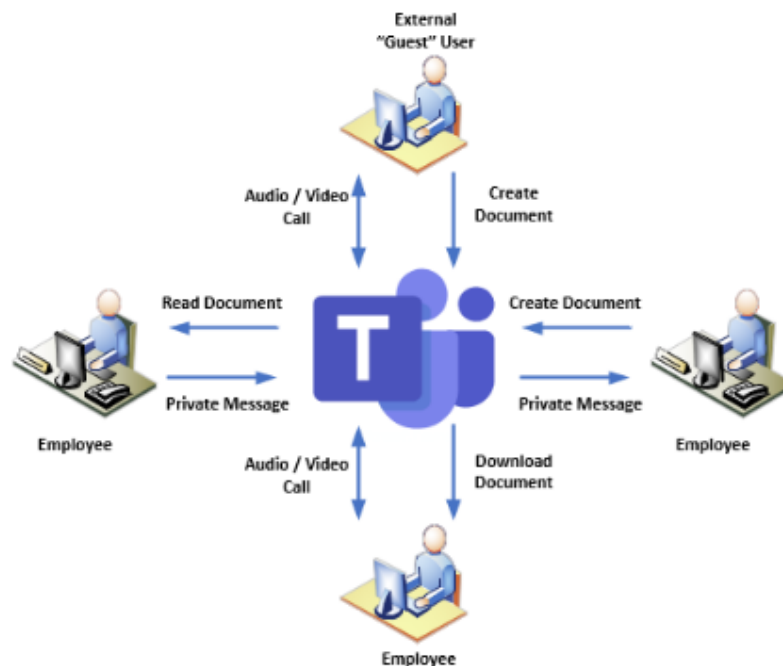


Figure 5 - MS Teams functionality

As such, Teams, in contrast to Zoom, offers collaboration beyond a single meeting, by virtue of its persistent private/group instant messaging ('chat' and 'channels') plus native integration to the full suite of Microsoft M365 applications, e.g. Sharepoint, Word, Excel, PowerPoint allowing users the opportunity for real time co creation of documents and the opportunity to add numerous other Microsoft and third-party applications. However, use of videoconferencing increased substantially during COVID-19, because social distancing meant face-to-face meetings were unavailable and videoconferencing offers the second richest medium after face-to-face interaction (Schoch et al., 2023). This popularity captured the interest and attention of several research studies which consider the use of videoconferencing and its impact on workers well-being during enforced homeworking.

Table 4 synthesises research on digital collaboration tools published during and post COVID-19.

Table 4. Themes in Digital Collaboration Literature - During/Post COVID-19

Theme	Authors	Data Collection Period	Setting / Approach	Outcomes
Collaboration/Working practices	Waizenegger et al., 2020	Remote working: Data collection confined to April 2020 (i.e. early homeworking).	Qualitative: cross-sectional Knowledge Workers in various industries.	Prior remote working literature explains voluntary home working not enforced homeworking. Technological affordances replace prior workplace affordances, and home affordances interfere with technological affordances, affecting employee wellbeing.
	Razmerita et al., 2021	Remote working: data collection between March 2020 and March 2021.	Qualitative: Longitudinal Knowledge workers in various sectors.	Many organisations lacked appropriate tools and training which hindered adaptation, but, over time, employees still managed to adapt. The study highlighted the feasibility of longer-term hybrid work
	Schoch et al, 2023	Data collected between July 2019 and June 2020 with one further interview in September 2021.	Mixed Methods: longitudinal Workplace: Germany	Explores use of Microsoft Teams, finding older participants face higher entry barriers, due to low technology self-efficacy. The organisation studied was largely ‘tech-savvy’ and using Teams prior to the pandemic.
	Hurbean et al, 2023	Data collected late 2021 so confined to post enforced homeworking.	Quantitative: cross sectional Workplaces: Romania	Researchers find that instant messaging does not have a negative impact on work performance. Differences found based on age; work performance affected positively when under 36 while older workers work performance is unaffected, but they may assess overload differently.
Intergenerational tensions in post-pandemic tech change	Moore et al., 2022	Data collected March 2021, so confined to post enforced homeworking.	Qualitative: Cross sectional Workplace: UK	Diversely aged workers use digital technology differently but neither group is homogeneous. Older workers able to embrace change, acquiring new work skills. Younger workers better equipped to explore complex technology.
Remote working and well-being in enforced lockdowns	Hacker et al., 2020	Remote Working: data collection March-June 2020.	Hybrid: Text-mining and qualitative interpretation. Virtual Workplace: Industries unknown.	Videoconferencing emerges as a social technology during enforced homeworking leading to a new ‘togetherness’ and a blending of work and social lives.

Theme	Authors	Data Collection Period	Setting / Approach	Outcomes
Remote working and well-being in enforced lockdowns cont.,	Wang et al., 2021	Remote Working: exact data collection period not specified.	Mixed Methods: cross-sectional Virtual Workplace: Industry unspecified	Social support important in enforced homeworking to combat loneliness. Self-discipline important for remote workers. Work-home interference and ineffective communication identified as remote work challenges in COVID context.
	Dwivedi et al., 2020	Not empirical research	N/A	12 experts discuss topics including online learning, cyber security and digital strategy from a technological perspective, suggesting implications for each area. For example, organisational agility, flexibility and adaptability highlighted to mitigate future crises.
Theory Development	Carroll and Conboy, 2020	Not empirical research	N/A	Argues the 'big bang' approach taken to implementation of collaborative technology leads to change that is unsustainable. Suggests application of Normalisation Process Theory to pandemic induced work practices.

From Table 4, it is evident that researchers have moved beyond examining the factors influencing organisations to adopt collaborative technology and are now firmly focused on the post-adoption perspective, a shift that reflects the necessity for organisations to adopt such technologies in response to the sudden transition to enforced homeworking. Empirical studies tend to either delve into the impact on working practices or the impact of enforced remote work on employee well-being. However, research has either been confined to the enforced homeworking context or the post enforced homeworking context; no empirical studies have been identified thus far, which traverse lockdowns and sustained hybrid working contexts, with the same group of research participants. On this point, the current study addresses a significant research gap.

In addition, studies which explore aspects of DCPs beyond video conferencing are rare, with a single study, by Schoch et al, 2023 having considered the other functionality of this platform, despite its vastly increased popularity as a result of COVID-19 (ibid). Similar to pre-COVID research, studies reveal differences in technology usage between younger and older workers, although the specific age delineation remains inconsistent.

Waizenegger et al. (2020) conduct a qualitative study to explore how enforced remote work during COVID-19 affected team collaboration, using affordance theory. They claim it is “the first empirical qualitative study that focuses on technology and team collaboration during COVID-19 while working from home” (Waizenegger et al., 2020: 430). Affordances are defined as “the potential for behaviours associated with achieving an immediate concrete outcome and arising from the relation between an object (e.g., an IT artefact) and a goal-oriented actor or actors” (Volkoff and Strong, 2013: 823 cited in (Waizenegger et al., 2020)). Knowledge workers actualise the technological affordances of videoconferencing to replace the in-person meetings, but constant online meetings led to fatigue and blurring of work-life boundaries (Waizenegger et al., 2020). This aligns with prior research in the ‘work-life

balance' research stream that suggests remote work blurs the boundaries between work and non-work life (Kelliher et al., 2019). The term 'Zoom fatigue' emerged to describe the additional cognitive load experienced when having to focus on other people's faces in close up as opposed to when meeting 'in person' (Forster et al., 2020). Online meetings also replaced social gatherings, helping to remove social barriers and foster relationships, especially among geographically dispersed teams (Waizenegger et al., 2020). The researchers claim that remote workers who had been isolated were now more included, thanks to the 'equal opportunity' provided by digital platforms but, despite including knowledge workers of diverse age and gender, there is no analysis offered regarding differences that might have existed. Yet there is a persistent view in the literature suggesting a relationship between an individual's challenges with technology and their age (Moore et al., 2022).

Waizenegger et al (2020) limit their data collection period to just 15 days in April 2020, and while they suggest that the pandemic could mark the beginning of a new era of flexible work and digital collaboration, they stop short of following their participants into these new work arrangements. A further limitation of their study is that although they mention Microsoft Teams, they mainly compare it to Zoom as a videoconferencing tool, overlooking Teams' additional collaborative features. They call for further research on the organisational, behavioural, and societal impacts of digital collaboration post-COVID-19 (ibid).

Razmerita et al. (2021) conducted a year-long, three-phase qualitative study to explore how knowledge workers adapted to remote work during the pandemic. This research was amongst the first on this topic to be published during the COVID-19 pandemic and acknowledges lockdowns as triggering an "astonishing and forced transition into remote working amongst knowledge workers and professionals" where "employees are working exclusively through digital technologies" (Razmerita et al., 2021: 2). The researchers also found that

organisations lacked adequate tools and training for remote work, hindering adaptation, although, over time, adaptation did occur on a continuum basis (ibid).

However, the study does not foreground the technological artefact in any meaningful way, merely referring in passing to use of email, Zoom and WhatsApp without offering insight into their respective role in helping participants adapt. Therefore, it is hard to unpack why one of their research participants suggests they are unable to collaborate with colleagues or look at the computer together as they would whilst in the office, in order to work on problems together, since Zoom allows knowledge workers to see each other's computer screen, which was important for communicating and sharing ideas during enforced homeworking (Waizenegger et al., 2020). The same participant mentioned poor mental health due to remote work, but Razmerita et al. (2021) do not clarify whether they had access to videoconferencing tools, which have been shown to ameliorate these feelings during enforced lockdown periods (Goldthorpe and Choudrie, 2021); (Abelsen et al., 2021). When collaboration technology serves as the interface between individuals, its perceived usefulness increases with the level of social presence it offers (Brown et al., 2010). Text-only technologies have lower social presence than videoconferencing, and it is likely that some participants in Razmerita et al. (2021) did not have access to videoconferencing. Since technology was the only channel to afford team collaboration at the time and was crucial for collaboration during the pandemic, teams that followed the same communication pattern as pre-lockdown could experience difficulties (Waizenegger et al., 2020).

A mixed-methods study by Schoch et al. (2023) uses a sensemaking perspective to explore post-adoptive use of Microsoft Teams following the exogenous shock of the COVID-19 pandemic. The study suggests that its findings can help organisations understand how collaboration technology might be used in other disruptive situations, such as workforce relocation, mergers, restructuring, or shifts to remote work policies. A disruptive crisis might

also be compared to a ‘revolutionary period’ which disrupts the equilibrium of otherwise stable systems, causing reconstruction of deep structures (Gersick, 1991) and (Tushman and Romanelli, 1985, cited in Jaspersen et. al, 2005). Organisations are encouraged to assist employees during these times, guiding them through the process of reassessing old routines and developing new intentions (Schoch et al., 2023). Furthermore, researchers emphasise that “longitudinal studies investigating substantial changes in communication and collaboration software user behaviour in the post-adoption phase are scarce” (Schoch et al., 2023:989). The study found that post-adoptive feature use varied among users, with older participants facing higher entry barriers due to lack of experience and low technology self-efficacy. However, the ‘tech-savvy’ organisation studied provided extensive support, helping employees overcome these challenges, and many were already using Teams before the pandemic. The research focused on four Teams features: chat, meetings, calls (unscheduled meetings), and channel chats, with data collected only until April 2020. Schoch et al. (2023) urge further research on post-adoptive user behaviour beyond the initial COVID-19 peak to identify long-term changes and validate the ‘new normal’ of remote work. They also suggest that a more detailed conceptualisation of features could enhance future understanding.

By 2023, some researchers were suggesting that instant messaging (IM) has become ‘the de facto standard’ for workplace communication, with organisations increasingly viewing it as an alternative to email (Hurbean et al., 2023). The authors argue that employees may experience a feeling of inadequacy or incompetence when they find instant messaging too complex or use it without a clear purpose, which can contribute to ‘technostress’: “a modern disease associated with the information society where individuals feel stressed by their use of technology” (Tarafdar, 2017, cited in Hurbean et al, 2023: no page number available).

Age differences were also reported: younger workers were more adept at transferring their personal IM skills to professional settings, while older workers were more prone to feeling

overwhelmed, feelings that were more important to them than impact on their work performance (or 'expectancy of work accomplishment') (Sonnentag et al., 2017, cited in Hurbean et al, 2023). Yet, despite its potential to cause interruptions and raise expectations of immediate responses, the study found no significant relationship between IM use and technostress, although the study did not explore other critical factors, such as the relevance of interruptions to the employee's primary tasks. Arguably, failure to complete primary tasks would be a source of stress, rather than use of IM.

Pointing to digital collaboration as part of the new organisational dynamics introduced as a result of COVID-19, Moore et al (2022) question overarching views in literature that members of generational cohorts, e.g. 'Millennials' (born 1982-1998) or 'Gen X'ers' (born 1961-1981), display similar patterns of specific technology usage, finding this to be an oversimplification. Their empirical findings from the two groups of knowledge workers challenge the dichotomy between 'digital native' Millennials and 'digital immigrant' Gen X, as claimed by Prensky (2001). Instead, they find that each generation is not homogenous, with user behaviour shaped by various factors (ibid). However, despite this, the results indicate differences in technical ability, with Millennials demonstrating the capacity to explore more ambitious and complex technological solutions, albeit with a more fragile sense of confidence compared to Gen X'ers. On the other hand, the older group of X'ers were able to embrace, adapt and value change, demonstrating considerable resourcefulness and resilience, which resulted in the development of new work skills during the pandemic (ibid).

These findings contrast prior views such as Vodanovich (2010) that older employees are slow to change or reluctant to adopt new ways of working. The workplace should provide an environment in which digital skills can be improved (Calderón Gómez, 2020), however researchers have found age-based stereotypes can create a 'self-fulfilling prophesy' and negatively affect older workers interest in learning and using ICTs thus contributing to a

‘grey digital divide’ (Lagacé et al., 2016). Digital divide/exclusion and digital inclusion can be considered as “two sides of the same coin” (Calderón Gómez, 2020: 223) where digital inclusion considers solutions to prevent or narrow digital divides. It is important to avoid a digital divide in the workplace where older adults are unwilling to accept collaborative technologies (Onyechi and Abeysinghe, 2009) because as working lives are extended due to rises in pension age (Warschauer, 2004), new digital skills are required of workers at midlife and beyond just to be able to continue to perform their jobs (Maurer, 2001). In this study, the term ‘older’ is used to describe individuals aged 50 or over (Albert and Heaton, 1988, cited in Choudrie and Vyas, 2014).

Moore et al. (2022) further suggest that longitudinal studies could offer deeper insights into the dynamic interplay between technological changes in the workplace, generational differences, and wellbeing. They identify the limitation of their study as their single period of data collection in March 2021, thereby supporting the aim and approach adopted for this study.

Considering studies which focus on the relationship between enforced homeworking and employee well-being, Hacker et al. (2020) use affordance theory to study videoconferencing by analysing tweets from March 23 to June 14, 2020. They found that many knowledge workers did not know how to configure web conferencing systems, seeking help on Twitter. Several researchers observed that ad hoc meetings, like ‘water cooler’ moments (Fayard and Weeks, 2007, cited in Wang et al., 2021), were replaced by planned videoconferencing during the pandemic, which reduced spontaneous knowledge sharing (Wang et al., 2021; Waizenegger et al., 2020). Both Wang et al. (2021) and Razmerita et al. (2021) recommend exploring the differences between home and office work and the long-term effects on organisational learning, policies and culture.

Other researchers pointed to the implications of enforced homeworking as exemplifying feelings of social and professional isolation amongst colleagues due to the absence of face-to-face interaction with colleagues, suggesting this might lead to anxiety and depression, feeling disconnected from one's job, decline in team synergy, trust and productivity (Dwivedi et al., 2020). Published in the early stages of the COVID-19 pandemic and suggesting there is insufficient empirical evidence to determine how effective technology is in facilitating social interaction with colleagues, these researchers nonetheless postulate that the degree to which technology is capable of maintaining social interaction amongst colleagues could, in principle, be more 'hype' than reality (ibid). Yet, earlier research provided evidence to the contrary, most notably Ogbeide et. al, 2013, who established that online relationships can still develop without face-to-face interpersonal relationships.

Carroll and Conboy (2020) argue that the rapid, unprepared adoption of digital practices, or the 'big bang' approach, combined with a lack of training or reflection on how practices and technology should be integrated into the new workplace context, is insufficient for long-term sustainability. They apply and develop concepts from Normalisation Process Theory (NPT) (May and Finch, 2009) to focus on the changing nature of working practices. The authors also cite previous research indicating that a sensible approach to understanding technology-driven practices begins with analysing the use of digital artefacts (Ciriello et al., 2019, cited in Carroll and Conboy, 2020). They assert that "within a remote working context, artefacts form an essential part towards people enacting a new set of practices" (ibid: 4), yet there is scant detailed discussion of digital artefacts within their article. Instead, they leave the field open for other researchers to explore the plentiful research gaps they identify, including case study research exploring the implications of the big bang approach on work practices and an explanation of how transformed work practices become sustained in the longer term (Carroll and Conboy, 2020), thus highlighting research opportunities this study can address.

In summary, COVID-19 enforced homeworking and the subsequent shift to hybrid working offer a unique context that differs significantly from pre COVID-19 digital collaboration studies. The introduction of digital collaboration platforms like Microsoft Teams brings new collaborative practices, but prior research has focused on videoconferencing, leaving gaps in understanding other potential workplace collaboration practices enabled by eCollaboration technology. Even studies that explored other collaboration practices have generally limited their scope to periods of enforced homeworking (Schoch et al., 2023) although the transition to hybrid work presents a new context where practices adopted during enforced homeworking may be further reconfigured. This context underscores the need for research that explores a broader range of collaboration practices over time, which could significantly contribute to existing knowledge about workplace eCollaboration. Hence, a clear rationale for the development of the second research question, which focuses on changing collaborative work practices, is identified: research which explores a wider gamut of collaboration practices and takes a longitudinal stance would allow significant contributions to be made to extant knowledge about workplace eCollaboration.

The need for more insight into the potential effect of changing collaborative work practices on organisational culture has been mentioned in passing in this section but the next section of the chapter provides a closer examination of literature in this area.

2.4 Digital Collaboration and Organisational Culture

The first challenge for researchers considering the relationship between the adoption of digital collaboration platforms and organisational culture is to understand what culture is, given multiple divergent definitions and measures. In their literature review of empirical studies where IT and culture were significant, Leidner and Kayworth (2006) synthesise contributions across a number of themes including definitions. They note that Sackmann (1992) describes culture as encompassing ideologies, coherent belief systems, basic assumptions, shared core values, significant understandings, and the collective will. Meanwhile, others argue that culture also includes more tangible, observable artifacts, such as norms and practices (Hofstede and Bond, 1988; De Long and Fahey, 2000).

Researchers have also argued there is a strong connection between cultural values and the actions and behaviours of groups (Posner and Munson, 1979). Values are often viewed as social norms that establish the 'rules' and context, setting expectations and boundaries for group members (O'Reilly and Chatman, 1996). Accordingly, focusing on organisational values to explain how groups use and apply IT, can be useful (Leidner and Kayworth, 2006). Schein's 3-level model of culture provides a way for researchers to describe and analyse any cultural phenomenon, be that an individual, a subculture or an organisation (Schein, 1983) and is thus an apt choice for this study, which aims to explore and ultimately discuss, the interrelationship of DCPs and organisational culture. The three levels of Schein's 1983 model are: -

1. **Artefacts:** At the top level of the model are artefacts - observable phenomena such as architecture, technology, language, emotional displays and organisational charts. These provide glimpses into a group's culture. This theoretical insight allows the researcher to anticipate that a digital collaboration platform, as a technological

artefact adopted in unprecedented circumstances, might generate outcomes of an emotional nature, amongst others. However, Schein warns that culture cannot be fully inferred from artefacts alone, due to the researcher's cultural bias. To gain deeper cultural insights, engaging with insiders and understanding 'why they do what they do' reveals shared beliefs and values. This theoretical perspective helped to inform the methodological choice to conduct an extended, in-depth series of interviews with study participants in order to reveal their perceptions of organisational values and beliefs.

2. **Values and Beliefs:** Shared beliefs and values infuse meaning into daily life within a group. Schein attributes these to shared learning (Edmondson, 2012, cited in Schein, 2017), which often reflects the leader's original beliefs. While his examples typically focus on start-up organisations with single leaders, in the context of the two mature organisations compared in this study, shared learning is interpreted by the researcher as the processes through which prevailing leaders adapt to the challenges of enforced homeworking and mandatory DCP adoption. This conceptual insight suggests that if the prevailing leaders in the two organisations participating in this study differ in their manner of adaptation, the learning might differ, resulting in distinct sets of values and beliefs emerging within each organisation.
3. **Assumptions:** Schein posits that values and beliefs may evolve into assumptions, forming the bedrock of a group's collective actions and significantly shaping organisational behaviour. However, their longevity is uncertain; they may persist or fade depending on their practical effectiveness, guiding organisational paths and influencing outcomes. This conceptual insight guides the study's exploration of whether the crisis-driven reconfigurations in working practices during enforced homeworking led to lasting changes in organisational values and norms, such as the

importance of face-to-face interactions, or remained temporary adaptations. In examining these changes, the research also engages with critics' concerns about the sustainability of such shifts over the longer term.

Schein (2017), references these three levels in his definition of culture, whilst asserting that culture is a product of shared learning (Edmondson, 2012, cited in Schein, 2017) and that researchers seeking to understand a given group's culture must therefore know what kind of learning has taken place, over what span of time and under what kinds of leadership. Informed by this theoretical perspective, the research delves into the leadership and shared learning experienced by both organisations who form part of the study.

"The culture of a group can be defined as the accumulated shared learning of that group as it solves its problems of external adaptation and internal integration, which has worked well enough to be considered valid and therefore, to be taught to new members as a correct way to perceive, think and feel in relation to those problems. This accumulated learning is a pattern or system of beliefs, values and behavioural norms that come to be taken for granted as basic assumptions and eventually drop out of awareness" (Schein, 2017: 6)

Figure 6 - Definition of Organisational Culture (Schein, 2017: 6)

Having established Schein's (1983) model as an apt theoretical perspective to inform the research design and discuss potential changes to organisational culture arising in the study, the prevailing literature on digital collaboration and organisational change is considered next.

In practice, while studies which consider the effect of the dominant organisational culture on the adoption of technology are plentiful, there are fewer studies which consider the reverse position, i.e. the effect of technology on the culture of the organisation (Leidner and Kayworth, 2006). Although, it has been suggested that changes brought about by technology do not directly change an organisation's culture but instead, coerce new behaviours which

may lead to new cultural beliefs (Schein, 1983). Finding few peer-reviewed studies which consider the impact of DCPs on organisational culture, search criteria were expanded and related literature included, for example, the impact of other collaborative applications on organisational culture, and the culture of technology enabled virtual teams, both prior to, and during the pandemic. In this manner the literature chosen covers the area of research in a broad and narrow perspective, in order to present a thorough review of the area of interest.

Table 5 synthesises this range of literature.

Table 5. Themes in Digital Organisational Culture literature

Theme	Authors	Data Collection Period	Type	Outcomes
Impact on prior values and assumptions	O'Reilly and Tushman, 2016, cited in Schein, 2017	Pre COVID	Unknown	Technology can disrupt deep organisational assumptions in established organisations.
	Nordström, 2019	Pre COVID	Empirical	Slack effective at conveying values and beliefs to new employees.
	Treacy, 2022	COVID-19	Empirical	Values of diversity, creativity and communication needed in digital innovation processes during remote working.
Emotional impacts	Goldthorpe and Choudrie, 2021	COVID-19	Empirical	Visibility, via videoconferencing in homeworking, gave rise to team compassion.
	Wee and Fehr, 2021	COVID-19	Empirical	Positive effects on employee voice from compassion in homeworking.
	Elfenbein, 2022	COVID-19	Literature Review	Argues for the presence of workplace emotions, using videoconferencing as an example.
	Vidolov, 2022	COVID-19	Empirical	Identifies affective affordances present in use of videoconferencing.
Transformation challenges	Spicer, 2020	COVID-19	Literature Review	Digital collaboration in COVID-19 transformed organisational culture, causing challenges.
	Cariani et al, 2023	COVID-19	Empirical	Organisations face challenges in transitioning organisational culture into a digital workplace.
	Martinez-Caro, 2020	Pre COVID	Empirical	A digital culture must exist alongside digital workplace practices.
Impact on organisational structure	Van Dijk, 2012	Pre COVID	Unknown	Collaboration networks create horizontal structures based on teamwork.
	Nell et al, 2021	COVID-19	Empirical	Top managers reject the idea that digitalization leads to flatter structures.
Trust/Control of remote workers	Handy, 1995	Pre COVID	Unknown	Presenteeism arises from the assumption that people cannot be trusted.
	Robey et al., 2000	Pre COVID	Literature Review	Members of virtual teams are more independent, challenging management control/supervision.
	Baker, 2016, cited in Schein, 2017	Pre COVID	Unknown	Managers interpret wfh requests as requests to 'shirk'. Such assumptions lead to management control systems.

Theme	Authors	Data Collection Period	Type	Outcomes
Trust/Control of remote workers cont.,	Carroll and Conboy, 2020	COVID-19	Literature Review	Collaboration tools are systems for management control in remote work.
	Shirmohammadi et al, 2022	COVID-19	Literature Review	Excessive monitoring reduces employee productivity.
	Kniffin et al, 2021	COVID-19	Literature Review	New modes of working will bring about employee surveillance systems.
	Nell et al, 2021, cited in Kniffin, 2021	COVID-19	Empirical	Surveillance can reduce creativity amongst lower graded employees.

Given that organisational culture will ultimately influence the effectiveness of digital technology implementations (Martínez-Caro et al., 2020), the general scarcity of literature illustrated by Table 5 is surprising. Synthesising literature into distinct themes, a number of studies have found that technology adoption can change prior organisational values, while others claim changing organisational culture does not happen merely as a result of the technology and perhaps requires some other driver. One popular theme that applies directly to DCPs is that they might flatten organisational structures. Another theme which has received considerable recent attention is the issue of digital surveillance systems for remote workers. However, the majority of publications on this topic hark back to prior research, without bringing new evidence to the argument one way or another, thus presenting a research gap this empirical study can address. Literature presented by theme in Table 5 is now discussed in more detail.

In his 2017 work, Schein initially asserts that organisational assumptions run so deep that it is not possible to change them without changing membership of the group, however when discussing changes in technology, he somewhat contradicts his own argument by citing a 2016 study by O'Reilly and Tushman, claiming that even basic assumptions in established organisations may be “forced to evolve in midlife when a new technology is brought in ‘disruptively’ by competitors or by leaders” (Schein, 2017: 240). Schein’s 3 level model was used to investigate collective culture in the workplace via digital collaboration platform Slack (Nordström, 2019), prior to the COVID-19 pandemic. Slack (Searchable Log of All Conversation and Knowledge) was launched in 2013 and has been noticeably popular amongst technical staff, perhaps due to the integrations it offers with third-party applications such as Jira, an issue tracking and project management system (Li, 2018). Slack is essentially an organisational chat platform, created to replace emails as the main tool for internal communication, content sharing, and knowledge exchange. It does not, however, offer

videoconferencing. Nordström (2019) claims that Slack is effective at transferring organisational culture to new employees, by allowing them to become part of and contribute to, mutual values and beliefs, which help them to understand the organisations underlying assumptions. However, as there were a large number of interactions taking place outside of the collaboration platform, (i.e. face-to-face), Slack alone did not function as a unified platform for comprehending and integrating into the culture of the organisation (Nordström, 2019). Since the research was not conducted amongst an entirely virtual team, it was not possible to assess the extent to which organisational culture could be established in virtual teams.

Schein's theoretical lens was again used to explore the values involved in the early stages of collaborative, digital innovation in the context of remote working/COVID-19, finding three values are required: diversity, creativity, and communication (Treacy, 2022). Moreover, three underlying assumptions were evidenced to shape 'digital culture' during remote working: openness, leadership, and teamwork (ibid). Treacy's 2022 research omits a description of how digital technology is used during the process of innovating, beyond setting up 'virtual teams that anyone can join' even though his introduction specifically defines digital innovation as "the use of digital technology during the process of innovating" (Treacy, 2022: 549). However, as Schein defines assumptions as values which been shown to work repeatedly over time, it is possible that values and assumptions identified as necessary for digital innovation, are the same values and assumptions that were previously applicable in a face-to-face environment.

Cultural beliefs and values often become embodied in an organisational ‘ideology’ which can serve as a guide to deal with the uncertainty of uncontrollable or difficult events (Schein, 2017). Arguably, an organisational ideology that is present in contemporary organisations is that rational behaviour is privileged over emotional behaviour, with emotion defined as “an adaptive response to demands from the environment, which directs our attention to the most pressing concerns and prepares us to act” (Scherer and Moors, 2019, cited in Elfenbein, 2022: 17.2). Elfenbein (2022) uses the example of Zoom meetings to critique a view that “conventional wisdom suggests we should distinguish personal lives from professional lives....yet our full humanity inhabits us even as we open the office door (or Zoom window)” (Elfenbein, 2022: 17.2). Thus Elfenbein adds support to the views of Shiau et al. (2022), who call for research on the changing nature of emotions in the workplace, particularly in the context of flexible working (Elfenbein, 2022; Shiau et al., 2022). One such study was conducted by Vidolov (2022), who adopted a cross sectional or snapshot approach, to examine digital artefacts involved in virtual meetings e.g., emojis and hand raising, offering the concept of ‘affective affordances’ to describe the experiences involved.

Compassion, a social emotion which is inherently ‘other regarding’ (Kanov et.al, 2017), was identified as having a positive effect on employee voice during COVID-19 (Wilkinson et al., 2019, cited in Wee and Fehr, 2021). This is an example of ‘group emotion’, defined as “not only as feelings that occur inside groups but also feelings emerging from the group experience itself” (Menges and Kilduff, 2015, cited in Elfenbein, 2022: 17.18). Group emotion was also experienced as a result of increased visibility, i.e. being able to see into each other’s homes via video conferencing during enforced lockdown periods, engendering trust, compassion and creating social bonds amongst individuals (Goldthorpe and Choudrie, 2021).

Longitudinal studies which have taken the emotions of change into account are quite rare (Giæver and Smollan, 2015) even though “how emotions come to bear on particular instances of IS innovation can also aid the transfer of knowledge from one research domain to another” (McGrath, 2006: 279). Indeed, useful insight could be gained by an approach which considers whether emotions are an accepted cultural value in digital workplaces, because when an innovation (such as the forced adoption of the DCP) prevents the routines of everyday practice being carried out, it is possible the general anxiety individuals feel as a result of modernity and its consequences (Giddens, 1984) becomes intensified, with the innovation then perceived as threatening (McGrath, 2006). Similarly, the “transformation of prevailing practices and the creation of new solutions might create negative stress and feelings of anxiety and insecurity” (Ellström, 2006: 107).

Referring to organisational networking technology to facilitate virtual meetings as an example of ‘technological seduction’, Schein (2017) highlights a challenge of organisational transformation; how can culture form and operate in a group of people who interact only electronically? Spicer (2020), asks much the same questions:

“Can you transport a culture out of a physical space such as an office and into the immaterial world of virtual working? Does the move online lead to a rise or decline of much of the empty symbolic rituals of corporate life? When people are physically separated from each other, how is it possible to build up and maintain a collective culture?” (Spicer, 2020: 1739).

Pointing to the replacement of the ‘water cooler’ moment by Zoom calls, Spicer (2020) claims the ‘jolt’ of COVID-19 profoundly transformed organisational cultures and presented challenges to managers wanting to build organisational culture. When ‘taken for granted’ practices and assumptions are ‘thrown out the window’, organisations can experiment with alternatives: changing culture requires experimentation but for cultural change to be successful, it must be integrated into everyday practices and communicated in ways that

resonate with the ideas and emotions of organisational members (ibid). Spicer (2020) further recommends that valuable research approaches could involve longitudinal, in-depth studies of workplace culture transformations, providing further justification for both the research topic and the approach adopted in this study.

Explaining the relationship between firm performance and organisational culture, (Martínez-Caro et al., 2020) contend that in the digital workforce era, an organisation's culture must evolve to encompass its digital workplace practices (Duerr et al., 2018). Building on this argument, they propose that a digital organisational culture - defined as a set of shared assumptions and understanding about how the organisation operates in a digital context - serves as a precursor to enhanced organisational performance through the use of digital technologies. In other words, while digital technologies can be a springboard to developing activities of significant value, companies will only unlock that potential if they incorporate the correct digital culture. Managers are advised to identify the attributes of existing culture that prevent digitisation and remove them, while also establishing cultural attributes that support successful exploitation of digital technology. However, what these cultural attributes might be is not explained.

Cariani et al. (2023) explore workers' perceptions of how remote working influences organisational performance, behaviour, and culture to evaluate whether it was a short-term reaction to the global health crisis or could become a lasting work model. They suggest that companies will face challenges in transitioning organisational culture into a digital workplace. Organisational communication was used as the construct for organisational culture and findings demonstrate a significant impact of remote working on increased organisational communication, which is moderated by the complexity of the digital technology used (ibid).

Another prevailing view in extant literature is the impact of networking technologies like eCollaboration systems, on organisational structures. Van Dijk, 2012, suggests they transform bureaucratic organisations into horizontal structures based on teamwork. Although later research argues that top managers do not agree with this viewpoint. On the contrary, they feel digitalisation will further empower top managers and expand the role of ‘headquarters’ (Nell et al, 2021).

One of the most substantial bodies of research within the domain of organisational culture and digital collaboration focuses on levels of trust in remote workers and the resulting need for surveillance. Schein suggests individual ‘unconscious’ assumptions can distort data; referring to a study by (Baker, 2016), in which requests to work from home are interpreted as ‘loafing’ and therefore denied, Schein states that “we will perceive absence from work as ‘shirking’ rather than doing work from home” (Schein, 2017: 23). Presenteeism was also identified as the *modus operandi* on the basis people cannot be trusted, by Handy, 1995, who claimed this would not bode well for virtual teams since technology on its own is not enough without trust. Trust is defined as *“the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party”* (Mayer et al., 1995: 712).

Schein suggests what he sees as an implicit truth about human nature by referring to ‘idealistic managers’ who fail to see lazy colleagues, as well as ‘cynical managers’ who do not see high motivation as a reason for working from home, suggesting that such assumptions become the basis for management control systems, which in turn influence the behaviour of those who are subjected to them (McGregor, 1960, cited in Schein, 2017). Many employers were reluctant to allow working from home prior to the COVID-19 pandemic due to a perceived lack of control when employees were not in sight or reach (Kniffin et al., 2021).

This reluctance to embrace remote work aligns with broader concerns about control and supervision, which virtual teams are claimed to challenge by empowering individuals to act more independently (Grenier and Metes, 1995, cited in Robey et al., 2000).

Researchers have asserted that new modes of surveillance will accompany remote working arrangements, even though evidence suggests that this can contribute to lower creativity among lower grade employees (Nell et al., 2021, cited in Kniffin et al., 2021). During the pandemic, researchers suggested that the collaborative applications, “Slack, Zoom and Trello are tools which management use to maintain control over their employees to ensure productivity is maintained in remote working” (Carroll and Conboy, 2020, p. 3), which is one interpretation, however there is a contrary view from human resource scholars which asserts that applications help remote workers accomplish tasks, and that constant and excessive monitoring has a negative effect on workers productivity (Shirmohammadi et al., 2022).

Although researchers are inclined to argue that organisations will implement digital surveillance systems, the majority of prior research has either been conducted pre COVID or is not empirical research and thus relies on prior arguments without providing fresh evidence. One exception to this is a study by Nell et al, 2021, who found negative outcomes of employee monitoring, suggesting research gaps in this area, that this study can address. For example, is it possible that organisational trust in remote workers has increased as a result of digital collaboration in remote working, therefore reducing the likelihood and desirability of organisational monitoring? Especially since the exposure of large numbers of employees to digital collaboration platforms means “those who were previously committed to face-to-face interaction and analogue tools can now see the potential gains from fast and effective coordination among distant collaborators” (Nell et al., 2021: 168).

This section of chapter 2 has examined prior literature concerned with relevant aspects of organisational culture, including the emotions which might accompany organisational change and potential trust and control issues in remote working. While Schein's 1983 three-level model provides a suitable conceptual framework for exploring and discussing the study's impact on organisational cultures, it does not allow the researcher to assess the transformation of working practices also explored in this research. The final section of this chapter reviews theoretical perspectives which could be used as a lens for digital working practices including the selected conceptual framework; liminal innovation (Orlikowski and Scott, 2021).

2.5 Reconfiguration of Digital Practices (Liminal Innovation)

Orlikowski and Scott (2021) offer liminal innovation to theorise the regeneration of digital practices that may occur when a crisis disrupts and suspends previous ways of working. The concepts of liminal innovation are drawn from 'liminality' or *limen*, a Latin word for the threshold between one state and the next (Turner, 1964). Although the term 'liminal' first appeared in 1884, in a psychology publication (La Shure, 2005, cited in Mertens, 2018), it was anthropologist Turner who publicised the term through his theory of liminality (Turner, 1964). Liminality refers to the experience of "being in a transitional state, so being on the boundary between one state but not quite being into the next" (Adibe et al., 2023: 301). Liminality, as a theoretical lens for organisational research, has gained traction due to its ability to illuminate the transient and intermediate aspects of organising and work (Söderlund and Borg, 2017, cited in Frick et al., 2019). The conditions of ambiguity and uncertainty (Ellis and Ybema, 2010; Beech, 2011) or being 'betwixt and between' one state and the next, also reflect the experience of being at the edge of current structures (Tempest and Starkey, 2004, cited in Adibe et al., 2023).

Orlikowski and Scott's 2021 theoretical concepts of liminal innovation build on Mertens (2018) concept of "liminal innovation as a set of practices that entail a seemingly never-

ending transitional phase where one innovation serves as a building block, or a kick starter, for another one” (Mertens, 2018: 290, cited in Orlikowski and Scott, 2021). Moreover, liminal innovation practices flow “between experimentation and implementation and are open-ended, fluid, and flexible” (Orlikowski and Scott, 2021: 281). The uncertainty of enforced homeworking during the crisis of the pandemic created a liminal state, where experimentation with digital collaboration platforms occurred. Organisations found themselves at the edge of the ‘old normal’ or face-to-face working, facing new structures, initially remote working, then hybrid working. Experimentation with Teams meant working practices were in a constant state of flux. Orlikowski and Scott’s 2021 liminal innovation perspective was offered in direct response to the shifting organisational practices and broader transformations that emerged as a result of the COVID-19 pandemic, as a way to help explain how generative shifts occur and thus offer the potential to do things differently. Given this study shares that context and focuses on practice change, the liminal innovation framework offers a compelling lens through which to explore how the crisis-driven disruptions of enforced homeworking and the adoption of Microsoft Teams, reconfigured working practices.

The researchers characterise practices as *sociomaterial*, defined as “a practice can have no meaning or existence without the specific materiality that produces it” (Scott and Orlikowski, 2014: 875, cited in Orlikowski and Scott, 2021), where different materialisations are consequential to the outcomes produced. Although, they suggest their proffered framework can be applied for all kinds of practices, to “serve as a basis for theorizing generative shifts in practice” on the basis that tensions arising ‘on the ground’ in times of crisis can produce change in different situations (Orlikowski and Scott, 2021: 2).

Liminal practices begin with a paradox (Turner, 1964) or tension (i.e. the ‘why’ and how practices are suspended) (Santuber, et al., 2021) which suspends prior practices, creating a

liminal time and space that encourages the potential for creativity (Czarniawska and Mazza, 2003). Orlikowski and Scott identify three types of tension (Figure 8); *pragmatic tension* arises when practical difficulties mean that existing practices must be adapted, *tactical tension* arises when existing capacity is repurposed to provide new products and services and *existential tension* arises when existing practices no longer make sense in disrupted conditions, leading to displacement or discontinuation (Orlikowski and Scott, 2021). Gkeredakis et al., (2021) employ similar terms i.e. ‘emerging tensions’ to conceptualise the categories they suggest arise from crisis conditions; opportunity, disruption, or exposure (threat).

Different Types of Tensions Generating Pressure for Change.		
Types of tensions	Conditions producing tensions	Changes
Pragmatic	Existing ways of doing things are strained as established practices encounter practical difficulties in practice	Adaptations modify established practices to address the difficulties arising in practice
Tactical	Existing ways of doing things are interrupted as established practices become infeasible in practice	Experiments repurpose the capacity of established practices for new products and services that are feasible in practice
Existential	Existing ways of doing things are discontinued as established practices no longer make sense in practice	Alternative practices displace established practices, offering novel and different ways of doing things

Figure 7 - Liminal Innovation Framework (Orlikowski and Scott, 2021).

Liminal Innovation combines concepts from practice theory with ideas from process studies (Orlikowski and Scott, 2021). Practice theory highlights the interaction between human actions and material objects, such as technology and tools, in shaping organisational processes, recognising that artifacts and technologies play a fundamental role in how practices unfold (Nicolini, 2012). A practice-based approach is also “fundamentally processual” (ibid: 3). Process theories provide a more constrained concept of prediction compared to variance theories. For instance, the analyst can only suggest that an outcome is probable (but not guaranteed) under certain conditions and unlikely under others (Markus and Robey, 1988). On the other hand, empirical process research may correspond more faithfully

to actual events in organisations, thus the analyst may be able to accumulate and consolidate findings about the relationship between information technology and organisational change (ibid). As such, research incorporating process theories should not be dismissed as illustrative cases only (ibid).

Another process theory considered by the researcher is Normalisation Process Theory (NPT) (May and Finch, 2009), which could help to explain the normalisation of pandemic-induced working practices. NPT identifies factors which promote and inhibit the routinisation of new practices, from implementation until they are normalised, i.e. become so familiar that they ‘disappear from view’ (Carroll and Conboy, 2020). However, while NPT could potentially explain how digital collaboration platforms become normalised post-pandemic, it is less suited to capturing the transitional dynamics and creative reconfigurations observed during a crisis, since it assumes a more structured trajectory toward embedding practices. In contrast, in this exploratory inquiry, there is a focus on the fluidity and open-endedness of change. Thus, Liminal Innovation offers a more appropriate lens for an exploratory study than does NPT, which lacks the conceptual tools to fully capture the creativity, disruption, and transitional states experienced.

Gallivan, 2001 created a new theoretical framework from Diffusion of Innovation Theory (Rogers, 2003) and a six-stage model of IT implementation proposed by Cooper and Zmud, (1990). The Technology Assimilation framework (Gallivan, 2001) is a process theory that claims to allow researchers to assess the extent to which a technological innovation becomes assimilated into organisational working practices. While Gallivan’s Technology Assimilation Framework offers valuable insights into the process of embedding technological innovations into organisational practices, it is less suited to the context of this study. The framework assumes a stable, linear process of technology assimilation and focuses on the organisational level, failing to account for the nature of DCPs, where each individual user has a multitude of

features available to them. Thus, assimilation into working practices is likely to take place at a different rate for each individual, making it difficult to assess the extent of assimilation which has occurred at the macro or organisational level. In contrast, Liminal Innovation provides a more dynamic and contextually relevant lens, specifically designed to examine the transitional and experimental nature of practices during periods of disruption. This makes it an apt framework for exploring the crisis-driven reconfigurations in working practices observed in this research.

Table 6 presents prior research conducted employing Liminal Innovation or Liminality.

Table 6. Prior Liminal Research

Perspective	Theme	Author	Outcomes
Liminality	Innovation	Czarniawska and Mazza, 2003 ; Ryan (2013), cited in Frick et al.(2019)	Authors find that liminal spaces support creativity and foster innovation.
Liminality	Experimentation and risk-taking	Frick et al. (2019)	Centres of Excellence are liminal spaces, created in order to facilitate digitalisation, carry the risk of developing incompatible systems but can loosen rigid structures.
		Garud (2022)	A liminal point in time, presented the opportunity for Uber technologies to enter the market and remain within regulatory frameworks.
Liminality	Individual and organisational learning.	Akehi (2020)	Doctoral College acted as a liminal space for professionals returning to study, creating both uncertainty and learning opportunities.
		Adibe et al. (2023)	The liminal space creates a necessary ‘corridor’ into which actors enter, presenting organisational learning opportunities
Liminal Innovation	Practice adaptation and displacement	Santuber et al. (2021)	Explores the required adoption of digital technology in judicial work practices during COVID-19 lockdowns, enabling courts to provide services but creating the risk of displacing traditional judicial and legal regulation.
		Veul and Krabbenborg (2024)	ICT applications can now be updated after diffusion, due to cloud computing. As they are both in use and in development at the same time, they are liminal innovations. Existing frameworks, such as Responsible Innovation (RI) should be updated accordingly.

The concept of liminal space has been used in management studies to illustrate the spaces in which consultants (Sturdy et al., 2006) and temporary workers operate (Garsten, 1999) and is a concept used in both intra organisational (Tempest and Starkey, 2004) and inter organisational studies (Ryan, 2013). Czarniawska and Mazza (2003), claim liminality fosters creativity whilst Ryan (2013), claims that because liminal states support experimentation and risk-taking, they can enable a radical innovation environment (Ryan, 2013, cited in Frick et al., 2019). The concept of liminal time was used to explain entry to existing markets by digitally enabled US organisation, Uber Technologies, one of the best known and most successful digital ventures (Garud et al., 2022). A dynamically changing window of opportunity, or liminal movement, allowed Uber to establish itself within existing regulatory categories (ibid).

Akehi (2020), in a PhD thesis, finds that returning full time to the liminal space of Doctoral College as a previous professional causes tensions by challenging prior identities. While the liminal space of Doctoral College presented the opportunity to take a break from practice and learn, it also felt like a place of uncertainty and loss (Akehi, 2020).

Recent qualitative research applied the lens of liminality to explain how digital spaces for collaborative innovation are created from the tensions involved in liminal states, finding that ‘in-betweenness’ is a necessary state, in effect a ‘corridor’, which is comprised of the tensions and different perspectives of actors who enter the space, creating an opportunity for sensemaking and learning (Adibe et al., 2023). These researchers’ exploration of collaboration innovation took place during homeworking whereas it would have been worth extending this cross-sectional research to consider what happens in ‘the new normal’ because other researchers have identified ‘learning boundary’ concerns, i.e. learning arising in temporal liminal states and spaces could be difficult to apply to a wider organisational context (Scarbrough et al., 2004).

Veul and Krabbenborg (2024), argue that, since innovative digital technology can be both ‘in use’ and ‘in development’ at the same, these innovations are better understood as liminal innovations. Researchers refer to software vendors such as Microsoft, who use various feedback mechanisms to gather information about different technologies use in practice, to inform future updates. In this way, software developers use liminality to incorporate information from technology use to develop or enhance features. Thus, developers construct future iterations of the innovation based on ‘what is happening’, rather than anticipating ‘what might happen’; the implementation process provides developers with insights that can only be gained once the innovation is actively being used (Mertens, 2018) and (Van de Poel, 2017 cited in Veul and Krabbenborg, 2024). On this basis, the researchers argue that existing Responsible Innovation Frameworks (RI) practices are outdated and should broaden their scope to include emerging as well as established ICTs (ibid).

The concepts of liminal innovation were employed in a PhD study to identify digital collaboration innovations that materialised in Chilean Courts during the context of the COVID-19 pandemic (Santuber et al., 2021). The authors point out that Courts were already in a liminal space and time due to ongoing digital transformation projects, and were forced to either reconfigure their digitalised practices in order to allow public services to continue or ‘fall paralysed under the weight of the challenge’ (Greco and Stenner, 2017, cited in Santuber et al., 2021). During the liminal conditions posed by the crisis, workers used social media for internal and external communications instead of their prior practices. Judges experimented with new formats, for example, using Facebook Live to respond to questions posted by users. Zoom was also used for communications, and the adoption of digital technologies allowed the two public organisations who were part of the case study to continue their services, although liminal practices challenged prior regulations. Authors conduct this research during the early stages of the pandemic, and identify their inability to explore how the liminal

innovations might develop over time, as a limitation (Santuber et al., 2021). As a result, it is unclear whether temporal practices ultimately displaced prior practices, although organisational and individual learning undoubtedly occurred.

Organisational learning may arise from internal and external tensions; as tensions are resolved, learning opportunities amongst those individuals and groups affected are generated (Kerosuo and Engeström, 2003). However, researchers have challenged the notion of workplace learning arising merely as a result of contradictions and tensions (Hager, 2011) and the concept of ‘boundary crossing’ was thus later offered as an additional means by which workplace learning is generated, both horizontally, by connecting with professionals in other disciplines and vertically, as one rises through hierarchical ranks (Kerosuo and Engeström, 2003). DCPs create a network of horizontal and vertical connectivity and thus offer the potential for workplace learning within (intra) and between (inter) organisations, especially since Web 2.0 eCollaboration systems provide for the co-creation of knowledge (Cheung and Vogel, 2013). Van Dijk (2005), also referred to a number of opportunities for individual learning arising from hypermedia i.e. a combination of media formats including video and text (available within Microsoft Teams), whilst simultaneously cautioning of the risk of learning fragmentation associated with, for example, reading a text message whilst watching a video, thus losing the argument of the text (van Dijk, 2005).

Organisational learning as a potential outcome of liminal innovation is acknowledged by Orlikowski and Scott (2021) although their research does not offer insight on organisational learning from the organisations they report on. Yet liminality emphasises the communal experience of the limen (*communitas*), or potential importance of relationships between people during the shared experience of liminality (Turner, 1964), (Küpers, 2011). However, Orlikowski and Scott’s 2021 theoretical concepts of liminal innovation confines its

explanatory power to changing practices, although liminal conditions can produce alternative social forms, norms, value systems, and activities (Söderlund and Borg, 2018).

On one hand, adopting a theoretical approach which advocates that practices may materialise and perform differently even from the same tensions, leading to different outcomes and consequences, will allow this researcher scope to demonstrate how the same practices may materialise differently and lead to different outcomes in each of the two organisations studied. On the other hand, a focus on practices alone, as conceived of in Orlikowski and Scott's 2021 framework, would limit the ability of the qualitative researcher to offer rich and in-depth insights into the subjective experiences and social interactions of organisational members as practices and culture were reconfigured. It is not clear to this researcher why the individuals involved in the changed organisational practices described in Orlikowski and Scott's 2021 study have no voice; perhaps the researchers simply did not have access to the individuals concerned. However, irrespective of any practical or epistemological considerations that might have influenced that work, this researcher posits that seeking to understand the views of individuals in the workplace, used in conjunction with the liminal innovation framework, can provide additional contributions to existing literature and help to provide a more holistic understanding of the reconfiguration of digital work in times of crisis. Prior literature in the areas that form the theoretical pillars of the study has not offered longitudinal insights, combined of both primary and secondary data, that extend beyond one year, making this four-year study with the same participants from two organisations, potentially unique. By conducting a longitudinal study, it should also be possible to offer an interpretation of why practices might endure or change, thus helping to address prior criticism regarding a lack of temporality when considering sociomaterial practices (Leonardi, 2013).

This completes the literature review and Table 7 provides a synthesis of research gaps identified in each theoretical pillar.

Table 7. Synthesis from all pillars of literature

Theoretical Pillar	Established Insights from Existing Literature	Areas Requiring Further Investigation
Mandatory Adoption	Historically negative outcomes, with emergent research suggesting more positive outcomes in the COVID-19 setting.	It remains unclear whether mandatory adoption of digital collaboration platforms inevitably leads to negative outcomes or under what circumstances such a strategy might achieve success.
Digital Collaboration	<p>Prior to COVID-19, instant Messaging and Social Media are the most popular choice for researchers and age often differentiates usage. Prior culture is a potential barrier to adoption of digital collaboration tools.</p> <p>From COVID-19, research focus considers practice adaptation and well-being as a result of forced working from home but largely focuses on videoconferencing. A single study considers Microsoft Teams features beyond videoconferencing.</p> <p>While diversely aged workers use technology differently, they are not homogenous in their usage.</p>	<p>Despite the widespread adoption of Microsoft Teams by organisations, only one study has focused on it as a research subject, exploring features beyond videoconferencing. Notably, no studies have examined real-time document collaboration. Empirical research since the onset of COVID-19 has focused on either enforced homeworking or its immediate aftermath. No studies have been identified that employ a longitudinal perspective, tracking participants from enforced homeworking through to hybrid working. As a result, the extent to which digital collaboration practices employed during homeworking have been developed and sustained in hybrid working is unclear.</p>
Digital Collaboration and Organisational Culture	<p>Culture evolves and technology has been found to affect organisational values, despite challenges. DCPs could flatten hierarchical networks although a more recent view suggests not.</p> <p>A deep-seated lack of trust in remote working will result in digital surveillance for those working from home.</p>	<p>While researchers have raised concerns about the rise of digital surveillance tools for remote workers, there is limited empirical evidence on the extent to which organisations have adopted these practices.</p> <p>Scant research examines the potential evolution of organisational culture stemming from practice adaptations introduced during enforced homeworking.</p>
Liminal Innovation	Liminal conditions can encourage innovation, creativity and organisational learning. Liminal innovation studies point to its capacity to explain practice adaptation and displacement in crisis.	Few studies have employed Liminal Innovation as a theoretical framework, making it a novel perspective that remains underutilised in existing research. No prior studies have applied the tensions framework in its full capacity or attempted to extend it.

2.6 Conceptual Framework for the Study

Having examined the bodies of knowledge for mandatory technology adoption, digital collaboration in the workplace and digital collaboration and organisational culture, together with an appropriate theoretical lens (liminal innovation) for practice reconfiguration in a time of crisis, a conceptual framework (Figure 9) was created. This provides the framework for an exploratory and inductive approach to the research aim and questions provided in [Chapter 1](#). To determine the application of the theoretical aspects to reality, a research approach was developed, explained in [Chapter 3 – Research Methodology](#).

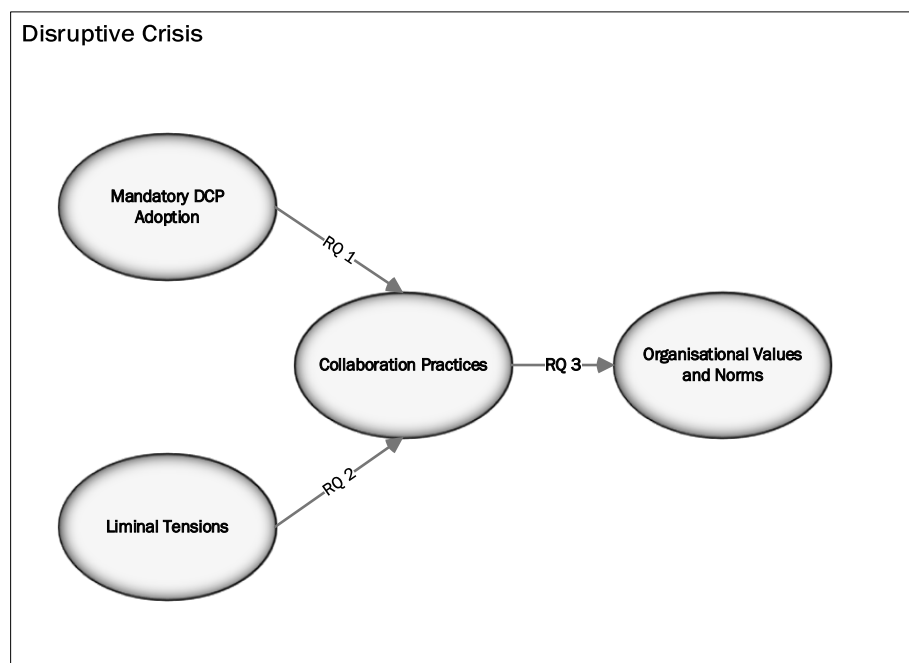


Figure 8 - Conceptual Framework for the Study

2.7 Chapter Summary

This chapter examined the existing body of knowledge for the theoretical pillars that together, form a synthesised conceptual framework for the study. An appropriate theoretical lens, Liminal Innovation (Orlikowski and Scott, 2021), applicable to the reconfiguration of organisational digital practices in a time of crisis, was identified and critically examined, together with prior studies using this theoretical lens. Research gaps were identified and

discussed and a rationale for the study and research questions offered. The following chapter explains how the research was designed and carried out to fulfil the gaps and opportunities identified in this literature review.

3.0 Research Methodology

3.1 Chapter Introduction

This chapter explains how the research has been designed and carried out to address the research aim and research questions found in [Chapter 1](#). The research is qualitative, and a longitudinal study of two comparative cases was utilised. This chapter presents a rationale for each aspect of the research design, including the epistemology, methods, sampling, duration, and data analysis techniques, explaining why the researcher selected particular configurations as opposed to other strategies that might have been adopted. The researcher's adherence to techniques to ensure methodological rigour in all aspects of the research design and operationalisation are illustrated. The overall 'story line' of the research study is presented again as Figure 9, demonstrating the relationships between the research questions, the theoretical concepts explored in [Chapter 2](#) and the presentation and discussion of the study's findings in [Chapter 4](#) and [Chapter 5](#) respectively.

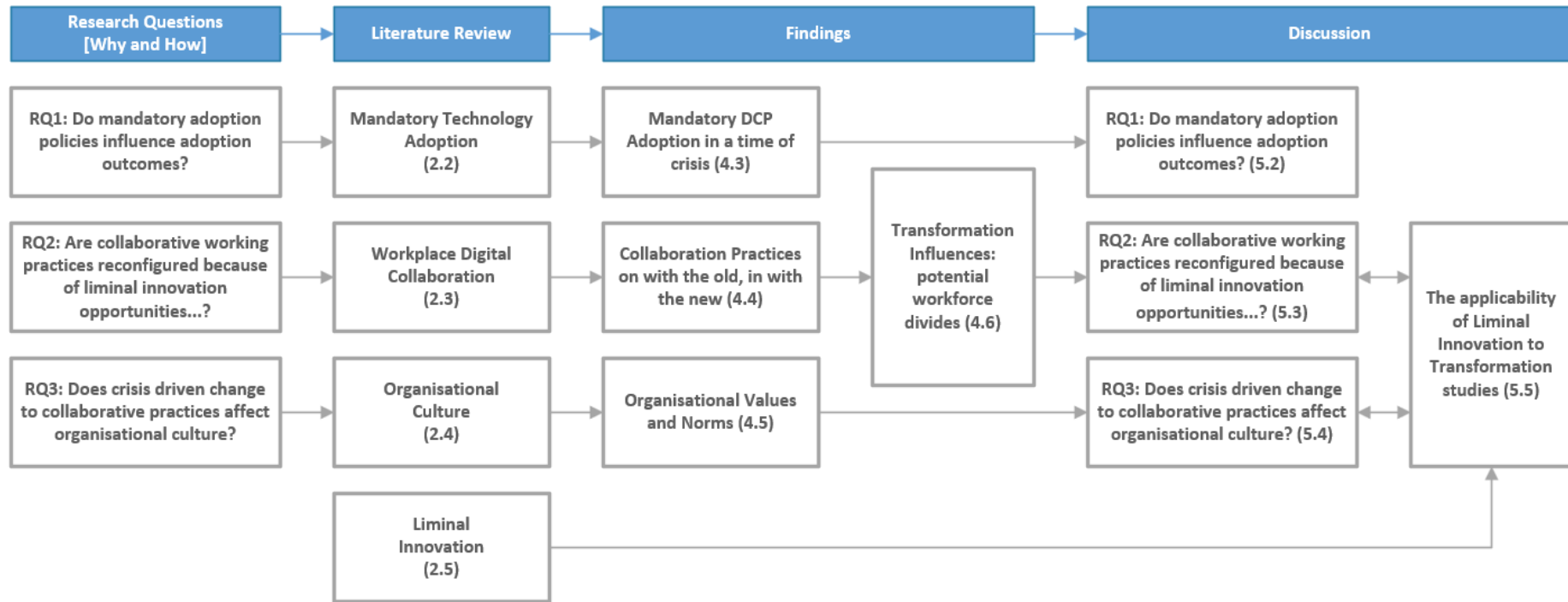


Figure 9 - Research Storyline in full

3.2 Research Philosophy

When considering the philosophical approach to be taken to the research study, the researcher should first understand their own ontological position or personal ‘truth’ about the nature of reality in relation to their area of enquiry, since “theories concerning reality are ways of making sense of the world” (Walsham, 2006: 320). The ontological position that is taken within a research study in turn determines the epistemological approach (Saunders et al., 2019). Epistemology is the theory of knowledge and determines what constitutes knowledge, how it can be collected and presented, and under what conditions the knowledge achieved can be claimed as true (Burrell and Morgan, 2016, cited in Saunders et al., 2019). Adopting a dualist ontology in a social sciences study would mean, for example, the researcher believing that entities such as ideas and social structures exist irrespective of our knowledge of them (Sandberg, 2005), a position the researcher is unable to take.

A dualist ontology corresponds with an objectivist epistemology that treats reality as objective and knowable beyond the human mind (ibid). In other words all knowledge of reality is simply waiting ‘out there’ for the researcher to discover its existence (Hallebone and Priest, 2009). Such an ontological and epistemological position is associated with a empiricist or positivist research paradigm and typically, quantitative information systems studies (Goldkuhl, 2012). Research in the positivist tradition aims for explanation or prediction (Braa and Vidgen, 1999), logically deducing specific events based on certain prior conditions and established 'laws'; from an ontological perspective, something is considered to exist if it can be perceived (Mingers, 2004). However, Popper (2005) argues that while it is possible to prove a prediction false, it is not possible to prove a theory true. This has led to suggestions that the deductive research process linked with positivist research does not establish absolute truth (Morad, 2021). Furthermore, due to the difficulties in attempting to reduce complex

social and technical phenomena to quantitative figures, research needs a more open and nuanced analysis (Goldkuhl, 2012).

In opposition to a positivist ontology, a constructivist ontology posits that reality is socially constructed by individuals' subjective experiences and language (Hallebone and Priest, 2009) therefore all scientific theories ultimately depend on human perception and judgement (Mingers, 2004). Furthermore, within the context of information systems research, "the social world (that is, social relationships, organizations, division of labours) are not given but rather the world is produced and reinforced by humans through action and interaction" (Orlikowski and Baroudi, 1990: 14).

In interpretive research, the epistemological position taken is that knowledge is an understanding arrived at through processes of interpretation from the meaning systems shared by the 'actors' in the study (Orlikowski and Baroudi, 1990). Similarly, Walsham (1995), argues that "interpretive methods of research start from the position that our knowledge of reality, including the domain of human action, is a social construction by human actors" (Walsham, 1995, cited in Walsham, 2006: 321) although in later research, Walsham admits the plausibility of an ontological position of objective reality (Mingers, 2004, cited in Walsham, 2006). According to Goldkhul (2012), interpretivism is not a unified and unequivocal tradition. Sandberg (2005) claims that all interpretivist approaches are united by their phenomenological base, on the basis that "the primary research object within interpretive research is individuals' and groups' lived experience of their reality" (Sandberg, 2005: 47); the concept of lived experience can be traced back to the phenomenological idea of 'lifeworld'. This concept was first developed by Husserl (1936/1970), cited in Sandberg, (2005) but has been further developed by other phenomenologists, such as Heidegger (1927/1981), cited in Sandberg (2005). Lifeworld posits that person and world are inextricably related through the person's lived experience of the world; the lifeworld is

objective in the sense that it transcends the subject because its qualities are not solely tied to the subjects' lived experience of it, but at the same time, it is inseparable from the subjects through their experience of it (Bengtsson, 1989, cited in Sandberg, 2005). In interpretive approaches, the human world is never independent but is always perceived through the lens of human experience, meaning it is inherently connected to a conscious observer.

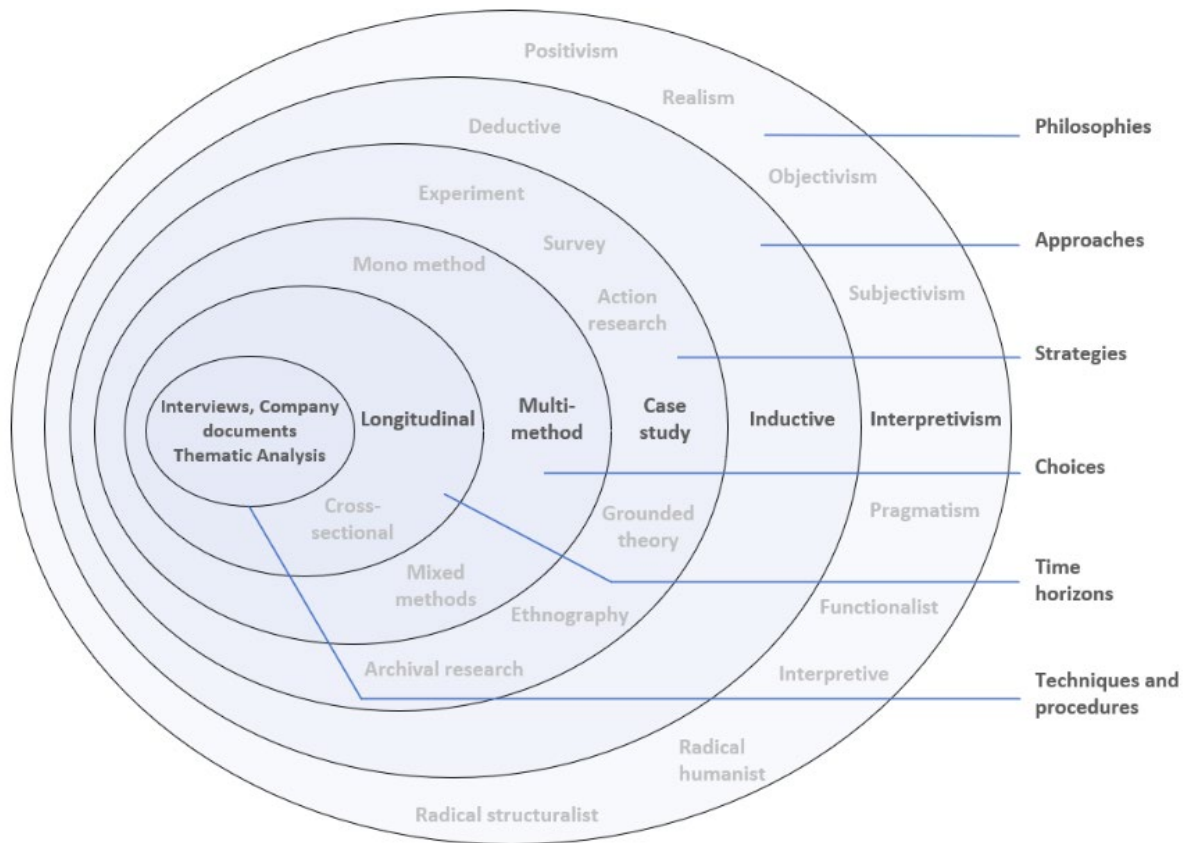
Consequently, the ontological and epistemological foundations of interpretive research deny the existence of an objective, knowable reality outside the human mind, asserting that knowledge is shaped solely by the lived experience of that reality. In this study, the researcher presents individuals' and groups' lived experience of their reality, although, more properly, it is the researchers interpretations of participants lived reality; Geertz (1973) described the interpretive view of data collected as, "What we call our data are really our own constructions of other people's constructions of what they and their compatriots are up to" (Geertz, 1973: 9, cited in Walsham, 2006). Sandberg (2005) further advises against interpretations that surpass participants' lived experiences and thus, participant quotations presented in [Chapter 4 - Research Findings](#) closely support findings and reflect lived experiences.

Research questions are aimed at understanding collaboration practices and organisational culture through the reflective experience of the research participants. This approach is advocated for research and theory on information technology and organisational change because organisational structures such as cultural norms and values are grounded in the individual behaviours and the micro-level events and processes that comprise them (Pfeffer 1982, cited in Markus and Robey, 1988).

Pragmatism is another possible research paradigm that has been considered by the researcher. Goles and Hirschheim (2000) describe pragmatism "as taking a middle position between positivist and interpretivist ontologies" (ibid: 141). Pragmatism, derived from philosophers

such as Dewey (1938) and Peirce (1878), accepts things and events as existing independent of any observers, but at the same time emphasises reason and thought as originators of elements in the external world. Pragmatists have been described as the ‘Knights of Change’ (Chen and Hirschheim, 2004), because in pragmatism, the research focus is on actions and change. Therefore, a pragmatic study incorporates an epistemology where the generation of knowledge about a reality is then applied in order to change that reality, following Dewey’s concepts of ‘inquiry’, or directed transformation (Dewey, 1938b). In contrast, the aim of this study is not to produce knowledge for ‘intervention’ or change, rather the research is aiming for interpretation and understanding, therefore an interpretive approach which acknowledges the philosophical underpinnings of phenomenology is taken within this research study.

The priority for a research design is that it must fit within the overall ontological and epistemological positions being adopted for the research project (Hallebone and Priest, 2009). Having explained both positions, the corresponding research strategy and detailed design employed in this study is described next. Figure 10 presents an adapted version of the Research Onion (Saunders et al, 2012) which demonstrates how the study design ‘travels’ from the outer to inner layers of the onion.



3.3 Research Approach

The selected research approach was exploratory and inductive; exploratory research is defined as research conducted to gain an understanding of the nature of a problem (Dudovskiy, 2018). An exploratory approach is a suitable design to adopt when the research topic is a little known phenomenon or lacks an established theoretical basis (McLeod et al., 2011). Rather than testing theory, which is typically the way a research problem is addressed in a deductive approach (Imenda, 2014), this research adopts an inductive approach, wherein the dataset provides the starting point for engaging with meaning (Debortoli et al., 2016; Berente et al., 2019, cited in Hacker et al., 2020). However, as Braun and Clarke (2022) point out, since the researcher comes to qualitative research intact with perspectives, some of which may be theoretical, engagement with the data can never be purely inductive. Instead, researchers formulate a series of research questions informed by existing literature,

progressively narrowing the study's scope to build a conceptual framework that integrates related ideas to guide data collection, analysis, and discussion. The conceptual framework for this study does not rely on a single theory or concept, as multiple gaps in the current literature are evident. Rather, the relevant concepts and principles drawn from the literature provide an 'integrated way' to approach the research problem, as advocated by Imenda (2014), cited in Morrad (2021). Walsham (2006), also acknowledges that a 'theoretical grounding' may arise from more than one body of literature (Rolland and Monteiro, 2002, cited in Walsham, 2006).

3.4 Research Strategy

The selected research strategy is case study, which allows examination of complex phenomena in a real-world setting, an emphasis that means research is focused on actual organisational processes and activities (Yin, 1981). Case studies offer particular advantages when the research questions that are asked are 'how' or 'why' questions about a contemporary set of events over which the researcher has little or no control (ibid), circumstances that apply to this study. A case study, in which the researcher is actively involved in the social environment, is well-suited for producing interpretive knowledge (Orlikowski and Baroudi, 1990, cited in Chen and Hirschheim, 2004) and is a method often used for information systems research (McLeod et al., 2011). McLeod et al. (2011) use empirical case study research to understand software engineering in an organisational setting, on the grounds it is an organisational activity involving complex interrelationships between people, procedures and culture, elements which require qualitative empirical case study research in real world settings to be properly understood (Runeson and Höst, 2009, cited in McLeod et al., 2011). Equally, digital collaboration practices and their impact on organisational culture present a complex interrelationship of elements whose understanding is enhanced by direct engagement and close interaction between the researcher and

organisational participants, a hallmark of empirical case study research (Doolin, 1996, cited in McLeod et al., 2011).

Two comparative cases are utilised, both based in the UK: a public institution and a private company, thus offering the opportunity to consider different research settings within the same country. Rainey et al. (1976), reported consensus views amongst prior literature that “government institutions tend to be characterised by cautiousness, inflexibility and lack of innovativeness”(Rainey, et al, 1976: 241) whilst pointing out that ‘consensus’ is not proof and questioning whether private organisations really are more flexible and innovative than government (ibid) The private organisation wishes to remain anonymous, and the case study description is limited to the facts presented in Figure 11, as further description may give away their identity.

The cases were initially selected because both organisations endorsed mandatory adoption of Teams for use by knowledge workers within their organisations and thus were a substantial match to the chosen research topic (Walsham, 2006). Most importantly, both organisations were willing to engage with the researcher over the duration of the study, thus presenting a valuable and practical opportunity for a multiple case design, which might offer the possibility of direct replication (Yin, 2018). Whilst multiple case designs are time-consuming, they are preferred over single case designs because analytic generalisations from two cases may be more powerful than those arising from a single case (ibid). Qualitative case study research provides rich and nuanced descriptions of practices, revealing the perspectives of organisational participants and yielding a “deep understanding of a phenomenon in one context, which may bring insight into others” (Wynekoop and Russo, 1997: 51 cited in McLeod et al., 2011). Additionally, generalisations can emerge as concepts, theories, practical implications, or valuable insights, all of which are attainable from a limited number of case studies (Walsham, 2006). One further aspect of case study research which rendered it

highly appropriate for this exploratory study, was a degree of flexibility, in that it is possible to modify the parameters of the design as it is in progress, to reflect “the complex and dynamic characteristics of real-world phenomena” (Runeson and Höst, 2009: 137).

Other research methods were considered and discounted; for example, action research was discounted on the basis the researcher was not employed to influence change in both cases (Saunders et al., 2019), and was not explicitly trying to change things in either case (Walsham, 2006). However, if either or both organisations made or make changes as a result of this research, it would be a matter of their choice. Finally, using two cases was seen as a way to help avoid potential researcher bias as the researcher is employed by the public institution. The researcher’s position or role is discussed in more detail in [section 3.8](#).

