Spring 6-29-2023

TO A NEW NORMAL AND BEYOND WITH DIGITAL COLLABORATION PRACTICES: A QUALITATIVE STUDY.

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Abstract

Many organisations adopted a digital collaboration platform (DCP) such as Microsoft Teams© during COVID-19 remote working; this longitudinal, qualitative research in progress considers how and why DCP adoption contributes to the reconfiguration of organisational collaboration practices and culture. 58 interviews were conducted with two organisations during 2020 and 2021 with diversely aged knowledge workers. Older (50+) and younger adults were not homogenous in their attitudes to change, ways of working or digital skills, but age-related stereotypical views were found, despite older and younger workers both demonstrating digital dexterity, or the ability to use and swap between digital applications with equanimity. The forced adoption of the DCP created a level playing field amongst diversely aged individuals, and the necessity of using the DCP to provide business continuity during the crisis accelerated change within the organisations studied, neither of whom are 'born digital'. Findings illustrate collaboration practices are variously adapted, repurposed, and displaced during liminal conditions arising from remote and hybrid working. Further, emotions of compassion and enhanced trust, experienced during the COVD-10 pandemic, combined with benefits from DCP use, contribute to the decision to offer hybrid working on an ongoing basis, providing workers with greater flexibility and potential for digital inclusion, including those with some disabilities. Hybrid working in this case, is an acknowledgement that the personal lives of staff matter; it is professionally acceptable to acknowledge one's personal responsibilities at work. However, both remote and hybrid working practices displace organisational cultures that privilege face to face collaboration, creating existential tension. Since the hybrid working 'genie' is unlikely to go back into the bottle, organisations should look forwards and consciously redevelop a hybrid organisational culture, embracing both physical and digital artefacts.

Keywords: Liminal Innovation, Digital Collaboration, Digital Inclusion, Hybrid Working, Emotions, Digital Natives, Digital Immigrants, Qualitative.

1.0 Introduction

1.1 Background

Remote working is a flexible arrangement "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). The abrupt 'big bang' approach taken to the adoption of remote working practices during COVID-19 meant organisations had insufficient time to train those affected (Carroll and Conboy, 2020: 1). For organisations whose workforces had varying levels of digital capabilities/skills, the sudden need to adopt innovative Information and Communications Technologies (ICTs) such as Zoom© and Microsoft Teams© (Teams) presented additional challenges, since employees digital skills "must keep pace with technological innovation or employers may fall behind competitors and miss out on opportunities for productivity and 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), claiming learning by trial and error only leads to a certain threshold of skills (ibid). Through trial and error, workforces managed to provide business continuity, using Digital Collaboration Platforms (DCPs) such as Teams, to varying degrees (Goldthorpe and Choudrie, 2021). A DCP can be defined as an internet based, flexible, connected framework for participants to digitally share, organise, track and progress the work of a team (Wainewright, 2017). Whilst Zoom excels at videoconferencing, it does not offer content sharing or 'chat' that persists beyond the life of a single online meeting and thus Zoom, unlike Teams, cannot be considered a DCP. Working practices are defined as "processes and activities carried out by human participants using information technology (IT) and other resources in order to service internal and external customers" (Alter, 2008:6) and according to Orlikowski and Scott, 2021, iterative experimentations with practices that arise in a 'liminal' space and time whilst prior practices are disrupted, generate alternative practices and can foster processes of ongoing learning and sense-making (Orlikowski and Scott, 2021). Experimentations with DCPs during enforced homeworking transformed the manner in which workforces collaborated, however researchers have questioned whether transformed work practices will become sustained in the long-term and what enablers and inhibitors sustain their use? (Carroll and Conboy, 2020).

Research on COVID-19 and homeworking has tended to focus thus far on well-being impacts (Waizenegger et al., 2020) but studies that foreground the digital artefact, both during homeworking and into a 'new normal', are scarce (Zamani et al., 2022). One exception is Razmerita et al., 2021, who found that organisations used pre-recorded videocasts to manage staff, concluding however, that further research would allow more understanding of impacts on organisational cultures. Digital artefacts involved in virtual meetings e.g. emojis and hand raising, were examined and the concept of affective affordances offered to describe emotional experiences involved (Vidolov, 2022). Given also "a shortage of empirical studies in the field focusing on lived emotional experiences and how they are situated in the context of the digital workplace" (Panteli et. al, 2023:1686) an opportunity exists to probe how DCPs have affected both organisational collaboration practices and employees, for example, one effect that might be experienced from innovation adoption is the creation of divides amongst the workforce (Rogers, 2003). The researcher was thus motivated to form the research aim to understand and explain how digital collaboration platforms, adopted during a disruptive crisis, have impacted diverse organisations. To fulfil the aim of this study, the following research questions were developed: -

1. *How and why are collaboration practices changing as a result of liminal innovation opportunities generated by a disruptive crisis?*
2. *What factors promote or inhibit digital collaboration amongst a diverse workforce*?
3. *What effect do digital collaboration practices have on organisational culture?*

By addressing the research questions, this intra generational research will offer novel contributions on the changing nature of the digitalised workplace as a result of DCP adoption, together with the interrelationship of factors which can help or hinder digital collaboration practices. It could also provide scholars with future directions for research and offer a contribution to practice by helping to inform policymakers in similar organisations considering implementation of DCPs.

1.2 Research Context

In March 2020 when the UK entered a period of enforced homeworking, both organisations in this study (see Section 4) licenced use of Teams for their whole

workforce. The adoption decision was made by management and end users unexpectedly found Teams on their computers. In this manner, end user adoption was mandatory, meaning users had little volitional control over their choice to adopt prescribed organisational technology (Bhattacherjee et al., 2018). When this happens, end users might experience different responses than when adoption is voluntary (ibid). This is discussed further in the next section of this report, together with an overview of the other theoretical concepts used to address the research aim, including liminal innovation, organisational culture relative to virtual teams and workplace digital divides. The mandatory adoption of technology is discussed first.

2.0 Theoretical Background

2.1 Mandatory post adoptive use of Technology

In circumstances where end users cannot exercise choice over their adoption of technology, it is possible that both acceptance and resistance behaviours and emotions will be demonstrated (Bhattacherjee et al., 2018)). Resistance is a reaction to a change (Bhattacherjee et al., 2018) and 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). Post-adoptive impacts such as resistance may be likened to the Diffusion of Innovation Theory's (DOI) 'consequences', which few research studies have investigated (Rogers, 2003), despite the DOI having been used extensively to study technological adoption. DOI employs linear stages to explain how change is effected, in contrast to Liminal Innovation theory, which considers change as ongoing (Orlikowski and Scott, 2021), an approach particularly suited to the aims and duration of this study.

