Evaluating performance in the context of mobile telework: an attention-based view

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Abstract

This study is an empirical account of how line managers evaluate the performance of their subordinates in the context of mobile telework. Whilst the increasing use of new technologies affords certain advantages for line managers in remote performance evaluation, it also results in a greater volume, fragmentation and variety of performance data, which can be challenging to manage. Adopting an attention-based view (ABV), we shed light on the role of technology in performance evaluation (PE), elaborating on the kinds of attentional stimuli that are generated by technology as part of the broader socio-technical work environment, and how these together with the attentional perspectives of the manager influence attentional engagement, i.e. what managers direct their time, energy and effort on in PE of mobile teleworkers. Our focus is on attention as something line managers do, in their immediate context. We contribute to the remote work and PE literature by showing how the interplay between two drivers of attentional engagement: attentional stimuli (different possible foci of attention in the external environment) and managers' own attentional perspectives (the cognitive and motivational structures that influence what stimuli receive attention) influence the attentional engagement in PE of mobile teleworkers.

Keywords: remote work, performance management, performance evaluation, monitoring technology, line managers

Introduction

Employee performance evaluation (PE) today, as an integral part of performance management, can be very demanding due to the volume, fragmentation and variety of performance data. These characteristics of performance data create attentional demands, i.e. issues that compete for managerial attention (Nicolini & Korica, 2021). Managers need to navigate these demands in order to arrive at a suitably accurate account of individual performance, potentially in real time - to respond quickly to acute situations in the short term, and as input into performance measurement and appraisal in the longer term. Research on performance evaluation shows that evaluation tasks are dependent on a complex context where organisational climate and design (Tziner et al., 2005, Levy & Williams, 2004), monitoring technology (Jeske & Santuzzi, 2015), social dynamics (Saffie-Robertson & Brutus, 2014; Ng et al, 2011) and other distal features of the organisational context (Levy & Williams, 2004) have significant impacts on the outcome

of the task. In the context of remote work, and more specifically mobile telework, *"where work is done by people whose work usually involves travel and/or spending time on customers' premises, who may be equipped with laptop computers and mobile phones to support their mobile work"* (Daniels, Lamond & Standen, 2010: 1154), attentional demands are exacerbated and can create additional challenges relating to information asymmetry, trust and control (e.g. Järvenpää & Leidner, 1999; Hertel, Geister, & Konradt, 2005; Webster, & Wong, 2008).

As part of the trend towards the greater use of technology in supporting and carrying out HRM practices (e-HRM) (Prikshat, Malik & Budhwar, 2021, Bondarouk & Brewster, 2016, Stone, Deadrick, Lukaszewski & Johnson, 2015), organisations have introduced new technology and data-driven tools (e.g. real-time reporting, dashboards) in order to support managers in evaluating the performance of their employees remotely. Gartner's outlook on the employee monitoring market for 2020 estimated that almost 80% of companies will be using monitoring software to keep track of their organisational goals and employees (Gartner, 2019).

Whilst such technology is intended to afford managers greater visibility, as well as the opportunity to react quickly, it also adds another layer to managers' attentional demands. For instance, such technology often produces a greater volume of data and cues, contributes to additional fragmentation with data both 'online' and 'offline', as well as real-time and historical, and poses difficult questions to managers about how much to rely on this data versus other more direct sources of information (Chen & Nath, 2008; Curzi, Fabbri, Scapolan & Boscolo, 2019; Schwarzmüller, Brosi, Duman & Welpe, 2018; Stone et al., 2015).

Previous research on PE in a remote or telework context falls into two broad categories. The first category, grounded in the organisational behaviour literature and psychology and cognitive theories, considers the influence of technology use on individual evaluations, including rater biases, ratee perceptions and the rater-ratee relationship (e.g. Stanton & Barnes-Farrell, 1996; Moorman & Wells; 2003, Jeske & Santuzzi, 2015; Alder & Ambrose, 2005). The second category, grounded in the HRM literature and theories on leadership, organisational communication, control and social identification, focuses on performance management in virtual or global team settings as the remote work context (e.g. Gilson et al., 2015; Hertel et al., 2005; Lauring & Jonasson, 2018).

Despite its valuable contributions, we identify three key shortcomings in existing work on PE in telework. First, previous research mostly focuses on the formal organisational practice of performance appraisal that occurs on a limited number of occasions over a period

of time (McKenna, Richardson & Manroop, 2011) and less on how managers continually engage in the evaluation of subordinates' performance (Schleicher et al., 2018, Tseng & Levy, 2019). Given technology's ability to monitor 'everyday' employee performance, and the importance of real-time performance data in managing fast-paced operations and delivering value to customers, focusing only on the formal performance appraisal 'event' risks ignoring the more pervasive, continuous role technology plays in shaping manager attention in PE.

Second, in response to studies on evaluation ratings based on cognitive theories and the formal appraisal event, De Nisi and Murphy (2017) suggest that cognition cannot fully explain individual managerial attention to particular issues since context also plays a significant role. While studies examine the interplay between manager cognition and the social context within which PE takes place, only few focus on the informational and technological context within which PE takes place (Golden, Barnes-Farrell & Mascharka, 2009; Kalischko & Riedl, 2021). And third, as Hislop and Axtell (2007: 35) note, '*the telework literature has placed significantly more emphasis on the movement of work into the home than work done "on the move".'* This is significant in terms of PE practices and attentional demands since managers of mobile teleworkers possess agency about whether and how often to visit and observe teleworkers directly (e.g. on customer premises).

We seek to address the above-mentioned shortcomings by adopting an attention-based view (ABV) (Ocasio, 1997) to examine PE in the context of mobile telework. Following Nicolini and Korica (2021), we adopt a sociomaterial perspective of technology (Orlikowski, 2007), where our focus is on attention as something line managers do, in their immediate context. In terms of their attentional engagement – what they direct their time, energy and effort on (Ocasio, 2011) – line manager agency in their performing of PE will be constrained or afforded by attentional stimuli and their own attentional perspective. The sociomaterial perspective thus complements the attention-based view by incorporating a focus on both individual attention distribution and contextual, organisational attentional stimuli, in understanding how technology shapes attentional engagement in PE.