CASE A	CASE B	
Higher Education institution	Media Company	
Primary business: Teaching	Primary business: Publishing	
Semi-public (receives some Government funding)	Private	
Annual Surplus 2021: £2.9m	Annual Profit 2021: £44m	
Number of students in 2021: approx. 30,000	Number of customers: 19m	
No. employed in administrative roles: 1450	No. employed: 1300	
Founded: 1952	Founded: 2007	
Notable achievements: Teaching Excellence Framework Gold Standard University, Athena Swann	Several notable ‘brands’, offering printed magazines and digital versions.	
Participant demographics	CASE A: Higher Education Institution	CASE B: Private Media Organisation
Job Grades	14 participants: 5 ‘higher’ graded roles 5 ‘middle’ 4 ‘lower’	14 participants: 6 ‘higher’ graded roles 5 ‘middle’ 3 ‘lower’
18-25 years	-	1
26-35 years	3	2
36-40 years	1	2
41-50 years	3	5
51-60 years	4	3
60+ years	3	1
Disabilities	1 participant with disabilities that affect working practices	1 participant with disabilities that affect working practices
Identified Gender	5 male gender 10 female gender	6 male gender 9 female gender
Level of education	Most educated to degree level	Most educated to degree level

Figure 11 - Organisational Information for the selected research sites.

3.5 Research Methods

Primary data collection and analysis methods are qualitative, selected because qualitative research generates human knowledge based on meanings expressed in words by human participants (Sandelowski, 2004). Lincoln and Guba (1985) argue that qualitative methods are more sensitive and adaptable to the mutually shaping influences that the researcher is likely to observe. Goldkhul (2012) suggests that a qualitative researcher must either adopt an interpretive stance aiming towards an understanding that is appreciated for being interesting, or a pragmatist stance that aims for constructive knowledge, appreciated for being useful in action.

5 semi-structured interviews were initially conducted as a ‘feasibility study’, whose purpose was to establish interview constructs and content validity. Following refinement of the interview protocol, a total of 65 semi structured interviews, consisting of 58 individual and 7 group interviews of approximately 1.5 hours each (Saunders et al., 2019) were employed to elicit in-depth subjective opinions from individuals in their work environment and were conducted online, initially to comply with social distancing measures (World Health Organization, 2020). However, since online interviews proved highly convenient for both participant and researcher and still allowed for observation of body language (Saunders et al 2015), they were continued for the study duration. Open ended questions allowed for probing of participant views during interviews. [Appendix 4](#) shows interview constructs used in each phase of data collection. [Appendix 10](#) provides sample transcripts from both organisations.

Walsham (2006) advises researchers to be sensitive to participant time pressures and this was especially relevant given the seniority of many participants. In order to maximise time for participants to share their experiences whilst in the interviews, an e-form, designed and created by the researcher ([Appendix 3](#)) was sent to each participant ahead of their interview.

The e-form proved a novel and convenient method to extend the overall time participants gave to the study and was used to collect demographic data such as participant age range and disability, but also details of the hardware participants had access to whilst working from home and who they were seeking support from in terms of their DCP use, for example, their colleagues, IT Department, family etc. It was also used to collect details of the collaboration methods they preferred at the start of the study and which Teams features they used. In the second phase of data collection, an e-form was used to again ask participants which collaboration methods they preferred, and which Teams features they now used, which helped inform how practices were changing over the study duration. Walsham (2006) advises that data of this type is valid in an interpretive study. Moreover, E-forms always contained an open-ended option for every question posed, thus allowing participants to express their response in their own words if they preferred to.

A qualitative case study typically involves multiple data sources, for example, interviews, observations, and documents (Yin, 2018). Secondary data sources for both organisations included data collected from published company surveys, leadership communications via email or recorded copies of virtual meetings. The researcher was permitted to use any data that was made available freely to all members of the organisation and ethics approval ([Appendix 8](#)) was sought and granted for all aspects of data collection. Where data was restricted to specific groups within the organisation, for example, those choosing to attend topic-specific online workshops such as hybrid working and disability awareness, specific permission was sought and granted. Figure 12 summarises the multiple sources from which data for this study was drawn.

Collection Phase/Time	CASE A	CASE B	Primary/Secondary Data
T1: May-August 2020 Enforced homeworking due to Covid lockdown restrictions.	15 pre-interview e-forms 15 semi-structured interviews	15 pre-interview e-forms 15 semi-structured interviews	Primary Data
T2: Sept-November 2021 Homeworking continues but occasional office working recommences.	14 pre-interview e-forms 14 semi-structured interviews	14 pre-interview e-forms 14 semi-structured interviews	Primary Data
T3: March – May 2023 Hybrid working (1-3 days per week in the office).	4 semi-structured group interviews	3 semi-structured group interviews	Primary Data
May 2020 to September 2023	Organisational survey results, Presentations, Published Company communications	Organisational survey results, Presentations, Published Company Communications	Secondary Data

Figure 12 - Research Methods

Methodological triangulation (Denzin, 1989) has been applied in this study as means of verifying the research findings and thereby adding credibility, in line with views offered by Sandelowski (1995) who suggests that corroborating data from one source with data from another source is useful when convergent validity of research findings is of value to the qualitative research (Sandelowski, 1995 cited in Tobin and Begley, 2004). The researcher corroborates data from primary sources with data from secondary sources, for example, participants view on whether their own digital skills were improved as a result of adopting the DCP were corroborated with an organisational survey (see [Chapter 4 – Findings](#)).

3.6 Sampling Approach

As the investigation adopted an exploratory inductive approach, a non-probability purposive sampling technique (Saunders et al., 2019) was adopted. A purposive group of participants

was identified within each organisation, selected on the basis of their age and job grade, identified as potentially important characteristics from the initial literature review. Although participants were placed in several age bands (shown in Figure 11); readers should note that when the terms ‘younger’ and ‘older’ workers are identified in subsequent chapters, the age differentiation is 50 years of age. Thus ‘older’ is used to describe those participants aged 50 or over (Albert and Heaton, 1988, cited in Choudrie and Vyas, 2014).

Participants role grades were independently verified as higher, middle, or lower with each organisations Human Resources Department and in so doing, participants individual identities were anonymised as far as possible. Research participants were knowledge workers drawn from departments such as Finance, Legal, Marketing, Editorial Services and Academic Services. Potential participants were contacted using a snowballing technique (Saunders et al., 2019), whereby a senior member of each organisation contacted colleagues, inviting them to contact the researcher. The initial sample size of 15 interviews per organisation was determined as a credible sample size based on the assertion that between 12 and 40 interview participants per organisation are sufficient for a qualitative study (Saunders and Townsend, 2016). Subject attrition, a well-known potential issue in qualitative longitudinal studies (Hermanowicz, 2013), meant the initial sample size was later reduced to 14 participants from each organisation. On advice, the researcher has not presented findings from those participants who subsequently left the study; therefore, results are interpreted for the 14 participants from each organisation who were consistently interviewed. Research participants demographics are shown as Figure 11.

3.7 Research Duration

The research was conducted as a longitudinal study where primary and secondary data was collected over a period of four years (2020 to 2023). No other published studies examining

homeworking or digital collaboration during COVID-19 have been identified that conducted longitudinal research over more than one year with the same participants consistently interviewed across all data collection periods, making this study distinctive in its approach and contributions. Longitudinal research seeks to uncover and understand processes of change over time (Saldaña, 2002); (Corden and Millar, 2007) and in so doing, can provide a holistic explanation of the outcomes of complex social processes (McLeod et al., 2011). Case studies are often carried out longitudinally (Walsham, 1995) in order to facilitate a ‘multifaceted treatment of change’ (Pettigrew, 1990). Undertaking a longitudinal case study enabled changing collaboration practices and organisational culture to be observed as events unfolded, while accessing participants’ actions and interpretations at the time, which would not have been possible had a cross sectional approach been taken, i.e. the ‘movie is more informative than the snapshot’ (Neale and Flowerdew, 2003), cited in Giæver and Smollan, 2015). Moreover, providing research participants with the opportunity to look back over time can generate valuable insights as they explain their actions, whilst “following people forward over time provides an opportunity to explore how and why people make the individual choices that add up to particular cumulative trajectories” (Corden and Millar, 2007: 529). The researcher conducting longitudinal research, assumes not only the role of researcher, but also, by default, the role of historian (Emerson et al., 2011, cited in Saldaña, 2002); knowing or inferring when changes occur is a ‘critical’ task in longitudinal data analysis (Saldaña, 2002). Before discussing longitudinal data analysis in more detail, it is important to clarify what period the study should take place over, and how many times data collection should be carried out, for the research to be considered longitudinal. In fact, the question of how long a longitudinal study should be appears to be a topic of debate amongst academics. Saldaña (2002) suggests interaction with participants should take place over one year or more, which is the duration adhered to in a study considering the effects of enforced homeworking during

COVID-19 (Waizenegger et al., 2020) but other scholars claimed to have conducted qualitative, longitudinal research within the same context, whose duration was six months (Marinaci et al., 2021). When conducting qualitative, longitudinal research, “the number and frequency of research episodes will vary according to how a given research problem is posed and thus will vary from study to study” (Hermanowicz, 2016:196). Commonly though, qualitative longitudinal studies utilise a ‘three-phase period’ i.e. three research episodes or phases where data is collected from participants, often via interviews, e.g., (Giæver and Smollan, 2015; Waizenegger et al., 2020).

As shown in Figure 13, a total of three research phases/rounds of data collection were designed with the initial round conducted between May and August 2020 (T1), during the first enforced homeworking period in the UK. The second interview round was conducted between September and November 2021 (T2), when the homeworking situation was still subject to change due to the ongoing COVID-19 pandemic. As a result, neither Case A nor Case B had enforced a full-time return to offices, although some participants had returned, on a part-time, socially distanced basis. However, at T2, participants in both organisations were actively ‘negotiating’ their ‘new normal’ working pattern. The final interview rounds (T3) were carried out as group interviews between March and May 2023. Group interviews were comprised of three to four participants per session who were asked a series of questions by the researcher, some of which were answered in turn by each participant, while the researcher used others to stimulate a discussion amongst the group. This provided an effective use of the researcher’s resources and still generated useful insights (Frey and Fontana, 1991). T3 interviews were conducted when participants had been working in their ‘new normal’ pattern, which was hybrid for all participants in both cases, for a minimum period of one year. The intervals between primary data collection periods were considered sufficient to examine change between the three points (Saldaña, 2002) and Figure 13 shows the data collection

periods. Similar themes were pursued at each round of data collection (interview questions for each round can be seen in [Appendix 4](#)). However, as Hermanowicz (2013), points out, some ideas cease to be relevant over time, whilst ‘newly emphasised’ areas of interest emerge, thus limiting the extent to which design of a qualitative, longitudinal research study can be fully operationalised at its outset (Hermanowicz, 2013). For example, participants no longer mentioned how they were forced to adopt the DCP by T3, while new themes such as emotions and digital accessibility emerged during T1 and T2 interviews. Rather than ignore new themes that did not fit within the initial design, the researcher returned to the literature and ultimately revised the design to accommodate the new ideas.

When analysing the dynamics of change in a longitudinal study, researchers consider how the descriptive properties of qualitative data, such as the use of verbs and adjectives in participant transcripts, evidence specific types of change, e.g., what increases or emerges, what effects are cumulative through time, what events or ‘epiphanies’ take change to a new level for participants (Saldaña, 2002). A further complexity arising from the longitudinal research design of this study is that distinct change (or lack of it) should be observed from one data collection period to the next (ibid) and therefore it was necessary to look for patterns *between* data collection periods as well as across all data collection periods, or the dataset as a whole.

Data Collection Phase/Time	CASE A	CASE B	Primary/Secondary Data
Feasibility Study April 2020	3 semi structured interviews	2 semi structured interviews	Construct and Content Validity
T1: May-August 2020	15 pre-interview e-forms 15 semi-structured interviews	15 pre-interview e-forms 15 semi-structured interviews	Primary Data
T2: Sept-November 2021	14 pre-interview e-forms 14 semi-structured interviews	14 pre-interview e-forms 14 semi-structured interviews	Primary Data
T3: March – May 2023	4 semi-structured group interviews	3 semi-structured group interviews	Primary Data
May 2020 to August 2023	Organisational survey results, Presentations, Published Company communications	Organisational survey results, Presentations, Published Company Communications	Archival/Secondary Data

Figure 13 - Research Methods by Research Phase

3.8 Researcher Position and Bias

The researcher has previously mentioned her employment with one of the organisations studied, thus seemingly qualifying her as an ‘insider’, a term used to indicate a researcher conducting research with populations that they are members of (Kanuha, 2000, cited in Dwyer and Buckle, 2009). This shared identity, language and experiential base (Asselin, 2003) generally allows the researcher more complete acceptance by participants, who may exhibit a greater degree of trust and openness with the researcher than would be demonstrated with an ‘outsider’ (Dwyer and Buckle, 2009). On the other hand, Dwyer and Buckle (2009), argue that by occupying the researcher role, the researcher is not a true insider, while the intimacy of qualitative research does not allow the researcher to remain a true outsider to the experience under study either. Thus, although both roles carry benefits and disadvantages, for example, while likely to be privy to frank disclosures, the insider role may present a higher risk of role conflict or ‘loyalty tugs’ (Asselin, 2003); (Brannick and Coghlan, 2007), in reality the researcher occupies the ‘space between’ the two positions (Dwyer and Buckle, 2009). Although, in conclusion, Dwyer and Buckle (2009) assert that it is not the degree of

involvement that hallmarks the successful researcher but rather their ability to be “open, authentic, honest, deeply interested in the experience of one's research participants, and committed to accurately and adequately representing their experience” (ibid: 59). They do, however, advocate detailed reflexivity or a close awareness of one's own personal biases and perspectives (Dwyer and Buckle, 2009), a view shared by Saunders et al. (2019), who advise regular reflection to uncover personal assumptions. [Chapter 7](#) provides examples of the researcher's reflexive and reflective research journey. Walsham (2006) frames the researcher's involvement as a spectrum at one end of which is the full ‘action researcher’, trying to change things in the way they think best and at the other end, the ‘neutral’ researcher, pointing out that neutral does not mean unbiased, since all researchers are biased by their background, knowledge and prejudices to see things in certain ways and not others (ibid). Rather, he asserts that a neutral stance means that participants do not perceive the researcher as aligned with a particular group, or being concerned with making money, or even simply not having strong views of particular people or processes (ibid).

The technique used by the researcher to analyse the data also requires the researcher to adopt the discipline of critically interrogating what they do, how and why it is done and what impact and influences this brings to their research (Braun and Clarke, 2022) and is discussed in detail next.

3.9 Data Analysis Methods

The data analysis employs reflexive thematic analysis (TA) (Braun and Clarke, 2022), which emphasises the role of a subjective, reflective researcher in developing, analysing, and interpreting patterns within qualitative data. While alternative methodologies, notably the Gioia Method or Grounded Theory, were considered, they were not selected for a number of reasons. The Gioia Methodology (Gioia et al., 2013) emphasises a structured, multi-step

approach to coding and theory development of qualitative data, making the research process transparent and credible. Despite its rigor, it has been criticised as inadequately addressing the challenges of interpretation, potentially restricting the development of interesting and plausible theory (Bhakoo et al., 2020). As this study is less focused on formal theory generation and more on interpreting participants' experiences and the meanings they ascribe to organisational changes, the Gioia Methodology was rejected.

Grounded Theory (Glaser and Strauss, 1967) involves a highly systematic approach to developing theories grounded in data, often requiring constant comparison and saturation. However, this study's emphasis on exploring patterns of meaning rather than developing a new theory made thematic analysis a more appropriate choice. Furthermore, the philosophical stance of Grounded Theory, particularly its original positivist leanings (Glaser & Strauss, 1967), does not align as closely with the interpretive and reflexive orientation of this research.

By choosing reflexive TA, this study benefits from an approach that prioritises interpretive depth, researcher reflexivity, and flexibility in exploring complex phenomena. These qualities are crucial for understanding the nuanced changes in organisational practices and culture in this qualitative study. Marsh et al. (2024), successfully apply reflexive TA to explore digital workplace job demands, such as hyperconnectivity and overload, and their association with employee well-being, while using the technique to conceptualise success factors for performance and work-life balance amongst hybrid workers.

The first step in the reflexive Thematic Analysis technique is coding; codes are the smallest unit of analysis, capturing specific meanings within the dataset that appear relevant to the research questions (the term 'appear' is used to acknowledge some of the codes initially created may not survive successive analysis). Codes act as 'building blocks' from which the

researcher goes on to develop themes, engaging and re-engaging with the data throughout the process. There is scope within reflexive TA for researchers to incorporate other techniques and within this spirit, this study employs the use of ‘open coding’, an analytic technique drawn from grounded theory, which essentially requires the researcher to engage and code every sentence within an interview transcript (Urquhart, 2013). Following the open coding technique generated many new inductive codes (Saunders et al., 2015), including emotions in the workplace, the accessibility features of the DCP, the perceived relationship between age and confidence to use digital technology, the continuing use of existing applications at Case B, such as Slack.


The qualitative data analysis software, NVivo, has been used throughout the analytic process to code both the primary and secondary data that has been collected. A deliberate coding structure was created within NVivo to capture overarching ‘containers’ for the three distinct data collection periods: (T1) Using Teams during Covid homeworking, (T2) Using Teams in the new normal and (T3) Hybrid Working. Employing a thorough approach resulted in many codes (or ‘nodes’ within NVivo) within each container. Figure 14 provides a small sample of codes for T1 (Using Teams during Covid homeworking).

Nodes			
Search Project			
Name	Files	References	
Using Teams during Covid home working		0	0
Accessibility of senior management	6	8	
Autonomy	1	2	
Communication boundaries	27	53	
Communication experience	37	87	
Consequences	29	84	
Digital Skills	3	4	
Discontinuance and shadow IT	7	9	
Emotions	9	12	
Flexibility	5	11	
Fun stuff	21	25	
Homeworking Pros and cons	34	100	
Deviations from the norm create pressure	1	1	
Flexibility observations	4	11	
I have a good space	1	2	
Lack of motivation	1	2	
Too many meetings	2	2	
Inclusivity	3	7	
Influence	14	21	
Innovative changes WPs	21	33	
Knowledge sharing	9	12	
Long term changes WPs	40	88	
Can't influence upwards	2	2	
Organisational change - forward thinking	2	3	
Organisational fit with Teams	32	72	
Organisational structure and Teams	30	59	

Figure 14 - Latent and Semantic code examples from NVivo for T1 data.

Although codes focus on a singular idea, they do not lack depth, as richer analytic ideas often sit behind the codes. For example, from Figure 14, the code label ‘Discontinuance and Shadow IT’, suggests a relationship between two concepts, i.e., use of sanctioned organisational technology may be discontinued in favour of technology preferred by the individual but unsanctioned by the organisation (shadow IT) and is thus a *latent* or interpretive code. In contrast, the code label ‘Homeworking Pros and Cons’ is a more descriptive code and is used to identify *semantic* (or manifest) content from the data corpus, i.e., the positive and negative aspects of the lived experience of homeworking. However, both descriptive and interpretive coding is acceptable within the coding process of reflexive TA and there is no right or wrong level at which the researcher must code (Braun and Clarke, 2022). In this study, theory has been used as a sensitising device and thus codes shown in Figure 15, such as ‘Digital Transformation’, ‘Mandatory Adoption’ and ‘Organisational

Culture and Trust’, which are part of the T2 container, ‘Using Teams in the new normal’, represent the researchers prior theoretical awareness.



Name	Files	Referenc
Using Teams in the new normal	0	0
Age related comments	25	47
Agility	1	1
Business changes since covid	5	9
Communication boundaries and methods	24	67
Continuance intention	19	27
Digital Skills	28	52
Digital transformation	8	15
Disability	15	27
Early adopters	2	2
Enjoyable features	9	12
Equality and inclusivity comments	18	46
Familiarity of use	6	7
Features that don't work well	3	4
File sharing practice	19	28
Future directions	5	7
Hindsight	1	1
Hybrid working	26	72
Innovative ideas for use of Teams	9	14
Kit worries etc	11	12
Mandatory Adoption	7	10
Middle management	12	25
Monitoring via Teams	14	18
Negatives	24	49
Neologisms	1	1
Old style homeworking	6	6
Organisational Culture and Trust	27	59

Figure 15 - Example codes for T2, including those informed by existing theories.

One further type of coding that the researcher has chosen to use is ‘in vivo’ coding, where codes are constructed from small snippets of a participant’s original language. ‘In vivo’ is a term originating from Latin, meaning ‘within the living’ and the technique is used in qualitative research, most often within grounded theory (Urquhart, 2013). In vivo codes can help ensure participants perspectives and expressions are accurately represented in the analysis. It was employed here when the researcher particularly wanted to recall the words and emotion expressed by the participant, for example, “*When we are in the office, it’s an absolute car crash!*” (P19: B), used emphatically to describe issues with hybrid technology at T2. Data excerpts can also be coded with many different codes as the researcher interprets several meanings for the same piece of data; Figure 16 provides an example of this, showing

e.g., codes ‘compassionate examples’ and ‘cultural change needed’ assigned to secondary data.

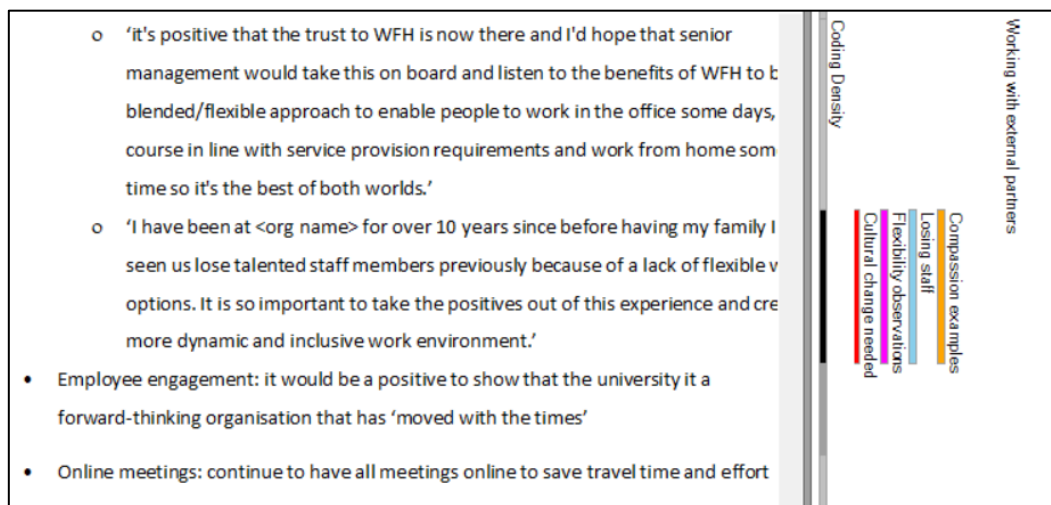


Figure 16 - Example of codes representing multiple analytic ideas.

Having coded the dataset, the next step in the reflexive TA process is to cluster together potentially connected codes into ‘candidate’ themes to explore initial meaning patterns. This technique moves the researcher away from exploring meaning within a single data item and towards an exploration of meaning *across* the dataset. Generally, if a candidate theme did not have patterns of meaning in each data collection period, it was discounted, however, one notable exception to this is the theme ‘Mandatory DCP Adoption in a time of crisis: a force for change’. This is because, by T3, participants had stopped naturally referring to how adoption had occurred, therefore patterns of meaning existed across T1 and T2 only. However, the patterns of meaning at T1 and T2 were both strong and relevant to the analysis, e.g., participants reported being forced to adopt the technology at T1, yet, by T2, when they might have discontinued usage, all participants all chose to continue its usage (the reasons for this are explained later). Even within a quantitative study, it is not always necessary to measure every construct across the same time periods, because some naturally apply at the

beginning of the study and then less so as the study progresses (Bhattacharjee and Premkumar, 2004).

The core tenets for theme creation are that each theme (fewer, richer themes are preferred) must be built around a *pattern* of meaning or *central argument/idea*, whilst illustrating richness and diversity in the manifestation of that argument or idea (Braun and Clarke, 2022). Critically, although themes do not have to address the research questions, they must provide the reader with evidence for the researchers answers to the research questions.

During theme development, researchers are advised to create a *thematic map*, which is a visual mapping technique, intended to demonstrate how the researcher “makes sense of what is going on” (Braun and Clarke, 2022: 197). Thematic maps, like theme generation and development, are part of a recursive process as the researcher moves back and forth between the data and the analysis. [Appendix 1](#) illustrates the relationship between NVivo codes and two of the final themes for the study, while Figure 19 shows the final thematic map, at the start of the [Results chapter](#).

Prior to that, Figure 17 provides an illustrative summary of how the researcher approached the development of the theme ‘Collaboration practices: on with the old, in with the new’ from interview questions through to the final theme while [Appendix 2](#) provides additional examples of how participants comments were abstracted to higher level concepts.

Whilst Figure 17 charts the significant patterns observed by the researcher, it is almost impossible to do justice to the number of hours that have gone into the development of the themes in a simple diagram. However, [Chapter 4 – Findings](#) presents both results and evidence for each of the final four themes, which it is believed fully support the analytic story presented by the researcher. Furthermore, the researcher has heeded advice offered by

Saldaña (2002), regarding the presentation of results, which “should be complex without being complicated” (Saldaña, 2002: 15).

Theme Development - Collaboration Practices: on with the old, in with the new

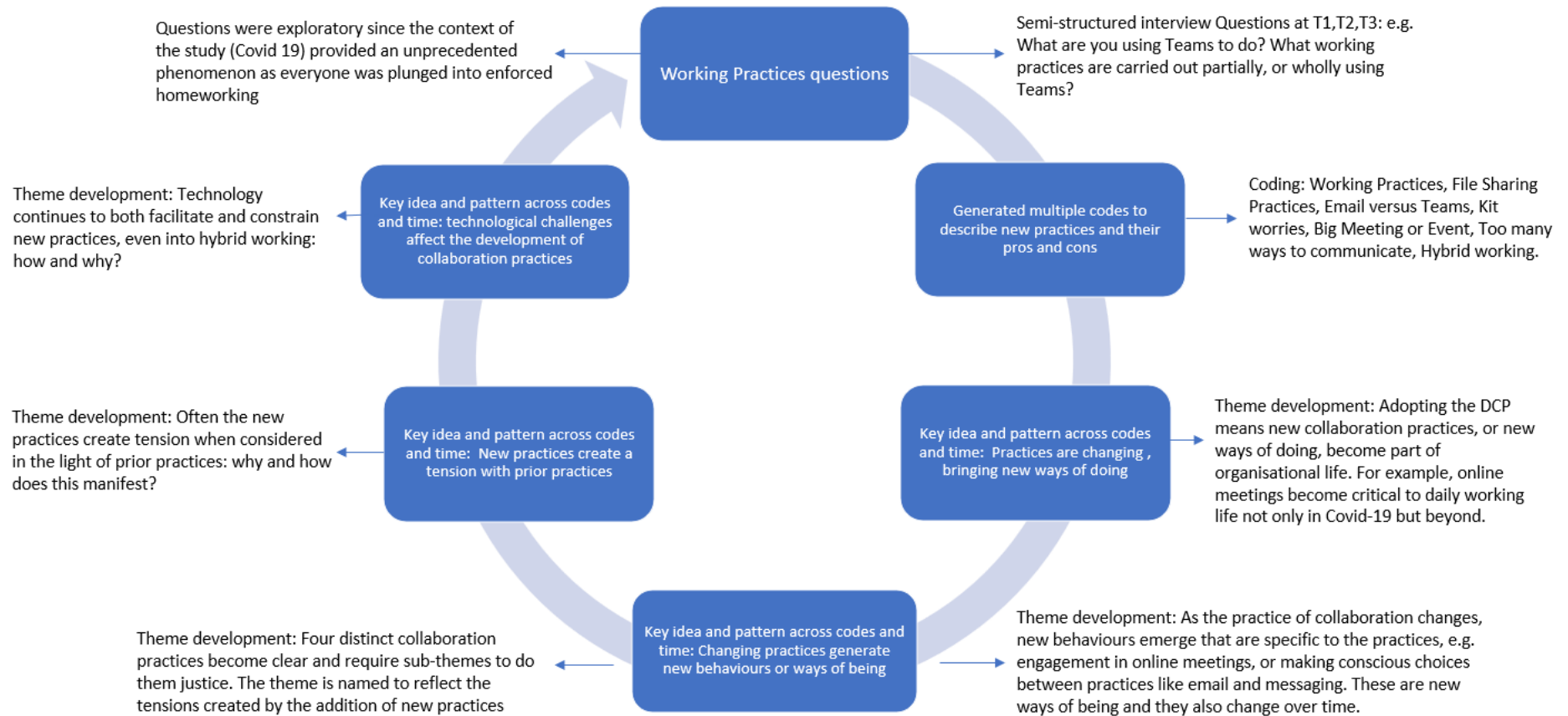


Figure 17 - Example Theme Development

3.10 Methodological Rigour

Walsham (2006) offers advice for interpretive researchers that covers the full spectrum of the research process. Researchers have also argued that the rise of interpretive approaches in social science necessitate alternative criteria for justifying knowledge, as traditional criteria from the positivistic research tradition, such as *validity* and *reliability*, are rejected as inappropriate (Giorgi, 1994, cited in Sandberg, 2005) on the grounds they would mix theoretical and methodological principles from different philosophies of science. Sandberg (2005) suggests additional strategies, such as communicative and pragmatic validity, while Lincoln and Guba (1985) introduced *credibility*, *transferability*, *dependability*, and *confirmability* as more suitable for ensuring trustworthiness in qualitative studies.

In this study, the researcher applies guidance drawn from Lincoln and Guba's (1985) criteria, together with that offered by Walsham (2006) to ensure methodological rigour in all stages of the research process. Table 8 provides a summary of how this methodological rigour is assured.

Table 8. Interpretive and Qualitative Research Guidelines as applied to this Study

Research Topic	Advice/Author	How advice was applied/adapted to this study
Carrying out fieldwork: gaining and maintaining access to participants.	The researcher should be sensitive to participants time pressures e.g. not overstaying one's welcome in interviews. Noted as especially relevant in contemporary, competitive organisations (Walsham, 2006).	Offered shorter interviews, particularly for higher grades (1 hour to 1 hour 15 minutes) and kept strictly to time. Tried to finish a few minutes early, since many participants had back-to-back online meetings. Participants sent an e-form ahead of interviews to collect demographics which took approximately 15 minutes to complete. Participants completed this in their own time, making better use of the interview whilst subtly extending the overall time participants gave to the research.
Carrying out fieldwork: providing feedback to organisations.	The researcher should provide feedback to the organisation, in the form of a report or workshop, if asked to do so (Walsham, 2006).	Management summary reports of the researcher's analysis were provided to both organisations after the first year of the study.
Carrying out fieldwork: advantages and disadvantages of tape-recording interviews.	Tape-recording does not capture the tacit, crucial, non-verbal elements of an interview (Walsham, 2006).	Whilst tape recording does not capture nonverbal elements, video recording offers this advantage. The researcher noted crucial nonverbal clues against transcripts, by referring to the recording post-interview. Recording allowed the researcher to focus on what the participant said rather than trying to take notes whilst listening. Automated transcriptions, available from the DCP, make the researchers job easier.
Carrying out fieldwork: collecting field data.	Interviews should be supplemented by other forms of field data in an interpretive study: moreover, interpretive does not equal qualitative. Quantitative data from surveys or elsewhere are 'perfectly valid' inputs (Walsham, 2006).	Interview data was supplemented by published organisational survey results and organisational communications. The researcher designed an e-form (Appendix 3) to glean additional information from participants.
Theory and data analysis: choosing a theory.	The choice of theory is essentially subjective, so the researcher should choose a theory which they feel is insightful to them. However, read widely (Walsham, 2006).	The researcher read widely, demonstrated by the extensive use of literature in the dissertation. Liminal innovation resonated and was felt to be apt, especially the description of 'existential tension' in displaced practices, which the researcher subsequently applied (Chapter 5 – Discussion).
Theory and data analysis: choosing a theory	Theoretical grounding may come from more than one body of literature (Walsham, 2006).	The researcher combined aspects of different literature to synthesise the theoretical grounding for the study.

Research Topic	Advice/Author	How advice was applied/adapted to this study
Constructing and justifying a contribution: justifying your methodological approach	Researchers are advised to take note of principles offered by Klein and Myers, 1999, notably: Researchers should demonstrate critical reflection on the social/historical background of the study and their role in it, demonstrate multiple interpretations of the participants. show how findings contradict earlier theory and relate findings to theory.	The researcher is careful to situate the study in its historical context, and quotes other literature conducted in the same context. Different interpretations of participants views are offered, e.g. by referring to participants age and job grade where it is considered relevant. Chapter 5 relates data findings to prior theory, clearly pointing out where findings support, contradict, or offer new insight.
Constructing and justifying a contribution: justifying your methodological approach	Researchers are advised not to confuse 'process with outcome': it is insufficient to claim principles have been followed, if the results are not interesting. Hence the researcher must achieve both. Use plenty of quotes from respondents to make the point vividly. but do not make the point 'do the work'.	The researcher has tried to present a coherent and interesting story for the reader. Participant quotes are varied and plentiful and are always preceded by the point being made by the researcher.
Ethical issues and tensions: confidentiality and anonymity	Should the organisations be identified by the researcher? Walsham points out that organisations are very sensitive about their external image.	The basis on which this research was agreed to was anonymity, where the issue of external image was a consideration for at least one of the organisations involved. The researcher has therefore taken care to anonymise names, references to job titles and any other idiosyncratic data that might inadvertently identify them
Ethical issues and tensions: working with the organisation	Hand in hand with the prior point is the moral issue of 'truthful' versus 'expedient' reporting. The interpretive researcher may uncover issues and be unsure whether to give 'bad news' to an organisation, Walsham advises he does not show all to sponsoring organisations, preferring to maintain academic integrity to write critically. He suggests that participants would disagree with his interpretations, and may feel hurt by critical comments, no matter how carefully he writes to avoid giving unnecessary pain.	This issue has been faced: while some participants were more guarded in their discussions, others gave 'brutally' honest and critical opinions that were somewhat unflattering to their organisation. Mindful firstly, not to identify participants, the researcher has erred on the side of truthful, rather than expedient, reporting. This may result in one or two participants, should they read the work, feeling that the interpretation is too critical. Sensitive to this and not wishing to betray trust, the researcher has written carefully, as per Walsham's advice, whilst still conveying the 'gist' of what was said.

Research Topic	Advice/Author	How advice was applied/adapted to this study
Credibility: comparable with internal validity (Lincoln and Guba, 1985).	Addresses ‘fit’ between participants’ views and the researcher’s representation. Credibility may be demonstrated through strategies such as prolonged engagement with participants and peer debriefing (Schwandt, 2001, cited in Tobin and Begley, 2004).	Research duration is four years (see section 3.7) contributing positively to research credibility. Peer debriefing and dissemination of the research sought four times a year via doctoral programme workshops. External feedback from academics received at conferences in March 2021 and April 2022, when papers were presented (Appendix 5) (Appendix 6).
Transferability: comparable with external validity (Lincoln and Guba, 1985)	Refers to the generalisability of inquiry, which is different in qualitative inquiry, as no single correct or ‘true’ interpretation (Tobin and Begley, 2004). While qualitative research cannot be generalised beyond a case-to-case setting, rich descriptions can make it possible to transfer the research to other settings (Lincoln and Guba, 1985).	Rich descriptions are provided, to allow readers to judge transferability to another setting, for themselves (Lincoln and Guba, 1985).
Dependability: comparable with reliability (Lincoln and Guba, 1985)	Achieved through auditing (Tobin and Begley, 2004). Memos recording research choices help ensure internal reliability/consistency (Saunders et al, 2019)	Memos are created inside NVivo to record data observations. Examination of sample data transcripts (Appendix 10) and reflexive journal entries (see section 7.2) make the research process traceable, contributing to dependability.
Confirmability: comparable with objectivity or neutrality (Lincoln and Guba, 1985)	“Establish that data and interpretations of the findings are not figments of the inquirer’s imagination but are clearly derived from the data” (Tobin and Begley, 2004: 392).	Participant quotations in Chapter 4 support data findings and reflect lived experiences. Examination of the audit trail provided demonstrate how conclusions and interpretations have been reached, establishing confirmability

3.11 Chapter Summary

This chapter detailed the research design, and methods used to achieve the study's aim and address the research questions from [Chapter 1](#). It covered the research strategy and design including the chosen epistemology, methods, sampling, duration, and data analysis, with explanations for each choice. The alternative approaches considered by the researcher were introduced and briefly discussed. Braun and Clarke's 2022 approach to reflexive thematic analysis was explained, with a worked example included. The chapter also demonstrated the study's overall methodological rigor. [Chapter 4 - Research Findings](#) follows and presents the findings from this study according to the techniques advocated for demonstrating change in longitudinal studies and thematic analysis, as explained in this chapter.

4.0 Research Findings

4.1 Chapter Introduction

This chapter presents the findings from the study. The structure for this chapter is illustrated in Figure 18, which shows that, for each theme identified during data analysis, findings are organised within each of three data collection periods: Time Period one (T1), two (T2) or three (T3). Participants' quotes are anonymised and referred to by number, followed by 'A' (Case A = public organisation) or 'B' (Case B = private organisation). One participant quote per case per point was typically selected, but following Braun and Clarke (2022), each point was supported by multiple participants unless stated otherwise. At the end of each theme, a comparative summary of the cases is provided (Yin, 2018) and a longitudinal summary of findings for each case across all three data collection periods. This through-line allows the reader to form a clear picture of how change occurred over time, an important feature of a longitudinal study (Saldaña, 2002).

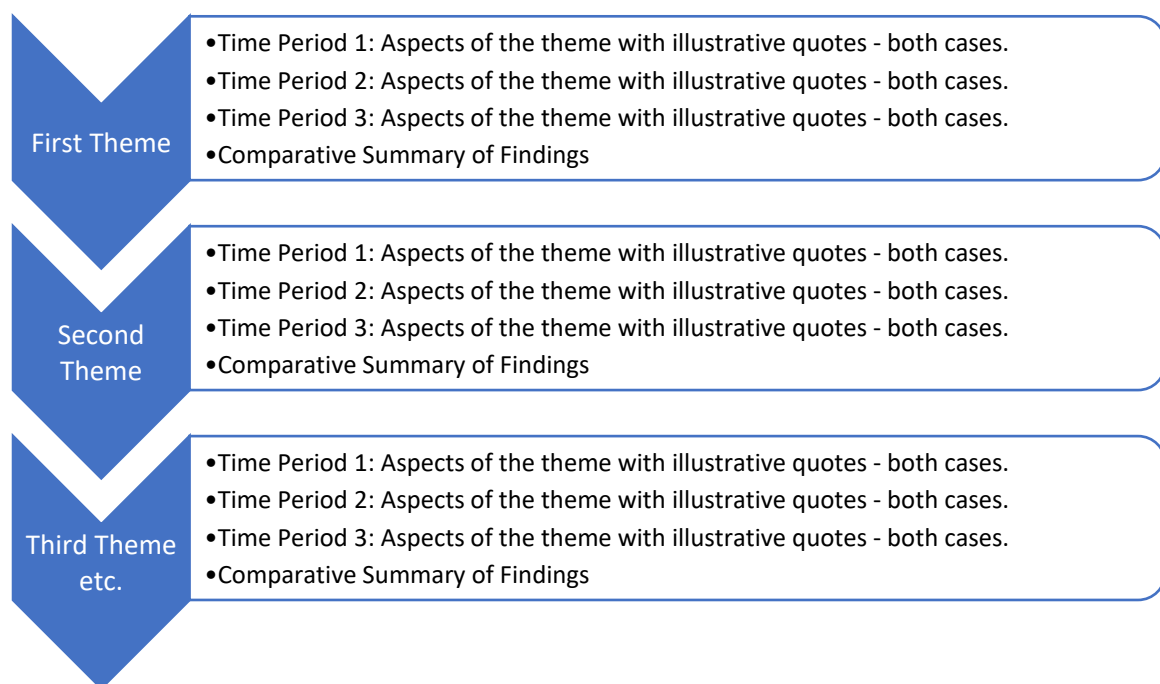


Figure 18 - Structure of the Study Findings presented in Chapter 4

4.2 Thematic Map of empirical findings

Four overarching themes emerged from the data analysis and are shown in a thematic map, embedded here in the research storyline (Figure 19). Thematic maps are a visual mapping technique, that demonstrates how the researcher “makes sense of what is going on” (Braun and Clarke, 2022: 197). Findings for each theme and in the case of Collaboration Practices, sub theme, are then presented in turn.

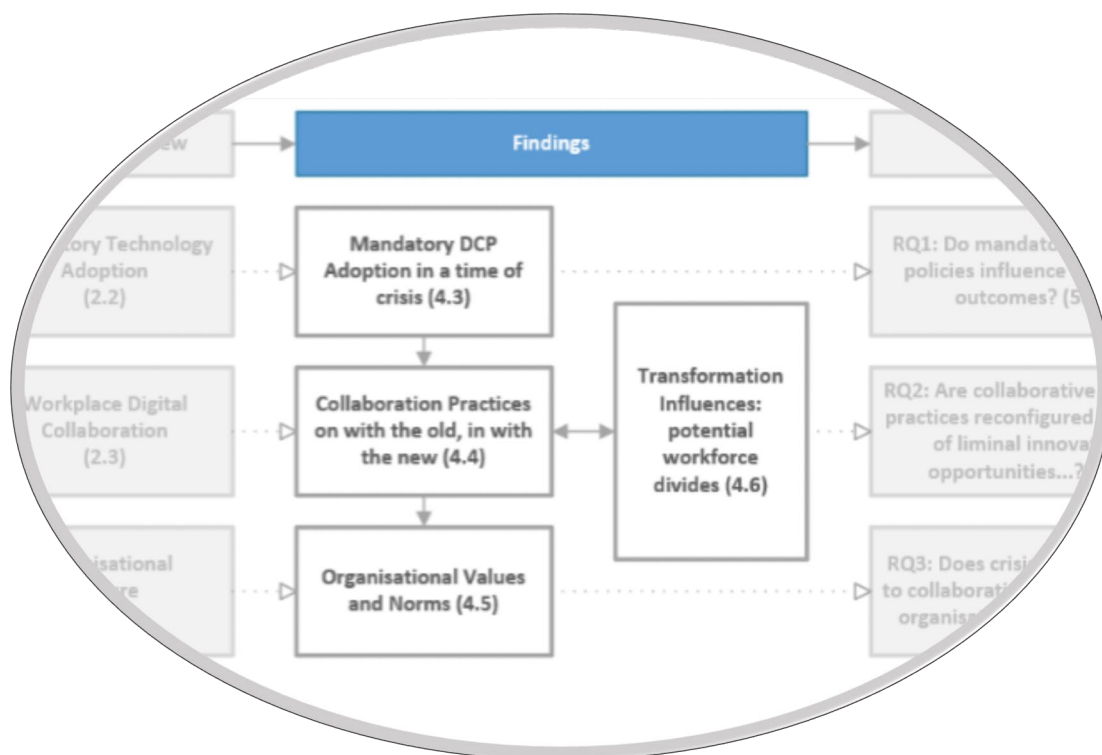


Figure 19 - Thematic map of empirical findings from both cases.

4.3 Mandatory DCP adoption in a time of crisis: a force for change

This theme illustrates how participants felt they had been forced to adopt the DCP, as result of enforced homeworking due to lockdowns, yet also felt that being forced had acted as a positive force for change. A desire to work more flexibly required them to continue using the DCP, but between T1 and T2, it had also become their modus operandi for daily

collaboration with colleagues. By T3, participants had stopped naturally referring to how adoption had occurred, therefore patterns of meaning existed across T1 and T2 only.

T1 (May-Aug 2020)

Challenges of rapid adoption

At the onset of the UK's first lockdown on March 23, 2020, Case A's IT department released an all-company software update introducing Microsoft Teams, catching many by surprise: *"I don't think I was even conscious of Teams before the lockdown"* (P5: A). Half of the participants from Case A were already familiar with Teams from a limited evaluation project¹. Meanwhile, at Case B, Teams was unknown beyond the IT team, who had been evaluating the platform: *"We'd never heard of it before, everyone had heard of Skype and Zoom"* (P22: B); *"Most of our formal meeting rooms are set up for Skype with speakers etc, as we often had to video call with Germany or Bristol"* (P17: B). However, issues were experienced when trying to use Skype in lockdown, rather than in purposed meeting rooms: *"Traditionally we'd turn to Skype...but people found it a little bit weird and glitchy, and it wasn't serving our purposes"* (P22: B), which in turn resulted in individual adoption of 'shadow IT' or non-sanctioned products: *"People were adopting products like Google Hangouts and Zoom"* (P21: B). Therefore, Case B's IT Team *"decided to flip very quickly [to Teams] in week 2 of lockdown... the crisis forced us to do our migration in 2 weeks"* (P20: B).

Thus, while Case A participants were given access to Teams on entering lockdown in March 2020, the majority of 14 Case B participants entered lockdown with access to alternative

¹ The evaluation project at Case A was limited to not more than 10% of the workforce of approximately 2700. 139 Microsoft teams/workspaces had been created, whose membership totalled 350 users. Some of these users were members of more than one team so it was not 350 people precisely.

videoconferencing products such as Skype for Business. Finding the sanctioned organisational product difficult to use, participants then resorted to non-sanctioned products, such as Google Hangouts and Zoom, due to the critical need to conduct video calls in lockdown circumstances. Keen to avoid the rise of ‘shadow IT’, Case B’s IT team moved quickly to roll out their sanctioned product, Microsoft Teams, which all participants were given access to in April 2020. Thus, although Case A adopted Teams approximately three weeks before Case B did, both organisations had to navigate the initial shock of adopting videoconferencing technology in enforced lockdown conditions, facing unique challenges in transitioning their workforces to this new mode of operation. Furthermore, irrespective of their slightly delayed start time with Microsoft Teams, by the time Case B participants were interviewed for the first time in May 2020, they were all using Teams so all reported results reflect their experience with it and are therefore directly comparable to Case A’s experiences. For example, both organisations were forced to adapt quickly to Microsoft Teams, as everyone tried to learn the basics of setting up and joining meetings and managing camera and microphone. In addition, as a result of all participants suddenly finding themselves at home without colleagues, a similar pattern emerged whereby they sought help from family and friends, as well as technical colleagues. Figure 20 presents the results for both organisations, since there were no noticeable difference between the two cases.

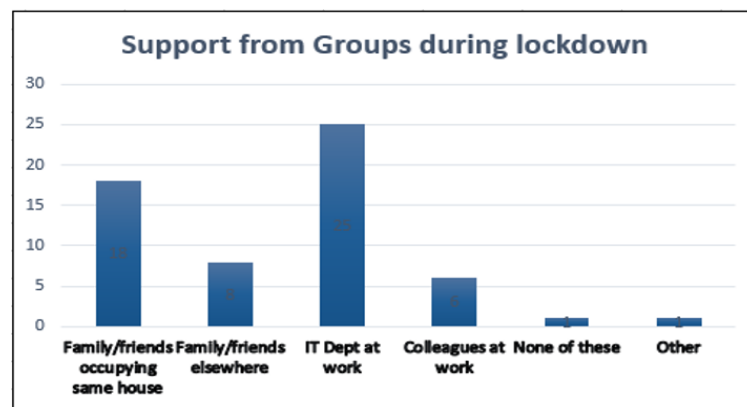


Figure 20 - Where participants sought help form in early lockdown

However, differences were observed between Case A and Case B in terms of their access to physical resources. Figure 20 illustrates that some Case A participants did not have access to a work supplied laptop, forcing them to make do with alternative solutions: *“I’m using my own laptop, and I remote into my PC at work but there’s no microphone on the work PC, so I have to use my phone, propped up on my laptop” (P12: B).*

Case/No.	Grade	Internet Access	Lockdown Kit
A1	Higher	Excellent	Work Laptop/Computer
A2	Higher	Good	Work Laptop/Computer
A3	Higher	Excellent	Work Laptop/Computer
A4	Higher	Excellent	Work Laptop/Computer
A5	Higher	Fair	Work Laptop/Computer
A6	Middle	Good	Work Laptop/Computer
A7	Middle	Excellent	Own Laptop/Computer
A8	Middle	Good	Own Laptop/Computer
A9	Middle	Excellent	Work Laptop/Computer
A10	Middle	Good	Work and Own Laptop
A11	Lower	Good	Own iPad and phone
A12	Lower	Excellent	Own Laptop/Computer
A13	Lower	Good	Work Laptop/Computer
A14	Lower	Good	Work iPad and personal phone

Figure 21 - Case A Participants access to resources at T1.

Case/No.	Grade	Internet Access	Lockdown Kit
B1	Higher	Excellent	Work Laptop/Computer
B2	Higher	Good	Work Laptop/Computer
B3	Higher	Excellent	Work Laptop/Computer
B4	Higher	Excellent	Work Laptop/Computer
B5	Higher	Excellent	Work Laptop/Computer
B6	Higher	Excellent	Work Laptop/Computer
B7	Middle	Good	Work Laptop/Computer
B8	Middle	Excellent	Work Laptop/Computer
B9	Middle	Good	Work Laptop/Computer
B10	Middle	Excellent	Work Laptop/Computer
B11	Middle	Excellent	Work Laptop/Computer
B12	Lower	Excellent	Work Laptop/Computer
B13	Lower	Excellent	Work Laptop/Computer
B14	Lower	Excellent	Work Laptop/Computer

Figure 22 - Case A Participants access to resources at T1.

At Case B, participants were better equipped in the sense that all participants had a work supplied laptop (Figure 21), however, since many participants were involved in editorial work, necessitating two large screens in their office environment, they also struggled when

forced to suddenly work from home with just one small screen: *“People have just one laptop screen, we don’t have our computers at home...so we’re struggling to keep everything [applications] open (P22: B).*

Similar issues were reported by both organisations among younger and lower-graded employees who lacked adequate space to work at home. A Case A higher grade shared: *“We’ve got pictures of staff...showing they’re working on their bed, literally leaning on a shoe box, and they’ve got a one-bedroom flat and two children” (P1: A),* while a Case B higher grade explained: *“There are young people...they are perched on a stool in the corner of a kitchen because that is the only space other than their bed” (P17: B).* Although both organisations reported similar logistical hurdles of setting up home offices, they differed in their initial approach to the functionality and training for Teams.

Differing Approaches to Teams Functionality and Training

Each organisation took a different approach to the functionalities that were initially made available. Case A opted for a limited rollout initially, offering full Teams² functionality upon request and providing restricted training, which led to some dissatisfaction among higher grades: *“It’s not my job to train people, that’s what we have the IT department for, you know when we are under the cosh, what are the service departments for?” (P3: A).* In contrast, Case B made the full Teams functionality available and provided more comprehensive support from the start, but the rapid rollout still wasn’t ideal: *“In an ideal world, we would have gone out every time a team was created and trained them, which would have avoided them falling at the first hurdle” (P21: B).* Although Case B made more functionality available

² A ‘full’ team comprises a Microsoft sharepoint server; each ‘channel’ created within the team is a folder in the sharepoint server. Uploaded documents can be edited by multiple people in real time and discussions can take place in each channel.

to their employees, which might have been expected to result in participants extended use of Teams features compared to Case A, there were more pressing demands on their time.

Notably, the closure of retail outlets in lockdown resulted in additional business for Case B:

“We sell something around 1/2 million [magazine name] copies per week...people have been wanting things delivered straight to their home and not go to the supermarket and they had no WH Smiths...we had massive uptake in terms of subscriptions” (P22: B). While this was

welcome, the effort of trying to produce a physical magazine in enforced remote working conditions without adequate hardware impacted Case B’s opportunity to explore DCP

functionalities in any detail: *“There’s no time to explore or to ask for help or to have a meeting to discuss how to do this” (P22: B).* Therefore, having access to additional

functionality within Teams was lost on Case B participants, who primarily confined their

usage to videoconferencing, similar to Case A participants. [Section 4.4](#) of this chapter

outlines the reasons behind later differences in platform usage between the two organisations.

However, both agreed that they had no choice in the matter of Microsoft Teams; this was a mandatory adoption, necessitating a rapid adjustment across both organisations.

Forced Adoption and its Implications.

The enforced adoption of Teams due to the pandemic was a common experience across both organisations, with participants reflecting on the fact this was not a voluntary adoption:

“We’ve just gone bang, bang, bang...you will be going into a meeting that is online and you haven’t got a choice, you can’t opt out it” (P2: A); “This has been forced on people because of Coronavirus...the adoption of Teams would never have happened without lockdown,

never” (P15: B). In Case A, no resistance was reported by participants, *“There was no one who said I can’t do this and you’re going to have to deal with me in a different way” (P1: B)*

whilst in Case B, it was limited, *“I have one person who will not use Teams, he hasn’t got a mobile phone, and he refuses point-blank to talk on Teams” (P22: B).* At T1, two

participants, one older and one younger indicated they would have preferred to stop using the DCP but didn't have a choice³.

Financial security acted as a motivator to adopt Teams for some participants: *"We are moving into a period of austerity...there will be cuts and there is a fear if you can't keep up you may be the one to go"* (P10: A). This view reflects a broader concern at Case A, regarding a more permanent move to online teaching; academics at this time were required to move quickly and without a lot of initial support to teaching online. However, fears about employment security proved to be unfounded; although Case A paused staff recruitment until they knew student numbers in October 2020, they did not furlough anyone or make redundancies in response to the onset of the pandemic. While similar concerns about employment security also galvanised some Case B participants: *"I think people worried about employment security and actually it's made people just get on with it"* (P21: B), their fears may have arisen because at Case B, redundancies were in the process of being made, although they may have been coincidental to the pandemic. However, all staff that were not furloughed during lockdown were asked to accept a 10% pay reduction for three months which was later repaid to everyone by the end of 2020. Although most participants did not openly express such fears, all participants wanted and expected to continue their daily work. Microsoft Teams provides the means to collaborate with colleagues without undue cost to the home-based employee; as long as an Internet connection is available in the home environment, which all participants had (Figures 21 and 22), Teams offers a low cost option for remote workers to collaborate in real time, allowing participants to communicate on a regular basis, which is discussed in more detail in sections [4.4 Collaboration Practices](#).

³ All 28 participants were sent an e-form ([Appendix 3](#)) ahead of the first interview round; 3 had selected 'Would like to stop using it but don't have a choice'. Reasons were explored in follow-up interviews.

Nonetheless, the initial reaction to the DCP was mixed: *“Some people have taken to all of this like a duck to water...others have really struggled* (P2: A). However, being forced to adopt the DCP had some positive outcomes at the individual and organisational levels.

Higher grades in Case B alluded to broader organisational shifts as a result of forced adoption: *“Would it have been the same reception if we had not been in lockdown? No, because being thrown in has meant that we have all come a long way, some further than others, whose lives will be the better for it.”* (P23: B). In Case A, higher grades offered similar reflections: *“As a consequence of the push, people developed the confidence to embrace technology in a way that we could not have driven in two, in three years because of the resistance of people”* (P5: A). Being forced was perceived as an effective strategy: *“If you have no choice, you crack on and do it and actually it’s been the biggest motivator EVER”* (P4: B). Participants noted that the crisis-induced adoption meant everyone was learning at the same time: *“Everybody’s learning at the same time...we’ve got older people, we’ve got younger people, and the younger people are really quite hot on their phones, but Teams is new for everybody, we’re all learning together”* (P8: A); *“There was a common understanding across all age groups and demographics and functions”* (P23: B). The mass adoption not only increased the utility of the DCP: *“You needed a mass adoption across the organisation for it to be useful, the main influence for me was when everyone started using it and it became useful”* (P7: A) but also highlighted its potential to reshape future work environments permanently: *“This is forever...“I am convinced that returning to the old normal would be a real mistake”* (P5: A).

T2 (Sept-Nov 2021)

Hybrid Work Emerges in both Organisations.

By T2, it was possible to return to the office but, largely due to social distancing requirements because of the ongoing pandemic, many participants continued to work from home. The DCP was necessary for an emerging working format that accommodated both in-office and remote participants, or hybrid working; participants in both cases affirmed their intention to continue using Teams because it was the facilitator for a hybrid work mode: *“It has become the norm now, but we will be going back in next month, but only two days, so I will still be using it three days and I imagine when I’m in the office, there will be people who are not [back in], so we will use Teams as well then”* (P16: B) and *“It is obvious people are not going to be in the office five days a week anymore...Teams has to be a part of that...we need a collaborative software”* (P7: A). The commitment to continue using the DCP was unanimous, seen as indispensable for future operations: *“Teams is now part of our day-to-day life”* (P12: A); *“I cannot imagine working without it”* (P9: A); *“It has become quite integral to our day to day”* (P16: B); *“There will always now be a need for virtual communication”* (P15: B). The broad acceptance and integration into daily work as a result of enforced adoption led participants to reflect on resistance to change.

Overcoming Resistance Through Enforced Change

While the adoption of DCP had initially been enforced, *“The fact was, we all got propelled into it, we had to get on with it”* (P2: A), participants at T2 acknowledged not only the necessity of adoption but also benefits: *“Having to get on with it helped, people felt more confident about tackling things because they know they can do it”* (P8: A). This, despite the challenging circumstances of adoption during a global life-threatening pandemic: *“Everyone has their own stuff they are dealing with outside work, especially during the last 18*

months...external factors can influence your behaviour at work and how you get on with new experiences like Teams” (P9: A). In normal circumstances, resistance was attributed to factors such as lack of time, lack of confidence and fear of the unknown: “People feel they haven’t got the time to invest...so people would need to really see the benefits...also fear of the unknown, not feeling confident, not knowing what they’re doing” (P8: A).

Yet, others pointed to a quandary; it was not possible to see what the benefits were until the DCP was experienced first-hand: *“It’s that whole concept of when you just don’t understand what you’ve got until you have it” (P21: B). The experience suggested that, offered a choice, many might resist: “If it was just a choice to move, then I don’t think people would take it” (P12: A). Based on their experience with the DCP, mandatory adoption couldn’t be discounted as a viable future approach: “I don’t feel like that’s necessarily a bad thing... because some people would be worried about changes but if it’s, well you have to use this now, then you don’t have any other choice, do you?” (P12: A).*

Mandatory training, with options to suit users’ busy schedules, would need to accompany such a programme: *“If there was training provided and everybody had to do it and it was like an hour and a couple of different options for times and days when you could attend, people would do it” (P12: A). Implementing a cut-off date for old systems could further facilitate the transition: “On so and so date this isn’t going to be available, and this is going to be used instead now, I think it will get things done” (P12: A).*

Comparative Summary of Mandatory Adoption - Case A and Case B

In both Case A and Case B, participants initially felt compelled to adopt the DCP due to the sudden shift to remote work during the pandemic. Case A introduced Microsoft Teams at the start of the lockdown, while Case B followed a few weeks later after issues with other platforms led to a rapid transition.

Both cases faced difficulties, such as inadequate home office resources and varying levels of technical proficiency. Case B participants had better access to work-supplied laptops, but some struggled with just one small screen, given their usual in-office set ups of large screens. Case A rolled out limited Teams functionality with restricted training, leading to some dissatisfaction, whereas Case B offered full functionality but still faced gaps in support and training.

Despite these challenges, the enforced adoption eventually led to positive outcomes. Participants in both cases noted that the crisis-driven adoption accelerated digital skills development and organisational change, overcoming resistance that might have slowed progress otherwise. By the time hybrid working became the norm, Teams had become an essential part of daily operations in both organisations, with participants widely accepting its necessity for future work.

Reflecting on the experience, participants recognised that mandatory adoption, though initially challenging, helped build confidence and adaptability. They suggested that future enforced changes could be effective, especially with mandatory training and clear timelines for phasing out old systems. The shared experience of adapting to the DCP during the pandemic fostered a unified approach to digital collaboration in both Case A and Case B.

Table 9 offers a longitudinal view of findings across all data collection periods, for both cases, concluding the findings for Mandatory DCP Adoption in a time of crisis. All points presented are supported by participant quotations included in the narrative results.

Findings for the **Collaborative Messaging** theme follow Table 9.

Table 9. Mandatory DCP adoption in a time of crisis - Longitudinal View of Findings

Case / Time	T1 (May-August 2020) Enforced homeworking	T2 (Sept-Nov 2021) Homeworking/occasional office working
Mandatory DCP Adoption at Case A	<p>7 participants already had access to the DCP prior to T1; the other 7 adopted when it was licensed at the onset of enforced lockdown in March 2020. The IT team licensed employees for chat and video conferencing only with other features (referred to as ‘full’ Teams) available ‘on request’. Training was reserved for those who requested full Teams, but IT were criticised for this decision.</p> <p>Participants were united, feeling they had been forced to adopt the DCP, but limited resistance was observed, with some motivated by a desire to keep their jobs. Despite difficult feelings, having to adopt was perceived as a ‘change accelerator’. Whilst some features were instantly used, others required a mass of people to adopt to be useful.</p>	<p>At T2, some Case A participants had returned to their offices on a part-time basis, but all participants expressed their intention to continue using the DCP. The DCP was necessary for an emerging hybrid working format that accommodated both in-office and remote participants, but it had also become the modus operandi for daily working lives. Being forced meant people ‘had to get on with it’ and this led to mastery and increased self-confidence. Reflecting on technology adoption in more usual circumstances, participants observed it necessitated an investment of time in learning new ways of working that their work schedule did not easily accommodate, and they might be inclined to resist on that basis. An approach which gave less choice might help overcome resistance, providing sufficient training and support was available.</p>
Mandatory DCP Adoption at Case B	<p>12 of 14 participants did not have access to Teams at the onset of lockdown. Instead, Case B went into enforced homeworking using Skype for Business but experienced issues with it and use of ‘non sanctioned’ products such as Google Hangouts galvanised the IT team to roll out Teams quickly as a sanctioned alternative. IT licensed everyone for ‘full’ teams, resulting in a lot of Teams sites being created in a short space of time, but most people didn’t know how to use the application, so its use was limited to video conferencing. Participants felt being forced was a positive step for many people; everyone was learning at the same time, irrespective of age or any other demographic. However, some older colleagues failed to adapt and took retirement.</p>	<p>Some Case B participants had already returned to their offices on a part-time basis or were actively planning to do so. All participants in Case B expressed their intention to keep using the DCP, seeing it as necessary for the emerging hybrid working format that accommodated both in-office and remote participants. Moreover, it had become a necessity for daily communications. However, use of the DCP was still largely limited to video conferencing and even those who understood its full potential were unable to influence others to adopt more functionality for example, ‘chat’. Instead, participants with access to alternatives such as Slack, continued to use them in preference, resulting in somewhat of a standoff between what the IT team wanted and what users were prepared to do in practice.</p>

4.4 Collaboration Practices: on with the old, in with the new

This theme is deliberately named to reflect the fact that adopting the DCP required participants to adopt new digital collaboration practices *in addition* to their prior collaboration practices. Four practices or sub-themes represent all the ways in which knowledge workers collaborate to achieve their business objectives; *Collaborative meetings: face-to-face versus online versus hybrid*, *Collaborative messaging: email versus chat*, *Collaborative composition: file storage versus content creation* and *Leadership communications: interaction versus accessibility*. As new practices develop in which the technology is embedded, new behaviours emerge, and tensions often arise. These aspects are interrelated but still visible to the researcher. The theme explores how the four collaboration practices developed, demonstrating change over time.

Figure 22 and Figure 23 show a baseline for all participants in both cases. Participants were asked to list their collaboration preferences whether digital or non-digital, at T1 (May-August 2020). Whilst participants in Case A deem email to be their overall preference, Case B participants consider meeting in person (hereafter referred to as face-to-face) as their overall preference, closely followed by email. Email did not form part of the DCP's features, but its use was affected by 'chat' or instant messaging, a new collaboration practice offered by the DCP, and thus it is included.

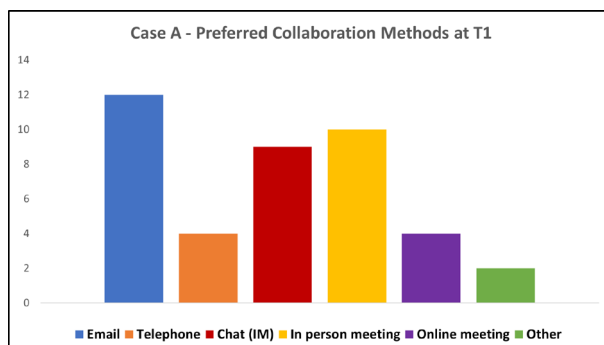


Figure 23 - Preferred Collaboration Practices at T1: Case A

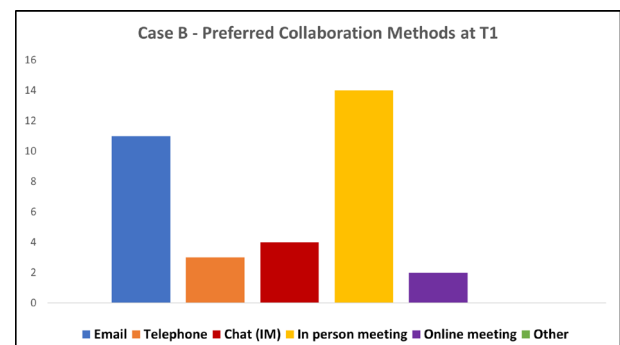


Figure 24 - Preferred Collaboration Practices at T1: Case B

4.4.1 Collaborative Meetings: face-to-face versus online versus hybrid

Collaborative Meetings: This practice examines the shift from face-to-face to virtual and hybrid meetings, exploring how the dynamics of meetings have changed and the implications for team interaction and productivity.

T1 (May-Aug 2020): Case Comparison

Counteracting digital overload.

At T1, with enforced homeworking, online meetings via the DCP's video conferencing feature became a daily practice for all ages and grades in both cases: *"I am on it [Teams] every day, it is generally meetings"* (P23: B). In the office *"some would have been over the desk chats, catch ups, some would have been a quick 5-minute chat (P23: B) but in lockdown these all became online meetings, together with "regular strategy meetings" (P23: B). Task allocation for lower grades also moved online: 'We have a call in our diaries every day for 3pm, to discuss workload" (P28: B); "There was a task list produced by a manager and allocated to us" (P14: A). Both organisations sought to mitigate the stresses of prolonged virtual meetings, social isolation, and a newly sedentary working day.*

Higher grades in both cases arranged for online activities such as quizzes, cookery and yoga classes and further addressed digital overload to protect employee wellbeing: *"We had a 7 to 7 emails ban...but then people were getting pings on their phones out of hours, and it was like well, how am I going to get this work life balance, I'm available all the time"* (P2: A). Yet, the pervasiveness of technology sometimes felt overwhelming: *"I've gone into Teams today and my Teams list has expanded and I'm thinking it's just too much"* (P8: A). On the other hand, when videoconferencing was temporarily abandoned in favour of emails, it resulted in serious consequences for someone with mental health issues *"I said...the emails are going to drive us mad, but [manager], who can't be fussed with tech, said no, no, no, so as the weeks*

on, there were these huge email chains and people were getting rude and snappy. I have been off sick from this job for three weeks with anxiety because of all the emails.” (P27: B). In fact, the transition to virtual communication was unexpectedly positive for many: *“It is not what I imagined.... you can have a real conversation with the person in front of you” (P17: B); “I love it, it’s amazing, it gives me goose bumps” (P9: A).* Older participants also found the technology transformative: *“I have to say almost from the very first time that I used it I have found it completely.....magical you know for running, for having meetings” (P5: A).* As participants adjusted to virtual meetings, new norms, and challenges regarding digital etiquette (netiquette) emerged.

Emerging Netiquette

Netiquette evolved in online meetings. *“When you get beyond a certain number of people and someone is presenting, a lot of people turn off their videos as they are in listening mode and that is OK.... but if there is only five of you, it is expected that you turn your video on” (P17: B).* Taking turns while speaking became a norm in online meetings due to the disruption caused by overlapping voices: *“Most people have understood and become patient with online communication” (P18: B).* Sometimes glitches were seen as user errors: *“I know some people have been irritated if someone’s mic wasn’t working” (P23: B).* Despite technical difficulties, in both cases, the DCP proved crucial for maintaining operational continuity in lockdown.

DCP impact on lockdown working practices

Participants in both cases lauded the DCP for supporting their work during unprecedented times: *“It has been invaluable” (P1: A), “It has been fantastic during these circumstances, for connecting and decision-making” (P24: B).* Despite grave initial concerns about productivity, *“Even when we were enabling everyone to work from home, we were thinking*

this is going to be a disaster” (P21: B), both organisations successfully maintained ‘business as usual’. Case A virtualised their A-Level Clearing services and Case B amazed themselves by producing printed magazines without ‘in person’ collaboration: “All our editorial teams are successfully working from home and putting out our magazines, we have not missed any press dates” (P21: B).

T2 (Sept-Nov 2021): Findings for Collaborative Meetings

Transitioning to Hybrid Meetings

By T2, the frequency of online meetings had normalised: *“Initially we filled the diary with one on ones every day as we felt unconnected...over time they lessened, and the pattern of formal meetings went back to a more normal weekly or two-weekly pace” (P17: B).* Hybrid meetings emerged across both cases, arising from the desire to include those now back in the office as well as those still working from home: *“I am still using Teams for meetings that have a wider membership across the University...those are hybrid as we are finding those colleagues that live further afield are tending to join remotely” (P4: A).* Some employees eagerly returned: *“There is one individual in my team, significantly younger and living at home with his parents...he was champing at the bit to get back in the office” (P18: B).* While the return to office and normalisation of meeting frequencies marked significant steps toward traditional work routines, the shift to hybrid meetings introduced new challenges related to technology and physical workspace configurations.

Hybrid formats introduced new challenges in both cases: *“My headphones aren’t noise-cancelling...as more of us are coming back it’s getting problematic and distracting” (P8: A).* Yet, others pointed out prior realities of office life: *“People were always [previously] having meetings all around you...you don’t really notice, you’re used to a hum in the office, and you tune out” (P1: A).* Higher grades expressed mixed reviews concerning the effectiveness of

hybrid meetings using specialist technology: *“The first one went well, the second one less so... it was to do with the volumes of speech in certain parts of the room”* (P5: A), leading to scepticism about the format: *“Probably **a hybrid meeting is the worst of both worlds**... You can either have an effective face-to-face meeting where everyone is included and feels present, or you can have a fairly functional Teams meeting”* (P5: A). In contrast to Case B, Case A limited their investment in purpose-built hybrid meeting technology to particular rooms, whereas Case B had plans to re-equip all meeting rooms. However, at T2 Case B participants were also experiencing technological glitches: *“It’s quite weird having a half in/half out meeting...I have a meeting every day at 10am which is fine when we are all at home, when we are in the office **it’s an absolute car crash**.... you can’t even sit next to each other because then the whole thing goes bananas with echo etc”* (P19: B). Efforts to improve hybrid setups continued: *“We are going to put a big screen in a space where we have lots of stand-up meetings”* (P19: B), yet inclusivity for remote participants remained a concern: *“When the screen is switched off and people wander back to their desks continuing a conversation and the person at home misses out on those conversations”* (P19: B).

Inclusivity and Engagement in Hybrid Meetings

Higher grades emphasised the need for inclusivity in hybrid meetings: *“If there’s four of you in a meeting room and one person at home it’s very difficult for that person to get a share of voice”* (P15: B). Inclusive behaviours were identified as crucial: *“Historically we had dial in options but that was always a second-class option.... tech is a lot better now, but people will need to be more inclusive in future”* (P18: B). One way in which technology was now better was the integration of real time captions for speech: *“I work with someone who is deaf, and the captions have really helped”* (P1: A): *‘I feel like this year there’s been a huge growth in technology with Zoom and Teams having live captioning...for that to become such a normal, widespread thing has been a really cool experience’* (anon: Disability Awareness group).

Engagement in hybrid meetings varied, with some reflecting honestly on their own practice: *“When I have been one of the people who wasn’t in the room, I found that I engaged less”* (P5: A). Some participants were observed visibly multitasking: *“Even in certain meetings you can see people...sending emails”* (P15: B), reflecting a further shift in meeting norms which wasn’t always welcome: *“I think that’s quite a shocking thing and even if they’re only doing it when a point doesn’t directly relate to them, I think that can be slightly rude”* (P15: B). However, multitasking was considered entirely necessary by some: *“The reason why I can keep on top of my emails and my team and be so responsive is that even though I am in [online] meetings I can still respond to people”* (P2: A). As hybrid meetings evolved to include more digital tools, the transition from traditional engagement methods to virtual adaptations introduced new challenges and opportunities.

Replacing prior practices with virtual practices

New virtual features were introduced to mimic the face-to-face practices of contributing and giving feedback, for example, reactions such as emojis (pictograms used in text messages to convey emotional cues), raising a hand to speak, virtual ‘clapping’, liking a contribution. Some participants found these to be initially awkward *“I like reactions which I use quite a lot...the hand-raising thing is a bit weird as people don’t know how to put their hand down again”* (P18: B); *“I still haven’t found one for SIGH.... I’ve used head against a brick wall though”* (P8: A).

