

Emerging Leadership Practices for Hybrid Work: The Role of Algorithmic Management Tools

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Abstract

This paper examines the impact of algorithmic management (AM) tools in the increasingly popular hybrid workplace and the emergence of novel leadership practices in hybrid work settings. Particularly, we explore the use of an Employee Experience Management (EXM) platform – Microsoft Viva – that has AM features in enabling emerging leadership practices influenced by algorithms. Using a qualitative approach with a case study design of a multinational organisation that adopted an EXM platform, the study findings reveal that AM tools contribute to emerging leadership practices that reflect inclusive, humanised, and multimodal modes of leadership – all of which are underpinned by analytics-enabled leadership. The combination of these modes of leadership and associated practices is believed to respond to the challenges in employees' work environment and enhance the employee experience in a hybrid workplace.

Keywords: Algorithmic Management, Leadership, Hybrid Work, Employee Experience Platforms (EXM), Analytics-Enabled Leadership.

1 Introduction

Algorithmic management (AM) is broadly defined as the potential automation of the full range of traditional employer functions, from hiring workers and managing the day-to-day operation of the enterprise through to the termination of the employment relationship (Adams-Prassl et al., 2023; Mohlmann et al., 2023). In addition to function automation, AM also entails the collection and use of data on a platform to develop and use learning algorithms that can coordinate, control, and recommend various operations (Benlian et al., 2022). One of the key defining features of AM is data (Jarrahi et al., 2021), generated through analytics which include capturing of big volume of data, comparing, analysing, and generating insights that

support prediction and decision making (Cameron et al., 2023; Edwards & Fenwick, 2016). This understanding of AM and corresponding AM tools is not only limited to full automation of employer functions whereby tools implement and enforce actions on behalf of the human. However, AM tools can also include technologies that incorporate elements of AM where data is captured from various sources and analysed through analytics processes with the help of algorithms in order to reveal insights and provide recommendations, so the human can then make decisions and take actions in light of this information. An example of such tools is Employee Experience Management (EXM) Platforms such as Microsoft Viva, that amongst other features, have built in AM features to enable data-driven insights and recommendations that enable leaders to make better decisions and enhance the employee experience. Such tools are believed to drive new innovations in business leadership that address the complexity of issues in global organisations (Apté et al., 2012).

The rise of AM tools has mainly been associated with alternative forms of work that is largely digital, and platform based (Newlands, 2021; Winikoff et al., 2021). This association is further evident by the scarcity of research linked to non-platform or non-digital work context. With the Covid-19 pandemic, alternative fluid work arrangements emerged (Essien, 2023). Amongst these alternative arrangements is hybrid work, a form of digital workplace transformation characterised by having employees who combine both Work from Home (WFH) and in-person work arrangements. Hybrid work is a form of digitalised workplace associated with an increased dependence on digital technologies (Panteli et al., 2022) including technologies like Employee Experience Management (EXM) platforms that have AM embedded within the platform amongst other features (John et al., 2022). With the growing prominence of this work model globally, AM tools are omnipresent and are being integrated into existing digital work systems from word processing to enterprise management systems, covering the full range of functions and capturing a wide range of work-related data in a workplace.

While the hybrid work model provides opportunities such as autonomy and flexibility in time and place of work, it also presents employees and managers with a set of challenges that stem out of this arrangement including longer working hours, social isolation, and digital fatigue. In recent years, AM tools have been adopted to manage the unique challenges of hybrid work environments. Existing literature on the use of AM has focused on the impact on employee experience within these settings (Kinowska & Sienkiewicz, 2022). As leaders are now also challenged with leading a workforce within a hybrid work arrangement, and with the increasing use of AM tools in organisations across a range of sectors, it is becoming particularly vital to understand the effect of these tools on leadership practices that are adaptive to the challenges of hybrid work.

With a distributed workforce in a hybrid work model, leaders are being challenged by the ability to observe employees' work patterns, engagement, and productivity – indicators of employee experience – using conventional methods adopted when employees work in-person. Therefore, in order to continue to have oversight over the employees' experience in hybrid work, leaders require insights enabled by data captured in the hybrid work environment to understand employees' work patterns and respond accordingly. This is an area where data driven analytics and the insights revealed can be of great value (Schuetz & Venkatesh, 2020), but also how the notion of AM is emerging, one that is understood to be the intersection of employees, managers, and use of algorithms (Jarrahi et al., 2021). Given the use of AM tools is transcending into many organizational practices, we are particularly interested in its

transformative role in altering and potentially enhancing the employee experience in hybrid work. Hence, the research questions that drive the study are twofold:

1. What emerging leadership practices support employees in overcoming key challenges of hybrid work?
2. How does the use of AM tools facilitate the emergence of these novel leadership practices in hybrid work?

Therefore, in what follows, we first present relevant literature that aims to develop the inter-relationships between hybrid work, AM enabled tools, and leadership practices. This is then followed by the study methodology and key findings, including the challenges of the hybrid workplace on the employee experience and the role AM enabled tools play in empowering leaders to respond to these challenges. In doing so, we present a case study of a multinational organisation that utilises an EXM platform – Microsoft Viva – a platform that incorporates a significant level of algorithmic analysis using a combination of data collection, analytics, behavioural analysis, and advanced reporting tools, to demonstrate how this tool, enabled by AM features, facilitates analytics-enabled leadership practices in hybrid work.

2 Literature Review

As the study investigates how AM impacts leadership practices in hybrid work, we draw upon the literature in these three domains. Hybrid work became popular following the Covid-19 pandemic, accelerating the need for digital platforms more than ever in order for employees to continue to work and for leaders and organisations to have insights into their workforce in terms of employee engagement and the challenges that impact it. Particularly, tools that have AM capabilities became prominent as they enable analytics and create the visibility needed to manage the employee experience in hybrid work. Therefore, it is at the intersectionality of these three domains that we come to an understanding that AM tools may potentially be used by organisational leaders to cope with the challenges of hybrid work. These three domains will be presented next.

2.1 Hybrid Work

Hybrid work is a form of workplace transformation that requires employees to combine both remote and in-person work. This work model became increasingly popular since the Covid-19 pandemic (Bell et al., 2023) and ushered a great shift towards hybrid work being the new work model. While some employees returned to in-person work arrangement following the pandemic, others continue to work remotely in a binary model, though variations in the degree of these arrangements exist within this model (Spataro, 2022). The hybrid workplace model has created new opportunities such as flexibility and autonomy, but also new challenges such as siloed teams and lack of connection, digital exhaustion, deterioration of general wellbeing, and blurring of the work-life divide (John et al., 2023). Further, the hybrid work model has also created what is referred to as a 'hybrid work paradox' – a situation where employees seek the flexibility in work arrangement and demonstrate preference for remote work but also want the social interaction of in-person work. This conflicting preference is presenting challenges for managers who now need to support their employees with these work arrangements. Management literature has already argued that in order to be able to lead hybrid teams, the new hybrid workplace requires leadership skills that enable leaders to operate across not just a traditional in-person workplace, but also in a virtual workplace (Hooijberg & Watkins, 2021).

In terms of its elements, the hybrid work model can be conceptualized along two dimensions, that of time or the temporal dimension, and place or the spatial dimension, and the flexibility embedded within them. Underpinning the emergence of hybrid work is the shift in employees' work location from working in an office or being 'place-constrained' to being able to work anywhere or being 'place-unconstrained'. Similarly, hybrid work entails a shift in employees' concurrency of work from having employees work synchronously with others or being 'time-constrained' to a model where workers can work asynchronously or being 'time-unconstrained' (Gratton, 2021). This heightened flexibility in the place and time of work (including number of hours and time of work) presents two sources of diversity in the modes of work which needs to be accommodated for. This includes spatial diversity (remote vs in-person) and temporal diversity (synchronous vs asynchronous).