The aim of the study is to examine how technology and social structures as attentional stimuli, interact with individual attentional perspectives to shape the attentional engagement of line managers in PE in a remote setting. In this study, we focus on examining PE in the context of employees performing mobile telework primarily in the field rather than in their homes. The study was designed as a qualitative case study and conducted in the context of a maintenance

department in a large multinational engineering and service company. The findings are based on 16 interviews with line managers paired with 12 days of shadowing in order to gain an in-depth understanding of their everyday PE practices.

In applying the ABV (Ocasio, 1997), the study contributes to existing literature on remote work and PE by shedding light on the role of technology in "how busy managers […] incorporate the observation of employee performance into their responsibilities" (Schleicher et al., 2018: 2219). It does this by examining where managers direct their attentional engagement, i.e. how their attention is allocated, directed and dealt with (Ocasio, 2011), which is not well understood in this research to date. We also address Schleicher et al.'s call to emphasise the importance of context in PE by examining attentional engagement in a remote telework context, by examining the role of technology in PE as attentional stimuli, and by viewing technology as part of an organisation's broader socio-technical system.

Advancements in technology have paved the way for the development of sophisticated monitoring tools that enable real-time tracking of performance indicators (Ravid, Tomczak, White & Behrend, 2020), regardless of the geographical distance between supervisors and subordinates (Golden et al., 2009). Monitoring tools allow for the continuous collection of different types of data, which renders the collected performance data rich but diverse and often ambiguous (Ravid et al., 2020). We elaborate on the kinds of attentional stimuli that are generated by technology-based monitoring tools as part of the broader socio-technical work environment, and how these together with the attentional perspectives of the manager influence attentional engagement in PE of mobile teleworkers. Specifically, we shed light on the interplay between two drivers of attentional engagement: attentional stimuli (different possible foci of attention in the external environment) and managers' own attentional perspectives (the cognitive and motivational structures that influence what stimuli receive attention).

The findings are important for practice since they address the need to understand better the role of new PE technology amidst the remote work transformation where the number of employees transitioning towards teleworking, hybrid, and/or remote working is increasing significantly (Felstead & Henseke, 2017; Donnelly & Johns, 2021). The study also addresses the question of what it means to be an effective 'remote leader' (Gan et al., 2022) and the implications for line managers of implementing HRM practices remotely (Bos-Nehles, Van Riemsdijk & Kees Looise, 2013). Existing literature has criticised performance management as being too rigid, formal and long-term oriented (e.g. Buckingham & Goodall, 2015; Cappelli

& Tavis, 2016). Our examination of the continual process of PE contributes to our understanding of how technology is being used to develop the practice of PM in a more agile, individual-focused and short-term direction.

Literature review

Performance Evaluation and Mobile Telework

Performance evaluation (PE) is a key part of performance management (PM), the purpose of which is to support and improve employees' performance and align it with the organisation's strategic goals (Aguinis & Pierce, 2008). Whilst performance appraisal is typically a very structured type of routine carried out on pre-set occasions where performance is recorded and developmental feedback can be documented, PE is viewed as a less structured, continual process (i.e. indefinitely, at regular intervals) that involves observing and gathering information about how employees carry out their work, including their attitudes and skills, to enable real-time evaluations of employee and job performance. This information is used as a basis for subsequent judgements about employee performance in formal performance appraisals. In line with Ferris et al. (2008: 146), we thus view PE as "embedded within complex social, emotional, cognitive, political, and relationship contexts" that "can be understood only in situ, or as played out against the contextual backdrop of the day-to-day interactions occurring in work contexts." When conceptualised in this way, managers can be viewed as key actors in PE, who have agency in choosing their evaluation strategy based on their individual preferences and interpretations of job performance. This influences what information they attend to, and how they synthesise information from different sources (Murphy & Cleveland, 1995; De Nisi & Murphy, 2017).

Most existing research on performance appraisal has focused on the formal evaluation process, wherein the individual attributes of raters have been identified as playing a pivotal role in determining the accuracy of the ratings. This phenomenon has been examined in terms of its inherent biases and leniencies. Notably, studies by Bernardin et al. (2000; 2010) have found that raters who exhibit high levels of agreeableness and low levels of conscientiousness are more prone to making lenient ratings. Moreover, lenient ratings are connected to self-construency and discomfort of the rater (Saffie-Robertson & Brutus, 2014). Self-efficacy and conscientiousness play a motivational role in performance evaluation, impacting raters' effort in making the performance as accurate as possible (Tziner et al, 2005). Studies have also

highlighted various dimensions of the rater-ratee relationship (Tziner et al., 2005; De Nisi & Murphy, 2017), such as their demographic similarities (Judge & Ferris, 1993), close relationships (Duarte, Goodson & Klich, 1994; Kingstrom & Mainstone, 1985), cultural identity and background (Mok et al., 2010), power relationships (Saffie-Robertson & Brutus, 2014; Ng et al, 2011; Ferguson, Ormiston & Moon, 2010), and the effects these have on rater biases.

While the personality traits and interpersonal relations between rater and ratee have significant impact on the evaluation process and its outcome, social contextual factors such as organisational design, HR strategy or technological development also have indirect impacts (Levy & Williams, 2004, Murphy & Cleveland, 1995). Different contexts may affect the interaction patterns, power dynamics and emotional background between rater and ratee and are therefore important for understanding the PE process and its outcomes. For example, electronic performance management tools hold people accountable for their performance and ties performance to rewards, which directs the attention of rater and ratee to key performance indicators at the expense of other tasks that are not monitored (Ravid et al., 2020, Stanton & Julian, 2002).

Research on PE shows that the evaluation of employees' overall performance is most likely to be biased in favour of performance information observed directly (Golden, Barnes-Farrell & Mascharka, 2009; Adler et al., 2016). This suggests that the "task of accurately evaluating someone's performance is difficult if not impossible" as it requires constant direct observation, exclusion of irrelevant information and any judgements from the past (Adler et al., 2016). Direct observations are possible when manager and employee are co-located. However, as an increasing number of employees today work remotely, their managers must instead rely on indirect observation in the form of information from a variety of different sources (e.g. colleagues, customers, systems), and through a variety of media (email, telephone, logs) and electronic performance monitoring (EPM) technologies (e.g. Kalischko & Riedl, 2021; Ravid et al., 2020), most commonly accessed through laptops or smartphones.