As Teams functionality improved, the role of traditional technologies, like the office telephone, diminished. By T2, participants in both cases found virtual meetings superior to traditional methods like office telephones: *“Video conferencing is a middle ground between a phone call and face to face...you can read reactions to a certain extent”* (P17: B); *“It feels different giving someone a team’s call as it did pre pandemic phoning them over Skype or an*

actual phone” (P28: B). Case B integrated their telephone network into the DCP, leading to significant cost savings: *“It has saved us a lot of money as basically we have cut in half the number of people who have a landline now. That is end of life technology... increasingly a thing of the past”* (P21: B). Meanwhile, in Case A, some got rid of traditional handsets: *“We don’t have phones anymore. We got rid of them during the summer”* (P9: A); *“I use it as a telephone and call people instead of typing an email. Not everyone does that and can be quite surprised when I do that, but it does not stop me”* (P4: A). Amusingly, one participant hardly recognised the sound of a ringing phone: *“I was in a Teams meeting and the caller said, what’s that sound, is that your phone? Sure enough, my phone was ringing, and I didn’t even recognise it was my phone! That tickled me”* (P3: A).

Figure 25 and Figure 26 show preferred collaboration practices at T2, illustrating a growing preference for online meetings and chat but with email still popular for many.

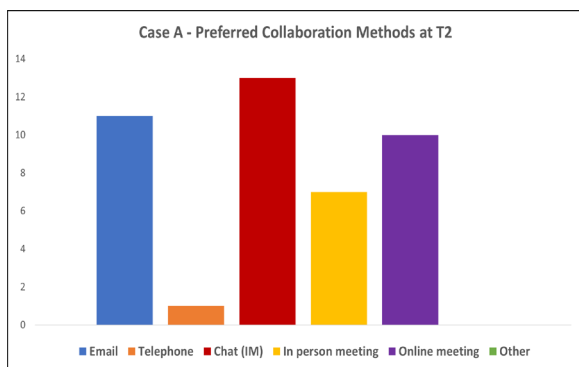


Figure 25 - Preferred Collaboration Practices at T2: Case A.

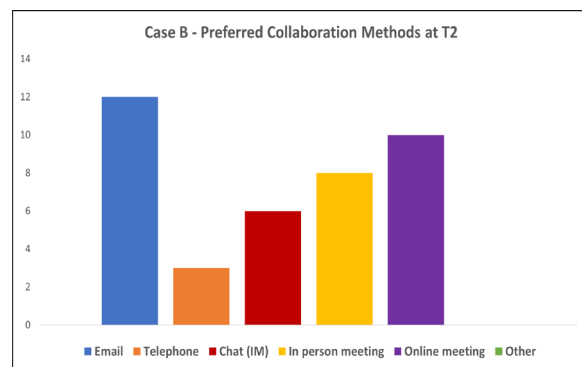


Figure 26 - Preferred Collaboration Practices at T2: Case B.

T3 (March-May): Findings for Collaborative Meetings

Continuing to Adapt to Hybrid Work Environments

At T3, participants in both cases generally spent one to three days per week in the office but continued to rely on hybrid meetings via the DCP: *“There’s lots of hybrid stuff happening”* (P13: A); *“We have a lot of meetings that I use it for, although we have a lot more meetings in person now...we are using quite a bit of hybrid”* (P5: A). For some larger meetings

requiring active discussion, Case A reverted to face-to-face: *“There was a meeting a few weeks ago...very little was said...so we need to do that face-to-face in future”* (P2: A). The shift to hybrid meetings led to new challenges, with noise becoming an issue in office environments: *“People get quite chatty in the office and people trying to have online meetings ask others to keep the noise down, but if you’re encouraging people into the office, I think the idea is that they’re talking”* (P26: B); *“It’s one of my irritations, when people conduct a meeting sitting at their desk.... it’s my view that if it’s an organised meeting, you should remove yourself”* (P8: A). This led to a new phenomenon; meetings rooms occupied by a solitary person conducting a hybrid meeting: *“I try to book a meeting room, which feels weird to sit on your own and talk on a laptop”* (P26: B). In Case B, the introduction of an all-company office day ([see section 4.5](#)) highlighted further challenges with noise and space: *“It is nearly impossible to find a quiet space...we have quite a few meeting rooms and booths and it is really hard to find a quiet space”* (P21: B), despite significant investment in more collaborative spaces. Differences in hybrid meeting technology also impacted the effectiveness of hybrid meetings across both cases.

Case A’s sporadic investment in hybrid technology led to frustrations: *“The hybrid tech is so appalling... I’ve said there’s no point, either you’re in the room or we’re doing it from home...it’s such a waste of time”* (P2: A). Yet, despite upgrading every meeting room, Case B experienced similar issues: *“The amount of meetings I’ve been in where people don’t know how to connect the screen...we can call a room so that the rooms speakers are used, people don’t know how to use that. There should be training. That wastes so much time”* (P26: B). Both cases grappled with how to conduct hybrid collaboration online, balancing technology and participant inclusion/engagement.

The hybrid meeting format continued to marginalise remote participants: *“Most of the voices that were heard were the ones in the room, the people who were dialling in were like second*

class contributors (P18: B), with larger hybrid meetings presenting even more of an challenge: “Hybrid meetings are fine when there is a relatively small number, but they get harder the bigger the group (P20: B); “I find that when you have a big group meeting face to face and people are joining online people do feel disenfranchised and do not contribute as much” (P20: B). As difficulties in ensuring equitable participation were highlighted, these issues underscored the complexities involved in organising online workshops where the need for effective facilitation and the use of digital collaboration tools became even more critical.

Challenges and Innovations in Virtual Meetings

Conducting an online workshop rather than a simple online meeting wasn't a straightforward choice for either organisation, despite the availability of digital solutions that offer virtual 'post-it notes' etc: *“I would say this is a workshop and we will get together...collaboration might happen online, but I don't think I would deliberately do it that way. We have used some of the available collaboration tools, but I have to really think about that being the way to do it” (P1: A).* Experiences varied significantly, with facilitation proving crucial: *“I think the person facilitating has a lot to manage and to oversee. They have to deliver the information, manage participation of the audience, ensuring everyone can contribute and has the opportunity, whether they want to record / transcribe it, managing questions. I've seen that done really well, and not so well” (P26: B).* This complexity in managing virtual workshops contrasts with the innovative manner in which Case B adapted online meetings for continuous, day-long communications, mimicking in-office interactions, creating 'open' meetings to facilitate open dialogue as if in the office: *“If we have a special issue and we need to chat all day, we have an open teams channel meeting with mic off until you want to ask a question, which really works as that is a conversation you would have in the office, and it avoids people doing things five different ways” (P22: B).* Similarly: *“There was a moment where we were waiting for our cover to be revealed on TV before we post our campaign on*

social media channels...that was an example of a two-hour block for a Teams meeting, with the TV on in the background just waiting for it to happen” (P23: B).

Comparative Summary of Collaborative Meetings – Case A and Case B

Both Case A and Case B transitioned from face-to-face to virtual meetings due to enforced homeworking, relying heavily on Teams videoconferencing. Participants in both organisations experienced fatigue due to constant online meetings, health anxiety, and social isolation. Both organisations took employee well-being seriously responding with the provision of various online events, contributing to a view amongst the majority of participants that videoconferencing played an essential role in alleviating feelings of isolation, maintaining social connections and providing emotional support during remote working. Individuals in both cases experienced similar challenges with the technical aspects of videoconferencing, even though Case B had some prior experience, albeit previously supported by technicians. The training provision for Teams was similarly limited in both organisations.

However, there were some differences between the two organisations; Case B later made significant investment in equipping all of their meeting rooms with specialist hybrid technology. In contrast, Case A made only modest initial investments in hybrid meeting room equipment. While both organisations offered users a degree of guidance on the use of the equipment, participants in each case regarded the provision as insufficient, highlighting a sustained concern about the provision of training for Teams users.

Both organisations emphasised the value of inclusivity but lacked awareness of the integral accessibility features within the DCP, thus inclusive meeting practices varied. Engagement and multitasking norms were similar. In both cases, higher grades were shocked by the norm

of turning off cameras and multitasking but found it necessary to manage workloads. A lack of perceived engagement in large online meetings led Case A to revert to face-to-face for some meetings while Case B maintained their preference for face-to-face across the study duration and therefore reverted as soon as practicable.

Space conflicts in hybrid working emerged differently: Case A did not have a company-wide in-office day policy ([see section 4.5](#)) and used empty meeting spaces for hybrid meetings in order to escape disturbances from hybrid meetings conducted at desks. Case B made significant investment in the redesign of their office space but still faced space conflicts due to their insistence on a specific in-office day policy for the whole organisation. Finally, both organisations experienced the displacement of office telephone networks as a result of adopting the DCP, but only Case B moved to integrate telephone networks into the DCP during the course of the study.

Table 10 offers a longitudinal view of findings across all data collection periods, for both cases, concluding the findings for Collaborative Meetings.

Findings for the **Collaborative Messaging** theme follow Table 10.

Table 10. Collaborative Meetings - Longitudinal View of Findings

Case / Time	T1 (May-August 2020) Enforced homeworking	T2 (Sept-Nov 2021) Homeworking/occasional office working	T3 (March-May 2023) Hybrid working (1-3 days per week)
Meetings at Case A	Online meetings become a daily necessity for all. Concerns about the pervasive nature of digital technology are raised and higher grades attempt to counteract ill effects. Online meetings serve both work and social purposes, from decision-making to task allocation for lower grades, and providing well-being activities for all grades. Participants find video conferencing fascinating but miss face-to-face interactions, and netiquette, such as turning off cameras in meetings and conducting ‘in meeting’ chat, emerge, to mixed reactions.	A hybrid meeting format emerges, but those using hybrid face technological challenges. Netiquette norms like turning off cameras became embedded. A lack of engagement from those joining online is noticed but some higher grades consider multi-tasking while in online meetings necessary. On-screen captions benefit those with hearing impairments, and meeting transcriptions are perceived as useful for generating meeting notes, prompting speculation whether manual notetaking will be superseded.	Hybrid meetings are an embedded and daily practice, for both in-office and remote work. Some large meetings revert to face to face due to lack of engagement in online settings. Hybrid working presents practical challenges in open plan offices due to noise disruption. Using technology to conduct hybrid meetings is difficult and time is wasted in trying to connect, leading some higher grades to opt for online <i>or</i> in-person meetings. Challenges are found when conducting workshops in online settings and these sometimes remain as face-to-face.
Meetings at Case B	Online meetings become a daily necessity for all. Some employees have prior experience with video calls but heavy workloads and concerns about well-being arise. Online meetings serve both work and social purposes, from decision-making to task allocation for lower grades, and providing well-being activities for all grades. Online meetings ameliorate feelings of social isolation, but all grades worry about the loss of face-to-face collaboration in their organisation. Netiquette norms, like turning off cameras in larger meetings, and conducting ‘in meeting’ chat, emerge, to mixed reactions.	A hybrid meeting format emerges, to accommodate in-office and remote workers but present technological challenges. Equity of voice in hybrid meetings noted as a challenge, and multitasking during online meetings becomes common, deviating from prior norms, upsetting to some higher grades. Software solutions like hand-raising and reactions emerge but occasionally cause confusion. When presented with a choice, only 50% of staff choose to keep a landline telephone; everyone else opts for the integrated telephony system in Teams.	Office reconfiguration is complete, but finding quiet spaces is challenging. All staff required in office on one ‘anchor day’ per week when face-to-face collaboration is privileged, but despite this edict, hybrid meetings occur. On other ‘in office’ and homeworking days, online and hybrid meetings are accepted practices. As foreseen, there is a tendency for in-office voices in hybrid to dominate. Meeting rooms equipped with hybrid technology, but problems in using it persist. ‘Open’ online meetings are used to simulate the office environment.

4.4.2 Collaborative Messaging : email versus chat

Collaborative Messaging: This practice contrasts the use of email and chat for communication, highlighting how instant messaging has redefined collaborative efforts and influenced communication efficiency and immediacy.

T1 (May-Aug 2020) Findings for Collaborative Messaging

All Case A participants were using email at T1 and about half of them had also started to use ‘chat’ or instant messaging, newly available via the DCP. Some younger participants (those aged 18-50), who had adopted chat expected it to result in quicker responses: *“It is a chat feature and like anything on Messenger or WhatsApp, you feel more obliged to reply quickly, that is just the way we as humans behave on chat”* (P7: A) and were somewhat frustrated when it didn’t: *“You can get to a situation where you feel like you want that engagement on demand and then you don’t get a message back and you are like hello....?”* (P9: A). Another younger participant conducted an ‘experiment’ with older colleagues: *‘I asked them to get onto chat, as the conversations could be quicker than email and anything quick or urgent could be done easily.... they weren’t replying much, so I tried emailing to see what the response time was, and it was a lot quicker’* (P12: A). Case B provides further examples on how participants across different age groups utilised email and chat.

Professional Perceptions of Chat versus Email

Similar to Case A, at T1 all Case B participants were using email, but only 4 of 14 participants had adopted Teams chat. Younger participants explained how they used it: *“I use it quite a lot for running late.... letting someone know that I’m running a few minutes late for a meeting* (P15: B); *“I don’t use it too much, I use it if there is something really urgent”* (P25: B). An older Case B participant found the concept of chat somewhat unprofessional: *“Chat, to me, sounds like, do you want to have a chat?”* (P24: B). However, the use of chat

was secondary to email, even amongst younger participants: *“Email is first, if it is more relaxed it comes through chat or calls”* (P28: B). Case A and Case B were agreed that email was the preference for collaborative messaging with external contacts: *“With my team members I will send a message...If I am wanting to send something more formal and involve a wider membership outside the university, I do that via email”* (P4: A); *“I have still been using it [email], probably more with anyone I have spoken to externally”* (P26: B).

Challenges of Multichannel Communication

Despite participants individual usage preferences, a common challenge emerged across both cases when participants were required to manage multiple communication channels. Having to juggle prior and new practices simultaneously was problematic for some higher grades of varying age: *“I would rather people didn’t send me messages on Teams because then I have to check Teams or question where someone sent me a message, is it on WhatsApp or text or teams”* (P17: B); *“The vast majority of my 300 staff.... I’d say 298, would prefer emails for a single communication stream. If you’ve got 50% of your activity coming through the normal email and 50% coming through teams, suddenly you’ve got two systems and that’s problematic”* (P3: A). However, this was not the case for others: *“Teams is just like Outlook for me, I have Teams on one screen and Outlook on the other”* (P11: A). While the integration of Teams alongside traditional communication methods highlights the difficulties in juggling multiple platforms, Case B also showed a further complication with the coexistence of Slack and Teams.

Platform Loyalty Challenges emerge in Case B

Technical Case B participants had been using Slack prior to the introduction of Teams:

“Slack was incumbent before Teams and was adopted primarily by the digital technology groups... my role faces both directions, I face into technology heavily, but I also face into the

business very heavily...I personally have to use both systems interchangeably” (P18: B).

Despite suggestions for standardising on one platform from non-Slack users, *“I was talking about it the other day and I said can we just use Teams now? It would be better to be using the same system” (P19: B)*, Slack remained in use and this higher grade explained why: *“It is well liked, and it has some integrations into our development environment, with the way we release code... so tech teams adopted it and love it and any conversation about should we unify and have one messaging system for the entire company is met with, that is all very well but we won’t stand for it” (P18: B)*. Higher grades noted the struggle: *“If there's already an institutionalised product, it's hard to make people switch” (P16: B)*, and *“Nobody likes to say no, there's no bad cop” (P18: B)*.

T2 (Sept-Nov 2021) Findings for Collaborative Messaging

Platform Loyalty Challenges continue in Case B

At T2, 13 Case A participants (of 14) nominated chat as a preferred collaboration method, compared to 9 at T1. In Case B, 6 participants nominated chat, compared to 4 at T1. Thus, while there was a limited increase in both cases, Case B participants were making less use of chat respectively. Preferred collaboration methods at T2 for each case can be seen in Figure 25 and Figure 26 ([section 4.4.1](#)). Contrary to the researchers prior understanding that Slack was only used by the IT team, a lower-graded participant explained that its use had extended to many of the business teams: *“A lot of the central teams use it...the functionality on Slack is better suited to instant messaging. Teams, for that purpose, has been used less across the business. It is the go-to for video calls, but Slack is for instant messaging” (P26: B)*, offering insight into a continuing reluctance to transition entirely to a new system despite some overlapping functionalities.

Emerging Strategic Use of Chat versus Email

As preferences evolved from T1 to T2, a growing sophistication in how participants from both cases chose between email and chat was observed. While participants noted the immediacy of chat: *“I will send a quick informal message via Teams for immediate responses and that is how they work as well” (P4: A)*, they also experienced the pressure of instant messaging: *“Some people say they feel pressure to answer a message when it comes through” (P13: A)*. On the other hand, participants valued email for its formality and accountability, asserting: *“I think email has become a bit more formal, for when something important needs to be transmitted, or if there is a document which needs sharing” (P9: A)*; *“Email is always formal, and actions come from emails, there is a record of what has been said and accountability” (P10: A)*. However, the challenges of managing the dual platforms of email and chat had continued: *“We use both and the lines get blurred, we forget where the conversation has taken place. Some conversations have to be set in stone so that you can look them up, but chat means scrolling back over a big chat line” (P22: B)*; *“Some people get a lot of chat on Teams and if you start putting documents in there for people to review, they might lose track of them” (P9: A)*. Individual preferences were identified: *“There is something there about knowing how your colleagues work, I know with my line manager if I need him to review something I email it and he deals with it” (P9: A)*. Sometimes these preferences were perceived to align with generational differences: *“There is someone who works with me that is younger who will always send me Teams messages so I will reply to those” (P17: A)*; *“Young people are very technologically savvy but don’t have the workplace digital skills such as writing a formal email, it’s all lowercase, no punctuation, or formalities” (P13: A)*.

T3 (March-May 2023) Findings for Collaborative Messaging

Continuing Resistance to Teams Chat in Case B

Overall, by T3 the use of chat had increased, even if only marginally for some Case B participants: *“I am using it a little bit more, when someone messages me I respond that way, or I have just finished a meeting with someone I will use chat”* (P17: B), but usage and preferences continued to vary among participants, with some older participants continuing to perceive it as less professional for workplace communication: *“I found chat.... I don't even like that word....it didn't seem like a serious place to work, all emojis and kisses. I preferred doing a team meeting or sending an email...”* (P24: B). However, use of Slack had continued, even amongst business (i.e. non-technical) users: *“My team uses Slack a lot, so for the same purpose as the chat function on Teams”* (P26: B); *“Everyone has to use Teams, but we use Slack a lot too.... we have a couple of groups that use Slack that we could move to Teams, but nobody wants to do it”* (P16: B), reinforcing an earlier reluctance to transition.

Embedded Strategic Use of Chat versus Email

At T3, it was hard for higher grades to be certain if the volume of emails received had reduced since adopting the DCP: *“Possibly. I'm thinking 16 have come in since we started chatting”* (P2: A), but it was clear that the return to face-to-face interactions hindered the ability to manage emails as efficiently as during online meetings: *“The trouble is, I'm finding the conversations I'm having on campus are work, but I'm not getting through my emails...when you're on campus, you can't slip stream, so you get less done”* (P2: A). As participants in both cases navigated these challenges, they also further refined their criteria for choosing between email and chat, a decision increasingly driven by the need for auditability: *“If someone asks me to do something for them, if they ask on Teams, I ask them to send me an email... so then I have it there along with a full chain, knowing it won't*

disappear. I use it as an audit trail” (P7: A); “For me email is still best if I want people to have a reference point. If I’m outlining something that needs to happen than I’ll use email” (P8: A).

Table 11 illustrates the characteristics that determine participants choice to use email or chat.

Table 11. Characteristics determining choice to use Email or Instant Messaging

Characteristic	Email	Instant messaging	Quotes
Audience	Intra-organisational	Inter-organisational	<p><i>"I have still been using it [email], probably more with anyone I have spoken to externally" (P13: A)</i></p> <p><i>"With my team members I will send a message...If I am wanting to send something more formal and involve a wider membership outside the university, I do that via email" (P4: A)</i></p>
Purpose	Formal statements and information	Informal/conversational	<p><i>"Email is always formal, and actions come from emails, there is a record of what has been said and accountability" (P10: A)</i></p> <p><i>"I think email has become a bit more formal, for when something important needs to be transmitted or if there is a document which needs sharing (P9: A)).</i></p> <p><i>"Emails aren't a conversation. They are a statement" (P8: A)</i></p> <p><i>"If it is more relaxed it comes through chat or calls" (P28: B)</i></p> <p><i>"Teams is more reactive and informal, such as brainstorming ideas" (P9: A)</i></p>
Searchability	Can be found more easily	Easy to lose – the conversation moves on	<p><i>"I'm on side with the search, it's rubbish and I can't find anything, I'm like, where is that? (P7: A)</i></p> <p><i>"We use both and the lines get blurred, we forget where the conversation has taken place. Some conversations have to be set in stone so that you can look them up, but chat means scrolling back over a big chat line" (P15: A)</i></p> <p><i>"Some people get a lot of chat on Teams and if you start putting documents in there for people to review, they might lose track of them". (P8: A)</i></p> <p><i>"If it is in my emails, I know I will be able to find it" (P23: B)</i></p>
Preferences (Own and others' preferences)	Sometimes catering to higher grades /older people	Young people lack formal writing skills	<p><i>"I asked them to get onto chat... they weren't replying much, so I tried emailing to see what the response time was, and it was a lot quicker" (P13: A)</i></p> <p><i>"It is just a habit for me to be on email" (P17: B)</i></p> <p><i>"There is something there about knowing how your colleagues work, I know with my line manager if I need him to review something I email it, and he deals with it" (P8: A)</i></p> <p><i>"There is someone who works with me that is younger who will always send me Teams messages, so I reply" (P17: B).</i></p> <p><i>Young people are very technologically savvy but don't have the workplace digital skills such as writing a formal email, it's all lowercase, no punctuation, or formalities (P13: A)</i></p>
Immediacy	Asynchronous – used when no immediate reply needed	Pseudo-synchronous – used for quick updates, and urgent requests - elicits faster response	<p><i>If it's a request for information I would use email unless I need it quickly and it really does require kind of an urgent attention (P16: B).</i></p> <p><i>"I like emails. They are good when you don't need an instant reply." (P13: A).</i></p> <p><i>"I use it [chat] if there is something really urgent" (P15: B)</i></p> <p><i>"I will send a quick informal message via Teams for immediate responses and that is how they work as well" (P4: A).</i></p> <p><i>"I wanted to ask a question, and she came back to me immediately. I know if I'd emailed that, I would not get an answer for about 3 days and that was brilliant to get that!" (P6: A).</i></p> <p><i>"I am much more responsive on chat than I would be on email" (P2: A)</i></p>

Comparative Summary of Collaborative Messaging – Case A and Case B

In both Case A and Case B, the shifts to remote and hybrid working caused collaborative messaging practices to change. Initially, email was the dominant form of text-based communication in both cases. With the introduction of instant messaging through Teams, both organisations experienced changes, experiencing the management of multiple messaging channels as disruptive, adding to the communication ‘noise’ rather than replacing use of prior email practice. In Case B, the initial adoption of Teams Chat was slower due to the incumbent use of Slack by technical and some business teams. In the later shift to hybrid work, Case B continued to face challenges from the use of Slack across the organisation, which created a fragmented communication environment. In this aspect, Case A were slightly more advanced in their use of chat, although it was not popular initially. Ultimately Case A were able to establish a broader collaborative network than Case B, since they had no competing ‘legacy’ applications.

Generational differences influenced communication preferences, with younger participants in both cases initially favouring Chat for its immediacy, while older participants in both cases initially preferred email. However, the study found no strict age-based divide in either case, as some older participants adopted Chat, and some younger ones preferred email, particularly for formal communications.

As preferences evolved from virtual to hybrid working, participants in both cases developed a more sophisticated approach to using email and Chat based on a number of communication characteristics, including immediacy, formality and auditability. Overall, both cases illustrate how collaborative messaging practices evolved throughout the initial shift to remote work and the later shift to hybrid work.

Table 12 offers a longitudinal view of findings across all data collection periods, for both cases, concluding the findings for Collaborative Messaging.

Findings for the **Collaborative Composition** theme follow Table 12.

Table 12. Collaborative Messaging - Longitudinal View of Findings

Case /Time	T1 (May-August 2020) Enforced homeworking	T2 (Sept-Nov 2021) Homeworking/occasional office working	T3 (March-May 2023) Hybrid working (1-3 days per week)
Email versus Chat at Case A	Everyone continues to use email, but half of the participants additionally use chat, and some form an expectation that others should respond quickly to their messages. A younger participant conducts an ‘experiment’ finding that older colleagues respond more quickly to the same question when it is asked via email, rather than chat. There is mixed perception of using email and chat simultaneously, some find it easy, others see it as problematic, preferring a single communication stream. Email remains the method of written contact with external contacts.	Everyone still uses email, even though more people have started to use chat. Since more people are juggling both practices, a cumulative effect emerges; the choice of practice (email or chat) is based on various characteristics such as purpose, immediacy and ‘searchability’. Participants complain they can’t find chats after sending or receiving them and are unaware of search facilities in the DCP. An individual who had initially discouraged emails in favour of chat reverts to email due to concerns about the potential loss of chat messages.	Email still used and participants unsure whether the volume of emails is less than pre-DCP. Some higher grades now find they can’t get through their emails on ‘in-office’ days as when they are face-to-face, they can’t multitask. New characteristics for choosing one practice or the other emerge; emails are deliberately used to create an audit trail, an antidote to being unable to easily find chats. Having a conversation via text is still not as efficient as simply speaking to someone.
Email versus Chat at Case B	Everyone continues to use email; with a quarter of participants additionally using chat. Some reject Teams chat in favour of Slack, a legacy application, causing others to question why there are two different apps to achieve the same thing. Chat seen as unsuitable for business collaboration by some. Emails are used for collaboration with external contacts.	Everyone still uses email. A few more participants use chat, and the speed of response is noted as faster than email. It becomes clear that Slack is used by other teams beyond IT; the ‘go to’ for instant messaging in Case B. When both email and chat are used, people sometimes forget where the conversation originated and feel more confident that they can find an email communication thread. A participant who initially advocated for the use of chat in preference to email, finds that colleagues have reverted to using email.	Everyone still uses email. In hybrid working, participants have reverted to some prior practices, for example, sharing file types, such as images and spreadsheets, as email attachments, rather than sharing document links in chat. Participants who were not previously using chat have not really changed their habits, e.g., some only use it minimally and others consider it to be ‘ <i>all emojis and kisses</i> ’. Those previously using Slack continue to use it.

4.4.3 Collaborative Composition : Document Storage versus Content Creation.

Collaborative composition is the practice of creating, managing, and storing digital documents in a shared space where authorised users can concurrently or individually view and modify them in real-time. This practice investigates the transformation in content creation and file storage, focusing on how digital platforms facilitate real-time collaboration and document management.

T1 (May-Aug 2020) Findings for Collaborative Composition

Prior Digital Document Collaboration Practices

Prior to adoption of Microsoft Teams, document collaboration practices at Case A and Case B appeared to be similar, utilising cloud-based Microsoft OneDrive for personal storage and Microsoft SharePoint for group storage. However, in addition to the Microsoft Suite of products, which all employees in both organisations had access to, approximately 500 of Case B's 1200 employees also had access to Google cloud-based products, in the form of G-Suite⁴, comprising Google Docs, Google Sheets and Google Slides: *"Google seems to be the main way people share files and work collaboratively as you can have multiple people editing documents at the same time...but it is on you to keep that link bookmarked"* (P26: B). A higher graded participant confirmed: *"Most of my senior team have G-Suite accounts"* (P15: B). Although a decision had been made in 2017 that Microsoft would be Case B's preferred IT toolkit, there were some for whom use of Google was embedded: *"There's a subset of those who are almost impossible to move off Google.... they have a slightly unique business case in so far as a lot of the third parties that they work with use Google"* (P21: B). There were also some long-standing users: *"There are a second subset...where there's probably no*

⁴ G Suite was subsequently re branded to become Google Workspaces, a cloud-based collaboration platform https://workspace.google.com/intl/en_uk/.

actual viable business justification...but it's very ingrained in their work and has been for many years (P21: B).

Additionally, both organisations had on-premises servers which were limited to being mere repositories, as illustrated by the difficulty in document editing: *“I know that we've got an annual leave spreadsheet... only one person can edit it at a time... it's saved in the X-drive” (P12: A).* Additionally, in Case B, large file needs, particularly in editorial departments, required specialised storage solutions: *“The reason we use a server is that the files are huge and are such high res, that it is not like sharing documents...you would have to deal with transfer links, they are massive files” (P27: B).*

Although the cloud solutions offered enhanced version control, understanding of how to use them varied among employees.

Challenges in Adoption and Utilisation of Cloud-Based Solutions

Cloud-based applications supported 'a single version of the truth', yet some employees at Case A failed to grasp the principles and shared a copy of the document, rather than sharing a link to it, which led to version control issues: *“It is more like send me a word document and I will save it, do my edit and send it back... but it could be that you don't have the latest version” (P10: A).* A similar situation existed at Case B: *“When you go to attach a file to an email, it asks you if you want to attach a document or a link, I always use document.” (P25: B).* Younger workers noted a generational divide in technology usage: *“There is a knowledge gap as they don't feel comfortable using Office 365 for sharing documents. I think with a certain age group there is a nervousness towards technologies they don't understand” (P10: A); “The people I work with are around the age of 60, so even if I am keen to get on board, I tend to go with what they are doing because that is what they are comfortable with” (P12: A).*

The shift to remote work during enforced homeworking highlighted the advantages of cloud-based platforms like Teams and G-Suite as their accessibility became critical. These platforms did not require VPN, which was a significant advantage as participants expressed frustration with VPN limitations: *“We can only get access for 8 hours at a time...” (P28: B); “Some people struggled to access the X drive at home...it was patchy whether the X drive worked...so we thought it would be better to upload our files to Teams” (P13: A)*. This latter comment refers to the fact that Microsoft Teams, when all functionality is licensed, effectively becomes a 'front-end' to SharePoint; every new ‘full’ team⁵ that is created automatically contains a dedicated Sharepoint Server site for document storage and collaboration. Documents can then be uploaded to Sharepoint via the Teams browser and access to stored documents restricted to named individuals. However, each organisation chose a different approach to the licensing of features.

At Case A, the IT department only made full document collaboration facilities available on request by individual users and thus, at T1 had a modest total of 139 full teams set up for a workforce of 2500. In contrast Case B provided access to these features from the start but the rapid increase in Teams usage at Case B led to management challenges: *“269 teams created since the start of lockdown which is a ridiculous number for a group of 1200” (P21: B)*.

However, some embraced the new collaborative opportunities: *“Now I have uploaded documents to Teams, everyone can go in and start working on it...for me it works well” (P6: A); “The [] site has gone from nothing to being used by everybody all of the time, which is amazing really... yes, the collaboration has been amazing” (P2: A)*.

⁵ A ‘full’ team comprises a Microsoft sharepoint server; each ‘channel’ created within the team is a folder in the sharepoint server. Uploaded documents can be edited by multiple people in real time and discussions can take place in each channel.

Others found it harder to adapt: *“They grumble because they cannot find a file, they are old school professors”* (P6: A), or remained unaware of the document collaboration functionality: *“We brought it in purely to do the functional meetings, we haven’t really been told about the extra functionality”* (P15: B); *“The limitation with teams is that people don’t know everything that it can do”* (P26: B). Across both cases, there was scant evidence of real time document collaboration; only one younger participant in Case A reported using this: *“Now we are working from home and have to collaborate better it is so much easier, as we can live edit the same thing.... we had a planning day on Thursday (online) with one document open and we could all add ideas and post things, see what others were doing”* (P13: A).

T2 (Sept-Nov 2021) Findings for Collaborative Composition

Mixed Progress in Case A and Case B

At T2, Case A displayed mixed use of collaborative functionalities. Some higher grades efficiently managed documents: *“We had the Quality Charter Mark submission in April, all the documents were on the Teams site, everyone worked from the same documents and we just lifted them out to send them”* (P4: A); *“I use it as a repository for files....so we have a number of channels in the teams site that we use as a repository....the parish news, that collaborative information”* (P2: A). Another higher grade had extended use in an innovative manner, to enhance workflow: *“A person submits a document in a channel with a message then it goes from person to person, we are using it as an approval mechanism, there might be other ways, but it is working”* (P2: A). Despite these advances, other participants reported minimal progress due to the platform’s complexity: *“We don’t have a file management system... it is hard to get people to move over to that channel.”* (P10: A); *“It is something that seems very simple but if it is not explained people do not engage with it...”* (P9: A). As

Case A worked through internal adaptation challenges, Case B faced its own hurdles integrating Teams more broadly across its operations.

A Case B younger middle grade suggested there was substantial use of Teams for document storage, backed by SharePoint: *“A good percentage of our collaboration and file storage is being done within Teams, backed up by Sharepoint” (P21: B)*. In contrast though, others suggested continuing preferences for G-Suite: *“The business still relies heavily on Google products (P26: B)*. Resistance to transitioning fully to Teams was evident amongst higher grade business users: *“Everybody uses Google docs...and we don’t have time to make people move across... (P16: B)*.

To address the continuing issues of ‘Two Islands’⁶ of collaboration, the rising costs of Google licences⁷ and concerns about a lack of in-house IT support for Google products, a business change programme with senior management backing was considered necessary. This programme would include a campaign of communications endorsed by senior management, training and regular ‘top tips’ to encourage users to switch to Teams for document collaboration. Despite anticipating some resistance, there was a reluctance to dictate user behaviour: *“We have been reticent to force people to not use certain things and to use the things that we want them to use... that's not really the modus operandi of [Case B]” (P21: B)*.

While both cases showed gradual integration of collaborative tools, the technique of 'document peeking' during meetings provided a simple, yet novel way in which collaborative composition could also take place.

⁶ This term was used in a presentation made in 2021 to senior management which suggested having two products stifles organisational collaboration.

⁷ Licence costs were in the region of £40k per annum and set to rise.

Document Peeking

Document peeking through screen-sharing allows others to directly view a document held in the sharer's storage area, but also enables real-time collaboration, since other meeting attendees can request temporary control of the shared document and edit it, thus maintaining a 'single version of the truth'. Although screen-sharing was problematic at T2: *"The screen share option has changed recently...you now get a grid and can't find which screen you want to share."* (P15: B), it provided efficiencies over prior practice, *"We used to come with a physical paper pack and hand that out to 15-20 people but on Teams it is very slick to just share the screen."* (P15: B).

T3 (March-May 2023) Findings for Collaborative Composition

Case B: Evolving Document Collaboration

By T3, a greater number of Case B participants had started utilising Teams for document collaboration, though often it was primarily just for storage: *"We had a group called the [] Team and we stored a number of internal policies and team documents that we found to be useful.... it is more just centralisation of documents"* (P28: B). Others were advancing to direct editing: *"We have also used Teams for a lot of files...everyone could see changes when they were made, it took me a while to get used to not saving documents"* (P25: B). Yet, some confusion remained over the need for individual document copies versus collaborative editing: *"When I was working on it last week to get the training documents finalised, I did have my version open, and I had the shared version open to make sure they were the same"* (P25: B). While participants in Case B were increasingly centralising their document storage and editing, they also explored more collaborative approaches to composition.

For example, some younger and older participants effectively used Teams for dynamic document sharing, with structures set up to enhance visibility and collaboration: *"We use*

Teams for sharing documents a lot...we have another group where we use documents that on press day are being updated by everyone in that team live so that everyone can see what is going on. A bit like a check list on a wall” (P22: B); “Files we are collaborating on tend to be in Team, for joint real-time collaboration” (P20: B). However, preferences varied, with some younger participants opting not to engage in real-time collaborative editing: “If there was two of us working on a contract together, we wouldn't use that document sharing tool there that you can both edit at the same time. We would just use it as a centralised storage base” (P28: B).

Despite isolated individual advancements, most Case B participants continued to limit their use of the DCP to collaborative meetings, with little engagement in collaborative composition: *“There are a couple of initiatives in the business who use the Teams platform to store files, to keep notes, but I can only think of one or two examples.” (P26: B)* with a suggestion that future use of Teams would be: *“Relatively minimal beyond its video call capabilities” (P26: B).* Most participants remained unaware of organisational plans to drive further change encouraging use of functionalities beyond video conferencing: *“Some departments and brands are using it with the workspaces and channels and that is our goal now, to move people into the core functionality and away from email” (P21: B).*

The anticipated project to migrate users from Google to Teams had not come to fruition by T3: *“The problem with our Google project is that there's always something which is more important to be doing...it's not going to be a popular project...but we've made some progress... another year of people using teams and starting to understand that actually there's richer functionality in Office 365... but it hasn't changed the fundamental fact that we've still got lots of people doing a load of stuff in Google” (P21: B).*

Islands of collaboration still existed; *“They're still collaborating, but they're just doing it all within their own team in Google and it tends to be more when they go and send something to someone in a team who don't use Google that we pick up on this”* (P21: B).

A higher grade confirmed some improvements had been made even if the project to replace G-Suite had stalled: *“We could insist everybody moves tomorrow and maybe we'd save 70/80k per annum, but it's not £1m per year, that's not the prize. There are a lot of things on the backlog but it's about prioritisation...and we have done something about it in the sense that at least everybody now has an official log on...our data is secure”* (P20: B). Financial success in 2021 had also removed earlier pressure to save licensing fees.... *“At the time there was more of an undertone that we need to make cost savings wherever we can...but in fact, [Case B] has had one of its best years ever* (P21: B).

Moving to Case A, the challenges and adaptations in document collaboration practices were similarly mixed.

Case A: Evolving Document Collaboration

At Case A, familiarity with cloud-based document sharing had increased, yet the transition to new methods was uneven: *“People are more used to it now. We used to have to say please don't download this, just work from it... I don't need to say that anymore”* (P9: A). Some younger participants drove change, encouraging more collaborative practices: *“There are files in there which I have worked out how to allow everyone to edit the file. However, “People still ask how to edit it and save it”* (P12: A). These sentiments were echoed by an older higher grade: *“It's a bit better.... there are still some culprits... you get sent something for the first time and it's a local copy and you think, oh couldn't you have sent the link... I know I'm going to make changes.”* (P2: A).

Although some participants were leaning towards better use of Teams' functionalities for document collaboration, others remained unsure: *"I didn't know about creating collaborative documents through Teams. I do that through One drive, but I presume it's the same thing"* (P10: A). Real time collaborative editing (working together as a group on the same document at the same time) was far less common than working on the same document with others but accessing the document at different times. Higher grades explained: *"We tend not to do this at the same time. I'm editing a document at the moment, and I can see 4 other people in it. We don't do a meeting, where we talk together, you do that sentence.... more we've got until Wednesday and people are going in [in their own time]"* (P2: A); Similarly: *"Lots of collaborative working... not necessarily live, but using the team link, circulating that and people working in their own time on a doc shared in Teams....so using it as a file repository, and essentially working from there"* (P9: A).

Comparative Summary of Collaborative Composition – Case A and Case B

In both Case A and Case B, the transition to remote working due to enforced homeworking caused significant changes in collaborative composition practices. Participants in both cases had faced practical difficulties accessing team documents stored on-premises via their organisations' VPNs, which were lengthy and unreliable to log into. Microsoft Teams provided a more accessible solution for both organisations, allowing documents to be edited and saved without needing to log into the VPN.

Despite this common shift, the adoption approach differed between the two cases. In Case A, access to the document collaboration aspects of Teams was provided only upon request, with limited training available to 'champions' within teams. Conversely, Case B made document collaboration features available to all employees and offered broad training, though this approach became overwhelming and was subsequently restricted.

Despite each organisation taking a different approach to the licensing of document collaboration features, these features were initially seldom used in either case. Generational and/or role-based differences played a role in their adoption in both cases. In Case A, a few younger participants used real-time document collaboration effectively, while older and higher-grade colleagues were less inclined to change their practices. In Case B, lower-grade employees attempted to influence higher grades to adopt Teams' document collaboration features but with limited success, leading to frustration. Thus, resistance to using new features was evident in both cases.

As hybrid working became established, both cases saw some increase in the use of Teams for collaborative composition, but this varied widely among individuals. Innovative uses were noted in isolated instances but in both cases, progress was inconsistent, and the depth of utilisation remained limited.

Case A saw more significant progress in adopting the document collaboration features within Teams, albeit inconsistently, than Case B. Although some individual Case B departments had started to store and access their shared documents in Teams, a significant number of employees continued to have access to, and were familiar with G-Suite, meaning there was little incentive to move their document collaboration to Teams. A dedicated transition project was considered necessary to unify collaboration across the organisation, shifting users away from G-Suite and towards the organisation's preferred IT solutions from Microsoft. Despite the potential cost savings and benefits to organisational collaboration of consolidating onto a single platform, other IT projects were prioritised in preference.

In contrast, Case A users had no comparable cloud-based storage alternatives available, although a lack of comprehensive training contributed to inconsistent use of Teams' features. Having competing products in place might illustrate a difference in cultural values between

the two organisations: with Case A's central IT department taking a more directive approach compared to Case B's IT team deliberately utilising a more 'softly, softly' approach, as long as data security was assured.

Overall, both Case A and Case B illustrate the challenges and adaptations in collaborative composition practices brought about by remote and hybrid working conditions. Table 13 offers a longitudinal view of findings across all data collection periods, for both cases, concluding the findings for Collaborative Composition.

Findings for the **Leadership Communications** theme follow Table 13.

Table 13. Collaborative Composition - Longitudinal View of Findings

Case / Time	T1 (May-August 2020) Enforced homeworking	T2 (Sept-Nov 2021) Homeworking/occasional office working	T3 (March-May 2023) Hybrid working (1-3 days per week)
Collaborative Composition at Case A	Prior to Teams, Microsoft OneDrive and Sharepoint are available plus on-premises file servers. There is uncertainty with cloud-based document sharing, leading to version control issues. Some younger participants feel their older colleagues resist moving to a new way of working, perhaps due to lack of self-confidence. Cloud based collaboration is important in homeworking due to problems in accessing VPNs. Teams provides cloud-based document collaboration, but Case A users must request it.	Collaborative composition is a mixed bag; some are very effective in their use, regularly uploading and collaborating on documents that are now stored in the DCP. However, only one participant reported 'live editing' a document with others in real time. Some teams now store all of their documents in the Sharepoint site that sits behind every new team, but others appear not to have moved forward since T1 and do not store any documents in the DCP. This aspect of the DCP is not intuitive and users require further explanation/training how to use it.	Mixed feelings exist; is there now a better understanding of how to work on cloud-based documents? Some say yes; links are now shared rather than a copy, but the practice still varies. Older and younger participants are not homogeneous in their usage or attitudes, with both older and younger participants instigating change in their departments. Real time composition is rare, with most collaborative composition happening as a result of people working in their own time on a shared document.
Collaborative Composition at Case B	Prior to Teams, Microsoft OneDrive and Sharepoint are available plus limited use of on-premises file servers. Some users display uncertainty about sharing cloud-based documents. However, several hundred users have access to G-Suite (a Google product) and so are already familiar with cloud-based storage and collaboration. To encourage people to swap to Teams, Case B license everyone to use the extended features but the majority of people think it is just for videoconferencing and remain unaware of what else is on offer.	Collaborative composition continues in G-Suite, while similar features in Teams remain underused amongst study participants, even though other parts of Case B's business are reported as now using them. Senior management support is sought for a project to swap as many people as possible from G-Suite to Teams, which will represent annual savings and prevent 'two islands' of collaboration. A simple, yet new way of collaborating with others, is to screen share a document in an online meeting, resulting in efficiencies for Case B when compared to prior practices.	Use of Teams for collaborative composition has increased; its use is varied; some merely use the document storage capabilities while others are using it to collaborate on documents in real time. Older and younger participants are not homogeneous in usage or attitudes and there are some misunderstandings regarding the concept of 'a single version of the truth'. Others still use G-Suite instead of Teams. The project to swap everyone over has not happened and some participants still primarily see Teams as a video conferencing and chat application.

4.4.4 Leadership Communications: Interaction versus Accessibility

Leadership communications focus on the delivery of key messages and information to all employees to ensure employee alignment with the company's vision. Feedback is sought from employees during these virtual events, which are also known as 'Town Halls'. This practice addresses the dissemination of strategic messages, comparing traditional methods with the interactive capabilities provided by digital collaboration platforms, and assessing the impact on accessibility and engagement.

T1 (May-Aug 2020) Findings for Leadership Communications

Adapting to Virtual Leadership Meetings

During the initial lockdown, both cases transitioned from face-to-face to virtual 'all company' meetings. At T1, these events could not be facilitated by the 'regular' online meeting due to capacity limitations; an online meeting could only accommodate 250 attendees at this time. Instead, a different Teams feature was used in both cases; 'Teams Live'⁸ was a broadcast style meeting which accommodated up to 1000 attendees but with limited interaction, i.e. attendees could not use their camera or microphone. Case A higher grades saw an immediate improvement in attendance: *"It's been fantastic, we did one yesterday and 220 people came online...you'd never get 220 people on campus at the same time (P4: A),* but Case B higher grades observed a different response: *"I don't think our CEO likes it much, he likes a clap or a cheer, audience feedback is difficult without being able to clap". (P18: B).*

⁸ Teams Live is an additional capability that provides a broadcast style meeting, where audience interaction is limited to moderated Q&A's, but attendee capacity (at the time) was 1000 attendees compared to 350 for a 'regular' meeting.

Increasing Meeting Capacity and Engagement in Case A

As soon as attendee capacity in a ‘regular’ online meeting increased to 350 people, Case A chose to swap to it because it offered the potential for greater audience interaction. Higher grades were considering it for long-term use: *"We have been talking about keeping those virtual Q&A sessions going when we are back on campus" (P1: A)*. This format was seen as enhancing engagement and accessibility: *"People have unparalleled access to senior management which they would never have had previously" (P2: A)*. It also supported sustainability goals by reducing the need to travel between campuses: *"If you think about getting from [campus A] to [campus B] it's probably a 5-minute drive....and you don't want to be driving now, you know, let's not if we can avoid it" (P5: A)*. Contrastingly, Case B's approach reflected a different cultural and logistical setup.

Maintaining Traditional Formats in Case B

In contrast to Case A, there was no indication from Case B that virtual communications would continue once they had the opportunity to return to face-to-face, because their quarterly events were *"where everyone gets together, and the CEO presents things to the business" (P16: B)*, although the virtual format was recognised for improving information consistency and inclusivity: *"In this new model we are all getting the same information which makes us one whole team, which is better" (P18: B)*. A participant with mobility issues pointed to the enhanced accessibility of a virtual event, *"I think this has made things more accessible....as the company events.... we all have to gather on these really uncomfortable step seats they have...and it's a really time-consuming thing for everybody" (P25: B)*.

T2 (Sept-Nov 2021) Findings for Leadership Communications

Continuing Virtual Leadership Communications in Case A

At T2, with social distancing still affecting traditional gatherings, Case A higher grades chose to retain virtual leadership meetings. *“It’s a new way of communication, which we didn’t have before...we didn’t know we needed it until we had it...the first one was terrifying, but you get over yourself and lose that control” (P1: A).* This mode increased accessibility: *“It has allowed the senior team to be more accessible to colleagues, and you can record it” (P4: A; “People know they can ask anything.... I’d rather it was in the open” (P1: A),* including those with mobility challenges: *“We have someone who has a disability that limits movement around campus.... I definitely think it has helped with accessibility in that sense” (P4: A).* Senior management saw potential for keeping this format for most scenarios excepting sensitive topics like restructuring: *“There might be a place for it, if you were talking about a restructure, you want to see people” (P1: A).* Meanwhile, Case B continued with their existing virtual setup but anticipated a significant shift back to face-to-face.

Reverting to Traditional Leadership Communications in Case B

At T2, Case B were still using Teams Live and audience interaction was very limited: *“The format is very presenter led...we all sit with cameras and mics off, and a small number of people are presenting” (P20: B).* However, shortly thereafter, the attendance capacity for a regular Teams meeting increased again⁹ and Case B were then planning to swap to a regular Teams meeting, which offered the chance for attendees to switch camera and microphone on and participate: *“I think we’re just about to go to that...using Teams meetings makes it much more interactive.” (P20: B).* Despite the potential for more engagement in virtual meetings, higher grades anticipated a return to face-to-face meetings for the community and social

⁹ Regular meeting attendee capacity increased to 1000 with camera and mics on, around T2.

benefits they offer: *“I think we will go back to the [face-to-face] because they bring everybody together and we used to go for drinks afterwards, which you can’t really do in Teams”* (P20: B). The organisation had already managed to reduce some of the cost implications of in-person events: *“Well, they used to be run in a hotel but now we’ve got an auditorium on the premises”* (P20: B). Preferences for the future format of these meetings varied among staff, reflecting a blend of traditional and evolving expectations.

As plans for leadership communications evolved, the personal preferences of senior leadership continued to influence: *“I think the new CIO is very keen on face-to-face”* (P20: B). Some higher grades saw a hybrid model as inevitable: *“I think they’ll be hybrid because obviously on that day some people will be working from home”* (P20: B), contrasting with others expecting physical attendance: *“If we are having an all company or a team meeting, we expect you to come in on that day” [in addition to your regular days]* (P16: B). While some younger staff members expressed a preference for in-person interactions: *“I would love to go to the ‘all company’ in person as I don’t think that can be replicated [virtually]”* (P26: B), others appreciated the accessibility and convenience of virtual formats, especially those facing long commutes: *“It was always a social event but because of the distance everyone was expected to travel, if it goes on for four hours then I have four hours travelling to get there and back for the sake of a meeting that I can sit here in comfort and watch on Teams”* (P25: B).

T3 (March-May 2023) Findings for Leadership Communications

Embedded Virtual Leadership Communications at Case A

By T3, both organisations were able to return to face-to-face, but Case A had decided to remain with the virtual setting for regular monthly leadership communications as it allowed for broader participation across the organisation: *“We still have the [monthly] Q&As online...*

in those meetings we have a greater breadth of people than face-to-face” (P1: A). A higher grade noted the more egalitarian nature of online forums compared to the intimidating physical settings of the past: *“Before people would have had to come to the VCs corridor....so it was very much you are coming into my domain. On a screen I think that is somewhat flattened” (P1: A).* Challenges remained, particularly for presenters experiencing minimal audience interaction, which could feel discouraging: *“It can be a bit soul destroying though...last time I did the OVC drop in there were about 50 people, but cameras off and I was wondering if anyone was listening as I talked about staff survey results” (P4: A).* Yet, the convenience and accessibility of virtual meetings justified their continuation, allowing busy colleagues to participate briefly and efficiently: *“Sometimes you can drop into something for ten minutes even when you cannot make the whole meeting, to show you are interested, which helps” (P1: A).* Online leadership communications had become the modus operandi for Case A, and were used for all strategic messages, for example, the annual welcome at the start of Academic Year 2023 (Figure 26).

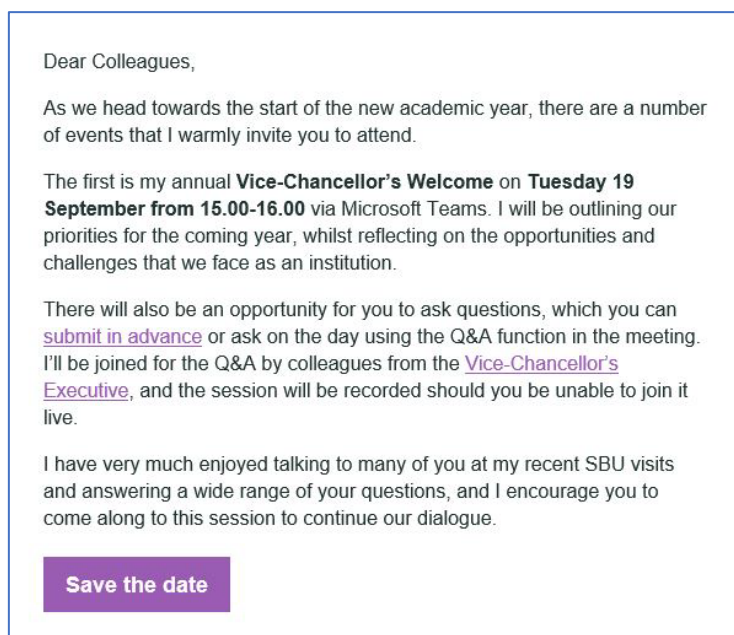


Figure 27 - Case A: Start of Academic Year 2023 - VC's Welcome

While the shift to virtual platforms broadened participation, Case A had also refined its meeting protocols to foster a more inclusive and orderly discussion environment: *“We turn the chat off and ask people to raise their hands so that everyone has the same opportunity to ask a question, be listened to and responded to”* (P1: A); *“The chat almost seemed to take on a life of its own, where the chair would think they had covered what everyone wanted to say on item 7 and move on to item 8, only to find the chat is still talking about item 7”* (P1: A).

Resumption of Face-to-Face Leadership Comms at Case B

In contrast, Case B reintroduced in-person all-company meetings by late 2022, aligning them with key messages about new hybrid working policies: *“We had an all company meeting towards the end of last year where they introduced the concept of anchor days and 3 days in the office, 2 days working from home”* (P28: B). Online communications at Case B were scaled back from monthly to quarterly: *“The whole [company name] one is quarterly.... we were doing those monthly for a touch point with [CEO name] and then that has gone down to quarterly”* (P17: B), and the emphasis shifted towards strengthening community ties through physical gatherings. Higher and lower grades understood the intention to foster a sense of unity and engagement: *“I think physical turnouts for [event name] has been quite strong... they have not been hybrid as part of it was, we wanted to have people together”* (P17: B); *“I would say that some of the best things about [company name] are those wider company events and there's always been this desire to bring the company together....I think those were challenged by hybrid working because there is less of that togetherness”* (P28: B).

Comparative Summary of Leadership Communications – Case A and Case B

In both Case A and Case B, senior leaders always conducted face-to-face strategic briefings before the shift to homeworking. With the onset of enforced homeworking, both organisations used the capacity of the DCP to develop a new, virtual style of leadership

communications. Both experimented with Teams Live, which allowed for larger attendee capacity than was possible with regular Teams meetings at the time.

Case A, encouraged by improved attendance at virtual events compared to prior on-campus meetings, began considering adopting this new style of leadership communications permanently. In contrast, Case B's higher grades, accustomed to large social gatherings, found the lack of interaction and audience feedback problematic. However, the virtual format was welcomed by participants with mobility issues in both organisations, offering better accessibility than face-to-face meetings.

As hybrid working became established, Case A decided to permanently adopt the new virtual communication style, reserving face-to-face meetings for more sensitive topics. This approach was seen as more egalitarian, flattening the organisational hierarchy by giving direct access to senior leaders, fostering a more open and transparent culture.

In contrast, Case B decided against hybrid leadership communications, emphasising the perceived benefits of community and social interaction in face-to-face settings. Case B reverted to in-person gatherings, reinforcing their commitment to office presence. This approach was appreciated by younger employees but posed challenges for those with mobility issues, highlighting the difficulty in balancing diverse employee needs with organisational objectives.

Table 14 offers a longitudinal view of findings across all data collection periods, for both cases, concluding the findings for Leadership Communications.

Findings for the **Organisational Values and Norms** theme follow Table 14.

Table 14. Leadership Communications - Longitudinal View of Findings

Case / Time	T1 (May-August 2020) Enforced homeworking	T2 (Sept-Nov 2021) Homeworking/occasional office working	T3 (March-May 2023) Hybrid working (1-3 days per week)
Leadership Comms at Case A	Case A switched their live leadership comms to virtual, out of necessity. 'Teams Live' was used accommodating 1000 attendees but offering limited interaction. Case A favoured virtual for its increased attendance, knowledge dissemination, and accessibility to management. When regular online meeting capacity expanded, Case A shifted to this for more interaction but were considering keeping virtual formats for their organisational benefits.	Case A chose to continue virtual Town Halls, valuing their accessibility and efficiency. Higher grades appreciated the format's inclusivity for colleagues with disabilities, the approachability to senior management that it offered and the ability to record sessions. They noted the flexibility for participants to join or leave as suited their schedules. Although face-to-face might still be useful in specific scenarios, Case A's preferences leaned towards virtual leadership communications.	While in-person meetings were possible again, Case A continued with virtual leadership comms for their wider reach and perceived equitable environment. However, challenges included limited interaction and engagement. Case A variously used moderated Q&A format and virtual hand-raising to manage discussions and ensure inclusivity. The Town Hall approach became their standard for strategic comms, including the Vice Chancellor's annual welcome.
Leadership Comms at Case B	Case B switched their live leadership comms to virtual, out of necessity. 'Teams Live' was used accommodating 1000 attendees but offering limited interaction. Case B's senior leaders were frustrated by a lack of audience feedback in a virtual setting but there were benefits observed such as improved information consistency and accessibility for those with mobility issues. In contrast to Case A, Case B were disinclined to permanently adopt virtual Town Halls post-lockdown, preferring a face-to-face leadership communication style.	Case B were still using Teams Live, however, with the increased capacity of regular Teams meetings, they planned to switch to a more interactive format. Despite this, higher-grade employees at Case B preferred returning to the face-to-face meetings to allow everyone to be together and participate in social aspects. Some looked forward to in-person events, while others, with mobility issues, preferred the convenience and comfort of virtual Town Halls, highlighting the time and effort saved. It was undecided whether a hybrid format would be employed going forward.	Case B resumed in-person leadership comms in late 2022, reducing the frequency of these meetings from monthly to quarterly after revering transitioning from virtual to face-to-face formats. While individual business units held hybrid Town Halls, all-company events remained in-person to enhance company unity and togetherness. The return to physical events, including social gatherings like Christmas parties, was well-received and well-attended, reflecting a positive response to the revival of in-person interactions.

4.5 Organisational Values and Norms: flexible, digital culture

This theme explores the culture of each organisation as perceived by participants, then presents the changing landscape of cultural values and norms across the duration of the study.

T1 (May-Aug 2020) Findings for Organisational Values and Norms

Prevailing Organisational Cultures

The organisational culture at Case A presented a complex landscape, shaped by a diverse demographic comprising academics, professional staff, and students. A higher grade noted the unifying influence of the institution's values: *“One of the things that stands out to me is the adoption of our values¹⁰, and that people are able to say them...9 out of 10 people could talk about them and what they mean to the organisation and to people” (P1: A)*. A commitment to equality, diversity, and inclusion (EDI) was evidenced by a dedicated team and the possession of a range of charter marks, awards, and affiliations across a range of protected characteristics, including Athena SWAN, the Race Equality Charter, and the Disability Confident Employer scheme. Yet, the culture was perceived to lack agility and involve unnecessarily complicated processes, as suggested by a lower grade: *“The culture of the university is lack of speed to change...if there is a convoluted way of doing things, we will find it” (P12: A)*. Implementing change in a large institution was perceived as a slow process: *“I think our issue is about being big, which makes innovation slightly more difficult across the whole institution... turning a tanker is a lot more difficult than turning a speedboat” (P5: A)*. Additionally, a culture of questioning might serve to hinder change: *“We are a university full of people who question, why wouldn't they question when we give them a new piece of software?” (P1: A)*.

¹⁰ Case A values are 'FACES': Friendly, Ambitious, Collegiate, Enterprising, Student-facing.

In contrast, Case B higher grades perceived their organisational culture as dynamic and a strategic asset: *"We often talk about 'moving at pace' and learning fast, that runs through anything we do"* (P15: B); *"It is one of our most strategic advantages... a company that has a strong, supportive culture. We get the best people, keep them, and get the best out of them. We like to be soft on the people and hard on the issues"* (P17: B). An emphasis on assistance at an individual level was also highlighted: *"It's a good company, very open and progressive. It's very caring, looks after people...our IT department is phenomenal...they are dealing with people whatever age they are...they will spend time to individually coach and reassure"* (P22: B). Case B also highlighted its proactive approach to diversity and inclusion as described by a higher grade: *"We take very seriously and respond very quickly to the issues about diversity and inclusivity and that is not just lip-service, that is how we behave"* (P17: B). At T1, 'collaboration' formed part of Case B's organisational values¹¹ meaning face-to-face collaboration.

Face-to-face collaboration in both cases

At T1, employees in both cases missed direct human interaction, *"I get a lot of energy from my colleagues and people in general, so I miss that human interaction and I'd rather be sitting in a room with them...which allows you to work better"* (P23: B). Similarly, Case A indicated a preference for traditional meetings, *"My team would prefer to have an old-fashioned meeting, this is not from 1 or 2%...lots of people have commented about wanting to get back to the office for face-to-face collaboration"* (P6: A). The absence of casual interactions was felt by higher grades in both cases, leading to concerns about the loss of informal knowledge sharing and potential stunting of business relationships: *"Lack of connection to the team, casual chats in the corridor, kitchen, that informal knowledge*

¹¹ Case B values are Inclusion, Diversity, Mental Wellbeing and Collaboration.

sharing" (P16: B); "If we said we were never going to go back ever and see each other, I think that relationships would become stilted, business like, driven and the connections are lost. In time you lose a lot of goodwill that you'd gained in those relationships" (P1: A). The productive and creative advantages of in-person collaboration were emphasised by Case B: "One partnership I started on Teams, we met in a space last week and the brainstorming and creativity we achieved in 45 minutes together gave us a massive leap forward" (P17: B). The necessity of face-to-face interaction was particularly noted for junior staff and new starters, "You might say that junior and new starters need more support and need to be instilled in the corporate culture, the building, the fabric etc.... there is a benefit to people coming into the office in the early stages of their career" (P17: B).

Deep concern by Case B about the loss of face-to-face collaboration led to an early initiative to make office space available, particularly for those in less ideal home working conditions: *"Part of the impetus for me in re opening the office is to allow those people to come back" (P17: B). A survey in October 2020 gauged interest in returning to the office but the results indicated the majority did not want to go to the office at that time: "85% of people don't want to go back into the office" though it was suggested "That will change as lockdown eases" (P15: B). Tensions were evident: "The company edict was that they wanted everyone back in the office for three days a week from the beginning of October, we had already pushed back on that...some people are very nervous about going back into the office" (P22: B). In contrast, Case A did not attempt to return at this time although higher grades were aware of the difficulties posed to those with inadequate home working conditions "We've kept it real in our heads that some people, they desperately want to get back" (P1: A).*

Though as yet, lacking definite plans for flexible or hybrid working, participants in both cases recognise a profound shift, foreseeing permanent changes to traditional office settings.: *"I think we're on the cusp of a complete global change... just because it was always done that*

way doesn't mean to say going forward that's the way it's going to be done" (P8: A); "You now realise you can do any sort of work from anywhere and you realise Teams has made that easy" (P16: B). From younger workers enjoying the flexibility to integrate personal activities into their day; "One of the main commitments I have is with the local [political party] and I have more time for that" (P9: A), to those previously facing a long commute: "I used to be on the ferry at 6.15 each morning... I bought a new computer, teams is working properly, and I leapt into the 21st century!" (P10: A), to working parents: "Now if I am picking my daughter up, I just walk out of the house without worrying about an out of service train, everything is less stressful" (P16: B), the shift is broadly welcomed. Higher grades are already considering the longer-term strategy: "It might be that you don't need all the office space and some of the office space could then become teaching space" (P4: A); "The bigger question is, how do we take all the best things about the office and make that work?" (P17: B), reflecting a proactive approach to integrating the best of both remote and in-office work and which considers the needs of individual employees: "There's all sorts of ways of thinking about it but it's just what works for individuals as well" (P4: A). Conversations around flexible working naturally lead to the issue of trust in those working remotely.

Presenteeism and Trust in Remote Working

Deeply ingrained cultural norms around presence and productivity were apparent at both organisations as acknowledged by higher and middle grades: "I wasn't receptive to homeworking before because, firstly, I didn't think people could work as efficiently at home and secondly, I didn't think people would work as efficiently at home" (P5: A); "It's always been a distrust, right up to my level and above, you feel guilty working from home" (P22: B). Pre-lockdown remote work required approval and was considered a privilege: "Prior to this working from home was a privilege and it would normally need to be approved. There would need to be some rationale...a specific piece of work that I needed to focus on without

distraction” (P18: B). The pandemic forced a rapid re-evaluation of these preconceptions, with many surprised by the high productivity levels maintained remotely: “I think if I’m honest when we first came into this we thought, Oh God, what would be the output of staff be...BUT I think it’s been amazing it because it’s almost been a like for like if not more in some roles” (P4: A). This was observed as a quantum shift: “There’s been a massive psychological shift in the company and in other companies toward trusting the workforce” (P22: B). As a result, prior norms were challenged: “The most extraordinary thing about lockdown is that everyone at every level of the company has realised people can be trusted” (P22: B); “I think it was a trust issue, but again this whole situation and the fact that we’re all doing it and doing it so effectively has completely changed their minds about home working” (P4: A).

Despite this, transforming the newfound trust in homeworking into a cultural norm was not imagined by Case A to be straightforward: *“It will take a culture change.... because some people will be trusting of others, others will trust people they know and some people will think, I don’t believe they are doing a full day” (P1: A).*

Monitoring and Managing Remote Work

Building on the insights about trust, this section delves into the complexities of monitoring remote work. Higher grades in both cases were uneasy about the idea of monitoring individuals output via software: *“I don’t think [Case B] is a company that would do that, the culture is one of inclusivity and trust, championing people” (P15: B); “As long as the line manager and the member of staff have agreed outputs and set goals, I don’t care where anyone does that, as long as they’re safe there” (P4: A).* While this reflects the extraordinary situation of enforced lockdown, other higher grades outlined a longer-term management approach: *“(Previously) it would be like, we’re not going to talk to you...you’re working from*

home because you're doing a special project. In future because of the way we are working with teams, we're still going to expect them to be in on meetings" (P2: A), underscoring the necessity of developing new management strategies that respect privacy while ensuring fairness and accountability in remote settings.

Ensuring equity in career progression could be more difficult in remote working: *"When you are remote and rely on trust it may be difficult to make decisions about who to move up...and that becomes important for diversity...where unconscious bias can come to the fore if you don't have proper processes set up"* (P17: B). Neither organisation had formal processes in place to track behaviour; *"We don't have many formal processes to track behaviours and performance"* (P17: B) although some roles in Case B were deadline-oriented, making failure to work obvious: *"A large proportion of the jobs are task-based...as long as you are doing your job, we will not go to press with blank pages"* (P15: B). At Case A, outcome-based performance measures were also preferred by middle grades: *"I say let's trust everyone to work in whatever way they want and just have them accountable for the things they have to do, if you have deadlines you have to meet them"* (P10: A).

T2 (Sept-Nov 2021) Findings for Organisational Values and Norms

Shift in Workplace Preferences

By T2, a shift in workplace preferences was evident across both organisations, with many reluctant to return to a full-time presence in the office. At Case B, a higher-grade employee observed a mismatch between leadership's preference for office-centric community and employees' reluctance to return: *"I know our leadership team really likes the office and prides itself on a sense of community and fun... people have been able to go to the office for a long time, but not many people do. I think that was a bit of a slap in the face when everyone could go back, nobody seemed to want to"* (P16: B). However, higher grades, whilst wanting to

preserve the organisation's collaborative culture, were no different in a desire for personal flexibility: *"I personally do not want to be going into the office more than 2/3 days per week"* (P17: B). Younger participants preferred not to return until more colleagues did: *"I do personally want to go back into the office a bit more, but I don't want to do it until others are doing it too"* (P21: B).

Financial pressures also played a role, with significant leases influencing decisions: *"We have two massive leases on buildings...which is also a factor in an increasing drive to get people back into the office"* (P21: B). At Case A, there was a similar acknowledgment of the changing dynamics, with a higher-grade employee noting the difficulty of choosing a single work style: *"I think there would be an outcry if we suggested everyone had to come back to work and nobody could work from home.... I think there would be disappointment if we said the opposite, that everybody had to work from home.... flexibility is the right approach"* (P5: A). Despite physical separation, both organisations managed to foster a sense of community through digital means.

Enhancing Personal Relationships and Changing Norms

By T2, despite the lack of face-to-face collaboration, both organisations had successfully nurtured a sense of community through use of the DCP in pandemic circumstances and were keen to continue those interpersonal connections: *"We want to maintain the community feel and people feeling valued as a person when we have to open up"* (P1: A) but cultural change as a result of using the DCP was acknowledged: *"We've changed culturally...I think the pandemic forced us to use it, but Teams has a real part to play in it to allow people to work from home"* (P1: A). The virtual environment even deepened some relationships: *"In some ways, you know people better because you have been in their house, you have seen their wives and kids pop in. you have more of an insight and it made us a lot closer"* (P16: B). The

recognition of personal commitments became more pronounced: *"There are senior managers who say they have to go to pick up the kids or sort out dinner because their partners are working"* (P9: A); *Most of the leadership and senior team are working parents"* (P16: B) and those without family commitments had also benefited from additional flexibility: *"People who resented other people being more flexible with their time...this democratises that, where everyone has the ability to use Teams to manage their time better and stay connected"* (P9: A). The shift towards greater flexibility was seen as a potential driver for more inclusive practices and gender equality: *"I don't think there is a massive change yet, there is some potential for more gender equality"* (P9: A). Both organisations started formalising their approach to hybrid work.

Approaches to Hybrid Working

Case A implemented organisation-wide 'flexible location' principles focused on 'where, not when', meaning flexibility of working hours was subject to separate negotiation. Flexibility, already a core component of Case A's 2020-2025 strategic plan, was linked to the new working principles in an all company update in March 2021¹². The approach allowed flexibility in working location, contingent on business needs and managerial agreements regarding on-campus presence: *"We won't go back to being 9-5 wholly office based. We've had to mature in our understanding...we might have two teams that appear exactly the same but their need to be in the office might be different...we could have been very prescriptive, but we managed to avoid that pitfall...we could have said everyone in for two days, but we tried not to do that"* (P1: A).

¹² *"With regard to flexibility...the two most obvious are related to the blended teaching approach that we've developed, but also of course to the opportunities and ability to work from home"* (Senior leader, March 2021).

Despite the principles of flexibility, some roles did not qualify for remote work, particularly those in customer-focused positions: *“We haven’t been given a go-ahead of flexible working...we understand that we’re customer-focused but during lockdown we were doing [description] work...they said it’s always something that will need to be done when it’s quieter and it’s something for us to fall back on”* (P14: A). This limitation led to frustration among team members who felt disadvantaged: *“there’s been a few issues in the team raised about that, about not being able to work from home”* (P14: A). In terms of office space reorganisation, Case A opted for a gradual approach, allowing employees to adapt to new working styles before making significant changes: *“We felt we would let people settle into how they wanted to work first...we will give it until Christmas then [] has been asked to look at space usage and a strategy to see how we do things in the future”* (P4: A). This strategy included modest investments in meeting room technology to enhance the hybrid meeting experience.

Case B planned a structured six-month trial starting January 2022, intending for employees to spend three days a week in the office: *“It will be three days back in the office from January and I can see why...they don’t want to start building exceptions into that at the start”* (P21: B). The workspace was professionally redesigned to support a dynamic and collaborative environment, face-to-face social and wellbeing events had been planned, and treats were available, including free hot drinks and pastries for the first few weeks, plus 10 free lunches for everyone¹³. A series of all company communications prepared in December 2021 regarding the proposed return, emphasised that the majority of staff would adopt the 3:2 working model, although a small number of teams would be the exception.

¹³ Return to work all company email and FAQs, issued early 2022.

The IT teams were named as adopting a different working pattern, with two days per week in the office, on the basis Case B needed to offer similar benefits to IT workers as the rest of the employment market. However, many participants subsequently explained to the researcher why their team would be working less than three days in the office, leading a middle grade to suggest it would ultimately come down to roles: *"There will be a mandated drive around sales and customer facing teams...the sales team will be people in their twenties, and we would get more productivity by having them in a competitive/social environment"* (P21: B). Against that, concern was expressed regarding damage to career health from protracted absences from the office: *"When it comes to promotions, who's going to be in pole position, the person who is in the office three days a week or the person who is in once a fortnight?"* (P21: B). Once again, the DCP was directly linked to flexible working: *"It's reflected in the stats around who wants to come back to the office and frankly, most people don't and that must be implying they feel perfectly capable...Teams has a massive part to play in that"* (P18: B). As hybrid plans were formalised, participants noted the evolution of trust and culture.

Trust and Monitoring in Remote Work

Across both Case A and Case B, the pandemic had shifted perspectives on trust in remote working: *"There has been a massive shift overall across the institution...I think culturally it has changed at an institutional level...the organisation's culture pre-Covid was presenteeism"* (P9: A). This newfound trust was acknowledged positively: *"I do think we trust people to work from home, I think we have won that argument"* (P2: A), and *"Yes, there is more trust, it's given more flexibility"* (P27: B). The circumstances of the pandemic did not allow the option for doubt and consequently it had been necessary to invest greater trust: *"I suspect by necessity, enormously!"* (P17: B), although popular discourse had not gone unnoticed: *"I've seen something on TikTok with people wiggling the mouse, so it shows they*

are still working” (P2: A). However, a focus on trust alone was interpreted as a reductionist interpretation of a broader phenomenon: “I think it would be remiss to say trust has changed...it is more that the culture has changed, not trust only as that has a negative connotation” (P23: B). Features within Teams such as ‘status availability’ lights, may have provided covert monitoring of employee presence, reassuring managers.