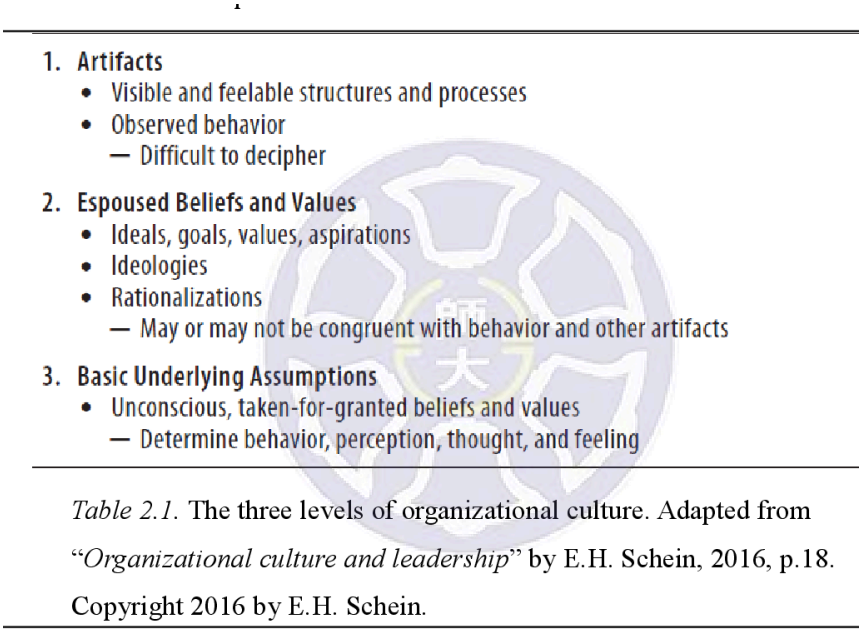
2.2 Liminal Innovation

Liminal Innovation theory explains the regeneration of organisational practices that may occur when a crisis disrupts previous ways of working (Orlikowski and Scott, 2021). Liminality is derived from *limen*, a Latin word for the threshold between one state and the next (Turner, 1969). When established practices are disrupted, tensions arise from the unsettled liminal space and time and from these tensions, existing practices might be adapted (pragmatic tension), new practices might emerge (tactical tension), or existing practices might be discontinued (existential tension) (Orlikowski

and Scott, 2021). Two distinct liminal spaces occurred during the duration of the research, first when the workforce moved to enforced homeworking and collaboration practices were reconfigured from necessity, and the second when the workforce moved to a 'new normal' or hybrid way of working, involving further re configuration. Liminal innovation theory is appropriate for use in qualitative research because it aligns with a perspective that change emerges from the interaction of people and events (Markus and Robey, 1988). IS research conducted during COVID 19 has employed affordance theory (Vidolov, 2022) and normalisation process theory (Carroll and Conboy, 2020) and the concept of liminality has been used more recently to understand the threshold for creating space for collaborative innovation (Adibe et al., 2023). However, Orlikowski and Scott's 2021 liminal innovation theory has not been used to explain changing organisational collaboration practice, thus presenting the potential for a novel contribution. Moreover, liminal innovation theory has thus far been confined to changing practices (Orlikowski and Scott, 2021), without consideration of how individuals navigate the alternative materialisation of those practices. This research could enrich the understanding of reconfiguration of digital work in times of crisis, by offering a more holistic view that includes reconfigured practices, together with diverse individuals' interpretations of changed practices and organisational culture. Relevant concepts from organisational culture literature are considered next.

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 to 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 (Figure 1) helps researchers analyse changes to organisational culture (Schein, 2017): -



1. **Artifacts**
   - Visible and feelable structures and processes
   - Observed behavior
     — Difficult to decipher
2. **Espoused Beliefs and Values**
   - Ideals, goals, values, aspirations
   - Ideologies
   - Rationalizations
     — May or may not be congruent with behavior and other artifacts
3. **Basic Underlying Assumptions**
   - Unconscious, taken-for-granted beliefs and values
     — Determine behavior, perception, thought, and feeling

Table 2.1. The three levels of organizational culture. Adapted from "*Organizational culture and leadership*" by E.H. Schein, 2016, p.18. Copyright 2016 by E.H. Schein.

Figure 1- Three levels of organizational culture (Edgar Schein, 2016)

2.3.1 Trust and autonomy in virtual teams

Changes brought about by ICTs do not directly change an organisation's culture, but coerce new behaviours which may lead to new cultural beliefs (Schein, 2017). A DCP might facilitate changes to organisational culture, for example, a permanent move to homeworking, although one underlying belief challenged by such a move is whether employees can be trusted to work when not present in the workplace. Presenteeism was identified as the modus operandi on the basis people cannot be trusted, by Handy, 1995. He asserted this would not bode well for virtual teams; 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 different aspect of espoused values in a hierarchical organisation is the extent of autonomy that individuals may exercise in pursuit of their working practices. It is claimed that virtual teams empower individuals to act more independently from direct supervision (Grenier and Metes, 1995, cited in Robey et. al, 2000). Similarly, networks (such as that created by a DCP amongst participating users) transform bureaucratic organisations into horizontal structures based on teamwork (van Dijk, 2005). One workplace ideology (Schein, 2017) 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 & Moors 2019, cited in

(Elfenbein, 2022:17.2). The relevance of emotions in the workplace is discussed further in the next section.

2.3.2 Emotions in the workplace

Despite the fact that "many rational organisational strategies are pursued on highly emotional grounds and much of what we describe as rational is in fact emotional" (Fineman, 1996: 550, cited in Dougherty and Drumheller, 2006), there continues to be 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). Recent researchers found that team compassion behaviour 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 & Kilduff (2015), cited in (Elfenbein, 2022). Emotions, including compassion, were identified inductively from data collection, alerting the researcher to examine literature, finding that research is called for on the changing nature of emotions in the workplace, particularly in the context of flexible working (Shiau et al., 2022), (Elfenbein, 2022). Additionally, studies which have researched the emotions of change have often taken a snap shot approach making longitudinal studies quite rare (Giæver and Smollan, 2015), thus offering a further research gap the researcher could address. Finally, "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). Whilst organisational culture is formed by shared beliefs/values and ideologies, differences may exist between values and practice, potentially leading to workplace divides, such as a digital divide, discussed next.

2.4 Digital Divide

The term 'digital divide' (DD) has drawn much research attention, evolving alongside the subject it relates to: internet usage (Wang et. al, 2013). During the 1990's, DD indicated a divide between those with/without Internet access, but over time analyses have distinguished different aspects of digital inequality including differences in capabilities/skills levels (Wei et al., 2011), (van Deursen and van Dijk, 2015), referred to in extant DD literature as the 'second level digital divide' (Wei et al., 2011). This

leads to differences in outcomes achieved by workforces; for example, in terms of productivity (ibid). Internet access is not an issue for most UK workplaces and therefore the workplace should provide an environment in which digital skills can be improved (Calderón Gómez, 2020), however researchers 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).

One 'age-centric' way of interpreting the DD is in terms of Digital Natives (DNs) and Digital Immigrants (DIs) (Prensky, 2001a). Prensky argued those brought up with digital technologies (digital 'natives'), 'speak a different language' to an older generation, who could not become 'native' speakers, hence the term 'digital immigrants' for the older generation (Prensky, 2001b). Arguably, Prensky's claims regarding skills acquisition would not withstand the march of time (Li and Ranieri, 2010) given growth in internet use since 2001. Nonetheless, such 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 educate DN students? (Li and Ranieri, 2010). Educators countered that DIs could acquire the skills suggested as belonging exclusively to natives (Helsper and Eynon, 2010) whilst other researchers focused on a younger age group, finding that living in a digital environment does not reliably imply being either digitally competent or able to use ICTs in a competent manner (Li and Ranieri, 2010) thus challenging the claim that all younger people are digitally adept.

