

Exploring the Effects of Platformization in Audits of Financial Statements

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Abstract

The widespread appropriation of data driven technologies in professional audit firms has been accompanied by a proliferation of digital platforms. Examples include proprietary digital platforms such as PwC's Halo, KPMG's Clara and third-party platforms such as Alteryx and Zoom to name only a few. The act of shifting to digital platforms to offer products and services and the process that turns a closed system into an open platform to facilitate interactions between users, collect and use data about such interactions and generate and take advantage of network effects is called platformization. Therefore, this paper aims to extend our understanding of *Platformization* to explore the implication of the appropriation of digital platforms on audits and auditors.

The motivation to deploy and accelerate the use of various forms of digital platforms can be understood in relation to two main reasons. First, is the pressure to meet professional demands on auditing, which were constrained by government guidelines imposed during Covid-19 pandemic. Second, audit firms' quest to digitalise the way financial statements are audited considering technological advances in Big Data.

Despite having a growing body of literature on technical dimensions of digitalization in audits, little is known about role and constitutive nature of digital platforms in audits of financial statements. This knowledge gap is particularly pertinent during uncertain times such as the Covid-19 pandemic given that the neoliberal era is characterised as manifesting intense precarity where rituals of interaction and monitoring are digitalised and virtualised. This study offers evidence on how control and monitoring are manifested and constructed between digital platforms and auditors.

Our empirical evidence from multiple case studies was collected during the Covid19 pandemic, including the big 4 UK audit firms. We conducted 15 semi-structured interviews with 11 individuals whose position of responsibility ranges from associates to partners. We also observed the operations of the digital platforms. We use Zygmunt Bauman's depiction of the contours of liquid modernity, particularly the body of work on surveillance, to establish forms of power on digital platforms deployed in audit firms and how they exercise control and coordinate audit work.

Our findings show that digital platforms are not neutral spaces to facilitate interaction and coordinating work; they are used by management to encourage auditors to monitor each other and develop auditors into digital-driven auditors. Further, auditors cultivate comfort and gut feeling by creating "virtual" interaction rituals on platforms such as Zoom to mirror the physical interaction. Audit firms use third-party platforms such as Alteryx to enhance auditors' entrepreneurial self – through skills in coding and developing assets to be used in audits. However, such an approach uses seduction techniques such as gamification to motivate auditors see the benefits of being creative, competitive, and efficient.

Therefore, the findings contribute to auditing scholarship by showing gamification and virtualization in audits as post- disciplinary means for excising social control and emancipation respectively which emerge through platformization. Thus, platformization allows us to demonstrate how the technical dimensions of data driven technologies to promote audit quality are imbued with panoptic and synoptic surveillance to monitor how auditors are committed to the firm and how they cultivate and sustain self-control and enthusiasm.

Introduction

In this paper, we build on prior research into audit technologies (Barrett et al., 2005; Salijeni et al., 2019) and the influence on the work of auditors (Jeacle and Carter, 2022; Power, 2021; Pentland, 1993) and their interactions (Bauer et al., 2022) using post-disciplinary theoretical levers from Bauman's treatise on liquid modernity.

There is recognition among regulators (FRC, 2021, IAASB, 2016) and academics (Salijeni et al., 2019, Appelbaum et al., 2020) that digitalization¹ is transforming the landscape for audits of financial statements. It could be argued that changes in clients' operational processes and stakeholders' demands for credible audits (Brydon Report, 2019) in a technologically advanced environment are driving the change. In addition, there is an awareness in accounting research that digitalization and virtualisation (Wickramasinghe et al., 2021) in the neoliberal milieu enact various forms of control surveillance and, transform individuals' identity and invoke their emotional resources such as anxiety and pleasure (Chapman et al., 2021).

In the last decade, Big and mid-tier audit firms, have invested significantly in proprietary digital platforms such as PwC's Halo (2017), KPMG's Clara (2017) and third-party platforms such as Alteryx (O'Brien and Stone, 2021; Alteryx, 2020) and Zoom (Bauer et al., 2022) to facilitate digitalization of audits and improve communication within the firm and clients. This "act of shifting to digital platforms for offer product and services" (Setia et al., 2020, p1) is called platformization because it turns "a closed system...into an open platform" (Madon and Shoemaker, 2021, p930) to facilitate "interactions between users...collect and use data about such interactions and generate and take advantage of network effects." (Gawer, 2021, p3).

Our focus in this paper is on platformization covering two main areas: the proliferation and appropriation of data-driven technologies (Salijeni et al., 2021, Appelbaum et al., 2020) with many professional audit firms adopting digital platforms. Secondly, we are interested in control surveillance approaches which are made possible on these platforms. We build on scholarly literature on professional audit firms that emphasizes on the use of audit technologies as hierarchical control methods (De Vries et al., 2022, Barrett et al., 2005) and socialisation regimes

¹ We concur with Lassila (2022)'s conceptualization which takes view broad view in defining digitalization to cover the discourse on both digital transformation and conversion of material things into digital state (digitization).

involving use of disciplinary powers (Anderson-Gough et al ,2001, Covaleski et al 1998).

In this regard, our focus is beyond those disciplinary powers by attending to neoliberal era where there is recognition that surveillance is becoming liquid, thus it “*does not keep its shape; it morphs and mutates*”. (Lyon, 2010, p330) and there is “*unprecedented level of techno-managerial transformations in the form of digitalization and virtualization*” (Wickramasinghe et al. ,2021, p493).

Pentland (1993) demonstrates that audits of financial statements involve a chain of interaction rituals that generate comfort for audit team members. The interactions mainly face to face and, in some cases, are on digital platforms (Bauer et al.,2022). However, digitalization can also generate discomfort because it invades privacy (Lassila, 2022). It also reifies and legitimizes monitoring rituals in times of uncertainty by offering a vast array of indicators which track and quantify individuals (Power, 2021). It is within the context of uncertainty --the covid-19 pandemic and post -pandemic period (“pandemic” hereafter), we situate this study because it attracted a plethora of digitally driven surveillance mechanisms (Ahmad et al, 2021) including new forms of interaction (Bauer et al .,2022) which together with the fear of the pandemic created a climate of emotional despair and “disjointed communities[but] also opens up space for actor resilience and experimentation.” Ferrares et al (2020; p114)

In this period, audit firms and regulators problematized that the audit environment required mechanisms that could enhance auditors’ ability to offer quality and credible audits (FRC,2020). The mechanisms would provide the interface between themselves and their clients and address the challenges associated with gathering appropriate and sufficient audit evidence, which usually form the basis of an audit opinion. Thus, to overcome the government-imposed constraints, which included social distancing, lockdowns, and restrictions on travel (Bauer et al.,2022) to name a few, auditors had to work, conduct audits and interact with each other and clients remotely from home; hence digital platforms with communication applications and, data collection and analysis were encouraged.