For remote managers, evaluating the performance of mobile telework with the help of EPM technologies presents new challenges compared to co-located PE. According to Golden et al. (2009) managers evaluate the performance of their employees by considering direct and indirect sources of information. Amidst the growing popularity of performance management systems and the increased use of technology-generated performance data, managers frequently

use such performance metrics in their evaluations, which can contribute to perceptions of appraisals being fair (Payne et al., 2009). Technology also creates opportunities for recording and monitoring a wide range of behaviours (Kellogg et al., 2020). Research on EPM technologies - including the more controversial surveillance EPM - has moved away from viewing them dichotomously (used or not) toward the effects of their specific characteristics such as perceived purpose, invasiveness, control and transparency (Ravid et al., 2020). However, the most commonly used for evaluation purposes are employee output, unproductive worktime, and the length and frequency of work tasks (Jeske & Santuzzi, 2015; Murphy & Cleveland, 2005). While empirical research still remains scarce, existing findings suggest that remote PE leads to managers increasing their focus on quantifiable information about employee output (Chen & Nath, 2008; Schwarzmüller et al., 2018). Whilst remote performance monitoring as a part of PE offers managers an unobtrusive means to collect performance data, the features and perceived purpose of this form of PE can influence a range of employee attitudes (Ravid et al., 2020; Wells, Moorman & Werner, 2007), including trust in management (Holland, Cooper & Hecker, 2015) and perception of tight control (Jeske & Santuzzi, 2015).

An Attention-Based View of Performance Evaluation

The volume, fragmentation and variety of performance data in PE of mobile workers – both from EPM tools and direct observation – create attentional demands that compete for managers' attention (Nicolini & Korica, 2021). We therefore suggest that the attention-based view (ABV) (Ocasio, 1997) is a pertinent lens through which to understand the effects of technology on managerial practices in PE. The ABV incorporates not only the individual focus of attention, but also how attention is structured by the organisational environment, i.e. how attention is situated. The ABV argues for the need to study the attentional engagement of organisational members which are defined by attention to stimuli in time and over time since people can be mindful about where they direct their attention based on their future plans and strategic goals (Ocasio, 2011, Ocasio, Laamanen & Vaara 2018).

Attentional engagement defines what people pay attention to. More specifically, attentional engagement is the process of sustained allocation of cognitive resources, i.e. time, energy, effort, to guide problem solving, planning, decision-making and sense-making (Ocasio, 2011). Such cognitive processes are activated in interaction with *attentional perspective*, i.e. top-down cognitive structures that emphasise relevant stimuli and action repertoires, and *attentional stimuli*, i.e. bottom-up attentional processing (data-driven, direct observations,

stored in memory). Individuals can have multiple competing or conflicting attentional perspectives, defined on different levels by goals, experience, top management team, organisational strategy, prior attention and other sociomaterial structures (Ocasio, 2011).

Although the importance of managerial attention for the evaluation process is emphasised in the PE literature, the existing, cognitive approach to attention is not sufficient for explaining how managers make judgements about the work of their subordinates. An attention-based view considers interlinkages between managers' overall attentional processing based on their values, perceptions, and goals – which in turn generate differing attentional engagement in response to a variety of social and material stimuli (Nicolini & Korica, 2021; Ocasio, 2011).

Method

Research context

To gain insight into how line managers use technology and data-driven tools in evaluating the performance of subordinates working remotely, we conducted a single case study at a maintenance department of a Russian subsidiary of a large European MNC. The work in the maintenance department is done in teams of mechanics (subordinates) led by engineers (line managers). The main task of the mechanics is to maintain customer equipment in commercial and residential buildings located in different parts of the city. This means responding to client callouts as well as performing routine maintenance. The work of the mechanics at the client sites is by its nature remote, often done individually in the absence of the engineers or other colleagues. Mechanics generally schedule their day according to planned maintenance or repairs, but can also be summoned by the call-centre to attend to urgent tasks at client sites. The number of maintenance jobs, combined with the expectation of fast reaction times to callouts, and the distance between the sites creates challenges for mechanics to manage everything on time.

To improve the efficiency and quality of maintenance services, the company recently implemented a real-time monitoring tool (hereafter referred to as Wire). The tool is multifaceted and aims to serve the needs of mechanics by enabling them to schedule, report, and keep track of their activities in the most efficient way. Wire also communicates client callouts to the mechanics, and provides access to real-time information about ongoing activities for different parties of the maintenance service chain (from clients to management). For line

managers, Wire provides real-time information about individual mechanics' ongoing tasks, and their execution progress and success. It has a colour coding system, for instance the length of an activity may be highlighted in red to indicate that the mechanic spent more time than expected moving from one site to another or in performing a maintenance task. The colour coding is intended to direct managers' attention towards issues potentially requiring action, for example clarifying the reason for a longer than average repair time, thus enabling the development of possible solutions such as rethinking the distribution of tasks among mechanics, or figuring out ways to increase their efficiency.

Design and data collection

Data collection started in autumn 2018 when initial contacts with the case company were made and the first introductory meeting with the HR Director and Head of Service Development was held. In this initial meeting, we learned about the company's PM system, its purpose, when it was implemented and what practices were in place before that. We also agreed on the details of the data collection process, and that we would gather data in the form of interviews, shadowing, and documents. We concluded data collection in summer 2019.

After receiving approval from corporate HR to start conducting interviews and shadowing in the unit, we started emailing potential participants. In our first email we emphasised that their participation in our study was voluntary, and that the content of all interviews was confidential and only accessible to members of the research team. In the consent agreement, we emphasised that in our reporting of the data, their views would be shared anonymously and that no individuals could be identified. We further explicitly stated that we would not share any individual insights directly with HR but only in aggregated form. At the end of our interviews with line managers we asked selected managers about the possibility to shadow them in their daily work for a few days, emphasising they were not obligated to agree to this. Several managers that we asked consented to this.

The qualitative data consists of 29 interviews, lasting on average 50-60 minutes (16 with line managers, 3 with division directors, 5 with mechanics, 1 with the HR director and 4 with service development managers), paired with shadowing of line managers for a total of 12 days in order to gain further insight into their everyday PE practices. Although the line managers are the key informants in this study, we also interviewed other actors in the company in order to get a broader understanding of the PE process. While not directly providing us with insights about how performance evaluation was practiced by line managers, being able to interact with different actors involved in PE technology and process implementation provided

us with a better contextual understanding, which was informative for further interpreting and reflecting on the line manager data.