Most empirical research in this area has been conducted with students (Jarrahi and Eshraghi, 2019). 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, thus making it timely to consider how DCPs affect diversely aged workforces.

3.0 Conceptual Framework

Given gaps identified in literature in the previous section, a conceptual model was developed to explain how literature is combined in determining the themes for the research study and shown as Figure 2.

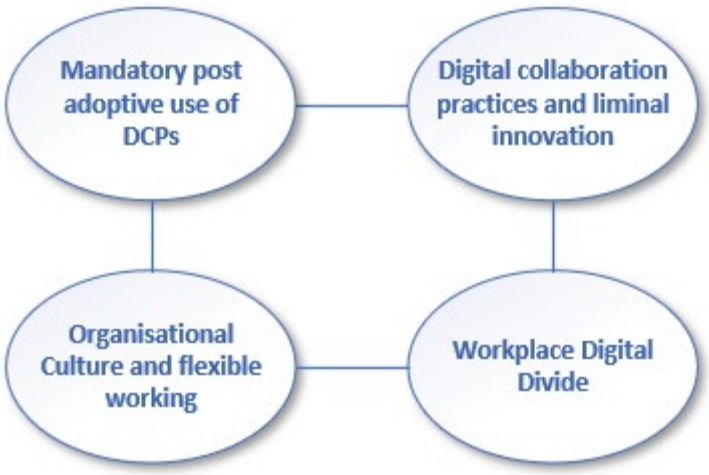


Figure 2 - Conceptual Framework

The following section describes how the research has been designed to investigate conceptual gaps identified.

4.0 Research Methodology

The research paradigm utilised for this research is pragmatism, a broad based paradigm which is associated with action, intervention and constructive knowledge (Goldkuhl, 2012). A pragmatic ontology "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" (ibid:141) thus taking a middle ground between positivist and interpretivist ontologies (Hirscheim et. al, 1996). A pragmatist epistemology values both descriptive and explanatory knowledge, which may be used in action for making a purposeful difference in practice (Goldkuhl, 2012). Thus, actions are important, not for their own sake, but as a means to change existence (Dewey, 1931). A pragmatic approach which values practical outcomes and transformations aligns well with Liminal Innovation's focus on changes in practice and resultant innovation during periods of crisis.

The selected research strategy is case study which allows examination of a phenomenon in its real-life setting (Yin, 1981); two comparative UK-based cases are utilised: a

Higher Education institution (Case A) and a UK Publishing and Media Company (Case B). Cases were initially selected based on practicability, i.e., willingness to engage with the researcher over a study duration of several years. Further, both organisations endorsed mandatory adoption of Teams, thus findings might offer the possibility of direct replication (Yin, 2018). Multiple case designs are preferred over single case designs because analytic generalisations from two cases may be more powerful than those arising from a single case (ibid). Table 1 provides organisational details.

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.

Table 1 - Information on selected research sites

4.1 Research Duration and Scope

5 semi-structured interviews were conducted in April 2020 as a 'feasibility study', whose purpose was interview construct/content validity. A further 58 interviews were conducted in two phases; the first phase conducted between May and August 2020 (T1) and a second phase 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). The research episodes/phases were arranged such that the first one was conducted during the enforced homeworking period, and the second 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).

4.2 Data Collection Methods

Primary data collection and analysis methods are qualitative, which generates human knowledge based on meanings expressed in words by human participants (Sandelowski,

2004). Semi structured interviews of 1.5 hours each (Saunders et. al, 2019) were conducted, partially structured by themes drawn from literature on technology adoption, organisational culture, and digital divide. Online interviews proved convenient for both participants and researcher and still allowed for observation of body language (Saunders et. al, 2015), whilst open-ended questions allowed for probing of participant views. An e-form sent in advance of interviews collected participants demographic details and data in relation to usage of various features within Teams and requested. Pragmatism adopts a pluralist approach, using method combinations that work in relation to the research purpose (Goldkuhl, 2012), thus some data is presented in chart-based from (Figures 4-6) although no large scale surveys were conducted. Appendix 1 shows interview constructs. Secondary data includes data from company surveys, focus groups, and digital artefacts such as recordings of 'all company' online meetings.

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
Phase 1: May-August 2020	15 pre-interview e-forms 15 semi-structured interviews	15 pre-interview e-forms 15 semi-structured interviews	Primary Data
Phase 2: Sept-November 2021	14 pre-interview e-forms 14 semi-structured interviews	14 pre-interview e-forms 14 semi-structured interviews	Primary Data
Ongoing	Organisational survey results, Presentations, Company communications	Organisational survey results, Presentations, Company Communications	Secondary Data

Table 2 - Data Collection Methods by research phase

4.3 Sampling Approach

A purposive group (Saunders et al, 2019) of potential participants was identified within each organisation, based on age, gender and job grade, identified as important characteristics. Potential participants were contacted using a snowballing technique (Saunders, 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 (Saunders and Townsend, 2016) but attrition meant the sample size reduced to 14 participants from each organisation by T2. (Table 3). Research participants were knowledge workers primarily drawn from departments such as Finance, Legal, Marketing, Academic Services and Editorial

Services (note, whilst Case A are an HE institution, this is not a study of teaching and learning).

Research Participants/ Demographics	**Case A : HE Institution**	**Case B : Publishing Company**
Job Grades	**14 Participants** 5 Higher graded 5 Middle graded 4 Lower graded	**14 Participants** 6 Higher graded 5 Middle graded 3 Lower graded
Aged 18-25		1
Aged 26-35	3	2
Aged 36-40	1	2
Aged 41-50	3	5
Aged 51-60	4	3
Aged 60+	3	1
Disability	1 Participant with disabilities that affect their working practices	2 Participants with disabilities that affect their working practices
Gender	9 female gender 5 male gender	10 female gender 4 male gender
Level of Education	All educated to GCE A Level and beyond	All educated to GCE A Level and beyond

Table 3 - Research Participants in each Case

4.4 Data Analysis

When analysing the data corpus reflexive thematic analysis (TA) and open coding drawn from grounded theory were used. Reflexive TA offers a method for developing and analysing themes or 'conceptual patterns' across a qualitative data set (Braun and Clarke, 2022). Reflexivity requires the researcher to reflect critically on their role and practice, further, the researcher acknowledges their own role and influence in interpreting and representing participants experiences. Data from transcribed interviews and secondary data was disaggregated into codes, created in NVivo. This was done in accordance with open coding in which all parts of a transcription are coded (Urquhart, 2013). According to Braun and Clarke, 2022, codes may be 'semantic'; descriptive, participant driven codes capturing relevant ideas, e.g., *'Level Playing Field (P4:A)'* or 'latent', researcher driven codes capturing more implicit concepts, e.g., 'Resistance Reflections' (Appendix 3 - Examples of the Data Analysis process. Open coding generated new inductive codes (Saunders et. al 2015) relating to emotions in the workplace.