Little is known about the impact of the pandemic and the changes to practices due digitalization in audits, which may be incorporated into the “new normal” as organisations return to hybrid forms of working (Bauer et al.,2022). Despite various governments lifting the introduced restrictions due to Covid-19, there is a strong sense that most audit firms are now adopting hybrid approaches to working (Bauer et al., 2022. This suggests that the role of digital platforms

in how audits are conducted is becoming more pronounced . In addition, the promotion of remote working even after the pandemic is a testament to the changes brought into the work practices of audit, which could affect their work-life balance (Chapman et al, 2021). The latter could be seen as an invasion of the private space of auditors by the audit firms, which might imply how auditors mobilise and balance their professional status and emotional resources such as professional judgements, trust, comfort, and anxiety. In this paper, our understanding of digitalization goes beyond the technical dimensions of the adoption process and draws on critical perspective to exploring the impacts of technology as socio-technical, including the influence on power relations (Knudsen, 2020; Yoo et al., 2010). We achieve this by carrying out multiple case studies of UK based audit firms posing the following question: *How has platformization impacted auditor practices during and after the Covid-19 pandemic?*

Covid-19 pandemic and what is happening afterwards have been characterised by volatility, relentless change, and fuzzy boundaries that we argue closely mirror the depiction by Zygmunt Bauman of ‘liquid modernity’ (2000) offering a suitable lens for our inquiry. It also highlights the prior characterisation of audit teams as drawing their comfort, social control, and legitimacy through physical interaction between themselves and clients (Bauer et al.2022; Pentland,1993).

We provide evidence collected through observation of digital platforms and semi-structured interviews with the participants from professional audit firms and audit technology companies. We analyse it by drawing on some pertinent themes from Bauman’s analysis combined with recent scholarship on control surveillance (Clegg and Baumeler, 2010), to critically examine digitalization in the audit process, focusing on some unexpected and undesirable consequences giving voice to the perspective of the auditors themselves.

Findings reveal that while being promoted to improve audit quality, digital platforms are becoming spaces for governing bodies (auditors) at a distance and, an emancipatory avenue for auditors to overcome their anxieties. The process of governing bodies is embedded in the platform’s affordances where gamification strategies building on Chapman et al. (2021) enable auditors appeal to their “inner self” with “likes” (Hamari and Koivisto, 2015) to ascertain their creativity and entrepreneurial tendencies transforming them into digitally driven auditors. Further, auditors are meant to feel in control of their destiny by invoking their sense of creativity through the ability to develop “assets” even though these assets are owned by firms and would be commodified into scripts for auditing. However, to cultivate comfort and gut feeling, auditors “virtualised” the ritual of interactions by simulating audit team rooms on

digital platforms. This observation allows us to extend our understanding and concerns on whether Pentland's (1993) findings on auditors' interaction and comfort generation can be experienced on digital space.

The paper is structured as follows: The next section reviews the literature on the transition to digitalization and modes of control in audit firms, and platformization. This is followed by an account of Zygmunt Bauman's conceptualization of Liquid Modernity (2000) to help us understand the impact of platformization of audit. We then present our research method and setting, then analyse and discuss. The paper concludes by presenting the contributions of our study and the implications for future research on platformisation on auditors.

Moving towards digitization

The history of audits indicates that audit firms lag in implementing new computer technologies (FRC, 2020; AICPA,2014). The use of computers in audits can be traced back to the early 1960s with the introduction of an application called AUDITAPE by Haskins & Sells, now called Deloitte (Matthews,2006). In contrast to current data-driven proprietary tools, AUDITAPE was used to audit "around" not "through" the computer. Despite the advances in technology, auditors preferred to use traditional manual approaches. In the 1980s, when audit clients started to use Enterprise Resource Planning (ERPs) platforms, off-the-shelf audit applications such as Highbond Galvanise (Formerly Audit Command Language-(ACL) and Interactive Data Extraction and Analysis (IDEA) were introduced to the market (Salijeni et al., 2021). These applications, commonly referred "Computer-assisted audit tools" (CAATs) were much improved than the proprietary audit firms' tools and leveraged the use of spreadsheets in Excel, among others. Salijeni et al., (2021) show that audit firms found them costly, lacked expertise and required specialists to operate them during audit engagements. Therefore, they were only restricted to specific clients.

While CAATs were mainly used in data analysis, auditing research in group judgments and decision-making (For review see Trotman et al., 2011) shows that audit firms introduced manual and computerised decision support and expert systems to help auditors make decisions consistent professional judgements.

The advent of large databases and cloud computing challenged the audit firms to rethink the way they interacted and collected evidence from their clients. In 2013, audit firms started

making claims about the use of Big Data Analytics (BDA) in audits (Salijeni et al.,2019). While the use of BDA was not as pervasive as portrayed in audit firms' promotional materials (FRC 2017), the use of digital platforms to leverage data analytical tools was gaining momentum. Audit firms introduced programmes of change on digital transformation (Salijeni et al.,2021) in which these platforms were promoted and introduced. PwC were the first to introduce proprietary digital platform called Aura (PwC, 2014). Aura was a suite comprising of tools for information monitoring (Aura Now), document exchange (Connect) and data analytics (Halo). Later, EY introduced their platforms called Canvas and Helix (EY,2016) followed by KPMG with their data analytics tool -Clara. As with PwC's Aura, Canvas in EY connects the firm with clients' systems whereas Helix is a data analytics tool.

Instead of developing their own platforms, other firms such as Deloitte and mid-tier firms leverage third party platforms e.g., Spotlight, Highbond Galvanize, Alteryx. Despite significant developments in digital platforms, it is unclear how this impacts the way auditors conduct their work or themselves during and after the pandemic (Bauer et al., 2022).

Barrett et al. (2005) explains how computerised audit methodology and inter-office instructions were used to coordinate and standardise audit work across different geographical spaces and time zones. They also show how these technologies are not just neutral because of their perceived technical dimensions, they are also performative. Thus, they are meant to bring "re-engineered approach to auditing and encourage auditors to identify and provide additional, non-audit services, to the client" (ibid, p3).

Audit and modes of control

In this section, we analyse academic literature to show how audit technologies in general are implicated in how audits are controlled and transforming auditors' identity and work. We also demonstrate that the appropriation of audit technologies is not unproblematic. Thus, we show how emotional resources are mobilised to overcome or embrace the technologies. We achieve this by identifying where modes of control and resistance are located in the audit firms and how they are mobilised.