To facilitate the heightened flexibility in the spatial and temporal elements of the hybrid work model, organizations often need a digital platform for employees to work on and which can potentially provide organisations with insights on their employees' working patterns. This is enabled by AM tools that support employees' work but also provide opportunities for managers to access work data regardless of the location and devices used (Larsen-Ledet & Lindley, 2022), which is why AM can play a significant role in the hybrid work model (John et al., 2022). To further understand what AM entails, we next explore AM and the role of AM tools in the workplace.

2.2 Algorithmic Management and Work Practices

Algorithmic management has become the new and upcoming trend in managing workplaces. As defined earlier by Benlian et al. (2022), this management concept is characterised by the collection and use of data on a platform to develop and use learning algorithms to coordinate, control and recommend various operations. AM has also been described as an automated decision-making vehicle (Kinowska & Sienkiewicz, 2022) that improves efficiencies of organizational operations (Brynjolfsson & McAfee, 2014; Mayer-Schonberger & Cukier, 2013). The availability of big data, Artificial Intelligence (AI), context-ware, and personalised learning algorithms on real-time behavioural and geo-spatial data have contributed to the popularity of AM (Schuetz & Venkatesh, 2020).

With the realisation that 'algorithms transform what workers can know and what they can 'see' in their work practice' (Willems & Hafermalz, 2021, p. 2), several researchers have been interested in how algorithms change and impact work roles and boundaries, and how coordination and control are organized (Faraj et al., 2018; Pachidi et al., 2021). The use of AM tools in workplaces has been linked to greater efficiency, improved coordination, and enhanced decision-making accuracy (Kellogg et al., 2020). On the other hand, Möhlmann et al. (2023) demonstrate how workers experience tensions relating to work execution, compensation, and belonging and the role of AM towards materialising behavioural nudging. Nevertheless, existing work within the management and organisational literature has predominantly taken a critical stance towards the use of AM in organisations. For example, Kinowska and Sienkiewicz (2022) reported in their study of European organisations that AM has an indirect negative impact on job autonomy, total rewards practices, and employees' wellbeing. Similarly, Park et al. (2021) argued that the increased use of algorithms in human resource management leads to six types of burdens that employees feel. These include 'emotional, mental, bias, manipulation, privacy, and social' (p. 2), all of which are believed to have an adverse effect on employees' wellbeing, particularly where these tools are used to

replace the human aspect of people management such as in review of applicant resumes during recruitment, job termination, mentoring, and other human resource management decisions.

Further, Benlian et al. (2022) state that one of the main challenges in AM is the process involved in learning from employees' personalized data, but also nudging employees into desirable behavior (Möhlmann, 2021). As quoted by Jan Recker in Benlian et al. (2022) 'algorithmic management implementing empowering leadership with a focus on participative decision-making, showing concern, interacting with the team, leading by example, informing, and coaching cannot be reached following the current trajectory of the frontiers autonomy, learning, and inscrutability' (p. 832). The discussion by Benlian et al. (2022) clearly states that AM and technology enabled leadership requires a reorientation of design towards social rather than (un)supervised learning, reduction in autonomy rather than an increase, and demands careful design rather than being a simple requirement that can be ignored. Despite such scepticism in the use of AM in workplaces, research also exists that urges for a more balanced perspective on the use of AM, one that takes account of the new opportunities these types of technologies may bring to workplaces (Marabelli et al., 2020). These opportunities can be extended to support emerging leadership practices suitable for leading a hybrid workforce.

2.3 Leadership in Hybrid Work

Having explored the popularity of hybrid work and the emergence of AM tools in digital workplaces, including hybrid work settings, we now turn to leadership. We take the position that the shift towards hybrid work contribute to challenges in sustaining and developing employee engagement, overall experience, and their identification with the organisation, and on the other hand, the use of AM tools necessitates a revisit of the role of leadership in these digitalised workplaces.

The hybrid work model has increased the need to bring in better ways to help employees self-manage their work, manage their focused and productive work time, and manage their work-life balance, while also maintaining their engagement and connection with their teams, managers, and organisation at large. It is therefore becoming important to understand the role of leaders and algorithmic management enabled leadership in the context of hybrid work, as well as the emerging leadership practices to support employee engagement despite the increased autonomy and flexibility hybrid work presents.

Leadership in the digital era is changing as the work setting in which leaders operate is changing (Bell et al., 2023) and as work technologies are evolving, particularly following the Covid-19 pandemic which accelerated the need for connection and relationship building in virtual settings as well (Banks et al., 2022). Leadership has been identified as being critical to the success of workplace transformation in the post Covid-19 context (Chamakiotis et al., 2021) and in a digital workplace context in general (Schneider & Kokshagina, 2020). Chamakiotis et al. (2021) identified that managing engagement, trust, relationships, digital wellbeing, and work-life boundaries are added responsibilities of new e-leaders.

Within the hybrid work model, the leadership function that is critical for the success of individuals and teams has also been redefined (Bell et al., 2023). It has been suggested that leaders of a hybrid workplace now assume different roles including that of a conductor who coordinates and motivates team members, a catalyst who stimulates creativity and collaboration, a coach who helps people to achieve their goals and professional development,

and a champion who advocates for their team and their required resources, all in hybrid settings (Hooijberg & Watkins, 2021). Conventional modes of leadership such as transformational leadership continue to have relevance to a hybrid workplace and the digital era in general. Transformational leadership is defined as 'the process of influencing major changes in the attitudes and assumptions of organization members' (Yukl, 1989, p. 269). As leaders support their teams to cope with environmental challenges and remain motivated, transformational leadership contributes to more functional team interactions, improved team viability, performance, and satisfaction (Lehmann-Willenbrock et al., 2015).

Branching off transformational leadership is authentic leadership (Avolio & Gardner, 2005; Dinh et al., 2014; Tonkin, 2013; Yukl, 2010). Authentic leaders are transparent, respected, and support the development of positive psychological states within themselves and their followers such as optimism, hope, confidence, and resilience (Avolio & Gardner, 2005; Iszatt-White & Kempster, 2019). A form of authentic leadership is humanised leadership which entails knowing oneself and promoting openness by acting according with ones 'true self' (Gardner et al., 2021). Further, multimodal leadership is a new form of leadership identified after the pandemic when hybrid work became more prominent. As highlighted by Antonacopoulou and Georgiadou (2021), multimodal leadership is the ability to remain connected to employees regardless of their spatial and temporal work dimensions. This form of leadership helps create a space where both in-person and remote working employees in a hybrid work model feel like they are part of one digital social fabric.

Responsive leadership is another mode of leadership that is relevant to leading a digital workplace and has been linked to employee engagement (Panteli et al., 2019). Responsive leadership manifests in activities that focus on the development and continuous improvement of the employee experience in organizations (Dery et al., 2017). This includes financial and mental support, encouragement, and feedback, all of which are believed to foster employee engagement (Panteli et al., 2019). Hence, responsive leadership that accelerates employee engagement and improves their experience in a hybrid workplace is highly relevant. A final leadership is inclusive leadership which manifests in behaviours aimed at minimizing status differences among team members. Literature on inclusive leadership emphasises the importance of creating environments where all team members feel valued, respected, and able to contribute with their unique perspectives (Kuknor & Bhattacharya, 2022; Roberson & Perry, 2022). In the hybrid work model, inclusive leadership plays an important role as leaders must navigate the complexities of managing teams that blend remote and in-person interactions, ensuring that all team members feel valued and engaged, and included, regardless of their work location or preferences.

3 Methodology

With the aim of the study to understand how AM tools can help address the challenges to the employee experience in hybrid work and potentially facilitate novel leadership practices, the study adopts a qualitative approach with a single case study design to allow for the study of an AM tool such as the EXM platform to be explored in the context of its use. The case study setting is based on a multinational technology organisation that has undergone digital transformation and currently having more than 2000 employees in Australia. We refer to the case organisation as Kappa (pseudonym). Following the pandemic, hybrid work became very popular amongst employees within Kappa compared to the mostly in-person work

arrangement model before the pandemic and the occasional remote work arrangement on a case-by-case basis.