4.5 Data Validity, Transferability and Reliability

Validity/reliability are associated with quantitative research to ensure trustworthiness (Nowell et al., 2017), however, Lincoln and Guba (1985) introduced credibility, transferability, dependability and confirmability as equivalent terms for qualitative research. Prolonged engagement with participants contributes positively to the credibility/validity of this research. Data collected from primary and secondary data has been triangulated to increase credibility of research findings (Lincoln and Guba, 1985). Memos created inside NVivo to record data observations help ensure internal reliability/consistency (Saunders et. al, 2019). Qualitative research cannot be generalised beyond a case-to-case setting, however, rich descriptions are provided, allowing anyone who wishes to transfer the research to other settings to judge transferability for themselves (Lincoln and Guba, 1985).

The researcher acknowledges pragmatic role as an engaged 'peripheral member' researcher (Goldkuhl, 2012), (Dwyer and Buckle, 2009) which can help with access to, and acceptance by participants but can affect the planned interview process and analysis of results, since they have the potential to be shaped by the researcher's experiences. In order to avoid this, interview protocols and results were reviewed by a second researcher. Examination of raw data, transcripts and reflective journal entries recording methodological/theoretical choices also act as an audit trail to demonstrate how conclusions and interpretations have been reached, establishing confirmability (Lincoln and Guba, 1985) and allowing another researcher to reproduce comparable and not contradictory, findings (Koch, 1994, cited in (Nowell et al., 2017).

5.0 Research Findings

This section provides research findings, arranged into a thematic map (Figure 3) intended to show how the researcher 'makes sense of what is going on' (Braun and Clarke, 2022; 197). Cross-case empirical data is presented within themes with participant numbers and respective case identified (Yin, 2018).

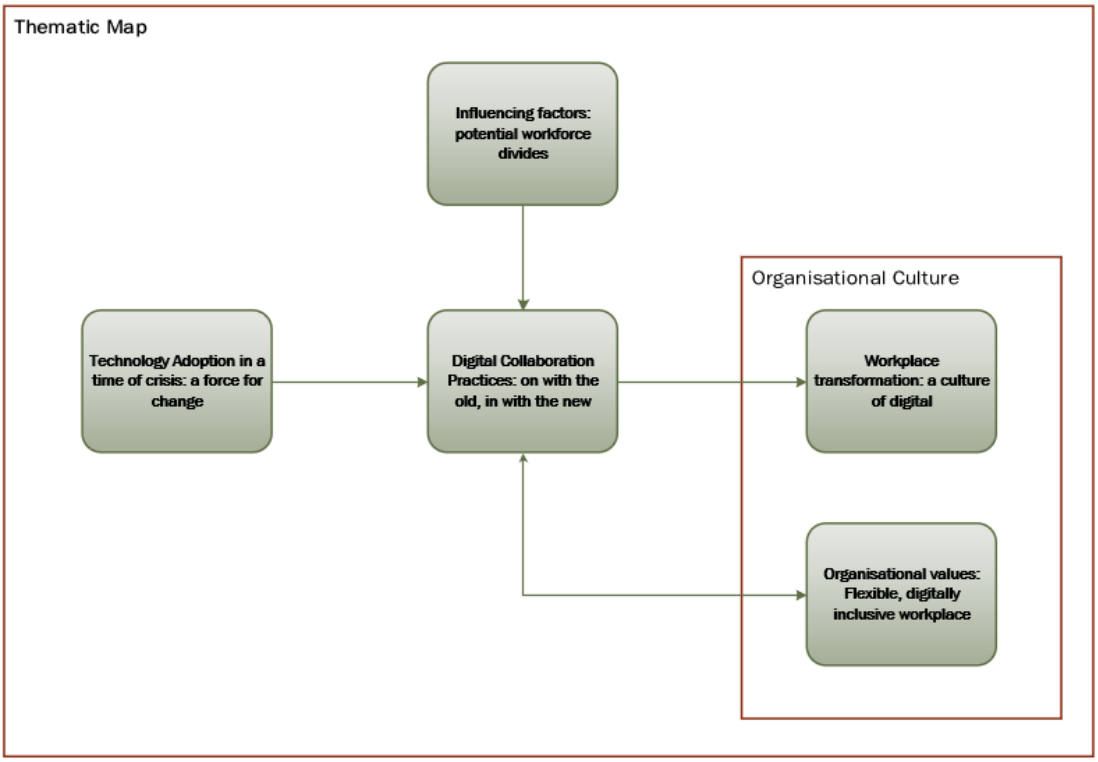


Figure 3 - Research Findings Thematic Map

5.1 Technology Adoption in a time of crisis: a force for change

At T1, Participants identified DCP adoption as mandatory; *"Being forced has meant no choice" (P4:A), "It was dropped on us" (P22:B), 'Would like to stop using Teams but don't have a choice'(P8:A,P23:B),* where the intention to continue may have been driven by the continued need for homeworking. At T1, participant responses ranged from engaged (Bhattacherjee et al., 2018)*, "It's amazing, it gives me goose bumps"(P9:A)* to reluctant (ibid), "*That's one of my things with Teams, I just feel, you know, overwhelmed by the amount of information"(P8:A).* There was no deliberate non-use amongst participants, for example older participants (50+) (Albert and Heaton, 1988, cited in (Choudrie and Vyas, 2014) did not resist the DCP (Vodanovich, et. al, 2010), as shown by this participant aged 51-60, at T1, who takes a lead, *"Its more about bringing everybody else with me, I am using Teams a lot, I do a daily video and I have a channel for my managers and that is the way I communicate with them….what I really want is for everybody else to start using it like I'm using it" (P2:A).* Not all younger participants were 'noticeably eager' to adopt the DCP (Vodanovich et. al, 2010). For example, a participant in the 26-35 age group, when asked at T2 if they would have adopted Teams were it not for the pandemic, responded *"I probably would have thought it was a bit faddy, why would we need this….what will they introduce next year?"*

(P23:B), whilst another in the same age group, asked at T1 if they foresaw longer term use of Teams, responded, *"No, I don't think so….as a team we would rather be in person" (P28:B:).*

At T1, higher graded participants acknowledged the technology and crisis as a force for change, *'It has accelerated where we wanted to go" (P4:A), "People, as a consequence of the push, developed the confidence…to embrace technology in a way which we could not have driven in two years, in three years because of the resistance of people" (P5:A).* By T2 when it was possible to return to the office and individual departments might have chosen to discontinue usage, all participants affirmed their intention to keep using Teams, believing that *"It has become integral to our day to day" (P16:B), 'It's a cornerstone of our technology" (P20:B), "There will always now be a need for virtual communication" (P15:B).* In addition to time and travel, other organisational changes were experienced; at T2 (September 2021), in Case B, a high graded participant said, *'We have had no sick days' (P19:B),* matched by official figures in Case A, shown in Table 4.

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**

Table 4 - Short term absenteeism in Case A

5.2 Digital Collaboration Practices: on with the old, in with the new

This theme illustrates alternative materialisations of digital collaboration practices and is named to indicate that whilst new practices were generated, they did not necessarily replace the 'old' practices.