As a research tool, shadowing enables the researcher to follow closely organisational processes and practice (Czarniawska, 2018), such as PE, by observing daily interactions and practices of managers working in their actual, complex, social and material settings (McDonald, 2005; Gilliat-Ray, 2011). One of the authors shadowed three managers during working hours, for 12 days, to learn what they actually do during their workday, rather than what their job role states they do (Quinlan, 2008). Shadowing is a one-on-one ethnography that is less about what is being done and more about connection between researcher and participant (Gill, 2011). The researcher's presence may influence the behaviour of the participant, for example changing the usual behaviour or workflow to align with perceptions of the observer's potential expectations. As the shadowing progressed, observation shifted to include also active discussions of ongoing work events with the participant, and casual conversations during shared meals or car rides. These interactions enabled the development of a rapport and a more natural behaviour from the participants, enhancing the accuracy and depth of the collected data. All interactions along with the observations were carefully documented in the field notes, which in turn required reflexive reading.

The 16 semi-structured interviews with our key informants, the line managers, focused on their daily activities, routines and responsibilities, their interactions with mechanics, ways to evaluate performance, and the use of monitoring technology. In the latter part of the interview, we employed an open-ended questioning style in order to allow room for new themes to emerge (Hammer & Wildavsky, 2018). All participants in the study were male and had an engineering education. They had progressed from being mechanics themselves to supervisory roles. Most of the supervisors had worked for the company for over 10 years and been in a supervisory role for over 3 years. The managers were encouraged to describe and reflect on their work, their experiences of using Wire, as well as their evaluation of mechanics' performance. All interviews were conducted face-to-face in the local language, which was the native language of both the interviewer and all the interviewees.

Data analysis

We analysed our data in three broad stages following an abductive process (Dubois & Gadde, 2002; Timmermans & Tavory, 2012). Being neither inductive nor deductive, the abductive approach assumes iterations between theoretical concepts and data to refine theoretical ideas

during the research process (Dubois & Gadde, 2002; Saetre & Van de Ven, 2021). The data analysis approach can thus be characterised as emergent, and conceptual advancements are made as fieldwork progresses and explanations are sought for observed experiences. The search for suitable theory to explain what we saw in our data was a process of trial and error. Reading and interpreting the data was instrumental, but also involved remaining open to consider different theoretical perspectives during the data analysis.

The aim of the first phase of data analysis was to create an initial understanding of how managers went about evaluating the performance of their mobile teleworkers (mechanics), what they based their judgements on, and what kinds of activities they engaged in. We paid special attention to managers' interactions with the mechanics and the technology (Wire). Reading and re-reading the interview transcripts, we noted down aspects of the managers' work environment including social patterns, artefacts, location, network relationships of the managers, and their intentions and expectations. In line with Silverman's (2011) suggestion to enhance the credibility of qualitative findings, we adopted researcher triangulation so that each author initially read and made notes separately. We met frequently throughout the process to discuss emerging themes and compare our views. We developed a table containing descriptions of managerial ad-hoc and routinised activities, as well as the context underlying the activity, which we used to 'map' the data.

In the second phase of analysis, upon deeper analysis of the table from phase 1, we observed that the ways in which managers interacted with their subordinates and Wire clearly seemed to influence the issues they focused on in their performance evaluation. We continued to work on the table, using informant-centric codes (Van Maanen, 1979), and including interview excerpts which we identified as important or illustrative, also adding our own comments and raw analyses to this table (Strauss & Corbin, 1990). We next turned to the performance evaluation and EPM literature to learn more about the role of managers as evaluators of employee/teleworker performance and the use of performance monitoring technology (De Nisi & Murphy, 2017). As we deepened our understanding of the data, the concept of attention (Ocasio, 2011) appeared to resonate with our previous readings and interpretations (Silverman, 2013), and it was viewed as helpful in shedding light on how technology, together with salient aspects of the individual manager's disposition and their environment, was shaping their PE activities in our study.

In the third and final phase, we decided to analyse the PE practices we were observing as attentional practices (Nicolini & Korica, 2021). We grouped and refined our initial, open codes to more research-centric codes related to concepts in ABV (Van Maanen, 1979). This

involved identifying what managers directed their time, energy and effort on in the PE process (*attentional engagement*), and how this was being shaped by their own personal disposition and agency (*attentional perspective*) on the one hand, and the sociomaterial context in which PE was taking place (*attentional stimuli*) on the other. Our data structure is illustrated in Figure 1.

Insert Figure 1 here

Both observational data and interviews were important for capturing different aspects of attentional engagement. Our field notes were particularly valuable for capturing what managers spent their time, energy, and effort on. We were able to identify patterns in their work practices and observe the attentional stimuli that influenced their attentional engagement. The interviews, on their part, allowed us to gain a deeper understanding of the attentional perspective of the managers, such as their perception of their own role identity, their motives for PE, and the different stimuli they pay attention to.

FINDINGS

We present our findings in correspondence with the data structure illustrated in Figure 1. First, we go through, in turn, the two key foci of *attentional engagement* in PE that emerged from our data: managers' focus on interactions with key performance actants, and specific performance indicators. At the same time, we interweave the *attentional stimuli* within the organisational context and the *attentional perspective* of individual managers that influenced managers' attentional engagement on these two foci. Second, we touch on how managers continuously balanced competing attentional demands between actants and indicators when evaluating everyday employee performance. All quotes are from line managers (engineers); their names have been carefully anonymised using pseudonyms.

Attentional Engagement in Performance Actants

The first focus of attentional engagement in PE that emerged was the time, energy and effort that managers directed to key performance actants. In this study, the key performance actants were the mechanics, customers and equipment that managers deemed central for evaluating performance. However, in terms of how managers directed their time in evaluating the

performance of mechanics (even hour to hour), managerial attention was split depending on managers' spatial orientation that in turn related to the role managers identified themselves with. Most of the managers had an engineering education and most of the managers started out as mechanics before assuming their managerial role. Our findings show that managers whose role identity was strongly linked to their perception of themselves first and foremost as engineers (and secondly as supervisors), engaged in more direct, physical face-to-face observation and communication (during which they also engaged in hands-on maintenance and repair work). Managers who identified primarily as supervisors (and secondly as engineers) engaged in more indirect, technology-supported observation and communication (email, telephone, Wire). Managers aimed to ensure that acute and emergency situations were responded to in a timely manner by paying attention to the performance of actants in real time, regardless of the type of interaction they used.