The hierarchical nature of control in audit firms means that at the top level, there are administrators who are preoccupied with making sure auditing on one hand, is perceived to meet societal needs and on the other is fulfilling the economic imperatives for the firm to survive as a business in a market economy. The literature embraces these as professional and

commercial logics (Guo, 2015). At the lower level, practitioners are responsible for performing the audits in which they employ various audit technologies to collect and interpret evidence which forms a basis for audit opinion. Power (2003) refers to administrative and practice realms as programmatic and technological levels. At the programmatic level, administrators engage in impression management where discourse and images of auditing reflect the economic, technological, and political demands (Power, 2003). The technological level operationalises the audit process through routines and practices. Thus, at this level, there is rationalisation of audit work, identity work, the engendering of fear, anxiety, and comfort (Pentland, 1993), control and accountability are made visible and auditable (Power, 1997).

The academic literature in auditing appears to offer two empirical strands of research that discuss how control is exercised in audit firms. The first strand shows that audit firms use the top-down approach in their control hierarchy, which relies on the appropriation of calculative technologies to coordinate and structure the audit work (Barrett et al., 2005; Power, 1997). The second strand is bottom-up, where audit firms appeal to auditors' inner selves" by aligning firms' objectives with their hopes and aspirations (Empson 2004; Alvesson and Willmott, 2002). The literature in this strand demonstrates socialization as a form of control to regulate auditors' behaviour and identity (Anderson-Gough et al., 2000).

In case of a top-down approach, the motivation for concentrating control at the administrative level is to coordinate and standardise audit work that meets regulatory and economic imperatives. Lemon et al.(2000)'s study of large audit firms in the UK found a top-down approach in promoting and implementing audit methodologies. Similar findings were evident in audit firms with multiple offices across the globe (Barrett et al., 2005; Turley et al., 2000). Lemon et al. (2000) note that regulatory demands to demonstrate audit quality meant that the "audit methodologies" are technologies that formalise the audit process as a structured endeavour and have the effect of limiting auditors' ability to make professional judgements. This is necessary because of increased risk of litigation and engagement partners' pressure to work on tight budgets due to decline in audit fees (Barrett et al., 2005; Power, 2003). In this case, the audit methodology becomes "the regular source for settlement of internal disputes on the extent of audit work helpful in defence to a court action" (Humphrey and Moizer, 1990, p226).

Carpenter and Dirsmith (1993)'s study on statistical sampling demonstrated how technology drawn from bodies of knowledge in other domains such as Statistics enables the audit

profession to control the way audit evidence was determined by giving “audit sampling” a scientific appeal. The reliance on expert knowledge or technologies from elsewhere (e.g Data Science) was also found to provide legitimacy in promoting the use of Big Data Analytics in audits (Salijeni et al., 2021). The extant studies show that audit firms use various technologies to rationalise different aspects of the audit process for regulatory and economic purposes. Further, these technologies allow the administrators to monitor auditors from a distance (Barrett et al, 2005; Humphrey and Moizer, 1990) and able to fulfil “an aspiration for an integrative formal approach to audit which holds out the promise of an algorithmic knowledge base” (Power, 2003, p.381). This promise is in sync with neo-liberal ideas, including the appetite for calculative practices that made auditors and the work amenable to ranking, quantification, and measuring.

As regards regulating auditors’ identity by appealing to their hopes and aspirations (Empson, 2004), audit firms deploy many socialization techniques. There is a significant body of knowledge in this area which shows audit firms being disciplinary institutions (Daust and Malsch, 2019; Covaleski et al., 1998) where auditors shape their identity through the management of time, demonstration of competence, personal appearance, credentialism and client service ethic (de Varies et al., 2022; Dermarkar and Hazgui, 2022; Kornberger et al., 2011, Anderson-Gough et al ,2001). Socialization is designed to make auditors envision their career success as hinged on being professional and entrepreneurial (Dermarkar and Hazgui, 2022, Robson et al, 2007). Audit firms idealised individuals who embrace professional and commercial logics as “versatile experts” (Guo, 2015). Despite the literature showing the professional and commercial logics to be incongruity, there is evidence that auditors acknowledge the importance of each logic and positively express and conduct themselves in that way (Dermarkar and Hazgui, 2022). This projection of auditor’s identity beyond technical prowess is evident on social media platforms such as LinkedIn (Suddaby et al. 2015).

Interaction is a key component in the socialisation process (Pentland, 1993) and “audits are conducted in hierarchical teams with extensive interaction between team members” (Bauer et al.,2021, p.3). Anderson-Gough et al (2001) provide evidence of how trainees bond with each other through interactive practices; induction courses, social events, and training events. The formed solidarity emanates from what Pentland (1993) called “chain of interaction rituals”. In this context, auditors cultivate a sense of belonging by interacting with each other and the bravado is strong in audit teams where comfort is generated, and anxiety is alleviated. As time

goes by of being an auditor, the reliance on audit technology diminishes because auditors prefer emotional resources such as gut feeling to guide them in decision making. The use of “gut feeling” appears to be an adaptation mechanism when administrators deploy audit technology that auditors are not comfortable using (Pentland, 1993; Humphrey and Moizer, 1990). At this point, their reputational risk if something wrong happens is more important than complying with firm’s technology (Curtis and Turley, 2007).

This observation points to two things, first, the appropriation of audit technologies is not without problems because auditors are not “docile” (Fischer,1996). Second, it alludes to modes of adaption that are developed or constructed to exploit opportunities or overcome elements of discomfort or anxiety in their work. Pentland (1993) indicate that working long hours and during lunch breaks are important in demonstrating auditors as “machines”. This articulation portrays the audit environment as unpleasant and devoid of emotional intelligence (de Vries et al., 2022), however Anderson -Gough et al. (2001) offer an alternative view to show that auditors play the politics of time to “contest and exploit administrative procedures for time-management and temporal allocation to further and display their ‘commitment’ to the firms and succeed over others in the competition for career advancement and promotion within the firms” (2001, p106). In this context, auditors could intentionally underestimate the hours worked on the engagement (Gill, 2011). The boundaries between social and work time become more blurred for career progression or to fit in. This impacts on their private life and resonates with neoliberal ideas where the family life is consumed by organisational life (de Vries et al.,2022). These ideas are evident in Edgley et al (2016, p23)’s who they suggest that audit firms are changing their work arrangements by introducing diversity practices such as flexible working to reduce the “conflict between family commitments, material work practices, physical availability for work and professionalism”

Platformization, surveillance and liquid modernity

At the basic level, digital platforms facilitate interaction. The type of interaction depends on the nature of the platform which studies range them from transaction, innovation (Cusimano et al.,2019) to social media (Grandinette,2020). Transaction platforms act as marketplace where two parties (producers and consumers) exchange services or products. An example is the Uber platform that mediates riders and drivers' transactions without owning any assets or employing any drivers (Cusimano et al.,2019).Innovation platforms acts as “foundations upon which other firms can build complementary products, services or technologies” (Gawer, 2009, p. 54). The

technical architecture of an innovation platform contains building blocks, as "accessible innovative capabilities" (Ibid) that can be accessed and combined by apps developers (complementors) to build apps and services (known as platform complements) uploaded for sale or free download on the Apple App Store and Google Play. Social media platforms offer direct interactivity where users communicate with each other, create networks, develop, and debate ideas and topics (Suddaby et al., 2015). Examples include Facebook, LinkedIn. Further, social media include cloud-based -streaming providers that offer video conferencing capabilities such as Zoom and MS Teams (Grandinette,2020).