5.2.1 Pragmatic Tensions

At T1, participants expressed their preference for prior forms of collaboration (Figure 4) and felt the DCP created unnecessary additional practices. However, as a result of practical difficulties of needing to work from home, adaptations were made (Orlikowski and Scott, 2021). Many workforce members do not own employer-issued mobile phones and are unwilling to use personal phones, furthermore, decision making via back and forth of email is time-consuming and conversations contained therein subject to misinterpretation (Byron, 2008). Participants already had internet access to their homes

and Teams requires internet connectivity plus installation on a laptop/tablet/mobile phone, so workforce members use it without additional cost to themselves. Video conferencing for real-time collaboration provided a substitute to seeing/speaking with others in the same physical space: at T1, "*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 could continue to operate, we can still see each other, if someone was having a rough day we could have a chat" (P18:B)*. The ability to see each other via video conferencing ameliorated feelings of social isolation by protecting workers mental health, *"It has helped me interact with people when it works. I have insisted that we have video calls once a week" (P27:B).* A recent quantitative study similarly found that, during COVID-19, people were feeling lonely and depressed, but were trying to support each other and give strength to one another (Abelsen et al., 2021).

5.2.2 Tactical Tensions

Tactical tensions repurpose capacity for new services (Orlikowski and Scott, 2021); 'All Staff' meetings/Q&A sessions were previously held in person which were uncomfortable for a participant with mobility issues, *"We all have to gather on these really uncomfortable step seats" (P25:B)* and time consuming for all, due to travel, but online meetings provide a convenient, accessible method to collaborate, *"This is more accessible" (P25:B), "The whole point of this is to be able to communicate as clearly as we can with you about where we're going" (Staff Q&A:A), "People have unparalleled access to senior management which they would never have had previously" (P2:A).*

At T1, few participants considered Chat (instant messaging) as a preferred collaboration practice. By T2, the pattern changed (Figure 5) with participants tactically repurposing asynchronous chat into pseudo-synchronous communication, by responding to chats quickly, if not immediately, and expecting the same in return, *"I will send a quick informal message for immediate responses and that is how they work as well" (P4:A).*

At T1 and T2, email was identified as a preferred communication method by most participants irrespective of age and whilst email has not been replaced, in line with previous research (Oettl et al., 2018), participants repurpose its use by choosing

between email and chat according to register (the degree of formality needed), *"Where we're establishing some change of process, I would communicate that via email" (P2:A),* audience (i.e. members of own organisation or external), purpose of communication, *"Emails aren't a conversation, they're a statement really"(P8:A)* and 'immediacy', *"I am much more responsive on chat than I would be on email" (P2:A).*

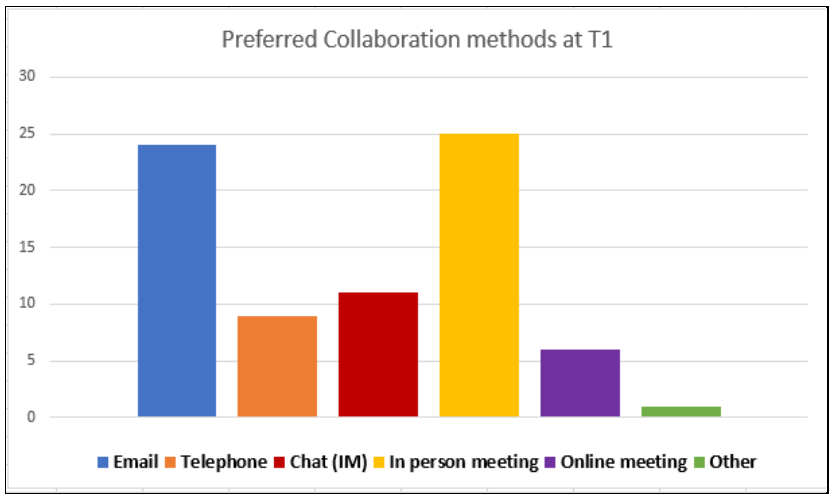


Figure 4 - Preferred Collaboration Methods at T1 (May – August 2020)

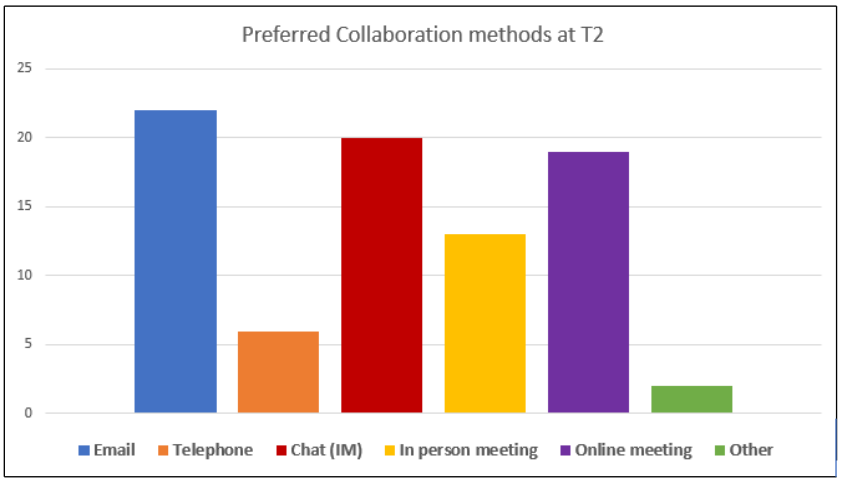


Figure 5 - Preferred Collaboration Methods at T2 (Sept – November 2021)

5.2.3 Existential Tensions

Orlikowski and Scott (2022) use 'existential tension' for practices that are displaced/ discontinued as they no longer make sense in practice, *"I was amazed by how few people wanted, cared about having an external telephone number, we've reduced it to about 30% of employees"(P20:B)*. By T2, concerns about the displacement of meeting

in person and the perceived impact on organisational culture were surfacing amongst higher graded participants, *"I think it is about protecting the company ethos and culture…we are a collaborative business and its about reminding people what we are good at" (P16:B)*, *"I know our leadership team really like the office and prides itself on a sense of community and fun in the office….I think that was a bit of a slap in the face when everyone could go back but nobody seemed to want to"(P16:B).* 'Hybrid working' is the reconfiguration of remote work and office work, to attempt a balance between the two modes. Case B, who hold employees choice awards for their culture, tempted workers back 3 days a week, with 'return to the office' treats including vouchers for free food/drinks and desk-based massages. Investment was made into reconfiguring office space offering 'warm desking' or 'neighbourhood' spaces and equipping meeting rooms with hybrid technology. However, a survey conducted in May 2022 indicated that many Case B workers prefer 2 days a week in the office, rather than the 3 favoured by senior management. Case A created flexible working policies/artefacts, leaving it to individual teams to decide on the remote/office mix. Arguably, attempts by both organisations to offer the best of both worlds could deliver the worst of each, with concerns about hybrid technology and suitability of working spaces expressed, *"When we are in office, it's an absolute car crash"(P19:B), "Open plan offices are not intended for everyone talking"(P18:B),"I can't do that today because I'm actually working in the office" (P12:A, ironically).*

5.3 Influencing factors: potential workforce divides

This theme examines factors from the data corpus that affect use of the DCP.

