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# When We Work. Delphi Results on Time and Temporality Within Futures of Work

Veli Virmajoki  | Sirkka Heinonen | Riku Viitamäki | Amos Taylor | Juho Ruotsalainen

Finland Futures Research Centre, University of Turku, Turku, Finland

**Correspondence:** Veli Virmajoki ([vevirm@utu.fi](mailto:vevirm@utu.fi))

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## ABSTRACT

This paper examines time and temporality as central but often overlooked dimensions that shape the futures of work. While workplace transformation discussions often emphasise spatial aspects of working environments, our study reveals that temporal structures fundamentally determine how work is organised, experienced, and valued. In a two-round Delphi study conducted in 2024, we used a novel Delphi approach with provocations and paradox probing. As a result, we gained understanding on how temporal (i.e., time-related) issues function as critical elements in future work environments. Our findings indicate that novel temporal arrangements and understandings are associated with transformations in working environments. However, the possibility of novel temporal arrangements and their utilisation often follow existing power structures, which create inequities between different sectors, roles, and people. To conceptualise time as an active element rather than neutral background, we contextualise the analysis to literature on time in futures studies and related fields. In this way, our research contributes through the Delphi study to understanding how changing temporalities might affect whether workplace innovations succeed in fostering productivity, well-being, and equity or whether they create novel problems and new forms of exclusion. The results of our Delphi study are particularly timely given how workplaces change in the context of the so-called double twin transition of digital/green and virtual/physical transforming our societies. Where and when cannot be separated when it comes to the futures of work, given the double twin transition.

## 1 | Introduction

Work environments are changing in significant ways as multiple transitions—such as digital technologies, environmental sustainability imperatives, and the shifting boundary between physical and virtual workspaces—redefine how we work. While discussions about workplace futures often focus on *spatial* innovations (like hybrid and multilocal settings that include homes, co-working spaces, forests, parks, and even the meta-verse, see for example, Baym and Ellison 2023; Vartiainen and Vanharanta 2024; Schäfer et al. 2023; Clifton et al. 2022; Orel et al. 2024; Paetow et al. 2025), this study shows that *time* is equally important aspect of future of work. Temporal<sup>1</sup>

dimensions like flexible schedules, structured breaks, and asynchronous collaboration<sup>2</sup> are not just operational details that are an add on how work is otherwise organised but rather shape productivity, well-being, and equity in direct ways. Temporality shapes both work and experiences associated with it in the future.

In this paper, we present comments, points of views, critical remarks, and ideas that respondents to a Delphi study presented concerning time and temporality in the futures of work. While not initially about time *as such* (see below), in our Delphi study on the futures of work temporality emerged as an important aspect of futures of work. We discuss how the respondents

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commented and argued about issues related to time and temporality as central aspects of the futures of work. There are several issues and areas where temporalities, whether existing ones are preserved or novel ones created in the future, are worthy of discussion, according to our Delphi findings.

Through discussing the Delphi study, we point out that workplaces of the future need to integrate both temporal and spatial considerations to be truly sustainable and inclusive. The integration of temporal and spatial dimensions in workplace futures remains understudied, even though it is crucial for understanding how work environments develop (see Dries et al. 2025; Saurin and Ratcliffe 2011; Sivunen et al. 2023; Leonardi et al. 2024; Vartiainen and Vanharanta 2024). Disruptions like COVID-19 that have accelerated the shift to flexible work arrangements and appreciation towards the quality of working environments (Toivonen et al. 2023) and, as we argue below, spatial and temporal flexibility seem to be deeply intertwined. Interestingly, the theme of working environments is not all that novel. Prior studies have noted how workplace productivity has emerged as a key priority in real estate strategies, driven by both cost reduction pressures and demographic shifts (Toivonen and Viitanen 2015). We observed that issues related to time and temporality have emerged at least implicitly in these studies. For example, it has been pointed out that “There is constant pressure to minimize costs and space use. Remote working, development of remote connections, *lack of time* and negative influences caused by traveling may support the utilization of alternative solutions [to owner-occupied office space].” (Toivonen and Viitanen 2016, p. 58 [emphasis added]). No working environment exists without temporal structures<sup>3</sup> and consequences.

While spatial flexibility gets immediate attention through innovations in physical and virtual workspaces, we point out that temporal structures deeply affect whether such innovations work as intended or create new forms of exclusion and stress. The access and utility of temporal aspects of work, such as flexibility seems to often follow existing power structures, thus suggesting that creating truly inclusive and productive workspaces needs to take into account both spatial and temporal barriers.

The Delphi study presented in this paper was conducted in March/November 2024 within the T-winning Spaces 2035 project at Finland Futures Research Centre (FFRC), University of Finland. The core of the project is to study and seek for such winning spatial solutions for future work that enable the double twin transition of digital/green and virtual/physical transforming our societies by 2035. The results of the Delphi study are to be integrated into the overall reflections on the double twin transition of digital/green and virtual/physical in this research project, funded by the Research Council of Finland in partnership with Aalto University (co-ordinator), Tampere University, and the University of Turku. The theme of the project is to study and seek for such winning spatial solutions for future work that enable the double twin transition of digital/green and virtual/physical transforming our societies by 2035.

What this comprehensive research initiative makes visible is how environmental and technological changes reshape both

spatial and temporal dimensions of work. The project's focus on winning spatial solutions provided an important opportunity to study how temporal patterns might develop alongside spatial innovations, particularly as organisations deal with complex connections between physical and virtual work environments. By studying these transitions through both spatial and temporal lenses, we can better understand how workplace transformations affect different stakeholders and contribute to broader societal changes.

The nature of this study project and the Delphi study that we conducted can be characterised as a combination of transformative and critical foresight (Minkinen et al. 2019). It is transformative foresight because our interest lies in whole-of-society change through reflecting on a complex issue and its systemic interlinkages. We are living in a complex world. Complexity thinking is one of the key characteristics in futures studies (Masini 1993). Complexity is a property of systems, of sets of interrelated elements. In a complex system the whole is greater than the sum of its parts (Byrne and Callaghan 2013). Furthermore, our interest also dwells in the critical foresight since the method we adopted uses paradoxes for deconstructing hidden assumptions and for re-thinking concepts. We value critical analysis for understanding the changing world. According to Inayatullah (1998), the critical tradition is concerned with creating distance from current categories. The task is to make units of analysis problematic and not to take issues for granted. It is noticeable that there have been recent calls for more rigorous and politically engaged future of work research that explicitly articulates underlying assumptions about phenomena, temporality, and stakeholders (Dries et al. 2025). What this combined approach makes possible is studying not just where work might happen in the future, but also how temporal patterns either enable or limit different ways of working. The integration of critical and transformative perspectives helps us question basic assumptions about workplace organisation and pinpoint radical alternatives that could affect how sustainable and equitable the future of work is.