In accounting research, there is a growing body of research on digital platforms which focus on the transaction (Chapman et al., 2021; Leon and Parker, 2019; Kornberger et al., 2017; Jeacle and Carter,2011, just to name a few) and social media platforms (Begkos and Antonopoulou, 2020; Suddaby et al., 2015). They have explored how various forms of accounting practices and technologies inform the way trust and accountability are constructed on platforms where users offer each other services such as TripAdvisor (Jeacle and Carter ,2011), AirBnB (Van den Bussche and Dambrin, 2020) and monetize their social hobbies (Chapman et al., 2021). The studies have enlightened us on the types of surveillance and control approaches embedded in digital platforms to facilitate identity work and motivate users. For instance, Kornberger et al., (2017; p91) show that digital platforms are evaluative infrastructures because they allow users to offer and counter reviews posted about their products or service (Van den Bussche and Dambrin, 2020). However, we note that an organisation deploys several digital platforms which now become "part and product of an ecology of devices that connect, and through this work of connecting, they change the objects they relate to each other". In this regard, modes of evaluation expand to include personal profiles, ratings, and other accountability metrics such as popularity indices (Leoni and Parker, 2019; Jeacle and Parker, 2011). As a result, new economic subjects and objects (non-expert columnists, bloggers (Jeacle and Carter,2011), entrepreneurs (Bussche and Dambrin, 2020, business analysts (Suddaby et al., 2015), social media influencers (Begkos and Antonopoulou, 2020) emerge out of the interaction between hierarchical and heterarchical power relations. This in our view necessitates the interrogation of visible and invisible infrastructures that coordinate and control activities. Chapman et al (2021,) sums up the modes mentioned above of evaluation as gamification control strategies because "they aspire to elicit playfulness and fun to bring about positive emotional responses while also increasing motivation and overall

task engagement”. They suggested that in a post-disciplinary era where there is ubiquitous of digitalisation and virtualisation, the use of gamification strategies to seduce actors could “potentially mitigate the emotional costs of economic efficiency and neoliberal regimes”. We find the use of gamification very useful in encouraging engagement. However, we note that this observation has been highly discussed on interaction and social media platforms not innovation platforms nor auditing context.

This is relevant in audits of financial statements where some audit firms are working in collaboration with third party innovation platforms such as Alteryx to encourage auditors develop their own assets (“scripts”, workflows) which can be reproduced to perform some audit tasks (O’Brien and Stone, 2021). There is limited understanding of how innovative platforms encourage auditors’ engagement. On the other hand, it is noted that social media platforms have effectively promoted the flow of information and engagement and empowerment of the public during the pandemic (Landi et al., 2021).

There are questions to be addressed in this context such as “who makes what decisions about a platform” (Tiwana et al., 2010 p. 679). The authors posit that there are three main decisions to consider: decision rights partitioning, control, and proprietary versus shared ownership. Digitalization involving platformization within the organisation raises concerns about the potential for dystopian outcomes regarding control and surveillance. In a review, de Vaujany et al. (2021) write: “The Covid-19 pandemic reveals how digitization, organizational fragmentation and mass surveillance are shattering the presumed dualistic order of controller and controlled. Surveillance and control are something far more immanent to and embedded within our everyday social interactions” (p. 677). Of relevance to platformization, Hafermalz (2021) develops insight into how platforms combine with a neoliberal ideology to develop ‘government through freedom’ techniques, based upon an entrepreneurial logic in a recognition market. Hafermalz's (2021) notion of “voluntary visibilising” practices in which employees' fear of being left out, overlooked, ignored, or banished becomes the dominant control mechanism. In this context, an “ambitious few” with autonomy and adaptability thrive, while the “many” who cannot cope, struggle (Clegg, 2018).

For our analysis of platformization, we draw on the eminent sociologist Zygmunt Bauman’s conceptualization of Liquid Modernity (2000). Bauman’s work has been applied extensively in management, organization studies and information systems research (Chatterjee et al., 2009; Clegg, 2018; Clegg and Baumeler, 2010). In *Liquid Modernity*, Bauman (2000) adopts the

notions of “liquidity” and “solidity” as metaphors to clearly distinguish the modernist view of society (solid) from the postmodernist view of society (liquid). In “solid modernity”, Bauman argues that social structures have strict rules, regulations, and bureaucratic systems to control individuals and organizations. Bauman argues that advanced information technology has intensified globalization processes and led to a “market mediated mode of life” characterized by freely moving liquid capital, mobile and short-term employment (“liquid labor”), and deregulated global markets with new business models (e.g., digital platforms) (Bauman, 2000; Bauman and Lyon, 2012).

Clegg and Baumeler, (2010) and Clegg and Pinha e Cunha (2019) point out some relevant themes from Bauman’s theorisation of liquid modernity as a lens for analysing digitalization. Firstly, digitalization erases the boundaries between what is regarded as public and private, organisation and environment, entity, and process. They also posit that digitalization impacts on processes of leadership and organising; the meaning of work and career; replacement of traditional bureaucracy by new forms of distributed power and control. An important aspect of liquid modernity for our analysis here is the change in surveillance and control mechanisms facilitated by a flexible working environment (Hancock, 2003), where panoptic (the few surveil the many) and synoptic (the many surveil the many) forms of surveillance coexist.

Clegg, (2018) summarises Bauman’s main argument:

A life lived in public increasingly pervades people’s experiences in organisations. It does it in two ways: one is through an enhancement of the panoptical tendencies of solid modernity, where the few exercises surveillance over the many; the other is through the development of new forms of synoptical power, where the many watches each other and the ambitious among them watch the few. (p357)

Bauman and Lyon (2012) argue that in the context of organisations in liquid modernity, individuals primarily fear that no one will see them, and this fear encourages individuals to voluntarily submit to surveillance and disclose private information in exchange for convenience and sense of visibility and solidarity. An example of this is the voluntary disclosure of personal information onto platforms such as Facebook or Instagram. The disciplinary power associated with platforms and surveillance highlighted in Bauman’s oeuvre has emerged as a significant theme in more recent literature in organisation studies.