Kappa implemented an EXM platform to manage and enhance their employees' experience in the flow of work. Specifically, Kappa implemented the EXM platform Microsoft Viva as an integration platform of existing tools, powered by Microsoft 365 and integrated into Microsoft Teams to provide a unified work environment. The platform, which incorporates a significant level of algorithmic analysis to provide valuable insights and recommendations for enhancing the employee experience, was adopted to enhance employee learning, team connection, communication, collaboration, productivity, wellbeing, and overall engagement of employees regardless of their work arrangement. With its AI capabilities powering AM processes, Viva supports employees and leaders with insights and nudges related to various aspects of the employee experience, making it a suitable candidate tool for our study.

The study began by gaining an understanding about various aspects of the employees' work experience at Kappa before, during, and after the pandemic as well as leadership practices at the organisation during these phases. Within each period, the study aimed to elicit details about the employees' work arrangements (in-person, remote, hybrid), the challenges that impacted their engagement, and the leadership practices that supported their engagement, and more broadly, the employee experience in these three work models. Primary data was collected through semi-structured interviews with employees and managers and those with leadership roles across a range of business units and seniority levels, within the Australia/New Zealand region of the company. A total of 30 participants were interviewed. Participants varied in terms of their hierarchical and functional positions at Kappa (including 10 participants with management or people leadership roles – denoted with a 'P', and 20 participants who are employees – denoted with 'ICT'). Participants also varied in gender (15 females and 15 males), technical roles (e.g., engineers, networking specialists, etc.), and length of employment at Kappa at the time of their interview (ranging from as recent as one month to as long as 28 years). A summary of the study participants' is provided in Table 1.

Interviews took place over an estimated period of 18 months, starting in December 2021 and completing in July 2023. Predominantly, interviews were held via Microsoft Teams with several interviews being held in-person in the latter stages of the data collection phase. Interviews averaged an hour in duration (exact interview durations are provided in Table 1), were audio recorded where consent is given, and transcribed to facilitate the coding and analysis process. At the time of their interview, the study participants fell into one of three categories – (1) those who have been with Kappa since before the pandemic and have experienced the shifts in work models from in-person work before the pandemic, to fully remote work during the pandemic then to hybrid work; (2) those who joined Kappa during the pandemic, experiencing fully remote and hybrid work arrangements; and finally (3) those who joined Kappa when the organisation returned to in-person work but also maintained the flexibility of remote work and hybrid work arrangements. This diversity in the participants' work arrangement shifts provided an evolutionary perspective of how work became hybrid at Kappa and provided an avenue to explore the challenges to the employee experience throughout these work models. Understanding of the challenges further enabled an understanding of how leadership practices transformed with work models to reinstate engagement and contribute to an enhanced employee experience under all work conditions.

Participant	Interview Date	Position Title	Employment at Kappa	Interview Duration
ICT1	Dec 2021	Networking Specialist	4.5 years	54 minutes
ICB2	Dec 2021	Communications Executive	3 years	49 minutes
ICT3	Dec 2021	Architect	Less than a year	48 minutes
ICT4	Dec 2021	Principal Consultant	10 years	54 minutes
P5	Dec 2021	Corporate Communications Director	4 years	57 minutes
ICB6	Dec 2021	Product Marketing Manager	1 year	43 minutes
P7	Dec 2021	Digital Sales Leader	21 years	58 minutes
ICB8	Dec 2021	Marketing Operations Team	Less than a year	65 minutes
ICB9	Feb 2022	Partner Account Manager	10 years	70 minutes
P10	Feb 2022	General Manager	5 years	70 minutes
ICB11	May 2022	Senior Consultant	Less than a year	45 minutes
P12	May 2022	Engineer	28 years	67 minutes
ICB13	May 2022	Senior HR Business Partner	Less than a year	55 minutes
ICB14	Aug 2022	Global Specialist	5 years	63 minutes
P15	Aug 2022	Business Group Manager	19 years	53 minutes
ICB16	Aug 2022	Technology Strategist	14 years	41 minutes
P17	Aug 2022	Lead Defence Readiness	2 years	50 minutes
ICT18	Aug 2022	Sr Cybersecurity Consultant	6 years	42 minutes
ICT19	Aug 2022	Cloud Solution Architect	1 year	32 minutes
P20	Aug 2022	Platform Engineering Manager	16 years	51 minutes
ICT21	Aug 2022	Senior Customer Engineer	3.5 years	56 minutes
ICT22	Aug 2022	Principal Data and Applied Scientist	4.5 years	48 minutes
ICT23	Aug 2022	Solutions Specialist	4 years	52 minutes
ICB24	Aug 2022	Change Manager	4 years	56 minutes
P25	Aug 2022	Business Group Leader	9 years	41 minutes
ICT26	Sept 2022	Cloud Solution Architect	Less than a year	41 minutes
P27	Oct 2022	Education Director	5.5 years	40 minutes
ICB28	April 2023	Future Skills Lead	2.5 years	45 minutes
ICB29	May 2023	Future Skills Specialist	Less than a year	50 minutes
P30	July 2023	Lead of Sales	6.9 years	75 minutes

Table 1. Summary of Study Participants

The interview questions were organised according to the three mentioned phases – pre-pandemic, during pandemic, and after pandemic. During the interviews, some of the questions relating to these phases were skipped if they did not apply to the participant. For instance, a participant who joined after the lifting of the lockdown and gradual return to in-person work at Kappa was not asked about their experience in the pre-pandemic and during-pandemic phases. Both participant groups (employees and managers/leaders) were asked a similar set of questions about employee engagement elements including reporting, meetings, team collaboration, socialisation practices, communication, level of autonomy, engagement with team members, technologies used, productivity, and other aspects of the employee experience. However, a set of questions for participants in the manager/leader group were also asked to identify their practices to support their employees during these phases and the role of the EXM platform Viva were relevant.

For the study participants who have been with Kappa during the pandemic and continued into the hybrid work phase, the interviews also elicited how their leaders and the leadership

community at Kappa supported them in overcoming the challenges of the remote work, some of which continued to remain present in hybrid work, particularly in relation to wellbeing, work-life balance, social connection, and productivity. The interviews also enquired about the use of the EXM platform Viva, capturing responses where the platform is reported to enhance the employee experience, particularly as used by the leadership group. This data collection phase resulted in the primary dataset. Our study also utilised secondary data sources that were publicly available including employee pulse reports published by Kappa which were analysed for similar work trends, challenges, and practices from the leadership community to support their employees.

The data coding process took place in parallel with the interviewing process where each transcript was coded using the NVivo qualitative data analysis software. Three sections were created to group data by work phase and work model. These include pre-, during, and post-pandemic phases to correspond with the evolution of the work model at Kappa from in-person, to fully remote, then hybrid work. The interview transcripts were coded by applying appropriate codes at the sentence and paragraph level, resulting in over 110 initial codes. A second cycle of coding was conducting to clean and aggregate the initial codes according to similarity such as data relating to a specific phase (before, during, after), data relating to the EXM platform Viva, data relating to challenges, and data about leadership practices, to mention a few.