It appeared that such status indicators, showing one’s availability as (green), busy (red), or away (orange) influenced behaviours: *“I note the red symbol with the line through it which shows they are in a meeting or have their do not disturb on, I will note that is on and I won’t hear from them for a bit” (P16: B); “I am watching for the green sign, throughout the whole day it is red or yellow and suddenly it goes green, I ask please, is it OK to have a five-minute chat?” (P6: A). Yet, there was discomfort among some lower grades about these features: “I think when it sets the status as ‘away’, but I am actually at my desk working, I feel like I should move my mouse to show I am not away...that feels like pressure” (P13: A); “They are sat at their desk reading huge documents and so the computer is idle, and they are concerned that they appear as away even though they are at their desks” (P21: B). Features like this made some wonder whether “People perceive Teams as part of a more managerial culture... somehow trying to be more observant of people, maybe tracking them” (P9: A). The online behaviour of younger colleagues was puzzling: “I’ve noticed younger members of staff never seem to be online, they have the black ‘x’ but they’ll respond very quickly, but that makes me think they are using their phones.... they are engaged with work but not logged in.... I don’t really understand” (P9: A).*

However, the consensus among higher grades in both cases was emphatically against overt monitoring, emphasising a focus on outcomes rather than activity: *“I hate to think what sort of measures, clocking on or when Teams says they are active, it’s a horrible thought.... that wouldn’t do anything for relationships. We should be upskilling our line managers to manage*

on output performance as opposed to having to see people" (P4: A); Higher grades in Case B also rejected the idea of explicit monitoring: "It's never come up as a management discussion point about how to keep tabs on people...if anything the tone has been, how do we look out for people?" (P18: B).

T3 (March-May) Findings for Organisational Values and Norms

Hybrid Working Tensions at Case B

By T3, participants in both organisations had been working in a hybrid manner for over a year. At Case B, the expectation was to work three days a week in the office, featuring an all company 'anchor day' to ensure maximum attendance for face-to-face collaboration:

"Tuesdays are an anchor day so that is the day the company insists that everyone is in,"

(P15: B); "Certainly the message from the business is to have more in person meetings when

in the office" (P26: B). Ideally, the anchor day would not contain online meetings: "On a

Tuesday we are not meant to have many Teams meetings, I think they would like us to not

have any but that is not always possible" (P15: B). This day prioritises face-to-face

interaction to foster deeper connections and creativity: "I think you get wider participation

because you can pull people in more easily. You get more streams of consciousness

conversations in the room." (P17: B).

Despite leadership preference for three days a week in the office: *"There is a definite push from above to get people in on a third day if you work five days a week" (P15: B); "It comes from the top, [CEO] wants people in the office...a strong believer of face-to-face working"*

(P24: B), actual office attendance, based on a desk booking system, was lower than expected:

"I think it maxed out at 1.4 days/person/week on average" (P21: B), although this system was

not 100% accurate. A survey conducted in May 2022 which received 556 responses,

confirmed 45% of respondents as coming into the office two days a week, with 33% coming

in 3 days per week. However, close to half of those who were working 3 days from the office said there were too many days in the office. Although tensions continued, Case B possessed a charismatic cultural environment.

Organisational Culture and Trust

Following recognition as a ‘great place to work’, Case B’s CEO reinforced an external award by celebrating 2021 as the company’s most successful year in its history, underlining the importance of a robust corporate culture: ‘*Culture eats strategy for breakfast*’¹⁴. Yet, in October 2022, Case B’s announcement of significant layoffs led to doubts about the company’s values. *“Actions speak louder than words and the October redundancies will take a long time to recover from... those sorts of things make you question the value and caring,”* (P15: B). Managers were concerned about the messaging to staff: *“It is the mixed messages, the constant gung-ho spending and big rises and every update is positive, then suddenly there are redundancies... and now nobody trusts anybody. It is hard as a manager to sell these messages to staff.”* (P22: B) *“I think there is an inherent problem that a lot of people have been made redundant which does not make people feel they are being cared for”* (P23: B).

This unwelcome shock raised the spectre of presenteeism again: *“I think there is still a lot of disagreement at the very top level about presenteeism in the office. At the very top level I think they would like us in five days a week so that they could see exactly what everyone is doing”* (P15: B). However, a good balance had been achieved over the previous 3 years: *“If you have found something that works...then actually why push people.... and change all of that balance...people come in extra days when it is necessary, that flexibility goes along with the trust”* (P22: B) and productivity had not declined: *“We all have a job to do, and it would be noticed if it wasn’t being done or done badly”* (P23: B). On the other hand: *“There are*

¹⁴ Source: All Company email issued January 2022 by a senior leader.

still things that show the Company want you to have a life beyond your day-to-day work” (P23: B), for example, “Some of the major social events like the Christmas party and pop quiz have been at least as well attended as anything pre-Covid” (P21: B).

At Case A, flexible working policies allowed departments to set their own schedules, typically mandating staff attendance for two days per week. Departments varied in their approach; some established a specific 'team day' for all team members to be present. *“We identified Tuesday as the day everyone comes in and I try to cram everything face-to-face on those days I’m in.” (P6: A).* This naturally created expectations of meeting in person: *“I’m on campus, I don’t want Teams meetings ...I’ve driven 30 miles...I want to see people” (P2: A).* Those in departments where a regular team day was not implemented, observed less opportunities for spontaneous face-to-face interaction, as not all colleagues were present on the same days: *“I’ve been in once a week, but I never see anybody... It’s hard to catch those informal moments” (P7: A).* This scenario appeared to make it challenging for new team members to integrate and learn informally: *“Three years ago the whole office is busy, everyone sharing knowledge, but now that is not there.... new people are not absorbing the same information” (P11: A).*

Although the transition to remote work was perceived as significantly shifting trust dynamics within Case A: *“There has been a massive shift overall across the institution... I think culturally it has changed at an institutional level,” (P9: A),* higher grades remained tentative about the longer-term productivity of hybrid working: *“There is something we need to get our head around... whether there is evidence that we are getting as much work progressed through Teams as we had previously, had everyone been in the office” (P4: A).* Remedial action had already been taken: *“I know for one of the teams in my area that was definitely not the case, we are addressing it and making it three days in the office” (P4: A).* Although, for some individuals, it was no longer clear what purpose face-to-face interactions served:

“People also say they get less done in the office because they are chatting to people...I see those relationships as important, but people do also see that as wasted time” (P1: A).

Likewise, *“I think it is nice for the social aspect to see everyone, but I don’t know if it is beneficial workwise” (P14: A).* Nonetheless others enjoyed their office days: *“I still really appreciate being in the office... so I work around that,” (P4: A)* and although *“It is really about personality and preference... maybe going into the office all the time for incredibly introverted people was very difficult,” (P1: A),* office days remained compulsory: *“Where we have heard people say that they are just not coming in, we have taken disciplinary action.” (P1: A).* There were also some groups of workers for whom the DCP had provided unexpected benefits: *“Today there was a presentation on neurodiversity and how for different conditions this has been a godsend using Teams and the chat, which has really helped them with their work” (P4: A).*

Balancing Employee Preferences and Cultural Identity

Higher grades in both organisations had to navigate the challenge of maintaining cultural integrity in their new, flexible environment. Case A felt they were balancing face-to-face and virtual identities: *“I don’t think we do culturally favour one side or the other” (P1: A)* and had not compromised prior cultural values: *“What also continues as a vein through our organisation is that values are still highly used and drive our organisational culture.... I have not seen any drop off in that” (P1: A).* Nonetheless, concerns had been expressed about a loss of community: *“It came out in the staff survey - ‘I love the flexibility, but I wish we hadn’t lost community’” (P1: A).* Yet, higher grades were unwilling to sacrifice their new-found flexibility, recognising instead that alternative ways to maintain community would need to be found: *“I am not prepared to give up flexibility to get community back, I think we have to find other ways of building that community” (P1: A).* Higher grades at Case B, similarly intent on preserving cultural integrity, were no keener to give up their flexibility: *“It*

was a personal choice; we didn't want to require others to do something we weren't willing to do ourselves, like coming in five days a week" (P17: B). Moreover, neither organisation felt there had been much of a choice from a commercial perspective: *"I think it was just business need, and we found we could work in that way.... I don't think there was an option to do nothing" (P1: A); "The decision was partly commercial - considering how many employees we might lose if we forced a full return" (P17: B).* This illustrates the challenges and opportunities presented as management attempted to balance the challenges of hybrid working environments.

The new flexibility in both organisations not only supported individual employees but also presented several organisational advantages. Table 15 details these benefits, which ranged from enhanced agility in decision-making, increased productivity in meetings and a reduction in short term absenteeism (see Figure 28).

Table 15. Benefits from DCP use - Participants view in both cases

Benefit Type	Illustrative quote from Case A	Illustrative quote from Case B
Agility in decision-making	<i>“Being able to meet on Teams at the last minute allows us to work at a quicker pace.... we are working with the NHS which has involved loads of individuals, but we meet quickly, sort things out and move on. I don’t want to lose any of that” (P4: A).</i>	
Improved attendance at formal meetings	<i>“Attendance to board of governors is the highest it's ever been...we had people stuck in the office in London, and if they would miss some of it, they'd miss the whole thing...now they dial in, and so things have gone through the roof because of that” (P1: A).</i>	
Productivity in online meetings	<i>“Meetings are more effective and efficient” (P5: A).</i>	<i>“I think meetings have become more purposeful, pointless meetings have fallen by the wayside” (P18: B)</i>
Enhanced inter-organisational collaboration	<i>“We have had much more engagement with our subsidiary companies and partner colleges ...we’ve been able to engage more effectively with the chief executives of [] and other businesses and that has been helpful” (P5: A).</i>	<i>“It is much easier now... there will be a default to ‘transactional’ conversations via Teams -only having the occasional in person meetings” (P17: B).</i>
Cost, time and sustainability benefits from reduced travel	<i>“There’s no possibility we will go back to doing overseas campus exam boards...if you think of the amount of money we were spending on trips and the damage to the environment” (P5: A).</i>	<i>“It is much easier now to find time in the diary for external conversations as we don’t have to travel” (P17: B).</i>
Reduction in short-term sickness rates	<i>“Our sickness rates have gone down considerably...that can be measured in working days and what that works out to in a year of work... if you're not feeling great you wouldn't travel, or you'd go early, but people are able to carry on [from home]” (P1: A).</i>	<i>“We have had no sick days [since homeworking began]¹⁵ (P19: B).</i>

¹⁵ Case B did not record short term absence at an organisational level, so data is anecdotal. This quote was from a higher grade, speaking on behalf of a 70 strong department.

Benefit Type	Illustrative quote from Case A	Illustrative quote from Case B
Customer Reach (existing customer segment)	<i>"It has allowed us to reach school students in different ways. We used to rely on schools requesting us to go into the school to do a talk...but now we have started online events...it allows us more direct communication without having to rely on teachers. You can now promote events on social media or through other organisations that work with young people, you can access young people directly. It is a definite productivity gain (P13: A).</i>	<i>"We have a panel where there will be a mixture of readers, and we do surveys about attitudinal stuff to try to understand things. For the digital part of the business, for our website, we were trying to find out about personas, and the team behind that used Teams for the interviews" (P23: B).</i>
Customer Reach (new customer segment)	<i>"We have been given the target to start engaging with adult learners...that would be much harder to do without online delivery for adult learners and parents, the research suggests that people have had a lot of success with online delivery as adults often have jobs, children, and other priorities" (P13: A).</i>	
Business continuity during a pandemic.	<i>"Well, its kept us running through a pandemic and that's more than can be said for many businesses¹⁶" (P12: A).</i>	<i>"Working practices of the last 18 months would have been catastrophic... thank goodness we had the technology as a lot of our jobs would not exist without it.... we weren't allowed to go into the office, how could we have possibly got a magazine together or run a website if we weren't able to properly communicate collaboratively? (P23: B).</i>

Short-term average working days lost Total days of short-term sickness absence divided by the total number of employees (FTE).	Year Ending
1.7	April 2021
2.7	April 2020
3.3	April 2019

Figure 28 - Short term absenteeism in Case A at T2

¹⁶ <https://www.standard.co.uk/news/education/universities-go-bust-13-coronavirus-support-a4489896.html>. 13 universities had gone out of business in the UK.

Comparative Summary of Organisational Values and Norms – Case A and Case B

Both organisations are organised into hierarchical control structures and participants descriptions reveal the prevailing cultural values and norms of each organisation as similar in some respects, but distinct in others.

Case A is characterised by a diverse and questioning culture, deeply committed to equality, diversity, and inclusion. However, it struggles with agility, often facing slow and complex processes that hinder innovation. By the second phase of the study, Case A had started embracing flexible work arrangements, though concerns about long-term productivity in a hybrid environment were emerging. The culture has shifted to accommodate remote work, but questions remain about maintaining community and integrating new team members effectively.

In contrast, Case B has a dynamic and creative culture, seen as a strategic asset. It emphasises rapid learning, support for individuals, and a proactive approach to diversity. Over time, Case B formalised its hybrid work approach, balancing leadership's preference for in-office work with employees' desire for flexibility. Despite a strong cultural environment, employee layoffs and tensions around office attendance raised concerns about trust and presenteeism, challenging the company's previously robust cultural values.

Both organisations experienced a significant shift in trust towards remote work during the pandemic, though their approaches to monitoring and maintaining cultural integrity differed. Case A focused on flexibility and outcomes, while Case B faced challenges balancing trust with a push for more in-office presence. Both reported benefits from using the digital collaboration platform, including improved decision-making, productivity, and reduced travel, but their integration of these benefits reflected their distinct cultural dynamics.

Table 16 offers a longitudinal view of findings across all data collection periods, for both cases, concluding findings for Organisational Values and Norms. Points presented in Table 16 are supported by participant quotations included in the narrative results.

Findings for the **Transformation Influences** theme follow Table 16.

Table 16. Organisational Values and Norms - Longitudinal View of Findings

Case / Time	T1 (May-August 2020) Enforced homeworking	T2 (Sept-Nov 2021) Homeworking/occasional office working	T3 (March-May 2023) Hybrid working (1-3 days per week)
Values and Norms at Case A	Participants describe a diverse culture with a strong focus on issues of equality. However, organisational processes were often disjointed. Face-to-face collaboration was missed, but a significant shift was anticipated; participants of all ages benefited from more flexibility. Presenteeism was a prior norm but enforced homeworking appeared to challenge this view and improve trust in home working. There was no inclination to monitor employees.	Organisational surveys indicated a shift in workplace preferences, where the majority wanted to continue with flexible working. Hybrid working principles created. Flexible working had benefited those with and without children. Organisational benefits had been realised e.g., improved inter-organisational collaboration and customer reach. Trust in homeworking was now established. DCP availability indicators provided awareness of colleagues' online presence.	Everyone working in a hybrid manner for over a year. Full time employees expected in the office two days per week but no 'all company day' or team days insisted upon. Some employees have become fixed on attending on specific days and others do not want to attend on any day, resulting in the need for disciplinary action. A balance is sought between flexibility and community, and organisational benefits, including agility and organisational learning, are identified.
Values and Norms at Case B	Participants describe a dynamic culture with a strategic focus on the quality of employees and a strong emphasis on creativity and collaboration, especially face-to-face. Presenteeism was a cultural norm, challenged in enforced home working and resulting in improved trust. Overt monitoring of remote employees was rejected and although more flexible working was seen as possible, it would be important to protect organisational culture. Ensuring equity in career progression noted.	Organisational surveys indicated a shift in workplace preferences, but with some difference of opinion between leadership and employees, on the right balance of at home and in office days. Benefits, including cost effective inter-organisational collaboration, had been realised. A hybrid trial was planned, and significant investment was made in office redesign. Workers were tempted back to the office with free drinks, meals, and social events. Trust in home working was perceived as well established.	Everyone working in a hybrid manner for over a year. One day per week designated as an 'anchor day' when all employees must come in. Face-to-face collaboration is privileged on this day to maintain cultural integrity and promote engagement and creativity. Three days in the week was requested but not adhered to by many. A cultural award had been won in 2022 but redundancies were later made, affecting the credibility of trust in espoused cultural values. Organisational benefits e.g. customer reach is identified from DCP adoption.

4.6 Transformation Influences: potential workforce divides

This theme highlights the personal attributes of individuals that influence the transformative impact of the DCP on their own and others collaborative practices.

T1 (May-Aug 2020) Findings for Transformation Influences

Emotional Impact of Remote Work

At T1, participants from both cases were experiencing intense emotions while adjusting to compulsory remote work. Mixed reactions regarding interaction with videoconferencing, were evident, with one participant noting, *“Initially everyone was complaining, there were two opinions...one was, isn’t this a terrible way to work and the other, but it is amazing that we can, both emotions were visible...at least we can still see each other, if someone was having a rough day, we could have a chat”* (P18: B). Similarly, in Case A, emotional fluctuations were common: *“I think people have gone like that [rollercoaster movement], sometimes we were all wow, this is amazing, other weeks its more stressful”* (P4: A). A survey conducted by Case A in May 2020, corroborated these experiences, finding the top three challenges of homeworking amongst Case A employees were demanding workload, health anxiety and feeling down due to social isolation. While navigating these emotional highs and lows, the age of participants seemed to play a role in adaptability to the new remote work environment.

Age-Related Attitudes towards Technology

Younger participants in both Case A and B identified an age-related disparity: *“We have quite a young team in their 20’s or 30’s, so we are keen on technology and trying stuff out...but some of the [wider] team, particularly the older members, are nervous about adopting change”* (P13: A). Similarly, *“I don’t mind change, which I think is a young person’s trait”* (P18: B). However, another younger participant suggested media influence

contributed to the common notion that young people are open to change: *"I suspect some young people probably say they like change because you know how these things are pushed by the media, actually probably some young people don't like change"* (P21: B). While some older participants pointed out long familiarity with digital applications: *"The amount of tech I've got through in my working life is massive"* (P22: B), others self-identified with more hesitation towards technology: *"I'm a complete Dinosaur in some senses"* (P5:A), and *"I am old school, I am 58 and a technophobe"* (P24: B), yet were surprised by their adaptability: *"I underestimate myself, it has been a dream!"* (P24: B). The disparity in comfort with technology between younger and older employees highlighted the broader issue of varying digital skills within each workforce.

Bridging Digital Skills Gaps

Prior to T1, Case A had access to Linked-In Learning, which offered numerous professional short courses, such as Essential Training in Excel and Project Management Foundations. However, between 2019 and 2020, only 10% of available licences had been used, making participation low. Whilst participants digital skills were not 'measured' at any point in this study, they did not appear to be heterogenous for any age group: *"There's a varying age group and IT proficiency within the group, some people are ready to try anything new, excited by the potential, other people have to be dragged kicking and screaming"* (P8: A). Nonetheless, when the DCP was adopted, it was younger colleagues who were identified as informal facilitators in the learning process: *"People often comment to me about how useful the younger generation have been to them, and they were going to people that weren't naturally the leaders in the team"* (P1: A); *"I help others, showing them how to do videos and things like that, I like to think I help the others that are older"* (P14: A).

Participants of all ages in both cases displayed varying comfort levels when required to transition between different digital applications, i.e. digital dexterity, a more nuanced aspect of digital skills: *“I can flit between Teams and Zoom, it really makes no difference to me”* (P16: B): *“Teams for meetings, Zoom for social, I use both”* (P7: A). Others suggested flitting between Zoom and Teams made them a little nervous: *“I feel very comfortable using Teams...I am slightly more nervous with Zoom because it is less familiar”* (P5: A). Some favoured one application over another: *“The majority of staff in the [school name] would prefer to use Zoom... they want to work on a platform they feel most comfortable with”* (P10: A), but this lack of adaptability between platforms led to some extreme outcomes: *“That can lead to that blacklisting effect, where one person’s experience can affect other person’s experiences that they haven’t had yet”* (P10: A). As both cases navigated the digital learning curve, underlying power dynamics within the organisations influenced how technology adoption and training were implemented.

Power Dynamics and Technology Adoption

Power dynamics influenced the adoption and usage of the DCP, demonstrated by individuals’ position within their respective organisational hierarchy, or as members of particular organisational groups, with or without power. In Case A, the central IT team restricted their offer of DCP training to those requesting a ‘full’ team, while those using video conferencing and chat were directed to written guidance. Middle and higher grades criticised the IT Department for its failure to provide training for all: *“The feedback I get from academic colleagues is that it’s not that they don’t want to do it, but they need to be shown how. We in the school will try to help but we also need training (from IT). It needs to be brought to the university’s attention”* (P6: A). Additionally, a lack of clear direction led to inconsistency: *“I just think we should have a university way of doing things, you know, a consistent way*

because everyone's doing their own thing.... it's just like the Wild West actually..." (P2: A).

Nonetheless, the IT team did not change its approach to training provision.

Lower grades at Case B pointed out the constraints and frustration of hierarchy in influencing more senior colleagues: *"I would like to influence better work practices...but that is not something that comes naturally...due to the hierarchical structure of a business.... having self-belief, that what you are saying will be considered by the more senior person and taken seriously"* (P26: B). Similarly, *"I was the one who nagged and nagged to trial Teams...I have worked on Google Docs and found it unwieldy. Basically, I am so low down on the pay scale I have no decision-making powers"* (P27: B).

T2 (Sept-Nov 2021) Findings for Transformation Influences

Flexible Working and Age Dynamics

By T2, participants in both cases had been working in a flexible manner for more than a year, and some older employees reflected that a better work-life balance was beneficial to advancing years, especially on physically demanding days: *"My focus is better...I need a quiet environment...I do think that is partially my age, I am 60 and my desire for work has not changed but I feel the work life balance is better for me which I have not had for 30 years"* (P24: B); *"My staff are not in their young days, they are mostly fifties and sixties...there are days when they feel a bit more tired and then will say, thank goodness it's my working from home today...I can still do my work but not running around crazy* (P6: A). The new working style reduced short-term absenteeism in the older age group *"When I think about sick days for the older age group, they are the ones who would have taken a day off if they had a cold and could not bear the commute...we have had no sick days [since lockdown started]"* (P18: B). Short term absenteeism had also reduced in Case A (Figure 28 in [Section](#)

4.5), although the analysis was not available by age. In addition to facilitating flexible working, adoption of the DCP appeared to influence digital skills among the workforces.

Digital Skills Levels through DCP Adoption

A broader survey about homeworking in general, conducted in March 2021 by the Human Resources Department at Case A, presented the researcher with the unique opportunity to pose a number of specific questions regarding digital skills, which are shown in Figure 28.

Working with MS Teams has...					
Please don't select more than 1 answer(s) per row.					
	Agree	Slightly agree	Neutral	Slightly disagree	Disagree
enabled me to develop my digital skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
encouraged me to try using digital tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
led to an increase in my self-confidence to use other digital tools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
significantly improved our working practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Data from question 23 may additionally be used in UH approved research with ethics protocol number acBUS/PGR/UH/04641(2).

Figure 29 - Questions in company survey (with ethics approval)- Case A March 2021

Used as secondary data for the purposes of this study, the all-company survey responses from Case A may be summarised as:

- 73% of respondents strongly or slightly agreed working with Teams enabled them to develop their digital skills,
- 67% agreed/slightly agreed Teams encouraged them to try using other digital tools,
- 57% felt using Teams led to an increase in self-confidence to use other digital tools,
- 76% felt Teams significantly improved their working practices.

It was not possible for the researcher to ask the same questions as part of a similar survey conducted amongst Case B's employees in 2021, but, in respect to digital skills, a Case B participant referred to an all company meeting hosted by the COO in April 2021, wherein "he [CIO] referenced a digital skills uplift....and we've kind of done it by stealth because why did

we push teams... and lo and behold, a year on and I guarantee that people if you'd said 12 months ago, would be using threaded messages and storing stuff, I would have absolutely not believed you" (P21: B). In order to gain the specific views of all Case A and Case B research participants, the same questions were read as open-ended questions (i.e., without the scales) in T2 interviews. Participants were invited to comment in any way they chose, and an illustrative sample of the answers are shown as Table 17. In summary, individual participant responses were more varied than had been indicated by the all-company survey results. Some older participants felt their skills and self-confidence had improved, whilst others felt they already possessed good digital skills. The only noticeable pattern was that younger participants all stated they had a good level of self-confidence prior to DCP adoption and were further able to compare the DCP to applications they used in their personal lives such as WhatsApp and Facebook, potentially demonstrating a greater level of digital dexterity.

Table 17. Participant replies to digital skills questions (both cases - T2)

Working with MS Teams has	Part. Case/No.	Age Group	Grade	Response
Q1. Encouraged me to develop my digital skills	A	>50	Higher	<i>"I would not class having a Teams meeting as a particularly high level of skill, it is better than nothing, but I would not class myself as highly skilled digitally, I am a dinosaur" (P5: A)</i>
	A	<50	Middle	<i>I feel I already had a high level of digital skills; I have been able to draw on my own skills set (P9: A).</i>
	A	<50	Lower	<i>"It's teaching me like a different kind of Facebook, but workwise" (P14: A).</i>
	B	<50	Higher	<i>"Yes, as I was not using video conferencing software before" (P17: B).</i>
	B	>50	Middle	<i>"Yes, it is another string to the bow" (P22: B).</i>
	B	<50	Lower	<i>"I'd say so because it's a new piece of tech that I hadn't used before, so by using it you naturally learn a new skill, I suppose...Yeah, I'd say so" (P28: B).</i>
Q2. Encouraged me to try using other digital tools	A	>50	Higher	<i>"Yes, it has helped" (P5: A)</i>
	A	<50	Middle	<i>"Definitely" (P9: A)</i>
	A	<50	Lower	<i>"No, I don't think it has enabled me to and I think I was quite familiar with this stuff already. And it's just in another way" (P14: A)</i>
	B	<50	Higher	<i>"To a degree, I have been curious about things like the white board but have not ended up using them very much" (P17: B).</i>
	B	>50	Middle	<i>"I wasn't discouraged in the first place, anything new to try is great" (P22: B).</i>
	B	<50	Lower	<i>"That's a difficult one because everything is being forced on us with the pandemic...whether that's directly attributable to teams is hard, but with teams coming in, there's definitely been other things we've had to use" P28: B).</i>
Q3. Led to an increase in my self-confidence to use other digital tools	A	>50	Higher	<i>Yes, I would say that (P5: A).</i>
	A	<50	Middle	<i>Yes, probably. There have been different tools that I have used, not much has stuck though (P9: A).</i>
	A	<50	Lower	<i>"No, I don't agree with that. I feel like I was confident in the other stuff, if anything they gave me the confidence to use Teams." (P14: A).</i>
	B	<50	Higher	<i>"Probably not...time pressure means it is not something I prioritise (P17: B).</i>
	B	>50	Middle	<i>"Not necessarily" (P22: B)</i>
	B	<50	Lower	<i>"It's difficult that one because I think before using Teams, I would feel confident. I think I sit in that bracket where I would always feel confident using a new tech. I probably get it wrong, but I don't mind trying, giving it a go (P28: B).</i>

Power Dynamics

At T2, the IT team in Case A had not modified their strategy of restricting training, which frustrated middle and higher grades: *"I've asked for training, and they say, oh no, we don't do this training...you just go to the video...but sometimes it's nice to have a real person to give people a chance to ask questions and run through a few scenarios...and this is not very supportive"* (P6: A); *"There is still a piece missing...I have had previous conversations with [the CIO] about giving us a car without the highway code...I intend to keep trying"* (P2: A). In contrast, at Case B, the IT team's approach to training was not limited to videos and was aimed at transitioning from Google Docs to Teams: *"I am willing to run training sessions as I really do feel people would get a better experience if they were to embrace Teams wholly as they could just use one set of tools"* (P21: B).

Impact of Organisational Hierarchy on Technology Adoption

Higher grades were able to negatively affect the adoption and utilisation of the DCP, causing some backwards steps to be taken by T2: *"Some people have tried to set up Teams workspaces and that has just died a death immediately.... somebody outside of our core group set one up.... I asked them to conduct the conversation on email instead...I just don't think we need it at the moment"* (P16: B). A lower grade also observed regression but could not influence due to their position in the organisational hierarchy: *"It's been the reverse, I was promoting it, and it's gone backwards. I don't feel discouraged by the software, but it's typical of that dinosaur community that they want to go backwards"* (P27: B). The influence of leadership on new practices was felt to be critical: *"You need a leader within the unit who makes that the detail way of communicating, then you take everyone with you...working practices are still dependent on the person who is leading a team"* (P10: A).

T3 (March-May 2023) Findings for Transformation Influences

Views on Age and Technology Adoption

At T3, the perception that younger people are more adept with technology persisted, although this stereotype was acknowledged as unlikely to apply to everyone: *“I think stereotypically that [view] does hold true, but only because younger generations have grown up with technology...however I don't think it's a hard and fast rule and I think it does a disservice to older generations”* (P26: B). However, organisations could benefit from harnessing the skills of younger employees: *“Recognising you can always learn from someone even if they are younger...that's why it's important for people in leadership roles to hire people who are better than themselves in certain areas”* (P26: B).

Ongoing Need for Structured Guidance

By T3, higher grades still perceived a need for more structured digital training at Case A, particularly for new employees: *“I think we could use more training, something for new staff who have joined.... I don't think we really do that; we just expect new staff to get on with it basically”* (P9: A). The approach to self-directed learning using available resources was not fully effective without awareness: *“I'm happy with that, but you've got to know it's there. That little loop component that just arrived...I can't train myself if I don't know it's there”* (P2: A). At Case B, employees were utilising self-teach methods: *“It was trial and error, I just messed about.... I might sometimes ask in the [name] team if someone knows how to do something”* (P25: B) and leveraging external resources: *“I am 51 now, I don't know what we did before Google”* (P25: B). Case A and Case B subsequently each took significant steps to formalise and enhance their training frameworks to support their employees' digital proficiency more effectively.

Advancing Organisational Learning

By T3, Case A had recruited a Digital Skills Development Team and launched 'Digital Wednesdays' to improve staff and students' digital capabilities systematically. This effort included promoting LinkedIn Learning as a key resource and inviting new staff to activate their account within four weeks of joining Case A. As a result, LinkedIn Learning account activation rose to 41% of total licenses or a 30% rise from baseline figures collected for year ending August 2020. Case B reported similar organisational initiatives: *“There are seminars which are mixed hybrid... some specific and some broader like what’s best practice when using video”* (P15: B). Moreover: *“We have a new Head of Learning and there's been a really big push for the business to use new learning platforms and upskill themselves and self-development”* (P26: B). Case B further invested in a bespoke learning environment: *“They now have a learning platform that is bespoke to the business... it incorporates LinkedIn Learning, videos, however you want to learn... and there's also been a really big push for people to take on additional qualifications in data, marketing, or project management”* (P26: B).

Comparative Summary of Transformation Influences – Case A and Case B

In exploring the transformative impact of DCPs on collaborative practices, findings from both Case A and Case B reveal how personal attributes, age dynamics, and organisational structures influence this transition.

In the early stages of remote work, participants in both cases experienced mixed emotions as they adapted to the new demands. While some embraced the new way of working, others found it stressful and challenging. Age-related attitudes appeared to influence DCP adaptation in both cases. Younger participants helped older colleagues, who, despite initial hesitations, sometimes surprised themselves with their adaptability. Some older participants

in both cases used self-deprecating and age-related terms such as *'technophobe'* or *'dinosaur'* to describe their attitude to technology while younger participants appeared more comfortable. The disparity in digital skills highlighted the broader issue in both cases of varying comfort levels with technology within the workforce. Throughout this period, the perception that younger employees were more adept with technology persisted, though it was acknowledged as an oversimplification.

However, the ongoing need for structured digital training remained a critical issue. By the later stages of the research, both organisations had begun to address this need more systematically. Case A introduced regular digital skills sessions and promoted LinkedIn Learning more actively, leading to a significant increase in engagement. Meanwhile, Case B invested in a bespoke learning platform that incorporated various resources, including LinkedIn Learning, and encouraged employees to pursue additional qualifications.

Power dynamics within both organisations also influenced how technology was adopted and used. In Case A, the central IT team's restrictive approach to training led to frustration, and a lack of consistent training meant most employees only had access to videos and written guides. In contrast, Case B's IT team did not deliberately restrict interactive training and offered it alongside written guides. However, lower grades in both organisations were sometimes unable to proceed with new ways of working due to higher grades reluctance or resistance.

Table 18 offers a longitudinal view of findings across all data collection periods, for both cases, concluding the findings for **Transformation Influences**.

A summary of Chapter 4 – Results, follows Table 18.

Table 18. Transformation influences - Longitudinal View of Findings

Case /Time	T1 (May-August 2020) Enforced homeworking	T2 (Sept-Nov 2021) Homeworking/occasional office working	T3 (March-May 2023) Hybrid working (1-3 days per week)
Transformation Influences at Case A	Shocked by mass homeworking and the need to collaborate via the DCP, emotions ran high. Age-related disparities re attitude to workplace technology were highlighted but younger participants proved helpful at this time. LinkedIn Learning courses were available to participants, but underutilised. The importance of DCP training and guidance was stressed, and the IT team were criticised for failing to provide this.	By T2, emotions, e.g., feeling stressed about working from home, were less evident. Participants highlighted homeworking as beneficial for older workers who might have ongoing health conditions. Some felt digital skills and self-confidence to use other digital technology was improved from using the DCP, but training was still needed. The IT team guided people to 'self-teach' resources which didn't suit everyone. Short-term absenteeism was noticeably reduced.	Direct relationships between age and resistance to change were not mentioned. Feelings persisted that insufficient DCP guidance was offered, especially to new starters. Some felt they were able to teach themselves, but suggested they would need guidance when new features were available. Digital skill development became a strategic organisational concern, and a dedicated team was put in place.
Transformation Influences at Case B	Shocked by mass homeworking, emotions were mixed, but the opportunity to see and connect with others via DCP video conferencing was helpful, including reducing feelings of anxiety from social isolation. Age-related disparities re attitude to workplace technology were mentioned but were not homogenous in any group. Lower grades expressed frustration at their inability to influence working practices amongst higher grades.	Homeworking was identified as beneficial for an older age group, with no 'sick days' having been reported for over a year. Some felt their digital skill levels and self-confidence had been improved by use of the DCP although others felt their skill levels were high prior to adoption. Some lower grades experienced a backwards step to their working practices due to higher grades preferences for not using DCP features.	Younger people still perceived themselves as having a more 'organic' relationship with technology, but recognised this might constitute a stereotype and do a disservice to older colleagues. Participants were developing their own skills through different means e.g., trial and error and google. Digital skill development became a strategic organisational concern. A new appointment was made, and a bespoke learning platform was implemented.

4.7 Chapter Summary

This chapter presented the findings from the study. Interview data was triangulated with secondary data from the digital artefacts that were collected and then organised into themes. Within the themes anonymised participant quotes from both cases were presented according to the three data collection periods. At the end of each theme a concise comparative summary of the two cases was offered. In addition, a summary of longitudinal findings for each theme was offered to illustrate the results for each data collection period in each organisation and how they developed throughout the study duration. All points presented in longitudinal tables were supported by participants quotes, presented in the preceding narrative. Direct quotes were not repeated in the summary tables, to avoid repetition and for brevity.

[Chapter 5 - Discussion](#) follows, providing an interpretation of these findings in the context of existing literature.

5.0 Discussion

5.1 Chapter Introduction

This chapter provides the interpretation and explanation of results presented and described in [Chapter 4](#), preceded by a brief reminder of the research problem and research questions for the convenience of the reader. The chapter is structured according to the research questions presented in [Chapter 1](#) and discussed with reference to both the findings and existing literature. The significance and relevance of the study's findings to the relevant fields of research are explained and the implications of the findings, elaborated. The key contributions of the study are also summarised in tabular format. The visual storyline for this chapter is presented as Figure 30.

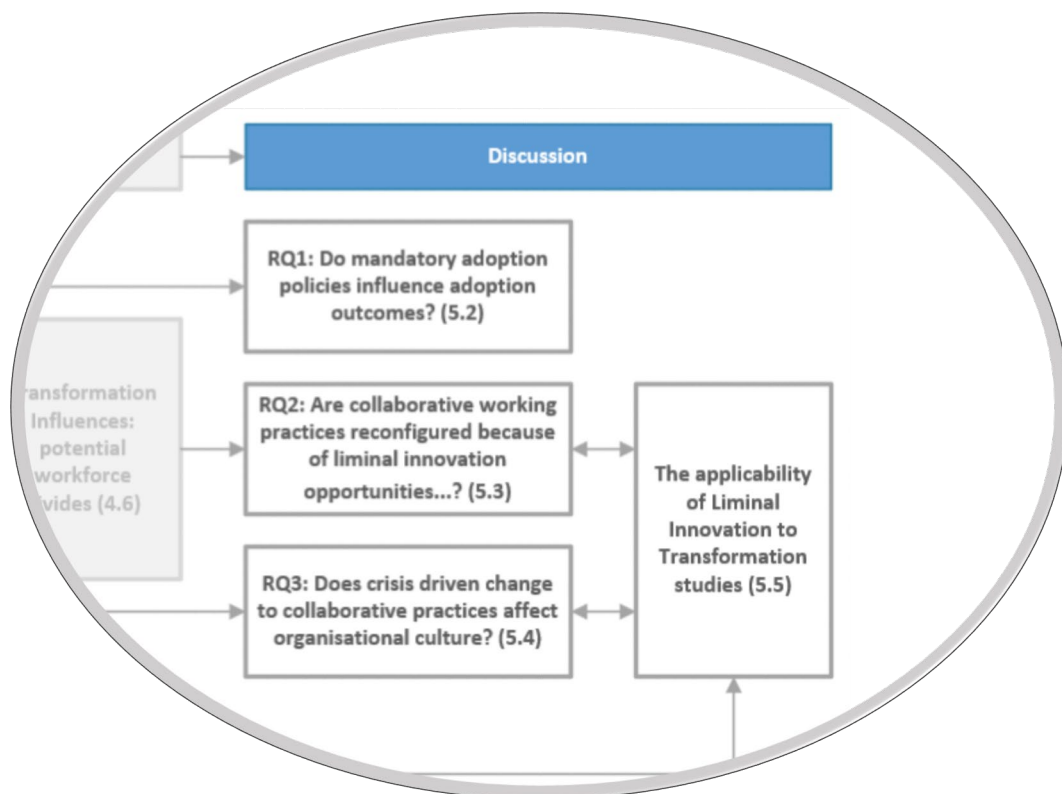


Figure 30 - Research Storyline (Discussion)

5.1.1 Recap of Research Problem, Questions and Findings

The research problem explained in [Chapter 1](#) outlined the forced adoption of digital collaboration platforms such as Microsoft Teams, by unprepared workforces, during COVID-19 lockdowns. The researcher pointed out that extant research has largely focused on videoconferencing during the homeworking period, suggesting that use of a digital collaboration platform should generate practice changes beyond virtual meetings. The researcher questioned whether practice changes have been sustained beyond enforced homeworking into hybrid working and further identified that the impact of reconfigured collaborative working practices on organisational cultures has remained largely unexplored. Aiming to shed light on the practices and culture emerging from home and hybrid working, the research aim *to explore, understand and explain reconfigurations to practices and culture, arising from the mandatory adoption of digital collaboration platforms in a disruptive crisis*, was formed.

To fulfil the aim of the research, the following research questions were developed: -

RQ1: Why and how do mandatory adoption policies influence adoption outcomes?

RQ2: Why and how are collaborative working practices reconfigured because of liminal innovation opportunities generated by a disruptive crisis?

RQ3: Why and how does crisis driven change to collaborative practices affect organisational cultures?

Four overarching themes were identified from the thematic analysis: Mandatory Adoption in a time of crisis, Collaboration Practices, Transformation Influences and Organisational Values and Norms. Mandatory Adoption considers the manner in which the DCP was adopted, Collaboration Practices includes four sub-themes; Meetings, Messaging, Composition and Leadership Communications, which represent the regular collaboration practices participants carry out. Transformation influences bring together participants'

reflections on how individual characteristics such as age and organisational grade, shape theirs and others professional practice. When interpreting the Transformation Influences theme, it becomes difficult to separate the influences from the sociomaterial practices they apply to; influence and practice become entangled such that the original transformation influence's theme disappears from independent view, highlighting technology's constitutive role in organisational processes (Leonardi, 2013). The study's storyline, presented in full as Figure 2, clarifies the relationship between the themes presented in Chapter 4 and the discussion of the study's findings in this chapter. This discussion chapter is organised according to the study's research questions and findings are interpreted within the context of exiting literature. Thus, findings for research question 1, follow.

5.2 Why and how do mandatory DCP adoption policies influence adoption outcomes?

This section examines the characteristics of the adoption approach taken by the organisations in the study and explains what the effects of this were on adoption outcomes, addressing Research Question 1. Figure 31 illustrates how the research question is addressed and the subheadings in this section then align with the visual representation.

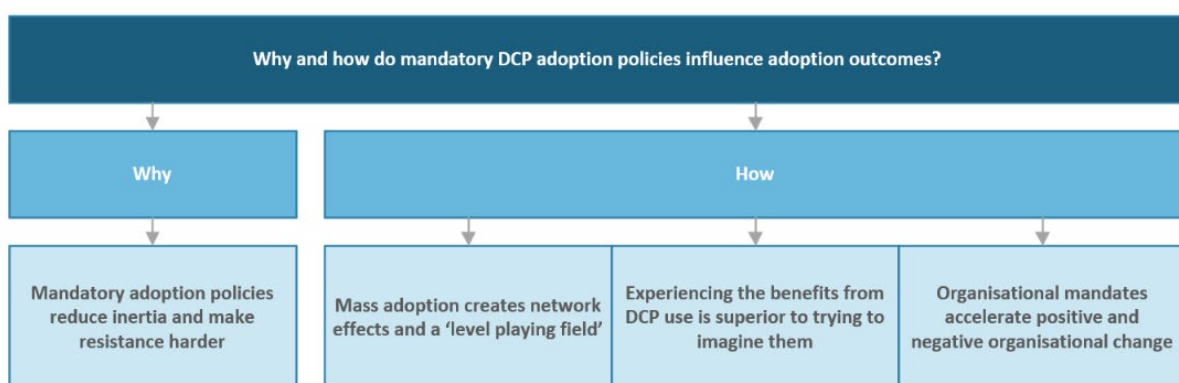


Figure 31 - Addressing Research Question 1

Mandatory adoption policies reduce inertia and make resistance harder

The study found that, when the UK's first lockdown took effect in March 2020 (Institute for Government Analysis, 2022) both organisations had minimal experience of Microsoft Teams, challenging views that suggest use of Teams was common pre-pandemic (Hacker et al., 2020); (Fraser-Strauss, 2023). Instead, both organisations IT teams were evaluating the product, similar to other UK organisations, for example NHS Digital (Mehta et al., 2020). Typically, co-located organisations or those who did not offer regular remote working to employees, a situation that applied to 97% of European workers in 2015, (Parent-Thirion et al., 2017, cited in Wang et al., 2021) had less impetus to investigate the benefits of an eCollaboration system, offering a plausible explanation why both organisations only discovered Teams out of necessity.

Nonetheless, on entering or shortly after entering, the UK's first enforced homeworking period, both organisations moved to licence their entire workforce with the product, indicating that both public and private organisations were driven by external pressures to adopt the technology and potentially confirming a view that private organisations might not be more innovative than public institutions (Rainey et al., 1976). Furthermore, by licensing the product to their entire workforce in response to the crisis, both organisations mirrored a similar adoption pattern to other UK based (Mehta et al., 2020) and global organisations (Schoch et al., 2023), leading to the platforms exponential growth (ibid).

The data confirm a similar adoption policy was applied in both organisations; participants felt they had been forced to adopt the technology and were given no choice, thus confirming the adoption as mandatory (Lui et al., 2023). However, although organisational management in both cases mandated the use of Teams for all employees, they differed in the features they initially made available, which in turn, directed their training efforts and ultimately may have

influenced the degree to which knowledge workers subsequently made use of the comprehensive technological features. Bhattacharjee et al. (2018), posited that what users do with the technology after they have been forced to adopt it varies, those who like it, will use it and may further explore its features, while those who see it as an intrusion may devise workarounds or use it to the minimum extent, and may also experience resentment and low morale. Still, both implementations support prior research than even in a mandatory adoption, users may be able to exercise some choice regarding their use of individual application features (Hartwick and Barki, 1994, cited in Jaspersen et al., 2005).

The mandatory adoption instructions issued by organisational management made it harder for people to resist implementation of the DCP. To illustrate this, adopting the mandatory adoption taxonomy developed by Bhattacharjee et al. (2018), during enforced homeworking, participants were either engaged (enthusiastic and innovative use), compliant (generally supportive but limited use) or reluctant users (those who are generally resistant toward the system (Bhattacharjee et al., 2018) with very limited examples of deviant use (outright refusal to use). Participants who indicated during enforced homeworking that they would like to have stopped using the DCP but didn't feel they had a choice, were considered reluctant users. However, only two of 28 participants indicated this, one from each case, an older (51-60) and a younger (26-35) participant, whereas the other 26 participants of varying age, indicated their intention to continue using the DCP. Moreover, a lack of homogeneity amongst older participants contradicts prior research suggesting older people resist technology (Vodanovich et al., 2010). This study also raises a question which could warrant further investigation in age-specific studies, i.e. adding a fifth dimension of *Adoption type (voluntary versus mandatory)*, to the four dimensions proposed by Vodanovich et al., 2010:

1. Users (older versus younger users),
2. Systems (traditional information systems versus

ubiquitous information systems), 3. Activity (professional versus personal), and 4. Context (office versus home), could influence research findings.

The theoretic lens of resistance is most often used to investigate issues surrounding mandated use (Bhattacharjee et al., 2018). Different interpretations could be applied to the lack of resistance observed in this study's findings, perhaps research participants genuinely liked the technology, as did members of NHS staff, according to Mehta et al., (2020). More plausibly, the match between the task at hand, i.e. needing to communicate with colleagues while isolated at home, and the sudden availability of videoconferencing technology, were perceived to offer relative advantage (Agarwal and Prasad, 1997) in a remote setting.

Dimensions of relative advantage include a decrease in discomfort, saving of time and effort and immediacy of reward. Furthermore, there is a positive relationship between relative advantage and rate of adoption (Rogers, 2003). In this study, participants were able to use videoconferencing to save time that would otherwise have had to be an email conversation, providing immediate reward for task completion and reducing uncomfortable feelings of isolation in enforced homeworking. This finding contradicts an overarching view that resistance is particularly strong in mandated adoptions (Bhattacharjee et al., 2018), by offering new evidence demonstrating that when mandated technology is perceived as offering relative advantage, resistance will not be strong. Thus, findings make a significant contribution to the resistance and mandatory adoption literature.

In summary, the findings discussed thus far provide an explanation of *why* mandatory policies influence adoption outcomes, while the rest of this section discusses *how* outcomes were affected by the forced adoption policies in both organisations. A different term used to describe an implementation where all users are required to adopt simultaneously, is the 'big bang' approach, discussed next.

Mass adoption creates network effects and a 'level playing field'

Findings from this study support prior claims that a 'big bang' approach, wherein all users were required to adopt simultaneously, resulted in a lack of organisational preparation and training for the adoption of new technologies during COVID-19 (Carroll and Conboy, 2020). However, a lack of training or preparation is not synonymous with the big bang approach per se: more correctly, the lack of preparation reflected the hurried move to enforced homeworking, evidenced in this study by a lack of suitable equipment used by participants in homeworking, a reliance on friends and family for support in using Teams and the hurried approach that was taken to the rollout. Yet, despite the lack of preparation and training, adopting a big bang approach to DCP implementation created an acceptance of videoconferencing during the COVID-19 crisis, an outcome that was multiplied because of a 'network effect', i.e., the benefit is multiplied as more users are affected (van Dijk, 2005).

Conversely, the utility of some of the DCP's lesser-known features, such as instant messaging, remained limited until a significant number of organisational colleagues adopted them. This aligns with Schoch et al.(2023), who noted that the availability of others via Teams created a network effect that increased the utility and ultimately led to more frequent use of instant messaging. Prior studies have identified both network effects and critical mass as additional explanatory factors underlying intention to use collaboration systems (Lou, 2000; Van Slyke et al., 2007, cited in Schoch et al., 2023) and increased usage patterns (Mehta et al., 2020). Findings suggest that by mandating adoption, organisations can leverage the network effects that enhance overall organisational productivity and flexibility. Hacker et al. (2020) claimed network effects increased societal acceptance of videoconferencing during the COVID-19 crisis i.e. as it became used in more contexts such as by families, leisure providers and consumers, so it increased in acceptance and value. Acceptance of

videoconferencing technology in the wider societal context (who hasn't heard the neologism - to 'Zoom'?) places it in the realms of a 'killer application', offering "such useful functionality that people are enthused to make the effort to learn how to use it" (Digital Inclusion Panel (2004: 39); (Cringely, 1996, cited in Sinclair and Bramley, 2011). Applications meeting this criterion increase digital inclusion at a broader level (Sinclair and Bramley, 2011).

An additional and significant finding from this research, addressing how organisational outcomes were impacted, is that the big bang approach created a *level playing field* effect where no one had any more experience of the application, it was new to everyone. Older colleagues felt that, although younger colleagues might be very proficient on their phones, when it came to the DCP, everyone was on the level playing field, irrespective of age. However, it is unlikely everyone really was on a level playing field because although the digital skills of participants were not 'measured', varying proficiency levels were identified. While some participants displayed *digital dexterity*, or the ability to easily switch between collaborative platforms, others were apprehensive on the occasions they had to switch, between, for example, Teams and Zoom, or achieved a level of comfort with a single platform and proceeded to 'blacklist' the use of alternatives. Also, younger workers were sometimes identified as informal facilitators in the learning process, although other research conducted in the context of enforced homeworking found that younger workers were not always 'tech-savvy' (Castro Rodriguez and Choudrie, 2021). Nonetheless, irrespective of the digital skill levels possessed by individuals, self-efficacy, i.e. the belief in one's own ability to succeed in specific situations, or to accomplish certain tasks, has a positive impact on one's ability to perform tasks (Bandura, 1993, cited in Lagacé et al., 2016). This is important because what is revealed by the findings of this study is a lack of computer self-efficacy from some older participants regarding their digital skills, aligning with the views of Compeau &

Higgins (1995) and, applying directly to Microsoft Teams, Schoch et al, (2023). Importantly, Lagacé et al., 2016, further argue that when older individuals in a workplace setting subscribe to stereotypical views they are less competent in technology use because of chronological age, it can in turn lead to digital disengagement. An implementation scenario where all employees are required to adopt a DCP at the same time rather than allowing interested ‘early adopters’ to go first, creates a level playing field, which can help improve feelings of self-efficacy amongst a diversely aged workforce, by fostering a sense of unity and shared learning. Not only is this important in itself, but as individual self-efficacy to use digital platforms increases, the easier individuals find it to use the facilities offered (Khashab et al., 2023). Moreover, self-efficacy is a determining factor in intentions to continue using online platforms (ibid).

By illustrating how the creation of a level playing field benefited older workers, influencing adoption outcomes, this study provides new theoretical insights into the interrelationship between intra generational technology adoption and eCollaboration systems. This finding has important implications for practitioners and policy makers considering the adoption of digital collaboration platforms. Rather than encouraging interested ‘early adopters’ (Rogers, 2003), to lead the way, organisations should consider a mass adoption across the workforce. This is particularly important when viewed in light of the term ‘laggards,’ used to describe those who adopt later (ibid). Unfortunately, being 'slow to adopt' is a trait that has also been associated with older individuals (Jarrahi and Eshraghi, 2019).

Evidence from this study aligns with findings by Moore et al (2022) that a binary divide in skill levels between older and younger workers does not reflect contemporary workplaces, however, aligning with Compeau and Higgins (1995) and Schoch et al. (2023), older workers are more likely to express low computer self-efficacy. Furthermore, in this study, both older

and younger workers point to a lack of self-efficacy in older colleagues. Although these observations may represent stereotypical views, such views are unhelpful in a contemporary organisation, especially since age is a protected characteristic in the UK. This study presents important implications for organisational policy makers, who should consider all possible strategies to level potential digital workplace divides. Employees of diverse ages need to have equal access to, and experience of digital applications which, as evidenced by this study, leads to increased self-efficacy through daily DCP use.

[Experiencing the benefits from DCP use is superior to trying to imagine them](#)

The argument that the level playing field effect was beneficial, is further supported by evidence that by T2, daily use of Teams had increased self-efficacy amongst participants. Self-efficacy is an important resource that managers are advised to focus on, and whilst both experience of using a system and training have previously been identified as ways to improve IT self-efficacy (Lagacé et al., 2016), providing experience by implementing a mandatory IT project, where all users have no choice but to participate, is not often the strategy of choice. This is not to say that the more usual management strategy of trying to get users' buy-in by creating positive attitudes toward a new system, should be eschewed, even though this task is acknowledged to be very challenging (Bhattacharjee et al., 2018). However, here, a quandary presents itself; based on their experience with the DCP, participants felt they had needed to use it to fully understand what the benefits would be. Earlier research cautions against “the futility of artificially inflating users' pre-usage expectations of a new IT via product hype or marketing gimmicks, to increase initial attitude and usefulness perceptions and thereby IT acceptance” (Bhattacharjee and Premkumar, 2004: 250) since overly high initial expectations may lead to later user dissatisfaction and eventual discontinuance (ibid). IT vendors are therefore advised to put more effort into down-stream activities to create a positive user experience, such as investing in training programs. Although Bhattacharjee and Premkumar's

2004 advice was limited to IT vendors, it could equally apply to organisational IT departments, but irrespective of who is doing the promoting and however strongly or modestly, data from this study suggests promoting a DCP's benefits is unlikely to be wholly effective because users struggle to understand these benefits vicariously, finding it more effective to comprehend them experientially.

This finding provides empirical evidence for earlier claims made by Riemer et al., 2009, that the true potential of collaboration technology only manifests when people make sense of and incorporate such technologies in their day-to-day work routines, because certain features are utilised to enable new practices or transform existing ones, while others are disregarded. It also lends further support to the argument that for DCPs, organisational mandatory adoption policies can be helpful, allowing workers to step past the difficult stage of benefit evaluation and into practice. Needless to say, support and training evaluation is an essential accompaniment to such policies, since a lack of training and support can result in low self-efficacy and increase resistance (Bhattacharjee et al., 2018) and Schoch et al. (2023), found low computer self-efficacy negatively affects Teams feature usage in a voluntary context. However, findings from this study also underscore the importance of clear implementation timelines and brief, but mandatory training sessions, organised around users' busy work schedules. While adequate training and support are crucial to fostering self-efficacy, organisational mandates also accelerate both positive and negative changes by driving widespread adoption.

[Organisational mandates accelerate positive and negative organisational change](#)

Mandating the DCP for organisational use accelerated organisational change, which was both positive and negative at the individual and organisational levels. At the individual level, the DCP provided a way for colleagues to collaborate in real time without undue cost to

themselves. Not only did this allow them to carry out business meetings, but videoconferencing also provided a way to visibly ‘check in’ on colleagues, family members and friends, providing a much-needed morale boost during the early stages of the pandemic, confirming research that many employees were worried about their family and friends’ wellbeing at this time (Waizenegger et al., 2020).

Arguably, the most positive outcome of DCP adoption for both public and private organisations is that it played a critical part in allowing both to survive a highly disruptive period; ‘business as usual’ activities had continued, despite neither organisation having any prior experience of en-masse, remote working. Digital readiness and connectivity are the common denominators for organisational readiness (Carroll and Conboy, 2020; Tut, 2020, cited in Bin-Nashwan et al., 2023) and although knowledge workers in both organisations lacked prior DCP experience, their organisations were able to provide Microsoft Teams, facilitating employee connectivity during the disruptive period. When first interviewed, higher grades in both organisations expressed serious concerns about employees’ abilities and intentions to work from home, but the reality was that both organisations remained operational with all employees working from home. In lockdown, the DCP quickly became the *modus operandi*, essential to both organisations daily working practices, a finding which supports earlier research that claims maintaining ‘business as usual’ forced many knowledge workers to adapt to unfamiliar digital platforms during enforced homeworking (Waizenegger et al., 2020) and confirming an early opinion from Dwivedi et al., 2020, that employees were likely to adapt to a new blended working process.

One outcome which generated mixed feelings was the early realisation that the DCP could facilitate a more permanent move to flexible working. For example, while higher grades in Case A found the DCP and remote working ‘motivational’ and were convinced at an early

stage that returning to the ‘old normal’ would be a mistake, this positive view was not entirely shared by higher grades at Case B. Intent on returning to the old normal of face-to-face working as soon as possible, their staff were surveyed in October 2020 about a return to the office but results revealed the majority of staff were unwilling to return at that time. Lower and middle grades at Case B revealed a different opinion to higher grades; the implementation of Teams had ‘changed people’s lives for the better’, alluding here to the opportunity to work more flexibly. Overall, these findings align with those of Bhattacharjee et al., (2018), that, following mandatory adoption, users may simultaneously hold positive and negative views of the adopted technology, seeing it as positive for task performance but negative for its impacts on work relationships. To illustrate, in this study, participants early views were positive in that Teams had provided the means by which they had been able to successfully work from home, allowing them to retain their jobs and unexpectedly benefitting their work-life balance. Moreover, their ability to work from home while remaining connected to colleagues had illuminated the possibility for flexible working to continue beyond the pandemic. However, participants negative views encompassed the ‘back-to-back’ online meetings of lockdown and the threat that continued remote working might bring to organisational culture, which was grounded in beliefs that collaboration takes place face to face. Following the mandatory adoption of the DCP, organisational change accelerated, with specific changes to working practices and organisational culture detailed in sections [5.3](#) and [5.4](#) respectively.

By the time both organisations were able to consider a partial return to offices in May 2021 and might have chosen to discontinue use of the DCP, at least on office working days, every participant expressed firm intention to continue using it. While users beliefs and attitudes to a technology can change over time (Bhattacharjee and Premkumar, 2004) the underlying reason why all participants from both organisations, irrespective of their age or grade,

intended to continue using the DCP was because they were united in a collective desire to continue working flexibly on a more permanent basis and understood that the DCP facilitated a new, hybrid mode of work. Indeed, its use was concomitant with the later, more permanent move to a hybrid work mode for both organisations. To illustrate, in 2023, after one year of sustained hybrid working in both organisations, and despite Case B's strong suggestions that employees reduce or eliminate use of the DCP on office days, privileging face-to-face instead, it remained essential to all participants daily working practices.

Prior work in the crisis informatics field has demonstrated how technological tools can evolve into something else in the aftermath of extreme events (Hacker et al., 2020). There is no doubt that the context in which Teams was adopted provided compelling external reasons that were hard for anyone to deny. Thus, in this comparative case study, there was a 'super rival' i.e., a powerful rival explanation, that became commingled with other potential explanations (Yin, 2018): the enforced homeworking that resulted from the UK governments response to the COVID-19 pandemic. Nonetheless, this study demonstrates that in addition to being the technological enabler for successful home and hybrid working, the mandatory adoption of Microsoft Teams was a successful organisational strategy that resulted in various positive outcomes. These findings align with emerging research by Lehmann et al. (2023), that found positive outcomes from the forced adoption of digital learning technologies during COVID-19 and provide a significant contribution by offering a contrast to prior research, which has largely found various negative outcomes from mandatory adoption at an individual and organisational level (Markus, 1983; Hirschheim and Newman, 1988, cited in (Bhattacharjee et al., 2018); (Brown et al., 2002); (Hsieh et al., 2011) (Hsieh et al., 2012). The findings also offer valuable advice for practitioners considering the strategic advantages of mandatory adoption of eCollaboration systems.

Summarising the similarities and differences between the two organisations in the context of mandatory adoption, they were more alike than different. Both workforces felt compelled to adopt the DCP in enforced lockdown and encountered the challenges of inadequate home office setups and varying levels of technical proficiency. One notable difference was that employees of the private organisation - Case B - had better access to work-supplied laptops than did employees of the public institution, suggesting greater resource availability in the private sector (Rainey and Bozeman, 2000).

Each organisation took a different approach to the functionality made available but both restricted training provision due to a lack of resource, with dissatisfaction more apparent in Case A. Despite these challenges, enforced adoption led to positive outcomes in both organisations, accelerating digital skills development and organisational change. By the time hybrid working became the norm, Teams had become essential to daily operations in both organisations. Mandatory adoption, though initially difficult, ultimately helped build confidence and adaptability for both workforces.

The next section of this chapter will delve into the reconfiguration of collaborative working practices due to liminal innovation opportunities prompted by the disruptive crisis, addressing the second research question.

5.3 Why and how are collaborative working practices reconfigured because of liminal innovation opportunities generated by a disruptive crisis?

This section of the discussion aims to understand and explain how the adoption of Microsoft Teams reconfigured collaborative working practices in remote and hybrid working conditions. Four distinct collaborative practices (or sub-themes) emerged during the data analysis and the findings for each of these practices contribute to addressing the research question. The four practices are Collaborative Meetings, Collaborative Messaging,

Collaborative Composition and Leadership Communications. Each of these practices highlight *why* knowledge workers reconfigured their collaborative practices as a result of liminal innovation opportunities, as theorised by Orlikowski and Scott (2021). Since three of the identified practices allow employees to actively work together on a common purpose or goal (Mayrhofer et al., 2003), they are collaborative, and therefore named as such. Leadership Communications, the fourth identified practice, leans more towards structured information sharing, but is enhanced by collaborative aspects, such as interactive chat.

Although previous research categorises e-collaboration into communication, coordination, and collaboration across and within organisations (Riemer et al., 2009), findings from this study align more closely with Turban et al. (2011), who argue that the difference between collaboration and communication is minimal. The researcher's definition of four practices also aligns with more recent quantitative research by Cao et al. (2021), who use 'collaboration hours' - encompassing *meeting*, *email*, and *messaging* hours - as a measurable indicator of digital collaboration that could be used to inform future organisational strategies. In this study, Practice 1 (Collaborative Meetings) refers to virtual *meetings*, Practice 3 (Collaborative Composition) is also likely to occur during *meeting*-based interactions, while Practice 2 (Collaborative *Messaging*) integrates *email* and instant *messaging* functionalities. Thus, this study extends Cao et al. (2021) by further operationalising and confirming the concept of 'collaboration hours'.

Following Orlikowski and Scott (2021), this study avoids prefacing practice names with 'digital', in recognition that digital technologies influence nearly every aspect of contemporary work, both directly and indirectly. As these practices are identified and elaborated, it becomes clear how the material aspects of the DCP are intricately intertwined with the social dynamics of the workplace, supporting a view of sociomaterial entanglement

(Leonardi and Barley, 2008). The interrelation of these practices with participants' age, grade, emotions, and skill levels further enriches the understanding of this transition, while examination of these practices from a longitudinal perspective provides a temporal view of how collaboration has been reconfigured in the context of both remote and hybrid working. In considering the user (participants), the system (Microsoft Teams) and the task (collaboration practices), a holistic view and rich understanding of post-adoptive system use can be offered (Straub and Burton-Jones, 2007), required for studies of workplace e-Collaboration, the autonomous research topic (Mayrhofer et al., 2003), to which this study provides significant contributions. Each practice is now discussed in turn.

5.3.1 Collaborative Meetings

Figure 32 illustrates how the findings for Collaborative Meetings contribute to addressing Research Question 2.

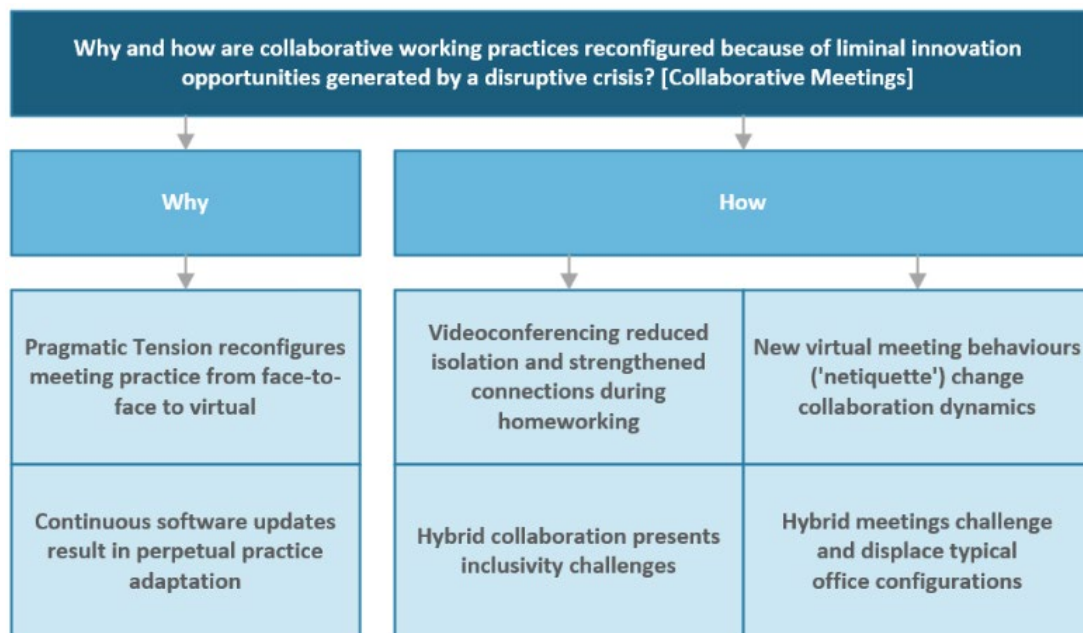


Figure 32 - How Collaborative Meetings contribute to addressing RQ2

Pragmatic Tension reconfigures meeting practice from face-to-face to virtual

Collaborative meetings via videoconferencing became highly relevant during periods of enforced lockdown (Schoch et al., 2023) and the two organisations who participated in this study were no exception. The disruption caused by the COVID-19 crisis caused the suspension of all proximal meetings, and enforced homeworking created a liminal space and time that provided an opportunity for practice reconfiguration/transformation (Orlikowski and Scott, 2021). Pragmatic tension, arising from the urgent need to overcome practical difficulties with prior practices (ibid), led to the adaptation of all face-to-face meetings to virtual formats. This confirms findings from Waizenegger et al. (2020) that videoconferencing replaced the prior experience of meeting in person and contributes to an explanation of *why* meeting practices were initially reconfigured.

Continuous software updates result in perpetual practice adaptation

The study found that when the DCP was introduced, knowledge workers struggled to manage basic functionalities such as setting up and joining a meeting or managing their camera and microphone, consequently having to seek help from friends and family in the same household in addition to their IT department. The phrase ‘you’re on mute’ - now forever enshrined in popular culture - neatly encapsulated early issues as people either forgot to turn their microphone on or turned it off to avoid speaking over one another but then forgot to switch it back on. Hacker et al. (2020) similarly found that many people were not ‘tech savvy’ when it came to using videoconferencing, however, applying the lens of liminal innovation to the data reveals an additional challenge; constant vendor software reconfigurations kept meeting practice flowing ‘between experimentation and implementation’ (Mertens, 2018, cited in Orlikowski and Scott, 2021).

For example, initially it was not possible to ‘raise a hand’ to signal a desire to speak, so turn-taking was clumsy, and conversation stilted, but over time, ‘virtual hands’ materialised. Thus, knowledge workers found themselves inadvertently engaged in a perpetual process of adaptation¹⁷ as collaborative meeting practice was open-ended, fluid, and flexible, characterising a liminal innovation practice (ibid), a finding that aligns with Veul and Krabbenborg's (2024) link between liminality and digital innovations. Often, participants blamed themselves or others for a lack of proficiency, without realising the practice itself was fluid. Khedhaouria et al. (2024), interpret the constant upgrades to ICT in the remote work environment as techno-uncertainty and this study builds on that concept, by demonstrating the volume and consequence of constant software updates. For example, in a 12 week period in 2021, more than 300 updates to Microsoft Teams were made (Thompson, 2021). These constant technological updates contribute to an explanation of *why* collaborative practices are continually reconfigured.

[Videoconferencing reduced isolation and strengthened connections during homeworking](#)

Initially, participants felt overwhelmed by constant virtual meetings, as even conversations that would have been a 5 minute ‘over the desk’ chat had to move online. Meetings were both lengthy and back-to-back, causing fatigue and stress, and the top three challenges of homeworking in this study were demanding workload, health anxiety and feeling down due to social isolation, which confirms prior research that found poor mental health during enforced homeworking (Dwivedi et al., 2020; Razmerita et al., 2021). This study also found economic stresses; participants at both Case A and Case B worried about employment security if they failed to ‘keep up’ with the new ways of working, a phenomenon also described as techno-insecurity (Khedhaouria et al., 2024).

¹⁷ 357 Teams updates occurred in 12 weeks in 2020 (Thompson, 2021).

Many participants, noticeably those in higher grades, struggled to find their own work-life balance as they worked long hours to keep their organisations running profitably, confirming prior research finding an increase of an average of 1.5 hours in daily working hours during the pandemic (Awada et al., 2021). Attempts were made by both organisations to protect the mental and physical health of staff by introducing wellbeing activities in the form of online yoga classes, cookery classes and quizzes. Dwivedi et al, (2020), reported feelings of social and professional isolation during this time and whilst this study also found enforced homeworking was not an enjoyable experience for many people, especially those who lived alone, the data from this study indicate that being able to see and hear colleagues in real-time via videoconferencing was a positive help. This was despite knowledge workers experiencing conflicting emotions, indicated by a suggestion that online collaboration was simultaneously ‘awful’ and ‘amazing’. Findings from this study thus confirm Abelsen et al., (2021), that videoconferencing technology ameliorated feelings of isolation during enforced lockdown periods. This study further found that reverting from videoconferencing to email collaboration negatively impacted the mental health of isolated individuals; while videoconferencing reduced isolation, email exacerbated it. This extends prior literature by highlighting how specific technologies affected well-being during lockdown, building on Razmerita et al. (2021), who mentioned email but did not clarify which technologies contributed to poor mental health.

Despite the negative effects of excessive online meetings during enforced homeworking, many participants were engaged with Teams (enthusiastic, wanting to know more) (Bhattacharjee et al., 2018), while compliant knowledge workers (generally supportive but limited in their use often due to discomfiture (ibid) were astonished by modern videoconferencing capabilities. This aligns with Castro Rodriguez and Choudrie (2021), who noted that digital tools that are motivating or increase connection with other colleagues

increase techno-*eustress*, or the ‘bright side’ of technostress. Despite the challenging circumstances of adoption, this study finds that positive engagement with the DCP fostered stronger connections among colleagues, providing the technological means by which emotional social support from co-workers and supervisors was accessed, established as beneficial for remote workers during the pandemic (Szkody et al., 2021; Lanzl, 2023, cited in Khedhaouria et al., 2024).

This sense of connection with each other was also likened to the UK’s alleged national spirit in 1940, more commonly known as ‘Blitz Spirit’ (Gulzar et al., 2021). Ogbeide et al. (2013), found that professional relationships can develop using email and text messaging, neither of which have audio or visual clues. This study finds that visibility, i.e., being able to see into each other’s homes via video conferencing and witnessing distractions such as family members and pets appearing or the doorbell signalling a delivery, engendered compassion for each other’s circumstances and deepened professional relationships in a time of crisis. The ‘action tendency’ underlying the emotion of compassion it is to provide support (Elfenbein, 2022). Suddenly, more of the ‘whole person’ was seen and colleagues responded compassionately, demonstrating that a culture of ‘leave emotions out of the workplace’ inadequately reflects organisations in this study, confirming a recent suggestion by Elfenbein, (2022) and highlighting the changing nature of emotions in organisations. Over time, it became normal for employees to reference their family commitments, such as leaving or calling a halt to meetings to collect children or prepare dinner, making it professionally acceptable to acknowledge one’s personal responsibilities at work. This shift may prove constructive for employees with unpaid work responsibilities, of whom 79% globally are female (Criado Perez, 2020). These findings offer a contribution by extending prior research which found that knowledge workers were able to build a sense of togetherness in difficult times (Hacker et al., 2020) and also help to explain *how* collaborative meetings were

reconfigured during a disruptive crisis, although the transition to virtual meetings was not particularly smooth.

New virtual meeting behaviours ('netiquette') change collaboration dynamics

In enforced homeworking, the tendency to switch off one's camera unless speaking was, for many managers, poor netiquette (etiquette in technology use), unwelcome amongst higher grades in both organisation, who reluctantly accepted the new behaviour for large meetings, if not for smaller ones. Differing interpretations have previously been offered; individuals were suggested to be camera-shy at the beginning of lockdown (Hacker et al., 2020; Balogova and Brumby, 2022). Although this might have been true, a quantitative study conducted in early 2020 found that turning off the video camera or muting the microphone is closely related to multitasking behaviour (Cao et al., 2021). However, concerns about multitasking were not explicitly voiced by participants in homeworking, at this time, they were more concerned about encouraging engagement and interaction. While Cao et al. (2021), argue that multi-tasking in online meetings was 'ubiquitous' during their data collection period in early 2020, their participants were all employed by Microsoft US, who were already conversant with Teams prior to the pandemic. In contrast, results from participants unfamiliar with Teams during the same data collection period did not show a comparable level of multitasking, possibly indicating that participants in organisations who were not 'born digital', did not immediately multi-task post adoption. However, by the time hybrid meetings materialised, a different picture was visible.