This paper makes visible several key contributions to both theoretical understanding and practical workplace design. First, it shows how temporal considerations often determine whether spatial innovations work or fail in practice, thus revealing the deep connections between where work happens and how time gets structured and experienced. Second, it points towards workplaces needing to support multiple temporalities—from focused deep work to rapid collaboration, from structured routines to flexible adaptation—thus recognising that different types of work and workers need various temporal arrangements. Third, it emphasises how temporal equity needs more attention in workspace design, particularly as organisations deal with increasingly complex combinations of physical and virtual collaboration. These findings show new ways of understanding how time and space work together in shaping workplace futures while giving insights into how workplace design might better connect with human temporal needs while supporting sustainability and inclusion. In its core, this paper makes visible how time is a crucial yet often overlooked dimension in workspace futures, showing that successful workplace transformation needs equal attention to both *where* and *when* work happens.

The paper proceeds as follows. Section 2 describes our methodology and explains the background literature and the Delphi setup. Section 3 discusses how time and temporality can be conceptually understood and managed in future studies. Section 4 provides an overview of, and map to, the main findings. Sections 5 and 6 show detailed analysis of our two-round Delphi study, while Section 7 examines how temporalities work as an active design element in workplace planning. The conclusion brings these insights together and emphasises the need to focus on both time and space in designing future work environments. Through these sections, we keep our commitment to both critical and transformative perspectives, and study how temporal and spatial dimensions of work might be reimagined to create more sustainable and equitable futures.

## 2 | Methodology

### 2.1 | Background: Literature

Before designing the Delphi study, as explained below, we conducted a literature review to understand the current research on futures of work and workspaces. This review provided crucial context for understanding both established patterns and emerging gaps in workplace futures research and, thereby, grounded the Delphi design. As detailed below, the review revealed that while spatial aspects of work have been discussed when it comes to futures of work, temporal dimensions often remained implicit or underexplored. This suggests the need for more focused research on time-related factors in workplace futures, as conducted in the Delphi study discussed below.

As a starting point for the review, eight futures studies journals were chosen to be examined more carefully. These journals were systematically reviewed via search terms, which there were 20 overall. Terms included a wide variety of issues from “the future of work” to “digital nomads”. The timeframe of the search was 2000–2023. The chosen journal were the following: *Futures*, *Technological forecasting and social change*, *European Journal of Futures Research*, *Journal of Futures Studies*, *Foresight*, *Futures & Foresight Science*, *World Futures Review* and *Long range planning*. This preliminary search was supplemented by other articles and reports concerning the futures of work, which were identified by the project research team. Furthermore, a separate literature review focusing on social science journals was conducted by using the keyword of “future of work” related key words. Based on this search, central discourses linked to futures of work were distilled.

In this section, we focus on the first literature review and especially on what kind of results this review yielded when we address the future of workspaces. The general sense in the articles is that the future of work and workspaces is at the best ambiguous or at the state of flux (see Fan and Moen 2023; Thulin et al. 2023). The major reason for this state of the affairs is COVID-19 pandemic, which forcefully drove organisations and businesses to adopt the practices of remote work. In a sense, pandemic can be seen as a watershed moment when work is considered (Proust 2023). This can be seen in the general notion of articles: they see that the future of work is in one way or another hybrid between teleworking and office

work. (see Proust 2023; Thulin et al. 2023; Fan and Moen 2023.) This kind of understanding underlines the notion that futures of work and workplaces are not either-or but both-and. There are clear pros and cons in both teleworking and office work.

Pros of teleworking are generally related to the issues linked to time management. As we will see, time management and related issues are a central theme that emerged also in our Delphi study. In literature, efficiency is seen as one of the benefits as is the lesser travel time (Proust 2023). Furthermore, positive time-related notions are more flexibility in organising daily schedule and possibility to spend more time with the family (Thulin et al. 2023). This is highly relevant, as flexibilities but also control that temporalities create are issues that our Delphi revealed. It should also be noted that the more teleworking is practiced, more favourable it is seen (Proust 2023). Related to the earlier research, these findings are interesting. In a research published in 2007, one hope related to the future workplace is that it would offer more chances to organise one's work better to suit one's personal lifestyle (Davis and Blass 2007). It can be argued that hybrid work offers this kind of flexibility. Other interesting notion is that it has been stated that teleworking is seen more preferable in the organisations, which have actually adopted the practice (Illegems and Verbeke 2004).

However, it should be indicated that the aspect of flexibility does not apply to all workers. Fan and Moen argue based on the survey that people with “the most intensive family care obligations” are actually busier if they are working from home (Fan and Moen 2023, 28). Telework also harbours another more general negative side-effect, since it does not offer the informal social interaction, which can happen in the office environment (Thulin et al. 2023). Furthermore, there is a danger of losing the sense of belonging when the organisation is concerned. It should also be emphasised that the transition to teleworking, at least in the scale we saw during the pandemic, has happened in a forced manner and at fast pace, which may mean that the possible downsides of this development are not yet clearly seen (Proust 2023). This rapid pace of change itself is a temporal phenomenon worthy to mention, as it was pointed out also in the Delphi answers. These points of view emphasise that just teleworking or working from home is not the preferable future but rather the aforementioned hybrid work is.

Furthermore, it should be noted that the discourse about the hybrid work is not reduced only between home and office. There is a wide variety of possibilities for future workspaces and places (Saurin and Ratcliffe 2011). One such place are co-working spaces, which bring together people from different organisations and occupations. Clifton et al. state that these spaces provide social interaction but also informal knowledge exchange (Clifton et al. 2022). This notion emphasises that social interaction is one of the key drivers to work outside of home even though it would be in principle possible to work just from home. However, our Delphi study pointed out that one should not forget that interactions happen not only in spatial settings but also in time and are controlled in ways that we further discuss in the later sections.

Moreover, there are also wider discourses about the futures of work that needed to be taken into account. These discourses

frame expectations, structure debates, and influence the ways in which different actors engage with workplace transformations. Viewing the futures of work as discourses focuses attention on the framings, assumptions, expectations, values, power struggles, and shared meanings through which the futures of work are anticipated, envisioned, and made sense of (see Brown et al. 2000). Such socio-cultural framings matter since they influence the creation of models and expectations for the futures of work that eventually develop into concrete work practices and workplace arrangements.

One major discourse focuses on technological determinism. The futures of work discourses often portray technology as the prime and independent mover of change, requiring workers and organisations to adapt. This techno-deterministic view downplays human agency, such as policy-making, in shaping technological change (Schlogl et al. 2021). The futures of work discourses often ask, “What will the future look like?” instead of “What kind of future do we want?” (p. 321). Adaptation is framed as acquiring competencies like resilience, creativity, and data literacy (Santana and Cobo 2020). However, the futures of work discourses differ by political context, with proactive approaches in Sweden, Germany, and other countries with strong cooperation between institutional actors (Marenco and Seidl 2021).