Direct observation and interaction on site. The attentional engagement of managers who favoured direct observation and interactions, mainly concentrated on three actants – mechanics and customers and problematic equipment. Site visits were considered important for getting insight into the daily work of mechanics, what they spent time on, what they prioritised, and how well they performed their tasks. The daily routine of these managers was to gather all the mechanics for a quick morning meeting at the office or at a client's premises, to discuss which current cases needed most attention, to answer potential questions, and to go through the plans for the day.

> *"We have our own small workshop at clients' premises, and every morning I hold a quick meeting with the mechanics. That is, every morning at 8 am we talk about the past day's callouts." (Jack)*

Although every mechanic had Wire and knew their daily work tasks in the morning (as opposed to before when tasks were distributed to employees in these meetings), managers nonetheless retained this practice, which they considered helpful for getting an overview of each individual mechanics' work, as well as for achieving alignment between different tasks. In addition to the informational aspect, managers viewed the daily morning meetings as a good way of controlling mechanics' presence at work, ensuring their neat appearance and that they kept busy with the right tasks. Following the in-person meetings, managers spent a considerable part of their day visiting different work sites.

The strong engineer identity of these managers seemed to be associated with a sense of personal accountability for the equipment, the quality of the repair and maintenance work carried out, and client relationships. This was coupled with their spatial orientation in the sense that they perceived hands-on involvement as something important for them as managers and senior engineers to do. A key attentional stimulus when evaluating the work of mechanics was the operational condition of equipment, with particular attention being paid to problematic equipment. Relying heavily on their own past experiences, these managers were of the opinion that they, by looking at the state of the equipment, could judge the actions of mechanics in terms of typical mistakes they made or ways in which they resolved different problems. Mechanics' own requests for help and the questions they asked also fed into managerial perception of mechanics' professional competence and performance.

> *"We ourselves [the managers] were once in their [the mechanics'] place, so we know what to control, what to check, and where to look, because I also worked as a mechanic, then a foreman, then master. So, everyone grows up as an engineer. Therefore, there is certain experience and best practices, we know where to look, we remember our experience of doing maintenance and times when we could have missed something, not noticed. Therefore, everyone here has their own accumulated experience." (Paul)*

Direct customer feedback was another attentional stimulus that these managers paid considerable attention to. In addition to being an important source of information about mechanics' work performance, managers also considered this kind of feedback as critical for maintaining close and trusting relationships with the customers. They considered their own physical presence on site as an effective way of assuring customers that they were receiving good service and that their equipment was being well taken care of, partly driven by the fact that many customer contact persons also had an engineering background.

***Indirect observation and interaction*.** While some managers directed a lot of attention to visiting mechanics at their working sites, others clearly favoured spending more (but not all) of their time in the office. This spatial orientation seemed to stem from their perception that administrative duties, reporting tasks, and bureaucracy (managing warehouse, logistics, labour safety management) had increased, thus requiring more presence at the office. These managers appeared more focused on their role as supervisors, highlighting their engineering role identity to a lesser extent. Similar to their managerial colleagues who preferred on-site face-to-face

interactions, the attentional engagement of these managers in PE was focused on mechanics, clients and equipment, however, they engaged with these in a notably different way. They typically started their day by checking emails and Wire, but instead of meeting mechanics, they called them. The purpose of the phone calls was largely the same as that of the morning meetings that the other managers held, with the important distinction that these managers directed less attention to helping mechanics plan their day and instead monitored more closely the extent to which mechanics completed emergent tasks and needed support with their work. While getting information about mechanics' location and task completion through Wire, the phone calls were intended to check that mechanics were in fact doing the things they reported in Wire., i.e. to triangulate Wire data with direct communication.

> *"In the morning I call my mechanics, find out what plans they have, what site will they go to, what task they are going to carry out there, routine maintenance work or repair work. In parallel with this, during the day, I monitor whether this is really so – it is necessary to control their actions."* (*Dave*)

Although the attentional stimuli were overall the same as for managers favouring direct interaction, (problematic equipment, client feedback and mechanics' need for help), they had a different, and largely digital form. Managers who spent more time managing the operational work remotely, engaged with Wire and the real-time data it provided more frequently as the major source of information about the performance of mechanics and the state of equipment. Managers could see the callouts in Wire, the urgent tasks that mechanics needed to attend to, and also the intended daily work plan for all their mechanics. Like the managers who frequented sites, these managers were also concerned with having all equipment running continuously, and safely. These managers, however, activated their attention towards problematic equipment based on the data provided in Wire, real-time (working/non-working equipment) and historical reports of how many times it had malfunctioned. The problematic equipment was also an indirect way of evaluating mechanics' work as Wire retained information on who had been responsible for what equipment. In addition, questions that mechanics asked, and the help they needed was an indicator of their competence, and thus a further source of input into PE.

> *"If a mechanic calls about some trifling matters several times a day, asking how to do this and that, then I understand that some knowledge is missing. I then start*

to look into his work history, what sites he is mostly working at, what work he has never done." (Rob)

A further observation was that managers whose attentional engagement was more directed towards indirect interaction, appeared to place more emphasis on the quality of mechanics' soft skills (e.g. communication skills) in PE. Differences in managers' way of observing and evaluating employee performance from physical to more remote, seemed to shift their focus of attention to incorporate other skills than simply technical ones, more specifically ones that supported managers in their remote evaluation.

Attentional Engagement in Performance Indicators

In addition to their focus on performance actants, managers' felt accountability for the results of their own team and team members (the mechanics), also led them to direct attention towards key performance indicators (KPIs). Thus, the second focus of attentional engagement that we found in our data was the attention paid to the KPI dashboard and the performance data of equipment and mechanics. Continual performance evaluation is also a way for managers to ensure accuracy and fairness in determining appropriate bonus levels, thus feeding into their decision-making about subordinates' rewards. Our findings suggest that attentional stimuli were more important in shaping manager attentional engagement compared to individual attentional perspectives. We elaborate on this in the findings below.

Monitoring KPI dashboard. In the organisation's performance management system, the central KPIs were presented in numbers and graphs on a dashboard that was visible on the first page of Wire. While the attention of managers to performance actants was frequent, even daily in the case of mechanics, manager attention to KPIs was more sporadic, driven largely by external attentional stimuli such as queries from senior managers, weekly approval of working hours, quarterly bonus decisions, senior management meetings, and emergency callouts. Being in the middle, line managers have several levels of accountability. They are, for example, accountable to senior managers for team performance indicators, so it is in their interest to ensure that mechanics report data promptly and accurately. This also means that they manage performance towards their own KPI targets and are thus motivated to follow these targets when aggregated data is available.