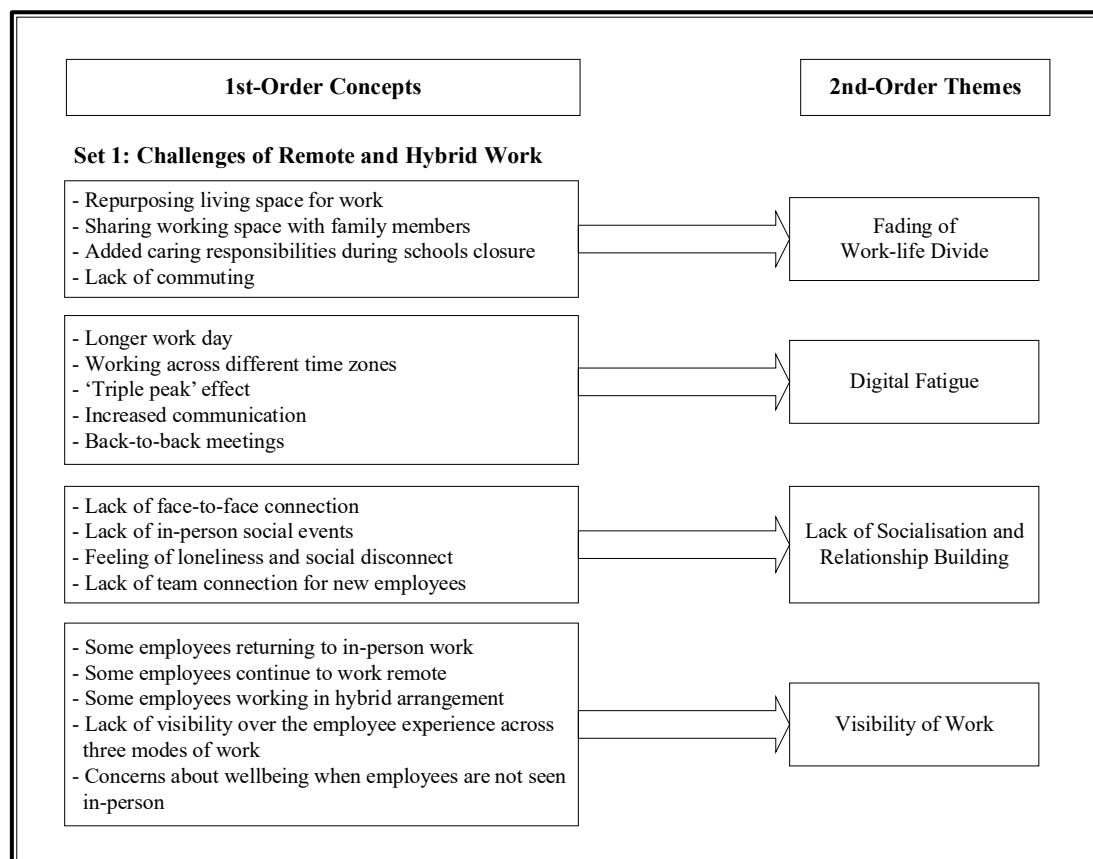


Figure 1. First Data Structure Identifying Challenges of Remote and Hybrid Work

Following the completion of the coding process, a thematic analysis was conducted, guided by the work of Gioia et al. (2012) and Nowell et al. (2017) where thematic analysis was implemented through the identification of 1st-order concepts that adhere to the participant's

language, 2nd-order themes, and finally, aggregate dimensions or global themes that relate to the emerging leadership practices. Guided by these principles, two data structures were developed. The first data structure is illustrated in Figure 1 and captured the challenges of remote and hybrid work as the 1st-order concepts. These led to the identification of four themes of challenges, presented as 2nd-order themes. Understanding these challenges is seminal to setting the context for the emerging leadership practices that were identified.

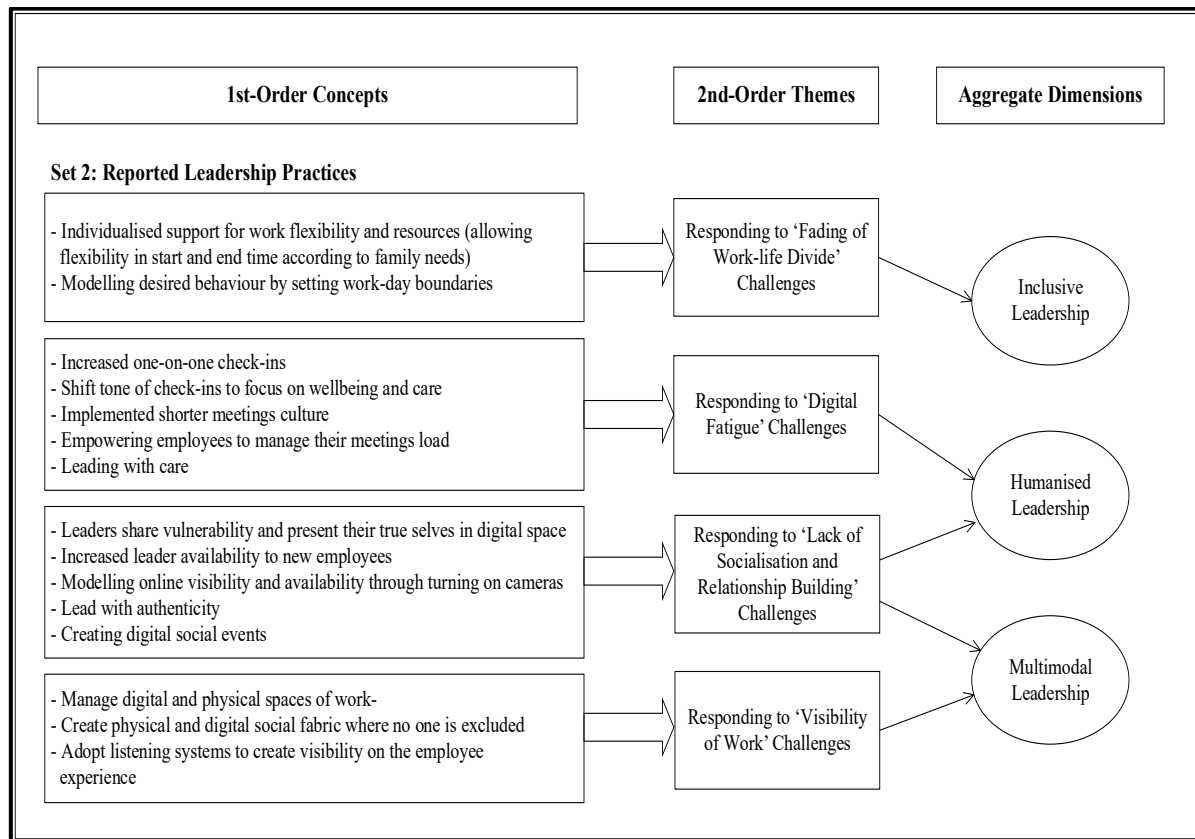


Figure 2. Second Data Structure Identifying Leadership Practices for Hybrid Work

Next, a second data structure was developed as illustrated in Figure 2. In this data structure, the leadership practices that were reported by participants were mapped as 1st-order concepts adhering to the participants language. These were then mapped to the challenges identified earlier and to which they responded, illustrated by the 2nd-order themes. Finally, the emerging leadership practices that support employees in overcoming key challenges of hybrid work were derived as the aggregate dimensions.

The analysis further identified that the use of the EXM platform with its AM features facilitated three novel leadership practices with the insights it revealed. Therefore, analytics-enabled leadership is illustrated as sitting across these practices to reflect its facilitating role. Next, these findings will be discussed in further details.

4 Study Findings

In an effort to highlight how AM tools can support leadership practices in hybrid work, it is critical to first highlight the challenges that were experienced as employees shifted from mostly in-person work to the current hybrid work arrangement over the last few years. These challenges are believed to impact employee engagement and would have implications for

leadership. We argue that it is critical to identify the challenges of both remote and hybrid work for two reasons, one being that several of the challenges of remote work have continued to be present in hybrid work settings, so they are still relevant, and two considering the challenges of remote work and later hybrid work settings provide an insight into how AM tools like EXM platforms have been developed and continue to evolve to respond to the challenges of a changing work environment, and in our case, support emerging leadership practices for a hybrid workplace. Therefore, in what follows, we present our study findings in relation to the challenges of remote and hybrid work and how leadership at Kappa responded to these challenges, often with the help of AM.

4.1 Challenges of Remote and Hybrid Work and Leadership Practices

A set of challenges were reported by the participants, particularly when they first went into the enforced remote work brought about by the Covid-19 pandemic. Amongst these challenges are the fading of work-life divide, digital fatigue, lack of socialisation and relationship building, and visibility of employees' work in remote settings. These challenges were experienced as employees transitioned into the enforced remote work and then hybrid work arrangements, whereby most of these challenges continued to be broadly relevant in hybrid work as well. Various leadership practices were also identified that evolved during the transition of work across these phases to address these challenges as will be presented next.