Another key discourse centers on the spatio-temporal dissolution of work. In the futures of work discourses, technology is often seen to blur the boundaries between work and leisure. With tele- and remote work, work penetrates leisure, but attributes traditionally associated with leisure also increasingly influence work practices: work is seen to become more individualised and subjectivised, emphasising workers’ inner motivation and inner experiences (Aroles et al. 2021). AI and automation are said to replace routine tasks, allowing human workers to focus on creative and social roles (Howcroft and Taylor 2023). These qualities, traditionally cultivated outside the workplace, are increasingly valued in cognitive capitalism (Moulier Boutang 2011).

Closely linked to this, there is a discourse related upskilling and talent management. In the futures of work discourses, workers typically adapt to technological changes by upskilling, making human-resources management central to cultivating workers’ skills (Schlogl et al. 2021). While upskilling dominates discourse, policies like universal basic income receive less attention. Rather than formal policies, workers are increasingly seen as responsible for their own skill development, fostering an entrepreneurial mindset (Santana and Cobo 2020).

Beyond skills and adaptability, changing notions of meaning in work is a fundamental one from the perspective of critical and transformative futures studies. As work becomes more flexible and individualised, its meaning is seen to shift from instrumental to self-expressive and even spiritual (Aroles et al. 2021; Kingma 2019). Seeking a sense of deeper meaning from work, employees are portrayed as prioritising connection and purpose in their jobs (Bankins and Formosa 2023; Santana and Cobo 2020). Beyond personal well-being, meaningful work is claimed to enhance productivity while reducing turnover (Peters and Reveley 2012).

One important observation concerns workplace surveillance and neo-Taylorism. In influential critical futures of work discourses, Digital Taylorism is expected to extend scientific management principles to the contemporary workplace, shifting control from physical labor to cognitive, creative, and social skills (Aroles et al. 2021). AI-driven surveillance enables detailed tracking of work, fostering a machine-centric future of techno-managerial control (Schlogl et al. 2021). While new work practices increase flexibility, their primary goals remain cost reduction and productivity (Aroles et al. 2021). As an alternative to the Digital Taylorism paradigm (efficiency-focused AI-driven work), the discourse presents the paradigm of Worker Autonomy (flexible but creative and democratised workplace) (Wang et al. 2020).

In this paper on our Delphi study, we wish to enrich these insights and discourses on futures of work from explicitly temporal perspective. The literature’s emphasis on hybrid arrangements and workplace social dynamics, including control and surveillance, provides us with important clues on the issues related to temporalities in the future of work. However, they also point toward the need to examine deeper questions about how temporal patterns shape workplace equity, effectiveness, and well-being. For example, the unprecedented pace of workplace transformation during the pandemic revealed how deeply temporal aspects are built in working life as the pace had its effects on the temporalities of the work. Moreover, the discourses provide a background for understanding how certain temporal assumptions—such as acceleration, continuity, and flexibility—are embedded in dominant discourses about work, often without being explicitly questioned. At the same time, they offer a crucial foundation for questioning the assumptions that shape prevailing ideas about the futures of work. We need an explicit focus on time and temporality in futures of work, and this paper provides exactly that. We point out how understanding time as a fundamental dimension of workplace futures, rather than just an operational consideration, opens new possibilities for understanding productive, equitable, and sustainable futures of work—and barriers we might face in seeking these.

## 2.2 | The Delphi Approach

The Delphi method is a structured process for collecting and refining expert opinions. It was developed at the RAND Corporation in the 1950s. The process involves several rounds of anonymous questionnaires, where participants give their opinions and adjust their views based on feedback from earlier rounds. This structure reduces bias and limits how much dominant voices can influence the outcomes (Linstone and Turoff 1975; Rowe and Wright 2011).

Linstone and Turoff (2002, 3) note how there are “many different perspectives on the Delphi method and an exceedingly diverse range of applications” and that “Delphi may be characterized as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem.” Moreover, what needs to be provided is “feedback of individual contributions of information and knowledge; some assessment

of the group judgement or view; some opportunity for individuals to revise views; and some degree of anonymity for the individual responses”.

The method works well in areas where precise analysis is hard or impossible. It has been used in forecasting, policy-making, and strategic planning. Its main features— anonymity and feedback—make it useful in exploring complex problems and collecting diverse viewpoints. Applications of the Delphi method include studies on urban planning, healthcare, and future technologies (Tapio et al. 2011; Bañuls and Turoff 2011).

However, the method is not perfect. Problems can come from how participants are selected or how responses are summarised. But when done carefully, the Delphi method is excellent for tackling ambiguous or multifaceted problems, and it helps to develop informed decisions and strategies (Bolger and Wright 2011; Marchais-Roubelat and Roubelat 2011).

Not all Delphis always seek for consensus through multiple rounds and anonymity. There are several variants of Delphi and some of them emphasize dissensus and dispersion of expert positions rather than consensus. For example, Kuusi (1999) argument-based Delphi builds future arguments for socio-technical domains and focus on differences between expert perspectives rather than on consensus. It serves more as a learning process where experts examine other viewpoints and justifications than as a method to reach consensus. Another example is Tapio (2002) disaggregative policy Delphi. It analyzes expert dissensus to identify alternative future paths. The method emphasizes expert arguments and justifications, treating dissensus as a creative process where researchers probe disagreements through counterarguments and questions to deepen understanding of different positions. Such examples can be multiplied: Landeta and Barrutia (2011) used a modified dissensus-oriented Delphi in the context of the drafting the university legislation in the Basque Country. In the process Delphi was used to consult the university community that was, in the context of the study, a professional bureaucracy with high degrees of autonomy. van de Linde and van der Duin (2011) also used a dissensus approach when they applied the Delphi method as an early warning system for future radicalization and terrorism in the Netherlands. In that context, they argue, identifying divergent perspectives was more valuable than reaching agreement.

Moreover, it has been pointed out how “a key feature that distinguishes a policy Delphi [i.e., exploring different policy options and positions] from conventional Delphi survey designs is its focus on understanding disagreement within an expert community” (Kattirtzi and Winskel 2020). von der Gracht (2012) also discusses in depth the issue of consensus and its measurement in Delphi studies, especially problems in the measurements. Von der Gracht also emphasizes that in policy Delphi, facilitators actually “search for dissent, resulting in a stable bipolar distribution, thus two opposing group perspectives” and that, in the process, “sufficient clarification and definition of the different opinions and viewpoints become the desirable goal” (p. 1528).