Methodology

Data collection

The study is an interpretative inquiry involving multiple case study (Eisenhardt and Graebner, 2007; Ryan et al., 2002) of the UK's big and mid-tier audit firms and an audit technology vendor. The initial plan was to investigate data driven technologies in audit given the thematic observations by FRC (2020) and the proposed changes to audit regulations in the UK (Brydon Report ,2019). The data was collected during the pandemic (March 2021 – December 2021) and after the pandemic (January 2022 to April 2022)

We conducted 15 semi-structured interviews with 11 participants (see Table 1) who were purposely sampled given their expertise and knowledge in the area we are studying (Miles and Huberman,1994). Their position in the organisations ranged from partners/CEO to associates. Their responsibilities include determining the strategy and implementation of digital platforms in audits, exploiting opportunities for new client, and maintaining the existing ones for audit purposes., performing audit engagements. We also interviewed participants from audit technology company that are involved in modelling and implementing techniques for data ingestion in audits and taxation.

The participants had work experience working in audit related matters from 4years to over 15 years. This allowed us to exploit the changes or transformation taking place. Given the state of affairs during data collection due to Covid-19 restrictions, 13 interviews were conducted using video conference calls (Zoom, MS Teams, and Google workspace). We had an opportunity to conduct 2 face to face interviews during the pandemic when the rules were relaxed. Each interview lasted 30 – 110 minutes duration. The names of the interviewees are anonymised as per agreed in prior to each interview.

Code	Participant	Position and years of experience	Organisation	Number of interviews	Mode of interview
P1	Internal audit Partner	>15	Big 4(1)	1	Virtual
P2	Audit Partner – Technology	>10	Big 4(3)	3	Virtual (2) & Face-to-face (1)

D1	Director – Audit	>10	Big 4(1)	1	Virtual
M1	Manager – Audit	>8	Big 4(2)	1	Virtual
M2	Manager -Audit	>8	Big 4(3)	2	Virtual (1) &Face to face (1)
M3	Manager -Audit	>7	Big 4 (4)	1	Virtual
M4	Manager – Audit	>7	Mid -tier firm	1	Virtual
A1	Associate	>4	Big 4(1)	1	Virtual
A2	Associate	>4	Big 4(1)	1	Virtual
V1	Founder / CEO	>20	Audit tech company	1	Virtual
V2	Head of Audit technology and Ethics	>10	Audit tech company	1	Virtual

Table 1: List and description of participants

We also reviewed documents that were made public by the professional auditing firms and accountancy bodies. Such documents include proposals to regulatory changes (Brydon Report, 2019), discussion papers and thematic reports on data driven technologies by FRC, IAASB, audit firm’s Annual and Transparency reports from 2019 to 2022, Regulatory guidance on audits during pandemic. This evidence allowed to identify the developments in audit technologies, their state of use, auditing during the pandemic. They also help us to triangulate some of the findings from the semi-structured interviews. We also reviewed the training videos and website for third-party digital platforms which were named in the interviews and documents. The platforms are Alteryx and Zoom to get a feel of the functionalities and other aspects.

Data Analysis

The questions during the interviews were structured to capture the use of data driven technologies and the effect on their work. Immediately after the interview, each of us was required to provide a written commentary on the issues captured during the interviews and a summary of reflection. This was compared with the transcript of the recordings. We then identified themes emerging based on prior literature and our observation. However, it was observed that participants were very much focused on how the pandemic was impacting their professional and private lives and how digital technologies and platforms were helping and

mitigating their concerns. Further, it was noted that several mechanisms were put in place by management to monitor their work. At this point, we also noted that the use of digital platforms for creative and entrepreneurial purposes was being highlighted. This prompted a change in course work questioning to uncover how work was coordinated and controlled during the pandemic. It became clear that critical perspectives approaches would be relevant in this context to observe and situate power relations and emancipatory strategies. Therefore, Bauman's theorisation of liquid modernity emerged as offering sensemaking into the undesirable and unexpected consequences of the auditors' rapid and unplanned digitalization during the pandemic, and the glimpse of future, post-pandemic audit environment we observed during data collection. We noticed that Alteryx and Zoom emerged as two digital platforms that offered us an opportunity to explore surveillance and auditors' response to appropriate technology during the pandemic.

We identified two concepts emerging from the data and literature; virtualisation and gamification to explain platformization in audits. Therefore, we discuss the two technologies to demonstrate how control and interaction among auditors were exercised during pandemic. We use concepts such as gamification to discuss the modes of control and virtualisation to capture interaction and emancipatory strategies.

Findings

Virtualisation in Audits

Context

On 23rd March 2020, UK Prime Minister Boris Johnson announced the first national lockdown in response to Corona Virus (Covid-19) spread in the UK and elsewhere (Gov.uk,[2020](#)). This meant that organisations, including audit firms and their clients were closed for business. Instead, they were asked to work remotely from home. As a result, the evidence we collected states that auditors were supplied with furniture, laptops, and mobile phones for remote working. Auditors' homes were now transformed into spaces for audits. One must bear in mind that; the process of auditing is very structured, requiring months of planning to establish areas of focus and collection of audit evidence. The swift announcements of business closures and subsequent lockdown meant that audit firms and clients experienced a shock that disturbed their work routines. The challenge was to transition and normalise the situation.

Regulators FRC, FCA and PRA offered guidance on how audits and relevant financial matters should be communicated, especially for Public Interest Entities. One of the recommendations was extending the submission dates for relevant financial information that has been audited (FCA, 2020). Audit clients faced moments of uncertainty and had to rely on government income support schemes to maintain their cashflows and employees on their payroll (National Audit Office, 2021).

As audit clients shut down their operations, audit firms faced problems with how to collect sufficient and appropriate evidence on which to base the audit opinion (FRC, 2020). We could argue that the pandemic problematized the audit process and administrators in audit firms sought digital platforms as an intervention to address issues of audit evidence collection and interaction among auditors and the clients

We found that audit firms encouraged video conferencing tools such as Zoom and Ms Teams to facilitate communication, interaction, and evidence collection. Therefore, in next section, we discuss the changes that happened, the means of control and the effects on auditors.

Changes to the audit process

The participants indicated that the pandemic changed the way audits were conducted in two ways, collection of audit evidence and interaction among auditors and clients. In both cases, the virtualisation of audit practices was encouraged.

As with every audit, the challenge was to offer a credible and quality audit (Turley, 2007). Therefore, audit firms restructured their resource mobilisation by increasing the number of experienced auditors to perform an audit engagement. The purpose was to use "experience" as a legitimisation resource that makes the audit process's quality visible and auditable (Jeacle and Carter, 2022, Free et al., 2009). As a result, some participants felt the change in how audit evidence was collected did not affect the audit quality. See the interview excerpt below:

“One thing I think we have ended up doing is that we allocate more amount of the senior professionals into an audit. So, we spent a little bit more time with supporting the team, or reviewing their work, or just to maintain that. Maintain that quality that we want to achieve. And that's perhaps something that has slightly changed. And so, it's not around doing things differently, it's around the process of

how do we get to that same position we wanted to get? And that's a bit harder.”
Director(D1)

Due to the precarity of performing an audit during the crisis(FRC,2020), it could be argued, that the process of virtualisation in evidence collection required one senior member of the audit team to be in charge to act as a gatekeeper for audit quality. Audit firms made it clear that inexperienced member of staff would not perform certain high risk audit procedures. That was the case with inventory confirmation. Audit firms felt that, to meet similar standards as when conducting physical inventory counts, having a senior member of audit team on the ground would demonstrate audit quality.