Hybrid collaborative meetings, generally meaning that attendees are either working at home or working in the office while attending the virtual meeting (Adekoya et al., 2022), materialised in both organisations in 2021. Hybrid meetings are a further reconfiguration of virtual meetings, again emerging due to pragmatic tensions (Orlikowski and Scott, 2021),

arising from the practical issues of a partial return to the office for some participants while most continued working from home, mainly because of continuing UK social distancing requirements and travel restrictions (Ellis et al., 2022). In addition, for the two organisations in this study, their intentions to adopt a more permanent move to a hybrid work style ([see section 5.4](#)) necessitated making hybrid meetings work.

As hybrid meetings emerge, so do new challenges. Whereas at T1, meetings were fully online, with participants equally able to contribute to the discussion, at T2, the dynamics shift. As higher grades start to return to their offices, they schedule various meetings to take place in meeting rooms, but as some participants remain working from home, these attendees join an online meeting, set up to take place on screen in the same meeting room. In this circumstance, the data indicate that *equity of voice*, where attendees have the same opportunity to speak, is difficult to achieve. This is exacerbated in large hybrid meetings where online contributors can become disenfranchised, or feel like ‘second class citizens’, as a result of finding it difficult to fully contribute to a discussion where other attendees are in the same proximal meeting space. This aligns with Ellis et al. (2022), who highlight challenges for virtual attendees who can remain unnoticed when requesting the floor, leading to feelings of being ignored or sidelined. This is a retrograde step when viewed in light of findings by Waiznegger et al. (2020), who suggest remote workers who, pre-pandemic, had been professionally isolated and marginalised, suddenly found themselves included, when all meetings were virtual. In hybrid, those working remotely can experience the same marginalisation, requiring meeting organisers to take an active role in facilitating participation. Ellis et al, (2022), suggest nominating an in-room attendee as responsible for moderating the virtual platform. This suggests online attendees in a hybrid meeting are *willing to engage but find it difficult to do so*, but a different problem is also visible; it becomes easier in hybrid for attendees to take a back seat, due to the ‘lower cost of getting

noticed' (Cao et al., 2021). To illustrate, by T3, when hybrid meetings had been in place for more than one year, turning one's camera and microphone off unless speaking had become an accepted and commonplace practice. To complicate matters, some meeting hosts mistakenly believe that asking online attendees to turn off their cameras and microphones improves connectivity for others. However, bandwidth issues are typically local to each attendee and therefore their experience rather than affecting the experience of the whole group.

Meanwhile, researchers find that switching off one's camera and microphone while in an online meeting, is a covert way to multitask, a behaviour less easily performed in a face-to-face meeting (Cao et al., 2021). Sometimes witnessing others multi-task is a clear departure from prior norms which is initially met with shock by some participants, confirming a suggestion that multi-tasking has historically been culturally associated with impoliteness (ibid). However, in alignment with Cao et al.'s views that multi-tasking is 'vital', an alternative viewpoint expressed by higher grades is that multi-tasking is now necessary given the significant volumes of emails and messages they receive. Brown et al. (2010) point out that providing concurrency in eCollaboration applications, while facilitating multi-tasking, may lead some to 'flaunt' social norms, and although this study confirms that suggestion, it also extends findings by showcasing how social norms are changing, and how many knowledge workers, including those in higher grades roles, now consider multi-tasking both acceptable and even necessary while attending online meetings.

The result of both issues discussed above is a lack of attendee engagement, particularly in larger hybrid meetings. This aligns with Ellis et al (2022), who suggest hybrid meetings can result in reduced participation and disengagement of the online attendees. This lack of engagement from online participants becomes so detrimental to collaboration, that some Case A hybrid meetings revert to face-to-face by the end of the study. Case B, experiencing the same issues, try to keep hybrid meetings smaller but with a continuing preference for face-to-

face collaboration, naturally revert to this mode for many of their larger meetings. These findings suggest that while hybrid meetings via a DCP offer attendees flexibility, preventing the need to travel to proximal locations, they have potential disadvantages for the collaborative process and require careful facilitation to ensure successful meeting outcomes. Additional challenges are discussed next, the first of which is inclusive meeting practices by meeting attendees.

Hybrid collaboration presents inclusivity challenges

In response to challenges around ensuring equity of voice, ongoing software reconfigurations appear to recognise some of the inclusivity challenges of hybrid meetings, for example, numbering virtual hands to ensure fairness in ‘turn-taking’. However, while videoconferencing may appear to offer equal opportunity to all (Waizenegger et al., 2020), making hybrid meetings inclusive is ultimately the responsibility of those participating in collaborative meetings, and however much thought vendors put into reconfigurations that address inclusivity, if there is a lack of understanding on the part of users regarding how to employ the technology, it is still possible others could be excluded. Put another way, what can be done with a technology is not predetermined but depends upon what people do with it in particular instances (Orlikowski, 2000). To further illustrate how meeting behaviour affects inclusivity, some knowledge workers noted that live meeting captions (closed captioning) were beneficial for colleagues with hearing impairments.

This finding, corroborated by deaf and hard-of-hearing colleagues, aligns with Berke et al., (2017), who established that captioning is a low-cost alternative to sign-language interpretation and does not require advance organisation. Older workers with hearing loss and those identifying as deaf or hard of hearing also benefit, and while caption accuracy is crucial, it has improved in recent years (ibid). Recording Teams hybrid meetings preserves

captions, allowing anyone who missed the meeting to see them later. Case A responded to this new awareness by changing organisational settings to facilitate captions for individual attendees ([Appendix 8](#)) and recording most strategic meetings. In contrast, Case B did not record meetings, inadvertently excluding anyone with hearing impairment who missed the original meeting but wanted to catch up afterward.

Bourdieu (1977), called attention to the often ‘taken-for-granted’ ways that dominant values and ways of seeing the world are accepted as the ‘natural order of things’, which helps reproduce inequalities. Thus, even when technology has been designed to incorporate integral accessibility features which disabled people find helpful in practice, if the able-bodied community remain largely unaware of them, embodied social practices are not inclusive, reinforcing inequalities. Bennett and Maton (2010), suggest qualitative research methods, by providing insights into these aspects of IT use in individual lives, can help to inform more nuanced strategies to promote digital inclusion. This study advances research in the field by providing those nuanced insights, which have largely gone unreported in previous studies situated in the workplace. Findings from this study not only make a theoretical contribution to digital inclusion and eCollaboration by emphasising the need for an awareness and use of inclusive digital meeting practices and behaviours, they also highlight important implications for organisations considering both DCP adoption and hybrid working, who should ensure their employees understand how to conduct inclusive online meetings. These findings provide an example of *how* collaboration practices have been reconfigured as a result of liminal innovation opportunities. Another example of how collaboration practice has been reconfigured, can be seen in the inadequacy of traditional office configurations to facilitate hybrid meetings, discussed next.

Hybrid meetings challenge and displace typical office configurations

Findings demonstrate that hybrid meeting collaboration challenges and displaces traditional office configurations in a variety of ways. For example, specialist hybrid meeting room technology, an addition to the Teams platform, was installed in all meeting rooms at case B and in a limited number at Case B. This technology allowed the meeting room to 'join' an online meeting and provides integrated microphones and cameras that zoom in on whomever is speaking. However, despite significant investment in the equipment, training is limited to printed guides at Case A and is not provided by Case B. Issues with audio, video and screen sharing in hybrid meetings frustrate participants, who had mastered these basics in fully remote working, but now find themselves faced with a new set of challenges, leading some to revert to either wholly online or wholly face-to-face meetings for their local hybrid meetings. At both Case A and Case B, large hybrid meetings such as committees and all company meetings require the support of specialist technical staff since participants do not feel confident in their ability to manage the hybrid set up. As hybrid meeting technologies are subject to continuous vendor reconfiguration, this situation is likely to be ongoing rather than a feature of their initial implementation. Organisations should be aware of the need to provide training programs that cover how to facilitate and operate a hybrid meeting, particularly where investment has been made into specialist hybrid solutions. Even then, specialist support may be needed for larger or more complex hybrid meetings, for example, interactive workshops where participants use a poll to vote on options. These findings make an important contribution to the body of emerging research on hybrid working practices.

A further challenge presented by hybrid meetings is a conflict between what has been described as a previously 'complementary relationship between environmental affordances and technological affordances in the office' (Waizenegger et al., 2020). In other words,

offices are challenging places in which to conduct hybrid meetings. To illustrate, Case B struggle to find free meeting rooms on in-office days, exacerbated by a decision to request all employees come in on a specific weekday when face-to-face collaboration is to be privileged (see [section 5.4.](#)) Despite this edict, hybrid meetings still occur but must be conducted from participants own desks. Sometimes participants attend the same online meeting as those who are present in the same physical location, which can lead to unpleasantly loud microphone feedback. Conducting hybrid meetings at one's desk can also disturb those in the same location who are not attending the meeting. Case A experience the same issues but since they do not have a 'whole company' edict for their days in the office, they often seek out empty meeting spaces, leading to a new phenomenon in which meeting rooms are occupied by a sole individual conducting a hybrid meeting. The implication for organisations is that flexible space utilisation policies could help manage conflicts between physical and digital workspaces, such as ensuring that meeting rooms are available for hybrid meetings and reducing noise and disturbance in shared office spaces. These findings make an important contribution to the body of emerging research on hybrid working practices.

While pragmatic tension necessitates practice adaptations, Orlikowski and Scott (2021) use the term 'existential tension' for practices that are displaced/discontinued in a disruptive crisis as they no longer make sense in practice. One such practice is the office telephone; at first displacement occurred because of the unavailability of office telephone networks in a homeworking setting but, even in hybrid working, with some days spent in the office, collaboration via videoconferencing proves superior to telephone-based collaboration. Furthermore, telephone networks can be integrated into the DCP, meaning all internal and external calls are dialled from a keypad within Teams. Case B employees were offered the choice to keep their office landline, but less than half decided to do so, leading to a suggestion that the office telephone is now an 'end of life' technology. In Case A, some

individual business units reported getting rid of their handsets, but the wider organisational telephone network remained operational, albeit unused. Thus, for both organisations, even in hybrid working, the DCP effectively replaces landline-based office phone calls. This finding extends eCollaboration literature, by illuminating how eCollaboration can provide a superior form of collaboration than prior methods such as the office telephone. Moreover, findings contribute to a more nuanced understanding of the challenges of hybrid working environments. Organisations using or considering digital collaboration platforms in remote and hybrid settings should be aware of potential cost savings by integrating telephone networks into the DCP and avoid renewing such networks without first evaluating these savings.

Summarising the similarities and differences between the two organisations in the context of collaborative meetings, there were both similarities and some notable differences. Both organisations relied heavily on Teams videoconferencing, initially experiencing fatigue and social isolation, but with videoconferencing playing a crucial role in maintaining social connections and providing emotional support. Both organisations faced challenges with inclusive meeting practices and were particularly concerned about the emerging norms of turning off cameras and multitasking during meetings.

However, while Case B later invested significantly in equipping meeting rooms with hybrid technology, Case A made only modest investments, perhaps due to greater purchasing restraints (Rainey and Bozeman, 2000). Space conflicts in hybrid working also emerged differently, with Case A using empty meeting spaces for hybrid meetings and Case B facing challenges due to their specific ‘in-office day’ policy ([section 5.4](#)). Ultimately, both organisations experienced the displacement of office telephone networks, but only Case B integrated these into the DCP during the study duration.

The second practice revealed by this study, Collaborative Messaging, is discussed next, across homeworking and hybrid working contexts.

5.3.2 Collaborative Messaging

Figure 33 illustrates how the findings for Collaborative Messaging contribute to addressing Research Question 2.

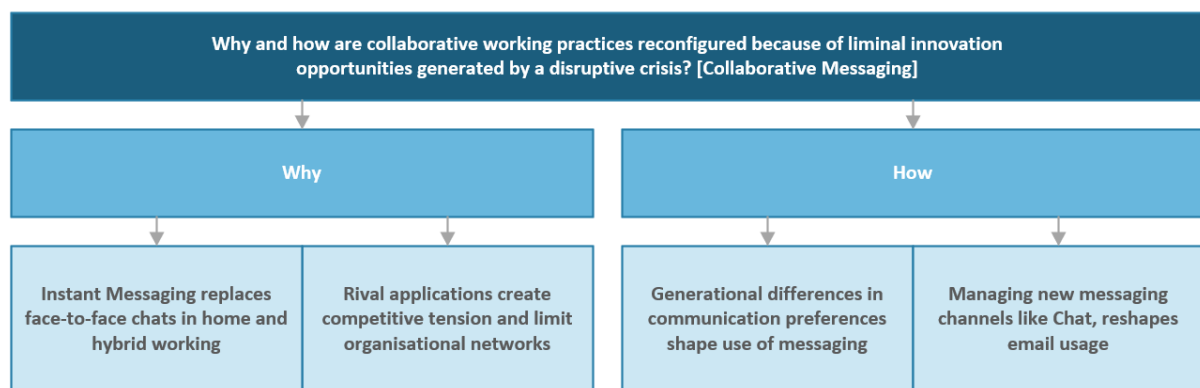


Figure 33 - How Collaborative Messaging contributes to addressing RQ2

Instant Messaging replaces face-to-face chats in home and hybrid working

Collaborative messaging includes instant messaging (IM) via the DCP and the use of email. At T1, email was the preferred collaboration method for Case A participants and the second most popular collaboration method, after face-to-face, for Case B participants. Mayrhofer et al. (2003), include email as eCollaboration functionality, with messages typically sent to individuals or groups of recipients, often accompanied by file attachments. Wahl and Kitchel (2016) argue that, despite being an asynchronous communication method (Brown et al., 2010), often only indirectly related to the task at hand (Johri, 2011), email has remained the most prevalent form of computer-mediated communication. This study's findings align with Johri (2011); although there are more synchronous methods of collaboration, such as face-to-face and the telephone and more effective ways of sharing documents (explained further in Collaborative Composition), email in both organisations had become a collaborative practice

as individuals and whole groups of colleagues worked together to discuss and resolve business issues, often leading to extensive email chains.

Arguably, instant messaging, which can be used either synchronously or asynchronously (Brown, 2010) offers superior collaborative potential to email, but it only became available to the majority of participants at the same time as videoconferencing. Instant messaging or ‘Chat’, is integral to Teams and unlike Zoom, is persistent, i.e. available beyond a single meeting, thereby operating independently of online meetings. Applying liminal innovation concepts, instant messaging was another collaboration practice that materialised as a result of pragmatic tensions disrupting face-to-face interaction, confirming findings by Schoch et al. (2023) that prior ‘walk-ins to offices’ were replaced with Teams Chat as geographic proximity ceased in lockdown. This finding helps to explain *why* messaging practices were reconfigured in liminal conditions.

[Generational differences in communication preferences shape use of messaging](#)

Unlike videoconferencing, which was seen as advantageous in the remote setting, Chat was initially perceived by many participants as unnecessary, while some older participants also perceived business ‘chat’ as unprofessional, even seeing it as ‘all emojis and kisses.’ These findings offer a different point of view to Pi et al. (2008), who argue that conversations which includes the usage of symbols and emoticons help in creating a better emotional feeling in the workplace, by demonstrating that some professionals do not find symbols and emoticons appropriate for business conversations.

A view that young people expect prompt responses to text messages (Turkle and Salamensky, 2013) was supported; younger participants using chat saw prompt responses as the norm. In the early stages of enforced remote working, older colleagues were more responsive to emails, suggesting generational differences in preferences; studies which have examined an

age-based perspective claim a binary divide with younger people preferring instant messaging and older people preferring email (Vodanovich et al., 2010). However, in contrast, this study failed to find a clear binary divide; some older participants adopted chat while some younger participants relegated its use to informal conversations only, demonstrating a lack of homogeneity in any age group and building on findings by Moore et al. (2022) that each generation is not homogenous, with user behaviour shaped by various factors (ibid). Adopting Chat not only helps to explain *how* collaborative messaging was reconfigured, but it also created additional problems, arising from multiple communication sources.

Managing new messaging channels like Chat, reshapes email usage

Initially, higher grades of differing ages found receiving communications from multiple channels problematic and disruptive, due to the difficulty of locating the source of received communications and one possible explanation is that higher grades receive a greater volume of communications. Prior research alluded to the impact of receiving messages as disruptive, (Shaw et al., 2007) without explaining the reasons, while Rajendran et al. (2019) found instant messaging was less disruptive than telephone calls or face-to-face conversation. Few to minimal prior studies have examined the interrelationship of multiple messaging channels, instead prior research is inclined to suggest that instant messaging will replace email usage in organisations (Hurbean et al., 2023). Johri (2011), posited that instant messaging is highly effective for virtual, distributed organisations, relegating email use to ‘insignificant’ but findings from this study contrast Johri (2011); email usage was not reduced to insignificance despite both organisations acting in a completely virtual, distributed capacity. Nonetheless, those using both Chat and email began to reconfigure their email use to manage multiple messaging options. This finding aligns with Oettl et al. (2018), who found email usage could not be reduced to zero since it is necessary for reaching external contacts, a need also observed in enforced homeworking. Initially, message formality also influenced the choice of

messaging option, confirming Rajendran et al. (2019) that email is viewed as formal communication, while instant messaging is preferred for informal communication. The study builds on existing literature by showing that, despite initial resistance, instant messaging began to disrupt the prior dominance of email and illustrates *how* this collaboration practice was reconfigured.

Rival applications create competitive tension and limit organisational networks

In Case B, the issue of multiple channels was further compounded due to the incumbent use of Slack by technical teams. While some felt standardising onto the newly adopted Teams Chat, which all employees had access to, would be constructive, the technical teams were unwilling to sacrifice use of Slack, not only because it offered integrations to their development environment which were unavailable in Teams at the time, but because it was established daily practice. In this case, none of the tensions in the liminal innovation framework apply; the incumbent practice of Slack was not adapted or displaced, and the new capacity of Teams was ignored. Yet, competing with an incumbent practice reduced the utility of organisational messaging using Teams Chat. This suggests a different type of tension will arise when a new practice is proposed in a disruptive crisis as a rival to an established practice: ***competitive tension***, which arises ‘on the ground’ when a rival practice is initiated that competes with an incumbent practice. An additional theoretical contribution is offered by extending the liminal innovation framework (Orlikowski and Scott, 2021) to include this new tension and an updated conceptual framework is offered as Figure 37 ([section 5.5](#)), based on the findings from this research. Next, the discussion considers further practice reconfigurations in the hybrid setting.

By the time **hybrid working** had become an established mode of work in 2023, the majority of Case A participants were using Chat, and the data indicate this method was now slightly

preferred to email. Yet, higher grades are unable to tell if there has been a corresponding reduction in the volume of emails they receive, suggesting that messaging has continued to add to the ‘noise’, rather than replacing it. Although use of Chat had also increased at Case B, it was a small increase relative to Case A, and it was still not considered to be a preferred collaborative practice.

Sometimes this continued to be a matter of personal preference, however, there was an alternative explanation for Case B’s longer-term disinclination to use Teams Chat; it became clear that Slack was more embedded at Case B than had first been apparent. It wasn’t only the technical team that used it, some of the business teams with whom they collaborated were also using it and saw Slack as the official company instant messaging application. Thus, the competitive tension identified when adapting from face-to-face to virtual continued to manifest. By early 2022, Microsoft were offering the same integrations in Teams¹⁸ as existed in Slack, but despite the potential for benefits including a reduction in licence fees and the creation of an organisation wide collaborative network, there were no management interventions planned to transition to Teams, due to the anticipated resistance of the powerful technical teams. This finding aligns with a view that covert power of this type becomes visible as different stakeholder groups negotiate change implementation (Boonstra and Gravenhorst, 1998; Bradshaw and Boonstra, 2004, cited in Kemal and Shah, 2024). Extant research also identified a similar situation with rival enterprise social networking applications, where some users had access to Yammer and others had access to Chatter (Choudrie and Zamani, 2016), but did not report negative outcomes arising directly from this situation. Findings from the hybrid working period corroborate why collaborative messaging

¹⁸ <https://www.microsoft.com/en-us/microsoft-365/blog/2022/03/22/new-jira-app-for-microsoft-teams-brings-agile-workflows-together/>

was reconfigured and demonstrate that competitive tensions have consequences; in this study, allowing both instant messaging products to exist in one organisation reduced the opportunity to create an organisation-wide collaborative network.

Hybrid working was reshaped by the evolving use of email alongside instant messaging.

As preferences evolved from virtual into hybrid working, a growing sophistication in how participants from both cases choose between email and chat was observed, reflecting an increased awareness and strategic use of each based on specific needs and contexts. For those using Chat, immediacy became the norm, with quick answers offered and received, thus extending earlier findings by Turkle (2013), cited in Brown et al., (2010); it is not just young people who expect prompt responses, this applies to diverse ages in a workplace setting. Moreover, it confirms that many people use chat as a ‘pseudo synchronous’ collaboration method by sending and receiving messages quickly. On the other hand, it remains more difficult to locate the source of information received via Chat (e.g. where did I see that; was it a chat with an individual outside of a meeting, a meeting chat, or an email?) and to find documents shared via Chat, which is easier when using email, most likely because many people ‘file’ received email into different folders. Emails were also suggested as providing more accountability than conversations taking place via instant messaging, on the basis actions were seen as arising from an email conversation. In hybrid working, emails are still preferred for formal conversations, but some younger colleagues are perceived as failing to possess the formal writing skills required for email, thus providing one possible explanation of why messaging is suggested as preferred by younger people (Vodanovich et al., 2010).

There are important implications for organisations wanting to adopt DCPs that incorporate instant messaging since it can raise the expectation of instant responses to messages, which in turn could increase perceived workload and stress, as well as weaken the work-life boundary

(Hurbean et al., 2023). Email is already one of the primary culprits of technology-mediated interruptions, contributing to about two hours of an employees' workday (Wilkes et al., 2018, cited in Hurbean et al., 2023). With this in mind, organisations could offer clear, practical guidelines based on this empirical research, regarding when to use each messaging option (Table), thus proactively helping employees avoid an accumulation of negative effects, which, if not managed, could potentially lead to technostress (Hurbean et al., 2023).

Table 19 summarises the characteristics governing the choice of collaborative messaging practice, gleaned from empirical evidence gathered in both virtual and hybrid working environments.

Table 3. Characteristics determining use of IM or Email

Characteristic/ Practice used	Email	Chat
Audience	Intra-organisational Inter-organisational but recipient in a different department. Recipient not known/well-known to sender.	Inter-organisational or inter-department. Recipient known/well-known to sender.
Auditability	Provides an audit trail or reference point. Confidence emails will not be lost.	The conversation moves on. Worry that chats might be lost (i.e., might disappear from the application).
Format	Suitable for longer messages. Suitable for detailed content.	Shorter messages (less than a few sentences).
Immediacy	Asynchronous – used when no immediate reply needed.	Pseudo-synchronous – used when an urgent response is required. Elicits a quicker response from recipient.
Preferences (own and others)	Sometimes catering to senior /older people. Requires some formal writing skills.	Young people lack formal writing skills necessary to construct an email and use text speak more naturally.
Purpose	Formal statements and information. For 'whole team' or 'whole company' written announcements. Certain attachments, e.g., images and spreadsheets	For informal/conversational dialogue. Good to catch someone's attention. Provides an easy way to share links to documents.
Searchability	Perception that emails can be found more easily. Search function is powerful, and people are familiar with its use.	Can't remember where a particular chat was seen. Search function perceived as more limited, and people do not know how to use it.

Finally, it could be argued that changes in collaborative messaging practice can be attributed to the passage of time, i.e. there was a gradual and natural adoption of chat, rather than to the different settings of home and hybrid working. Although this is plausible, an additional motivation to use chat in a hybrid work mode arises because individuals are often unaware of others working patterns, but using chat allows colleagues to discreetly gauge one another's availability, by referring to presence indicators. This contrasts with Waizenegger et al. (2020), who found that during homeworking, employees struggled to see if colleagues were busy, leading to underuse of chat functions on collaboration platforms and negatively impacting their learning. (Hurbean et al., 2023), suggest an instant message is less disruptive than a phone call; this study extends prior literature by finding instant messaging is less disruptive than a video call, a finding that is true whether an employee is in the office or at home. To explain, it had become customary for participants to use chat to reach out to each other to ask if it was convenient to call a colleague, rather than directly calling them via videoconferencing. This habit could be due to cultural factors, thus further research could examine whether this custom presents itself in different settings, beyond the UK.

Summarising the differences between the two organisations studied, it is clear that the DCP brought changes to collaborative messaging practices in both organisations, modifying rather than displacing prior email dominated communication. However, while one organisation's continued use of Slack created a fragmented communication environment, the other, with no competing applications, were able to establish a broader collaborative network.

The next section of the discussion explores the third collaborative practice revealed by this study; Collaborative Composition, tracing the development of this practice across both organisations, in both remote and hybrid working settings.

5.3.3 Collaborative Composition

Figure 34 illustrates how the findings for Collaborative Composition contribute to addressing Research Question 2.



Figure 34 - How Collaborative Composition contributes to addressing RQ2

Collaborative Composition is the collective practice of creating, managing, storing, and editing digital documents within a DCP, emphasising teamwork and ensuring version control. Identified as a core aspect of eCollaboration by Mayrhofer et al., 2003, it allows multiple contributors to simultaneously edit documents, enhancing collaborative efforts in organisational projects. Collaborative composition via the DCP was, for some participants, an adaptation of prior practice, arising from pragmatic tensions (Orlikowski and Scott, 2021) caused by the practical difficulties of accessing other forms of collective digital storage during enforced homeworking, and providing an explanation of why collaborative composition was reconfigured.

To illustrate, participants had different file storage options: while everyone had personal cloud-based Microsoft OneDrive to store documents, some used on-premises servers accessible only via their organisation's Virtual Private Network (VPN). Logging into VPNs from home proved lengthy, unreliable, and subject to access limitations, unsuitable for

lockdown hours, supporting findings by Awada et al. (2021) who noted 1.5 additional hours worked on a typical WFH day compared to pre-pandemic workdays. In contrast, Microsoft Teams was accessible via a browser without needing VPN access. Licensing the full Teams product deploys Microsoft SharePoint Server, allowing shared document editing and saving within Teams, and facilitating project discussions via chat or video calls, representing a significant improvement over earlier eCollaboration systems in which videoconferencing and instant messaging were not integrated with document storage/collaboration (Mayrhofer et al., 2003).

Additionally, prior to enforced homeworking, some participants in both organisations already had access to native SharePoint Server (i.e. not accessed via Teams) but confusion about document sharing was prevalent, with recipients receiving copies via email instead of links, leading in turn to the existence of multiple document versions. Limited research on SharePoint's use for organisational collaboration has been found, but Dulipovici and Vieru, (2015) found a mixed landscape amongst their participants: some integrated SharePoint with shared drives, others used both old and new practices, and some refused to use SharePoint, on the grounds it was too much effort. They conclude that, despite the capabilities of the technology, it is users' perceptions and actions that either drive or fail to drive practice change, aligning with a view that how people use (or fail to use) a technology is at least as important as how it fits with the task at hand (Dennis, et al., 2001). However, in this study, participants were somewhat unable to form an opinion regarding this aspect of Teams, because not everyone was initially given access to this functionality or had access, but not training.

Competitive tensions from rival applications created 'islands of collaboration'

For Case B, a rival explanation for underutilisation arises from the presence of an incumbent eCollaboration platform, Google's G-Suite (later Google Workspaces). While some participants were accustomed to real-time collaboration, G-Suite's inability to store links centrally placed the burden on individuals to manage bookmarks. Transitioning to Teams promised significant benefits, including a £70-£80k annual saving and the elimination of 'two islands of collaboration.' Additionally, for some business users, G-Suite provided no significant advantage beyond habit, which can influence users' continuance intentions (Limayem and Cheung, 2008).

Before Teams was implemented, some Case B users had adopted unsanctioned platforms like Google Hangouts and Zoom. Senior management's targeted communications had effectively moved users to Teams, illustrating how managerial interventions can expedite secondary adoption of technology (Gallivan, 2001). Despite that success, the transition project from Google to Microsoft did not come to fruition during the research study, with suggestions that the reason for holding back was a lack of appetite to upset powerful business users. While there is no doubt this would not have been a popular project (see [Section 4.4.3](#)), it is a surprising finding given that the IT team, as the change agents responsible for implementing the change, possessed 'expert power', meaning they were perceived as having expertise in the domain, which should lead to acceptance of the change by those affected (Munduate and Bennebroek Gravenhorst, 2003). However, other factors contributed; alternative IT projects were prioritised, and Case B had experienced their most profitable year ever in 2021, reducing the immediate pressure to make cost savings.

Non-engagement with a system, a form of resistance (Ferneley and Sobrepererez, 2006), makes it difficult for that system to become embedded in organisational culture (Choudrie and

Zamani, 2016). While Case B fully engaged with Teams' videoconferencing features, document collaboration was resisted due to continued use of legacy applications. As a result, the potential benefits of a unified eCollaboration platform were not realised. The findings from this study provide new insight into the resistance of eCollaboration system features by demonstrating that non-engagement with specific features result in the same outcome; while Case B users were entirely engaged with the videoconferencing aspects of the DCP, the document collaboration features remained marginalised or resisted, due, in part, to continuing use of legacy applications rather than the preferred organisational application.

Resistance can indicate issues in IT implementation (Markus, 1983). In this case, allowing G-Suite to remain operational perpetuated user habits, preventing full consolidation onto Teams and limiting the creation of an organisation-wide collaborative network. As with Case B's earlier Slack usage, the introduction of Teams as a rival to G-Suite generated competitive tension. G-Suite practices persisted, underutilising Teams in home and hybrid working. These findings build on the methodological contribution to liminal innovation concepts, by providing a second example of competitive tension that corroborates the definition previously offered.

[Generational and role-based differences influence document collaboration](#)

Overall, in enforced home and hybrid working there was very limited evidence of real-time document collaboration using the newly adopted DCP, with only one team from Case A, mainly comprised of younger colleagues, deliberately working together to co-construct documents, finding this process much easier to achieve in virtual working than in prior, face-to-face, practice. Examples of generational differences appeared; younger participants accommodate older colleagues' preferences for document collaboration, sacrificing their own preferences. Age is posited to be a recognised moderator of post-adoptive use of IT

(Jaspersen et al., 2005), and although some age based differences were observed, this study failed to find a clear binary divide amongst older and younger knowledge workers, aligning with Moore et al. (2022). For example, while some younger knowledge workers drove change, others failed to make any use of the document collaboration features, and had not uploaded documents to it, suggesting that while it seemed a simple principle, it was not an intuitive part of the DCP and required explanation.

Some role-based differences were also observed; lower grades tried to influence higher grades to make more use of Teams document collaboration features but experienced limited success, leading to frustration. These findings align with views that an individual's role in an organisational hierarchy affects usage behaviour of collaboration platforms (Riemer et al., 2015). Additionally, superiors affect behavioural intention to use digital technology (Wang et al., 2013), however, 'power' is missing from organisational factors affecting 'opportunity to use', an antecedent of digital fluency, in their conceptual model. Since 'use' acts as a virtuous cycle on digital fluency, *lack of opportunity may act as a vicious cycle*, thereby preventing lower and younger grades from taking the opportunity to improve their digital fluency. This finding makes a theoretical contribution by identifying a previously unexplored relationship within an existing theoretical framework.

Findings also have important practical implications; higher grades cannot be an exception to organisational initiatives to implement eCollaboration by choosing instead to stay with prior practices out of habit/comfort.

Document collaboration isn't effectively reconfigured without organisational training

The data from this study suggest that, in 2023, when hybrid working had been sustained for more than a year, neither organisation had evolved their training to target an uptake in

collaborative composition practices and participants remained uncertain how to use the DCP for document collaboration.

The ability to manipulate documents via Microsoft Teams, where it is possible to open and edit documents in either the web-based or the desktop-based version of applications like Microsoft Word, safe in the knowledge that wherever the document is opened, changes will be saved to the original document, was lost on the majority of participants in non-IT roles in both organisations. So too was the important ability to simultaneously edit documents with colleagues. Although there were claims that colleagues no longer shared individual copies of documents, few had progressed to real time co-editing, instead multiple users edited the original source at a time to suit themselves, which arguably still evidences collaboration composition, albeit not collectively/in real-time. While there were some examples of collaborative composition, progress was not consistent in either organisation or for any age group.

However, targeted organisational training provision was scarce and tended to be offered to new users, rather than encouraging existing users to adopt additional practices. Yet hybrid working policies were in place for both organisations, meaning colleagues were often geographically distant from each other, therefore the longer term need to employ effective collaboration in all forms, not just collaborative meetings, was an organisational priority.

Findings from this study strongly align with the views of Jaspersen et al. (2005) that organisational training strategies cannot be static and must evolve alongside users' practices in the workplace context. Findings also help to shed light on the possible reasons for misunderstanding amongst professionals regarding the features and benefits of collaborative applications (Simon, 2021; Fraser-Strauss, 2023).

While collaborative tools have been positively correlated with project performance in Research and Development settings (Marion et al., 2016, cited in Orellana, 2017), few to minimal prior studies have considered their usage by knowledge workers (Wahl and Kitchel, 2016). Given this paucity of empirical research on the use of document collaboration in organisational settings, findings from this study advance the understanding of how this important aspect of eCollaboration is evolving (or failing to evolve) in traditional UK organisations, also presenting opportunities for further research. Furthermore, there are important implications for organisations wishing to adopt sophisticated eCollaboration systems, who should plan to conduct sustained training and education programmes for users.

Summarising differences in document collaboration across both organisations, DCP adoption offered a more accessible solution than on-premises servers. However, the features were underutilised in both cases and progress remained inconsistent throughout the study duration, but Case B faced additional challenges due to the continued use of legacy application G-Suite, which hindered a unified approach to eCollaboration. Despite continuing to experience ‘two islands of collaboration’, a project to transition away from use of G-Suite failed to materialise during the study. Resources were diverted elsewhere and a very profitable year in 2021 contributed to lessen pressure for Case B to make savings in software license fees.

The next section of the discussion explores the fourth and final collaborative practice revealed by this study; Leadership Communications, tracing the development of this practice across both organisations, in both remote and hybrid working settings.

5.3.4 Leadership Communications

Figure 35 illustrates how the findings for Leadership Communications contribute to addressing Research Question 2.

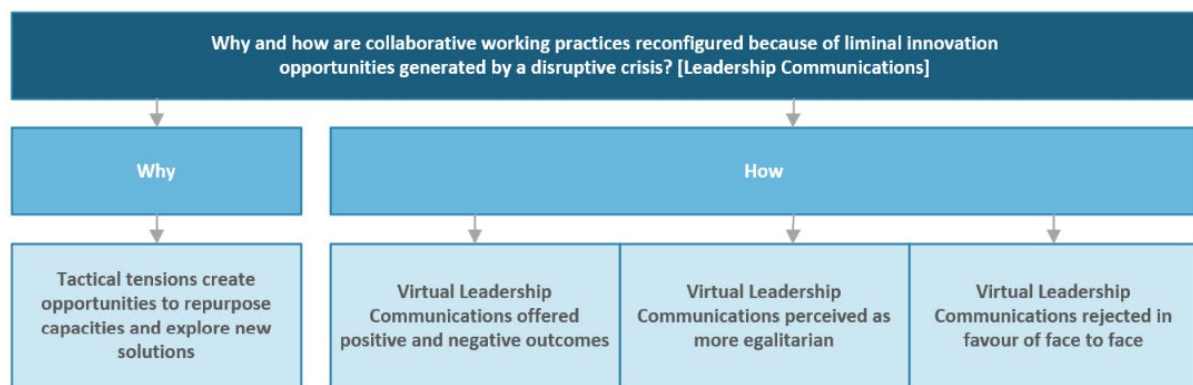


Figure 35 - How Leadership Comms contribute to addressing RQ2

Leadership Communications focus on the real-time delivery of key messages and information to all employees to ensure employee alignment with the company's vision. Leadership Communications are delivered via the DCP, and such virtual online events have also been referred to as virtual 'Town Halls' (Comp et al., 2022).

Tactical tensions create opportunities to repurpose capacities and explore new solutions

Prior to homeworking, senior leaders in both organisations conducted regular face-to-face, all-company strategic briefings and updates. Effective leaders strive to project vision, and their role remains vital, especially in crises (Kniffin et al., 2021). Tactical tensions arise when existing practices are interrupted and no longer feasible, creating opportunities to experiment with new products and services, repurposing existing capacities in new ways (Orlikowski and Scott, 2021). Leadership communications evolved from such experimentation; regular online meetings lacked sufficient attendee capacity, so both organisations experimented with Teams Live. This addition to the Teams product offered a 'broadcast style' virtual experience, meaning attendees could not use cameras or microphones and were limited to posing questions into a moderated Q&A function, but more colleagues could attend. The new technological capacity provided by Teams Live, combined with the conditions of enforced homeworking, enabled both organisations to experiment with new strategic communication methods and provides an explanation of why leadership communications were reconfigured.

The study's findings extend earlier research which found that organisations initiated new forms of distant management at this time, such as prerecorded videocasts, but failed to explore their efficacy (Razmerita et al. (2021).

Virtual Leadership Communications offered positive and negative outcomes

Case A experienced an immediate improvement in the number of employees attending their virtual communications events in homeworking, compared to prior, face-to-face events. The improved attendance led higher grades to consider the possibility of adopting this new style of leadership communications in the longer term, feeling that higher grades were now visible to, and therefore available to, more employees. Comp et al. (2022) found that Virtual Town Halls conducted in the context of COVID-19 were effective at conveying not only factual information but also to convey the culture of academic programmes to potential students. However, Case B higher grades, used to regular, all company large gatherings that also contained a significant social element, found the lack of interaction and audible audience feedback a significant problem, but in contrast, for participants facing mobility issues, the new style of communications was welcome, providing improved physical accessibility over prior face-to-face gatherings. Next, leadership communications in the context of hybrid working are examined.

By the time hybrid working emerged in 2021, Case A higher grades had consciously decided to adopt the new style of leadership communications, reserving face-to-face interactions for situations requiring greater sensitivity, for example, a restructuring. 'Regular' Teams meetings had now increased in attendee capacity, thus Case A switched over, in order to allow attendees to pose direct questions rather than moderated questions. Initially, higher grades found the digital format daunting but embraced it, believing it benefited individuals and therefore the organisation. However, these findings were not replicated in Case B, whose

higher grades continued to express a preference for face-to-face leadership communications, although virtual events were utilised while pandemic induced restrictions prevented all-company gatherings.

Virtual Leadership Communications perceived as more egalitarian

By 2023, with hybrid working established for over a year in both organisations, Case A had adopted virtual leadership communications as a regular practice. As specialist hybrid technology became available, a few events were held in a hybrid format, requiring technical support. This approach combined the benefits of face-to-face interaction with improved accessibility, allowing individuals to 'drop in and out' based on personal schedules and enhancing access for those with mobility issues. Moyo (2019) advocated for leadership communication channels that are fair, open, and non-discriminatory, benefiting all stakeholders. Democratic communication fosters organisational commitment (Güney et al., 2012, cited in Moyo, 2019) and although this study does not focus on organisational commitment, findings suggest that DCPs could offer organisational leaders the potential for an open and inclusive style of leadership communication. The new communication style was also perceived as more egalitarian, flattening organisational hierarchy by providing direct access to senior leaders, thus fostering an open and transparent culture. The study suggests that communications conducted via the DCP offer leaders the potential for an inclusive style of communication and build on Kniffin et al. (2021), who suggest that virtual environments might foster more participatory relationships by reducing physical cues of dominance.

However, these findings should be treated with caution as they mainly reflect the views of Case A higher grades, raising important questions about whether employees receiving this new communication style feel the same way, presenting opportunities for further research.

Despite this, the findings shed light on *how* leadership communications were reconfigured in hybrid working in Case A, the public sector organisation.

Virtual Leadership Communications rejected in favour of face to face

In contrast to Case A's adoption of a virtual/hybrid style of leadership communications, Case B suggested hybrid leadership communications would not be made available, due to the organisational emphasis on face-to-face, driven by the perceived benefits of community and social interaction. Although frequent use of virtual technologies has not been found to significantly affect employees satisfaction with organisational communications, on the other hand, rich face to face communication has been proven to positively affect organisational communication satisfaction (Barhite, 2017). By the end of 2022, Case B had reverted to face-to-face leadership communications, driven in part by the preferences of the CEO. All-company gatherings were only available face-to-face and thus served more than one purpose, not only creating the opportunity for employees to mix in a social environment after the strategic updates but also reinforcing Case B's broader commitment to a minimum of three days in the office. This approach was appreciated by younger employees but posed challenges for those with mobility issues, highlighting the difficulty in balancing diverse employee needs with organisational objectives. This finding illuminates how leadership communications reverted to prior practice in hybrid working conditions in Case B, offering a balance to the more positive use of virtual leadership communications in Case A, together with additional insight into *how* collaborative practices were reconfigured again in hybrid working.

Comparing both cases approach to virtual leadership communications, while Case A embraced virtual briefing as a permanent change, feeling it fostered a more open culture, these views were not shared by Case B, who reverted to face-to-face meetings, reinforcing a

commitment to office presence. These differences reflected the distinct cultures of the two organisations, with Case A valuing flexibility, and Case B emphasising social interaction and office presence.

This concludes the discussion of organisational collaboration practices; the final section of this chapter considers why and how crisis driven change affects organisational cultures.

5.4 Why and how does crisis driven change to collaborative practices affect organisational cultures?

Figure 36 illustrates how the findings for Organisational Values and Norms address Research Question 3.

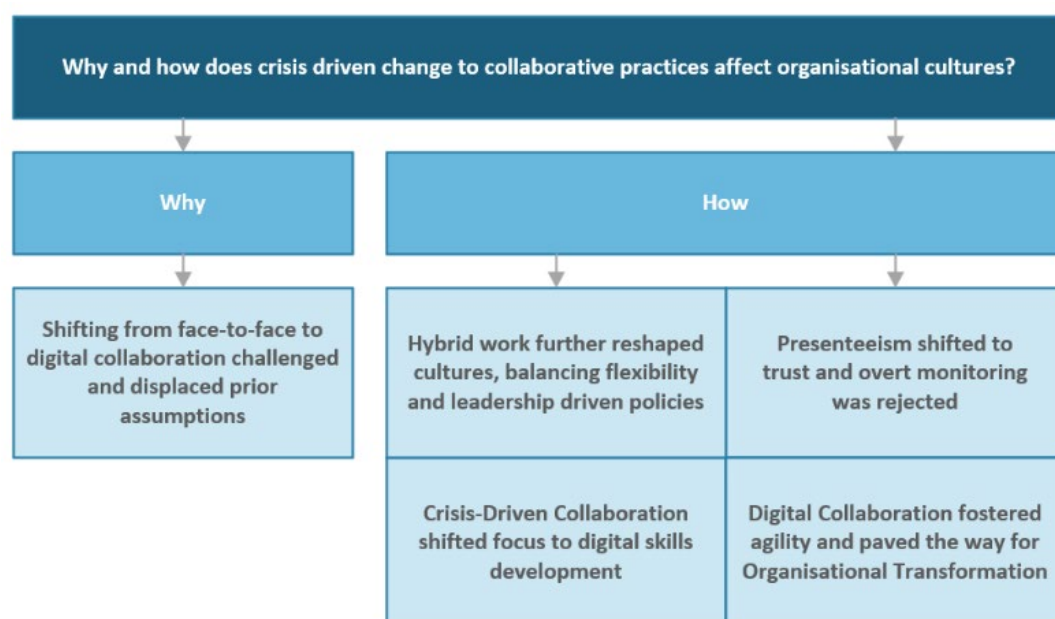


Figure 36 - Addressing Research Question 3

The study found that, although both organisations share value dimensions of *bureaucracy*, which emphasises organisation, hierarchy, systems, control, procedures (Leidner and Kayworth, 2006) and *hierarchical*, emphasising control over individuals through authority relationships (Wilkins and Ouchi, 1983), the prevailing culture at each organisation, as perceived by employees, places emphasis on some similar and some differing values. Schein

(2017) asserts culture includes mission, strategy, structure, and operational processes, and as such, limits the changes an organisation can make. Participants describe organisational culture at Case A, the higher education institution, as questioning and forward thinking with espoused values (Schein, 2017) of diversity and equality. Case B, a private media company, emphasise a caring, progressive culture with values of creativity, diversity, and collaboration.

One key difference from these findings is organisational agility, or speed of change: Case B claim dynamism, while Case A suggest change is harder to implement. Leidner and Kayworth (2006) emphasise that values shape how groups use and apply IT, thereby suggesting Case B's dynamic approach might lead to faster DCP adoption. Surprisingly, during the first UK lockdown, Case A moved more quickly to licence their workforce with Teams, with Case B obtaining their organisational access a few weeks later. These findings broadly support Rainey et al. (1976) who found that private organisations aren't always more innovative than public ones, and Gawthorp (1981) who argues that 'environmental turbulence' overshadows other differences.

Another finding that stands out from the results reported earlier is a difference in resource provision; all Case B participants entered lockdown with company-issued laptops, while some at Case A had to make do with a variety of equipment, including personal devices. Although there was little prior need for portable equipment, since flexibility in work patterns was not standard, this argument applied equally to both organisations and on that basis, does not explain resource differences. It also seems unlikely that Case B were more prepared for the serious, exogenous shock of the COVID-19 health pandemic, which had the ability to cripple unprepared organisations (Leonard-Barton, 1992, cited in Brown and Kline, 2020), than were Case A. Differences in resource provision were also evident with Case B later making significant investment in equipping all of their meeting rooms with specialist hybrid

technology, in contrast to Case A's modest initial investments. Case B also made significant investment in the redesign of their office space, to offer more collaborative spaces. Rainey and Bozeman, (2000) found that public organisation managers face more purchasing restraints than those in private organisations, offering a plausible explanation. An alternative explanation for this result is that Case A emphasised different priorities; while Case B employees experienced salary reductions and redundancies, Case A employees were protected against both eventualities throughout the duration of the research study.

Shifting from face-to-face to digital collaboration challenged and displaced prior assumptions

The evolution of cultural assumptions during the study reveals a significant shift in how both Case A and Case B approached flexible working practices. Schein (2017) posited that values and norms can become deep-rooted assumptions, shaping collective actions. A key prior assumption in both organisations was that synchronous collaboration occurred primarily in a face-to-face setting, making its absence keenly felt during lockdown. However, a note of caution is due here; findings from lockdown should be considered in light of the crisis conditions of a life-threatening global pandemic. One of the most striking findings from this time is that of heightened emotions; workforces felt a sense of isolation from each other and strong feelings of 'we work better together' meaning we work better together when co-located, were evident. This finding is consistent with Dwivedi et al. (2020) who report feelings of social and professional isolation during this time and Adamovic (2022) who found working from home only reduces job stress when employees do not believe that it will lead to social isolation.

The current study further identified face-to-face interactions as superior to digital interactions for brainstorming and creativity, likely due to the richer social cues in in-person settings (Kniffin et al., 2021). These findings are consistent with Straus and McGrath (1994) cited in

Guegan et al. (2017) although prior research is inconsistent, with other researchers such as DeRosa et al.(2007) and Michinov (2012) cited in Guegan et al (2017), finding electronic brainstorming to be more effective, with advantages like improved attention to others' ideas. Difficult negotiations were considered as better suited to face-to-face interactions due to the challenge of reading emotions on screen, a key factor in negotiations (Sharma et al., 2020 cited in Elfenbein, 2022). However, research on emotions in negotiations is limited, and this study's findings are limited in this aspect, suggesting potential future research avenues.

Junior workers and 'new hires' were felt to benefit from 'immersion' in the organisation's culture, including its physical artefacts such as office buildings. This finding could have important implications for organisations considering their approach to 'onboarding'. Face-to-face was found to be superior for informal knowledge sharing, results that are consistent with Razmerita et, al, (2021).

Breu and Hemingway (2004) argue that virtual teams suffer from chronic issues due to mistrust in technology, but in surprising contrast, this study found no significant mistrust in the DCP, extending Awada et al., (2021) who emphasise the importance of reliable communication technologies, by finding organisations displayed trust in the Microsoft Teams platform. The lack of mistrust in the platform can be explained by high levels of cognition-based trust; individual users trusted their employer had put the necessary security measures in place to protect their information (Kim et al., 2008, cited in Zamani et al., 2019). In addition, the use of Teams had been sanctioned by employers in preference to other platforms, so employees felt confident to use it, an example of high levels of institution-based trust (Pavlou and Gefen, 2004, cited in Zamani et al., 2019).

Regardless, organisations are warned against an 'over reliance' on digital technology, with early examples of security 'glitches' with the Zoom platform, highlighted (Gkeredakis et al.,

2021). Yet, the global growth of the Teams platform reflects how many organisations around the world were relying upon the platform being available, which supports a view that, during pandemic-induced social distancing, people had no choice but to place absolute trust in the Internet (Bin-Nashwan et al., 2023).

Razmerita et al. (2021) observed that a general sense of organisational culture was lacking in the early days of the COVID-19 and when the lens of liminal innovation is applied to the practice of face-to-face collaboration, it illuminates displacement of deeply held organisational values. (Orlikowski and Scott, 2021) use the term ‘existential tension’ for practices that are displaced/discontinued as they no longer make sense in practice. While both organisations appreciated the practical necessity of an organisational move to working from home, existential tension arising from the loss of face-to-face collaboration and the potential impact on organisational culture was partially responsible for a Case B survey to employees in October 2020 regarding a return to work on 3 days per week. At this time, 85% of respondents were not in favour, due to ongoing concerns about the COVID-19 pandemic. In contrast, Case A did not suggest anyone returned at this point in time.

Moreover, the necessity of working from home challenged organisational assumptions about the necessity for face-to-face collaboration; the adoption of Microsoft Teams facilitated continued collaboration, challenging the belief that effective teamwork could only occur in person. Productivity levels were found to be maintained and even improved, according with Awada et al. (2021) who asserted that knowledge workers faced minimal productivity loss when transitioning to WFH and linked coworker communication with increased productivity, advising the use of collaborative applications. Similarly, Cariani et al. (2023) highlighted digital technology as crucial for hybrid models, recommending the building of digital infrastructure for connectivity and continuity. As the pandemic progressed, both

organisations recognised the potential for a profound shift to flexible working, confirming that organisational change is emergent (Markus and Robey, 1988). This unanticipated cultural shift is consistent with O'Reilly and Tushman's 2016 assertion that disruptive events can lead to a re-evaluation of basic organisational assumptions. Furthermore, the challenges to deeply held organisational norms, arising from existential tensions, provide the explanation of *why* crisis-driven changes to collaboration practices resulted in changes to organisational cultures.

Hybrid work further reshaped cultures, balancing flexibility and leadership-driven policies

By the time hybrid work emerged in 2021, less anxiety was demonstrated by participants, in turn reflecting a normalisation of working practices, e.g. a reduction in back-to-back meetings and an improving global situation. The UK's mass vaccination program began on December 8, 2020 (Gov.UK, 2020), with most employees still under government sanctions and not returning to offices. A clear shift in employees' preferences in both organisations could be seen; repeated organisational surveys confirmed the majority of employees wanted to continue working in a hybrid manner, with some days in the office and others at home. This finding was echoed in other European organisations (Razmerita et al., 2021).

Although US companies like Facebook and Twitter planned to bring employees back and Google opted to remunerate employees differently if they worked from home (BBC, 2021), evidence from this study supports views that suggested a return to full-time office work unlikely (Dwivedi et al., 2020; Savić, 2020; Kniffin et al., 2021) and a broader cultural and societal shift towards accepting hybrid norms (Razmerita et al., 2021; Adekoya et al., 2022). Although Alexander et al. (2021) reported anxiety by employees about post COVID-19 plans, indicating that not all knowledge workers were fortunate enough to receive the same levels of

communication and assurance from their management teams, as did the organisations in this study.

In this study, older participants valued the work-life balance offered by hybrid working, considering it particularly beneficial in their advancing years. This was borne out by a reduction in short-term absenteeism in the older age group in Case B. Yet, findings confirmed that younger participants, those with and without family commitments, also benefited from enhanced work-life balance and short-term absenteeism saw a significant and sustained drop across Case A too, although data was not available for specific age groups. Absenteeism data from the enforced homeworking period must be interpreted with caution because the purpose of lockdowns was infection control, however, these reductions were sustained into hybrid working. Prior research has found that, in proximal working, unwell employees often persist in going to work (Pichler and Ziebarth, 2019), particularly when highly engaged or under high demands (Miraglia and Johns, 2016), mimicking supervisor's presenteeism (Dietz et al., 2020). Kessler (2017) advises against coworker pressure to work while sick and Kniffin et al. (2021) advises researchers to explore how sickness is navigated post COVID-19, suggesting there are important implications for organisations. Findings from this study suggest that flexible workers may continue working when moderately unwell, avoiding what would otherwise have been a 'duvet day.' Those with chronic conditions like migraine, might temporarily stop work but resume later the same day. This study thereby helps to explicate Kniffin's 2021 suggestion, by finding a reduction in short term absenteeism that was perceived by higher grades as improved organisational productivity.

The shift towards greater flexibility was seen as a potential driver for more inclusive practices in the workplace. One interesting finding is that hybrid working using DCPs democratises flexibility, making it equally available for employees without family responsibilities. By

2023, with hybrid working having been sustained for over a year, the two organisations studied had adopted different strategies reflecting their unique cultural values. Case A, with a culture emphasising flexibility and inclusivity, required staff to be in the office two days per week while allowing flexibility based on local service delivery needs. This approach was aligned with their prior strategic plan and reflected a broader acceptance of hybrid norms among higher grades. Individual teams had settled into their own working pattern, with some implementing one or more regular weekly team days when all team members attend. The strategy proved more successful at creating informal opportunities for team interactions than were available for teams who failed to mandate particular workdays, aligning with Breu and Hemingway (2004) that organisations should invest in face-to-face interactions to provide opportunities for virtual teams to share knowledge.

On the other hand, some employees were no longer sure what purpose informal interactions served and suggested they delayed the completion of work tasks, revealing some confusion between the value of ‘casual chat’ and more focused opportunities for knowledge sharing. This has implications for organisations choosing to implement flexible working policies by emphasising the need to provide structured opportunities for informal interactions, to maintain effective knowledge sharing and cohesion within the organisational culture. Notwithstanding this implication, levels of social interaction are a matter of personal preference, and, for some with neurodiverse conditions, the ability to message via the DCP in preference to engaging face-to-face, had been a help, rather than a hindrance, aligning with Pinchevski and Peters (2016) that digital technology can free those with Autistic Spectrum Disorder (ASD) from the burdens of face-to-face counters.

Conversely, Case B, intent on preserving its charismatic and face-to-face collaboration-focused culture, did not publish policies. A six-month hybrid trial was initiated in 2022,

which encouraged three office days per week with one mandatory ‘all company’ face-to-face collaboration day, highlighting a more rigid approach. On this all-company day, face-to-face collaboration was to be privileged, and virtual meetings avoided entirely where possible. In reality, this was almost impossible to achieve since use of the DCP was now deeply embedded in daily working practices. A survey conducted in May 2022 reflected mixed feelings about office attendance, despite concerns about career impacts, indicating a disconnect between organisational expectations and employee preferences. Employees' reluctance to return to full-time office work was perceived by some higher grades as a 'slap in the face' to Case B's perception of its cultural values, which had previously tended towards *local values*, or strong identification with the organisation as an extension of personal life (Leidner and Kayworth, 2006).

The current investigation found that redundancies in October 2022, despite a successful prior year, undermined trust and highlighted the tension between positive organisational messages and actual practices at Case B, suggesting trust is reciprocal and employees will withdraw or reduce their trust and belief in an organisation's espoused cultural values when actions contradict them. These results further support Wang, et al. (2020) who established the importance of a collective shared belief that management are trustworthy when job cuts occur, since job cuts are significantly linked to lower levels of organisational commitment, but shared trust helps maintain that commitment. Schein (2017) suggests in such cases, the espoused value may be aspirational, rather than embedded in the organisation's ideology. When pressured, it is likely that Case B were unable to prioritise ‘caring’ over economic considerations.

Both organisations sought to balance flexibility while maintaining cultural integrity, and their differing approaches reveal the complexities and challenges of implementing hybrid working

policies. Perhaps the primary distinction between Case A and Case B lies in the differing opinions of their top leaders, which significantly influenced their respective policies. This divergence underscores the impact of leadership perspectives on organisational culture and policy implementation, despite both organisations' decisions to offer hybrid working having been driven by similar factors: perceived commercial pressure, a cultural disinclination to mandate a return, and employee preference for flexibility. The transition to enforced homeworking and subsequent hybrid working models highlighted the adaptability of organisational cultures but organisations should be aware of the necessity for clear communication, inclusive practices, and adaptability in navigating the hybrid working landscape.

Presenteeism shifted to trust, and overt monitoring was rejected

The cultural norm of presenteeism was found to have been deeply ingrained in both organisations before the COVID-19 lockdowns, positioning working from home as a privilege that required prior approval. There were isolated examples found of deeply held assumptions that working from home was 'shirking', confirming Schein (1983) and while working from home was occasionally possible, it was reserved for tasks requiring focus. As such, employees would not often be disturbed; in any case, prior to the adoption of the DCP, they were largely unable to join face-to-face meetings back in the office. Ultimately, presenteeism reflects a lack of trust in employees' intention to work from home, however, findings also indicate that, prior to DCP adoption, many employees lacked knowledge of eCollaboration, so didn't understand how employees *could* work from home, in addition to doubting whether they *would* work from home, further reinforcing these assumptions.

On the question of trust in enforced homeworking, findings clearly indicate that the realities of the pandemic challenged these norms, positively impacting perceptions of trust across all

levels of the workforce. Despite these positive outcomes, shifting organisational culture to ensure long-term trust in homeworking was not imagined to be straightforward, on the basis that some managers would continue to harbour misgivings, consistent with Handy's 1995 argument that technology alone cannot foster trust. The control of remote workers became a focal point, with Kniffin et al. (2021) suggesting that the lack of control mechanisms had previously hindered widespread remote work. It has been suggested that tools like Slack, Zoom, and Trello were utilised in enforced homeworking to maintain productivity through employee monitoring (Carroll and Conboy, 2020). This does not appear to be the case; in contrast, this study has found that both organisations deliberately rejected overt monitoring practices as they were deemed anti-cultural. Findings from this study align with Shirmohammadi et al. (2022), who argue that such applications help remote workers accomplish tasks and that excessive monitoring negatively affects productivity. This finding offers a contribution to existing literature regarding the management of remote workers during the COVID-19 pandemic by highlighting how practices like monitoring were deliberately rejected in order to preserve organisational culture. Instead, new management strategies were identified as necessary to ensure fairness and accountability while respecting privacy, for example, an outputs-based approach to productivity and an expectation that those working from home be available for collaborative meetings. Without alternative measurement strategies, equity in career progression could not be assured.

By the final data collection period in 2023, both organisations had embedded trust in homeworking as a core cultural value, marking a significant shift from the start of enforced remote work. Initially, the circumstances forced upon them had left no room for doubt, trust had been developed out of necessity. Makarius and Larson (2017) highlight trust as crucial for successful remote working, and according to this study's data, we can infer that without its development, sustaining hybrid work would have been unlikely. Conversely, trust can be

abused, confirming Bessa and Tomlinson (2017). Despite some concerns about potential productivity implications in the longer term, both organisations continued to oppose overt employee monitoring, viewing it as the antithesis of good employee relations. Still, they were aware of social media discourse, such as on TikTok, suggesting ways to ‘fake’ productivity, like 'wiggling the mouse' to keep Teams status indicators green.

The study reveals that Teams availability indicators, like ‘green’ or ‘red’ status, can influence behaviour. Primarily used to gauge when it is appropriate to contact a colleague, they can also prompt actions mimicking those satirised on TikTok. For example, lower-grade employees sometimes felt pressured to perform minimal keyboard activity to switch their orange 'away' status back to green, even when legitimately occupied with tasks like reading lengthy documents. Generational differences also emerged, with older colleagues confused by younger colleagues’ ‘offline’ status, which can appear when the Teams mobile app is active, but the desktop app remains idle. Features like status availability can be interpreted in different ways, either seen as helpful tools for the individual worker to manage time more effectively, or as tools of control. This researcher argues that they offer both of those things. However, when considered as tools of control they are more akin to *digital presenteeism* than, for example, output-based productivity measures.

An alternative interpretation of trust development in remote working is that it persists out of necessity due to the lack of structured output-based monitoring in either organisation. While significant events continue to occur successfully in both organisations, these alone cannot measure productivity at a granular level, which relies on individual accountability and line management oversight. Findings from this study contradict Ramasubramanian and Banjo (2020) by showing high levels of individual accountability, though the potential for homeworking abuse remains. Consequently, hybrid working policies could be rescinded,

should employees breach employer trust in demonstrable and significant ways. This would be a significant loss for employees, who have found a sustainable hybrid work-life can be achieved through a combination of organisational and individual strategies (Eng et al., 2024).

This has important implications for organisations who could benefit from implementing structured output measures to ensure the sustainability of hybrid working. Overall, the findings demonstrate how the crisis-driven change to homeworking reshaped organisational culture by challenging the norm of presenteeism and fostering trust through new collaborative practices. However, the tension between trust and control remains, highlighting the need for balanced strategies to sustain hybrid work and preserve cultural integrity.

[Crisis-Driven Collaboration shifted focus to digital skills development](#)

Cairns and Malloch (2011) suggest that the need for a multiskilled workforce in the developed West has arisen as a result of late twentieth century globalisation. While ‘education’ is seen as comprehensive, ‘training’ is seen as specific and targeted at competence at specific practices (Wenger, 1998). The absence of dedicated training teams in both organisations led to a reliance on IT departments for DCP training, resulting in varying effectiveness. At Case A, interactive training, delivered by an individual, was restricted to those wanting to use the full functionality of the DCP, effectively meaning those using videoconferencing and chat had to manage with written guidance instead. This approach was criticised as leading to inconsistencies in use. Case B’s IT team were initially available to provide individual training but weren’t able to produce any written guidance until several months after Teams was implemented. Despite these initial hurdles, employees in both organisations managed to develop competence with basic DCP functionalities through daily practice. This aligns with Razmerita et al. (2021) who found that knowledge workers in the UK were able to adapt effectively to the conditions imposed by enforced homeworking.

Moreover, some individuals in this study felt having to use the DCP had improved their digital skills and self-confidence with digital technology. Younger workers further compared the use of Teams to applications such as WhatsApp and Facebook, indicating prior familiarity and *digital dexterity*, aligning with views that younger people can seamlessly transition between their personal and professional use of information systems (Vodanovich et al. 2011); (Moore et al., 2022). Although, confirming findings by Moore et al. (2022), the study did not find evidence of a binary skills divide between younger and older workers, in contrast finding that older workers can possess high levels of skill not possessed by younger colleagues and vice-versa. Some older workers initially described themselves negatively, using terms like ‘dinosaur’ to express low self-confidence in digital skills. However, successfully mastering video calls and chat on the DCP boosted their confidence, encouraging them to explore other digital applications.

However, while employees demonstrated some capacity for self-directed learning, the inconsistencies in use behaviour, evidenced by the failure of knowledge workers of all ages to discover the more advanced features of the DCP, points to a need for more structured training initiatives, particularly in light of a more permanent move to hybrid working. This supports findings by Hsieh et al. (2011), who argue that employees need to be stimulated to learn and apply more of the available functions of implemented technologies in the post-adoptive context.

The focus on digital skills, brought about by DCP adoption, served to raise awareness of the strategic importance of a *digitally skilled and digitally curious* workforce. Recognising the limitations of informal learning methods, steps were taken to support the development of employees' digital proficiency more effectively, recruiting dedicated teams and implementing structured training and education programmes. As a result, Case A's LinkedIn Learning

account activation rose 30% from baseline figures collected for year ending August 2020. Case B introduced a bespoke learning environment, also incorporating LinkedIn Learning, and employees were encouraged to pursue additional qualifications in data, marketing, or project management. There are similarities between the attitudes taken by organisational management in this study and the view posited by Vial (2019), that in order to ‘unlock the transformative potential of digital technologies’, it is necessary to develop the skills of existing workers (Hess et al., 2016 cited in Vial, 2019).

Digital Collaboration fostered agility and paved the way for Organisational Transformation

Although cross-functional collaboration is an important aspect of digital transformation (DT) (Earley, 2014; Maedche, 2016 cited in Vial, 2019), existing definitions of DT locate the transformation experienced in this study as IT-enabled organisational transformation (business processes are optimised and efficiency gains are realised; existing institutions remain unchanged), rather than digital transformation, (business processes are transformed and the business model of the focal organisation is altered) (Vial, 2019). Although, the definition of DT is also consistent with that of digitalization, which includes the “broader individual, organizational, and societal contexts” (Legner et al., 2017:301, cited in Vial et al. 2019) and elsewhere, the process of fostering organisational transformation through the application of information technologies is referred to as ‘digitalization’ (Kitsios et al, 2022), Both digitalization and digital transformation can assist companies in improving their competitive advantages by increasing organisational flexibility and resilience and improving dynamic capabilities (ibid).

While challenging existing definitions of DT is beyond the aim or scope of this study, the data provides some evidence of the redefinition of value networks (Tan et al., 2015; Delmond

et al., 2016 cited in Vial, 2019), which Vial identified as digital transformation. Notably, Case A used the DCP to bypass schools after initial contact, subsequently contacting potential university applicants (customers) directly for follow up ‘sales pitches.’ Not only did this include young people, but also their parents, who were potential adult learner applicants. This demonstrates a remediation strategy, where the couplings between participants of a value network are reinforced as digital technologies enable close collaboration and coordination among participants (Klötzer and Pflaum, 2017 cited in Vial, 2019).

Following Kitsios et al. (2023), the study also finds evidence of the development of other beneficial organisational capabilities as a result of transformation from digital technology.

Table 20 summarises these benefits.

Table 4. Organisational benefits from eCollaboration adoption

Benefit from eCollaboration adoption
Facilitates business continuity in remote working.
Facilitates agility in decision-making.
Improves attendance at formal meetings e.g. committees.
Enhances meeting productivity.
Enhances inter-organisational collaboration.
Enhances intra-organisational collaboration.
Costs, time, and sustainability benefits from reduced travel.
Can reduces short-term sickness rates amongst employees.
Extends customer reach (existing and new customer segments)
Enhances digital skills and self-efficacy.
Enhances trust in remote working

Vial (2019) suggests that although ‘top management’ see digital technologies as potentially beneficial, deeply embedded organisational structures including organisational culture, stifle their innovative power. This study finds that the transformation of collaboration practices and corresponding shifts in organisational culture as a result of DCP adoption also illuminated the possibility for future organisational transformation, at least in Case A, whose senior leaders targeted further process transformations using digital technologies, describing this as digital

transformation. This aligns with the views of Kitsios et al (2023) that, initiated by the COVID-19 epidemic, the inherent utility of digitalization has begun to receive widespread acknowledgement.

Past transformations in industry show that, although in times of crisis, small changes can occur, transformational changes are also possible (Gersick, 1991). While the outcomes from this study might not fit within existing scholarly definitions of digital transformation, the two organisations concerned experienced the advent of digital collaboration in home and hybrid working as transformational, aligning with the views of (Treacy, 2022), who suggests enforced homeworking led to ‘the most significant organisational design change in our lifetime’. However, the longitudinal nature of this study illustrates the progressive transformation of organisational practices and demonstrates that such change unfolds from the interactions of organisational actors with technology, constituting organisational change. Thus, change is emergent, arising unpredictably from complex social interactions; technology does not determine individuals and organisations behaviour, and while human actors might try to design information systems and features to satisfy organisational needs (Markus and Robey, 1988), the study demonstrates that individual interpretations and usage will vary.

While moves to hybrid working could still be transitory (Orlikowski and Scott, 2021), early changes are so far sustained for the two UK organisations who participated in this 4-year study. It is possible these results are not reproducible on a wider scale, however, findings from this study reflect those of what is claimed to be the largest study to date of hybrid work, wherein researchers suggest 80% of US companies now offer some form of hybrid work, while the 20% that don’t are ‘likely paying a price’ (Bloom et al., 2024).

Having addressed the research questions and thereby fulfilled the aim of this research, the final section of this discussion chapter considers to what extent the liminal innovation

framework (Orlikowski and Scott, 2021) is applicable for research on transformation studies in organisations.

5.5 The applicability of Liminal Innovation to Transformation studies

In consideration of what constitutes a ‘digital culture’ (Kane et al., 2017 cited in Vial, 2019), Vial (2019) points to organisations who are willing to foster learning by conducting ‘small scale’ experimentation with digital technologies (Fehér and Varga, 2017, cited in Vial, 2019). This approach allows organisations to learn and adapt long-term plans based on both experimental outcomes and ongoing environmental changes (ibid). Liminal experimentation with the DCP, which reconfigured practices and resulted in cultural changes and organisational learning, aligns with Vial’s recommendations for small, incremental, and iterative changes (Jöhnk et al., 2017, ibid). In this study, the lens of liminal innovation provided an explanation underlying *why* processes and culture were transformed through incremental changes, and as such liminal innovation concepts are particularly well-suited for IT-enabled organisational transformation during times of crisis. Figure 37 illustrates the process of practice reconfiguration observed in this study as a result of liminal tensions arising in a disruptive crisis. Competitive tension emerged and is posited as an additional liminal tension that arises ‘on the ground’ when rival applications or practices co-exist with emerging practices. Additionally, the original framework (Orlikowski and Scott, 2021) does not represent the individual or organisational cultural influences, which, in this study, were found to shape *how* practices were reconfigured. Therefore Figure 37 offers an extended liminal innovation framework, based on empirical findings from this study, aligning with Söderlund and Borg (2018), that liminal conditions can produce new norms and values. This provides significant empirical and theoretical contributions, extending liminal innovation research by offering a conceptual framework for the study of sociomaterial

practices in which the social context and the material are separate but become sociomaterial (Leonardi, 2013). This approach to sociomateriality uses abstract concepts like norms, policies and communication patterns to show how technology and organisations shape each other, highlighting technology's constitutive role in organisational processes (ibid). This extended framework might also prove of use for academics wishing to teach students about sociomaterial practices and how they are reconfigured in a disruptive crisis.

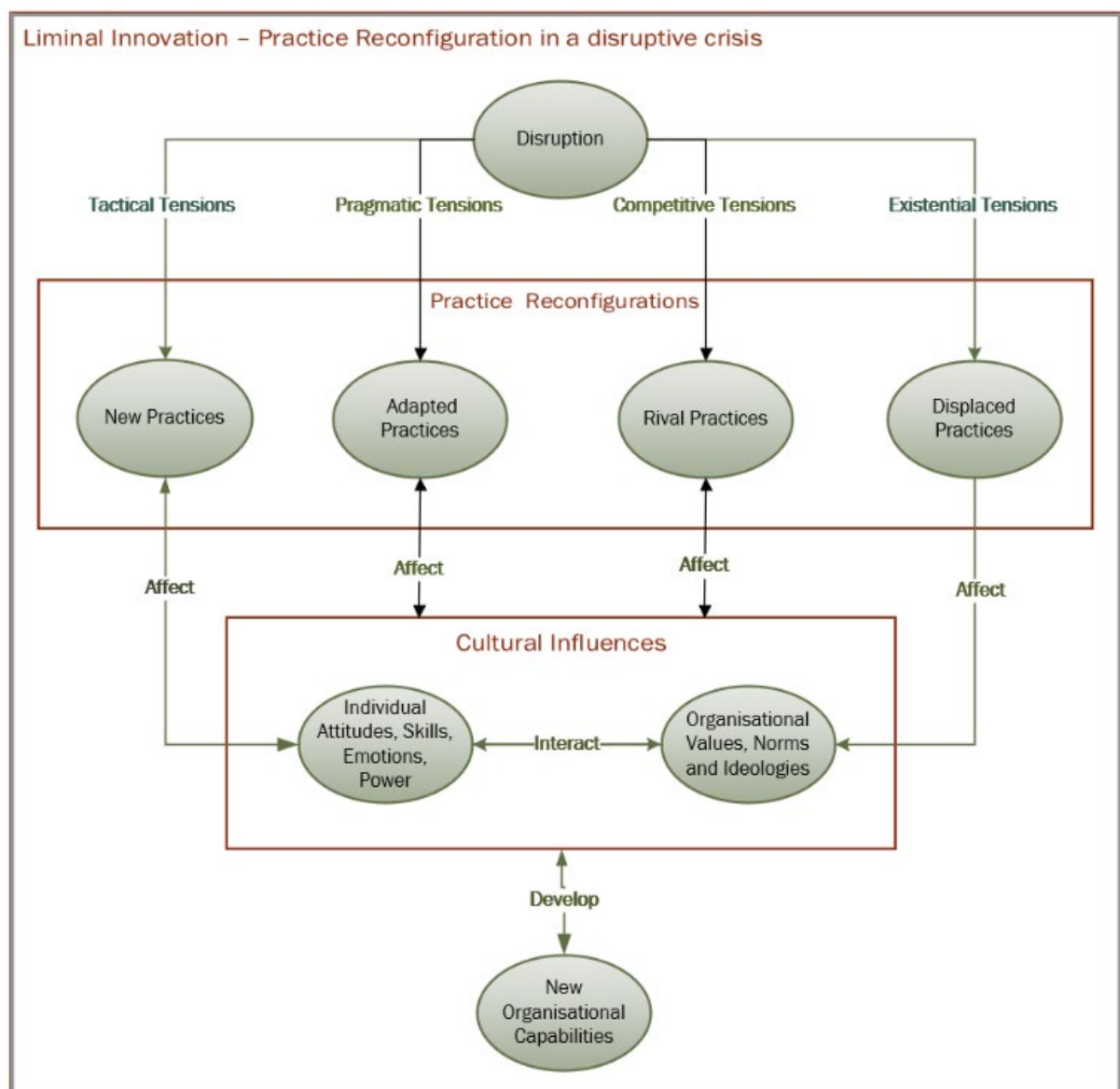


Figure 37 - Extended Liminal Innovation framework based on empirical findings

Table 21 follows, summarising the study's main findings and contributions.