The Delphi described in the paper at hand, while novel in its use of provocations and paradoxes, is to be counted to this

family of Delphi studies that do not search consensus but seeks to understand variety of viewpoints. As noted, it is connected with the transformative and critical foresight goals while still satisfying the main defining features of Delphi (Turoff 1970; Linstone and Turoff 2002), as (i) it was anonymous, (ii) there was feedback of individual contributions of information and knowledge, and (iii) there was the assessment of the group views that informed Round 2 on the basis of Round 1 responses.

The problem we aimed to address was one that is complex and has several aspects, as our study focuses on, and seeks for, what we call winning spatial solutions for future work that enable the double twin transition of digital/green and virtual/physical transforming our societies by 2035. A key objective in the Delphi was to identify and tackle trajectories for possible futures of work.

### 2.3 | Delphi Study With Provocations and Paradoxes

In our study, we used a two-round Delphi process that took place between March and November 2024. Each round built on earlier insights while bringing in new elements for participant to consider. Here we provide the overview of the method, but as we move along in the following sections, the methodology will be discussed further.

However, before going into the overview, it must be noted that temporality and time-related issues emerged organically *through* the study process rather than being the research question originally posed by the Delphi process. The original Delphi design aimed to understand spatial aspects of, and solutions to, futures of work within the double twin transition framework (see above). However, when participants engaged with spatial provocations and workplace paradoxes, they consistently raised temporal perspectives, issues, and concerns that we report in this paper. This emergence of temporality through participants' responses—rather than through direct questioning about time—constitutes a finding. It demonstrates that spatial and temporal dimensions of work are so deeply intertwined that the Delphi experts in our study could not meaningfully discuss one without the other. Our analysis of temporality, therefore, derives from interpreting what respondents wrote and thought when confronted with spatial workplace challenges, not from systematic measurement of their opinions of how time and temporality are to be like in the futures of work.

Importantly, this also means that we are not discussing or suggesting any particular time and temporalities within futures of work (or have any hypotheses on these issues, for that matter). What we wish to point out is that (a) time and temporality are important aspects of the future of work even according to experts, even when they are not directly interrogated about this particular issue, and (b) this topic is complex, nuanced, and tightly related to other areas of human lives, such as power and status, for example.

In Round 1, we invited a total of 195 experts via email (initially 145 in March 2024, with additional recommendations and reminders sent later) and closed the survey on May 24, 2024. Of

those, 69 completed the Round 1 questionnaire (a 35% response rate). Among these 69 respondents, gender was balanced (44.9% female, 49.3% male, 1.5% other, and 4.3% prefer not to say). The average age of Round 1 participants was 49 years, with 1.5% under 29, 18.8% aged 30–39, 27.5% aged 40–49, 17.4% aged 50–59, and 34.8% aged 60 or older. Geographically, 51 of the 69 (74%) were based in Europe, 6 (8.7%) in Latin America, 5 (7.2%) in North America, 3 (4.3%) in Asia, and 4 (5.8%) in Africa. Their professional roles spanned presidents, policy officers, management consultants, foresight researchers, co-chairs, directors, doctoral candidates, senior scientists, CEOs, design leads, founders, professors, senior advisors, deans, and master's students.

Round 2 invitations were sent exclusively to the original cohort (plus a few additional experts for targeted feedback) between October 10 and November 15, 2024, reaching 72 individuals. Forty-two experts responded (a 58% response rate). The gender split and age breakdown in Round 2 remained similar to Round 1, and 29 of the 42 respondents (69%) were based in Europe, 5 (12%) in Latin America, 3 (7%) in North America, 3 (7%) in Asia, and 2 (5%) in Africa. These same experts were asked to evaluate and comment on the synthesized themes from Round 1, ensuring continuity of expertise across both rounds.

As explained above, we conducted a literature review to understand the current research on futures of work and workspaces. This review provided crucial context for understanding both established patterns and emerging gaps in workplace futures research and, thereby, grounded the Delphi design. Round 1 of the study used a comprehensive questionnaire with three main sections that tried to foster creative thinking and question deep-seated assumptions. The first section, “Provocations on the Futures of Work,” provided participants with radical futures possibilities. The participants needed to select three statements they found most interesting from options like “Full unemployment is not a dystopia but a desired social outcome,” “The work in the future will be done through sleep and play,” and “Workers are not hired, they choose their work.” For their most interesting choice, participants were asked to give detailed explanations about what it implies for work arrangements in 2035. Provocations—based on literature review and desktop research—were used because they are an effective way in foresight for stimulating futures thinking and enabling even radical innovative ideation (Heinonen and Ruotsalainen 2013; Cainelli and Janissek-Muniz 2025).

The second section brought in *paradox probing* as a methodological innovation and continuing the process design mode of provocation, going beyond usual Delphi evaluations of probability and preferability.<sup>4</sup> Paradoxes in this context are statements or ideas that seem contradictory and carry with them deeper systemic tensions and connected elements. These played a key role in this study by making visible hidden assumptions, enabling creative thinking, and dealing with the complexity of future work environments. Paradoxes are not just contradictions but rather provocations that make participants rethink established frameworks and explore different possibilities. Our approach adopts the analysis of paradoxes within organisational change and strategy studies (see e.g., Brorström 2017). Examining paradoxes can deepen our understanding of organisational complexity and entails questioning how organisations

can effectively help make sense of complexity and its implications in the present. Andriopoulos (2003) claims that by identifying and resolving them we can gain a better understanding of the principles behind obvious contradictions.

Examples from the study point towards tensions like “Work takes on qualities of leisure and hobbies, while leisure adopts characteristics of work” and “Workers become more autonomous and creative, while their work is being increasingly surveilled and controlled through digital means.” What these paradoxes make visible is systemic dynamics and unresolved tensions that could shape how work changes in hybrid and digital spaces.

By working with paradoxes, participants needed to consider the complexities of future visions and how tensions in these visions might develop or get resolved. What paradoxes make possible is seeing blind spots in thinking and finding new ways to approach challenges that do not fit well into usual categories. In this way, paradoxes connect with the transformative and critical foresight goals of the study as they open up alternative solutions and perspectives while questioning deep-seated assumptions and ideas.

The third section used creative scenario thinking techniques, asking participants to think about future work through a movie script lens and to present elements for scenario-like narratives. This approach made it possible for participants to concretely identify key and propose actors, essential skills, locations, challenges, and power dynamics that might shape work in 2035 in a more narrative and imaginative way. Instead of using strictly conventional Delphi logic that asks for evaluations about probability, plausibility, and preferability, we chose to try a methodological experiment where the Delphi method's field of application was expanded (see e.g., Beiderbeck et al. 2021). This Delphi-generated material for narratives to be finalized within the project.