“We are trying to do counting physically where possible, because that's the best way to do them from an audit quality perspective. We have an option to do a virtual inventory account, which means having a set-up like this and doing an inventory count. There are various prerequisites that we need to meet to do that. So, or instance, we can't send an associate in to doing a virtual inventory count. We have a rule that it needs to be individual at a certain grade.” Director (D1)

The confirmation of inventory meant that video conferencing platforms were used to show the inventory existence, condition and levels by moving around the camera.

“In December, I had two warehouses in the United States where we decided that we are not going to rely on our US firm to do that count, because we thought there was too much risk, they would pull out, basically. So, we decided to a virtual inventory account. So, I was sitting in my laptop back home in Finland a midnight, Finnish time and doing an inventory count in California, where it was the afternoon.” Manager - Audit (M4)

There was also reliance on the test of controls rather than substantive testing given the restriction imposed on visiting client premises. Audit firms then utilised other digital platforms for documents sharing, and cloud-based storage is important to address some of the concerns.

One of the drivers for bringing experienced individuals on the shop floor was the issue of oversight which appeared to be lacking with online platforms. Pentland (1993) and Guénin-Paracini et al. (2014) demonstrate how physical contact among audit team members alleviates fear and is a form of social control. These concerns were voiced echoed during the interviews

“If you have many staff on an audit, if they're all in the same room, that makes it much

more straightforward to oversee an engagement and oversee the different elements of an engagement that people are doing. When everyone's working from different parts of the country and you're only speaking on calls, that makes it very difficult. If you're in an audit room in person, you're constantly picking up what other people are saying, because you're surrounded by people. You're constantly picking up external noise. You're constantly learning because you're constantly around people. That's just not the case here, which is the first part for what makes things difficult.” Manager -Audit(M1)

To facilitate the face-to-face interaction that was perceived to be lacking during the pandemic and to capture the aura of audit rooms, we found out that all interviewed audit firms in UK implemented what they called a “virtual audit room”, which is essentially an all-day video conference call for auditors. During these “virtual audit room” sessions, auditors would leave the camera and microphone off and only turn them on when they had a question for the other members.

“” A virtual audit room”. This is a term we use, which is effectively, we all sit in a (zoom meeting)– like might be six hours in a row, we are all on mute, might have our cameras on or off. But obviously, if someone asks a question, I can then hear it and I can respond into it. And intervene if needed” Manager -Audit(M3)

Although this is not considered to be the same as physically being in the same room (Pentland, 1993), the virtual audit room creates a virtual environment and opportunities for auditors to ask each other questions while providing some level of human interaction during remote working. Others regarded it as a panic room to alleviate some fears

“We use kind of like audit rooms, where we basically just have everyone on a call from the audit team, and we will just have that Teams call open for like half the day, the full day. Not everyone has to talk. Panic room, mate, is a very good way of putting it. It's surprising how much people are willing to do these audit rooms very close to a signing deadline. So, I think a panic room is a very good way of putting it.” Director -Audit (D1)

However, to some, such a virtual and remote working environment blurred the boundary between private and professional life and created pressure for some auditors to work longer hours.

“It sometimes is challenging to make a difference between what is free time? What is work? And that is probably what makes it harder. The rough side of the working remotely is that, start at seven o'clock and it comes, I don't know, quite late at night and you realise that the whole all day is gone, and nothing had – I hadn't had that much time off. I don't relate it to remote working as such, the hours have always been long. The change is, perhaps it's harder to differentiate between the free time and the work time at the moment.” Associate(A1)

Although auditor's working long hours is not a new phenomenon (Gill, 2009), the flexible and remote working adopted during the pandemic saved auditors time spent on the road, travelling to clients' site. However, it appears that they are using the extra time working and not everyone is comfortable being scrutinised:

“I would think that some people don't like it. They don't really – they might feel that you're being monitored all day, someone is watching you all the time, like the Big Brother feeling.” Associate(A1)

Moreover, one audit associate explained that sometimes she would request the virtual audit room to stay open until late at night during busy season. It is pertinent that this enables participants to stay visible to their superiors and peers.

“Sometimes I work from when I wake up until I go to bed at night... during the busy season, some of us would request to open the virtual audit room late so we can continue to work.” Associate(A2)

While the purpose of virtually room that appeared on the surface to create “the sense of bravado”, it was clear to some that this was a form of surveillance that made them work longer than anticipated. This behaviour mirrors Bauman's (2010) argument about how individuals would give up their private lives for visibility and recognition from the others; voluntarily creating a mode of synoptic surveillance through which the others can see them others can see them others can see them others can see them others can see them others can see them, but also surveil others simultaneously. While opening and staying in the virtual audit room until late at night creates opportunity for the ambitious few, but at the same time, it imposes synoptic surveillance on those who did not extend their working hours

“I think it really depends. Depends on is the answer. It depends on who are the sort

of team managers and seniors who are organising it. So, I have seen calendar invites with the wording, "Mandatory audit room from 4 to 8pm." And whether I would personally do that probably it's not the way how I would run the team, personally."
Manager -Audit(M2)

"I think that there's also a flipside to that, in that people at my work also don't appreciate when it's time to switch off, right? So, if I leave an office at six, seven o'clock at night, I pick up my bag, put my coat on and leave the office, I've finished for the day, right? And everyone in that office knows that I've finished for the day. If I'm working remotely and it's lockdown, and for all intents and purposes, I'm probably not going to be able to leave my house for a great deal of time, I can get calls, I can get text messages at any time of the weekend, at any time into the night. And it's like, at which point have I finished work?" Associate(A2)

Some argued that the shift to virtual meetings with clients allowed junior auditors to attend and have an opportunity to observe the discussions between the client and auditors. This acted as a training ground for junior n auditors. However, junior auditors were not allowed to contribute to the deliberations

Some participants indicated that because of moving everything online, there was a requirement for the communication with the client to be more structured to provide an audit trail. During the pre-pandemic, both formal and informal communications with the client were allowed, however, during the pandemic, the informal aspect was discouraged.

Those who joined the audit firms during the audit felt that they did not experience the reality of audit firms promised during recruitment. On the other hand, others felt that there was no sense of belonging when interacting virtually.