4.1.1 Fading of Work-life Divide

The fading or blurring of the work-life divide is the first reported challenge. With the initial enforced remote work, participants had to repurpose their living space into an office space where their new working conditions featured a lack of a dedicated office space, sharing a working space with other family members, and lack of a dedicated office space and furniture: *'In the early months of this, I was working off the kitchen table and then an outdoor table.'* – P5. These challenges were further heightened by schools and childcare closures, contributing to a much-added responsibility on employees who must now juggle working and caring responsibilities. Coupled with the lack of commuting which is seen as a forced break to help transition from office life to personal life, for many employees, *'work life balance got thrown out the window.'* – P7.

Leadership Practices	Quotes
- Help employees replan their work habits to more sustainable habits and improve the work-life balance and wellbeing	"Everybody was different, some people maybe their husband you know took a couple of days off and so they would work part time so they would take it. You know 2-3 days a week or some people worked shorter hours. So they worked from 10:00 until 3:00. Or you know they work then late into the evening and it really depended like there is a lot of flexibility to work with your individual manager because everybody circumstances were different, so there's a lot of flexibility." – P5
- Modelling of desirable behaviours and setting example on how to reinforce work boundaries	<p>"I'm shutting off at 5 I want them to know that they should do that too ... cause if they see me online at 9:00 o'clock they will think I should be online at 9:00 o'clock." – P10</p> <p>"if they get up in the morning and do their emails and check teams and then vanish for a few hours, we let them do that ... if they are more comfortable working after dinner, we let them do that." – P20</p>

Table 2. Inclusive Leadership Practices to Improve Work-life Balance

In response to this challenge, inclusive leadership practices helped leaders to ensure that their team members were able to cope with the challenges of managing the fading of work-life divide and associated balance. Leaders at Kappa implemented initiatives to accommodate differences in work locations, work preferences, family situations, personas, living arrangements, access to office space, and access to required resources to support employees, particularly, during the time of fully remote work. Much of this support was individualised to cater to the individual's circumstances (e.g., allowing for flexibility in start and end times of the workday depending on family needs) and taking initiative to model desirable behaviours, therefore, creating a safe space for employees to have some autonomy to manage their work-life balance. Some of the relevant examples of such practices are detailed in Table 2.

4.1.2 Digital Fatigue

Digital fatigue was experienced due to a longer working day, working across different time zones, an increase in the number of emails and back-to-back meetings, and the 'triple peak' effect with peak time in the morning, afternoon and evening. These conditions contributed to employees feeling burnout: *'We have people paging us at all hours of the day because we can now work from anywhere in the world.'* – P6. Managers needed to be aware of their teams' as well as their own work patterns in order to pay attention to signs of burnout and digital fatigue being experienced by their employees.

Humanised leadership practices that supported employees to overcome challenges related to digital fatigue were evident. These include a notable increase in one-on-one check-ins with employees, with a shift in the tone of these meetings to care and wellbeing, implementation of team-level practices to reduce digital fatigue such as defaulting meetings setup to shorter meetings to allow for breaks in between, empowering employees to manage their meetings load and have the freedom to decline meetings when it gets too much, and ensuring that their leadership approach is leaned into empathy and the notion of care. The below Table 3 lists some participant quotation which reflect humanised leadership practices to help employees overcome digital fatigue in remote and hybrid work.

Leadership Practices	Quotes
- One-on-one check-ins with employees	"we very much leaned into that notion of care. And you know, there's lots of people who were home schooling, they were, you know, they were dealing with, you know, maybe they themselves were in isolation .. living here but had older parents back in Ireland and concerned about what this might mean to them. And so, I think there was just a lot of care and empathy, particularly in those early days." – P5
- Shorter meetings	"our team made an agreement, we would move our meetings to 50 minutes or 25 minutes so that there would be a 10 or a 5 minute buffer between meetings ... you can default it in outlook ... we all did that as a team." – P15
- Leading with care and empathy	"I think one of the things, the initiatives that we looked at was really around meeting culture and really empowering employees to start, you know, feeling empowered to say, actually, no, I don't wanna join or you know, you've got four people from my team, so I'm gonna leave it to ex." – ICB14

Table 3. Humanised Leadership Practices to Overcome Digital Fatigue

4.1.3 Lack of Socialisation and Relationship Building

Socialisation, engagement, and relationships has been challenged as well, particularly with the lack and diminished in-person social connection, in-person social events, and the incidental conversations, causing a feeling of loneliness and social disconnect: *'The thing that made it hard was that ad hoc personal conversation, the relationship building, you know, having a coffee with someone and talking about family or what you did on the weekend, it was a lot harder to do that.'* – P16. This was particularly challenging for newly onboarded employees who have no prior interaction with their new team and little understanding of the sub-cultures that can be difficult to pick up when team members are working in remote or hybrid modes.

Therefore, socialisation and relationship building were key challenges reported in remote and hybrid work environments. Multimodal leadership practices where leaders made themselves visible and available to both remote and in-person employees were reported, often with an authentic and humanised touch where leaders presented their true selves to support their employees' overcome challenges related to lack of socialisation and relationship building. Examples of such practices are presented in Table 4.

Leadership Practices	Quotes
- Present their true self and share vulnerability in digital space	"to our managing director's credit, Mr XXX created a space in which people felt like they could be really authentic, you know he was experiencing exactly the same as everybody else. He was in his Home Office at home where he had boxes piled high. He had his dogs, his kids interrupting, you know, hit it kind of humanized." – P5
- Increase availability to new employees to support them with onboarding	"when I was on boarding [manager] would always check up on me probably every second day, just see how you going like just checking up or what's your latest training that you have to do? so my manager was very intentional." – ICB2
- Active encouragement of participation by setting role model and always turning camera to increase visibility	"because I manage a team, I'll be honest, there's an expectation I'm back twice a month again like normalized. And the team were craving it. Like, when are you coming, which I thought was interesting because I thought I was doing a great job remote, but they craved seeing me and I think it's because of what we talked right at the start. The bump space-time, the like kitchen conversation or corridor or like just that social fabric that gets built in the non-scheduled non agenda type interactions that are only really made possible in person." – P15
- Make themselves available to both remote and in-person employees	
- Creating digital social events	"we've done virtual escape rooms ... also was doing virtual coffee catchups." – P1 "my colleague was experiencing a 5-year anniversary o what my manager did was she actually set up a surprise event where she said it was like a team checking in, and she actually sent all around a cocktail making kit. We just like make cocktails together, we played virtual games together." – P2

Table 4: Multimodal and Humanised Leadership Practices to Promote Socialisation and Relationship Building

4.1.4 Visibility of Work

As employees at Kappa slowly returned to in-person work while keeping some working from home arrangements, the hybrid work arrangement continued to maintain a prominent degree of remoteness. With most employees maintaining a combination of working some days from

home and some days in the office, managers and leaders were challenged with the visibility over their teams' working patterns and engagement levels, particularly ones that could lead to burnout and negatively impact their wellbeing including working late into the evening, working outside conventional hours, lack of personal focus time, and social isolation.

With these challenges, managers and leaders needed to ensure that they maintain oversight over their team members and that their work is visible and captured irrespective of where they work from. One participant noted the need to *'accommodate a workforce that is hybrid so that no one is disadvantaged by choosing to be working remote from home, and so I'm choosing to be in the office, and you know we refer to being sort of inclusive so you don't accidentally exclude anyone.'* – P25. Employees reported an increased reliance on information and communication technologies such as Microsoft Teams, Outlook, SharePoint, web cameras, and other technological resources to support their work but also enhance the visibility on employees and their work, not from a surveillance point of view, but from an inclusion point of view where employees are supported and able to choose their work arrangement without concerns over their work not being visible.

In response to the added complexity of a workforce where some employees work remote, some in-person, and some hybrid, multimodal leadership practices were evident to support employees working across there various modes, creating both physical and digital spcial fabric and spaces of work that are inclusive, and having listening systems in place to create visibility on the employee experience. Examples of such practices are illustrated in Table 5.