Round 2 built on collective insights from the first round through careful analysis and synthesis. The research team first analysed Round 1 responses. The focus was on emerging patterns and grouping insights into broader themes and narratives. These findings were then shown back to participants for deeper exploration and development. In this round, participants worked with a new paradigm of work that had emerged from their collective responses. The paradigm portrayed notions of hybrid and multilocal work and emphasised worklife becoming more precarious since it is built on the idea of short sprints. Furthermore, skills like philosophical thinking, emotional intelligence not to mention one's ability to self-reflect play a crucial role. However, in the paradigm work is still about survival in a sense of making ends meet, but also in a sense of wider societal responsibility and nature's sustainability. What participants did was evaluate this paradigm's credibility and preferability. Importantly from the perspective of this paper, they also provided detailed arguments for their assessments and pointed towards potential gaps or missing elements. The round also presented to participants three different narrative clusters that had emerged from Round 1—focusing on technology, people, and nature—and asked them to evaluate these as possible starting points for building more detailed future narratives.

This iterative approach made it possible for participants to work with and develop collective insights while keeping the creative and provocative elements that shaped the study's methodological approach. Throughout the Delphi study we followed transformative and critical foresight as mentioned in Section 1. The process was transformative foresight because our interest lies in understanding holistic social change through reflecting on complex issues and their systemic interlinkages. Furthermore, our interest can be characterised as critical foresight since the method we adopted uses paradoxes for deconstructing hidden assumptions and for re-thinking concepts.

In what follows, we first provide conceptual tools to understand time and temporality in futures studies, and we then proceed to the results of the Delphi study.

### 3 | Futures With Time

The future is not only some passage of *time* “ahead of us”. Time itself and our conceptions, uses, and experiences of time play a central role in how we understand and shape the futures (Virmajoki and Laakkonen (2024a)). This becomes exceptionally clear in the context of work. Time is not a neutral background where work happens. Thompson (1967) illustrated how industrial capitalism, a form and organisational structure of work, fundamentally altered how time was understood and experienced. This transformation, like the one we might be experiencing now and wish to understand in this very paper, fundamentally affected time management, standardisation, and experiences. For Thompson, industrialisation was not merely about technological advances but represented a transformation in how societies organised and controlled time. These insights are still relevant, especially when digital technologies and flexible work arrangements reshape when, where, and how work takes place. Remote and hybrid work, in particular, both enable and require new ways of structuring and experiencing time.

Moreover, *where* and *when* are intertwined. We might consider the future of work and, thereby, the future of working spaces, but this analysis is incomplete without an understanding of time and temporalities of work. As Lefebvre (1992/2004) argued, time and space are co-produced through social practices, and create rhythms that result from the interaction between natural cycles and social processes. These rhythms can be seen in bodily experiences, organisational schedules, and everyday practices, forming what Lefebvre refers to as a “bundle of natural and social rhythms.” As we will see in this paper, and what is already written in the idea of *double transition* (digital/green and virtual/physical) nature—and its rhythms—are not out of play even in today's society. On the contrary, it has become a central issue in the survival of ecosystems. Therefore, because there are temporalities in nature, human beings cannot escape certain rhythms. Nature and temporalities tied to it are a central theme that emerged in the Delphi study we conducted.

Seen from a more academic angle, we need to be self-reflective on temporalities when conducting futures research projects. While futures research often emphasises long-term timescales—spanning years or decades (Brier 2005; Nordlund 2012)—it is

equally important to consider temporality in *how* human beings orient themselves towards the future. In other words, we need to focus on how time is structured, experienced, and controlled. These different scales of time are not merely tools for analysis. Rather, they reflect deeper assumptions about how futures develop and how they might be influenced. Bell (2009) observes that understanding the measurement and meaning of time is “absolutely basic to futures thinking.” In other words, our very notion of what constitutes “the future” depends on how we conceptualise and measure time.

The link between time, power, and control is also a constant theme under discussion. Zerubavel (1981) and Freeman (2022) demonstrate that time structures embed and reinforce power relations, where control over time operates as a mechanism of social power. Bauer (2018) highlights how control over temporal horizons determines what futures are perceived as possible or impossible. This means that the ability to define and constrain time horizons shapes what futures can be imagined or pursued. Lefebvre (1992/2004) concept of *rhythmanalysis* adds depth to this analysis, showing that power operates not only through direct control but also through the management of everyday rhythms. These rhythms, from bodily experiences to work schedules, both reflect and reinforce power structures. In the context of techno-social systems, Virmajoki and Laakkonen (2024b) discuss in detail, through the notion of *time-need*, how different aspects of time, ranging from time measurement to power dynamics, form a whole that affects human lives and activities. In the context of work, such dynamics emerge in decisions about who sets schedules, measures their execution, defines “normal” working hours, or determines availability. Interestingly, flexible work arrangements often make these temporal structures visible, especially when we make provocative studies concerning work, like in the Delphi study discussed in this paper. It is highlighted that control over one's time (and different aspects of it, such as measurement, representation, and control), is frequently tied to broader social and organisational hierarchies. For example, the ability to work flexibly is often a privilege tied to specific roles, industries, or organisational positions, and exposes power dynamics in debates about work arrangements. We discuss this in detail below on the basis of our Delphi results.

Moreover, different temporalities often coexist and sometimes conflict, even within systems that appear standardised. Marrs (2008) demonstrated this through his study of railroads, showing how they operated with “multiple times” and various “cultures of time.” While railroads are often seen as symbols of standardised time, their temporalities are shaped by elements such as technical systems, worker schedules, and passenger needs. Also, Virmajoki and Laakkonen focus on railroad systems and argue that “If time and temporality are complex even at the heart of western modernity, one can only imagine how complex they are across different contexts” (2024b). Similarly, modern workplaces consist of—and need to balance, or control to be more critical—various temporal demands. One example of such demands is that, on the one hand, there is a requirement for immediate responsiveness required by digital tools, and on the other hand, the longer rhythms needed for creativity and recovery. These competing temporalities create tensions between efficiency, sustainability, productivity, and wellbeing

as well as between global coordination and local rhythms. As workplaces become more complex and globally interconnected, they must control and tackle what Nowotny (1994) describes as the increasing fragmentation of time and the rise of conflicting temporalities. In this Delphi study, the fragmentation became visible in phenomena such as temporal dissonance within global teams or the difficulties of maintaining work-life boundaries in the context of always-available digital environments.

Poli (2017, 152–153) questions the simplified image of two different ways to use time which hinders their intermediate phases. One is the concrete, natural or “primitive” way based on activities and natural rhythms. The other is the abstract, artificial or “advanced” way based on timetables. While people’s perceptions of time are linked to their internal rhythms, their responses to time are culturally conditioned. Referring to Zerubavel (1981, 7), Poli states that well-socialised persons do not necessarily eat when they are hungry, but do so during officially designated eating periods. This may be applied to work—remote work frees an employee from a designated place, pace and period of working time to working when it is most appropriate for a person’s life situation or biorhythm instead of fixed work hours. This ties time to space in an exquisite personal, unofficial mode.