"I'm not a huge fan of needing to be in the office all the time, but I think, as an auditor, it's very difficult to do this job remotely fully. The first thing is teaching new starters is so difficult remotely, sharing screens, etc. It just can't replicate for when you're with someone on the job and teaching them. So, as a result, you end up with individuals that are six months, nine months into their training contract and they are just not at the competence that you'd expect of individuals with that experience, just because the training that they have is just – it just doesn't replicate." Director(D1)

In sum, the virtualisation of audits during the pandemic mirrors liquid modernity associated with the neo-liberal era. The evidence above power relations that allowed distributed surveillance. For instance, the virtual rooms enabled administrators to monitor audit rooms

from a distance – which Foucault refers to as panoptic surveillance, but at the same time, auditors with the virtual room were monitoring each other, which is a form of synoptic surveillance.

Further,, the idea and implementation of working from home have created a sense of “absence of the presence” for the audit team. The creation of virtual audit teams which require auditors to switch on the camera on conferencing platforms while working from home is quite telling. First, it allows auditors to “feel the presence of each other” though absent physically.

Gamification in auditing

The second important aspect of platformization is the gamification of audit work. Here, the audit firms are observed to be mimicking digital platforms, such as Google’s and Apple’s app store characteristics, where anyone can produce and share their products and services for others to use (Srnicsek, 2017). We observed that Alteryx has partners with some Big audit firms namely PwC and KPMG to offer its platform for audit and other services. The partnership with audit firms includes the establishment of data academies that offer support to those interested in becoming acquainted with Alteryx to an advanced level. One of the audit firms (PWC) have adopted a data-analytics and process automation software platform, Alteryx, to improve efficiency in audit process by automating repetitive manual works such as copying and pasting information between documents(O’Brien and Stone,2021). Alteryx is an American company which started its business in 2014. As a product, it embodies the ETL (Extract Transact and Load) model that allows data collection, cleansing and modelling which is less coding intensive. Ruiz (2017) argued that 80% of the time is spent on ETL while the remainder is for data analysis. According to Gartner's software consultancy company, Alteryx is a leader in machine learning and data science because of its resource’s capabilities and the no-code approach.

One key feature in Alteryx are the workflows, which can be saved and re-used for another task. This reproducibility of workflows is what enables audit tasks to be automated. There is also a community online that offers support and sets challenges (Exhibit 1) that individuals can undertake to advance their skills.

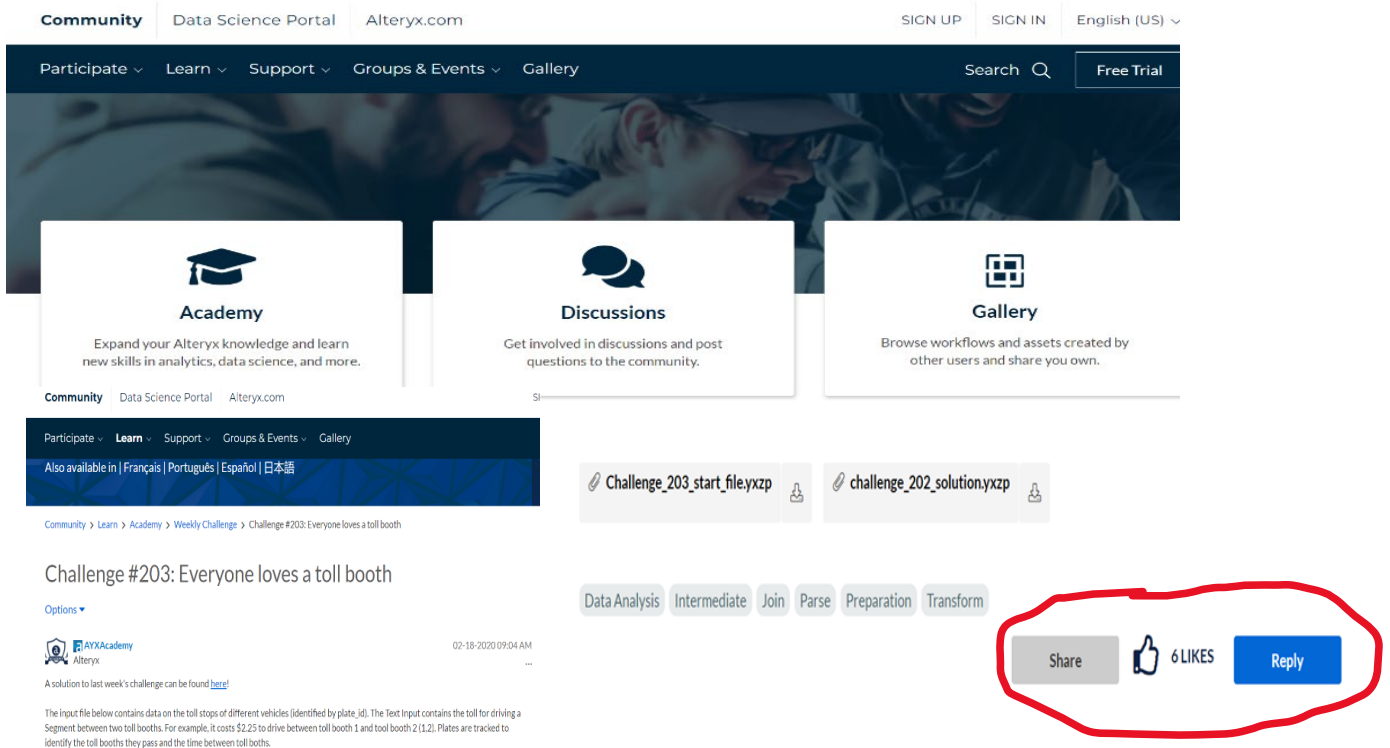


Exhibit 1 – Alteryx Community webpage

The introduction of “like” functionalities (Exhibit 1) introduces elements of gamification into the challenges that poised it users (Chapman et al., 2021; Hamari and Koivisto,2015). While likes emoji look mundane, they are meant to motivate users to aim higher. This entitles users to get badges and ranks. Badges are received when you achieve certain number of likes or replies. While ranks demonstrate linear progress and represent your cumulative contribution to the Alteryx community. Van den Bussche and Dambrin(2020,p507) indicate that peer to peer valuation enact “entrepreneurs of the self” because the user “ depend on other to validate their self-worth.”

Alteryx enables auditors to create their own process automation macros to help their audit work and innovate the audit process. More importantly, these macros, which they refer to as “assets”, can be shared on the firm’s dedicated Alteryx platform app store for other auditors to download, modify and use freely. When the uploaded “assets” receive feedback from the users, the individual auditor who has uploaded it receives a “gem” as a token of good performance. On a

positive note, Alteryx facilitates grassroots innovation by allowing wide groups of auditors working in different fields such as financial and public audit, to share their ideas in digital assets.