Leadership Practices	Quotes
<ul style="list-style-type: none"> - Manage and support employees who want to work remote or in-person, so they are not disadvantaged by their choice - Creating inclusive spaces of work 	<p>"being a people's leader, have you got a mix of team members where some want to go back to the office and have already gone back and some wanna resume working from home? ... the majority I would say are comfortable to only come into the office once or twice a week. The majority are now happy working in a in a hybrid way." – P17</p> <p>"If everybody else is in a room and there's one or two people online, it's hard to keep you engaged. So what we do is we say, right, everybody get on your laptop in the room, we can all see each other. We have, we have the people who are remote up on the screen in front of us. And you still do the chat. You still talk like, so the people who are on feel like they're still much more part of it. The people in the room still feel like they've got in the room and because they're up." – P27</p>

Table 5: Multimodal Leadership Practices to Enhance Visibility of Work

Now that the challenges of remote and hybrid work and emerging leadership practices responding to these challenges have been identified, we next present on the prevalence of AM tools that can support such leadership practices using the example of an EXM platform Viva which has AM enabled features.

4.2 The Prevalence of EXM Platforms in the Hybrid Work Setting

AM tools, empowered by AI is an innovative way to deal with the challenges experienced by employees and leaders in hybrid work (Nyman et al., 2023). Digital work data captured in the workplace office applications can be used to visualise organisational and individual practices captured at a granular level of detail and generate insights related to organisational and individual work patterns. These insights can be used enhance management of productivity

and development of engagement and collaboration, while also improving employee wellbeing – all of which can contribute to enhanced employee experience. Therefore, this section will present on how EXM platforms with AM features capture digital work data to help employees and leaders use insights gained from the EXM platforms to support various forms of leadership practices to overcome the challenges identified in remote and hybrid work.

4.2.1 Capturing Hybrid Work Data with an EXM Platform

At the time of the staged return to in-person work, Kappa adopted Microsoft Viva, an EXM platform to enhance the employee experience and create visibility on employees' engagement, work habits, and routines by capturing work data and generating insights (John et al., 2022). Microsoft Viva is powered by Microsoft 365 and is integrated into Microsoft Teams to foster employee experience in the hybrid work model: *'When you think about the employee experience it transcends a whole range of things. So, whether you're digital, in person, in between, I think Viva is designed to think about the employee experience pretty holistically.'* – P25. As employees and managers are challenged by frequent and enforced changes in their work environment, AM enables the capturing of work data related to employees' work regardless of place and time of work or device used. One participant noted that: *'I do get a report regularly around how much time I am spending outside working hours online. What is the percentage of email I do during nine to five versus outside of that window ... It's not something that I had paid attention to before, but during Covid I did and now.'* – P12. For employees, the benefits of AM tools like Microsoft Viva is evident, allowing them to understand their own work habits and help them improve the work-life balance that was largely challenged by the recent shifts in work modes.

4.2.2 Monitoring Employee Experience

A listening system illustrated by various forms of work analytic and insights is also evident in Microsoft Viva. Our study findings show that the insights were used to inform ways for improving work productivity and reducing digital fatigue. Leadership strategies that demonstrate a leadership sentiment of care for employees' wellbeing facilitated by Microsoft Viva was evident in the study. One of the commonly appreciated practices is the increased and consistent check-ins by managers. These check-ins varied from organisational pulse checks, aimed at checking how employees are doing, to frequent one-on-one in person meetings with managers and leaders. The focus of the remote or in-person check-ins had shifted to employee needs and ensuring that they are doing and progressing well.

Connecting with this sentiment of care, some features of the EXM platform Viva supported managers to continue to have oversight over their employees through the Viva manager 'Insights' function. This function gives managers visibility into teams whose work patterns may lead to burnout and stress as illustrated by the example in Figure 3.

One participant reconfirmed the potential use of Viva Insights to help managers listen to employees and take action towards improving their wellbeing noting: *'there are manager Insights and it can tell early indications that your team might be burning out by working late. So if people are logging on and sending emails at midnight or sort of outside their typical working hours, that insight would be surfaced to your manager.'* – P6.



Figure 3. Viva Manager Insights Example1

Viva Insights highlight patterns of concern such as after-hours work, meeting overload, and little focus time, which are believed to create awareness and help managers take necessary steps to help their teams reevaluate their work habits into more sustainable and desirable patterns that have less negative impact on their wellbeing. Notable about the platform is that Viva provides these insights while maintaining the privacy and confidentiality of the data as managers only get access to aggregated team data rather than individualised data. One participant shared that: *'the manager Insights is very powerful. It's not personal like you can't ...but you know there are ways we can see the trends ... if people are disengaging, not individual ... but teams. It'll say to me' you haven't had a one-on-one with this direct report for two weeks.'* – P15.

In terms of challenges on employees' work patterns visibility, participants reported how team insights in EXM platform influenced leaders to pay attention to employee engagement and wellbeing: *'There are manager insights and [tool] can tell early indications that your team might be burning out by working late.'* – P6. Managers found Viva insights to be very useful in creating visibility around their teams' work habits and signs of disengagement. With this data, managers were able to take necessary steps to help their teams replan their work habits and improve their wellbeing without any misinterpretations or assumption of a productivity paranoia.

4.2.3 Fostering Leadership Practices

The burnout signals revealed to managers by the EXM platform Viva empowers managers to determine strategies to manage their employees' wellbeing. Managers who used insights and recommendations based on AM features found it very useful for managing their teams' work habits. Drawing upon these insights, managers and leaders reported paying closer attention to the data and analysing this information to identify the experienced challenges in a changing work environment. Hence, analytics-enabled leadership practices facilitated by EXM platforms are found to enable and support various leadership practices. The integration of intelligent algorithms with digital technologies such as EXM platforms contributes to the generation of aggregated analytics and insights that promotes analytics-enabled leadership by assisting managers and leaders in the complexity of a hybrid work environment. Table 6

¹ <https://www.microsoft.com/en-au/microsoft-viva/insights>

illustrates examples of how insights from EXM platforms support analytics-enabled leadership to foster various types of leadership practices.

Quotes	How EXM Supports Leadership	Modes of Leadership Supported
"it's all aggregated information and privacy protected. But yeah, you'll get insight into the way your team is working if they're spending too much time on teams calls, rather than having enough time to actually focus on the work they need to deliver." – P6	Provide managers with team insights into teamwork patterns and early indications of burnout and stress (including little focus time, too many meeting).	Humanised Leadership
"it's not down to the human level. I don't want you to think, oh we can see that [person] is working well. Like it's not at that level ... so it's not like it's I can see that [person] is doing this. That's not what it does. But yes, I think we use our technology and the listening systems in place to be able to look at some of the signals which we were then able to then use to then ensure that we had the policies that benefits the education for our people leaders." – P25	Creates visibility to over not only in-person employees, but also remote employees and flag if remote employees (teams) are disengaging and provide a nudge for the need to meet with employees or other artefacts that supports managers in managing a hybrid workforce.	Inclusive Leadership
"The manager 'insights' is very powerful. It's not personal but you know there are ways we can see the trends. If people are disengaging, not individual, but teams, it'll say to me you if I hadn't, like, you haven't had a one-on-one with this direct report for two weeks." (P15)	Capture team level insights on work patterns and help to impact work-life balance.	Multimodal Leadership

Table 6. Leadership Practices Fostered by Analytics-enabled Leadership

In terms of leadership strategies relating to employee connectedness and engagement, leaders demonstrated a leadership style of shared vulnerability, showing one's true self and true circumstance. One participant noted: *'I've seen some of our leaders be really vulnerable during the last 18 to 24 months, and I think it's led to much deeper, more personal connections within teams and much deeper and better relationships.'* – P5. This notion of shared vulnerability is believed to demonstrate courage, build trust, and enhance team connectedness – all of which has been observed across the leadership community at Kappa.