5.3.1 Emotional Response

As a participant pointed out, *"People have things going on outside work which affect their behaviour"(P9:A)*. Potential loss of employment threatened, *"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)*, "*I think people worried about employment security and actually it's made people just get on with it" (P21:B)*. 'Fear about IT' generates 'reluctant' use (Bhattacherjee et al., 2018), or 'resigned compliance' (Lapointe and Rivard, 2005). Existential anxiety was highlighted as a consequence of modernity (Giddens, 1984), and when routines of everyday practice are disrupted by an innovation, this anxiety can intensify to fear (McGrath, 2006). Moreover, the context

in which this research was conducted, i.e., COVID-19, also gave rise to emotions of worry (Choudrie et al., 2021).

5.3.2 Age

In terms of ways of working, a binary divide between older and younger participants was not found regarding a preference for 'multi-tasking' or 'linear tasking' i.e., preferring to conduct tasks in a linear fashion (Bayne and Ross, 2007). Some participants identified that whilst they might prefer to work in a linear fashion, they felt they have to multi-task. Results are shown as Figure 6.

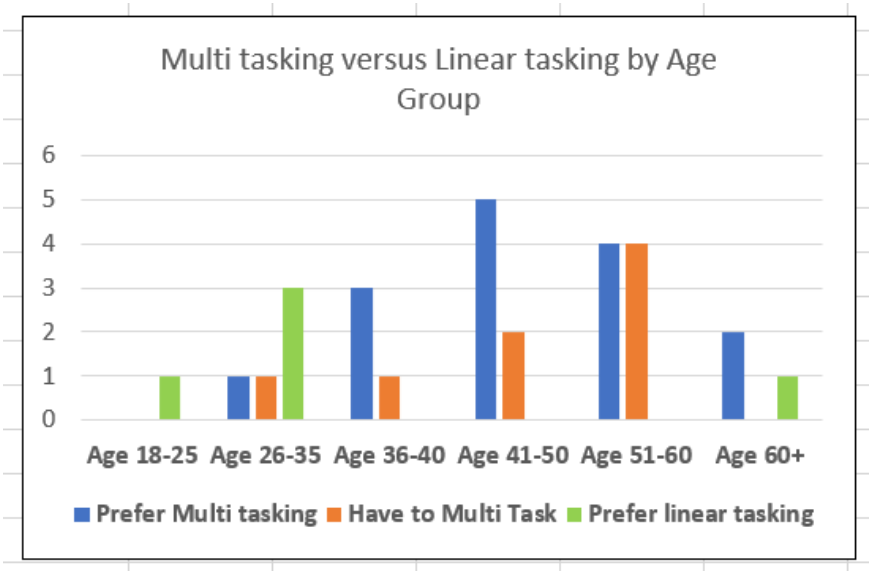


Figure 6 - Multi Tasking versus Linear Tasking by age group at T1

Some participants referred to themselves using negative terms, *"I am old school…I am 58…I had not done a streamed meeting before this (P24:B)*, *"I'm a complete Dinosaur in some senses"(P5:A).* Generally, these participants were 50 years of age and above. Similarly, younger participants used positive terms, *"We have quite a young team in their 20s or 30s, so we are keen on technology and trying new stuff (P13:A), "I don't mind change, which I think is a young person's trait"(P19:B).* Stereotypical beliefs in an older age group can create self-limiting behaviour (Lagacé et al., 2016), which, when challenged by the necessity of mastering the digital technology, can have surprising results, *"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).* This

confirms views that older people can become immersed in digital technology (Kesharwani, 2020).

5.3.3 Digital Fluency

Participants digital fluency was not 'measured', however the majority had no prior experience of a DCP, *"I don't think I was even conscious of Teams before the lockdown" (P5:A).* At T1, *"Some people have taken to all of this like a duck to water. Others have really struggled, and some people have found it quite overwhelming"* (P2:A); the phrase 'you're on mute', now forever enshrined in popular culture, neatly encapsulates early issues. Younger people were identified as helpful, partially supporting claims that DNs possess higher level of skills/confidence (Jarrahi and Eshraghi, 2019); *"People often comment to me about how useful the younger generation have been to them…they were going to people that weren't naturally leaders in the team" (P1:A).* A younger participant suggested a 'level playing field' helped, *"There was a common understanding across all age groups and demographics and functions" (P23:B).* By T2, some participants felt their digital skills and self-confidence to use other digital tools had improved, *"I wasn't using video conferencing software before, and that's a digital skill" (P17:B).* Some participants compared Teams to existing digital apps, thereby feeling digital skills were little improved, "*I'd say only marginally because I was using a similar thing for ages, Slack is similar" (P27:B). "Teams is quite similar to other chatting functionalities that you can get like WhatsApp, that sort of thing. Video conferencing is like FaceTime" (P12: A).* One participant in the 26-35 age group observed that *"Young people don't think how technology can be used in a more professional way, they think of it as a personal tool" (P13:A).*

5.3.4 Structure and Role

'Influencing upwards' is not easily achieved, as this participant aged 18-25 observed, *"It 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)* 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, *"I am the oldest in the team, I am 57…I have*

to go through my line manager, I am completely hampered, that is one of the reasons I have been off sick…because I have ideas all the time, but nobody listens"(P27:B).

5.4 Changing Organisational Culture: values and practices

The overarching concept within this theme is how organisational practices/values have changed.

5.4.1 Flexible and inclusive workplace

This sub theme illustrates changing organisational values. Presenteeism was the prevailing espoused value (Schein, 2017) in both organisations, "*I didn't think people could work as efficiently from home and secondly, I didn't think people would work as efficiently from home" (P5:A). "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 " (P23:B).* However, lower graded participants felt they *"proved everyone can be efficient and work from home (P12:A)"* whilst recognising that *"anything that is not the norm is unknown"(P28:B).* By T2, changes were observed, *"I think the organisational culture is improving. If anything, there's a lot more trust" (P7:A), "There has been a massive shift…I think culturally it has changed at an institutional level, some people would have trusted their employees and their teams anyway" (P9:A).*

Participants demonstrated compassion, a social emotion which is inherently other regarding (Kanov et.al, 2017), *"Our team is getting stronger and looking out for one another" (Focus Group:A).* Both organisations, recognising the threat to mental/ physical health, responded with compassion by instructing online activities, such as yoga and fun events, "*Let me take a shelfie"(P13:A).* Visibility, being able to see into each other's homes via video conferencing, engendered trust, compassion and created social bonds, *"The two are linked, getting to know people better and having the technology to facilitate that"(P18:B). "I think there's been some real positives and I think it's going to really work for our staff community in the long run (P4:A).* By T2, other effects were noticed, "*There are senior managers who say they have to go to pick up the kids or sort dinner out because their partners are working. Online working can only benefit that, some people will take their phones while they are waiting for the kids or at an appointment maybe. There is some potential for more gender equality" (P9:A).*

Equality and inclusion is important to both organisations, evidenced by salaried

equality, diversity, and inclusion personnel. A further aspect of inclusion is that disabled workforce members appreciated the DCPs integral accessibility features, *"I can use Teams/Zoom captions on my laptop, 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"* (*Focus Group:A*).