Table 5. Summary of Key Research Findings and Contributions

Section	Prior Findings	Findings/Contributions from this study
5.2	Mandatory Adoption largely results in negative outcomes (Markus, 1983; Hirschheim and Newman, 1988; cited in Bhattacharjee et al., 2018).	<p>Contradicts the majority of prior literature by finding positive outcomes of mandatory technology adoption, aligning with recent research by Lehmann et al. (2023) that mandatory adoption of technology can be beneficial.</p> <p>For DCPs, mandatory, mass adoption is helpful, for the following reasons: -</p> <ol style="list-style-type: none"> 1. Allows users to ‘step past’ trying to visualise benefits, confirming Riemer et al., (2009) that the potential of DCPs emerges in practice. 2. Amplifies formation of an organisational collaborative network through network effects - greater adoption leads to greater impacts. Confirms existing literature on network effects in technology adoption (van Dijk, 2005), but offers new findings by the introduction of the mandatory adoption context. 3. New Finding: A level playing field effect emerges when DCPs are simultaneously adopted across the workforce, fostering unity and collective learning. Instead of early adopters leading the way (Rogers, 2003), the ‘we all go together’ approach enhances self-efficacy across a diverse workforce. This reduces the risk of negative age-related associations with late adoption, promoting inclusivity and minimising digital workplace divides.
5.2	Resistance is stronger in mandatory adoptions (Bhattacharjee et al., 2018)	Contradicts - resistance is not strong in mandatory adoptions when the technology is perceived to offer relative advantage.
5.2	Older users resist technology more than younger users (Vodanovich et al., 2010).	Contradicts - Older users do not offer greater resistance in mandatory settings.
5.3/5.4	<p>Various prior COVID-19 homeworking findings: -</p> <ol style="list-style-type: none"> 1. Videoconferencing replaced meeting in person (Waizenegger et al., 2020). 2. Feelings of social and professional isolation: (Dwivedi et al., 2020; Razmerita et al., 2021) 	<p>Findings from this study confirm Waizenegger et al., (2020); Dwivedi et al., (2020); Razmerita et al., (2021); Abelsen et al. (2021); Khedhaouria et al., (2024); Awada et al., (2021).</p> <p>New Findings:</p> <ol style="list-style-type: none"> 1. While videoconferencing reduced isolation, reverting to email-based collaboration worsened mental health for those already feeling disconnected. 2. Increased visibility of personal circumstances engendered compassion for colleagues - over time it became professionally acceptable to reference personal responsibilities in the workplace: modern workplaces are influenced by more than just rationality.

Section	Prior Findings	Findings/Contributions from this study
5.3/5.4 cont.,	<ol style="list-style-type: none"> 3. Videoconferencing ameliorated feelings of isolation, and provided a source of emotional social support Abelsen et al. (2021); Khedhaouria et al., (2024) 4. Worries about employment security (Khedhaouria et al., 2024). 5. Increase in daily working hours (Awada et al., 2021). 	
5.3	<p>Microsoft Teams is a videoconferencing application (Hacker et al., 2020). Misunderstanding exists regarding the features and benefits of collaborative applications (Simon, 2021; Fraser-Strauss, 2023)</p>	<p>New findings: Adoption of Microsoft Teams reconfigured collaborative practices.in enforced homeworking into four distinct sociomaterial practices: collaborative meetings, collaborative messaging, collaborative composition, and leadership communications. Furthermore.</p> <ol style="list-style-type: none"> 1. Collaborative messaging includes both chat and email, which are now used for different purposes according to immediacy, formality, accountability, intended recipient and individual preferences. However, email remains widely used contradicting Johri (2011), Hurbean et al., (2023). 2. Collaborative composition underutilised; many workers remain unaware how to use Teams for document collaboration. Requires concerted training and the removal of rival applications to increase usage. 3. Communications conducted via the DCP could offer leaders the potential for an open and inclusive style of leadership communication.
5.4	<p>Working practices adopted in a hurry as a result of enforced homeworking in COVID-19 are not sustainable (Carroll and Conboy, 2020).</p>	<p>Following knowledge workers over four years in a rare longitudinal study, findings contradict prior views: Organisations experienced DCP adoption during a crisis as transformative, driving sustained changes in collaborative practices and organisational culture in home and hybrid work.</p> <p>New findings:</p> <ol style="list-style-type: none"> 1. Daily use of DCPs led to the development of new organisational capabilities, including greater agility in decision making and enhanced inter and intra organisational collaboration. 2. Productivity levels were maintained and even improved in enforced homeworking. 3. Awareness of the need for a digitally skilled and digitally curious workforce emerged, highlighting the importance of future organisational transformation initiatives.

Section	Prior Findings	Findings/Contributions from this study
5.5	<p>Liminal innovation concepts reconfigure organisational practices during crisis (Orlikowski and Scott, 2021).</p> <p>Liminal conditions can produce new norms and values (Söderlund and Borg, 2018).</p>	<p>Confirms Orlikowski and Scott, (2021): Liminal tensions arising in an exogenous shock resulted in reconfigured working practices. Confirms (Söderlund and Borg, 2018): Liminal conditions produce new norms and values.</p> <p>New Findings:</p> <ol style="list-style-type: none"> 1. Liminal innovation theory extended with the addition of <i>competitive tension</i> which arises ‘on the ground’ when rival applications or practices co-exist with emerging practices. 2. The displacement of face-to-face interactions during the crisis created existential tension (Orlikowski and Scott, 2021) as prior cultural norms about the necessity for face-to-face collaboration were challenged. 3. DCPs may be considered as liminal innovations by virtue of being subject to perpetual software updates. 4. Individual and organisational cultural influences shape practice reconfigurations. An extended conceptual liminal innovation framework illustrates these influences together with liminal tensions.
5.2/ 5.3	<p>Older people prefer email and younger people prefer instant messaging (Vodanovich et al., 2010). Older and younger users are not homogenous in their technology use; (Moore et al, 2022).</p>	<p>Contradicts Vodanovich et al., (2010) by failing to find evidence of a binary divide in preferences.</p> <p>Confirms Moore et al, (2022), by failing to find a binary divide in usage habits or digital skills; older workers can possess high levels of skill not possessed by younger colleagues and vice-versa. However, older workers may possess lower levels of computer self-efficacy, confirming Compeau and Higgins (1995); Schoch et al., (2023).</p>
5.3	<p>Can be hard to ensure hybrid meetings are inclusive for all and may result in a lack of engagement by online attendees (Ellis et al, 2022).</p>	<p>Confirms Ellis et al, (2022) that it can be difficult to ensure inclusivity in hybrid meetings, which can result in a lack of engagement from online attendees.</p> <p>New Findings:</p> <ol style="list-style-type: none"> 1. Introduces and defines <i>equity of voice</i> meaning all attendees have the same opportunity to speak in online and hybrid meetings. This is more difficult to achieve in large hybrid meetings where online contributors can become disenfranchised or feel like ‘second class’ citizens. 2. Social norms are changing, and many knowledge workers, including those in higher grades roles, now consider multi-tasking both acceptable and even necessary while attending online meetings. 3. Hybrid technology can be complex and may require specialist support, often leading to meetings reverting to fully online or in-person formats.

Section	Prior Findings	Findings/Contributions from this study
5.3 cont.,		<ol style="list-style-type: none"> 4. Hybrid meetings can disturb those in the office and meeting rooms can end up with a sole occupant to avoid disturbing those around. 5. There is a relationship between the use of digital collaboration platforms and workplace digital exclusion; knowledge workers need to be fully aware of the challenges and opportunities posed in hybrid meetings.
5.4	<p>Virtual teams suffer from chronic issues due to mistrust in technology (Breu and Hemingway, 2004). Collaboration tools are systems for management control in remote work (Carroll and Conboy, 2020); new modes of working will bring about employee surveillance systems (Kniffin et al., 2021).</p>	<p>Findings contradict Breu and Hemingway (2004); there was no significant mistrust in the DCP during home or hybrid working. Although employee monitoring practices were deliberately rejected as anti-cultural, contradicting Kniffin et al. (2021), a form of <i>digital presenteeism</i> emerged as a result of the DCP's availability status indicators, partially confirming Carroll and Conboy (2020).</p> <p>New Findings:</p> <ol style="list-style-type: none"> 1. Pandemic-enforced homeworking challenged prior norms of presenteeism. Trust in employees' intentions to work remotely increased. Without this trust, sustaining hybrid work would have been unlikely. 2. New management strategies were identified as necessary to ensure fairness and accountability while respecting privacy, for example, an outputs-based approach to productivity and an expectation that those working from home be available for collaborative meetings. 3. Hybrid working policies could be rescinded, should employees breach employer trust in demonstrable and significant ways.

5.6 Chapter Summary

This chapter provided the researcher's interpretation of the study's findings. It was structured in accordance with the research questions presented in Chapter 1, in order to address the questions and thereby the aim of the research. The discussion clarified where the study's findings support, contrast or extend prior research, indicating theoretical contributions and practical implications. Key research contributions were also summarised in tabular form.

[Chapter 6 - Conclusions and Limitations](#) follows, offering conclusions and limitations for the study, summarising the theoretical and practice contributions and offering directions for future research.

6.0 Conclusions and Limitations

6.1 Chapter Introduction

This chapter concludes the study of the mandatory adoption of digital collaboration platforms during a disruptive crisis and the impact on organisational collaboration practices and culture. Other research approached the subject from a well-being perspective, concentrating on the period of enforced homeworking, whereas this longitudinal research, conducted over four years from 2020 to 2023, focuses more on the development of practices and culture from homeworking into sustained hybrid working. The research effort involved 65 semi structured interviews, conducted as three distinct data collection phases with the same 28 knowledge workers employed in two different UK based organisations, and examination of organisational artefacts including all-company survey results and emails, with findings presented in Chapter 4 and discussed in Chapter 5.

This chapter provides a synopsis of the research study, and findings are synthesised to show how they collectively address the research aim and questions. The research is drawn to a conclusion, emphasising the significance of contributions, and the practical implications. The limitations of this study are discussed, together with suggestions for future research.

6.2 Study Synopsis

Within this section, a summary of the salient content and overall conclusion of each chapter is discussed.

[Chapter 1](#) introduced the research, setting out the problem statement: the COVID-19 pandemic forced governments worldwide, including the UK, to implement measures that turned knowledge workers into remote workers, fundamentally altering how they collaborated. This shift led to a dramatic surge in the adoption of the digital collaboration platform Microsoft Teams. However, rapid organisational adoption left little time for

adequate training, potentially leading to underutilisation of these technologies. With much focus on videoconferencing in enforced homeworking, the broader impacts of DCPs on organisational collaboration remains underexplored, particularly regarding their influence on workplace culture. This chapter concluded that research into these changes, especially in the context of hybrid working, is still emerging. Calls for more comprehensive studies that focus on the digital artefact and go beyond the immediate crisis, considering the broader, longer lasting effects on organisational practices lead the researcher to formulate specific aims and research questions that address those calls and explore them in the context of both home and hybrid working.

[Chapter 2](#) reviewed existing literature in the eCollaboration domain, distinguishing between research conducted before and during/post COVID-19 disruptions. It defined mandatory adoption (Jasperson et al., 2005; Koh et al., 2010; Bhattacharjee et al., 2018; Lui et al., 2023); and highlighted the generally negative outcomes (Markus, 1983; Hirschheim and Newman, 1988), such as resistance (Hsieh et al., 2011). While older workers are often assumed to resist technology (Vodanovich 2010) and digital collaboration tools in voluntary settings (Onyechi and Abeysinghe, 2009), emerging research shows positive outcomes from mandatory adoption in educational settings during COVID-19 (Lehmann et al, 2023), suggesting a need to explore the effects of mandatory DCP adoption in the workplace in the same context, with a diversely aged workforce. The review also identified significant gaps in research beyond videoconferencing, particularly in areas like document collaboration (Wahl and Kitchel, 2016), and the impact of changing collaborative practices on organisational culture, especially concerning norms around remote work (Schein, 2017; Shirmohammadi et al., 2022). The chapter introduced the concept of liminal innovation as a theoretical framework to understand how the abrupt shift to remote work and the subsequent hybrid working arrangements have transformed collaboration practices, potentially leading to lasting changes

in organisational culture and further setting the stage for an empirical investigation into the longer-term impacts of digital collaboration technologies in the workplace. Thus, the conclusion from Chapter 2 is that while mandatory digital collaboration can trigger resistance, emerging research shows positive outcomes. However, key gaps remain in understanding the broader impact beyond videoconferencing and the impact of digital collaboration on organisational culture. Liminal innovation presents a framework that is a good fit for the setting and focus of the study. From gaps in the existing research, a conceptual framework for the study was conceived and presented, completing Chapter 2.

[Chapter 3](#) presented the research design and methodology underpinning the research. The study employed a qualitative, longitudinal approach through two comparative case studies. An interpretivist epistemological approach was adopted, reflecting views that reality is socially constructed through subjective experiences. The chapter explained the rationale behind the chosen methods, sampling, duration, and data analysis techniques, and included a worked example of theme development. The researcher emphasised the importance of methodological rigour, demonstrating how it has been applied in this study and setting the groundwork for the findings presented in the next chapter. From the methodology chapter, it should be clear that the researcher was aware of the need to craft a design that was appropriate for the topic of inquiry in all respects, and which also fits with the researchers own ontological and epistemological perspective.

[Chapter 4](#) presented qualitative findings from 58 individual and 7 group semi-structured interviews with 14 knowledge workers, from higher, middle and lower grades in each of two cases, triangulated with secondary data gleaned from organisational artefacts and arranged as a thematic analysis. Findings were presented for each of three data collection periods, together with a comparative analysis for each case and a convenient one-page summary demonstrating the ‘through-line’ of findings. Four overarching themes emerged, and

important sub themes and/or theme aspects were identified. From these themes, it is clear that DCPs offers other ways to collaborate beyond videoconferencing and that the individual attributes of individuals, including their age and rank within the organisational hierarchy, can influence the degree of use that is made of technological features. It also seems apparent from comments made by the participants that use of the DCP would have been less significant were it not the circumstances of enforced homeworking participants found themselves in. Despite lamenting the loss of face-to-face collaboration, the option to work more flexibly was a powerful driver for organisational change, welcomed by the majority of knowledge workers. As a result of their experience during enforced homeworking, both organisations chose to offer hybrid working to their employees, although their distinct cultural styles meant the offering differed.

[Chapter 5](#) interpreted the meaning of findings presented in Chapter 4, relating these back to the research questions and to existing theory, organised according to the conceptual framework presented in Chapter 2. Key concepts discussed included some positive outcomes from forced, mass DCP adoption, such as the creation of a level playing field, benefitting those with low computer self-efficacy. Positive outcomes from mandatory adoption contrast prior literature (Markus, 1983; Hirschheim and Newman, 1988 cited in Bhattacharjee et al., 2018); (Brown et al., 2010); (Hsieh et al., 2012), offering a significant and novel contribution. A sustained shift in collaborative practices from homeworking into hybrid working required the development of inclusive practices to ensure, for example, equity of voice in hybrid meetings. The discussion emphasised the importance of understanding how cultural factors influence the adoption and adaptation of digital collaboration platforms, offering a richer perspective on how organisations navigate transformative changes during crises. For example, long-standing beliefs that effective collaboration required face-to-face interaction were challenged and although overt monitoring of remote workers was considered anti-

cultural, a form of digital presenteeism manifested as a result of availability indicators within Teams. The chapter introduced new theoretical insights, extending the liminal innovation framework (Orlikowski and Scott, 2021) by the addition of competitive tension, arising from the introduction of practices that act as a rival to incumbent practices. Chapter 5 drew attention to the practice and cultural configurations in the different contexts of home and hybrid working, offering novel contributions to emerging literature on eCollaboration in both enforced homeworking and hybrid working.

[Chapter 6](#) – this chapter - presents the research summary, implications and recommendations, with a concise view of the findings and implications for organisations, practitioners and scholars alike. It is presented along with limitations of the study and suggested areas for future studies. Essentially, this study offers valuable insights into the long-term effects of crisis-driven digital collaboration on organisational practices and culture. By examining mandatory technology adoption, collaboration practices, and the evolving role of digital platforms, it highlights both the positive and negative outcomes of these changes.

Additionally, the application of the liminal innovation framework, extended to include competitive tension and organisational influences, provides a new perspective for understanding how reconfigured practices impact workplace dynamics. Ultimately, this research contributes to both theory and practice, offering a foundation for future studies on digital collaboration and organisational transformation, while acknowledging various limitations, including the focus on one specific digital collaboration platform, Microsoft Teams.

In the final chapter - [Chapter 7](#) the researcher reflects on the Doctoral journey undertaken and the way her role and views have impacted, and been impacted by, the research process., This chapter provided an in-depth reflection on the researcher's methodological and

theoretical decisions throughout the study, using journal entries to demonstrate reflexivity in action, which is important when pursuing a qualitative line of inquiry that involves a subjective understanding of the external world (Easterby-Smith et al., 2015). It highlighted the personal and professional growth experienced during the doctoral journey, particularly in relation to digital accessibility and inclusive practices. The chapter also emphasised the importance of applying the knowledge gained to improve IT practice and foster a more inclusive digital workplace.

6.3 Discussion of Research Aim and Research Questions

The motivation of the research study was three-fold. Firstly, there has been significant interest in changes to knowledge workers collaboration practices during COVID-19 enforced homeworking, especially since the mandatory, ‘big bang’ approach taken to the adoption of digital collaboration platforms like Microsoft Teams, left many workers unprepared for the dramatic changes to collaboration that followed (Carroll and Conboy, 2020; Waizenegger et al., 2020). Given that prior research on mandatory adoption inclines towards negative outcomes, including resistance and dissatisfaction (Hsieh et al., 2011) and that older people are suggested to be more resistant towards digital technologies (Vodanovich, 2010) the researcher was motivated to explore the impact of mandatory adoption policies on knowledge workers.

Secondly, prior research has largely focused on videoconferencing, whereas the researcher suggested that the adoption of digital collaboration platforms should generate practice changes beyond virtual meetings. Seeking to understand claims by scholars and practitioners alike, that Microsoft Teams is not well understood (Simon, 2021; Fraser-Strauss, 2023), the researcher also sought to establish the veracity of early views that crisis-driven changes might be temporary (Orlikowski and Scott, 2021), leading to a study that explored the evolution of

collaborative practices over an extended period. The study tracked these changes from the onset of lockdowns through the emergence and establishment of hybrid working, assessing whether the transformations observed were enduring or merely transient.

Finally, the researcher set out to explore the under researched area of shifts in organisational cultures that may have accompanied changing collaboration practices (Waizenegger et al., 2020). By comparing the experiences of diversely aged workforces in two UK organisations, a public institution and a private organisation, the study could draw attention to potentially varying outcomes of different organisational approaches to DCP adoption and usage.

Collectively, these motivations prompted the research aim: *to explore, understand and explain reconfigurations to practices and culture, arising from the mandatory adoption of digital collaboration platforms in a disruptive crisis*. To fulfil that aim, three research questions were developed, all of which were addressed in Chapter 5, supported by data presented in Chapter 4.

The first research question, *Why and how do mandatory adoption policies influence adoption outcomes?* was addressed in Section 5.2. The second research question, *Why and how are collaborative working practices reconfigured because of liminal innovation opportunities generated by a disruptive crisis?* was addressed in Section 5.3, with the third research question, *Why and how does crisis driven change to collaborative practices affect organisational culture?* addressed in Section 5.4.

6.4 Major Research Findings

Research studies have long predicted the increase of teleworking amongst white collar workers (Awada et al., 2021), yet this had largely failed to materialise in Europe, prior to 2020. Scholars have also pointed to organisational transformation arising from technology adoption (Vial, 2019) and transformation arising from a disruptive crisis (Gersick, 1991). The

most obvious finding to emerge from this study is that it took the combination of both of these events to bring about ‘the most significant organisational design change in our lifetime’ (Treacy, 2022), or the move to hybrid working that has now been adopted by many OK organisations (Adekoya et al., 2022).

This thesis posits i) that the adoption of digital collaboration not only reconfigured how knowledge workers collaborated during enforced homeworking but also underpinned shifts in organisational culture, including an acceptance of digital collaboration and decisions to transition to hybrid working and ii) that mandatory adoption policies for digital collaboration platforms resulted in positive outcomes, establishing robust collaborative networks among workforces with varying levels of self-efficacy.

The second major finding from this study is that the adoption of digital collaboration platforms has reshaped organisational cultures. The displacement of face-to-face interactions during the crisis created existential tension (Orlikowski and Scott, 2021) as the daily use of digital collaboration platforms challenged deeply held organisational assumptions that collaboration occurs in person. The need to maintain business continuity using the DCP while the entire workforce worked from home also challenged the norm of presenteeism, as the enforced shift to remote work demonstrated that effective collaboration and productivity could be sustained without the need for physical presence in the office, paving the way for a more permanent shift towards flexible working. Trust in employees' intentions to work remotely increased, supported by the DCP's ability to highlight employee availability. The research has shown that, despite experiencing both negative and positive outcomes from DCP adoption, daily use of DCPs has led to the development of new organisational capabilities, raising awareness of the need for a digitally skilled and curious workforce and emphasising future organisational transformation initiatives.

Perhaps the most compelling finding from this study offers a contrasting view to critical opinions of mandatory, mass adoption of digital platforms during COVID-19 (Carroll and Conboy, 2020). Drawing attention to an important, positive outcome of this adoption, the study illustrates the potential of simultaneous adoption across the workforce in creating a level playing field effect where all employees, regardless of age or experience, are new to the technology, helping to foster a sense of collective learning, benefitting those with lower self-efficacy. Confirming views that highlight older workers are likely to possess lower levels of computer self-efficacy (Compeau and Higgins, 1995; Schoch et al., 2023), this qualitative research provides additional nuances by illustrating the influence of age-based stereotypes in these beliefs. This is an important finding in itself given the paucity of technology adoption studies conducted with both older and younger workers in a workplace setting. Aligning with Moore et al. (2022) the study failed to find evidence of a binary digital skills divide; older workers can possess high levels of skill not possessed by younger colleagues and vice-versa.

The relevance of mandatory adoption for DCPs is also clearly supported by findings that mandatory adoption policies amplify the creation of an organisational collaborative network through network effects - the more users adopt, the greater the impact. This finding extends existing literature on network effects in technology adoption (van Dijk, 2005), into a mandatory context. It is particularly relevant for digital collaboration platforms, where the study shows that users better understand the benefits through hands-on experience rather than indirect observation. The research further extends Riemer et al. (2009) by providing empirical evidence that the full potential of collaboration technology is only realised when integrated into daily work routines.

The investigation of collaboration practices that was conducted tackles the inconsistency found in existing studies on Microsoft Teams, particularly implicit suggestions that Teams is

a merely a videoconferencing application (Waizenegger et al., 2020). In fact, four distinct sociomaterial collaborative practices were revealed; collaborative meetings, collaborative messaging, collaborative composition and leadership communications, all of which were reconfigured as a result of liminal tensions arising from the disruptions of the COVID-19 crisis. Findings reveal important challenges such as an apparent lack of engagement in hybrid meetings, and the need to manipulate hybrid technology, or find space for hybrid meetings in an office setting.

Unexpected findings from the study revealed an important relationship between use of digital collaboration platforms and workplace digital exclusion, illustrating how knowledge workers need to be fully aware of the challenges and opportunities posed in hybrid meetings, such as ensuring equity of voice and using and signposting integral accessibility features, like captions and meeting recordings, for their own and others benefit.

The study offers novel insights into the other collaborative practices revealed by the research. Knowledge workers must now navigate various messaging platforms, each with its own strengths and limitations, further complicated by individual preferences influenced by age and rank. One unanticipated result was the limited understanding of collaborative composition, where multiple authors edit documents within a DCP - an area with scarce empirical research (Wahl and Kitchel, 2016). These results are rather disappointing and could present a significant challenge for long-term hybrid work. Virtual Leadership Communications, perceived by some senior leaders as enabling a more open and inclusive approach to leadership, can be effective in engaging broader audiences and promoting inclusivity, but also lack the social interaction of face-to-face events, highlighting the need for a balance to maintain community cohesion.

One of the organisations in this study is a public institution and the other a private company. Although they each displayed a unique culture, resulting in different strategies including their approach to hybrid working, the only significant difference observed that might be attributable to their different sectors was the private company's greater financial investment into physical resources including laptops, hybrid meeting room technology and professional office re-design. Access to financial resources may also be the underlying reason why the private organisation were less focused on removing rival applications from their organisation, despite these causing some problems in the establishment of a unified organisational collaborative network. Alternatively, the public institution could have been more risk-averse, therefore more prudent in terms of investment.

6.5 Research Contributions and Implications

6.5.1 Theoretical contributions and implications

The following section aims to provide a concise summary of the main contributions and implications for academia arising from this study.

Firstly, this study contributes to our understanding of mandatory technology adoption by demonstrating that such policies can yield positive outcomes in a number of ways ([section 4.3](#) and [section 5.2](#)). In the context of digital collaboration platforms, mandatory adoption amplifies network effects: the more users adopt, the greater the impact. This finding also extends existing literature on network effects in technology adoption (van Dijk, 2005) into a mandatory context and is particularly relevant for digital collaboration platforms, where the study shows that users better understand the benefits through hands-on experience rather than indirect observation. This also extends Riemer et al.(2009) by providing empirical evidence that the full potential of collaboration technology is only realised when integrated into daily work routines.

The **level playing field effect** that this study identified, wherein mandatory adoption policies ensure all users, regardless of self-efficacy, start from the same point, is particularly encouraging and assists in our understanding of the inter relationship between computer self-efficacy and digital collaboration. Based on this study, and in the context of DCPs, it follows logically that an adoption strategy where interested ‘early adopters’ lead (Rogers, 2003), privileges those with high computer self-efficacy. Given that the term ‘laggards,’ used to describe later adopters, carries a negative connotation, particularly when weighed against claims that older individuals are slow to adopt (Jarrahi and Eshraghi, 2019), such strategies could inadvertently serve to widen workplace digital divides, unhelpful in organisations valuing inclusivity. Although one should be cautious pending further replication and corroboration of these findings in contexts beyond a disruptive crisis, they suggest a re-evaluation of adoption strategies is warranted, and at least provide justification for further inquiry into differences at the individual level (Rainey et al., 1976).

Secondly, the empirical findings in this study have provided a deeper understanding of the collaboration practices that knowledge workers can employ following DCP adoption. In addition to collaborative meetings via videoconferencing, this study identifies and explains three additional sociomaterial practices that have emerged; collaborative messaging, collaborative composition and leadership communications ([section 4.4](#)) and ([section 5.3](#)). Providing insights from enforced homeworking and thereafter into a hybrid working context, these results add to the rapidly expanding field of hybrid working research, by identifying the challenges and opportunities of these practices, for example, ensuring digitally inclusive meetings by using and signposting accessible features and ensuring equity of voice. Knowledge workers also need to understand not only the strengths and limitations of different messaging practices, to avoid technostress (Hurbean et al., 2023) but be sufficiently

adaptable in their practice to work with individual preferences that can arise, sometimes as a result of age or rank.

Collaborative composition, the collective practice of creating, managing, storing, and editing digital documents within a DCP, often in real time, is a critical practice in remote and hybrid working. In other words, digital collaboration is not confined to speaking with each other via videoconferencing, and to inhibit it in this manner is to constrain the efficacy of these work modes. However, this study casts some doubt on knowledge workers understanding and application of collaborative composition techniques, leaving room for further progress in determining the extent of this issue.

Thirdly, this study appears to be the first study of substantial duration which examines associations between the adoption of digital collaboration practices in enforced homeworking, hybrid working and organisational culture ([section 4.5](#)) and ([section 5.4](#)). Previous research on homeworking has only briefly addressed this (Razmerita et al., 2021). The findings identified therefore assist in our understanding of how the shift from face-to-face interactions to digital collaboration affects organisational cultures in both negative and positive ways. The move to enforced homeworking during the initial crisis created existential tension (Orlikowski and Scott, 2021), displacing deeply ingrained assumptions that effective collaboration requires physical presence. This tension was compounded by a desire among organisational leaders to allow knowledge workers enhanced work-life balance, which sometimes clashes with organisational ideologies privileging face to face interactions for organisational cohesion and creativity. The disruption undermined the norm of presenteeism, revealing that productivity and collaboration can be sustained remotely, increasing trust in remote working and thus facilitating a cultural inclination towards flexible working practices,

findings which are useful in expanding our understanding of the broader shift in the UK to hybrid working (Adekoya et al., 2022).

Despite both positive and negative outcomes ([section 5.2](#)) ([section 5.3.4](#)), the daily integration of DCPs has initiated a cultural evolution within organisations, underscoring the importance of continued adaptation and innovation in the digital workplace. These findings provide a basis for rethinking organisational practices and policies in the context of digital collaboration and remote work, offering significant implications for both theory and practice in organisational studies.

Finally, the application of the liminal innovation framework (Orlikowski and Scott, 2021) to workplace collaboration practices offers a novel theoretical contribution in itself. This study also introduces ‘competitive tension’ ([section 5.3.2](#)) ([section 5.3.3](#)) ([section 5.5](#)), arising when reconfigured practices are perceived as rivals to existing ones that are allowed to remain in use. While previous research (Bhattacharjee et al., 2018) highlights the return to old habits, this study emphasises the negative impact of allowing rival practices to coexist, as it encourages users to revert to familiar methods, undermining the integration of new practices. Based on empirical findings, this tension offers a theoretically compelling addition to the framework. While the framework explains practice reconfigurations, it overlooks individual and organisational influences. To address this, an extended framework (Figure 37) was developed, incorporating individual factors (attitudes, skills, emotions, grade) and organisational factors (values, norms, ideologies) that shape practice reconfigurations ([section 4.4](#)) ([section 4.6](#)) ([section 5.3](#)) ([section 5.4](#)). This expanded model offers a useful tool for researchers and educators studying sociomaterial practices and disruptions during crises.

Overall, the research appears to be one of the first attempts to thoroughly examine the technological artefact and how it changed working practices, in a distinctive study which follows the same groups of employees in two organisations, from enforced homeworking into the realm of hybrid working. Furthermore, studies which evidence the corresponding changes to organisational cultures are not often seen. As a result, this study offers significant contributions on the impacts that crisis driven technology adoption can have in the longer term, on both organisational practices and culture.

Practical contributions are summarised next, offering insights and recommendations for policy makers and practitioners navigating digital collaboration in a post-crisis world.

6.5.2 Practical contributions and recommendations

This section considers the study's contribution to practice and provides recommendations for practitioners and policymakers.

Hybrid working is a growing trend, with researchers suggesting 80% of US companies now offer some form of hybrid work (Bloom et al., 2024) and similarly finding a broader trend towards remote working amongst UK companies (Adekoya et al., 2022). A digital collaboration platform, with its ability to create an organisational network, allowing not just real time interaction via videoconferencing but real time document collaboration, offers enhanced collaboration practices beyond synchronous collaboration practices like email. However, the adoption of a DCP will bring the need for knowledge workers to manage multiple communication channels. To help manage expectations around response times and prevent information overload and technostress (Hurbean et. al, 2023), organisations should establish clear **guidelines on when to use email versus instant messaging**.

This study's findings in relation to the **suitability of a mass, mandatory adoption for digital collaboration** platforms make a particularly valuable contribution to practice and should offer reassurance to practitioners and policy makers who might otherwise hesitate to adopt this approach. Based on this study, there are important reasons why such an approach is suitable for DCP adoption. Firstly, practitioners should be aware that trying to sell the sum total of DCP's benefits 'up front' will be of limited value, because their true value only manifests when features are drawn on to enable new, or transform existing practices . Secondly, a mandatory approach will assist in overcoming the natural human resistance that can be expected of any new system implementation, regardless of its perceived value. Thirdly, a digital collaboration platform is a networking technology and having users adopt simultaneously will multiply outcomes arising from a 'network effect', i.e., the benefit is multiplied as more users are affected (van Dijk, 2005). Finally, and of crucial importance, an approach in which 'we all adopt together', fosters a sense of unity and collective learning. This is more inclusive than following the 'conventional' approach of letting interested early adopters go first and is likely to boost self-confidence amongst those with low computer self-efficacy, who could otherwise be left behind. This is especially important for organisations who were not 'born digital' and for those who employ diversely aged workers.

In concert with mandatory adoption policies, policy makers should **phase out legacy systems** through targeted leadership communications and managerial interventions. Allowing them to continue to exist encourages users to stick with them out of comfort/habit and is likely to reduce the utility of new practices that are being introduced.

Policy makers and practitioners must be mindful of the **need for inclusive and accessible collaboration practices** and, importantly, how to implement them in the workplace. DCP features such as live captions and recorded meetings should be consistently utilised to support

colleagues with hearing impairments and those who miss live sessions. Practitioners should fully understand and provide training on integral accessibility features in collaborative applications. Organisational Equality, Diversity and Inclusion policies that previously focused on physical access to resources such as meeting rooms, must be expanded to incorporate guidance on digital inclusion in virtual environments.

From a well-being perspective, findings from this study should reassure policy makers that social interaction can be successfully maintained via the medium of videoconferencing and is superior to email for this purpose. Policy makers should bear in mind that **a holistic investment in technology** will be needed to facilitate hybrid working; as a minimum, all employees need laptops but **investment in hybrid meeting technologies** for ‘in office’ days will also assist in ensuring success. Policy makers also need to rethink physical workspaces, **adapting workspaces to support hybrid meetings** effectively. This includes investing in technology that minimises audio and visual disruptions, such as noise cancelling headphones for all employees and creating policies that manage the use of shared spaces to avoid conflicts and disturbances.

As importantly though, practitioners should develop **comprehensive, ongoing training** programmes tailored to the evolving needs of employees. This follows a line of thinking espoused by Jaspersen, 2005. ‘One-off’ training is insufficient, instead progressive learning opportunities should be provided to enable employees to fully exploit the capabilities of DCPs, particularly for more advanced capabilities such as collaborative composition and the successful use of hybrid meeting technology. In addition, the conscious development of a continuous learning culture will help to prepare the workforce to adapt to future technological advancements.

Policy makers could consider adopting virtual leadership communication practices that leverage digital collaboration platforms, to increase accessibility and engagement. Virtual or hybrid leadership communications could have the effect of flattening organisational hierarchies and fostering a more inclusive culture. However, face-to-face interactions should still be valued for their social benefits and community-building potential as adopting digital collaboration platforms in concert with remote or hybrid working may challenge organisational norms about face-to-face interaction and presenteeism. However, **maintaining a sense of community and organisational culture in a hybrid work environment requires deliberate effort**. Making sure that departments or local teams attend the office on the same working days is preferable to allowing employees to choose their own weekly pattern, which can result in fewer opportunities for informal interactions and knowledge sharing. Regular virtual team meetings are also advisable. However, acknowledging and accommodating personal responsibilities within work schedules can build a more inclusive and supportive organisational culture.

While trust is critical for remote and hybrid working success, organisations who have implemented or are thinking of implementing hybrid working practices should consider implementing **output-based productivity measures instead of invasive monitoring** practices. This approach respects employee privacy and autonomy while ensuring accountability and fairness. Transparent communication about performance expectations and regular feedback can further reinforce trust.

By implementing these practical recommendations, policy makers and practitioners can better navigate the complexities of digital collaboration in remote and hybrid working and foster a resilient, productive, and engaged workforce.

6.6 Research Limitations

There are a number of limitations identified in this study. The most important limitation lies in the fact that a single digital collaboration platform, Microsoft Teams, was studied. In future investigations, it might be possible to compare results arising from use of a different digital collaboration platform such as Google Workspace or Zoho Workplace.

Since the study was limited to the mandatory adoption of digital collaboration platforms, the results cannot be generalised to voluntary adoption or technologies other than DCPs. The result was conducted with hierarchical organisations based in the UK. Therefore, the results cannot to be generalised to other contexts or other cultures where the Internet may be less accessible.

Conducting a longitudinal, comparative case study generated huge volumes of data, which presented significant challenges in managing, analysing, and trying to present the data in a concise manner. This lead to difficult decisions about which insights to highlight and which to set aside to maintain a balance between depth of analysis and clarity of presentation. While these decisions were necessary to meet the study's scope and address the research questions, they also open up opportunities for future research to explore areas beyond this study's focus, offering a pathway for deeper investigation into specific themes or patterns.

A particular challenge in this longitudinal research was participant attrition. Initially, participants were evenly distributed by age and grade, but younger participants proved more mobile, and some left their organisations during the course of the four-year study. Findings from those who did not participate in all three rounds of data collection were not included, potentially biasing the results by over-representing higher-grade views. For instance, higher-grade participants believed virtual leadership communications improved accessibility and flattened the organisational structure, but these perceptions couldn't be confirmed with lower-

grade participants. Notwithstanding the relatively limited sample size of 14 participants from two organisations, this work offers valuable insights into participants' expressions of the beliefs and feelings that influence their remote and hybrid working behaviours, which may be difficult when using quantitative methods (Bryman, 2016).

6.7 Future Research Directions

The findings provide valuable insight for future research; for example, this study indicates that organisational cultures are evolving as a result of digital technologies. A natural progression of this work would be to analyse the development of blended organisational cultures, particularly in a longer-term study. Mixed methods research could be employed to identify the factors that contribute to successful digital cultures, which could then be tested in cross-national or international studies.

Significantly more research is needed to fully understand the implications of the adoption of digital technologies for disabled workers. If the debate is to be moved forward, a better understanding of the impact of digital technology on a broad range of differently abled workers needs to be established. Since people with disabilities are not a homogeneous group, additional research into the individual adjustments that might be needed to ensure digital accessibility in the workplace would be a fruitful area for further work.

Focusing on the mandatory adoption of other digital technologies in the workplace could yield valuable insights, validating its effectiveness as an organisational strategy. For instance, if it proved practical, comparing two organisations adopting the same system - one using a voluntary, phased implementation and the other a mandatory 'big bang' approach - could provide a useful comparison of the advantages and disadvantages of these differing strategies.

6.8 Chapter Summary

This chapter provided a concise summary of the research, highlighting the significant impact of mandatory digital collaboration platform adoption during the COVID-19 pandemic on organisational practices and culture, particularly the shift to hybrid working. The study's key theoretical contributions were presented, and practical recommendations were offered for organisations to manage hybrid work effectively. The chapter also acknowledged study limitations, such as participant attrition and the focus on a single platform, and suggested future research directions, including exploring blended organisational cultures and the impact of digital technologies on disabled workers. The final chapter in this dissertation follows, in which the researcher reflects on the research journey undertaken.

7.0 Reflexivity and Learning

7.1 Chapter Introduction

The final chapter in this dissertation uses examples of personal journal entries made over the study duration to demonstrate how decisions regarding methodological and theoretical choices were made and how the researcher acknowledges her own assumptions and values. These examples are interpreted according to Walsh's 2003 reflexive framework of four practices that demonstrate how a reflexive attitude is manifest. Finally, the researcher reflects on the application of knowledge gained as a result of the doctoral journey, to her own practice as an IT practitioner.

7.2 Researcher Reflexivity and Reflections

My research study is a qualitative study, in which I adopt an interpretive approach. Most qualitative, interpretive research calls for some degree of reflection and self-awareness, but academics have argued there is a difference between reflection and reflexivity (Johnson and Duberley, 2013). Reflection involves looking back at experiences or actions to consider what happened, how it was handled, and what can be learned from it. The goal of reflection is usually to improve one's practice, learn from past experiences, and develop a deeper understanding of a particular event. On the other hand, reflexivity, defined as "that which turns back upon, or takes account of, itself or the person's self" (Holland, 1999: 2, cited in Johnson and Duberley, 2013), involves a deeper level of self-awareness where the individual examines not only their actions and thoughts but also their underlying assumptions, biases, and the broader context in which they operate. The goal of reflexivity is about understanding how one's position, perspective, and actions influence and are influenced by the social, cultural, and institutional contexts in which they are situated.

While reflection can occur in any context where learning from experience is valuable, reflexivity is emphasised in research, particularly qualitative research, where the researcher's influence on the process and outcomes should be acknowledged and critically examined (Johnson and Duberley, 2013). However, while the need for reflexivity in management research is relatively recent (Weick and Quinn, 1999), scholars have also discussed the need for reflexivity as a key aspect of everyday management praxis (Schon, 1983; Senge, 1990, cited in Walsh, 2003), suggesting that while reflexivity is more properly an attitude rather than a set of procedures, there are a set of practices that demonstrate how that attitude is manifest (Walsh, 2003). Using examples from journal entries made throughout my research journey (Cameron and Price, 2009), I demonstrate how I have applied the following reflexivity practices in my study.

- ***Personal reflexivity:*** requires the researcher to expose the assumptions, expectations, reactions and unconscious responses that impact one's research (Finlay, 1998).
- ***Interpersonal reflexivity:*** concerned with the relationship between researcher and participants, i.e. how should I be towards the people I am studying (Schwandt and Marquardt, 1999) and the obligations of data gathering.
- ***Methodological reflexivity:*** or we cannot stand 'outside their own epistemological and ontological commitments' (Johnson and Duberley, 2013).
- ***Contextual reflexivity:*** recognises research as a historically situated activity.

My first two journal entries below demonstrate that I am a practitioner, employed within one of the organisations featured in this study. They also illustrate that my study was situated in the context of the COVID-19 global pandemic. Contextual reflexivity represents a perspective that emphasises a study's research questions and answers are embedded in a social field of assumptions and practices. My research questions aim to trace the evolution of

cultural assumptions and practices and while the intention of the research has never been to provide a descriptive, historical account, conducting longitudinal research inevitably gives the researcher another role as a historian, by default (Emerson et al., 2011 cited in Saldaña, 2002).

16th March 2020: Today everyone has been licensed with Teams...I have received a lot of emails from people asking what we are going to do about training people...we have now lost the opportunity to do face-to-face training.... as today Boris announced everyone should work from home and so I am at home in the study. We haven't done any online training before; I think it could be done but it's not something we have any experience of. Every decision is instantly overturned, every day brings a new development but (CEO) is still suggesting we do the full rollout of Teams in a more considered way.... on the research front, I have applied for ethics approval...I hope I am doing the right thing.

This entry and the following one demonstrate I was under personal and professional stress and my own heightened emotions were often matched by interviewees in the first round of interviews I conducted between May and August 2020. Heightened emotions, attributable to the research context, are illustrated in Chapter 4 and discussed in Chapter 5.

20th April 2020: What a crazy week... people haven't understood that they already have Teams... we did make it clear to the management team that people just weren't experienced enough with online meetings... but they were ALL of the opinion that it was so intuitive that people wouldn't need any guidance...but now we have had to set to and quickly produce guidance. Interestingly, the CEO has written guidance for the senior executives...I think perhaps this is a question of status and not wanting to admit to people lower down the hierarchy that you don't know how to do things. I am definitely going to include some of those people in my research... I know I need to include participants of different grade levels... outside of my immediate environment, things in the world are dreadful, there have started to be food shortages ...they are talking about shutting the tube and the trains...more people have died...its really frightening.

In the second journal entry, it is clear I was unable to make decisions about training provision, a situation several research participants subsequently criticised my department and

indirectly, myself, for. Initially, I defended this position, but having attended a Doctoral workshop, I demonstrate methodological reflexivity, as can be seen from the next journal entry: -

22nd May 2020: Attended DBA session online. This was about research methodology – reading Research Methods for Business Students which speaks about subjectivism – reality is constructed intersubjectively. I have realised that as a subjectivist I cannot detach myself from my values.... I have to openly acknowledge them. I believe Teams is a good thing...a technology with potential...I have always been meaning to interview people who don't like Teams, but I have noticed in one of my interviews that I defended Teams. I have altered my interview questions to make sure I reflect both the positive and negative consequences of adopting Teams.*

*Saunders et al. (2019).

Walsham (2006) describes a 3-year longitudinal study in which he and a fellow researcher started out as neutral observers, but over time, felt a moral imperative to offer help and advice to participants, because to refuse would demonstrate a lack of concern for participants, who expected the researchers help in return for their involvement in the study (Walsham and Sahay, 1999, cited in Walsham, 2006). I experienced a similar moral imperative, particularly at the start of the study, when participants in both organisations were plunged into use of Teams without warning or experience. As an experienced Teams user, I felt compelled to offer help, however, when the initial round of interview transcripts was examined by the supervisory team, it became clear that this had sometimes resulted in me not getting time to ask all the questions on the interview protocol ([Appendix 4](#)). Walsh (2003), emphasises the need for interpersonal reflexivity to include post-hoc analysis of the dynamics between researcher and participant, particularly in terms of power dynamics (Marecek et al., cited in Walsh, 2003). It was often clear to me that as a member of the IT team, I was in a position of knowledge and therefore power in relation to the use of Teams. I was happy to share

knowledge but had to find a compromise. Sticking to the research questions during the interviews, I was often able to guide participants in both organisations to the respective guidance or colleagues that could provide further help.

The early interviews were not the only time role conflicts presented a challenge, and my supervisory team guided me to ‘wear my researcher’s hat’ and not my practitioner’s hat. Of course, even wearing my researcher’s hat, I still bring my own attitudes to the research project. Interpretive research with an explorative stance is advocated to accommodate the unconscious and self-deceptive aspects of a researcher’s actions because it views the researcher’s participation as an important part of the study (Salner, 1996; Walsh, 1995, cited in Walsh, 2003).

In my explorative study, earlier versions of my research questions were focused on trying to understand whether there is a difference in the digital skills of older and younger colleagues. Practising personal reflexivity allowed me to understand that as an older, digitally adept female, I was biased. Perhaps from pride, I was hoping that other older colleagues would not demonstrate any noticeable behavioural differences or attitudes and would prove to be just as competent as younger colleagues. This is not to say I had any intention of misrepresenting or failing to present results which might contradict my hopes. In fact, the evidence from the research did somewhat fail to match my original hopes; there were some differences in attitudes and practices between the two groups ([section 4.6](#) and [section 5.3](#)). The following NVivo memos, created at an early stage, demonstrate my belief that ageism is a societal problem: -

There are a lot of references to age in the interviews and it is ALWAYS the same theme - young people like change and new things, older people want to stick the way they know/are more cynical. I have lots of quotes on this theme. Both younger and older people self-identify

with this concept. People use some negative terms for older people (actually older people do this, not the younger ones), e.g. 'dinosaur' 'technophobe'.

Is this AGEISM? Which is endemic in our society. Or is there actually any truth in this from a psychological pov. When Prensky (Prensky, 2001a, 2001b) wrote his Digital Natives and Immigrants articles it was 20 years ago. Obviously, the population he was talking about - the under 40s, could now be any age from late thirties to mid-fifties...and what else has changed in that time?

While the focus of the study moved on, arriving at the research aim in Chapter 1, my findings have changed my own practice. I always reassure anyone who blames themselves for technological quirks because I think this trait can be a lack of self-confidence manifesting itself. Also, the research highlights that Teams is undeniably very quirky!

Throughout the course of this study, I have experienced the same challenges of time that all students face, particularly those who combine work with studies. I am organised and thorough and while my attention to detail is helpful, it has sometimes hindered my ability to be concise. I have also experienced challenges of a more intellectual nature. The most difficult of these occurred when I began to consider utilising Orlikowski and Scott's 2021 liminal innovation framework as a lens for the interpretation of my data. The following description is constructed from the journal entries I wrote in July 2023.

Throughout the course of this study, I have considered many theories ([Appendix 9](#) describes some of those) and have always enjoyed reading Distinguished Scholar Professor Wanda Orlikowski's work, much of which resonates with me. I was fortunate to have the opportunity of presenting my work in the Doctoral Consortium of the United Kingdom Academy of Information Systems (UKAIS) conference in 2022, and a suggestion was made that I should consider the liminal innovation framework (Orlikowski and Scott, 2021), which draws on practice theory but offers a 'process' view of how practices are reconfigured in times of crisis; in effect it is a mixture of both practice and process. The practices referred to by the

authors are sociomaterial practices and while the authors claim their framework ‘can be used for any practices’, I felt I needed to understand what is meant by a sociomaterial practice.

Herein lay the issue, because the Orlikowski and Scott approach to sociomateriality theory (‘strong’ sociomateriality) assumes the inseparability of material and human (socio) agencies, entailing strong ontological and epistemological commitments to relationality and performativity. The task of the methodologically reflexive researcher is to “discern the boundaries or limits of the theoretical approach through which a project is undertaken” (Walsh, 2003: 59) and adopting Orlikowski and Scott’s position on sociomateriality, without questioning the underlying principles, might have put me in conflict with the constructivist epistemology I adopt in the research study. Yet, I felt the practice approach of liminal innovation, which is focused on practice change in a disruptive crisis, offered real interpretive value for my data.

Through persistence, I discovered that a second stream of sociomateriality research exists, led by Leonardi (2013) which does not contradict my epistemology, and this is what is referenced when relevant, e.g. where I define what is meant by sociomaterial practices.

Although it is beyond the scope of my research to defend sociomateriality theory, a deeper understanding of the differences between the two competing approaches also gave me more confidence to adapt the liminal innovation framework for my constructivist approach.

Next, I explain how my professional practice has changed as a result of the doctoral journey.

7.3 Application of Learning to Practice

Our programme director has regularly challenged my peer group with the question, ‘*What will you do differently?*’ and I decided early on that I would not wait but would strive to improve my practice throughout the journey. I therefore answer this question with some examples of what I am already doing differently.

I can make general observations that I have become less diffident in expressing my views, and my writing skills have undergone marked improvement. I have often taken on tasks that others might shy away from, applying myself with determination and stamina. These qualities have certainly been needed in abundance during the doctoral journey but have also been invaluable in my current IT development project, which has presented unusual intellectual challenges in addition to the usual, inherent complexities.

The knowledge and insights gained from this research have significantly influenced my practice over the past four and a half years, particularly in the area of digital accessibility. An unexpected finding from the study was the discovery that DCPs include many integral accessibility features, a fact I and many others were previously unaware of. In this dissertation, I highlight only the features mentioned by participants, such as closed captions (speech-to-text), but I have since learned of additional features that are impactful in both workplace and educational settings. For instance, Teams includes an integral screen reader, which is crucial for visually impaired users to read instant messages. Previously, meeting chats were inaccessible to those with visual impairments, but when the screen reader was reconfigured to read these out, I tested these improvements with a visually impaired colleague and publicised this feature to a broader university audience.

The immersive reader also has features which allow text from other documents such as Word documents to be re-presented in different fonts, as single lines of text, with different sentences parts highlighted or on different backgrounds, and these features have been designed to assist with different conditions, ranging from dyslexia to cerebral palsy.

Simple practices, like sharing presentations before meetings, can greatly assist those who struggle with both printed material and speech during online meetings. Since videoconferencing limits screen reader users from processing text in real time, it's crucial to

circulate materials in advance. While it's good practice to use and promote accessible features, many colleagues seem to remain unaware of the need to create accessible content, such as adding descriptive ALT TEXT to images. To improve workplace practices, I have collaborated with others to raise awareness about digital accessibility, led Digital Skills sessions, and hosted a breakout session at our first annual Equality, Diversity, and Inclusion event in 2023, where I distributed an infographic that I designed in conjunction with a like-minded colleague ([Appendix 7](#)). Additionally, I have become an EDI champion in my business area.

Finally, several family members and friends have questioned why I would put myself through the self-doubt and sheer hard work of a Doctorate, at a time in my life when I might alternatively be focusing on retirement plans. Yet, it has been an immensely rewarding journey that also fulfils a 20-year personal ambition, and on that basis, I whole heartedly share the views expressed by (Dewey, 1917), that education plays an integral role in life, rather than merely as preparation for a future role.

7.4 Chapter Summary

The final chapter in this dissertation provided examples of the reflexive approach taken by the researcher throughout her doctoral journey. The researcher reflected on the application of learning to her own practice, offering various examples, including taking a proactive role in raising awareness of the need for inclusive practices in the digital workplace.

This completes the dissertation - thank you for reading this work.

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Appendix 1 - Example Themes and NVivo Codes

Overarching Theme	Sub theme	Theme aspects	NVivo Codes
Mandatory DCP Adoption in a time of crisis: a force for change	Challenges of rapid adoption Differing Approaches to Functionality and Training Forced Adoption and its implications Hybrid work emerges Overcoming Resistance	N/A	Forced to use Tech Lack of Guidance Help from Colleagues Champions Common Understanding Unaware of functionality Other options available Discontinuance and Shadow IT Mandatory Adoption Resistance to Change Resistance Reflections Management support needed <i>'That's the way it's been over however long'</i> <i>'Accelerated where we want to go'</i>
Digital Collaboration Practices: on with the old, in with the new	Collaborative Meetings	Counteracting Digital Overload Emerging Netiquette DCP impact on lockdown working practices Transitioning to Hybrid Meetings Inclusivity and Engagement in Hybrid Replacing prior practices with virtual practices Continuing to Adapt to Hybrid Challenges and Innovations	Working Practices File sharing practices Kit Worries Under investment in technology Worries about the tech Communication Experience Communication Boundaries Big Meeting or event
	Collaborative Messaging	Professional perceptions of chat versus email Challenges of multichannel communication Platform Loyalty Challenges emerge (homeworking) Platform Loyalty Challenges continue (hybrid) Emerging Strategic Use of Chat versus Email Continuing Resistance to Teams Chat in Case B	Homeworking Pros and Cons Neologisms Disability Having a voice Equality and Inclusivity Hybrid Working Use of email versus Teams

Overarching Theme	Sub theme	Theme aspects	NVivo Codes
		Embedded Strategic Use of Chat versus Email	Emotions and Technology Employment worries
	Collaborative Composition	Prior Digital Document Collaboration Practices Challenges in Adoption and Utilisation of Cloud-Based Solutions Mixed Progress in Case A and Case B Document Peeking Case B: Evolving Document Collaboration Case A: Evolving Document Collaboration	Accessibility of Senior Management Continuance Intention Characteristics of a digital organisation (telephones) Compassion examples Fears brought about by the tech Get on with the day job Sustainability
	Leadership Communications	Adapting to Virtual Leadership Meetings Increasing Meeting Capacity and Engagement in Case A Maintaining Traditional Formats in Case B Continuing Virtual Leadership Communications in Case A Reverting to Traditional Leadership Communications in Case B Embedded Virtual Leadership Communications at Case A Resumption of Face-to-Face Leadership Comms at Case B	Too many meetings Lack of motivation Work/Life balance What is collaboration? <i>'Islands of collaboration'</i> <i>'Too many ways to communicate'</i> <i>'Teams replaces the phone call'</i> <i>'Living at work rather than working'</i> <i>'Emails aren't a conversation they are a statement'</i> <i>'When we are in the office it's an absolute car crash'</i>

Appendix 2 - Example Theme Development

Theme/Sub theme	First-Order Data	Key Idea	Second-Order Data
Mandatory DCP Adoption/ Challenges of Rapid Adoption	<i>"We've got pictures of staff...showing they're working on their bed literally leaning on a shoe box, and they've got a one-bedroom flat and two children" (P1: A). "There are young people...they are perched on a stool in the corner of a kitchen because that is the only space other than their bed" (P17: B).</i>	This comment was relayed by a higher graded participant, and it represents the difficulties some younger and lower grade workforce members experienced during this period.	Space Poverty is something that may be experienced by lower paid members of the workforce and may not have surfaced prior to enforced homeworking, however if an organisation decides to become wholly 'virtual' some workforce members could be disadvantaged in the way illustrated.
Mandatory DCP Adoption/ Forced adoption and its implications	<i>"This has been forced on people because of Coronavirus...the adoption of Teams would never have happened without lockdown, never" (P15: B). "We've just gone bang, bang, bang...you will be going into a meeting that is online and you haven't got a choice, you can't opt out it" (P2: A). "It's that whole concept of when you just don't understand what you've got until you have it" (P21: B).</i>	Participants acknowledge their lack of choice about adopting the DCP, it was forced on them due to the necessity to maintain effective communications with colleagues during a period of physical isolation. Most people didn't have company mobile phones, so they had no 'free' method to speak in person to each other unless they used the videoconferencing which just uses their own wifi. If colleagues were in the office, they would 'in person' and thus have no need for the video conferencing facilities.	Participants see relative advantage and are compliant in using the videoconferencing now that it is compatible with homeworking. The exogenous event was the antecedent for mandatory adoption that replaced individuals' assessment of the technology but still brought about compliance. Mandatory adoption may be a helpful organisational strategy to overcome individual resistance based on lack of knowledge/perception of the benefits of an innovation.
Mandatory DCP Adoption/ Forced adoption and its implications	<i>"Everybody's learning at the same time...we've got older people, we've got younger people, and the younger people are really quite hot on their phones, but Teams is new for everybody, we're all learning together" (P8: A). "Would it have been the same reception if we had not been in lockdown? No, because being thrown in has meant that we have all come a long way, some further than others, whose lives will be the better for it." (P23: B).</i>	As most participants were required to adopt the DCP at the same time, the participant perceived a levelling effect which was helpful; no one had more knowledge than anyone else and there was camaraderie in being 'thrown in' (at the deep end). The analogy to 'coming a long way' is a reference to some workforce members people having had to 'travel further' but finding benefit as a result.	The levelling effect of a mandatory adoption for the whole workforce was helpful in creating feelings of unity among diversely aged workers. Irrespective of digital skills or levels of confidence at the outset, forced adoption generated beneficial outcomes. Adopting the DCP in this context may have narrowed rather than widened workplace digital divides between older and younger workers.

Appendix 3 - Phase 1 e-Form Questions

QUESTION	OPTIONS
Please indicate your consent to participating in this questionnaire	Yes/No
Please confirm your name and current job title?	
Please indicate your age range?	18-25
	26-35
	36-40
	41-50
	51-60
	60+
Please indicate the gender you associate with?	Female/Male/Other
Do you have any long-standing illness, disability or infirmity? By long-standing I mean anything that has troubled you over a period of time or that is likely to affect you over a period of time?	Yes/No/Prefer not to say
Does this illness or disability (Do any of these illnesses/disabilities) affect your working activities?	Yes/No
If you answered 'Yes' above, has using MS-Teams made any difference to your ways of working? Please answer giving as much information as you are comfortable with.	
Please indicate the highest level of academic qualification you hold?	University Degree/BTEC Levels 4&5/Other equivalent
	A-Levels/BTEC Level 3/Other equivalent
	Post Graduate Degree or higher
	GCSEs/O-levels/BTEC Level 1&2/Other equivalent
Please briefly state your highest qualification if it is not covered in the above options?	
How would you describe your usual home-based access to a computer (when not in lockdown) ?	I have my own computer
	I share the computer with my family
	Work iPad
	We do not have a computer at home
	I Pads/ I phones
How would you describe your level of access to the Internet (from home)?	Excellent
	Good
	Fair
In lockdown, are you using a work supplied or your own computer whilst working from home?	My work laptop/computer
	My own laptop/computer

QUESTION	OPTIONS
	Other
If you answered 'other' above, please explain in more detail?	
What support from other people have you used whilst working from home? Please select all that apply	Family/friends occupying the same home;
	Family/friends elsewhere;
	Colleagues from work;
	IT Department from work;
	None of the above;
	Other;
If there are other people supporting you not covered in the options above, please say who?	
Thinking now of the way you carry out work tasks, what is your preferred way of working?	I prefer to multi-task
	I prefer not to multi-task but I have to anyway
	I prefer to complete one task before starting another
	None of the above;
If you answered, 'None of the above', please tell me more?	
What are your preferred methods of communication in normal working circumstances? (tick just your favourites please)	Email
	Telephone call
	Teams chat or other messaging e.g. WhatsApp
	Face to face meeting;
	Online meeting
	Other
If you have answered 'Other' to the above, please tell me more?	
Thinking about MS-Teams now, which of these statements most applies to you?	I was an early adopter of Teams
	I wanted Teams earlier than I was able to get it from my IT dept
	I am using Teams, but I don't really like it
	I didn't initially see a need for it - but like using it now
Which of the following influenced you with regards to using MS-Teams (please select all that apply)	Television Advertising
	Other organisations opinions on Teams
	My immediate colleagues' opinions on Teams
	My IT department's opinion on using Teams
	I evaluated it for myself and decided based on that
	None of the above;

QUESTION	OPTIONS
If you are answered none of the above, please tell me more?	
Which of the following best describes your attitude to using MS-Teams?	I am using Teams because I want to use it
	I am using Teams because I have to use it
	Some other reason
If you are using MS-Teams for some other reason, please tell me more?	
Which MS-Teams features are you using? (tick all that apply to you)	I use Online Meetings
	I 'Chat' with colleagues
	I read posts (conversations) in Team channels but have not replied or posted anything myself
	I start new posts (conversations) in Team Channels and reply to others
	I upload Files in Team Channels and post about them
	I upload Files and edit them in real time with others
	I post GIFs for some light-hearted relief
	I use the 'Praise' feature for colleagues
	I use other Teams features
	3rd party apps
If you use other MS-Teams features, please briefly tell me which you use?	
Have there been any negative consequences of using MS-Teams? Select all negatives that apply.	Information overload;
	Can't concentrate on my other work;
	No negative consequences;
	Any other negative consequences?
If you've answered 'Any other negative consequences' above, please tell me more?	
Will you continue using MS-Teams?	Yes, I will continue to use Teams
	I would like to stop using it, but I don't have a choice
	I will stop using Teams
If you intend to stop using MS-Teams, will you replace it with something else?	
If you intend to (or could) replace MS-Teams, what will/would you replace it with?	
If you replace MS-Teams, what do you think the advantages to you will be?	

Appendix 4 - Interview Protocol

Teams and Working Practices

What do you use Teams for?

How well does Teams support your current working practices?

Do you foresee longer term changes to your working practices as a result of the technology?

When it comes to using Teams, who influences you?

Who do you influence?

Who is responsible for initiating changes to working practices?

Prompt: -

Who is keen to try out new things?

Who is responsible for extending the use of the technology?

Prompt: -

Who is responsible for taking the concept and applying it creatively to innovate?

Have you created any 'fun stuff' in your Teams?

Do you participate in any of the 'fun stuff'?

Communication using MS-Teams

Does everyone in your group use the collaborative technology?

Do you contact the same group of colleagues now as you did before?

Do the same people contact you?

How would you describe the communication experience when using Teams?

Consequences/workarounds

Is there anything about Teams that doesn't work well for you?

How do you get around that?

Prompt: -

Have you had to adapt your way of working to suit teams or have you adapted the way you use Teams to suit your working practices?)

Probe: -

Please describe how you have adapted

Can you identify two good things and two bad things that are the consequences of having adopted MS-Teams?

For the good things, did you anticipate these happening?

For the bad things, did you anticipate these happening?

Organisational structure and culture

Thinking now about your organisational culture, how well would you say it fits with use of a technology like MS-Teams?

What kind of power structure does your organisation have?

Prompt: -

Command and control/top down/hierarchical?

Informal/flatter?

Have you been able to try things out in Teams without recourse to management?

Prompt: -

Do new ideas need to be endorsed by management?

Probe: -

Are new ideas passed down from the management?

When it comes to organisational knowledge, how do people feel about sharing that?

Probe: -

Whose hands does knowledge sit in?

Working hours during lockdown?

Probe: -

Changes for the better?

Changes for the worse?

Trust

How important is trust for home-working?

Now? (i.e. in current circumstances)

Later? (i.e. when there is no need to work from home)

Probe: -

What measures need to be in place to make sure people are working?

Appendix 5 - Research in Progress paper for Doctoral Consortium - UKAIS 2021

Available at: <https://aisel.aisnet.org/ukais2021/26/>

Exploring and understanding innovative digital collaboration platforms in the workplace: a qualitative, comparative study.

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Abstract

COVID-19 brought home working for UK workplaces, necessitating rapid adoption of innovative online digital collaboration platforms such as Microsoft Teams®, thereby presenting challenges to workforces with little prior experience of such digital technologies. This research in progress considers the impact on diversely aged UK workforces and their working practices. A longitudinal study of two organisations uses qualitative data collection methods. Data collected between May-August 2020 indicates neither group of interviewed digital natives or digital immigrants are homogenous in their skills or attitudes, and despite a rich collaborative feature set, use was limited to video conferencing and 'chat' at the time. Long term flexible working may be offered; however, a lack of suitable IT equipment must not be the reason by which a digital divide is created in the workplace. The next phase of data collection will take place once enforced lockdowns have ceased, to identify changes that have subsequently occurred.

Keywords: Homeworking, teleworking, digital collaboration, digital divide, digital inclusion, digital natives, digital immigrants, pandemic

Introduction

COVID-19 is a global pandemic that has affected the daily lives of individuals in a personal and work manner. This global pandemic of unprecedented proportion has led to preventative measures such as enforced lockdowns or curfews, that subsequently led to a rapid adoption of online digital collaboration platforms such as Microsoft Teams® (MS-Teams) and Zoom®.

Due to the preventative measures, the concept of 'remote' or 'teleworking', has become a norm in the last year. Governments around the globe were and are still recommending that workforces operate their working lives in the household and with COVID-19 preventative measures and their impact being a rare occurrence, this research team was motivated to conduct research into the impact of exogenous shocks on the workplace. For example, whilst this period of disequilibrium may make it possible for deep, new organisational forms to occur (Corbo et. al, 2018), it is yet unclear whether home working will be a temporary or a more permanent form for workforces.

Furthermore, the researcher of this study was employed in an organisation that was implementing the online collaborative digital platforms and needed to identify and understand the impact of these platforms. Therefore, this study was motivated to overcome, or reduce the

research gap by forming the aim: *To explore, understand and explain the adoption and use of innovative digital collaboration platforms within diversely aged UK workforces.*

To ensure a different aspect to the organisation that the researcher was employed with, safeguard research rigour and reduce or eliminate any subjective bias, a comparative case study was selected. The initial case study is a higher education institution that the researcher is employed at. The second case study is a private sector, media organisation.

To ensure that a deep and rich understanding rather than just an identification of factors would occur, a qualitative research approach is employed. This implies that the data will be words based and collected using interviews and observations (Saunders et. al. 2019). The aim is also to ensure that a longitudinal perspective will be employed by conducting the study in three phases. The initial study was a feasibility study in March 2020 where construct and content validity were completed. For this, questions drawn from the literature themes of trust, teleworking and technology adoption were utilised. The questions were all open ended to ensure that probing could occur. Snowball, convenience sampling was used. The researcher's manager assisted the research by identifying certain individuals to assist with this study. The criteria were those who had adopted or were considering adopting the digital collaboration platform. They were drawn from the higher education institution.

For the second phase, a pilot study was conducted between May and August 2020 with 30 individuals who were drawn from various organisational levels. This was to ensure a broad range of perspectives were elicited (Appendix A). By this time, both organisations had licenced their entire workforce with the digital collaboration platform MS-Teams to assist communication and collaboration during enforced home working.

Data Collection and Initial Findings

To collect the data 30 interviews were conducted in total: 15 participants from 'Case A', a public higher education institution and 15 participants from 'Case B', a private organisation (Appendix B shows interview constructs). Participants were drawn from a purposive sample of administrative staff occupying lower, middle and higher graded roles as defined by their respective Human Resources Department. To ensure that the required numbers of participants were used, theoretical saturation was employed, meaning that data collection only ceased when categories were well developed and understood. Further, Townsend and Saunders (2016) recommended that qualitative studies using interviews should contain between 12 and 40 participants. The analysis of this study involved thematic analysis and open coding drawn from grounded theory. This involved the disaggregation of transcribed interview data against construct codes created in NVivo, adding new codes as they emerged from the data.

Initial findings of this study revealed that neither organisation was pre-disposed to provide flexible working as an acknowledged benefit, this being offered by prior arrangement and on a privilege basis only. Both workforces have shown resilience and the ability to provide business continuity, using the technology to varying degrees to adapt their working practices, however, despite a rich feature set including the ability to collectively edit documents in real time, only video conferencing and, to a lesser degree, instant messaging ('chat'), had been adopted en masse by those interviewed between May-August 2020.

Those in higher graded roles expressed some surprise that working from home has been conducted as successfully as it has; both organisations have maintained their core business activities. Secondary data from workplace surveys and focus groups subsequently confirm that many employees wish to continue working from home even when a return to the office can take place. Trust is recognised by all as critical for home working (Handy, 1995) with varying opinions expressed regarding the measures that might need to be taken to ensure workforce productivity in the future. Overall, there was no desire or intention expressed to implement monitoring software.

The lack of chance encounters (van Dijk, 2005) or serendipitous 'water cooler' moments, were identified as a potential driver to bring one workforce back into the office with the other having since been offered a 'flexible location' option: a hybrid approach wherein the working week can be split between office and home, subject to management agreement of local business needs.

Lack of adequate IT equipment has hampered some individuals with others experiencing 'space poverty' in their homes. It will be important that organisations willing to continue offering flexible working in a post-pandemic world, genuinely offer equal opportunities to all and do not inadvertently create digital divides in workplaces between the 'there's' and the 'there-nots.' A qualitative study conducted in 2020 during home working illustrates a change to power imbalances between those who previously worked from home and those who were physically present in the workplace (Cooper and Kurland, 2002 cited in Waizenegger et. al., 2020), suggesting that such power imbalances no longer exist, thereby providing greater workplace inclusion, including career opportunities. That study was cross-sectional, however, this research in progress is longitudinal, with a second round of data collection planned post lockdown, when participants either return to their offices or adopt a 'hybrid' approach of enforced homeworking. It remains to be seen what the longer term outcomes will be, however, one working parent research participant acknowledged feelings of stress in anticipation that individual's views could be marginalised if there is no physical workplace presence.

Initial analysis of pilot study results by age indicates that neither younger (aged 18-40) or older (aged 41-60+) workers are homogenous in their technology usage or behaviours, including adoption of different features offered by the digital collaboration platform, thus contradicting some extant views regarding the concept of 'digital natives' and 'digital immigrants' (Prensky, 2001 ; Rainie and Lee, 2006 ; Vodanovich et.al, 2010). This study adds further empirical evidence to the study of technology adoption in the context of generational differences in the workplace (Jarrahi and Eshraghi, 2019). It is sited in UK workplaces, thus offering a novel perspective to academia, since much of the previous research on digital native/digital immigrant and digital divide concepts has either not taken place in the UK or failed to consider a workplace setting, missing the rich opportunities that study of a diversely aged workforce might offer.

New methods to communicate with the whole workforce have been discovered by both organisations, with Case B hosting a virtual 'all hands' event that previously required the whole workforce to travel long distances at considerable organisational expense. One interesting and potentially important observation is that a participant in Case B who confirmed a disability that affected their daily work, suggested video conferencing features allowed them a greater level of comfort and flexibility when undertaking their working practices.

Benefits of this study

Benefits of this study are to offer a contribution to research regarding the impact on diversely aged workforces of the mandatory adoption of digital collaboration platforms, including digital skills and adaptation of working practices, that should lead to an increase of digital inclusion in the workplace. This research will also offer a contribution to practice for organisations considering implementation of such technology, especially if a mandatory approach is under consideration.

Limitations of this study

Limitations of this study are that results pertain to the mandatory adoption of digital collaboration tools and cannot be generalised to voluntary adoption, technologies other than digital collaboration platforms, or other contexts.

Future directions

Analysis of pilot study data continues and a second phase of data collection using semi structured interviews and focus groups is planned to commence in 2021, assuming a return to work has been sanctioned by the UK Government. Collecting data at more than one point in time will contribute to an understanding about the sustainability of the digital skills that the age diverse workforce might have acquired during the adoption of the digital collaboration platform, and whether further features have been adopted in the later stages of innovation diffusion. Themes identified from the pilot study will be explored again and sub themes identified from the data analysis will be further developed. For example, digital skills and workarounds as a sub theme of working practices and organisational learning, structure and trust as the relevant aspects of organisational culture.

Appendix 6 - Full Paper accepted for UKAIS 2022

Available at: <https://uhra.herts.ac.uk/handle/2299/26582>

Exploring and understanding innovative digital collaboration platforms in the workplace: a qualitative, comparative study.

Author Name

Affiliation – Only for the revised document. No required for peer review

Abstract

COVID-19 brought homeworking in UK workplaces that necessitated the rapid adoption of innovative online digital collaboration platforms (DCPs) such as Microsoft Teams® (MS Teams). This presented challenges to knowledge workers with little prior experience of such technologies. Studies of this nature are rare, which led to the aim: To explore, understand and explain the use of innovative DCPs within diversely aged UK workforces. A qualitative, longitudinal study of two organisations is undertaken to explore how knowledge workers have been affected. Results indicate neither group of interviewed younger adults (under 50) or older adults (over 50) were homogenous in their attitude to change, technology usage or digital skills, but age-related stereotypical views are prevalent in both groups. Improved digital skills and self-efficacy from the adoption of the DCP were sustained, contributing to workplace digital inclusion. Online meetings can also provide an inclusive digital experience for disabled staff if users are aware of integral accessibility features.