"I have key indicators, KPIs: commercial repairs, real-time back reporting for mechanics, the number of service orders they execute. This is updated once a

week on Tuesday mornings. So, on Tuesday I go in [to Wire] and look where something needs to be addressed." (Dave)

The KPI dashboard provided a convenient way to get an overview of everyone's work and progress, evaluate it, and understand what additional things needed to be done. Based on their own background knowledge, managers often double-checked that all activities carried out during a month were accurately recorded in Wire. For example, during one of the field observations that took place at the end of the closure period, one manager called a mechanic in his team, reminding him that if he did not close a repair project in the program, this would not be included in his pay.

"Wire has all the data on callouts, on mechanics, on objectives. Using Wire, I also create reports on how many mechanics have worked, the peaks, when callouts arrive, on which days for a certain period. All sorts of different reports on the number of call outs for any period. There [in Wire] are all the data about where the equipment is located, customers, numbers, addresses, contracts and so on." (Rob)

Monitoring performance data of equipment and mechanics. While the dashboard provided an overview of key team KPIs, managers deepened their understanding of the dashboard data by accessing more detailed performance data of equipment and mechanics that was available in Wire for different periods. They were able to slice this data in different ways depending on their needs; per team or individual mechanic, client or unit of equipment. For example, one key KPI for mechanics concerned whether or not they were able to fix equipment on the first attempt, without the problem recurring. If this indicator seemed to suggest problems, managers would go on to examine available performance data in Wire to try to get to the bottom of the problem, is it linked to a certain lift, a specific mechanic etc. Studying this data thus allowed managers to get an overview of individual mechanics' entire maintenance histories.

"I can fill in the name of the equipment and the system will give a full history: what faults there were. Accordingly, I can already talk in detail with the mechanic, for example, "John, I'm sorry, you had 56 applications for this piece of equipment in a week and it still continues to fail, so it seems you yourself can't figure it out?" (Alex)

While a properly performed maintenance job was considered to prevent frequent breakdowns, the condition of the equipment was not viewed solely as the result of mechanics' work. Managers were interested in the reasons for failure and engaged with the equipment data to identify particularly problematic cases. Combined with the dashboard indicators, this helped to provide a more accurate and well-rounded picture of an individual mechanic's performance.

> *"80-90% of visits to Wire are to view call-outs – that is an emergency that brings the equipment to a standstill, how many of them there were, within what timeframe the mechanic arrived there and how efficiently he performed – their efficiency can be seen too."* (Alex)

Emergency stops, e.g. standing, non-operating equipment, were a key stimulus of managerial attention when it came to evaluating the performance of mechanics. Every morning, the night shift director sent managers a report on what equipment had stopped operating during the night. Managers evaluated mechanics' reactions to the callouts in terms of speed, quality as well as following organisational procedures (for example regarding safety). While emergency stops appeared to be a key stimulus for most managers, those who worked on-site relied more on physical journals for this information, e.g. notes that mechanics made at the end of the working day, whereas managers who spent more time at the office relied more on the digital data available in Wire.

Balancing attentional demands between actants and indicators

Our findings indicate that managers' attentional engagement in PE was directed towards two key foci – performance actants and indicators – in distinctive ways. However, it was evident in our data that this was not an 'either/or', nor a 'both/and' scenario, rather managers were observed as continuously confronting a complex dilemma of balancing competing attentional demands between these two foci of attentional engagement when evaluating mechanics' performance.

> "*I still learn some information from the mechanic, because he is my direct subordinate. In second place, from the customer, and in third place - the system. This is how I do it anyway. All this happens in a fairly short period of time, if you need to understand the true information. Mechanic, customer, and then the*

> *system in parallel. There lies the complete picture, everything fits together."* (Jeff)

A key issue for managers in this respect was finding a balance, over time, between trusting and controlling their mechanics. The prevalence of the trust vs. control dilemma again seemed to be linked to managers' attentional perspectives in terms of role identity and spatial orientation. Managers working on-site, who engaged in more direct physical interactions, exhibited a greater tendency to micro-manage and control their employees directly. For example, although reasons for repeated equipment failure were listed in Wire by mechanics, these managers were not satisfied relying solely on the system generated information. Instead, they commonly wanted to make their own assessment of the cause of failure to determine whether the equipment was faulty (badly installed from the beginning or too old), or if the failure was in fact caused by mechanics' poor work. They did not appear to trust mechanics' ability to report accurately about each site visit, nor Wire itself, and frequently called mechanics for complementary information when needed, or visited them onsite.

> *"It is not like a mechanic lies, or provide false information. This does not happen often. The issue is not a lie when we assess the situation. We have our own truth, and we say it. Maybe the system tells some other truth. We have different perceptions of time, and different perceptions of the quality and complexity of work."* (Jeff)

Managers who worked more from the office generally appeared more trusting of mechanics' ability to carry out the work effectively on site and did not visit sites themselves unless absolutely needed. Instead, they directed more attention to indicators related to reporting and other managerial work, showing trust in the Wire data. This seemed to relate to their self-identification as managers rather than engineers, where they saw their primary task to be one of supervising and organising work, whereas managers with a dominant engineer identity felt more personal accountability for the quality of work being carried out.

In addition to grappling with the issue of trust and control when evaluating the quality of mechanics' performance in maintenance and repair work, trust vs. control also posed a dilemma for managers when evaluating the timeliness and reliability of mechanics. In particular, managers with a strong engineer identity expressed doubts regarding mechanics' motivation to report the duration of their work tasks and travel times correctly in the system.

They relied on their own experience of working as mechanics, which led them to try to pre-empt/prevent different forms of potential misconduct that they knew could take place, using a combination of direct communication and system generated information.

> *"WIRE is not so convenient for the mechanics, because at any time I can see John is working today, the time is 12 noon, and he has 3 callouts hanging from 9 o'clock in the morning, and he still has not gone to them. And so I call him: 'Where are you, mate? Your callouts have been hanging for three hours now, and you still have not appeared. Where are you?!'"* (Alex)

Managers responded to the dilemma of balancing competing attentional demands by increasing their direct control over mechanics' performance, and the information that was entered into the system. This typically involved agreeing with mechanics on certain informal practices, such as how to report the duration of activities in the system.