5.4.2 A culture of digital

This sub theme illustrates how new digital practices are reinforcing a digital culture, "*We had not done any online events with students…we used to rely on schools requesting us to go in....often the schools the team consider need support….it has allowed us to reach students in different ways…without having to rely on teachers" (P13:A),* thus bypassing previous intermediaries and creating value (Ramaswamy & Ozcan, 2016, Dougherty & Dunne, 2012, cited in Verhoef et al., 2021). Development of digital skills in both organisations, *"I Teams someone as often as I call them"(P24:B), 'He (CIO) referenced a digital skills uplift and we've done it by stealth…lo and behold, people who if you'd said twelve months ago would be using teams and threaded messages, I absolutely would not have believed you' (P21:B)* offers a more hopeful outlook for incumbent knowledge workers (Verhoef et al., 2021). This concludes brief findings and analysis, the next section offers discussion/conclusions.

6.0 Discussion/Conclusions

6.1 Digital Divide/Digital Inclusion

This research did not find a binary divide between Digital Natives and Digital Immigrants using a DCP in the workplace. DIs did not resist using the DCP with DNs eagerly adopting it, thus contradicting claims that resistance is a characteristic of older adopters (Vodanovich et. al, 2010). Figure 6 illustrates not all younger participants prefer to multitask, some prefer to conduct tasks in a linear manner, challenging prior claims that DNs "like to parallel process and multi-task" (Prensky, 2001a). A mixed group of older and younger participants suggested that multi-tasking, a moderate amount of which has been suggested as improving productivity (Abelsen et al., 2021) is necessary in today's workplace rather than a preferred way of working, thus offering new insight. When faced with many collaboration methods, DIs were not more likely than DNs to use asynchronous communication such as email, contradicting prior claims

(Khoir and Davidson, 2014, cited in (Jarrahi and Eshraghi, 2019), in fact, participants in all age groups continue to use email, a further contribution.

This research also failed to find a binary divide between DNs and DIs in terms of digital skills; digital fluency varied across the workforce; older workers can be highly fluent with younger workers less so, offering empirical evidence to support views that digital fluency is a continuum rather than a binary divide (Wang et. al, 2013). Digital dexterity, the ability to compare and use different digital applications with equanimity, appears to indicate higher levels of digital fluency. Stereotypical views were found amongst all age groups when it comes to self-confidence to use technology, with older people often using negative terms such as 'dinosaur' to describe themselves. Younger people suggested 'liking change' is a characteristic attributed to younger people. 'Liking change' may create a virtuous circle, however, younger/lower graded workers, irrespective of age, use sanctioned organisational technology, accommodating higher graded workers preferences, which can lead to frustration for those with higher levels of digital fluency. Thus, despite digital fluency, the role occupied within a hierarchical organisation is more important than age. Prior research has criticised the binary terms associated with DIs and DNs as implicitly discriminatory, for example, 'old', 'slow', 'past or legacy', 'backward looking', in contrast to 'young', 'fast', 'future', 'looking forward' (Bayne and Ross, 2007). These terms, with their inherent assumptions, act as an 'othering' concept, unhelpful in organisations valuing inclusivity, especially since age is a protected characteristic in UK workplaces. Findings from this study, which investigates simultaneous adoption of a DCP by diverse age groups, make an important contribution to the body of knowledge on intra generational research and technology adoption in the workplace; prior research highlighted the importance of comparing behaviours between diverse age groups in a workplace setting (Wang et. al, 2013), a research topic that is still 'in its infancy' (Jarrahi and Eshraghi, 2019). A further contribution to workplace digital inclusion is made; integral DCP technology features such as captions and transcripts on recorded meetings, together with the opportunity to work more flexibly, is helpful to younger and older workers suffering from some temporary or permanent disabilities/impairments, such as hearing/vision loss and mobility issues, for example when recovering from surgery/cancer treatments.

6.2 Collaboration practices and Organisational Culture

Organisational collaboration practices have been interminably changed by the mandatory adoption and use of DCPs. When COVID-19 disrupted working practices, DCP adoption was enforced and from liminal spaces arising from unsettled conditions, alternative digital collaboration practices materialised (Orlikowski and Scott, 2021) In enforced homeworking, pragmatic tensions (ibid) generated new practices; meetings were conducted entirely online via video conferencing. This capacity was then tactically repurposed (ibid) to provide new services; 'Town Hall' online meetings provide a cost-effective, accessible method for all company collaboration/information dissemination, in a time of crisis and beyond, thus developing agility across organisational communications (Verhoef et al., 2021). Whilst email, a prior digital collaboration practice, continues to be used, 'chat' has been added, causing some to feel overwhelmed by the plethora of ways to collaborate. Knowledge workers attempt to rationalise multiple collaboration methods by choosing one based on characteristics such as register (formal/informal tone), purpose (broadcast/information giving), audience (internal/external colleagues) and immediacy (how quickly a response is required). One collaboration practice that has been almost entirely displaced is the office telephone.

Alternative materialisations of digital collaboration practices facilitated business continuity rather than transforming core activities; in Case A, student applications were processed, virtual clearing took place and teaching/assessments continued, but the institution did not become a 'virtual' university beyond the pandemic. Similarly, in Case B, printed and digital magazines were produced on schedule and acquisitions made during lockdown periods but the publisher did not become wholly digital, and continued to produce both digital and printed material. The new understanding that a DCP can facilitate virtual/remote working even when the organisation was not 'born digital', was combined with increased trust in workers intent to work from home, and organisational compassion for each other's circumstances beyond work, to transform working practices. Both workforces were offered an ongoing opportunity to work more flexibly than previously imagined possible. Hybrid working in this case, is an acknowledgement that personal lives of staff matter and illustrates a culture of 'leave emotions out of the workplace' inadequately reflects organisations in this study, supporting a recent suggestion (Elfenbein, 2022). Moreover, it is professionally acceptable to acknowledge one's personal responsibilities at work, which may prove

constructive for employees with responsibilities for unpaid work outside the workplace, of whom 79% globally are female (Criado Perez, 2019). In illustrating this, the research contributes to scant literature on the role of emotions in IS technology adoption and their impact on organisational culture.

However, whilst hybrid working benefits many employees and creates some productivity gains, e.g. reduced short-term absenteeism, it also creates existential tension, or displacement (Orlikowski and Scott, 2021), of organisational culture, as incumbent norms and values continue to privilege 'in person' collaboration over online collaboration. Forward looking organisations will need to find ways to embrace a hybrid organisational culture, for example, investing in purpose-built hybrid-technology for meeting rooms since this technology continues to evolve at pace. A further simple tactic would be to incorporate both physical and virtual events/activities, favouring neither one nor the other, thus offering an inclusive strategy to diversely aged/abled workforces. Acceptance of video conferencing 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 criteria increase digital inclusion at a broader level (ibid). Given the acceptance of video conferencing, a core feature of Teams, and knowledge workers' experience of using a DCP to facilitate effective flexible working patterns, it is hard to imagine how this particular genie is going back into the bottle. Furthermore, recent research highlighted how good 'task-technology' fit, or the degree to which a certain technology fits a given task, can enhance work performance and reduce loneliness when working flexibly (Abelsen et al., 2021). MS Teams provides a good task-technology fit for the purpose of hybrid working, albeit many participants fail, thus far, to use the rich features offered, such as real time collaborative document editing. This researcher argues that both hybrid working and use of DCPs are here to stay, supporting views of (Dwivedi et al., 2020), (Razmerita et al., 2021). By explaining how and why workplace collaboration practices are changing as a result of DCP adoption, what diversely aged workers subjectively experience and what the impact is on organisational culture, research questions are addressed and contributions offered, also helping to address calls for knowledge about how communication takes place in the context of digital platforms (Vial, 2019).