Keywords: Technology Assimilation, Homeworking, Microsoft Teams, Inclusion, Digital Divide, Longitudinal, Qualitative, Intergenerational.

1.0 Introduction

In March 2020, the UK Government required all those who could do so, to work from home. This was to safeguard the National Health Service (NHS) and individual lives from the potentially deadly virus COVID-19. As working lives went 'virtual', adoption of online platforms such as Zoom or Microsoft Teams® (MS Teams), rose rapidly. In March 2020, there were 44 million daily users of MS Teams, rising to 115 million in October 2020 (Kent, 2020). Rival video conferencing software Zoom saw a huge rise of daily users from 10 million globally prior to March 2020, to 300 million by October

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2020, despite some early but serious security 'glitches' (Wainwright, 2020). However, whilst Zoom excels at video conferencing, it does not offer content sharing or 'chat' that persists beyond the life of a single online meeting. Zoom, unlike MS Teams, cannot be considered a digital collaboration platform (DCP), which can be defined as an internet based, flexible, connected framework for participants to digitally share, organise, track and progress the work of a team (Wainwright, 2017).

One potential barrier to realising the opportunities for change that DCPs might offer, could be workforces with varying levels of digital capabilities/skills (Chetty et al., 2018). They found that 'employees skills must evolve at a similar pace to technological innovation' (Chetty et al., 2018:3). Van Dijk (2005) defined digital skills as "the set of skills that users need to operate computers and their networks, to search and select information, and the ability to use them for the fulfilment of one's goals" (van Dijk, 2005: 179).

This variance in digital capabilities is acknowledged in the extant digital divide literature as the 'second level digital divide' (Wei et al., 2011) and leads to differences in outcomes achieved by workforces; for example, in terms of productivity (ibid). Whilst access to the Internet, or the first level digital divide (Wei et al., 2011), is not an issue for most modern workplaces in the UK, a disparity in digital capabilities persists and with ageist beliefs continuing to exist in the workplace, the digital divide between older and younger workers could widen (Lagacé et al., 2016). For example, older workers may lack the self-confidence to engage with the technology (ibid) whilst younger people may adopt DCPs but use them in substantially different ways to their older counterparts (Vodanovich et al. 2010); (Jarrahi and Eshraghi, 2019a); (Kesharwani, 2020). However, as working lives are extended due to rises in pension age (Warschauer, 2004), the ability to deploy digital skills in the workplace is pressingly important and new skills are required of workers at midlife and beyond just to be able to continue to perform their jobs (Maurer, 2001).

Despite a substantial body of literature on the digital divide, almost no empirical research has been carried out within the context of the workplace or which is intergenerational, comparing both younger and older workers within one study (Wang

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et. al, 2013). Furthermore, digital divide research in the workplace has not been conducted in the UK (Jarrahi and Eshraghi, 2019b; Kesharwani, 2020).

This research has as its context, the COVID-19 pandemic and associated enforced periods of homeworking in the UK. Whilst recent studies have considered the well-being impacts of homeworking (Waizenegger et al., 2020) they have not investigated the technology features of DCPs and their assimilation into organisational working practices. Prior research indicates that periods of disruption, such as those imposed by the COVID-19 exogenous shock, might make it possible for deep, new organisational forms to occur (Corbo et al, 2018) but it is unclear in this case, whether any sustained change has occurred beyond enforced homeworking periods. Rogers (2003), cautioned that 'sustainability is not universally a positive outcome of the innovation process' (Rogers, 2003 : 442). Since a gap on digital divide and digital skills in the workplace existed, this study was motivated to reduce this research gap. Accordingly, the research aim was formed: To explore, understand and explain the adoption and use of innovative digital collaboration platforms within diversely aged UK workforces.

To achieve this aim, two case studies that have data drawn from two UK organisations are used; a private sector company and a public institution. The Information Systems (IS) management of each organisation licenced their entire workforce with a DCP, MS Teams, at the onset of the UK's first 'lockdown' in March 2020, which included enforced homeworking. The DCP was mandated for teams to communicate with one another to try and deliver 'business as usual' (BAU) activities in a hitherto unknown virtual capacity. The desire to maintain BAU was mirrored by many UK organisations (Waizenegger et al., 2020). The context of this study provided a rare opportunity to study the impact of mandatory adoption of a DCP. Mandatory adoption occurs when users have little volitional control over their choice to use the prescribed organisational technology (Bhattacharjee et al., 2018) and in such circumstances, it is possible that resistance behaviours will be demonstrated (ibid).

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To ascertain the aim, the following research questions were formed:-

- RQ1: How and why do diversely aged workforces experience changes to their working practices following adoption of an innovative DCP?
- RQ2: When and where do diversely aged workforces experience changes to their working practices following adoption of an innovative DCP?
- RQ3: What can we learn from diversely aged workforces' digital skills following adoption of an innovative DCP?

Having introduced this study, the next section provides a theoretical background where the main research concepts of technological diffusion, digital divide and organisational culture are reviewed. Next, a brief explanation of the research design is provided. This is followed by findings and analysis. A discussion and conclusions section follows, then contributions to academia and practitioners. Limitations and future directions draw the paper to a close.

2.0 Theoretical background

This section provides an overview of the main literature that informs this research.

2.1 Technology Adoption / Assimilation

The Diffusion of Innovation (DOI) theory explains how an innovation ("an idea, practice or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003:12) is adopted and 'diffused'. The term diffused means that information about the innovation is shared amongst members of a social system over time (Rogers, 2003). Despite its continuing influence, DOI theory fails to offer insight on respective roles that might be played by diversely aged adopters (Kesharwani, 2020). To overcome such a gap, (Macedo, 2017)), used the Unified Theory of Acceptance and Use of Technology2 (UTAUT2) model developed by Venkatesh et. al (2012) as a theoretical lens to study the behavioural intentions to adopt and use ICT amongst older adults. However, the suitability of UTAUT models for the study of 'post adoptive' behaviours (where the decision to adopt the innovation has been made and the innovation is available for use) has been challenged (Jaspersion et. al, 2005).

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The Technology Acceptance Model (TAM) (Davis, 1989) is another seminal theory, created specifically to explain IT adoption. Whilst both TAM and DOI have been successfully validated in studies concerning many technological innovations, they have been criticised for their lack of applicability when the decision to adopt is not within an individual's locus of control but rather a decision made by the organisation (Gallivan, 2001). Gallivan (2001) referred to both TAM and DOI as 'traditional innovation adoption models' (Gallivan, 2001), which led to a new 'hybrid' theoretical framework from the DOI, plus insights from the organisational researcher Orlikowski (1993) and the six-stage model of IT implementation proposed by Zmud and colleagues (Kwon and Zmud, 1987; Cooper and Zmud, 1990). The six-stage model can be used to explain how extensively an innovation becomes embedded within an organisation's processes and culture, rather than on factors which influence individuals to adopt it (Gallivan, 2001). Stages 3-6 (adaptation through infusion) of the model are considered 'post adoption'.

In the context of this research, the adaptation stage (instalment) occurred commensurate with the beginning of the study, making it appropriate to focus on the three post adoptive assimilation stages: acceptance ("organisational members induced to commit to using the IT application"), routinisation ("usage of the IT application is encouraged as a normal activity") and infusion ("IT application used to its fullest potential") (Cooper and Zmud, 1990:125). Infusion has also been described as 'embedding an IT application deeply and comprehensively within an individuals or organisations work systems' (Saga, 1994: 37). Alter (2008) defines a work system as "A system in which human participants and/or machines perform work (processes and activities) using information, technology and other resources to produce specific products and/or services for specific internal or external customers" (Alter, 2008:10). Acknowledging human agency in the use of an IS is suited to interpretive research since it focuses on subjective interaction between the 'user' and the technology features (Alter, 2008), especially as 'users' may choose to interpret features in ways influenced by their own habits and knowledge, rather than as originally intended by the designers (Orlikowski, 2000). Infusion may also be used to evaluate 'the extent to which an innovation is used completely and effectively and improves the organisation's performance' (Wynnekoop, 1991, p. 21, cited in (Gallivan, 2001).

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to the body of knowledge by providing rich and deep insights on the use of a DCP during and beyond the period of enforced homeworking. Next the digital divide is considered, a term which has drawn much research attention.

2.2 Digital Divide

There is no agreed definition of this term, rather it has evolved alongside the subject it relates to - internet usage (Wang et al. 2013). During the 1990's, the term indicated a divide between those with Internet access and those without it, but over time analyses of the digital divide have distinguished different aspects of digital inequality including differences in capabilities/skills levels and available outcomes from using the internet (Wei et al., 2011); (van Deursen and van Dijk, 2015). The consequences for those excluded from an increasingly digital society might be felt in both work and personal lives; for example leaving employment opportunities to those more familiar with digital media, and an inability to access scarce public resources (van Dijk, 2005). For those already in employment, their digital skills must keep pace with technological innovation or their employers may fall behind competitors and miss out on opportunities for productivity and innovation (Chetty et al., 2018).

Digital divide/exclusion and digital inclusion can be considered as "two sides of the same coin", where digital inclusion considers solutions to prevent or narrow digital divides (Calderón Gómez, 2020: 223). The workplace might provide an environment in which digital inclusion can be furthered; however, the acquisition of skills requires a degree of self-motivation to use digital technologies that is beyond mere 'unconscious' use (ibid). Maurer (2001) suggested older adults may be less willing to participate in training and development. A UK based study by Warr & Pennington in 1993 found perception differences exist about older and younger workers, with older workers perceived as less able to grasp new idea or learn quickly (Maurer, 2001). There was no evidence offered in Warr and Pennington's 1993 study about actual differences in older adults' ability to grasp new ideas. Moreover, a later study found that older people can successfully learn new technologies in the workplace (Warhurst and Black, 2015) if they can get past the age-based stereotypes that create a 'self-fulfilling prophecy',

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One aspect of Gallivan's 2001 theoretical framework is 'organisational consequences', categorised in DOI into 'desirable/undesirable' (from the perspective of those adopting), 'direct/indirect', and 'anticipated/unanticipated', an area which few prior research studies have investigated (Rogers, 2003). Resistance to using the DCP might be anticipated as a potential consequence, especially as little knowledge of the innovation is disseminated ahead of its implementation (Rogers, 2003) Bhattacharjee et al, 2018 claim resistance is a deliberate choice made by individuals, perhaps in response to technology features as interpreted by those experiencing them (Suchman, 2008, cited in Choudrie and Zamani, 2016) and may result in decreased productivity (Bhattacharjee et al., 2018). Resistance may not always present itself as a negative phenomenon, for example, identifying issues can allow remedial action to take place (Lapointe and Rivard, 2005).

Resistance may also be expressed in the form of 'workarounds', defined as "a goal-driven improvisation to one or more aspects of an existing work system which may occur as a result of resistance" (Alter, 2014: 1044). Workarounds may emerge over time in conjunction with completion of work related tasks (Choudrie and Zamani, 2016). Thus, workarounds might also be anticipated as a consequence of the innovation adoption. Rogers (2003) claims that understanding people's perceptions of an innovation are essential in overcoming the 'pro-innovation bias' (Rogers, 2003) whilst suggesting that judgements concerning consequences are 'difficult to measure' due to their subjectivity (ibid).

In summary, Technology Assimilation offers a promising theoretical lens with which to explore and explain the empirical data collected from this research study. Moreover, Cooper and Zmud (1990) argued that their 'comprehensive research model provided a basis for research questions that might significantly enhance an understanding of the implementation process' and 'would facilitate the interpretation of empirical results' (Cooper and Zmud, 1990:125). One limitation identified by Cooper and Zmud (1990) is that data collected as a single snapshot, rather than repeatedly over time, can only lead to tentative conclusions. They argued for further longitudinal studies. This study, like Gallivan's 2001 research, uses a longitudinal, case study approach which could add

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negatively affecting older workers interest in learning and using ICTs, and thus contributing to a 'grey digital divide' (Lagacé et al., 2016).

Some IS researchers have focused on older people, where the 'age boundary' has been more specifically defined as over or under 50 years (Albert and Heaton, 1988, cited in Choudrie and Vyas, 2014), finding that older adults experienced psychological barriers when adopting online services (ibid). Yet researchers who focused instead on a younger age group, found that living in a digital environment does not reliably imply being either digitally competent or being able to use ICTs in a competent manner (Li and Ranieri, 2010) thus challenging the age based stereotype that all younger people are digitally adept. This stereotype is implicit in the 'age-centric' interpretation of the digital divide which coined the phrases 'Digital Natives' (DNs) and 'Digital Immigrants' (DIs) (Prensky, 2001a). Prensky argued that the brains of a younger generation, having been brought up with digital technologies (thus digital 'natives'), "almost certainly work differently" (Prensky, 2001b: 4) to older peoples' brains, drawing on the theory of neuroplasticity (Prensky, 2001b). Whilst acknowledging that an older generation may learn how to use digital technologies, he likened this to learning a new language, claiming that older people could not become 'native' speakers, thus the term 'digital immigrants', originated. In 2001, Prensky was referring to those under the age of 20, implying that digital natives, also referred to as millennials and the 'net' generation, were those born after 1980. Prensky suggested mutually exclusive behaviours for younger and older adults; for example, 'multi-tasking' is the choice of natives whilst immigrants conduct tasks in a linear, sequential fashion (Prensky, 2001a), also, DIs continue to resist new digital technologies whilst DNs welcome new technologies (Zhao et al., 2014).

A study of adolescents and young adults aged 13-24, by (Moisala et al., 2016) confirmed that 'digital natives' indulge in more multitasking behaviour than older generations (Carrier et al., 2009; Zhang et al., 2015, cited in (Moisala et al., 2016). However, Moisala et al, 2016 claim that "it is plausible to think that intensive use of digital technologies could in a sense 'train the brain' to become more skilled at multitasking, thus, by implication suggesting that any age brain might be similarly trained. Their research also provided evidence for the idea that there is a relationship

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between daily media multitasking and a reduction in the brain's ability to maintain attentional control (Moisala et al., 2016). Anecdotal evidence in support of the idea that younger people are 'multitaskers living in a state of continuous partial attention' was also offered by the Pew Internet and American Life Project in 2006 (Rainie and Lee, 2006).

Arguably, Prensky's claims would not withstand the march of time as the growth in internet use since 2001 means enhanced digital capabilities are unlikely to be limited to those under or over a particular age (Li and Ranieri, 2010). Nonetheless, Prensky's claims fuelled debates that had the adequacy, or otherwise, of the education system as their focus, i.e. if natives and immigrants spoke a different language, would DI educators be able to successfully educate DN students? (Li and Ranieri, 2010). Supporters perceived a gap between students and teachers that couldn't be bridged easily (Underwood, 2007) whilst educators countered that DIs could acquire the skills suggested as belonging exclusively to natives (Helsper and Eynon, 2010).

Other researchers found neither age group homogenous in terms of digital skills; Kennedy et al., 2010 found differences in skill levels amongst university students, while Haggittai and Hinnant (2008) found differences in younger peoples' perception of their skills. Most empirical research on DNs and DIs has been conducted with students and educators, but given that education occupies a small proportion of a young person's life compared to the years they will spend at work, it is surprising how few studies have been conducted in workplace settings. One 2006 US based study, referring to Prensky's view on Digital Natives, suggested the millennial generation would offer workplace challenges as well as opportunities to their digital immigrant employers, due to their differing values and experiences (Rainie and Lee, 2006). Some practical advice was offered to employers, including being clear with expectations regarding how much 'personal device' time would be acceptable in company hours (ibid). In 2022, this advice feels outdated and potentially discriminatory. Alleged generational differences, and frequent, uncritical use of the term digital natives and similar, were felt to be problematic in an educational context (Helsper and Eynon, 2010), and this researcher contends they are equally unhelpful in a modern workplace, since these terms and their

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2.3 Organisational Culture

Schein (1983), defined organisational culture as "the pattern of shared assumptions that a group learnt as it solved its problems of external adoptions and internal integration, that has worked well enough to be considered valid and therefore, to be thought of a new member as a correct way to perceive, think and feel in relation to those problems" (Schein, 1983: 14). Schein's 3-stage model provides a classification to help researchers analyse and understand changes to organisational culture (Schein, 2017).

Schein suggests changes brought about by ICTs do not directly change an organisation's culture, but rather, coerce new behaviours which may lead to new cultural beliefs (Schein, 2017). A DCP might facilitate changes to organisational culture, for example, a more permanent move to homeworking for employees. One espoused belief or value challenged by the move to homeworking is that of trust. In 1994, presenteeism was identified as the *modus operandi* for organisations; on the basis people cannot be trusted, with systems in place to correct employee oversights (Handy, 1995). Handy asserted this would not bode well for virtual teams; suggesting technology on its own is not enough without trust (Handy, 1995). Trust is defined as "the willingness to be vulnerable to another party when that party cannot be controlled or monitored" (Mayer et al, 1995, cited in Mayer et al, 2005: 874). A recent study on trust between 'leaders and followers' in a virtual setting found 25% of participants did not feel computer mediated communications adversely affected trust and advocated further research into trust and virtual settings in organisational contexts (Norman et al., 2020).

Another aspect of organisational culture that may be affected by DCPs is power, due to the claim that virtual teams empower individuals to act more independently from direct supervision (Grenier and Metes, 1995, cited in Robey et al, 2000). Similarly, van Dijk, 2005 explains networks transform bureaucratic organisations into horizontal structures based on teamwork (van Dijk, 2005). Handy, 1995, also claimed independent groupings "push the organisation to a federal structure" (Handy, 1995: 46).

Having provided the background to the theoretical aspects of this study, the research methodology is described next.

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associated beliefs 'other' some employees and therefore fail to promote digital inclusion.

Sinclair and Bramley advise that 'any communications technology has both an inclusive and exclusionary potential' (Sinclair and Bramley, 2011) whilst Rogers (2003) cautioned that innovations tend to increase gaps in equality rather than reducing them. Given these words of warning, this research collected demographic data from research participants including age, gender and declared disability in order to explore different perspectives that might be relevant in terms of workplace digital inclusion. One recent study found existence of an age and gender based digital divide amongst higher education faculty staff but did not provide an in depth understanding of the issue (Soomro et al., 2020). Sex: 'whether someone is a man or a woman' and Gender Reassignment are, like age, protected characteristics in the Equality Discrimination Act 2010 as is disability (UK Government, 2010). As at March 2021, 20,000 employers had signed up to the UK Government's 'Disability Confident' scheme, which offers different levels of commitment to the improvement of working life for disabled staff (Powell, 2021). Despite this, during the COVID-19 pandemic, disabled people became unemployed at a faster rate than did non-disabled people (ibid).

To further the digital divide research, Selwyn suggested that future studies should focus on 'post-adoption' issues (Jung et al., 2001, cited in (Selwyn, 2003), including the outcome, impact and consequences of accessing and using ICT, which he considered the 'fundamental yet often unvoiced element of the digital divide debate' (Selwyn, 2004). Furthermore, Selwyn acknowledged the value of in-depth qualitative research to begin to unpack the complexities of the digital divide and develop a more sophisticated understanding of this phenomenon (Selwyn, 2004). Helsper and Eynon (2010) called for more empirical research on how younger and older generations engage with technology, suggesting that, due to the limited understanding offered by survey data, 'qualitative work could also be beneficial' (Helsper and Eynon, 2010); this research aims to address such gaps. The conceptual framework underpinning this research means that organisational influences will also be investigated, and the following section identifies those aspects of organisational culture that are most relevant within the context of this study.

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3.0 Research Method

This exploratory research was conducted utilising an interpretivist epistemology, which sought to generate socially relevant knowledge through the interpretation of the phenomenon under study (Hallebone and Priest, 2009). A qualitative research approach is thus used, where the emphasis is on the words that will allow a deep and rich understanding of the data (Saunders et al, 2019). A comparative case study was selected which serves as the context of this study. The case study method was selected for its suitability when 'how' or 'why' research questions are being asked about "contemporary events over which the researcher has little control" (Yin, 1981:14). Two cases were selected; 'Case A' is a public sector organisation; namely, a higher education institution and 'Case B' is a private sector, media company, both are based in the UK. As the primary researcher is employed within the higher education institution, but was additionally able, through professional contacts, to conduct research with the private company, the research team felt that using a second case study could potentially offer a different aspect to the findings and would also help to reduce or eliminate any subjective bias on the part of the primary researcher.

The data was collated using a longitudinal aspect where the first phase of semi-structured interviews was conducted with 28 participants from both cases between May and August 2020 (T1). Open ended questions allowed for probing of participant views. The first phase was followed by an interval of between 16 and 18 months, with the second phase of interviews conducted between September and November 2021 (T2). (Hermanowicz, 2016) advises that, when conducting qualitative, longitudinal research, "the number and frequency of research episodes will vary according to how a given research problem is posed and thus will vary from study to study" (Hermanowicz, 2016:196). In this case, the research episodes or phases were arranged such that the first one was conducted during the enforced homeworking period, and the second conducted when participants had agreed their 'new normal' working pattern. Longitudinal research considers change over time and the interval between episodes was considered sufficient to examine change between the two points (Saldaña, 2002). Should the answer to 'what is different?' be 'nothing at all' this is still of value (Saldaña,

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2002: 2), in the context of the research questions. Between primary data collection points, secondary data including results from surveys, focus groups and company documentation, were also collated.

Theoretical saturation was ensured (Nelson, 2017) by including 28 participants, which also complied with Saunders and Townsend's (2016) suggestion that between 12 and 40 interview participants are sufficient for a qualitative study (Saunders and Townsend, 2016). Participants were drawn from a purposive sample of knowledge workers representing support departments such as Finance, Marketing, Student Services etc and occupying lower, middle and higher graded roles. A broadly equal amount of younger and older workers ensured diversity. Snowball, convenience sampling was used; details of participants are shown in Table 1 and Appendix A shows interview constructs drawn from extant literature themes.

Research Participants/ Demographics	Case A: Higher Education Institution	Case B: Private Media Organisation
Job Grades	14 Participants 5 higher graded roles 5 middle graded roles 4 lower graded roles	14 Participants 4 higher graded roles 5 middle graded roles 5 lower graded roles
Ages: 50 years or over (>50) Under 50 years (<50)	4 higher graded >50 1 higher graded <50 2 middle graded >50 3 middle graded <50 1 lower graded >50 3 lower graded <50	1 higher graded >50 3 higher graded <50 2 middle graded >50 3 middle graded <50 2 lower graded >50 2 lower graded <50
Disabilities	1 Participant with disabilities that affect working practices	2 Participants with disabilities that affect working practices
Gender	9 female gender 5 male gender	10 female gender 4 male gender
Level of Education	All educated to GCE A Level or beyond	All educated to GCE A Level or beyond

Table 1 - Research Participants and demographic data

Having described the research methodology of this study, the next section details the findings and analysis to date.

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Companies cannot expect workers to go back into the office, our company are embracing this, everyone can benefit' (Case B, <50). 'A Damascene moment' (Case A, >50). Both organisations maintained their core business activities; Case A virtualised their A-Level Clearing services whilst Case B amazed themselves by continuing to produce a printed magazine without 'in person' collaboration. Secondary data from workplace surveys and focus groups conducted in 2020 confirmed many employees wished to continue working from home even when a return to the office could take place. Based on new shared beliefs in the trustworthiness of employees, management in both organisations responded positively and created new artefacts in 2021; policies to provide flexible working on a permanent basis. The exogenous event and enforced lockdown were acknowledged as having positive impact by a senior graded participant, "I think, honestly, there's been some real positives and I think it's going to really work for our staff community in the long run. It would never have happened without Covid" (Case A, <50).

However, the artefacts or features within the DCP have also been fundamental in facilitating the ability to work from home. At T1, to continue synchronous communication with colleagues to maintain business as usual activities and/or avoid social isolation, they really had little choice but to use the video conferencing artefact: *"Initially everyone was complaining, there were two opinions at the same time, one was isn't this a terrible way to work and the other, but it is amazing that we can, both emotions were visible...at least we could continue to operate"* (Case B, <50). Initially there were issues with the stability of the DCP and a lack of preparedness in terms of skills, the phrase 'you're on mute', now forever enshrined in popular culture, neatly encapsulates the real issues experienced at that time.

By T2, the artefacts within the DCP, most noticeably video conferencing and business 'chat', were established as new methods of business communication in both organisations; video conferencing was routinised in Case A (application no longer perceived as out of the ordinary (Cooper and Zmud, 1990) and infused in Case A; infusion representing the deepest stage of technology assimilation, or stage of an "innovation's assimilation into the organization" (Meyer & Goes, 1988; Fichman & Kemerer, 1997, cited in (Gallivan, 2001). Infusion brings increased organisational

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4.0 Initial Findings and Analysis

When analysing the findings of this study, thematic analysis and open coding drawn from grounded theory were used. The subjective views of this study were interpreted, where each transcribed interview was read sentence by sentence and word for word. Following that, a discussion with the second author of this study about the interpretations led to the findings. This process was followed to ensure that the bias of the researcher collecting the data was reduced by having the second author proffering a 'devil's advocate' role. Therefore, initially, there was a disaggregation of the transcribed interview data with the secondary data that led to construct codes created in NVivo. As the interpretation, i.e. analysis, occurred, new codes emerged from the data. 'Within case' and 'cross case' analysis was used to explore and understand similarities and differences between Case A and Case B (Yin, 2018).

4.1 Shared Organisational Beliefs and Values: new Artefacts

Applying Schein's 1983 definition of organisational culture as a pattern of shared assumptions, in conjunction with his 3-stage model to analyse and understand change, a pattern emerged regarding changes to organisational culture in both organisations, as a result of the period of enforced homeworking. This can be evidenced by new values, shared beliefs and the creation of new artefacts. For example, with regards to homeworking, the prevailing espoused value (Schein, 2017) identified in both organisations at T1 was that this was a privilege, not a right. Shared beliefs emerged from higher graded roles in both organisations, who expressed surprise that homeworking could work and, moreover, workforces could be trusted to be productive; *"What I experienced with my team and direct reports was that everyone was working really hard - not to say they weren't before but the perception of working from home might have been just a day off" (Case B, >50). "I am now much more receptive to people doing some flexible home working. I wasn't before...I didn't think people could work as efficiently from home and secondly, I didn't think people would work as efficiently from home"* (Case A, >50).

Even at T1, profound and lasting organisational and personal change was perceived as possible; *"A massive opportunity to improve work/life balance, without feeling isolated*

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effectiveness (Cooper and Zmud, 1990); *"It's allowed us just to reach students in different ways...it's allowing us to have more direct communication without relying on teachers...because we find some schools are really good at booking us in (to visit), or letting students take part in events and opportunities on campus and other schools are not...usually the ones that in terms of widening access we'd probably feel need the most support...looking at their GCSE scores and the number of students that have free school meals...so I think in terms of the work that we do it's definitely a productivity gain for the whole organisation"* (Case A, <50).

4.2 Digital Divide and DCPs

Analysis of the empirical data collected in this study indicates neither younger (<50) or older (>50) workers are homogenous in their use of the DCP or attitude towards using it. Differences between younger and older adults in the workplace related more to technological self-confidence (self-efficacy) and stereotypical self-beliefs, *"I am old school, I am 58, I was panicking, I have no technical knowledge, (Case B, >50); and, from a younger person, "We are a young team in our 20s or 30s, so we are keen on technology and trying new stuff"* (Case A, <50). These self-beliefs, when challenged by the necessity of mastering the digital collaboration platform, had surprising results, *"I'm a complete Dinosaur in some senses, I sometimes even scribble on paper...but I have found it completely...magical for running, for having meetings"* (Case A, >50). This confirms the views of a study suggesting older people can become immersed in digital technology (Kesharwani, 2020).

Participants who declared disabilities affecting their working practices, reported video conferencing allowed them a greater level of comfort and flexibility. There are other features, e.g. the ability to post subtitles on live online meetings: *"I can use Teams/Zoom captions to follow the meeting, which is a huge bonus. I don't have to go back to the dark days of struggling in meetings in pre Covid times...rapidly developing digital technology can make a big difference to the working lives of disabled staff"* (Focus Group 2). This could lead to improved digital inclusion for disabled workers, however organisations must be aware of, and actively promote use of these features, to ensure that inclusivity.

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4.3 Digital skills and DCPs

Most research participants had no prior experience of using a DCP or conducting online meetings; *"Going forward I think we would use more digital meetings; it was not something we did before, but now everyone knows how to do it and it is so accessible we will use it, definitely for the foreseeable future"* (T1, Case A, <50). Since everyone adopted the DCP at the same time, a 'level playing field' existed which was acknowledged as helpful to the development of digital skills irrespective of age or other factors *"There was a common understanding across all age groups and demographics and functions"* (Case B, >50) and *"Everyone can do it, so it means we are now on the journey"* (Case A, >50). Secondary data from a staff survey in March 2021 in Case A, indicated respondents felt that they had improved digital skills and improved self-confidence/motivation (to try other digital applications) from the adoption of MS Teams during enforced homeworking. Methodological triangulation (Saunders et al., 2019) was then carried out by asking the same questions (but re-phrased to be suitable for qualitative research), to all participants from both organisations during the T2 research interviews. The prevailing view from research participants confirmed that digital skills and self-confidence/motivation (to try using other digital applications) had been improved as a result of using MS Teams and this improvement has been sustained, 18 months after the acceptance stage of assimilation.

Those participants who felt their digital skills were either slightly improved or not improved, demonstrated a priori competence with digital technology by directly comparing MS Teams features to other digital applications they were already familiar with, or as a result of being members of a technical department; *"I would say obviously Teams is quite similar to other chatting functionalities that you can get like WhatsApp, that sort of thing"* (Case A, <50); *"To me a digital skill is to be able to program in C++.....using a word processor, using teams, I don't see that as fundamentally a digital skill. I see it as a useful IT"* (Case A, >50). Some participants demonstrated equanimity and confidence to use any of the digital applications available to them; *"I have got one member of my team who I chat to on Teams and one member that I chat to on Slack"* (Case B, <50); *"Having limited bandwidth I found Teams struggled...so I would often go to Zoom or Google Hangout instead because I found them more consistent....I will*

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5.0 Conclusions and discussion

This paper has presented an exploratory empirical study whose aim is to *explore, understand and explain the adoption and use of innovative DCPs within diversely aged UK workforces*. Conclusions are offered as follows: -

The unprecedented exogenous event COVID-19, and subsequent enforced homeworking, facilitated a widespread acceptance of a DCP in both UK organisations studied, because it offered an effective communication method by which workers could maintain contact with each other during a period of social isolation. Moreover, it facilitated business continuity in ways which were unexpected and often revelatory, to the workforces involved.

As a result of adopting the digital collaboration platform, organisational culture has changed; trust in workforce intention and ability to work from home is now an assumed belief. New artefacts - flexible working policies, have been created which confirm this new norm in both organisations. Technological artefacts offering new channels of business communication have become deeply assimilated into working practices, most notably video conferencing and business 'chat'.

Despite the mandatory adoption, resistance was limited and there is no intention by either organisation, to revert to their previous state and thereby discontinue use of video conferencing. Popular video conferencing platforms have reached previously unseen levels of usage during UK lockdowns in both the workplace and in broader UK society. As such, video conferencing technology can be considered a 'killer application', offering 'such useful functionality that people are enthused to make the effort to learn how to use it' (Digital Inclusion Panel, 2004: 39; Cringely, 1996, cited in (Sinclair and Bramley, 2011). Applications that meet this criteria have been shown to increase digital inclusion (ibid).

Required as they were to adopt the digital collaboration platform, workforces have seen an improvement in both their digital skills and self-efficacy to try other digital applications, which were sustained throughout the study. The ability to use 'digital

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use) whichever one works" (Case B, <50. Although individual digital skills were not measured, it is likely that this digital dexterity indicates superior digital skills.

4.4 Resistance to change and mandatory technology adoption

Adoption of the DCP was acknowledged as forced (mandatory) adoption (Bhattacharjee et al., 2018) by participants; *"Being forced has meant no choice"* (Case A, >50); *"It was dropped on us"* (Case B, <50). Literature suggests in these circumstances users may experience dissatisfaction and proffer resistance (Bhattacharjee et al., 2018). However, participants did not resist even though they found some difficulty in using the technology initially, because at T1, online meetings taking place using video conferencing, were the only way most people were able to see one another, which was reassuring; *"We can still see each other, if someone was having a rough day we could have a chat"* (Case B, <50) and *"It has helped me interact with people when it works. I have insisted that we have video calls once a week"* (Case B, <50).

It was interesting that participants indicated a prior intention to resist, had they been asked to adopt the DCP prior to lockdown; *"Everyone would have said we're too busy at the minute, try so and so Dept first"* (Case A, <50) but then acknowledged that being forced to adopt the DCP had been helpful; *"not being able to opt out"* of using the DCP *"achieved what could not have been done in three years due to the resistance of people"* (Case A, >50). *"It's a bit like necessity being the mother of invention, and we've just gone...you will be going to a meeting that's now online and you can't opt out of it"* (Case A, >50).

Resistance expressed as 'workarounds' was not found at T1, but by T2, in Case B, continuing use of a different DCP by a small number of departments led to a workaround that involved embedding links to Google G-Suite® documents within Microsoft Teams rather than use the native file storage and collaboration

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media as a means for a particular personal or professional goal' is described by van Dijk as strategic skills (van Dijk, 2005). The acquisition of strategic digital skills is important to avoid the potential creation of 'unbridgeable gaps between groups of employees in the workplace' (van Dijk, 2005). Thus, adoption of the digital collaboration platform has led to an improvement in digital skills, which in turn positively contributes to digital inclusion in the workplace. DCPs offer integral accessibility features designed to assist disabled workers, however, employers need to be aware of them and actively promote their use amongst the whole workforce in order to routinise them.

Empirical data collected in this study failed to confirm dichotomous views (Prensky, 2001; Rainie and Lee, 2006; Vodanovich et al., 2010) about younger and older workers in respect to any of the following; attitude to change, technology usage or digital skills. Differences between younger (<50) and older (>50) adults in the workplace relate more to a lack of technological self-confidence (self-efficacy) amongst older adults and stereotypical perceptions amongst both younger and older adults.

6.0 Theoretical Contributions and Practical Implications

This study adds further empirical evidence to the study of technology adoption in the context of generational differences in the workplace (Jarrahi and Eshraghi, 2019a; Kesharwani, 2020). It is contextualised in UK workplaces; thus offering a novel perspective to academia, since much of the previous research on digital native/digital immigrant and digital divide concepts had either not taken place in the UK or failed to consider a workplace setting, missing the rich opportunities that study of a diversely aged workforce offers.

More specifically, a contribution to research is offered regarding the impact on diversely aged and abled workforces of the mandatory adoption of DCPs including digital skills, that should lead to an increase of digital inclusion in the workplace.

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For the practitioner community, the study has identified important factors that might play a significant role in affecting implementation of other technological innovations in organisations. Whilst no one would wish to recreate the circumstances of a global pandemic, organisational management should consider mandatory adoption in conjunction with adequate, contextual training since simultaneous, mandatory adoption of the DCP by the whole workforce ('the big bang' approach) contributed positively to the transformation of working practices and did not result in dissatisfaction or intention to discontinue use, either in the short term or the longer term.

Furthermore, IT departments may wish to consider the effect of allowing 'shadow' IT within their organisations since it may negatively affect deep assimilation of prescribed organisational technology.

This research also offers a contribution to practice for organisations desiring to provide an inclusive experience for differently aged and abled employees, by offering insight and guidance on factors that positively and negatively affect workers experiences when adopting a DCP.

7.0 Limitations and future work

The results of this study pertain to the mandatory adoption of digital collaboration tools and cannot be generalised to voluntary adoption, technologies other than DCPs, or other contexts.

Future research directions could include consideration of other organisational contexts and/or other DCPs, potentially increasing the applicability of these results. A large-scale survey could be used to statistically confirm findings, particularly with regards to acquisition and sustainability of digital skills.

Future work could also explore what post adoptive interventions are successful in routinising DCP artefacts that were not routinised in this study, e.g. file collaboration.

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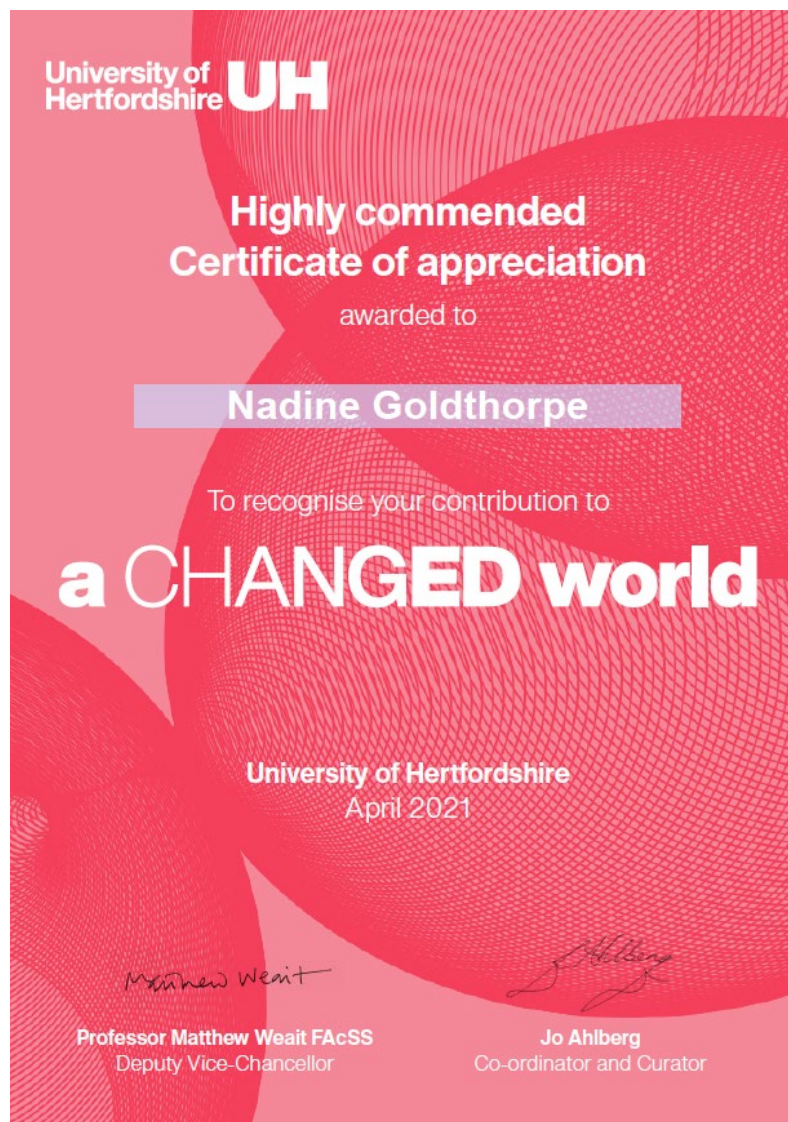
(Further references omitted for brevity)

Appendix 7 - Practice based Researcher Dissemination activities

A Changed World - Highly Commended Certificate

The researcher, together with Principal Supervisor and two fellow students, created a video ‘Trust, Innovative Technologies and the Pandemic’ in which each researcher offered insights based on their own research, for an entry in the University of Hertfordshire’s Archival project on life during the COVID-19 pandemic. The team, called ‘Trust in the Future’, won a Highly Commended Award for their entry in the Collegiate Category.

<https://www.herts.ac.uk/about-us/a-changed-world/the-collection/trust-in-the-future-team>



Excerpt from email received 25/11/2021

‘I am profoundly Deaf, and I work at the University. When we all first went into Covid lockdown, most meetings were held on Teams, but some meetings, and most ‘social events’ were held on Zoom. At first Zoom had no live captions, and as it is impossible to lip read someone adequately on a screen, I was (and felt) totally excluded from all these events such as active sports, quizzes, online coffee breaks and well-being events designed to help UH staff with Covid anxiety. Then Zoom developed live captions, but these had to be switched on in a ‘not very user-friendly way’ before a meeting started by the meeting Host. As I soon found out, Hosts simply did not know there were Live Captions available and certainly didn’t know how to switch them on. So, yet again, I was excluded. Then, Nadine picked up on this issue and through her hard work and perseverance has enabled a ‘Live Captions’ button to appear on the meeting dashboard of every UH hosted Zoom event...! All I do at the start of any UH Zoom meeting is click on that button, and the Host enables the Captions which start immediately. And I can even remain anonymous if I wish. This may seem like a very small change, but this means that I can now attend any on-line Zoom UH event, in the same way as all my colleagues, and I no longer feel excluded or ‘different’ - which is wonderful...!

Email received 29/03/2022, in response to my voluntary participation in online training on how to make Zoom and Teams meetings accessible.

Dear Nadine,

Thank you for giving your time to plan and lead a Herts Digital Skills Week event. We had over 500 attendances at events across the week, and many more students and staff will benefit from the programme by accessing session recordings and resources on the Digital Skills Week site. Some of the comments that participants have shared with us so far:

“As both an attendee and a speaker at Digital Skills Week it was wonderful to see the knowledge sharing across the University.”

Nadine Goldthorpe – Student No. 98023486

“A very informative event. Enlightened with knowledge necessary for all students to get-up to date with new technology.”

(The event referred to above, was recorded and shown again with my permission as part of National Inclusion Week in September 2022).

University of
Hertfordshire **UH**

Contact
digital@herts.ac.uk
for advice and support

**A digitally inclusive
workplace is
everyone's
responsibility**



Appendix 8 - Ethics Approvals (original and amendment)



SOCIAL SCIENCES, ARTS AND HUMANITIES ECDA

ETHICS APPROVAL NOTIFICATION

TO Nadine Goldthorpe
CC Professor Jyoti Choudrie
FROM Dr Ian Willcock, Social Sciences, Arts and Humanities ECVDAS Chairman
DATE 26/05/20

Protocol number: cBUS/PGR/UH/04641

Title of study: An exploration of the factors that influence beliefs and changes to working practices following the adoption of collaborative software

Your application for ethics approval has been accepted and approved with the following conditions by the ECDA for your School and includes work undertaken for this study by the named additional workers below:

no additional workers named

Conditions of approval specific to your study:

Ethics approval has been granted subject to the following conditions:

- The online survey must use a UH approved survey system.
The student is recommended to use Online Survey because of security issues with other sources. For those in the Hertfordshire Business School, supervisors should request an OS account on behalf of their students through CASE (CASE-Technology@herts.ac.uk).

Contact Que Mirza for an account for either Online Survey or Qualtrics
q.mirza@herts.ac.uk
- The Chairman requests a checkbox at the top of the survey (after the information about the study) to collect and record explicit consent (implicit consent is no longer considered best practice).

General conditions of approval:

Ethics approval has been granted subject to the standard conditions below:

Permissions: Any necessary permissions for the use of premises/location and accessing participants for your study must be obtained in writing prior to any data collection commencing. Failure to obtain adequate permissions may be considered a breach of this protocol.

External communications: Ensure you quote the UH protocol number and the name of the approving Committee on all paperwork, including recruitment advertisements/online requests, for this study.

Invasive procedures: If your research involves invasive procedures you are required to complete and submit an EC7 Protocol Monitoring Form, and copies of your completed consent paperwork to this ECDA once your study is complete.

Submission: Students must include this Approval Notification with their submission.

Validity:

This approval is valid:

From: 26/05/20

To: 31/12/21

Please note:

Failure to comply with the conditions of approval will be considered a breach of protocol and may result in disciplinary action which could include academic penalties.

Additional documentation requested as a condition of this approval protocol may be submitted via your supervisor to the Ethics Clerks as it becomes available. All documentation relating to this study, including the information/documents noted in the conditions above, must be available for your supervisor at the time of submitting your work so that they are able to confirm that you have complied with this protocol.

Should you amend any aspect of your research or wish to apply for an extension to your study you will need your supervisor's approval (if you are a student) and must complete and submit form EC2.

Approval applies specifically to the research study/methodology and timings as detailed in your Form EC1A. In cases where the amendments to the original study are deemed to be substantial, a new Form EC1A may need to be completed prior to the study being undertaken.

Failure to report adverse circumstance/s may be considered misconduct.

Should adverse circumstances arise during this study such as physical reaction/harm, mental/emotional harm, intrusion of privacy or breach of confidentiality this must be reported to the approving Committee immediately.

UNIVERSITY OF HERTFORDSHIRE

ETHICS COMMITTEE FOR STUDIES INVOLVING THE USE OF HUMAN PARTICIPANTS
(‘ETHICS COMMITTEE’)

**FORM EC2: APPLICATION FOR MODIFICATION AND/OR EXTENSION TO AN
EXISTING PROTOCOL APPROVAL**

- 1 **Title of original application:**
An exploration of the factors that influence beliefs and changes to working practices
following the adoption of collaborative software

Protocol Number:
cBUS/PGR/UH/04641

Is this the first modification/extension request for this study?**

Yes

No

**If no, please include the most recent approval notification document with your
application.**

2 **Protocol holder details**

Applicant name:	Nadine Goldthorpe
Student/Staff number :	98023486
Applicant e-mail address:	Nadine.Goldthorpe@gmail.com
Work address (if appropriate):	University of Hertfordshire
Supervisor's name:	Professor Jyoti Choudrie
Supervisor's School & Department:	HBS
Supervisor's e-mail address:	J.Choudrie@herts.ac.uk

3 **Specify the nature of the modification/extension (please tick all that apply and
complete Q4 & 5).**

- ☐ Revised title of study.

Please state amended title here

- ☐ Amend/extend dates

From: [Click here to enter a date.](#) To: [Click here to enter a date.](#)

- ☐ Additional worker(s):

Names and student/staff numbers for any additional investigators involved in this
study

[Click here to enter text.](#)

- ☐ Change of supervisor from: Click here to enter text. to: Click here to enter text.
Please complete declaration below and give reason in Q4

Declaration by new supervisor:

I have reviewed the ethics protocol paperwork for this study and am aware of any conditions which must be adhered to.

Signed Click here to enter text..

Date: Click here to enter a date.

- ☐ Location of study

Detail new location here

- ☒ Other

Request to attend discussion groups on working from home experiences that staff members have had during lockdown. Lockdown was not envisaged when original EC1 application was made so discussions on working from home were not envisaged either. Examples of workshops to participate in include a Changed World discussion to be held November 18th and HR Working from Home discussion groups to be held end November/beginning December 2020. Further workshops may follow.

Request to observe, record relevant observations made by other staff members and use thereafter in my research. All observations that are recorded and quoted in my dissertation will be subject to the storage mechanisms detailed in my EC1. All data will be anonymous if presented in final doctoral thesis. (Data collected may not be relevant to my research but if it is, I will request permission from individual staff members by sending them an EC3 form for their consent.)

Support has been given by my supervisor but permission still to be obtained from the organisers of these workshops. If it is not given or cannot be obtained in the timeframe before workshops occur (first workshop is on November 18th), I may need to organise my own targeted workshops in 2021.

4 **Reason for extension/modification request**

Advised by Ian Willock, via Emma King, that these activities were not covered by original EC1 and EC2 would be needed in addition to permission by workshop organisers.

5 **Hazards**

Does the modification or extension present additional hazards to the participant/investigator?

YES ☐ NO ☒

If YES, please complete a new Form EC5, 'Harms, Hazards and Risks'.

If you are required to complete a School-specific risk assessment (in accordance with the requirements of the originating School), it is acceptable to make a cross-reference from this document to Form EC5 in order not to have to repeat the information twice.

Signature of Applicant : Nadine Goldthorpe

Date: 16/11/2020

Support by Supervisor: Jyoti Choudrie

Date: 17/11/2020

** modifications include any amendment of documentation to be given to participants, for example
Form EC3, Consent, Form EC6, Participant Information Sheet, survey document

Appendix 9 - Additional Literature

Technology Assimilation and Technologies in Practice

Gallivan created a new theoretical framework from the Diffusion of Innovation Theory (Rogers, 2003) and the six-stage model of IT implementation proposed by (Cooper and Zmud, 1990). The Technology Assimilation framework (Gallivan, 2001) claims to allow researchers to assess the extent to which a technological innovation becomes assimilated into organisational working practices. However, it fails to consider that for ‘personal’ technologies such as a DCP, where each individual user has a multitude of features available to them, assimilation into working practices is likely to take place at a different rate for each individual, thus making it difficult to assess the extent of assimilation which has occurred at the macro or organisational level. Thus, another theory of innovation was discounted for this study.

One aspect of Gallivan’s 2001 Technology Assimilation Theory which proved interesting to this researcher is the inclusion of insights from organisational researcher Wanda Orlikowski, who has made important theoretical contributions to IS research in organisations, successfully challenging DeSanctis and Poole’s adaptive structurational model (1994) (Orlikowski, 2000), which is based on Giddens’ Theory of Structuration (Giddens, 1984). According to researchers Bryman and Bell, 2003, the Theory of Structuration was a deliberate attempt by Giddens to straddle the split between a view of organisations as pre-existing realities that social actors have no role in fashioning (Bryman and Bell, 2003) and those who suggest that “the availability of a pre-constituted world of phenomena cannot be taken for granted” making it necessary to “examine the processes by which the social world is constructed” (Walsh, 1972:19). DeSanctis and Poole’s adaptive structurational model posits that technology possesses inbuilt (or *embodied*) structures that users then appropriate for their

own use (DeSanctis and Poole, 1994). Individual human action is central in structural models, but Orlikowski challenged De Sanctis and Poole, arguing that it is the repeated social practice (action informed by meaning drawn from a particular group context (Cook and Brown, 1999) of interaction with a technology which produces structures, therefore technology structures are *emergent*, not embodied (Orlikowski, 2000). Orlowski's assertion that technology structures emerge in practice acknowledges human agency by placing the focus on the subjective interaction between the human being using the technology and the properties of it (Orlikowski, 2000). Put more simply, if researchers do not understand what happens during use of a technology, "the crucial point may be missed, in that it is how people interact with technology in their day-to-day activities - not the mere presence of the technology on the desktop - that influences performance outcomes and consequences" (Orlikowski, 2000: 425). The emergent perspective was categorised by Markus and Robey (1998) to indicate the relationship between organisational change and technology is a result of the interaction of people and events (Markus and Robey, 1988). This theoretical perspective gives rise to process theories, often used in qualitative research, which focus on the subjective and adaptive use of technology (Dulipovici and Vieru, 2015). Process theories explain how a sequence of events that unfold through time leads to some outcome, which can illustrate how one event leads to and affects the ensuing one (Mohr, 1982) and whilst process theories have lower levels of prediction, they "may still enable researchers to find patterns in empirical data that variance theorists might miss" (Markus and Robey, 1988:592).

Sociomateriality – a practice lens

A qualitative study explored Lotus Notes, an early collaborative technology, using the lens of technologies-in-practice to illustrate why and how people use technologies with different intended and unintended consequences as a result (Orlikowski, 2000). Although the concept of technologies-in-practice resonates with the researcher, in practice, it has proved difficult to

apply this theoretical model to empirical results. These difficulties have been acknowledged by other researchers, as, by reducing the use of technology to a set of norms governing when, why and how a technology is used in a specific social setting, the technology itself i.e. the object of inquiry when using a ‘practice lens’, disappears from view, becoming merely a ‘reflection’ of the enacted *social* practices (Leonardi, 2013). In addition, “more can be gained (now) by asking why different organisations experience *similar* outcomes with the same technology” (Leonardi and Barley, 2008: 161). Leonardi uses this argument to advise researchers to place more focus on the *material* properties of ‘technological artifacts’ (a “bundle of material and symbol properties packaged in some socially recognizable form, e.g., hardware, software” (Orlikowski, 2000: 408), since material features provide people with “the ability to do old things in new ways and to do things they could not do before” (Leonardi and Barley, 2008: 161). According to these researchers, the importance of both the social and the material is generally acknowledged by scholars of technology and organisations, despite a lack of agreement of the ontological and epistemological nature of the relationship between them (ibid). Leonardi also directs researchers to the ways in which specific features become ‘entangled’ in the social practices of people’s work (ref). This concept of *entanglement* similarly features in the theoretical formulation of Orlikowski and Scott’s perspective of sociomateriality (Orlikowski, 2007), (Orlikowski and Scott, 2008). In their 2007 article exploring technology at work, and then again in their 2008 article challenging the separation of technology, work, and organisation, Orlikowski and Scott point to both the social (human) and the material (technology) as being deeply entangled within the context of the workplace, thus the terms socio and materiality are deliberately conjoined. Moreover, each component and its intra-action with the others contribute to the agency of the system as a whole and the phenomena or outcomes that emerge from it. To illustrate, in a workplace setting using collaboration software, the users, technology, and organisational

culture are entangled and the things that happen (phenomena) emerge from the complex intra-actions between individuals using the software, the technology itself and the broader organisational culture and structures. Therefore, successful collaboration or even a misunderstanding or conflict, is not just caused by individuals, the technology, or the culture in isolation, but rather they emerge from the entanglements of all these elements. If one of these elements were not present or were substantially different, the outcomes would also be different. ‘Strong’ sociomateriality, as per Orlikowski and Scott’s perspective, is not without its critics; in his article, ‘Sociomateriality – taking the wrong turning?’ (Mutch, 2013) asserts that ‘illicit turns’ based on contradictory and even ‘preposterous’ notions were taken by Orlikowski and Scott (Scott and Orlikowski, 2013). Extending Mutch, 2013, Leonardi, 2013, asserts that Orlikowski and Scott’s stance on sociomateriality does not provide the researcher with assistance in explaining why certain actions occur *when* they do because it focuses so much on *how* certain actions are performed in practice, without which “no analyst could explain why practices arise, endure or change” (Leonardi, 2013: 67). The philosophical underpinnings of sociomaterial practices are also differently explained by other academics, for example “we are always already entwined with others and things in specific sociomaterial practice worlds, such as teaching, nursing, managing, and so on (Dreyfus, 1995; Sandberg and Dall’Alba, 2009; Schatzki, 2005; Taylor, 1993a, cited in Sandberg and Tsoukas, 2011). Goldkuhl, 2012, claims the view of sociomaterial practices in information systems as expressed by both Orlikowski, 2000; 2008 and Leonardi & Barley, 2008, is “interpretivism flavoured with a speck of referential pragmatism” (Goldkuhl, 2012: 142). Referential pragmatism is a claim to let actors, knowledge about actions, action-objects, activities, and practices become the primary studied objects (Blumer, 1969). Further consideration of the nuanced and ongoing theoretical debate in the sociomateriality research stream is beyond the scope of this research but it is relevant to have critically examined differing perspectives and

potential limitations, because a focus on sociomaterial practices is used again in Orlikowski and Scott's 2021 work, which considers the use of digital technologies by organisations responding to the COVID-19 pandemic and offers conceptual insights to assist in understanding emerging practices, organisational shifts, and the broader processes of transformation (Orlikowski and Scott, 2021). This theoretical lens is a good match for the research context, it resonates with the researcher and therefore liminal innovation was selected for the research study.

Definition and levels of Organisational Culture

The first challenge for researchers considering the relationship between the adoption of technology and culture is to understand what culture is, given multiple divergent definitions and measures and the levels at which culture might apply. In their literature review of empirical studies where IT and culture were significant, Leidner and Kayworth (2006) synthesise contributions across a number of themes including definitions. They advise Sackmann (1992) discusses how culture has been framed as ideologies, coherent sets of beliefs, basic assumptions, shared sets of core values, important understandings, and the collective will, whilst others suggest that culture includes more explicit, observable cultural artifacts such as norms and practices (DeLong and Fahey 2000; Hofstede 1998), symbols (Burchell et al. 1980), as well as language, ideology, rituals, myths, and ceremony (Pettigrew 1979) (Leidner and Kayworth, 2006: 359). Research at the national (culture of individual countries) and organisational levels (culture of individual organisations) are two distinct branches of research, yet culture at all levels exerts “subtle but powerful influences on people and organisations and.... information technologies are often closely intertwined with culture” (Leidner and Kayworth, 2006: 358). Research at the national or cross-cultural level has considered the influence of national culture on the development and use of ICTs, questioning the applicability of Western-based theories to non-Western based cultures, whilst researchers

who have focused on culture at the organisational level claim that cultural interpretations influence those using IT (ibid). Hofstede's conceptualisation of national cultures is the most widely cited research on national culture yet it is also heavily criticised, most notably for an assumption that the domestic population of a country is homogenous (Jones, 2007). In the organisational culture research stream, many more taxonomies of values exist than in the national research stream, but the overall purpose of taxonomies in both streams is to enable differentiation between groups along the lines of dominant values that will guide behaviour. For example, in organisational taxonomies, a value dimension of *bureaucracy* emphasises organisation, hierarchy, systems, control, procedures, a value dimension of *hierarchical* emphasises internal stability and control and a value dimension of *local values* emphasises strong identification with the organisation as an extension of personal life (Leidner and Kayworth, 2006). There is a tight link between cultural values and the actions and behaviours of groups (Posner and Munson, 1979); values can be seen as social norms that define the 'rules' and context that set expectations and boundaries for group members (O'Reilly and Chatman, 1996). Thus, a focus on organisational values is useful when explaining how groups use and apply IT in context (Leidner and Kayworth, 2006),

Table 1. A Taxonomy of Cultural Values		
Value Dimension	Description of Value	Level
Uncertainty Avoidance: Hofstede 1980, 1983	The degree to which members of a society feel comfortable with uncertainty and ambiguity. Members in high uncertainty avoidance countries prefer less ambiguity than do those in low uncertainty avoidance countries.	National
Power Distance: Hofstede 1980, 1983	The extent to which members of a society accept that power in institutions and organizations is distributed equally; status differences among workers may either be very pronounced (high power distance) in contrast to workers in low distance countries that follow a more egalitarian philosophy when making decisions (Tan et al. 1995).	National
Masculinity–Femininity: Hofstede 1980, 1983	High preference for achievement, assertiveness and material success (high masculinity) vs. low preference (femininity).	National
Individualism vs. Collectivism: Hofstede 1980, 1983	The preference for a social framework where individuals take care of themselves (individualism) as opposed to collectivism where individuals expect group to take care of them in exchange for their loyalty.	National
Time-orientation: Hofstede and Bond 1988	A measure of people's consideration of the future; being comfortable with sacrificing now for long term benefit (long-term orientation) or more focused on immediate results (short-term orientation).	National
Monochronism vs. Polychronism: Hall 1983	Attitudes toward use of time in performing tasks either focusing on issues one at a time (monochronic) or performance of activities in parallel (polychronic).	National
Context: Hall 1976	High context cultures prefer a communication style in which individuals prefer to draw inferences from non-explicit or implicit information. Individuals in low context cultures prefer information to be stated directly and exhibit a preference for quantifiable detail.	National
Locus of Control: Smith, Trompenaars, and Dugan 1995	The degree to which an individual perceives that his or her life is controlled by luck or powerful others (external locus) as opposed to being controlled individually or internally (internal locus).	National
Solidarity: Goffee and Jones 2000	The degree to which an organization's members pursue shared objectives quickly and effectively regardless of personal ties.	Organizational
Mission: Denison and Mishra 1995	Sense of purpose.	Organizational
Involvement: Denison and Mishra 1995	Sense of ownership and responsibility among a firm's members.	Organizational
Sociability: Goffee and Jones 2000	The tendency toward sincere friendliness among members of a community.	Organizational
	Concern for people issues.	Organizational
People-Oriented: Cooke and Lafferty 2003	Fairness, collaboration, enthusiasm for job, trust	Organizational
Concern for People: Blake and Mouton 1964	Values emphasized collaboration and support	Organizational
Constructive: Cooke and Lafferty 1987	The degree to which workers are fair and helpful to one another.	Organizational
Supportiveness: Wallach 1983	Concern for people.	Organizational
Employee Orientation: Hofstede 1991	Emphasis on developing people resources.	Subunit
Group: Quinn 1988		

Table 1. A Taxonomy of Cultural Values (continued)		
Value Dimension	Description of Value	Level
Task-Orientation: Cooke and Lafferty 2003	Concern for efficiency.	Organizational
Concern for Production: Blake and Mouton 1964	Compliance, risk-taking, precision, competition.	Organizational
Innovation: Wallach 1983	Values emphasizing challenge and risk-taking.	Organizational
Results Orientation: Hofstede 1991	Values emphasizing achievement of goals.	Organizational
Job Orientation: Hofstede 1991	Concern for getting the job done.	Organizational
Customer Interface: Hofstede 1998	Emphasis on results in a loosely controlled environment, bound by fixed rules.	Subunit
Bureaucratic: Jones 1983	Emphasis on results in a loosely controlled environment, bound by fixed rules.	Subunit
Rational: Quinn 1988	Emphasis on production and efficiency.	Subunit
Passivity: Cooke and Lafferty 1987	Values emphasizing approval, dependency, and avoidance	Organizational
Aggression: Cooke and Lafferty 1987	Values emphasizing power, competition, and perfectionism	Organizational
Consistency: Denison and Mishra 1995	Tendency toward individual conformity as opposed to voluntary participation.	Organizational
Adaptability: Denison and Mishra 1995	The capacity for internal change in response to external conditions.	Organizational
Bureaucracy: Wallach 1983	Values emphasizing organization, hierarchy, systems, control, procedures.	Organizational
Hierarchy: Ouchi 1981; Wilkins and Ouchi 1983	Values emphasizing control over individuals through authority relationships.	Organizational
Process: Hofstede 1991	Values emphasizing means by which goals are achieved.	Organizational
Normative Values: Hofstede 1991	Emphasis on correctly following organizational procedure.	Organizational
Administrative: Hofstede 1998	Emphasis on processes, routine, work standardization, and correctly following procedure.	Subunit
Production: Jones 1983	Emphasis on processes, routine, work standardization, and correctly following procedure.	Subunit
Hierarchical: Quinn 1988	Emphasis on internal stability and control.	Subunit
Markets: Ouchi 1981; Wilkins and Ouchi 1983	Values emphasizing control over workers through price mechanisms.	Organizational
Clans: Ouchi 1981; Wilkins and Ouchi 1983	Values emphasizing control over workers through shared beliefs.	Organizational
Parochial Values: Hofstede 1991	Identification with the organization.	Organizational
Local Values: Gouldner 1957	Strong identification with the organization as an extension of personal life.	Subculture
Pragmatism: Hofstede 1991	Values emphasizing customer needs over the needs of the organization.	Organizational
Professional: Hofstede 1998, Jones 1983	Emphasis on meeting customer needs, performance of nonroutine tasks, specialization, tight control, and less concern for people.	Subunit
Cosmopolitan Values: Gouldner 1957	Values identifying most strongly with associations external to the organization.	Subunit
Professional: Hofstede 1991	Values identifying most closely with work profession.	Subunit
Developmental: Quinn 1988	Concern for growth and acquisition of resources.	Subunit

Figure 38 - Taxonomy of Cultural Values, Leidner and Kayworth (2006)

Appendix 10 - Sample Interview Transcripts

Excerpts from the original transcripts, one for each organisation in each of the three data collection periods, have been anonymised and participants are referred to by number only.

Interview Date: 15/05/2020 Participant 4: Case A

Q: Researcher

A: Participant

A: More recently we've been using them for Q&A for the business recovery group. It's been fantastic, we did one yesterday, 220 people came online, and we could answer all the questions and manage it really well. You'd never get 220 people on campus at the same time, people were calling in and dropping out, they come for the bit that they can come for. It works so well, they've got most of the information, they probably wouldn't have come and not wanted to walk in later, the way you can drop in an out works so well.

Q: Was that Teams Live or a Teams Meeting?

A: I think it was Teams Live. [CEO] said make sure we use Teams Live. It worked really well.

Q: Teams Live can have up to 10,000 people.

A: Amazing. Apologies, it's my dog barking, but my son's put him in the garden.

Q: You get this sort of thing, I have a daughter printing things out, my cat comes in and walks on the laptop. Those things we'll remember. Anyway, going back to you - You're saying you think the meetings are a bit more efficient. A thing that's come out is the back-to-back meeting thing. This idea seems to be coming out quite a lot in the interviews, people are having back-to-back meetings.

A: Completely, that bit hasn't got better. Yes, it's more efficient, but you fit more in. Some days I don't even get any fresh air until, you know you start in the morning, sit at your table and that's it until 5:30. Obviously I have lunch, make the kids lunch, but that bit is hard. If we're going to keep going like this we're going to need to solve this - need some etiquette about it - build in time before and after.

At the minute, I'm not too worried, there's just additional work. Moving forward as a University we need to protect people's well-being. It could be an etiquette and key principles, and to help individuals manage their diaries better.

Q: I agree. You said last time, week 5, can you believe that when I spoke to you. People were flagging and missing each other. How is that going now?

A: I would say, [interruption - quick email activity]. [name] just sent me a chat saying can you find this out urgently. Normally you wouldn't see it would you, she knows I'm just sitting here. I've just sent that through.

Q: We spoke before about people flagging. You were using teams for social, checking up on well-being. People were missing seeing other people in the office. How is that working out now?

A: I think people have gone like that [roller-coaster], some people are having a great week, some people are hacked off, but the next week there's no this is fine. It hit people at different times. Sometimes we were all wow this is amazing, other weeks it's more stressful, and you think this is full on and all I've done is sat here for a week. It depends on what people are going through in their roles at that time. Overall, though, my teams have been fantastic. When we do go back on to campus, none of us will be 5 days in the office. We want to do a mix, and obviously we're going to have to do that because of covid and rota-ing, but we all want to do that, and we'll put that in place.

Q: Will you just do that as the manager, or will you look to HR for principles?

A: There is going to be a project, not announced yet, a paper going to VC. We're going to start a change of culture project, flexible working, working from home, there'll be something coming in the press, but the VC is adamant we shouldn't go back to the way we were. He thinks it's been good, the flexibility, even actions we've had in equality it's helped us achieve those. There's so much in it for people, caring, all sorts. There will be a wider project. It was always there, but some managers made it harder for some staff than others.

Q: Yes, definitely.

A: That's what we need to get rid of. It was always allowed, but now there will be key principles and it will be endorsed. I want us to do this, so think there will be big changes for the whole university. All the key people who need to lead by example with this are now in a really positive place about it.

Q: That's brilliant.

A: Yes, massive. It would never have happened without covid.

Q: I know, that was one of the things I was speaking about, as a researcher, I was asking about well we've had the tech for the last 15 years, why have we not done that before? I'll move on if I can. Let's see. You spoke before about grades and roles about coming into whether or not they can work from home. Have we gone past that?

A: As time has evolved, for example in my own SBU, where we've had staff who weren't at full capacity, we've ended up using them in a different way for some of their time. That's one way that we've dealt with that. I think it's about how we manage that moving forwards. We've been talking about, should we go to this new model and very mixed economy. It might be that you change appraisals, so it's more on output and you monitor output so that it doesn't matter when they work, as long as they are available for meetings. That's real flexibility, as long as you deliver on your task, who cares if you did it at 12 at night or in the morning. We're saying line managers need a lot more training and help and development if we're going to that model. We have appraisals and objectives, but I don't know about accountability. It's different across SBU's. Not in a harsh way, but we should have accountability for our own objectives in our own jobs.

A: This was grab what you can, as we went into lock down. If we're going to do this moving forward, we'd be saying to managers, we need to work out the dominant workplace, campus or home. If someone is 3 days at home, 2 days in the office, their kit remains at home, but they bring the laptop into the office and hot desk. Likewise, the other way round. Quite frankly, being honest, we can't afford to give everyone two sets of everything. So, we're trying to think of it in realistic ways. How we can do this.

Q: And headphones? People aren't thinking about going back into the office. Open plan, eight of us and four of us in the same meeting, we can't all be meeting with colleagues who are still at home, we can't use laptops at our own desks, we'll get feedback. We'll need headphones with a mic. People don't necessarily understand the tech in the meeting rooms. They aren't thinking through how we are going to work collectively. We can't all have individual meeting rooms. We're going back then, they've got to be kitted up, and maybe even if you have headphones, and people in team meetings, maybe for some areas you need some privacy, sound defenders.

A: We would have to do this. Last Friday I went in to have a walk around with estates to put up signage. We've taken out some desks. They can have teams on one screen and the rest of them sitting around the table, but we're not going to have that in every area. [Finance Director] will need to understand in order to make this work there will need to be a cost output if we're going to do it successfully. Take for example, there's a pause on recruitment of staff until we know what our student numbers are like come October, sensible in this climate. Things we're talking about, by doing something like selling a building and moving to hot-desking, we're trying to never get to the point where we have to make any redundancies, so all of these things are to protect our staff but sometimes, it gets seen out of context. Actually, that's the whole thing, why we're doing it. I don't know if you've been reading the press, 13 universities likely to go bust, we're in such a good position compared to them.

Q: Where would I find that?

A: In the press, reading it on my phone, just the Evening Standard, but there's so much info if you google it. So many in financial trouble, we're literally not in that position at all. That's because [name] is such a good finance director, sometimes it's hard when don't get the kit, he's protected us and we're in a good position.

A: I think, honestly, there's been some real positives, and I think it's going to really work for our staff community in the long run. Even the comms coming out, [name] will say, we fell across doing the comms in a certain way has gone down well with the staff, we're going to keep doing it, it's allowed us to do things in a new way.

End of sample

Interview date: 21/07/2020 - Participant 23: Case B

Q: Researcher

A: Participant

A: It's an interesting parallel with my job working across [] print and digital. We know that our average age for print is 50-60 and on digital it is 30-40, but we have people on both who are in different age groups. The reach of the website is increasing and increasing but there is a finite number of people in the different age groups, so we know we are speaking across the age groups for the two sister brands.

Talking about digital natives, I am strictly one as I'm 35, but am I as much of a digital native as my colleague who is 25? Therefore, who is better to write the copy that goes with a social media post that goes on Instagram? You could argue that my 25-year-old colleague is because she is immersed in that world more than I am, there will be platforms that she uses that I don't, like TikTok. We have an interesting scenario where we try to speak to our print users who might well see that our social media channels are attached to that when we are thinking in terms of voice, we have to consider people who aren't digital natives, we still want them to click through.

Q: It is not a binary definition, there are grades. I am looking at it in the context of an organisation and how do people respond at work, what does that mean for the workplace. Let's have a look at how well people do and respond to it and whether in practice that confirms or challenges any of the theories that might exist. What do you use Teams for?

A: I am on it every day. It is generally meetings. It is interesting to wonder if some of these meetings would have been meetings if we were in the office, some would have been over the desk chats, catch ups, some would have been a quick 5 min chat. It is used for meetings we would have had anyway like strategy presentations. For me as a line manager it is also a keeping in touch tool. I usually just jump on a call as that is the equivalent of me sitting next to them in the office and asking how they are doing. I have brought someone on-board during this period and I used it in the beginning as a morning check in to chat and see how she was doing. I think I may have used Zoom at that point actually and then we moved to Teams. I am using it for almost every way to communicate with my colleagues. We are probably meeting more than when we were in the office. It is efficient in some respects, not quite as good as being in the office with people, it somehow seems better than sending so many emails. There were so many emails when we first started, I have switched to being happy to go on a quick call.

Q: Do you feel you have seen a reduction in emails?

A: Yes. I remember there being a point early on where it was hard to keep up with emails. It can be like that anyway sometimes, but it felt like so much. It was helpful once we had all moved to Teams because it was unified. It was really easy for anyone to set up a meeting regardless of their digital capabilities. Before it was easy to send emails, and it added to the work pile. I think we are using meetings slightly differently at the moment across teams I am working with, the meetings will be used to work through things together.

Q: How well do you think it supports your current working practices?

A: When it comes to the work that I need to get done it is not a barrier. I get a lot of energy from my colleagues and people in general, so I miss that human interaction. I would rather be sitting in a room with them. I think it has supported most of what I need to do, with the exception of having the day-to-day relationship with colleagues which allows you to work better. I don't feel that the work output is too badly affected, and I think Teams has supported it quite well.

Q: Do you foresee longer term changes to working practices as a result of this kind of technology?

A: I think there will be a blanket rule across our company about working from home. Let's say in a year's time people now understand that you can work from home if you have the tools to do it properly, we have this common way of working now, using the same platform. It has accelerated the understand that is a possibility. In the future if you are waiting for a washing machine to be delivered it doesn't mean you have to take the day off or fail to attend a meeting because you could just as easily attend if needed. It will be interesting to see how that will be organised if some people are in the office and some people are at home.

Q: Headset and Teams enabled meeting rooms. At the University we have got it set up where you invite the room to the meeting then the people who are at home can be on the screen.

A: That is interesting. My Dad is a consultant who said, there have been projects that he may have written off geographically before that he could be involved in. We have all realised that we can get things done and things have not come to a halt.

Q: Have you used any of the file sharing capabilities in Teams?

A: I have, but I have not set it up. I use chat all the time. I have set up a group for my little marketing team so that we can ask quick questions. I have shared files within one of those threads but I haven't used the file sharing area myself. Someone else that I work with has set that up and I have worked on the back of that.

Q: When you share files in the chat it is in the OneDrive of the person who has shared it. So, if you shared a file with me that way, although I have a copy it is still in your OneDrive.

A: We are not using it in that way at all. When I am sharing things in chat it usually is because I am signing off some branding and I can quickly comment. We have been using it quick fire rather than me looking at it across the desk. We haven't been using it as our server. I love saving things properly in a file because I need to be able to find things, I am strict with myself. My direct reports have access to those areas. Due to the VPN thing there have been times when I have saved to my desktop so I have that folder which is an interim thing which should not really be there. We can definitely get more efficient, one way we have is using Google better. I use Google drive where I have a document that I want feedback into, or building presentations together, that used shared Google files. In the past someone would have manually collated it. There is a whole world that we have not explored yet which will make us more efficient.