Feminist scholars have particularly emphasised how dominant conceptions of time serve specific interests and reinforce power structures. Kristeva et al. (1981) analysed women’s experiences within temporal structures and highlighted how gendered power relations shape how time is understood and organised. Milojević (2008) extends the critique and argues that clock time was developed to serve particular societal, cultural, and gendered needs—especially those of industrial capitalism and patriarchal systems of control. These critiques show the need to examine whose temporal needs are prioritised in work arrangements and how diverse rhythms of life and work might be better accommodated. However, this is not the only axis where interests and power structures concerning temporalities can be found. For example, the assumption of linear career progression or standardised working hours often fails to reflect varied life patterns and responsibilities.

Understanding agency in relation to time is also central to reimagining future work arrangements. Emirbayer and Mische (1998) describe how actors engage with the past, present, and future simultaneously. In this way, they adjust to different temporalities based on different contexts. This process, which they call the “chordal triad” of agency, becomes increasingly relevant as people work in flexible and technology-mediated environments. Lefebvre (1992/2004) rhythmanalysis provides a valuable framework for understanding how individuals negotiate competing temporal demands through their lived experiences and bodily rhythms. This perspective suggests that workplaces might need to better align with human temporal needs instead of imposing artificial rhythms.

These theoretical insights help frame the temporal challenges of future workplaces. As our Delphi study will show, questions about time—who controls it, how it is structured, and how it shapes work experiences—are central to creating sustainable and equitable futures of work. The challenge is not merely to

make work more flexible but to recognise and accommodate the multiple temporalities that shape working life. Understanding time not only as container or passage but rather as a system of use, measurement, representation, control, power, experiences (Virmajoki and Laakkonen 2024b) and deeply embedded in the practices of work and organisation provides a basis for analysing the future of work. As digital technologies and new work models evolve, the ways in which time is structured and experienced will remain central to shaping productive, equitable, and sustainable futures of work.

Finally, it should now be clear that the route to understand and shape the futures of work does not go through merely reimagining *what* of work or *where* of work but also the *when* of work. Without careful attention to the temporal dynamics and the rhythms of working life, even the most innovative spatial solutions may fail to address the fundamental challenges of modern work. Recognising time as something actively produced and contested, rather than as a neutral backdrop, opens up new possibilities for reimagining work in ways that better meet human needs and potentials.

#### 4 | An Overview of Findings: Time of Space in Futures of Work

Before we discuss the results of each of the two Delphi rounds in detail, we wish to remind the reader that an overall picture concerning time and place as intertwined in the future of work emerged through the research process rather than was directly asked about. The Delphi study revealed, through its two rounds, how experts understood time and temporality as crucial aspects when the possible futures of work are to be understood. As one participant observed, “Work will be even less about the space and more about our interaction with space and time.” This insight points towards an important finding—that understanding futures of work is not merely about the nature of work and its physical context, but also how temporal patterns affect the effectiveness and equity in workspace arrangements. The study’s structured approach enabled participants to make clear the necessity of temporal considerations that, despite their importance, easily remain only in the background in discussions about the futures of work(s). The tight knot between spatial and temporal reflections concerning remote work was also evident in the interviews conducted within the T-winning Spaces 2035 project. At the same time, the digital world at large was considered as time-agnostic—it does not care nor necessarily even know in which time zone you are in (Heinonen and Viitamäki 2025).

Through provocations and questions, the thinking about temporal aspects of workplace futures was opened up. While the participants were actively working with radical spatial concepts, like nature-based hubs, virtual environments, and so on, several arguments and considerations emphasised how temporal structures determine whether such innovations truly serve functional work and human needs or not. This point was captured by one respondent who noted: “Locality is described very well—but temporality? What about the times of work and of leisure (and other activities)?” This type of reflection illustrates how the participants were led, through provocations and

paradoxes, to consider how temporal patterns might complement or create difficulties in the spatial innovations needed in the future of work, thus leading to discussions about issues such as rhythms of work and rest in future workspaces. What the participants emphasised was that even the most innovative spatial designs need to take into account human temporal needs to work effectively.

The expert arguments provided us with insights on several critical temporal patterns that add to our understanding of future workspaces. What the participants highlighted was how flexible schedules, asynchronous work (i.e., people working together but at different times), and structured recovery times interact with spatial arrangements and, thereby, affect workplace effectiveness and well-being. Moreover, they also pointed towards important tensions, like those created by constant digital availability, maintenance of work-life boundaries, and unequal access to temporal flexibility. Through these discussions, it became clear that temporal considerations often determine if spatial innovations work or fail in practice, especially when it comes to supporting different work needs across sectors and roles. We return these themes especially in Section 5 where we analyse the theme through reactions to provocations and paradoxes.

A central finding is that temporal considerations are not just operational details but rather shape fundamentally how workspaces function. Digital platforms enable unprecedented spatial flexibility but also create situations that can be interpreted as *temporal anomaly* pointed out by participants. This is a type of a situation where more autonomy in choosing work locations exists together with increased pressure to be always available. Such *anomalies* open up crucial questions about how temporal patterns affect whether spatial innovations succeed or fail in future workspaces—and may serve as the foundations of new paradigms of work of the future. The participants emphasised that dealing with such anomalies requires attention to how temporal structures either help or harm human well-being, especially in the context of functional working life and its structures. Well-being, time, and effectiveness cannot be separated. The issue is not whether to build novel temporal structures to support new spatial contexts of work. What the study revealed was that without careful temporal frameworks, even innovative spatial solutions might make workplace challenges worse rather than better.

As Section 6, which discusses the results of the second round of the Delphi study, will show in detail, the expert perspectives developed through multiple rounds to reveal more temporal insights while keeping spatial dimensions in view. This led towards a new understanding of work that takes into account how temporal structures—flexible scheduling, recovery periods and so on—function together with spatial arrangements to determine workplace well-being and effectiveness. However, the participants kept emphasising that access to temporal flexibility is not equal across different sectors and roles. This raises serious questions about equity in future work and the ethical and fairness aspects of working life structures. These discussions made visible how temporal privilege often follows existing power structures, and that truly inclusive future workspaces need to address both spatial and temporal inequities. One

cannot build an inclusive space that floats free from time and its control.<sup>5</sup>

The findings point towards what successful workplace futures need: treating time as an active design element rather than background. What participants emphasised was that new spatial arrangements—physical or virtual, as these cannot be untangled when it comes to working environments—need matching innovations in how time is used, represented measured, coordinated, and controlled, that is, novel understanding of future *time-needs*, to use the notion from Virmajoki and Laakkonen (2024b). This means that we need to reconsider not just when work happens, but rather how different temporal needs can be supported in diverse work contexts. The study made visible how temporal patterns deeply affect whether spatial innovations work as intended or create new forms of exclusion and stress. As one participant noted when asked about overlooked paradoxes: “24/7 work culture acts against the needs of the human body (sleep hours) and makes work itself less efficient”. These insights suggest that future workspace design must take into account how different temporal structures and time-needs either enable or limit different ways of working. This is particularly important when organisations deal with more and more complex integrations of physical and virtual work and collaboration.