Building on the concept of vulnerability, managers took initiative to spend more time with new employees in the first few months of their onboarding and have frequent one-on-ones meetings with them, often on a weekly basis, as often this is a challenging time and new employees who have not met their team members and may have a sense of vulnerability. Viva prompts managers to enhance connectedness with team members: *'it'll say to me you if I hadn't... like you haven't had a one-on-one with this direct report for two weeks.'* – P15. New employees in a hybrid work setting require more support in gaining knowledge of work and developing their skills and connections, and managers play an important role in setting a good onboarding experience.

To summarise, the findings highlight how insights from an EXM platform empowered leaders to engage in participative decision-making, to show concern for wellbeing, to interact with the

teams based on their needs, to lead by example, to coach and to show care and vulnerability, creating a safe space for other to do so. Among the various listening systems available, participants particularly highlighted the role of Microsoft Viva in empowering both leaders and employees in managing their work more effectively remote and hybrid work settings.

5 Discussion

The study has been driven by an interest in understanding the role of AM facilitated by EXM platforms in dealing with the underlying challenges of hybrid work and its impact on leadership practices. Notable of the modern business environment is the wide adoption of tools and technologies which are believed to have an impact on day-to-day work, including the work of leaders (Shields, 2024). Current literature on AI technologies echoes three key perspectives on leadership and AI – an enhancement perspective where AI technologies can enhance leadership functions (Titareva, 2021), a replacement perspective, and a sceptical perspective. We therefore argue that if the workplace has undergone digital transformation and such technologies are being widely adopted and used, then leadership is likely to have changed as well, not by means of adaptation of old ways, but through a transformation process that led to a new understanding of leadership, one that is more fitting with digital work regardless of how it is done (in-person or remotely).

Accordingly, our empirical findings indicate that leadership has undergone a transformation process, resulting in the emergence of new modes of leadership. Drawing upon our findings, we propose that successful leadership of a hybrid workplace is a reformed leadership approach that combines characteristics of three modes of leadership as evident in the study. These include inclusive leadership, humanised leadership, and multimodal leadership, all of which can be supported by analytics from tools such as EXM, hence we propose that analytics-enabled leadership is underpinning these emerging modes of leadership as illustrated in Figure 4.

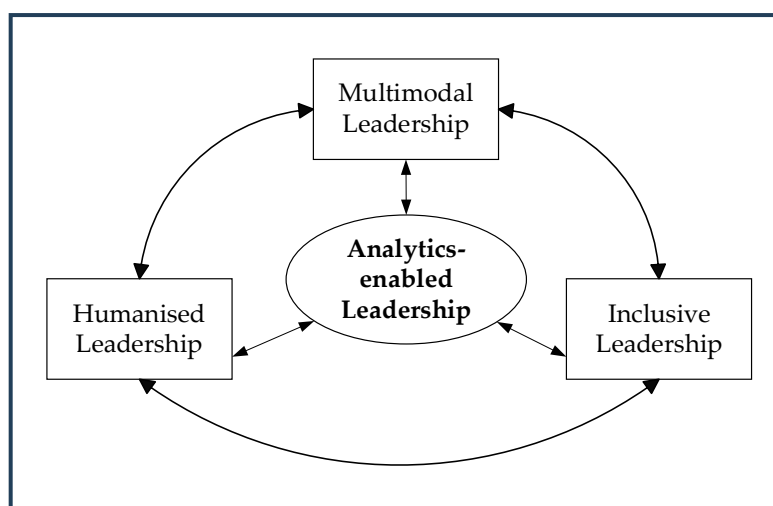


Figure 4. *Emerging Modes of Leadership for Hybrid Work*

To begin with, **inclusive leadership** is the first mode of leadership that is well aligned with a hybrid workplace. It recognises diversity, responds to individual needs and work styles, and actively listens to team members voice (Roberson & Perry, 2021). In existing work models such as virtual work, diversity is understood in terms of temporal, geographical, cultural,

linguistics, gender, and other conventional differences underpinning diversity. However, in the hybrid workplace context, the notion of diversity have been extended to further include diversity in individual work preferences (remote vs in-person vs hybrid), work styles, states of physical and mental wellbeing, caring responsibilities, commuting requirements, generational differences (new graduates vs experienced adults), participation preferences (e.g., chat vs voice vs camera), socially connected vs isolated employees, and other individual based circumstances that are beyond job and role requirements (Wasko & Dickey, 2023). In this sense, inclusive leadership acknowledges diversity along the noted dimensions and more broadly along the personal lives of employees beyond professional interactions in a conventional workplace and accordingly provides individualised support. For instance, for employees with childcaring responsibilities, AM enabled tools like EXM platforms can highlight very early morning or late evening working patterns. Inclusive leadership approaches can leverage on these insights to provide individualised consideration for such employees, for instance, to work outside the conventional working hours.

Our findings indicate that an inclusive leadership that puts emphasis on care is key to successful leadership in hybrid work (Nakamura & Milner, 2023). Inclusivity is not to be left to chance but needs to be deliberate to avoid the accidental exclusion. Inclusive practices encompass having hybrid events, so no one is excluded, provision of individual consideration in terms of coaching and mentoring, and provision of resources in consideration of personal circumstances. Hybrid work has presented itself as the preferred option for many employees as well as organisations. Therefore, post-pandemic employees expressed a desire to return to the office and to a co-located workplace, to engage, connect, and regain the energy derived from being in the same physical space as their team members. One of the important messages for leaders in hybrid work is to 'deliberately include rather than accidentally exclude', that is, leaders need to consider leadership practices that does not put anyone at a disadvantage due to their work preference or personal circumstances (John et al., 2022). AM tools can be used to ensure everybody is included. Practices such as requiring web cameras to be on in hybrid meetings and recording of meetings to ensure all are included or recommendations about suitable meeting time are some examples of how leaders use EXM platforms effectively to enact inclusion.

Second, **humanised leadership** is another form of leadership observed and centres around the demonstration of authenticity and acting according with one's 'true self' (Gardner et al., 2021). Within the context of our proposed leadership practices for hybrid work, humanised leadership manifests in the shift in focus towards the 'care' element. Given the challenges that can arise from the blurring of the work-life divide and its impact on employee wellbeing, leaders in a hybrid work setting need to be more attentive to the wellbeing of their employees and their individual needs (Perrigino & Raveendhran, 2020), particularly while working in repurposed office spaces that overlap with living space. This can include showing empathy and compassion and would require a more relationship-oriented approach. Part of showing one's true self is achieved through accessibility, therefore, humanised leaders are more accessible and approachable.

In the hybrid work context, accessibility is not only about being available for one-on-one meetings with reports or being responsive, but is also about being present and visible such as when leaders turn their cameras on during meetings and model accessibility behaviour. This practice reflects a human-centric approach where leaders show authenticity and are not shy to

show vulnerability which is believed to contribute to building trust and better team collaboration. Humanised leadership approaches show that leaders are interested, highly present, care, and are listening (Levay & Andersson Bäck, 2022; Longmuir, 2023; Taskin et al., 2024). This is not only echoed through verbal cues, but also through non-verbal cues such as how people look, how they interact, and what their body language communicates.

Furthermore, successful leadership of a hybrid workplace requires **multimodal leadership** which entails that leaders can manage employees and monitor work performance and progress whether they work in-person or remotely. Accordingly, leaders can come up with strategies that support their employees' engagement and wellbeing in both modes of work (Hooijberg & Watkins, 2021). Multimodal leadership is about being able to extend leadership practices into a digital space, and with data generated by tools like EXM platforms, leaders have better visibility over their distributed workforce, where visibility on digital work, work patterns, and overall employee engagement is no longer situated to physical co-location (John et al., 2023). Multimodal leadership reflects the ability to remain connected to employees regardless of their spatial and temporal work dimensions and to create a space where both in-person and remote working employees feel like they are part of one social fabric (Antonacopoulou & Georgiadou, 2021). In this common space, team members feel a sense of connection to their team members, managers, and their leaders. In multimodal leadership, leaders capitalise on the potential of digital technologies to create new spaces for real-time connection with employees, where they can communicate corporate updates, top news, goals, facilitate the professional development of employees, build trust and collaboration, drive creativity, drive innovation, and encourage employees to continue to learn and develop, all while operating in a hybrid work model.