Q: It is like using Google Sheets. I have not used that myself but have heard that is quite slick, it may be slicker than Teams. It is interesting to see now that [] has given you Teams, how it will develop, whether it will develop, whether it will remain as a meeting and chat tool and whether you will use other cloud-based tools for file collaboration.

A: I have been aware of my behaviour of going to set a meeting up in Teams then going back to Outlook to do it and setting it up as a Teams meeting. I use it because I am reliant on the popups, but I use Teams as the mode in which I do it.

Q: That is a good way to set up meetings, particularly with people you are not in a team with. All our Teams meetings that we set up are done in Outlook.

A: It is easy to go in via Teams.

Q: If you use the calendar in Teams, you will find it is the Outlook calendar. If you have a meeting with an external person, it is best to use Outlook. When it comes to using Teams who influences you?

A: Other than our company asking us to use it rather than Zoom, I am not sure I am influenced by anyone other than the fact that we are all using it now. It is how we are communicating because we are not together in the office.

Q: I got the chance to meet []. She is keen because she has used Teams before, would she influence you?

A: She might influence me to use the sharing tools better. She is younger than me and has used it before. I would not say she has done, but there is potential to.

Q: Who would you influence?

A: Definitely, I think I would influence my managing director on the print side.

Have you spoken to []? She would be fascinating. She is the person who surprises herself the most. When we first started working from home you could see how delighted she was to manage it. She certainly felt that she was a certain age and could not manage the digital side of things from home and would not be able to work other than in the office. She has been pleasantly surprised. She feels like it has given her skills she didn't think she would ever have.

Q: I interviewed [] he said he was a dinosaur and the least technologically capable person. When I asked him about the Teams experience, he felt it was magical. What do you think?

A: I agree. [] is the best example of someone who believed she was a dinosaur, she isn't actually. She felt it was going to hold her back and she has proven something to herself. Everyone is on an even playing field, we can all set up these video calls. It will challenge the way people think in our organisation. Was working from home just having a day off? There are all sorts of reasons why you might need to work from home, but you can work from home. Even if you had been inclined before to think it was a time to start later or finish earlier, I don't think people would do that now, it is not novel now, it is a day in the office at home.

Q: Have you ever worked from home before?

A: Not more than the odd day. It was something I was considering, and I was skirting about asking. I work with two teams. The [] team is slightly younger, and the leadership is a bit younger and probably have children and more used to wanting to, have now been given this lifeline of working from home so much easier. I thought I could ask on that side. I was slightly tentative with the other team because of the perception of not really being productive at home.

Q: Do you think that was present within the organisational culture?

A: Yes. This situation will have completely changed that thinking. I don't really like working from home, I like going to the office and being around people. There are days when I need to have no meetings or interruptions and just get on with a piece of work. I feel that would be easier to do at home now.

Q: With that in mind, what measures would need to be in place to make sure people are working?

A: For me it is about the output, it is not about the working hours whether they choose to leave at five or have a longer lunch. I know how much work I have given someone and what they need to do. I am someone in normal times that will

work well into the evening, but I would like to be able to leave my desk at 5.30pm and come back later for a few hours. People do need to be around during the day as things come up all the time, but flexibility is better and trust. I would not be worried about my team doing their work, it might be different if you were worried about that. That is a different situation. If you are managing several teams there would have to be ideas about everyone being in for the meeting of the week, there may be other days where people were expected to be in for specific reasons.

Q: Previously there was a sort of scepticism about working at home. Would you say you would not feel trusted to work at home?

A: I would say there was not one version of it but there were elements of cynicism of people working at home and whether it could be achieved, but that has now been proved.

Q: You said you had posted some GIFs, have you created any fun stuff using Teams, any wellbeing things?

A: When we first got Teams I set up a daily tea break with my team, we are used to having our tea break at 3pm and it is a bit of a joke that we are the tea crew and like to chat at that moment. That could be where I was an early influencer in getting people to use it in that way.

Q: Has that finished now or are you still doing it?

A: It is still in the diary as a placeholder, if we took it out it would mean it had gone, but I won't be there every day, but others can. Sometimes when you are run ragged is the best time to catch up with people. If I see that someone has started the meeting, I might think oh I will join.

Q: That is the same for us. We met each day at 11am but then it was just a Friday, but it is nice to do it.

A: I have put one in for today as I thought it was a good time to catch up.

Q: [Org name] have done a lot of fun stuff, have you joined in with any of that?

A: Yes. Probably more of the practical psychology stuff.

Q: The wellbeing stuff?

A: Yes. I attended one about dreaming more during lockdown, it was so easy to join it, why not. The desk posture set up, working from home practices and being clear about breaks. A really useful one was refresher courses on business models.

Q: There is a theory about the diffusion of innovation, you have probably heard the term 'early adopters' which is where that comes from. In that theory it says that for every innovation there are always consequences and they may be anticipated or unanticipated, they may be positive or negative. I wonder whether you can identify any good and bad things that are the consequences of having adopted Teams?

A: The common understanding across everyone regardless of function, age, demographic. It is a relatively intuitive programme. We had Skype before which didn't quite do the same thing. This has felt easier. In this situation it has given us an easy way to socialise as well as work, even to the point where I have had Teams meetings on things that weren't my work, so like outside of work there is a choir I am doing some branding for. We have used Teams as it is easy to get in touch with someone where I would not feel comfortable facetimeing.

Q: That is interesting. Could you have anticipated that it would give everyone a common language?

A: No. It is so hard to tell this year. Would it have been the same reception if we had not been in lockdown? No, because we would not have been thrown into using it. Being thrown into it has meant that we have all come a long way, some further than others, whose lives will be better for it. That goes back to your original point about digital natives, for those who would be happy facetimeing might see it differently. I have had some birthday parties with friends with a theme or dress up had a chat and it has been fun.

Q: What about some negative consequences?

A: My eyesight. I keep thinking I need to get my eyes tested because I am staring at the screen so much more. Posture and back health because we are not moving around so much. We don't have proper chairs at home either.

Q: That might be a consequence of lockdown rather than Teams itself. If you think back before you had the technology and now that you do have it is there anything you could isolate and say life was better before because ...

A: I look at my diary and it is so easy for us to have meetings that there is a lot in there. When I want to do strategy work, I need a chunk of time without a meeting in it. It is quite tricky to know if that is Teams or lockdown, maybe a bit of both. It is hard to get a day where there is not a concentration of meetings because the benefit of it is it is easy to use for a quick catch up, that easy accessibility means it is busier.

Q: It is difficult to say. You will have to book a few meetings with yourself.

A: I have done. On the technology front, I seem to have issues when there is more than one person on a call. My MAC has been deprioritised, my husband and I are vying for the optimal bandwidth, but I have felt frustrated with the technology. I know some people have been irritable if someone's mic wasn't working, but we now realise that one day that will be us.

Q: Do you have it installed as an application?

A: Yes. Do I sound like I am down a rabbit hole?

Q: Not at all.

A: Some people have said that.

Q: It is variable I think, it can freeze. Do you think Zoom is better, more stable?

A: It has been a while since I have used Zoom, I don't know. I can't think there is a difference. Teams has caught up a bit with being able to see more than four people, if they could adapt that to see everyone it would be good.

Q: They are bringing in 49 people like Zoom. They are copying each other. Does everyone in your group use Teams?

A: Yes.

Q: Do you contact the same group of colleagues that you did before, or have you reached out to anyone different?

A: I don't know if I can attribute it to Teams, but I have started a new role and I have been getting in touch with different teams and different people. I think there is something about inviting people into your home and that you can do that so easily maybe is an advantage, you have their attention.

Q: Would you say that the same people contact you, or has anyone new reached out to you?

A: I think they probably have but it is hard to say whether that is due to Teams or my new function. There are people who I am more used to having regular contact with who haven't particularly embraced it. I can tell by their behaviour that they don't do a catch-up coffee, etc. It may be because I am the manager and they want me to do it. It may be that they hold back in a way that they wouldn't if we were in the office. I have noticed someone who has a lot to give but not giving it at the moment, not that she isn't working, she is across function and not choosing to use Teams to join in. She is the youngest person too.

Q: I need to interview more young people, you could ask her if I can interview her to help her.

A: It is hard to tell if it is Teams or whether she isn't confident being the initiator yet.

Q: That would come out in an interview.

A: It is [person name] who works across [dept names]. She has done a lot of great work on our social channels and is invaluable, it is interesting that she has not been the initiator of things as I would have thought she would.

Q: Maybe she doesn't like Teams. Those are great people for me to interview as well. You said that you didn't particularly want to go on using it but felt you would have to. Those are good cases for me. For most people it is overwhelmingly positive, but I want the less positive experiences too.

A: There may be an insecurity about being on camera although she is gorgeous, whereas I am not that bothered if I look bad.

Q: It would be good to reach out to her as a digital native. The people who have volunteered have been the middle managers, so I am a bit short on the younger people.

A: What age group are you looking for?

A: For a digital native the literature suggests that is anyone up to 40. I am trying to get a good spread across ages, I don't have anyone at [org name] who is below 25.

A: You should speak to [person name] in the [dept name] team, he is 25, he would be good.

Q: This is all HR approved research. If I send you the email that went out from [person name], you could send it to them and say I am short of younger people and you thought of them, would it be ok if I contact them.

A: I am happy to influence that a bit.

End of sample....

Interview Date: 24/08/21 Participant 8: Case A

Q: Researcher

A: Participant

Q: So, what are you using teams to do now please? In other words, what of your daily working practices do you carry out? Wholly or partially using teams?

A: OK, so some of the teams have been coming to the office for a while. I am one of them. I've been coming in since February and this week we've actually formally introduced a schedule of hybrid working. I've met with everybody; I know what their preferences are. We know who's in, what days, they've got a ring-fenced day. We know what we're doing.

A: And what I have found is that some of the practices during the time that I've been coming in, some people have been in the office, majority at home. I've been continuing, you know what I had been doing. So say, for instance, where I might have gone over and spoken to somebody, I will chat with them via teams because I, have a fear about going back into lockdown in a way and, breaking the new habits. So I've continued during that.

A: So primarily I would say, uh, keeping in contact using the chat function to keep in contact with the people who are at home and ensuring that collectively everybody is involved and gets the same message. So I've got principles I work too, so if people need a reference point and particularly got couple of people that part time, I will email. But if I'm asking every opinion on something I don't know, everybody is working or use teams so it catches the people that are around me and the people there at home.

A: So, we all greet each other every morning. You know that's a social hello, first thing, whether people are at home or in the office. So it's ensuring connectivity of the team if you like and collaborative working.

Q: That's nice, when I interviewed you before you, you said that you'd started doing that, but then that it dropped off a bit, but you still said goodbye to each other at the end of the day.

A: I felt it was the other around. Actually, that what happened originally is everybody said hello and everybody said are you OK then that dropped off as we've got used to the situation. And eventually we just stopped saying goodbye. So now it's really everyone says hello in the morning.

A: You can see that as people feeling that they've got to check in. I don't know but everybody says hello in the morning.

Q: Do you think it's that?

A: Do I think it's people checking in?

Q: Yes.

A: I feel people might be conscious of the fact they might be seen as not being available for work if they don't, and people only say hello and they don't say you what did you watch on television last night. It's literally like a hello.

I think the thing was as we said before, it's the same with all these things. It takes time and actually you know everyone is busy and it always doesn't feel like a good use of time. But we all had no option so that's been a positive thing. I mean, one of your questions was about would I have used teams if it hadn't been for the pandemic and what went through my mind was I can't say I would never have used it, but obviously we haven't got that yet. We'd barely got any information about Teams at the time, and I think as it got rolled out we would have used it because we would have seen the benefits for the team. But the fact was we all got propelled into it. We had to get on with it and actually, you know we're the other side of it now and we're using it and it's been a definite benefit for the team.

Q: What would be the main reason you think that people generally or people in your team might resist something new? You know what are the reasons people resist in your opinion?

A: I, I mean, I think there's there are variety of reasons I would say probably the most common would be time. Yeah, people feel they haven't got the time to invest. It's like anything, isn't it when. you don't know what you're doing and the first few times you do it you just can't do it quickly. It's all unwieldy where are the instructions again and blah blah, and I think everybody is under the cosh timewise, so people would need to feel really invested, really see the benefits, just feel it's worth spending the time to be quite honest and when it's something you have to do, you have to but there's a bit of a moment really.
T

There's probably one person in my team in particular, I would say fear of the unknown and not feeling confident about what they're doing and not knowing what they're doing. And it's been interesting last week because we had an away morning as I said, and we were reflecting, starting with looking back on the past year and what were the challenges? What have been the benefits? And you know how has that helped us as a team? And this your person, said, well, one of the good things, and the fact I've been working at home is I just had to get on with it because there haven't been people around me to help, and

therefore she feels more confident about tackling things because she knows she can do it. You know, she's come out the other side intact.

A: One comment I would make about that, you know there's sort of similar argument being made about with the 18- to 30-year-olds with vaccines. They don't like the fact they feel they're being forced to have it. I mean, you could argue in that case you know their benefit is obviously hopefully you stay well and don't get COVID, but I would say that in a situation where not everybody has got each other's mobile numbers, emails aren't a conversation, they are a statement really, and as a mode of communicating, a common mode of communicating which everybody else around you is using, you probably buy into it more by the fact that you have to do it and also you know you're then connecting with people that are part of your support network, and I think people in the team were very supportive of each other.

There's a varying age group and IT proficiency within the group. Some people are quite confident and ready to try anything new, really excited by the potential, other people have to be dragged kicking and screaming to it, but the ones excited by the potential were support to the ones that were being dragged kicking and screaming.

Can I just add a quick comment about how else we use Teams. I mean, what it came down to in the end was for me, Teams effectively replaces the phone call. It's quick. It's a quick gathering of information, touching base, the social side, the offline conversation perhaps as well. The email is for me then a reference point really and I think one of the things that I found a bit difficult with all the use of the channels is information being posted, so I saw a message from somebody saying, could we please use emails for really important information? Because actually if you go and leave and you come back it would be much better to go through emails and pick up the important information rather than having to sort of wade through all the messages that are being posted because you know it's a lot to get through when there is a lot of chit chat that's going on as well. If it's important then communicate via email and I'm in that in that league really.

Q: Before you said you'd rather have an email because you felt there were too many things coming through on teams and the email, would be more appropriate. So you said that email is for important and things for general circulation and you were going to look at sort of some protocols in your team of when to use emails and when to use teams chat. Do you think you've done that?

A: Yes, I have well, I've spoken to everybody, and they feel the same as I do that if it's something that that everybody needs to know and it's something where we're establishing a process or something, we do it via email. I emailed information about hybrid working out today and I know we've got two people on leave, so I'll send it as an email so they will definitely pick that up. So where we're establishing some change of process. I wouldn't communicate that via teams. I would communicate that via email, but another thing I've thought of, another way in which I'm using teams which I would not have done in the past, contacting the wider network of people. So I messaged one of the academics last week because I wanted to ask a question and she came back to me immediately. Now I know if I'd emailed that to her I would not get an answer for about 3 days and that was brilliant to get be able that because I was working late trying to get something done. It was brilliant and there was something else that she came back straight away again and because it's very short, quick, you know you can communicate more efficiently like that so I think it's is knowing what to use for what for yourself and for other people, really.

Q: Yeah, that's good. You've added chat to your preferred ways of working now and you hadn't, you hadn't got that in there this time last year.

A: Yep. No, I think you know when we met before we were still at that stage where we'd been absolutely bombarded with information. You know, there was stuff coming through, there was stuff coming through, through teams which you know I was getting to grips with, it's just like this absolute onslaught of information.

Q: So who would you say is responsible for initiating changes to your working practices, who's keen in the team to try out new things.

A: I mean I'll be honest with you, with the team we've got now there's probably one person isn't, and I think other people would be, but I think again, it's offset against sort of time, really, you know? I mean, I think there are a number of people that are definitely up for change. I mean, one of the things we discussed at our away morning was, what can we actually control to do things better? And you know, I felt so sad. We came up with about four things we actually can control. There is so little that we actually have got control over, you know? And we've ended up with these four things, honestly is it going to make that much difference.

Q: So you mentioned you'll continue to use teams when you're able to return to the office? So how do you see that working in practice, you've got some at home and some in, will you still have meetings, online meetings and how do you see it working? Have you thought about it?

A: Yeah, well, we've already been having hybrid meetings, so yeah, so those of us who have been in the office. I mean I came back in February, so I'd come in regularly. Not every day in February. And there's been a few of us that much prefer being in the office, so at least since February we've been having a weekly team meeting. We've been here pretty much on our own, so we can go where we want when we want. So because we've been issued laptops as well, now we've been going up to

[meeting room] and the guys in the team worked out how to connect through teams and project on the big screen and so it's doing that.

Q: Do you all take your laptops that those of you that are in the office? Do you go into that room but all take your laptops? So

A: No, just one, just one takes a laptop usually you know, say me or another colleague and then we connect. We connect to the meeting and then we've been sitting socially distanced around the table and then everybody else obviously is up on the screen. And then for our team meeting we have a protocol where I ask everybody to put their camera when they speak because I find admin don't like to put their cameras on, but I've said, we feel more connected if we if we could see each other and then they see us obviously. So we've been doing that for a while.

Q: Do you let them use the chat facility in the meeting?

A: No need to chat but sometimes they raise their hand if they want to make a comment and so on. The one that's more challenging but I'm starting to get clear in my mind about how to manage that that based on experience, is the desk meetings.

And so, everybody's got laptops now. I mean, for instance, I've come away from my desk now to have this meeting with you because I think I, I think it's disruptive to the people around me in the office.. My view is the meetings in the office should only be, because we're in a big open plan office. but you, but meetings in the office should only be for the equivalent of if you had a phone call.

Because I think I think it's too disruptive and so for instance, somebody had a [meeting] at his desk which went on for about 3 hours and I was a little bit annoyed. He's a lovely guy and it wasn't his fault, and I had said last week, its a long meeting. It shouldn't be done at the desk.

So we've got some desks in our area, so it's all in hand, but I just think it's time to get everyone back. I think it sends a message apart from anything else. My headphones aren't noise cancelling, so I get chat going on around me. I mean it's not so bad because I've been in there with only been a few of us in it's been fine, but as more of us are coming back it's getting more problematic and can get very distracting, which is why I feel strongly about not having meetings at the desk, because if I have two people either side of me sitting talking or in meetings for 2-3 hours it would drive me mad, I think noise cancelling headphones are definitely really crucial.

Q

Well I think we've got out of the habit in some ways of having phone calls in our open plan offices.

Q: So on the issue of trust. I mean we all felt that trust is critical for homework, but do you think anything has changed since last year? I think for you personally, yours was a question of, well, you've got some people that are tried and tested that, you know, but you won't. So certain if you had new people quite how that was going to work. So as a manager, what's your position on Trust and Trusting others and being trusted, what do you feel about it?

A: The trust is still fundamental to the home working and somebody in my team commented last week, we were talking about good things from the last year and she was talking about the home working and saying that she was really pleased that she was trusted to work at home. She said, really, it's certainly an important message to her.

A: Uh, I think if I'm honest with you, I struggle with it a bit because I sometimes have my doubts. If people are telling me they're absolutely swamped with work, about whether they really are swamped with work. I mean, I've been wrong on this before, but there have been times where people have said to me, 'Oh, I can't do that, I'm far too busy', then they've been in the kitchen talking for 40 minutes and I think not that busy then (said ironically) or, you know, you can go around someone's computer and you see they're on a game, or you know someone was looking at recipes and you've lost all those cues, haven't you? Those clues if you like, to what's really going on so yes, the trust is fundamental and I just keep reinforcing the message that all I've ever asked and I've been really consistent about that, is that people do their hours. I'm not asking you to do more hours just please don't not do your hours either. in terms of the new people, what we've done in our team, fortunately myself and my two equivalent managers and our overall manager, we're all on the same page with the approach we wanted to take. We all felt that although the work we do is not student facing, it is important to have time in the office together so as an SBU if you like, we established a two days in the office rule, or the equivalent for part time staff so everybody knows that they have to do that.

And we also agreed that with anybody new, they would be expected to work in the office every day until they reach their first probation point and then when they reached their first probation point, they would be 'allowed', if you like inverted commas, to do some home working because we do need to test their integrity and self-discipline to work at home as part of their probation. So we would be actively expecting them to do some home working and then once they reach their second probation point then we talk to them about, same as we would with all the permanent staff, what was their preference?

Q

Do you think that might put some people off though? You know put prospective candidates because some people, maybe not in your area, but in IT, some people are asking up front well what's the flexible working policy? And if it's not to their liking, well, you're out and move on to the next.

A: No, well to be quite honest since March 2020 we've actually recruited five members of staff to the team and obviously the more recent interviews people have been asking about flexibility and hybrid working and we said that the university is moving to a policy of hybrid working and that we would expect that people will spend some time in the office to become familiar, to be trained, to get to know their colleagues, to get an understanding what the university is all about, but the hybrid working would be an opportunity and will definitely be offered to them.

The two new people that joined us in the last month, one about five weeks ago, one literally only two weeks ago, they are both very on side with it and in actual fact the guy that joined about six weeks ago now, Dan. I asked him, I talked to him about what I'm thinking in terms of between his first and second probation point and he actually said I'd rather be coming into the office more until I feel I'm really trained and confident but he definitely wants to do the home working and we would give him the opportunity to do more homework then he's actually choosing to do now that's an individual person and it will vary and I wouldn't mind betting there's a greater expectation for people in IT that they should be able to work at home all the time, but we aren't student facing either so you know it could be argued and in fact the difficult person in my team asked me three times to give a reason why she was expected to come on campus at all. I expected a couple of others to be quite resistant to be honest, they could argue why do we have to come on campus? We're not student facing but we've been very clear in our message. It's not about individuals, It's about the whole team and some people actually want to have their colleagues to work face to face. So you know, we can do some home working, some collaborative working and the collaborative will be for the we've all got to get together and discuss this and so on and the home is for the quietly uninterrupted.

Q: Yeah, that is interesting and changing the topic slightly? Would you call any aspect of using teams fun?

A: Emojis and the GIFs. We have a lot of fun with them.

Q: Have you discovered, if you use emojis, there's 800 of them now.

A: It's too many now. I used to moan, there weren't enough I still haven't found one for SIGH I've used head against a brick wall, and I was going to write to Microsoft at one point, but now I can't find what I'm looking for.

I see because I suppose I do like being consistent and I like sort of, you know, a clear policy if you like, and that's the policy we established and we will apply that consistently with everybody. To be fair, he might not have had a laptop at the time, I don't know, but in my mind, I like things to be this or that and that you know that's what was established, and we will carry on like this. But anyway, I like to be fair. That's the thing, if nothing else I tried to be fair to everybody and treat everybody the same.

Q: Yeah, I hope you can continue with that and people don't sort of rebel. The only thing I would say is that there are some benefits inside this technology for people who are disabled and that's the only thing to be mindful of I don't know if you've discovered any of those things and I've come across it by accident but I realise now but for example if you have visual impairment there are transcripts from a meeting if you have hearing impairment there are captions and for people who have temporary or permanent mobility issues but technology helps them to participate more so the combination of the technology and the flexible working means that disabled people are better able to participate.

A: We've had disabled people in the team but there is nobody at the moment and so that would be definitely something mindful. I've heard various discussions on the radio about working from home and for some disabled people it's worked well, for other disabled people it's been a nightmare, hasn't it? In terms of the isolation and so it's a bit of a no one size fits all, but being aware of individual needs, isn't it really?

Q: Yeah, that's just something to be mindful of, but OK, great. So if I read you some statements now, could you tell me how what you feel about them? What about them in relation to yourself please?

So if I say using Microsoft Teams has enabled me to develop my digital skills?

A: Yes, true.

Q: Using Microsoft Teams has encouraged me to try using digital tools?

A: See, I'm never quite sure what digital tools means.

Q: Yeah well I would say cloud based technology. Applications that aren't on your own laptop but where you're connected to someone else via the Internet.

A: I'm not sure, not to split hairs but I don't know if it's using teams, that's done that so much as a pandemic and having to find different ways of communicating has encouraged me to use digital tools.

Q: Yeah, fair enough. OK, so using Ms teams has led to an increase in my self-confidence to use other digital tools.

A: Probably actually.

Q: Using Microsoft Teams has significantly improved our working practices.

A

I'm not sure.

Yeah well for me I've felt sometimes we've got too many sources of information now . Where is before I'm not saying it's all about email you know you go to [] or email and meetings whatever and now it's any number of channels in teams and and emails and the chat function. I feel it's calmed down, but at one point I was just I've got to tune some of this out and I wasn't the only person who felt that, it's just too overwhelming to deal with it all.

Q

I think that is that is a commonly kind of identified thing. it's just coming at me from all angles? I don't know if part of that's about trying to find things. That's the thing we are always find ourselves. Wait where was that? Was that in a meeting chat? Was that in a channel chat? Was that in a group chat? Where was where was that thing? I use the search bar all the time because if you go to search bar at the top of teams and you just type in any keyword in there that will return back, all the messages, all the people, all the everything that you've you know, everything broken down by messages, people and files where that keyword appears.

A: I must confess I do forget to use it, but I'll experiment with that.

Q: Have a little experiment, I mean as sometimes it's helpful.

A: Awesome. One of the things I've said about us all coming back together now we've got to start regrouping a bit really in terms of practice. Do we want to rethink about whether we start saving everything on teams again or not? And I like to take people with me and I want them to do something that works for them.

End of sample.

Interview Date: 01/11/21 Participant 15: Case B

Q: Researcher

A: Participant

Q: Thank you very much for letting me interview you again. That's really helpful. So what are you using teams to do now please? What working practices are carried out, wholly or partially using teams?

A: So I would say 99% of my meetings are on teams. It's only the odd external training session or external meeting that's put in place by external clients where we use anything other than teams, that might be zoom, but I would say vast, vast majority is all done on teams. And I'm still not in the office at all, and I've been in a few times since last year, but not in any kind of meaningful way. So yeah, all day pretty much on teams. I'm using chat facility more now than certainly before for a variety of things, so quite a lot of just a few more sociable chat. So, I guess kind of more like banter, I guess, a bit more informal, but also anything that's actually urgent when I need a more rapid response, than maybe email. And I have got a couple of groups set up where people have shared different folders and presentations and stuff, but still don't use that facility much at all.

Q: So going back to the chat as last year you said you used actually gave me an example where you might be in an online meeting but then you needed a quick answer to something, you might fire off a quick chat but you said if there wasn't immediacy then you would still use email. So, do you think that's changed then do you think even if it's not immediacy, you're using chat ?

A: No, I would still, if it's a request for information I would use email unless like you say I'm in a virtual meeting or I need it really quickly and it really does require kind of an urgent attention.

Q: And do people respond to you quickly when you use when you reach out to them on chat?

A: Yes, quicker than an email.

Q: Yeah, and do you do the same? Do you respond to people when they message you?

A: Yeah, yeah, I tend to respond to them and also quite use it a lot for running late. So again, that kind of letting someone know that I'm running a few minutes late for a meeting.

Q: OK, great. You didn't say this in in last year's interview, but I was just wondering, was all your work previously done via email or did you have any WhatsApp groups? Were you chatting at all like using maybe WhatsApp with colleagues before you started using teams?

A: Before COVID?

A: So I've got friendship groups with colleagues that we have a WhatsApp group so we have like I don't know Strictly or Bake Off on where you have like some chat or just sociable things. But no, I would never and still wouldn't, I would never use WhatsApp for a work-related thing. It feels like an invasion of privacy, really. We did have a messenger facility at work but again, I didn't really use that. I mean, occasionally somebody people would message me to say, you know, can you come for lunch or whatever? But not, but nothing in any sort of meaningful way, no.

Q: Thank you. So what, if any, further changes to your working practices do you see as a result of teams?

A: Since last year?

Q: Well, more from this point forward. Do you think that there's anything more that you might change, are you working on something now thinking, oh, we could do that in a different way? Or are you are thinking that you stick with using it for meetings?

A: It's an interesting one because obviously we talked about going back to the office and I think the plan is to go back in January but I'm not sure we will be because we're having major works done to our floor so but say we go back in January. It will probably be two days a week, two to three days a week, so there'll still be an element of hybrid working, so I guess more for me. What I've been thinking about is which meetings work better via teams and which meetings would work better face to face?

Q: What do you think that you will do face to face?

A: Brainstorming. Well, that's very hard. I think even with mural boards, that doesn't really translate.

Q: No.

Q: OK, so well that's interesting. We started to touch on there about going back into the office, what would you say in response to my question, do you envisage using teams once we're able to return to the office?

A: Yeah 100% yes.

Q: You don't think you're just going to stop using teams now?

A: No, I think it would be incredibly difficult, I think because of the more flexible hybrid nature with going into the office. I think there will always now be a need for virtual communication. I think there's some huge improvements that need to be made, and so we have had some Hybrid meetings which haven't been overly successful if I'm totally honest.

Q: Yeah, same here.

A: I find it worse. I think for me it's better if everyone is in the office or if it was out of the office, but this idea, some people in, some people out, I think for me, that's where we've found it really hard. So we've had instances where myself and my boss have both been in and we've both gone to join a meeting at our desk. The same meeting and the laptops have had interference. Yeah, so we've had the echoing, but we've also had interference where it screeches.

Q: You do have that in proximity. You've got to wear a set of headphones.

A: Yeah that's been quite difficult and then meeting rooms where the technology is quite difficult to set up. The microphones aren't sufficient, even if there's four of you in a meeting room and one person at home, that one person at home just doesn't get a share of voice or it's very difficult for that person to get a share of voice.

Q: You can imagine Microsoft are busily working away with all sorts of technology, like teams meeting rooms where in your meeting room you've got a screen, and the room itself a participant. It's an attendee, and you can just join the meeting from a panel.

A: Yes. So that's what we have. We have exactly that, got. Microsoft Teams meeting rooms, it kind of looks like an iPad. You join the room as a participant. It's yeah, it's just actually in reality, how effective is that? And I've just found, to date, it hasn't been that effective for us, you know, different problems in every room which make it hard work.

Q: Do you think you'll just try to avoid that then and just do what you're saying and split them up and say these ones will always be online and these ones will be face to face.

A: Yeah, I think there will be obviously the odd exception when you've got an ad hoc meeting that you have to have, or somebody isn't very well or has to work from home that day. You know there will be the odd thing, but I think on the whole, yeah, that's what my current plan is for the team, to try and split it up - for me the office should be about going to the office for a purpose, and the purpose should be actually face to face interaction.

You know, seeing people and having those meetings like we talked about, the creative ones, ones that require any kind of element of brainstorming, planning because they work better in the office. If you're going to the office to sit there and send emails with a pair of headphones on to block out the noise because you want to concentrate, well my point of view is you

shouldn't be in the office then, really you know that's better done at home. There's certain meetings that are just way more efficient at home, and so we have a weekly meeting where we will update on facts and figures for the week and we share the screen, but we used to all print out 12 documents.

Q: Oh yes, you mentioned this. I was going to ask you about that. You said you had a big pack of paper and you kept yours for a week and then got it and everyone else got rid of it immediately afterwards.

A: Exactly Nadine, well that's changed, so now we just share the screen and it's really efficient, within half an hour. That meeting was always an hour but it's half an hour now, we don't even have the cameras on. We just literally share screens.

Q: Yes, so that would be one of your productivity gains because I think you did say there's been some productivity gains. Would that meeting, would you count that as one of them - spending less time doing it and saving paper?

A: Yeah, definitely.

Q: Do you think there have been other productivity gains for you personally?

A: Yeah, they have been. Yeah, absolutely. And I think from both the personal or professional point of view, there's been meetings like that which have just been more efficient online and then there's been kind of the personal one which is at 6:00 o'clock or whenever I finish, I don't have an hour commute. I can go straight downstairs and I'm back with my family.

Q: Are you one of those people who found it hard to separate, you know stop work or does the fact that you've got a family keep you a bit more grounded?

A: No, I haven't found that too difficult. I haven't found it too difficult. I mean, I've always kind of checked emails on holiday and weekends and you know kept an eye on them. But in terms of actually changing my behaviour because I'm working from home now, probably not.

Q: So are you saying you previously had quite a good balance?

A: I think I've got quite a good balance to be honest. Yeah, I think quite a good balance. I think it's good because during the summer we had less projects. It was a quieter period of time which meant that I was finishing, you know, slightly earlier. I went for a swim a lot. That's one of the things I did a lot during the summer. We've got a lido up the road so I would go and cycle out, go for a swim and cycle back. So that was lovely. Now this is the run up to Christmas. We've got budgets. We've got five year strategy. We have Christmas planning. It's incredibly busy and so I would say I would finish later. Now, you know, I probably don't get away from my desk till maybe half 6-7 but then I don't mind that ebb and flow, you know, I think for me that's part of it. As long as you know, during the quieter period you can also take advantage of that.

Q: Well, there's a couple of things that you've mentioned that I want to talk more in detail about please - last year you said to me that it's been incredible, and you had 35,000 new subscribers, have you still got those or have they gone back to new stands? What happened financially?

A: So we've had a big shift, so before if you imagine our readership base was 60% newsstand, and 40% subscription. That has now completely switched, so it's now 60% subscription, 40% newsstand.

So that's been a major shift, and we have had an incredible year. From January, so from the new budget year we'll have a record-breaking year this year in terms of profit.

Q: Wow. Where can I get hold of the actual figures, please? Can you let me have them or do I have to wait until they're published?

A: So we don't publish our figures - we publish our ABC which is our sales circulation data. We published that from Jan to June and then July to December, but we don't publish our profits, so if there's specific things that you think would be useful to know, then let me know.

Q: I don't even have to say money, but it would be helpful to say well like last year you said you had 35,000 subscriptions. What does that mean in terms of a percentage on your bottom line, it's trying to couch 35,000 years subscriptions or what you've just said about an incredible year in something that for the reader.

A: It's going from say 39 million (2020) last year to 41 million this year (2021) in terms of profit.

Q: And what would you have been before that? Before you even went into this new weird landscape.

A: High 30s, probably 36-37. To 41 is quite astonishing.

Q: And this is pounds per annum?

A: Yes, profit, pounds.

Q: So you think that's incredible, what's happened?

A: It is incredible. I mean it's going to change, in the last few weeks we have been approached by our paper manufacturer who say that because of the rising costs of energy and the cost of raw materials, they can no longer supply us with paper at the same rates, therefore we will need to pay a levy, a surcharge.

Q: Why do you think people have changed and used Google them when they could be doing all this in teams?

A: I don't know, I don't know. I think there was some prior experience with Google, so people are slightly more comfortable with it. And I think the fact that you can all commonly, commonly edit it. Again, it's an advantage which I don't know if it can be done in teams.

Q: Oh yeah you can, last year I was talking to your IT team and they were thinking they'd get rid of Google but I think that there's just been other priorities like getting the office is ready for people returning and making sure all the tech is in them and all the rest of it.

A: Yeah, they'll have to be. And I think the idea is that we'll get to a stage where we'll just have one lead that will plug into a laptop and so it will, well they're calling it 'warm desking'.

I'm sure other people have said about this – there's neighbourhoods and the idea is that you will just plug 1 lead in and that will be you away. I mean at the moment that's not the case. I think when I last went into the office, which was about a month ago. I think I plugged four, four or five cables in.

And it took probably 10 minutes to log in. Now at home it doesn't even take me 10 seconds. So again, there's a productivity efficiency there that you don't you think about.

Q: It's true, it's small, but the other thing you mentioned and I was going to take you back as you were saying that you know there's some things that worked much better from home and it's interesting, isn't it because actually, the things that you mentioned about focusing and people coding you know that was the situation before COVID. The technology was there, maybe not as slick as teams in terms of the video conferencing, but if you're a coder and you need to work on assuming you're going to sit in the office with headphones on, why wouldn't you do that at home - that's been true for a long time, so the only thing that could have the only thing then that stopped that happening in my mind and I don't know if you agree or not was trust, or rather lack of it.

A: Yeah 100%.

Q: So has that changed now? Because I think you'd said there was that sort of feeling that even you, in a senior position you had to ask and there was sense or feeling a slight guilt wanting to work from home? Tell me what's happened now in terms of your organisational culture and trust?

A: Yeah, that's completely shifted, and I think, from the top down, pre COVID, whilst we said, Oh yeah, flexible working and all the rest of and the reality was that there was an expectation that everyone would work in the office five days a week, regardless of whether that was the best place for them to work.

So quite often what you would have is, if you walked through, particularly my floor, you'd have a lot of people who would have big headphones on who would just be staring at a screen all day and you know, sitting there all day, I think. Obviously as soon as COVID happened and people were forced to work from home, I think suddenly that trust element you were forced to trust people and I think you know, the proofs in the pudding, and they've seen that actually, the output has continued to be the same.

I think that's throughout the organization, there's that element now that they have to trust people because we've been forced into this situation, there's no longer this and I think another really interesting thing - I think some of the people who were slightly more old school, really had issues before about if you're asked to work from home, they weren't particularly open or responsive to it, a lot of them have actually retired now.

Q: Really?

A: Yeah, they didn't like the new way of working, really missed the office and felt that actually,

why were they spending their time on Teams where they're not getting that office banter? They're not getting all the great bits about working in the office anymore, so they took the decision to retire.

Q: I'm kind of surprised about that because I would have thought that actually, for some of the older people, it's a way of continuing to work as you do get older.

A: There's been a split, so there's been three people off the top of my head that I can think of who retired predominantly because they didn't like the new way of working and there's been a group of people who have allotments who love the fact that they don't have to commute in from Richmond every day and are less tired and have more energy; they can go to a Pilates class at lunchtime you know whatever it is, they have absolutely enjoyed that and like you say, probably this new way of working from home means that they might not retire at 65. They might go on to you know whatever age.

Q: OK well look. I've got some questions about digital skills if that's alright. So, I'm going read out some statements and if you can just tell me if you feel they to you and just explain why you've said whatever you're going to say if that's OK.

So first of all, if I said to you, using Microsoft Teams has enabled you to develop your digital skills? What would you respond to that?

A: Probably not...(pause) Like, has it? I'm trying to remember a pre work COVID world. Possibly because I don't think I really did any video conferencing before. So I guess that's a digital skill. Yes, I probably didn't do any video conferencing before.

Q: I think you did a little bit of Skype for business, maybe that was at the beginning of COVID.

A: Very, very little.

Q: OK, so using Microsoft Teams has encouraged you to try using digital tools?

A (looking perplexed...) Has it encouraged me to try using digital tools? Probably not, not purely using Teams. I think the situation has encouraged us to use tools to find ways around things, but can that be attributed to using Microsoft Teams, probably not.

Q: OK so 'Has using Microsoft Teams has led to an increase in your self-confidence to try other digital tools?

A: Again, I don't know if it can be attributed directly to Teams, but I think the situation that we're in -absolutely and again purely you know through necessity, like Google Drive and the sharing of folders like I say that's new and beforehand, I had to Google how to set up a folder. Yeah, when you recognize actually there's a real benefit there to having that in a shared place so everyone can access, everyone can update, so it's in real time and it's worthwhile putting the time in to learn how to do that. Yes, there's definitely been things that we've thought we just need to get better at this.

Q: Yeah OK, great, thank you and finally using Microsoft Teams has significantly improved your working practices?

A: I would say that's mixed. I think some working practices it has significantly improved and some of the examples that we also talked about earlier where there has been some efficiency gains, productivity gains.

I think some of my relationships are better now than they were at the beginning of Covid because I speak to people on Teams you know.

That's the other thing I think because you are at home, people expect you to be there the whole time and expect to be on teams the whole time. So before when I was in the office very, very rare people would put meeting at one at 1:00 o'clock. Now it feels like that that's completely OK, they can put meeting in at 1:00 o'clock. There are lots of days where I'll go, oh God, great, now I've got a 1:00 o'clock and my next slot, and only because it's in as a regular coffee, it's three o'clock. That's the only time that's blocked out in my diary that someone put in for a regular coffee, which I never go to because I never have time! Actually Teams can be really quite intensive.

Q: You could deal with all that. You can block all that out in teams now in Teams you've got a thing that's called Viva, and when you go on the left-hand side of teams, do you get Viva?

A:: (looking where Nadine suggested)...No kidding. That's great, I didn't know that even existed.

Q: It's happened in the last month or something like that, but that's how you can protect your time.

A: Yeah, that's brilliant. I will use that actually.

Q: Ok, so I've only got one final question then you've kind of come into it here really anyway, about the negative consequences of adopting teams. So have you got anything else that you think is negative?

A: The amount of screen time. The sheer amount of screen time, you know, sometimes you can be on the screen for nine hours pretty much solidly and then concentration....so we've had training sessions on Teams where anything over an hour just doesn't think work and you could see people switch their cameras off, multitask, you're just not concentrating in the same way.

I think that's a negative and even in certain meetings you can see people having the meeting but sending emails if it's not directly relevant to them. You can actually just see them on the second screen, like emailing away.

Q: But didn't people used to do that to you in face-to-face meetings? I've been in meetings where people have done that. They bring their laptop in and they're just sitting there.

A: We would never have laptops.

Q: You wouldn't have laptops in a meeting?

A: Very, very rarely, unless you were sharing a document or an Excel spreadsheet or a, you know you wouldn't take a laptop into a meeting and then you certainly wouldn't dream of sitting there and sending emails! Unless you actually said look, I really need to send this one email.

Q: What about with others? Senior people? Wouldn't that happen?

A: No, I don't think it's happened with anybody. I mean, I think that's a quite shocking thing because I've been in meetings with my boss, or bigger team meetings where yeah, people are very, very obviously doing other work and are distracted when we're having a meeting about something else. Only when it doesn't directly pertain to them, that's when they're doing it but yeah, I think that can be slightly rude. And the fact that they're an hour long, like very, very few meetings going for less, either its 30 minutes or an hour or 1 hour 30 minutes and that just means meetings butt up against the next one.

Q: All right, well let's leave it there. Thank you so much for your valuable insights.

A: I'm more than happy to do it again if you need to.

Q: Thank you. You know I wouldn't be anywhere if people like you weren't willing to give me their time and their thoughts.

End of Sample

Focus Group Date: 22/06/23

Participants 1,4, 5: Case A

Q: Researcher

Q Since we have been doing hybrid working for more than a year, I thought it would be good to see how it has been working. I spoke to you in September 2021, I think you were all going into the office two or three days per week but everyone else was trying to navigate what the new normal looked like. We have now been doing it for a year and we knew how we thought things would work out but let's talk about how things actually have worked out for us in practice.

P5: I don't think anything has changed. We have a lot of meetings that I use it for, although we have a lot more meetings in person now. [name] and I will do one to ones on Teams, and I think it is fair to say using a bit of hybrid. So as an example, if someone can't make a meeting they can join electronically, I think more are trying to come in to do it in person but every time there is always someone at home to make it hybrid.

Q: I made some notes from right back in September 2021, you were a little bit apprehensive about how hybrid would work, you were thinking it might be the worst of both worlds, you had only had a couple of hybrid meetings one had worked well and one not so well. One particular thing that came out was that when you have a hybrid meeting you are not sure how much engagement there is from the people that are not in the room. Do you think that is the case?

P5: I have found that it is not universal, it really depends on the meeting. Recently I have asked that we do all of our [meeting name] in person as it became apparent to me that I was not getting any challenge at all in the hybrid meetings, I am not saying they were not listening and thinking about the issues, but the chemistry was such that nothing was being challenged. Of course, the cast of characters changes each year, and it may be there were not so many challenging characters on the academic board that we had previously. It is not a controlled experiment, but there is no question that it causes me concern.

P1: There are less of us, so it is more obvious because there are fewer of us.

P5: Yes. I think it is an issue of numbers. I think it is also about seniority. So, at [meeting name] everyone considers themselves to be roughly the same seniority, so I don't think there is any inhibition with regard to people being prepared to say what they think and putting themselves forward. I think there is a much bigger polarity between me and the least senior person at the meeting and I suspect that means that if they are at home they will not challenge. Whereas, in person they are happier to maybe because I eyeball them. There is a lot to be said about chemistry in a person-to-person meeting.

Q: I think all of you have said that you thought this form of virtual leadership communication at least for the Q&As makes you more accessible to people. [name] you had said that it possibly flattens the structure. Do you still feel that?

P1: I do for a couple of reasons. Some of our meetings are hierarchical, that doesn't necessarily flatten structure but if you are having an open forum, before people would have had to come to the VCs corridor and been met by reception, who would have asked them to wait and we would have then collected them, so it was very much you are coming into my domain. On a screen I think that is somewhat flattened, particularly during Covid it did make us more accessible. Sometimes you can drop into something for ten minutes even when you cannot make the whole meeting, to show you are interested, which helps. The other things to say is we have had to think about etiquette around use of chat. For the recent consultations we turn the chat off and ask people to raise their hands so that everyone has the same opportunity to ask a question, be listened to and responded to. The chat almost seemed to take on a life of its own, where the chair would think they had covered what

everyone wanted to say on item 7 and move on to item 8, only to find the chat is still talking about item 7. We had to come up with some etiquette around that which would not have done at the point we last spoke.

Q Yes, it is almost an undertone of conversation.

P5: There are circumstances where it can be helpful. When it is a forum and you are trying to make sure that everyone has the chance to talk and be involved, the chat can be more challenging, you can end up with a whole side conversation which might be off topic.

Q [name] - I think you had previously said that could work quite well if someone raised something in the chat that you could cover without it disrupting the flow of the meeting.

P5: I was saying that when we were doing meetings entirely online which worked better, as everyone had the same opportunity to do hands up, ask a question, etc, it got rid of a lot of guff, the trivial stuff seemed to be in the chat. It seems to be different when you have a hybrid meeting, I think it is because the people online do not feel as enabled as the people having the conversation, so they then put the important stuff in the chat rather than raising their hands. It seems to me it is different, when it is all online it works well, but when it is hybrid, it doesn't work well.

P1: It is almost like two meetings, when you are at home you can hear things differently. When I have joined [meeting name] at home you hear the clatter of the cups and rustle of the papers just as loudly as the speech, it is a very different experience. The people at home then may start to chat and the people in the room are then just engaged in the meeting itself.

P4: I was going to add an element about attendance. When we advertised a hybrid meeting, we learned very quickly to get people to advise if they were coming into the office or were going to attend via hybrid. When it is just me and the clerk and everyone else is at home it is just a waste of time because it does not work well.

Q: Are all three of you now working in a hybrid manner? What is your pattern?

P5: That is interesting because I work in a hybrid manner without a pattern. We have been talking about new ways of working. I tend to work to avoid the traffic, I am rarely at home all day, maybe once a fortnight, but there are days when I am home half the time.

P4: Last week I was in five days. I base things around meetings. Yesterday I had back-to-back Teams meetings so there was no point going in. I still really appreciate being in the office and I think the teams have settled into patterns so I know when people will be in and when I can see them in person, so I work around that.

Q: One of the things were actively considering before was the work breakdown. [name] you were talking about appraisals face to face. We were thinking about splitting up tasks. How has that worked in practice?

P4: Appraisals are definitely in person; I think everyone really appreciates it. I just mentioned a team that is moving from one day to three days in the office, there is something we need to get our head around the certain output we see in teams and whether there is evidence that we are getting as much work progressed through teams as we had previously had everyone been in the office. I know for one of the teams in my area that was definitely not the case, we are addressing it and making it three days in the office. That is team specific. In a more senior team, the [team name] there has been absolutely no change, in fact they pick up things out of hours more easily now, if anything we are getting more for our money.

Q: I think [name] had said that you do need to be more disciplined when working at home, what is the probability that everyone is equally disciplined?

P1: I would say that is the same in the office Nadine. I am in face-to-face meetings where people are on their laptops, I am sure they are working but are answering questions in that meeting that are not related to the meeting. There are always ways to be present but absent.

Q: Arguably, at home you could send a couple of emails and then go and prepare the dinner perhaps. Nobody admits that in these interviews.

P1: I think that is true, but people also say they get less done in the office because they are chatting to people. I see those relationships as important, but people do also see that as wasted time. In terms of the shrinking of the network, I see less people face to face when I walk around the campus. I sometimes get criticised for not being visible but when I went to their office they were not there! It works both ways, there are less opportunities to bump into people. However, in the hybrid meeting format I see a wider group of people than I did pre-pandemic. Last week I met with the [name] community success group, because it was online, they all attended, but in person that would not happen. We still had the Q&As. In those meetings we have a greater breadth of people, but not face to face.

P4: It can be a bit soul destroying though. Not this time because we had a speaker, but last time I did the drop in there were about 50 people, but cameras off and wondering if anyone was listening as I talked about staff survey results. On the other hand, when people tune in and may be just listening and that is all they came for and maybe that is fine. I think how people use Teams is different, I use it as a telephone and call people instead of typing an email. Not everyone does that and can be quite surprised when I do that, but it does not stop me.

Q In the publishing house that I am researching with, they have cut the in-house phones by two thirds, they did a survey to replace them and asked who wanted a landline and two thirds said they didn't need one, they used Teams to contact people. Use of the office phone has been displaced by this, one of the other things that has potentially been displaced is the organisational culture. If we have an organisational culture which privileges face to face, I don't know if we do but they do. They feel that people not wanting to come into the office is having a negative effect on their organisational culture.

P1: Where we have heard people say that they are just not coming in, we have taken disciplinary action, I have heard some of those cases recently. We have taken a hard line where people have said they will never be able to come back to the office for whatever reason. It worries me that we don't stick to the flexible location principle and that we move to people coming in for two days/week because I have heard people say that they have done three days last week, so you owe me a day at home. It becomes a right instead of the flexible location principle which is that you do the work wherever it is most favourable, which is what I favour. To be able to manage it we will culturally move to that. I don't think we do culturally favour one side or the other, I think we have tried to deal with it where we can. What also continues as a vein through our organisation is that values are still highly used and mentioned and so they drive our organisational culture. I have not seen any drop off in that. I have not heard anyone saying that is not within the values, or it is. They have been a helpful anchor through the pandemic and since and are still holding strong. In the survey it was the one area where people said don't lose these. I think we will have a strategic plan with the same values, they are so embedded now.

P5: It is a really interesting question about culture, and I think it is probably too early to tell to be honest. I think it is quite early with regard to knowing how the operational bit will ultimately end up, and too early to tell about culture. It is an interesting thing to consider, how it changes and moves, I am not sure we yet know.

Q: That was a question I was asked at the conference last week; do I think there will be any long-term scars from this. I said I was slightly concerned, personally I am concerned about the retreat of people, such as not using cameras. I don't know if you know that people can create an avatar in Teams now, we are testing the new features, but do we want people to retreat into the digital? Is it a divide between the real world and the virtual world?

P5: You do realise that this is not actually me?!

Q: In avatar land you have to operate the avatar's arms, where you appear spontaneous., there would be a delay.

P4: The danger would be that Graduates coming into the workplace would lose the skill set of being able to be around people, communication and presenting skills would be lost. I guess we are in an employee's market, but I can't help thinking there is a line that will be crossed, we have allowed so much flexibility so that people want a job which fits in around them and their life. I think people expect that now and in the longer term that will impact the culture in some way.

P1: I think the reality is there will be an expectation of our employees. Within our organisation we have six different generations of people, and we have to be careful that our own preferences and our own experiences of when we started work isn't reflected on today's workforce. The reason for saying that is some people will not see the social connection at work as a necessary reason to come to the office, they will still be able to communicate with people. I think some children will not be able to talk to people and do a presentation. We have to make sure we are prepared for this. We can say what we want it to be, but if it is not attractive to the workforce, we won't get people.

Q Is that why you made flexible location principles available in the first place? What was the driving force for that?

P1: I read your report, and I think it said the genie was out of the bottle. It came out in the staff survey, I love the flexibility, but I wish we hadn't lost community, but I am not prepared to give up flexibility to get community back, I think we have to find other ways of building that community. I played netball last night for work and was delighted to see we had double the number of teams that we had last year, so although we are not so connected in some ways in others we are, and we have to drive that part of the organisation. In answer to your question, I think it was just business need and we found we could work in that way, what we had a choice of was whether we went down the route of everyone has to do 40% 60% or 20% of their time in the office, or we went with flexible location principles which said there was some manager involvement in this and the time means you need to be in the office. The decision was we did something or nothing, I don't think there was an option to do nothing.

P5: Can I comment on the intergenerational stuff first? There is a culture there that we just don't understand. My kids do everything online, shopping, watching content, etc. It is a different world to me, when I say I am going to Tesco they look at me as if I am mad. It is just not in their culture to do that. Asking about will they lose the ability to have a conversation? The chat GTP thing raises deeper issues about whether we will need critical thinking. We are going to have to teach it even more because they are going to have access to a machine that can challenge them, or are they going to have access to a machine that can do it all for them? Maybe in the future critical thinking will happen via AI and we won't need it. I don't personally believe that, but these are the differing views as to what this type of technology will do. Teams was forced upon me by lockdown, having to use Teams, having to raise my hand, having to understand chat. I was a very modest user of Teams but find it entirely natural now. If I have to use Zoom now, I press the wrong buttons because it is not the tech that I now use, but I can convert reasonably comfortably. I found that I could work perfectly adequately to the extent that I wasn't doing the evening work and could work well from home. I don't know where I end up on this, we have to think about measurable ways of determining if we are as productive now as we were before. I think we can be as productive, but we need to find a way to do that and embrace that discipline.

Q Picking up some points there. Maybe there is an assumption that younger people look for their social life at work, I am not sure whether that is right. I have a lot of younger people that I have interviewed, and they all seem to have other things to do outside of work.

P4: I don't think I am thinking about it as a social aspect. I am thinking about it in the longer term could it mean less of an ability to communicate. It is fine if people are able to communicate outside of work and enjoy that social interaction. It just seems very insular and that is where mental health problems occur. If you are on your own in a room with your camera off and not communicating, surely that cannot be great in the long term.

P1: It is really about personality and preference. Some of the people we are now disciplining would quite happily do that and can't understand why anyone wants to make a journey and doesn't try to do things differently. Maybe going into the office all the time for incredibly introverted people was very difficult. It is just different.

P4: Today there was a presentation on neurodiversity and how for different conditions in that area this has been a godsend using Teams and the chat which has really helped them with their work within the workplace. It is hard not to bring your own personal view into it because that is all you know.

Q Tell me when you think about collaboration, can you define that for me? What does it now mean to you?

P5: Asking a researcher that gives a specific view of working on a research project usually with another individual from another institution or another country or facility or different department. That is not collaboration, collaboration is what I do with [name] every day, it is what we do within the University with each other. Our values are interesting as collegiality is the bit that comes most closely to collaboration. Sometimes we collaborate to get an outcome, often you collaborate because it will benefit you as much as the other person, collegiality is probably about benefitting someone else, not necessarily a benefit to you, there is a subtle difference. So, collaboration is about working together to achieve outcomes that you could not achieve on your own, or you can achieve better together.

Q How do you think the technical properties have influenced that collaboration? Has it changed?

P5: I have an example within the Alliance Group of Universities, we all collaborated in the sense of discussing problems, discussing what we were doing in their own institutions, working out solutions, it was transformational in terms of how we collaborated during that period and have continued to, not quite as well as during lockdown when we all had our backs to the wall and we were collaborating for survival purposes, because it was vital to get through each day. It did create a different form of collaboration within that cohort of individuals which was incredibly positive.

Q Has that continued, or have you retrenched back to the individual competitive positions?

P5: We still come together to share information. One member suggested that with [artifact name] would it be sensible for the group to get their heads together to [idea description] between the organisations. I thought that was a brilliant idea. I am not sure how that will be enacted but I thought what a brilliant idea as a consequence of the technology we had the confidence to talk about things with each other. There are other examples I could give where we have gained a competitive advantage as a result of that technology.

P1: I can never quite differentiate in my head collaboration from teamwork, which comes partly from my sporting lens, which is that you come together to do something better than you could do on your own. I do think that has suffered somewhat. It is easier to jump on Teams to have a call with someone, in that way we probably collaborate better than we did, instead of saying let's have a meeting and that takes 10 days to set up, now you might just jump on a call. In other ways if I had been across the table from someone, we may have written something up together, I might have drawn a diagram and they might have added to it, to come out with a more rounded view. We have lost something in that individual face to face, quite often in my office we would have used a whiteboard, or a screen linked to a package and might have shouted someone else in to join, we have lost some of that spontaneity and have to organise things more now.

Q: when you say we are going into a room to collaborate, do you mean physical or virtual?

P1: Probably physical if I knew I was going to collaborate, I would say this is a workshop and we will get together. Collaboration might happen online, but I don't think I would deliberately do it that way. We have used some of the available collaboration tools. I think some of our academic colleagues are much better at that as they are natural users of that technology. I have to really think about that being the way to do it.

P4: With regard to technology and collaboration whether on an individual level or team level, it has provided so much flexibility as it can be any time anywhere via different methods, online, face-to-face, etc. It comes down to the individual circumstances you are in, whether there are teams involved or individuals or the tools you are using as to whether each collaboration is as productive as it could be. What we have been provided with has allowed for constant collaboration, but whether that is always as productive as it could be say online as opposed to face-to-face, I am not sure.

Q: Thank you everyone for your time, massively appreciated.

End of sample

Interview Date: 19/11/2023 Case B Focus Groups

Participants 17,18,20,21

Q: Researcher

Q: P17 do you use Teams for anything other than online meetings and chatting with others now?

P17: No.

Q: You were not really using it much for chat before, has that changed?

P17: A little bit more, when someone messages me I respond that way, or I have just finished a meeting with someone I will use chat.

Q: P20, I think you had just started to do file sharing in Teams.

P20: We do that when we need to share files, sometimes from OneDrive, but files we are collaborating on tend to be in Teams.

Q: Have you gone as far as working together in real time to edit documents?

P20: Yes, joint collaboration.

Q: P21, I think you were already doing all of those things.

P21: Certainly still doing those things, I have a little app installed for a desk booking tool and for office space, so I use that to check into my desk in a morning when I go into the office. We are in the process of moving all our data for various teams off the file servers and onto Teams.

Q: P18, how about you?

P18: Yes, same as everyone else. In addition, I have had a go at using things like planner as an extension, operating project plans so that we can collaborate through Teams on planning exercises.

Q: Are you all now working in a hybrid manner?

P17: Yes. Always two days in the office, sometimes three, the rest from home.

P20: Yes. Two or three days in the office per week and the other at home.

P21: Same here.

P18: In my particular circumstances I am pretty much full time at home now.

Q: It was the end of 2021 when we spoke last, and we talked about planning how we thought it would be when we did hybrid working. P17 you were in the office more than anyone, but you were particularly concerned about the noise point of view, using meeting rooms, disturbing other people, etc. How is it working out in practice?

P17: It does not feel particularly efficient, but when I have got calls in the office, I tend to find a meeting room. I am lucky because I am on the fifth floor where it is not very busy, and I can use meeting rooms easily. That is how I manage calls when I am in the office. I will sometimes sit at my desk to do them, but I realise what I was worried about which is that I feel slightly uncomfortable and that I might be disturbing people around me if I am taking calls at my desk.

Q: I think you thought that we might all get used to that level of noise going on in the office, have you noticed that, or does everyone try to find a meeting room when they are on a call?

P17: I am not particularly disturbed when other people are on a call, so maybe I am getting used to it. I am not spending a lot of time at my desk if I am in the office. The office isn't particularly busy, so we are not too close to people making calls, there aren't very many people.

Q: I always imagined that the further up the building you go the more senior the people are, is that true?

P17: There are different teams on different floors, and we have put the leadership team in one area which might be quieter and not the same as other people's experience.

Q: I find when I go into the office one day a week, that 90% of the time when I pass a meeting room there will be someone in a Teams meeting in there. Is that your experience or are you trying to reserve things so that when you are in the office that is face to face?

P17: I think most meetings seem to be hybrid meetings, or someone on a Teams call. In my experience, if I am reflecting on what I have seen, but I will be in some meetings where I don't have someone on the screen, that is probably the minority.

Q: I have heard from other people that I have interviewed that there is this concept of an anchor day on Tuesdays, is that per team or the whole organization?

P20: That is for the whole organisation, so Tuesdays do get quite busy. I don't think we have run out of seats, my team is different because we don't have a rota of people coming in to work on the support desk, so Tuesdays is the busiest day, but there are some spill over desks not that far from us, so there is room for everyone.

Q: How is the kit working out, as you put a lot of thought into the lockers, simple connections, etc.

P20: Yes, all the desks have a large monitor and there is one USB connection which will power a laptop and a screen. Some people have had problems with their headsets, which I have had sometimes with noise cancellation on a Tuesday when it gets very noisy. By and large it has been fine.

Q: P21 how are you splitting up your work so that some tasks are specifically for the office and some tasks for home?

P21: Not necessarily. I find a lot of benefit from going into the office three times a week from a sanity perspective, I don't know that I am devising my week with my office days in mind. We probably are a bit unique in IT. We were doing online meetings from our desks in 2017/18 because we always had a number of our team based elsewhere and the nature of IT is that we are a little ahead of the game. We would often conduct online meetings on Skype for Business from our desks, so I don't feel particularly guilty about taking calls from my desk. It is noticeable now with the anchor day, it is nice to go into the office with what feels like pre-Covid levels of people. On the few occasions when I do want to find a quiet space if I need to take a personal call, it is nearly impossible to find on the second floor. We have quite a few meeting rooms and booths and it is really hard to find a quiet space.

Q: Do people have to book those?

P21: No. I get the impression that some people like to go in and work from a booth. When I book meetings, I am not aware of thinking about whether I am at home because it might be purely online. We have had a couple of projects where we have had almost entirely in person meetings, which is good. In general, my view is that hybrid meetings are fine, and they work, and our equipment is all enabled to run hybrid meetings, but actually I often feel that either fully remote or fully in person are both superior experiences than hybrid.

Q: That is one of the things that we were considering back then, would be it be better to stick to one or the other. I think that was where the idea at [org name] came from that perhaps you would try and focus on face to face in the office and online when working from home, that was why I was keen to see if that had worked in practice.

P21: I think it is very different for people in different roles like sales, when they go into the office, they are doing a lot of in person type catch ups, maybe products and tech where they are utilizing the opportunity to do creative sessions in person. It doesn't really apply for me and the people in IT that I deal with.

Q: Can we explore that idea of creativity and are we more creative in person. I am going to ask P18, as you go into an office sometimes.

P18: Most of my work is remote, but there is still sometimes a need for face to face. Last week I had a project team get together for an end of project retro, so not the week in week out evaluation, but a big wash up of the life cycle of the project. I would echo P21, in that the hybrid element of that did not work very well, most of the voices that were heard were the ones that were in the room, the people who were dialling in were like second class contributors. Hybrid meetings remain a challenge.

P21: Some of the worst experiences, which are not terrible, if there are three people in a meeting room and maybe five people remotely, in those instances just visibility can be an issue, minor audio issues with headphones, or being in the room.

Q: Peripheral vision was mentioned before. I think we all feel that something is lost. We mentioned people online being second class citizens. What else do we think is lost by not going for face to face?

P17: Face to face meetings tend to be a lot more interactive. It is hard when having a large online meeting or a mix, people tend to tread on each other's toes and there is a question over who goes first. Hybrid meetings are fine when there is a relatively small number, but they get harder the bigger the group. I also find that when you have a big group meeting face to face and people are joining online people do feel disenfranchised and do not contribute as much.

Q: I thought we were getting over that as an early experience and in some cases people had more of a voice, but I wonder if that was a better share of voice in the context of us all working from home and being online. P17, I know you have said it is important to feel that we work better together, can you elaborate on how you feel [org name] work better together?

P17: If I am thinking of contrasting group discussions on a screen like this, versus in a room, I would still instinctively try to get into the office, even if it not my normal day in the office, to try to get people together in a room. I think you get wider participation because you can pull people in more easily. You get more streams of consciousness conversations in the room.

I have been trying to unlock why people are more creative, I think you get broader general conversations, people can judge each other's body language and if there are difficult conversations, it can get quite shouty and transactional on screen. The emotion is different in a room together. We used to talk about how our team conversations would end up being transactional on a screen and much more conversational in a room. I can't unpick it more than that.

Q: You have used that term transactional before. It is interesting what you say about difficult conversations because I think there is a school of thought where difficult conversations become easier online. P18, you have commented on that before.

P18: In certain cases, my one to ones improved. If you are having a difficult conversation with someone in a public space, like the booths, some of those public spaces are not very safe then. If you are talking to someone in their own home, with no opportunity to be overlooked or overheard, then some people have opened up on certain topics that they probably would not have done in the office. There is a certain intimacy of a one to one online if you feel it necessary you can press the button to leave the discussion if it is too much and you are upset. That can give a sense of autonomy and power over the conversation, whereas in the office if you are subjected to a conversation, you are uncomfortable with it is very difficult to just leave in a physical space. If there was a difficult HR conversation and a person hangs up that is also difficult but that sense of you could if you wanted to or needed to be regaining some control. That notion of not being overheard or overlooked is helpful, especially if talking about sensitive topics.

P21: I have certainly felt that point around privacy, it is so much easier if you are working from home, sometimes you might feel that you can't talk about it in the office without needing to walk away from your desk. We are doing a project at the moment, and I am so used to calling someone and talking about it without worrying about being in the office, that is a big plus. I think it helps to have that level of automatic privacy especially on such a big project.

P18: You have to be careful not to reduce your number of contacts. You tend to talk to the same people and there may be a case of out of sight out of mind, there is something about the coffee queue where you bump into someone you have not seen for a while and that can spark a conversation where you might ask their opinion on a matter. We have all got to remember to think about the people you don't normally think about. Teams could do a better job of serendipity, or auto suggestions about people you might not have spoken to for a while.

Q: That informal connection is something that you were concerned about losing P17. How are you faced with those sorts of informal connections now?

P17: P18 is correct, it happens in the coffee queue. Out of those conversations I have follow up conversations and I also try to make those in the hub. Having a generic catch up chat, could be done via Teams but also could be done when we are next in the office. I haven't really changed behaviour but have confirmation of what I thought was going to happen, rather than changing my behaviour when I am on Teams to be more inclusive.

Q: At [org name] the management wanted everyone in the office for three days/week, but almost everyone I interviewed explained to me why their team was coming in two days/week. I know there was a survey in May 2022 which indicated the same thing. Given that the drive is still for more days in the office, why was hybrid working ever agreed to in the first place, rather than just asking everyone to come back?

P17: From an overarching company view, we were slow in mandating at all, we were suggesting and asking as that is part of the company culture, it is not hierarchical. There tends not to be many top-down rules about how people should organise themselves and their teams. It was partly cultural and partly practical to see what worked best, rather than setting out one rule which didn't work for teams. It was commercial, as if we had said that, how many employees would we have lost? It was difficult to understand what would end up being the end point value position for us, in comparison with everyone else. If all other offices had said that everyone had to go back in, we probably would have made another decision. Finally, I think it was personal because we didn't want to go in five days/week, there were differences of circumstances and opinion with the leadership team and we would not ask other people to do what we would not do ourselves.

Q: Thank you for answering honestly. I do also feel that in both of our organizations the people at the top have benefited. The surveys suggest that something like 70% of people do feel that there is a benefit to being able to work more flexibly. I didn't want to put my particular bias, that is why I wanted to hear what you said. There is still a drive to get it to the three days/week and I know from the last interviews I did you have done a more recent survey which I am hoping to have the top line results from, if I can, there is still that drive to three days/week, why?

P20: I think the problem there is that when you say it will be two days it will probably end up being one. P21 probably knows better than any of us how many people are actually coming into the office.

P21: Purely based on our desk booking system which is not 100% accurate because it is not used by everyone, I think it maxed out at 1.4 days/person/week on average, there is a flat line now of 1.1 days/person/week. During the various lockdowns and when we were all working remotely, I cannot imagine what it would be like in your 20s starting a new job, particularly in an interactive role like sales or collaborative such as editorial. It would have been an awful experience to start a new job and not getting any of the social side, which I have associated with jobs. I do worry that over a longer amount of time there may be a perception that some people are not coming into the office anywhere near as much as other people, even within the same team, if that happens there may be some resentment building. It has never been mandated in a strict enough way to say you must come in the three days/week, now it is the anchor day plus one day, for the people going out of their

way to go into the office two or three days per week and they can see that someone else in their team is coming in once a month, over time there could be resentment.

Q: What do you think about trust now? We started off in 2020 that there was presenteeism, that was the prevailing norm, then we went to trusting everyone out of necessity, that was not a misplaced trust because everyone did work from home. Where do you think we are now in terms of trust?

P17: I don't have a large team that reports to me, but it doesn't cross my mind about the amount of work someone is doing whether they are in the office or out, it is purely on what you see being delivered. It does not cross my mind to think that someone isn't getting on with their work, or if there is a difference in the office or out.

P20: In our team it was always that way. I never mandated on what people should be doing on what days, these are the things that need to be done, can you do them, and then check in once a week to make sure they are done, but the team choose what order they are done. I haven't noticed a change there, have you P21?

P21: No. I guess there is another element to this which is I guess there are some types of roles which are better suited to either fully remote or hybrid working than other. I guess if you are running a sales team with people in their twenties, as much as those twenty-year-olds might want to be in the office, their managers would also like that as you do need to closely manage those roles. From my perspective, I trust that people are doing what they need to.

Q: Do you feel that the move to wanting three days per week is that because of presenteeism?

P21: I think it is mostly to do with maintaining the culture.

Q: In [org name] some of the things I have noted is that the culture is very strong, and awards have been won, it is a sharing culture which looks after people, work hard, play hard, etc. How do you think that his new mode of working and the technology that we are using to facilitate the way of working, what effect do you think that is having on your organizational culture?

P17: We have not re-won that same award; our rating has gone down. We had a staff engagement survey, which was positive during Covid, but our score has come back down to comparable pre-Covid levels. On reflection, having looked at the detail of that, some of it would be because we are not all together. Some of those things are not there with the same sort of focus, managing people at home and all the effort all the managers put into making sure that everyone was alright at home, some of that has either normalised or decreased. The support for people being at home is not as prevalent or noticeable. We have not really replaced lots of the cultural glue that we had in the office, as it is not easy to replace in a hybrid environment and we have not done that totally successfully. Therefore, some of that rubbing up against people, seeing them in the corridor, some of the responses that underpin some of the comments about satisfaction and engagement are as a result of us not being together and feeling that culture as strongly. I think people are very satisfied with their direct managers, that works really well still, but the broader feeling or not knowing what is going on in the rest of the organisation, don't have much to do with senior leadership, etc.

P20: One of the things that we are looking at is how to make it less friction. Things have moved on, the kit we now have is so much better than it was, Teams is slowly improving too which helps and making sure people know about the new features. Tech is improving which will help, it will make it a more natural experience to have an online meeting. From the tech point of view things will improve. I don't have an answer for the number of days in/out of the office. I think three days for me is a good balance and for my team, but in other areas some people like to work from home.

Q: Is that what you think might happen, that it will be more roles based?

P20: I think that makes sense.

P21: I think it is worth noting that, in spite of the lacklustre numbers on my desk booking tool, clearly people aren't coming back for even two days never mind three. Some of the major social events like the Christmas party and pop quiz have been at least as well attended as anything pre-Covid. I guess that is a good sign, and maybe the frequency of those being one off events and there only being a few in the year, but they are still really well attended.

Q: What about the-all hands, I think at one time you were going to be quarterly, but in the business units there would be mini all hands, once a month, what is happening with that?

P17: There are more business units all hands and there are platform all hands which get together and the whole [org name] one which is quarterly. We were doing those monthly for a touch point with Tom and then that has gone down to quarterly within the business units or managerial units. They are still hybrid, and we get a good audience for those. There have also been offsite things for groups. I think physical turnouts for all hands has been quite strong.

Q: Going forward in terms of organisational culture, what are your thoughts?

P17: I think the difference and attractiveness of our culture and the ability to retain people and get things done in a radical way where things emerge and come to fruition and people get things done, the more that we can be in the office together that will make that work. It would be nice if there was a bit more of in the office for that to work, but I don't see us every fully mandating people to be in the office fully, practically there are lots of tasks that people can get done outside of the office.

There are lots of different roles and groups and it will always remain hybrid to a degree. From an energy point of view, it would be nice if the number went up from 1.2 to nearer to 2.5.

Q: We all benefit from more flexibility.

P18: One of the factors that we have all lived through was the fact of Covid dialled up our compassion a lot. We were all scared for ourselves, our families and others and that dialled up the compassion, which was part of the mix that went into the early days of remote working successful. I wonder whether that naturally our collective compassion has dialled down a bit and that might be something to reflect on. P17, I think you are suggesting getting people together to foster and create the community or reenergise it. I think there are other things that can be done there as well around just reminding everyone that there are still reasons to care for each other. The feeling that the ogre has passed, and we can all just go back to normal levels of care, as opposed to hyper care.

P17: I think that is a good observation. It would be nice to cling onto some things Covid brought. Being together and getting that relationship and community building done in a way when we don't feel that Covid is making us do that.

P21: Presumably what is happening in the wider job market will impact what is happening to an extent, I imagine there have been times where there were plenty of job opportunities available which were advertised as fully remote, I expect that has changed drastically already. My sense is that the numbers will gradually go up as time goes on, to a sensible point such as the 2.3 days/week that probably feels about right, that is then best of both worlds. There are still benefits to working from home and having that extra flexibility. Thinking back to some of those days commuting in under someone's armpit on the tube for half an hour.

P20: I don't miss those actually!

Q: That is a good point to finish on.

End of sample.