As already briefly indicated, these findings connect with theoretical perspectives on time and work that were discussed earlier.

First, the non-neutral nature of time in work environments that our study revealed—especially visible in how digital platforms create temporal anomalies between flexibility of *where* but constant availability and rigidity of *when*—links to now-classical themes such as Thompson (1967) analysis of how organisational structures of the modern working life, at least since industrialisation, have always been tied to temporalities. Second, what our participants expressed and experienced with competing temporalities in digital workplaces, such as the tension between quick responses and deeper creative work, makes visible the kind of time fragmentation that Nowotny (1994) theorised. Similarly, participants' observations about unequal access to temporal flexibility across sectors and roles show the power relations in temporal structures that Zerubavel (1981) and Freeman (2022) have identified.

Third, as already indicated, the tensions our study revealed around digital availability and work-life boundaries give concrete examples of what Virmajoki and Laakkonen (2024b) call time-needs. When the participants discussed about how to define boundaries in always-available digital environments, they went deep into the themes of measurement, control, power, and experiences concerning time. Experience, as a notion, often remain in the shadow of the issues of control and power, but our study suggests that how time can be experienced and used is a key constant in what makes future workspaces functional. Fourth, our findings about natural rhythms and recovery periods—visible in participants' emphasis on environment concerns, structured breaks, and sustainable work patterns—point towards the practical importance of Lefebvre (1992/2004) insights about temporal patterns in social practices.

The next sections will explore these connections in detail through participant's reactions to provocations, paradoxes, and the new paradigm of work.

Through these insights—into temporal structures such as flexible scheduling, asynchronous work, recovery periods, digital availability, work-life boundaries, and temporal inequities, alongside their interplay with spatial innovations in shaping workplace effectiveness, well-being, and inclusion—the study makes visible how temporal patterns are crucial yet often overlooked aspects of futures of workspaces. In what follows, we discuss how the issue of time and temporality of workspace futures developed and became visible through the two rounds of the Delphi study. Section 5 will show how specific provocations and paradoxes revealed hidden temporal assumptions, while Section 6 will examine how these insights were discussed in the context of a new paradigm of work and workspaces. The analysis reveals that effective, successful, and decent workplace transformation needs equal attention to both *where* and *when* work happens, and how temporal patterns can either help or harm the success of spatial innovations.

## 5 | Temporality Through Provocations and Paradoxes

The first round of our Delphi used a methodologically new approach to study expert visions of futures of work that combined provocative statements with paradox probing. Following critical and transformative foresight framework, the questionnaire gave participants challenging stimuli designed to disrupt usual thinking. These included radical statements such as “Full unemployment is not a dystopia but a desired social outcome,” “Offices will disappear,” and “The work in the future will be done through sleep and play.” What the methodology made visible was the hidden assumptions and complex tensions about both spatial and temporal dimensions of future work and the issues that make the two interconnected. This novel design pushed participants to question basic assumptions about futures of work. Our methodological approach not only revealed spatial innovations but also exposed how different temporal frameworks might emerge, evolve, and potentially conflict in future work arrangements.

The provocations related to the spatial aspect of work first generated responses about radical changes in this area. When asked to think about unconventional workplaces beyond traditional offices, third places such as libraries, cafés, and so on, the participants envisioned shifts in where work might happen. Their responses pointed towards roughly two different but equally radical visions for future workspaces. For example, one participant reflected, “The forest, mountains, and beaches could be our most comfortable workspaces,” which suggests a fundamental reconnection between work and natural environments. Another participant suggested a more technology-focused future: “These spaces will be in the ‘cloud,’ not in a physical environment. Access to the space and its shared resources will be possible through next-gen smartphones, implants, tattoos.” These visions suggest different temporal rhythms—one aligning with natural cycles and seasonal patterns, the other enabling constant and algorithm-driven

temporal flexibility detached from traditional cycles. Some participants pointed towards concerns about isolation, with one noting, “A change towards a more digitalised work might lead to loneliness and a lack of sense of community.” To be sure, the issue is not black-and-white. In Round 2 (see the next section) it was pointed out how “Steady (9–5:) work in a set location, with jointly set, long-term goals” might still hold in the future and that, though the working environments change fast, people may not change as fast in how they see the timeframes of their lives.

As the participants worked with the study's paradoxes, temporal considerations emerged as constant theme. The paradoxes, such as “Need for silent working period & co-creation”, led to rich discussions about managing competing, overlapping, and fragmented temporal demands in futures of work. What some responses revealed was novel expectations about work rhythms and durations. Important shifts in how work time might be structured emerged from the responses. When asked about how changes in spaces will transform work, one participant observed that “Work tasks are smaller and quicker, meetings take max. 15 min,” which suggest a shift toward more concentrated work patterns. Meanwhile, another participant suggested, when commenting on the role of AI-augmented work, that “The classical timeframes of working hours will be useless when people start selling skills for specific goals.” This suggests that the future of work is tied to skills, and temporalities will change as the skills change. These comments point towards a fundamental shift away from traditional time structures toward arrangements where work time gets structured and valued in new ways. Interestingly, these comments, especially the one related to skills, connect with Thompson (1967) insights about how work arrangements shape temporal understanding. What is done depends on temporalities, and vice versa. One cannot untangle temporalities of the work from the tasks of the futures.

The paradoxes given to the participants made visible tensions about work-life boundaries and temporal autonomy. The participants engaged deeply with statements like “Work takes on qualities of leisure and hobbies, while leisure adopts characteristics of work” and “Home as a place for work can make it public and breach privacy.” Their reasoning pointed towards growing concerns about whether current work patterns can continue<sup>6</sup>. As one expert warned, when asked to provide paradoxes, “24/7 work culture acts against the needs of the human body (sleep hours) and makes work itself less efficient.” In the same context, another participant pointed towards a generational shift: “Working hard and the ‘no pain, no gain’ mentality, long celebrated as paths to capitalist success, are no longer aligned with the values of the new generations.”<sup>7</sup> The responses showed a growing recognition that traditional work patterns might be fundamentally unsustainable and increasingly in conflict with the social values of the future. These insights connect with Kristeva et al. (1981) analysis of how dominant temporal structures often fail to work with human needs and diverse life patterns. Patterns, when it comes to human activities, are always a temporal phenomenon. If the work patterns are to be transformed, so will the temporalities of the work.