These emerging practices indicate that authentic and humanised leaders of a hybrid workplace are able to adapt leadership practices that bring their work and home personalities closer together, creating a shared culture and a safe environment for employees to also be their true self. These changes are believed to flatten the traditional corporate hierarchy and make higher level executives and leaders more accessible to junior employees in remote (Mandviwalla et al., 2021) and hybrid work. EXM platforms can play a role in supporting leaders to show authenticity and a human-centric leadership approach. One example is in the way these tools pull information from emails and chats and reminds users such as leaders about commitments and follow-ups with their employees, an avenue to demonstrate authenticity.

Finally, **analytics-enabled leadership** can be viewed as being part of the 'new' or emerging forms of leadership discussed by Quaquebeke and Gerpott (2023) that is AI augmented. According to Kifor et al. (2021), digitally powered analytics allows leaders to enhance the effectiveness of people-related decision-making and create an understanding of employee performance, working habits, and work-life balance shifts. Analytics-enabled leadership entails that leaders listen to the insights and sentiments to drive decisions and actions. The integration of intelligent algorithms with digital technologies like EXM platforms contributes to the generation of aggregated analytics and insights that assist managers and leaders in the complexity of a hybrid work environment. Not only do these analytics highlight work pattern data and nudges employees towards desirable actions, but they also enable a responsive form of leadership that pays attention to the data generated by these systems and intentionally adapt their leadership strategies to support employees in a changing work landscape.

This finding agrees with the concept of inverse transparency by Gierlich-Joas et al. (2024) where both employees and leaders are empowered by the transparency or visibility on work patterns. While recognising that technologies which create visibility on work patterns can drive concerns for privacy and surveillance (Leonardi & Treem, 2020), technologies such as the EXM platform provide opportunities for transparency, which if utilised appropriately, can benefit employees and managers alike. Analytics-enabled leadership thus reduces the transparency gap between monitoring employee's work and empowering employees to have some control and autonomy over their work. Therefore, new leadership practices emerge as leaders learn to join the loop of AM and engage with the insights to inform decisions and emerging leadership practices. This is in comparison to earlier leadership approaches driven by dogmatic principles and how work should be done, perhaps, pre-pandemic.

Within the context of analytics-enabled leadership, we observe a shift towards the data being responsible for initiating and nudging leadership behaviours and practices that are responsive to the employee insights. For instance, insights can flag and validate excessive work patterns that could lead to potential burnout, or insights indicative of social withdrawal, or employees spending too much time in meetings and having little focus time to complete their work. Agreeing with the Harms and Han, (2019, n.p.), 'humans need not consider algorithms to be rivals so much as a new type of partner, both for leaders and followers'. Therefore, leadership can work with these insights and respond by encouraging employees to actively book focus time or give them to autonomy to set their working hours, or to push training on how to carry out effective meetings to reduce digital fatigue and burnout. Cranefield et al. (2022) highlights how work analytics tools can enable better productivity and wellbeing by partnering with AI-driven tools such as Digital Productivity Assistants (DPAs). We argue that this is not a deterministic relationship and that other factors linked to renewed leadership practices and workplace culture need to exist for this to happen. Our study found that analytics-enabled leadership enables more human-centric leadership approaches that puts people first, one where care, emphasis on wellbeing, and provision of individualized support and consideration are key factors that enhance employee engagement in hybrid workplaces.

6 Theoretical and Practical Contributions

With the increased popularity of hybrid work following the Covid-19 pandemic and increased dependence on digital and AI-enabled AM tools such as EXM platforms, our study aims to contribute to the information systems literature by exploring the effect of these technologies on organisational practices, particularly, leadership practices that leverage on the AM capabilities of such tools. This parallels the call for the need to study new manifestations of leadership in the context of the digital era (Banks et al., 2022).

First, a key contribution of our study is in relation to analytics-enabled leadership which can be considered as an emerging leadership practice in hybrid work, largely enabled by the concept of AM and advanced technological tools such as an EXM platform. The study has demonstrated that with the increasing use of analytics in workplaces including hybrid work settings, there are renewed possibilities for leaders to develop insights about employees' experiences at work, their needs, and challenges, providing opportunities for leaders to develop interventions in timely and targeted manner. As illustrated in the findings and detailed in the discussion section, data captured by EXM platforms and the insights facilitated

by the AM capability not only promotes analytics-enabled leadership but also supports inclusive, humanised, and multimodal leadership practices.

Second, our study contributes to the literature on hybrid work which has increased popularity in the post-pandemic period. It shows that challenges linked to hybrid work may be dealt with effectively through the use of AM tools and EXM platforms in particular. As a team becomes more diverse, multicultural, multigenerational, and global in a hybrid work model, team leaders need to take additional steps towards creating a workplace that accommodates everyone's work preference and circumstances while maintaining productivity. Insights revealed by these tools can drive the design and implementation of initiatives which demonstrate responsiveness to the changing nature of the workplace and employees' individualized requirements. As a senior executive at Kappa noted: *'If you think about the transformation that workplaces or organisations are now reconciling today, I would say that's about hybrid, and how to bridge the digital and physical worlds, or workplaces and how to make that seamless and how to ensure that work can be productive, can be meaningful, can deliver outcomes, can create joy across both dimensions.'* – P25. Therefore, this study shows that with the help of workplace analytics, data-driven rather than dogma-driven leadership gains importance and appropriateness in leading hybrid work teams.

In terms of the practical implications of our study, our findings provide practical considerations for leaders and managers of hybrid teams. These considerations are worthy of attention given the global appetite for hybrid work, the continuity for some work from home arrangements, and the requirement to create a hybrid working culture that nurtures inclusiveness, trust, engagement, and wellbeing. AM tools go beyond the provision of metrics on employees' work performance. They provide opportunities for adopting a human-centric leadership approach, one that encompasses attention to learning and development, wellbeing, and work-life balance. The findings have implications for leadership training and development to ensure that individuals who lead in hybrid work settings have the skills and knowledge they need to deal with the challenges that employees are experiencing and respond appropriately.

7 Conclusion and Future Research

With the rise of AM within the increasingly popular hybrid work model, organisations need to explore the impact on leadership practices. Drawing on a qualitative approach and a case study design, our study shows that with the addition of AM in hybrid work, leaders have an added responsibility as well as an opportunity to transform their leadership approaches where there is a shift on care, empathy, inclusion, and deliberate actions that enhance the employee experience.

In contributing to research efforts on emerging and successful leadership practices suitable for a multimodal workforce, our study findings indicate that an inclusive leadership that puts emphasis on care is key to successful leadership in the hybrid work context. Inclusivity here recognizes diversity, not only cultural diversity but also diversity in individual needs, circumstances and work styles. Inclusivity is also demonstrated through actively listening to team members voice (Roberson & Perry, 2021). Team leaders and organisational leaders need to pay close attention to the data generated by AM tools as algorithmic insights helps reveal some unnoticed and unspoken work habits and patterns that cause employees to experience disengagement, digital fatigue and to lose their work-life balance.

Our study opens the agenda for further research in the field of AM and hybrid work. The scope of our study was limited to examining the role of AM in dealing with the challenges of hybrid work. As such, it was beyond the scope of this study to examine privacy and surveillance concerns which have been reported in the literature (Leonardi & Treem, 2020). We nevertheless encourage further research in this area, notably case studies on the use of AM in hybrid work from a longitudinal perspective with the purpose to examine at what point privacy and surveillance concerns emerge and how they are managed in different organisations. Moreover, with the realisation that hybrid work can take different shapes in different organisations with varying arrangements of in-person work and working from home, there is a need to expand research in this area. For example, future research may seek to explore how leadership is transformed in different modes of hybrid work to accommodate varying percentages of in-office and remote workers. Similarly, further research could examine whether any particular leadership mode may dominate hybrid work settings in different organisations, all of which, can contribute to our developing knowledge of leadership in hybrid work.

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