> *The mechanic was at the site at 9.00 a.m., although it was scheduled for 10.00 a.m. They called the expert that they had arrived early. The expert arrived at 9.35 a.m., and at 9.40 a.m. the guys started working. I [the researcher] did not see how this mechanic records his activity in [the system]. I asked Dave. He said "Yes, of course the mechanics are inputting the time records. But, there is a nuance! They are unlikely to record the 'real' time, because this work can last from 10 minutes to 90 minutes. It is very difficult to explain these statistics to management, so they just enter average values." (Field observation notes, followed by interview with Dave in quotation marks)*

To address the challenge of discrepancy in what performance indicators showed in the system and what was happening in reality, managers created informal reporting rules for mechanics so they could manipulate some of the timing-related issues that they thought to be insignificant for performance evaluation purposes but might create "unnecessary" difficult questions from management, such as informing standard times for tasks rather than the real ones.

Discussion

In this study, we focused on how technology shapes the attentional engagement of line managers in PE in a remote work setting, specifically mobile telework. Drawing on literature on PE (De Nisi & Murphy, 2017) and ABV (Ocasio, 1997; 2011), we examined how the

combination of social structures and technologies as different attentional stimuli on the one hand, and individual attentional perspectives on the other, interact to shape the attentional engagement of line managers in PE. This is important as organisations increasingly adopt more technology and data-driven tools to support managers in their implementation of HRM practices in a remote work setting – in this case PE – which facilitates the process, but simultaneously compounds managers' attentional demands by providing a greater volume and variety of data and cues to attend to.

We contribute to research on PE and remote work in two main ways. First, our findings advance the PE literature by studying it in situ as a continual process. PE is considered a 'core' HRM practice (Biron, Farndale, & Paauwe, 2011) – strategic in that it is one of the most human capital-enhancing practices of the 'HR bundle' (Takeuchi, Lepak, Wang, & Takeuchi, 2007), and tactical, since it provides input into a number of HRM-related outcomes for the employee (e.g., pay, promotion, and talent pool inclusion). Our focus on the daily activities that managers engage in to formulate an account of the performance of their subordinates constitutes an important addition to existing literature, which has predominantly concentrated on the formal practice of performance appraisal, paying less attention to what information feeds into these appraisals and how managers arrive at their evaluations. Our study also advances the PE field by focusing simultaneously on two significant phenomena that are shaping the PE practices of line managers in more and more organisations – the introduction of new technologies to support the capture, monitoring and reporting of individual performance, sometimes in real time (e.g. Ravid et al., 2020), and the exponential rise of remote work arrangements (Donnelly & Johns, 2021).

Second, this paper contributes to the remote work literature by furthering our understanding of how managers carry out PE activities for mobile teleworkers. Our findings confirm that managers rely more on the information they observe directly (Golden et al.,2009) and co-location with subordinates is ideal for PE (Adler et al., 2016). However, we also show that indirect contact with subordinates is as reliable for them given that other sources of information are available too. By applying the ABV (Ocasio, 1997; 2011), we show that technology indeed plays a key role as attentional stimuli, but so too do other actors and actants. The proximity and instant availability of the stimuli often depends on the in-situ physical location of the evaluator, which as we show, interrelate with the role evaluators choose to identify themselves in. In other words, managers exhibit agency in how and when they use technology and what cues they attend to, but that their agency is constrained and/or afforded

by the attentional stimuli in the external context and their own attentional perspective (Nicolini & Korica, 2021). In doing so, we provide one of the first fine-grained accounts of managerial attentional engagement in connection with PE of remote teleworkers, where technology plays a crucial role in staying connected and draws the attention of the user to 'important things' (Ravid et al., 2020, Stanton & Julian, 2002).

Attention has traditionally been conceptualised as a cognitive process of conscious allocation of awareness and scanning, based on the assumption that attention is the result of mental work only. While managers have agency and can be proactive in choosing the sources of the information based on which to evaluate the performance of their employees, our study provides a nuanced view on the foci of attentional engagement where attention is not entirely the conscious choice of managers, but in which context also has a significant influence. Our findings show how, driven by their own motives such as accurate performance measurement and timely response to acute situations, managers pay attention to the things they do in PE. More specifically, we emphasise the interplay between managers' attentional perspective and the stimuli that influence their attentional engagement, ultimately shaping their approach to performance evaluation. The managers' 'attentional infrastructure' (Nicolini & Korica, 2021) – owing to their nested position in between employees, customers, the equipment and top-management, as well as their different levels of trust in their employees and the technology – included a need for managers to strike a balance between different competing attentional demands.

Our findings support ideas in the mobile telework and PE literature that managers heavily rely on direct continuous interactions with subordinates, as well as deep engagements with other direct sources of performance information such as clients (Adler et al., 2016, Golden et al., 2009, Murphy & Cleveland, 2005) in forming their judgements. However, our study also suggests that managers direct significant attention to technology-generated performance indicators, triangulating between different sources of data to complement their own accounts of their subordinates' work performance in a remote environment. Our findings reveal that managerial attention to digital performance indicators tends to be periodical rather than day to day, triggered by stimuli related to formal demands such as requests from senior managers, routine duties such as confirmation of working hours and bonus decisions. Our study also showed that some material objects (in our case, 'connected' equipment) can create a considerable amount of attention around itself, activating more 'engineer' roles of managers,

whereas other tools (e.g. digital monitoring tools) can be particularly important in activating practices expected from managers as 'supervisors'.