Furthermore, using the lens of liminal innovation, a different context to that demonstrated by authors (Orlikowski and Scott, 2021) is offered. Liminal innovation concepts of displacement and existential tension are extended in this research to consideration of organisational culture (Orlikowski and Scott, 2021) making a further contribution.

6.3 Factors promoting or inhibiting digital collaboration practices

A contribution is made to academia and practitioners, who may benefit from insight on factors which promote or inhibit digital collaboration practices, the provision of which addresses a research question. When the DCP was mandated for all, it *promoted* digital collaboration by creating a collaborative network, made more effective by the greater links available between people (van Dijk, 2005). Simultaneous adoption *promoted* a level playing field between those who might otherwise have been disadvantaged, e.g., older adults (Lagacé et al., 2016). Resistance to DCP adoption was not an *inhibitor* for older adults, contradicting prior literature (Vodanovich et.al, 2010) however, negative stereotypical views amongst older participants, persist as a potential *inhibitor* (Wang et al 2013). Digital fluency acts as both *promoter* and *inhibiter* but some participants felt using the DCP improved their digital skills and self-confidence to try using other digital applications. Lack of awareness/use of design features beyond video conferencing and chat acts as an *inhibitor* to optimum effectiveness in collaborative working. The ability to use 'digital media as a means for a particular personal or professional goal' is described as strategic skills (van Dijk, 2005), important to avoid potential creation of 'unbridgeable gaps between groups of employees in the workplace' (ibid). Organisations compete on the basis of value-adding knowledge work making continuous learning, regardless of age, important (Warhurst and Black, 2015). Adoption of the DCP led to an improvement in digital skills/self-confidence, which in turn positively contributes to digital inclusion in the workplace.

7.0 Limitations of this research and future directions

Acknowledged limitations of this research are that results pertain to mandatory adoption of DCPs and cannot be generalised to voluntary adoption, technologies other than DCPs, other contexts or other cultures where the internet may be less accessible. For example, employees in other organisations and/or countries will not necessarily

have experienced enforced lockdown in a similar way to participants in Case A and Case B. Future directions could involve further research into the development of blended organisational cultures, and since people with disabilities are not a homogeneous group, additional research into the adjustments that might be needed to ensure digital accessibility in the workplace.

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Appendix 1 – Interview Questions

(T1 – May to August 2020)

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 1 continued - Interview Questions

(T2 – September to November 2021)

What are you using Teams to do?

Prompt: what working practices are carried out wholly or partially using Teams?

Probe: What, if any, further changes to your working practices do you see as a result of Teams?

Probe: Who is responsible for initiating changes to working practices? Prompt: Who is keen to try out new things?

Do you envisage using Teams once we able to return to the office? If so, how do you think this will work in practice?

Do you think use of Teams/Zoom is here to stay for the foreseeable future? Probe: Please could you explain why you think that?

(Optional) You mentioned last time that Teams has been beneficial to you in terms of your disability and working practices. Please could you tell me a bit more about that?

(Optional – depends upon response to pre interview questions) If they agree that the pandemic has caused them to use Teams, ask…would you have resisted using Teams? If so, can you tell me why?

Have you expanded your network/reached out to anyone in Teams you did not contact before?

Has anyone new/different reached out to you?

Last year, trust was identified as important for flexible working. How do you think attitudes towards trusting people to work from home have changed in your organisation?

Probe: What measures need to be in place to make sure people are working when working from home?

Are there other changes to your organisational culture that you have noticed since adopting Teams?

Prompt: For example, how have methods of communication between colleagues changed?

Which features in Teams have you enjoyed using, if any?

What would make you more likely to try using some of the other features within Teams (that you have not yet used?)

Digital Skills (Simply read each statement below and ask participant for comments in relation to self and explanation of answer)

Using MS-Teams has:

Enabled me to develop my digital skills

Encouraged me to try using digital tools

Led to an increase in my self-confidence to use other digital tools

Significantly improved our working practices

What benefits, if any, has using Teams bought you?

Prompt: Do you think that using Teams has brought productivity gains? Can you please describe those gains?

Probe: For you, your team, your organisation

Could you describe any negative consequences of adopting Teams?

Appendix 2 – Original Conceptual Model

Appendix 3 - Examples of the Data Analysis process

A – Aggregation of codes into Themes and Sub themes

Theme	Sub theme	Codes	Notes
Tech adoption in a time of crisis	Mass Adoption	Technology Adoption and Rollout/ Common Understanding/Level playing field	*"There was a common understanding across all age groups and demographics and functions" (P8:A)* and *"Everyone can do it, so it means we are now on the journey" (P4:A).*
	Mandatory Adoption	Mandatory Adoption/Forced to use tech/ Accelerated where we wanted to be/ Personal Volition	*"Being forced has meant no choice" (P4:A),* *"It was dropped on us" (P22:B)*
	Resistance Reflections	Resistance reflections/Resistance to change/That's the way it's been over however long	*"That's the way it's been over however many years – I'm not against it, its just getting into that mindset" (P16:B)*
	Role of central IT	Shadow IT/other options available /Slack	
		Lack of Support Champions/ Lack of guidance/Help from colleagues/Online training needed/Test space/Unaware of functionality/Self help with Tech	
	Future intentions	Continuance Intentions	

B – Examples of Theme Development

Theme	First-Order Data	Key Idea	Second-Order Data
Mandatory Adoption and Resistance to Change	*"Being forced has meant no choice".* *"It was dropped on us".* *"Used out of necessity, we would not have adopted if in office"* *"If given in office, Teams would not have been used"* *'I can see people's faces',* *'It's an easy way to socialise'* *'I don't feel distant from people'* '*We would have been on the phone or had to use email'.*	Participants acknowledge their lack of choice about adopting the DCP, it was forced on them and their use is based on necessity. Necessity refers to the need to maintain effective communications with colleagues during a period of physical isolation. Most people didn't have company sponsored 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 speak to one another 'in person' and thus have no need for the videoconferencing facilities. Prior to enforced homeworking, individuals' assessment of the DCP would have resulted in resistance and non-compliance.	Participants see relative advantage and are compliant in using the videoconferencing now that it is compatible with homeworking. It helps to prevent feelings of social isolation that might occur when working from home. 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 Adoption and Digital Divide	*"There was a common understanding across all age groups and demographics and functions"* *"Everyone can do it, so it means we are now on the journey".* '*We have been thrown into it and we have all come a long way, some more than others, whose lives will be better for it'.*	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 a journey was made by more than one participant. Whilst there was an agreement that everyone had adopted the DCP at the same time, there was also reference to people having had to 'travel further' but finding benefit as a result. This refers to individuals learning how to use the DCP and acknowledges a workplace digital divide.	The levelling effect of a mandatory adoption for the whole workforce was helpful in creating feelings of unity. Irrespective of digital skills or levels of confidence at the outset, self-learning generated beneficial outcomes. Adopting the DCP in this context may have narrowed rather than widened the workplace digital divides.