“So, and again, this is where, if you want to excite people about technology, you need to recognise the – recognise the behaviours. You need to reward the behaviour. So, there’s a lot – so teams can receive gems. Teams, when they’ve – if you put your asset on the digital lab, you need to download it I don’t know how many times. You receive gems because it’s like a – it’s recognition that your asset is – is successful. So, there’s incentives in the systems to allow people to actually put the energy around technology.”
–Partner -Audit Technology(P2)

The extra work that this manager interprets production of assets by auditors as “passion”:

“But the point I need to make here is, our experience with this is, actually, this is about passion. So, you don’t drag people against their will into this, okay. So, people fall into this and are passionate about it. And they want to do the extra mile to make it happen–”
–Partner -Audit Technology(P2)

A new hierarchy has emerged with individuals known as “Digital accelerators”:

“And you know, and because they put their own passion into this. So, you’re going to realise that those who embrace, fully, technology and becomes an energy, we made them digital accelerators. So, we created a cohort within the audit that we started calling digital accelerators. Because these are the people who engaged positively with innovation. There’s an element of passion and they drive a positive behaviour within the others.” –Partner -Audit Technology(P2)

However, there is also a negative aspect of the gamification associated with Alteryx. The effect of these symbolic tokens seems to have affected the way auditors conduct themselves on the platform. One of the partners we interviewed shared his conversation with an auditor using Alteryx:

People fall into this [Alteryx] and are passionate about it... they want to do the extra mile to make it happen and you feel it, you are going to see that... when you ask some of the guys how they developed these assets, it is like “I was working until two am”.

When I asked why are you staying till two am? They said, "I know, I didn't even ask myself, I just was so dragged into this thing, I wanted to make it happen". –Director - Audit(D1)

While this partner interpreted this episode as auditors being passionate about the new technological tool and are working hard to acquire new skills, the alternative interpretation would be that they are pressured into working towards the ambiguous award of “gems” that may or may not be considered in their performance reviews and promotion cases. While the adoption of Alteryx is motivated by improving audit efficiency and saving time consumed in mundane repetitive tasks, ultimately improving auditors’ working condition, gamification facilitated by Alteryx imposes greater capacity for controls and panoptic surveillance for management (Bauman and Lyon, 2012). The ambiguous award for completing extra tasks outside the auditors’ normal job scope and the ability to make “assets” visible to the others create a system of synoptic surveillance which amplifies pressure, ambiguity and uncertainty for the “many” (Clegg, 2018). Ironically, auditors, who are working extra hours to automate repetitive audit works, may be creating their digital aesthetic double which may replace junior auditors in the future as Bauman predicted would be that they are pressured into working towards ambiguous goal that is visible to both management and their peers (Bauman, 2014; Clegg, 2018; Warren, 2014).

Discussion and Conclusion (to be extended)

This paper was set out to explore *how platformization has impacted auditor practices during and after the Covid-19 pandemic*. We focused on the control surveillance and its effect on auditors. We were particularly intrigued by the proliferation of digital platforms in audit firms and wanted to explore how they are implicated in how audit work is changing and coordinated. Drawing on Bauman’s liquid modernity treatise, we find that digital platforms are not just technical dimensions which portrays progress in the audit firms, but are also spaces where auditors are monitored, controlled and transformed into data driven individuals with a creative inclination (Lassila ,2022). Even though prior studies in accounting have focused on transaction digital platforms(Chapman et al., 2021; Leon and Parker, 2019; Kornberger et al., 2017; Jeacle and Carter,2011) and social media platforms (Begkos and Antonopoulou, 2020; Suddaby et al.,2015), we notice some similar findings on innovation platforms in an auditing

context. For instance, we observe that using Alteryx in audits, gamification strategies such as the use of badges, review comments, act as means through which auditors are motivated and evaluated. This form of social control appears to be gaining traction even on other social media where auditors showcase their expertise. We contend that this evidence demonstrates attempts by audit firms to appeal to the “inner selves” of auditors by introducing symbolic tokens that encourage auditors to be creative (Lassila, 2022; Chapman et al., 2020). Further, in correspondence to the interpretation of liquid modernity, auditors voluntarily submit their creativity to the organisation in return for “a promise” of career progression. Thus, we show that gamification is also a means of socialisation where communities such as the one on alteryx website transform individuals to become digitally inclined. The use of calculative mechanisms such as ranking shows progress and allows the user to submit their bio data, activities, and assets on the platform and be part of the accountability mechanism (Lassila,2022). There is evidence that with platformization site of power are both centralised and decentralised. For instance, virtual audit rooms point us to the virtualisation of Pentland (1993)’s chain interactions rituals where comfort is generated by being in front of the camera while discomfort is experienced by the perceived monitoring by others. In this regard, Bauman’s liquid surveillance is observed because everyone observes everyone generating synoptic surveillance, which is synonymous with neoliberal era. While there is evidence of managing from a distance using these digital platforms, there is also managing on the shop floor where experienced auditors are seen coordinating work whilst in the company of less experienced auditors, as with the case of meetings with the clients.

Overall, this paper has made two significant contributions. First, we contribute to our understanding of the influence of platformization, accelerated by the global pandemic, and increasing uncertainties on auditors’ roles and required skills. Our analysis demonstrates how the virtualisation of audit work, such as remote working facilitated by Zoom, Teams and Google workplace, can create undesirable consequences for auditors, such as increased levels of surveillance to which the employees voluntarily submit to. Moreover, the process in which auditors can share their codes and algorithms built for automating repetitive audit processes, referred to as “assets” adds a novel aspect of gamification. Drawing on Bauman’s depiction of the contours of liquid modernity, we argue that individual auditors may be forced into working extra hours interpreted as “passion” for work while indicating their effort on virtual space, such as virtual audit room, to maintain their visibility to others to survive and progress in their career

in audit. Our findings extend Hafermalz's (2021) study by demonstrating how the fear of being excluded from their group can force auditors to be visible to their superiors and their peers and subordinates by engaging in synoptic surveillance practices on virtual space.

Second, we extend Smith-Lacroix et al's (2012) work on the changing role of auditors by focusing on the effect of platformization of audit work. Our analysis of findings demonstrates how gamification introduced through Alteryx can erode jurisdictional boundaries between auditors, IT specialists and data analyst by creating what Bauman (2000) refers to as a "market mediated mode of life" in which employees are trading their work in a form of "assets" and "gems" (award given for uploading assets on Alteryx) on virtual platform that is visible to others. This work on Alteryx requires knowledge and skills in computer coding, which is outside the auditors' normal expertise and forces auditors to cross jurisdictional boundaries into data analyst/IT support to pursue the ambiguous award of "gems".

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