While performance indicators are highly relevant for evaluating performance, the information received from direct interaction with subordinates and clients is necessary to make more accurate judgements for PE purposes. Monitoring tools play an important role in affording managers and subordinates the opportunity to organise their own workflow independently, which creates additional challenges for remote PE. In line with the work on control issues in remote work settings (e.g. Sewell & Taskin, 2015), managers in this study faced a continuous dilemma of managing competing attentional demands in order to stay in control of subordinates' activities, which typically required finding the most effective ways to interact with them as well as monitor them. In contrast to previous literature, which primarily focused on employees' perceptions of excessive control (Jeske & Santuzzi, 2015), our study offers a unique insight into the challenges that managers face when deciding which source of information to trust and react to. Managers are confronted with the challenging task of striking a balance between monitoring their subordinates' operational activities and their reporting activities. This balancing is needed to ensure an optimal level of performance on site as well as in the software reporting system. The ways in which individual managers chose to do this were highly intertwined with attentional stimuli such as client feedback, senior manager requests, problematic equipment, as well with their attentional perspective – their spatial orientation and their perception of their own role. Those with a strong managerial identity directed their attention towards the KPI's of their subordinates which, combined with other data, also served as an indicator of their own performance and thus potentially impacted the accuracy of their ratings (Ferris et al., 2008). A strong perceived role identity of being an engineer, served to direct managers' attention towards performance actants. Our interpretation of this focus of attention was that it was driven by their own views/expectations of the specific role they had to play as incumbents of their current position (Burke 1991; Burke & Reitzes, 1981), rather than being grounded in a social identity explanation of perceiving themselves as members of a wider social group, in this case engineers.

Limitations and areas for future research

Like all research, this study has limitations that can, if addressed, open up avenues for new innovative studies. First, our study is built on single, in-depth, case study data. Generalising the findings was not the aim of our explorative study, and there are several potential reasons

why studies such as this might have been influenced by certain idiosyncrasies. For instance, our target group was limited to mobile teleworkers performing hands-on, complex tasks in nearby, remote locations that their managers and customers could attend on site in person. This afforded line managers far greater agency than if evaluating the performance of a knowledge worker working from their own home, potentially in another country. In light of our findings, this would not only alter the kinds of attentional stimuli that these managers would experience, but the trust and control dynamics within PE in this kind of setting would produce different kinds of attentional demands on the line manager. Future research could therefore adopt a nuanced categorisation of remote workers and comparative research designs in order to tease out how the challenges of PE differ for each group. Moreover, our study was conducted in the Russian cultural context which is considered high-context (Hall, 1976). The importance of face-to-face communication and close relationships is considered essential for building trustful relationships (Andreeva, 2014), and Russian attitudes captured in the proverb 'trust, but verify' have been presented as a challenge to employee empowerment (Outila et al., 2021). Furthermore, in our study all the managers were male which may have an impact on which performance measurement criteria they rely on, subjective or objective (Maas & Torres-Gouzalez, 2011). Accounting for personal characteristics of the managers, for example gender, may clarify patterns of the attentional engagement.

Second, while trying to understand the attentional engagement of managers, we did not focus on their personality traits or skills to mindfully and consistently sustain their attention on key tasks (Weick & Sutcliffe, 2006) without interruptions, or mindfully switch their attention to the most relevant stimulus in-situ (Ocasio, 2011). Understanding managers' personality traits and their cognitive abilities would serve to complement future research on attentional engagement of managers in performance evaluation practices.

Third, by extension, the study does not investigate the influence of attentional engagement on key performance management outcomes, whether these are for the employee, the team or the organisation. Future research could thus re-connect with the performance appraisal literature by examining how managerial attention in everyday PE activities in a remote or telework setting influences performance measurement, including how attentional engagement might be related to objective and subjective rater biases. The employee perspective is also missing from this study. Building on the growing body of research on employee experiences of HRM practices (Edgar & Geare, 2014; Plaskoff, 2017) and performance appraisal more specifically (Farndale & Kelliher, 2013), future research could build on studies

such as Abraham et al. (2019) and Kalischko and Riedl (2021) in examining employee attitudes towards performance tracking technologies and practices of their line managers, including the psychological, cross-cultural and ethical issues surrounding the use of EPM and surveillance technologies (Ravid et al., 2020).

Lastly, due to methodological constraints, we did not observe the performance monitoring tools and how managers worked with them in great detail, but relied mostly on managers' own accounts about their interactions with the system. We encourage future research to use more innovative, digitally-supported data collection methods in order to gain more in-depth and objective insights. For example, backlog data (Mahringer et al., 2021), or shadowing the digital activities of users on the screen (Czarniawska-Joerges, 2011) would serve as a useful complement to the subjective views of key actors. In addition, shadowing activities of managers on screen has potential to further open up the 'black box' of technology in HRM research (Myllymäki, 2021) by elaborating on the affordances and constraints its specific material and/or digital properties create for line managers when engaging with HRM practices.

Implications for practice

Our study reinforces the notion that human agency, material artefacts and social context are all instrumental in how technology-supported HRM practices such as performance management are formed and reproduced. In this particular case we observed that these three things in combination influenced what managers paid attention to in PE, which is likely to have implications for how mobile teleworkers are managed, evaluated, given feedback and rewarded. Whilst new technologies have become essential in managing geographically dispersed service operations, as well as in evaluating the performance of remote work and workers, no technology exists in a vacuum. The combination of physical spaces and managerial tasks gives rise to a variety of attentional stimuli that differ in their urgency and importance. As managers carry out their work, they must navigate through these stimuli in real-time while maintaining a balance. Our study has revealed that sustaining attention to organisational priorities stems from the manager's individual attentional perspective, such as perceived role identity as shown in our research.

In terms of the evaluation of mobile telework, we examine it as a continual process that includes real-time observation and integration of information for the evaluation. Both organisational contextual factors that provide attentional stimuli, as well as the individual attitudes and agency of managers that determine how they process information and where they

direct their attention, generate different routines and practices among managers as they try to navigate the attentional demands that come with different types and sources of information. Therefore, understanding the attentional engagement of managers is important for organisations, since this can be used to help direct their attentional focus to the issues deemed most important. The company's strategic objectives and expectations for managerial roles should be a guiding principle for making recommendations about how to direct their attentional engagement. Development interventions and the adoption of leadership practices such as mindfulness or coaching could also help managers deal with the volume, fragmentation and variety of information for PE, and support them in sustaining attention over different temporalities and proactively managing their attention towards critical matters (Nicolini &Korica, 2021). Together, this should also reduce the need for time spent on manipulating data and inventing informal practices that can be counterproductive for everyone.

Lastly, the sources that managers attend to for evaluating performance influence the kind of feedback they provide to employees and the quality of formal evaluation as perceived by the employees. Employees' reactions and perceptions of fairness of evaluation are important for general satisfaction with the workplace and job engagement. Therefore, finding the balance between paying attention to technology generated data and observations made through direct interaction is crucial for managers in order to improve the employee experience.

Data availability statement

Due to the sensitive nature of the data, participants of this study did not agree to make data publicly available.

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Figure 1. Empirical data structure