Differences between workers in different sectors, and inequalities in work tied to these differences, emerged as a key theme in participants' responses. A central concern was the persistence

of power imbalances between different social groups. Some respondents highlighted that while certain workers—likely in white-collar roles—might enjoy greater autonomy and flexibility in the future, others will remain bound to more rigid structures. The access to flexible work models was not seen as universal. This raises concerns about who benefits from the new work arrangements and who is left behind. These divergent temporal freedoms could create a new form of inequality where control over one's time becomes a marker of social status and privilege.

A closely related point that emerged was that the concentration of power among middle and upper classes might become a significant issue. One participant suggested that those that are already in privileged positions will maintain control over what is considered as the most significant sectors of employment. The access to flexible work models was not seen as universal<sup>8</sup>. This raises concerns about who benefits from the new work arrangements and who is left behind. These divergent temporal freedoms could create a new form of inequality where control over one's time becomes a marker of social status and privilege.

A closely related point that emerged was that the concentration of power among middle and upper classes might become a significant issue. One participant suggested that those that are already in privileged positions will maintain control over what is considered as the most significant sectors of employment. At the same time, some responses suggested that dissatisfaction among other groups could escalate and change the future. This suggests that inequality in work may not only persist but may become a site of conflict. The responses also pointed out that while some sectors may see significant transformations, others may remain largely unchanged. Despite the technological development, certain forms of labor—particularly manual and service-oriented work—will still rely on more traditional ways of doing things<sup>9</sup>. These observations point to a future where structural inequalities in work are not automatically erased by new technologies or evolving work cultures. Instead, class-based disparities continue to shape who has power, who enjoys autonomy, and who remains locked in less flexible forms of labor.

What was discussed above means that, in general, we have to remember that there is no future of *work*, but futures of *works*. Whenever we discuss changes related to spatiotemporal aspects of work, we should take into account two aspects of the issue: First, different professions develop in different speeds. Second, and more importantly, different professions will have different temporalities and time-needs (see Virmajoki and Laakkonen 2024b) built in them.

During the Round 1, technology emerged as both enabler and barrier through several paradoxes such as “Digital work expected to reduce environmental impacts but generates environmental harm” and “Technologies will free us to do what we truly want to be doing but no one is paying for it.” When asked where changes in work might lead, one participant suggested explicitly positive possible shift “from fitting into a job to inventing your life—self-actualisation—finding markets worldwide for what you want to do with the help of your AI/Avatar.” However, others pointed towards deep concerns about

technological inequality and rapid change. One suggested that “Dealing with the quick upgrade of the technology and being sure all humans can deal with it” remains a crucial challenge in the future. What the responses made visible was how technological advancement could either help or limit human potential depending on how it gets implemented and distributed. This brings into focus how technologies, while transforming where and how work might be done, also has the power to disturb or enable the control we have over what happens and when.

This issue is related to the point about equity also; different people are affected differently by the novel temporalities that technology and its adoption bring. In general, the study made visible important tensions around power and control in future work arrangements. The participants worked with the paradoxes related to this such as “Workers become more autonomous and creative, while their work is being increasingly surveilled and controlled through digital means.” One respondent noted that “When self-learning technologies and functions of artificial intelligences are introduced into processes, technology-mediated communication probably becomes richer, but at the same time, it may lead to stronger monitoring and control over workers”. Another one connected the pace of technological advancement to the issue of skills and power imbalance: “the use of technology may distance the worker from the management in more than one way, which may make it laborious to the worker to follow-up the development of required skills even on her own job or profession.” This shows how digital tools can create flexibility while also introducing surveillance and control. Workers may become more monitored or disconnected. This connects with Virmajoki and Laakkonen's (2024b) analysis of how different aspects of time—from measurement to power dynamics—work together to affect human activities. The findings point towards how access to temporal autonomy often follows broader social and organisational hierarchies, and vice versa. This raises important questions about how power gets distributed in future work environments.

What emerged as a crucial insight from Round 1 was that while spatial innovation gets immediate attention, dealing with temporal dimensions quickly comes into play as an equally important for creating sustainable work futures. As the participants explored questions about how spatial changes might transform work, they kept emphasising that we need to rethink fundamental time structures to support well-being and equity. However, many issues such as different sectors, power hierarchies, and technology affect how temporalities are distributed among different people and groups. However, we cannot exaggerate the finding. The themes remind us about Nowotny (1994) analysis of increasingly fragmented time and conflicting temporalities in modern work contexts.

The responses showed again and again how spatial and temporal challenges connect when we approach the future of work. Flexible hours might lead to overwork if proper boundaries are not in place. Technological innovation creates needs for careful attention to accessibility and human needs; individual autonomy can possibly harm necessary social connections—such findings suggest that successful workplace transformation needs careful attention to both spatial and temporal dimensions. Particular focus is needed on power dynamics, how

technology mediates work, and human needs for rhythm and recovery. The findings suggest that the future needs careful balance between innovation and inclusion, between flexibility and structure, and between individual autonomy and collective coordination. This connects with Emirbayer and Mische's (1998) description of how actors must work with past, present, and future at the same time while adjusting to different contexts.

What Round 1's results ultimately made visible was that re-imagining future workplaces needs equal attention to spatial and temporal dimensions. The provocations and paradoxes methodology showed that time, like space, gets actively produced and contested. Rather than working as neutral background, temporalities are connected to all aspects of futures of work as shaping them. Creating sustainable and equitable work futures will need careful consideration of how temporal structures can help rather than harm human well-being, how technology can enable better work without exploiting, and how flexibility can be made more equal for everyone. We have already discussed, based on participants comments, how focus on time and temporality revealed tensions and contradictions rather than clear visions for some dominating temporality of working life of the future. As we have seen through Round 1, several viewpoints emerged when experts who answered our study engaged with workplace futures through our provocative methodology.

Yet this emphasis on temporality should not overshadow the crucial role of spatial innovations. Rather, it reveals how deeply space and time are intertwined in shaping work futures. Questions about spatial arrangements lead temporal issues, while questions about temporalities make spatial issues visible. We have to remember that the provocations and paradoxes were about the future of work in general: Spatial and temporal issue emerged due to the fact that human activities require spatial and temporal dimensions. Now we turn towards the new paradigm and what respondents discussed about it.

## 6 | A New Paradigm of Work and Temporality

Round 2 brought in a detailed "New Paradigm of Work", generated on the basis of Round 1 insights, for participants to evaluate. The paradigm suggested, among other things, work as "an endless series of short sprints and reflection for adaptation" and saw workspaces as "hybrid and multilocal, populating homes, offices, co-working spaces, forests, parks, space and the metaverse." The paradigm described to participants a type summary of central points achieved through Round 1. It described work life as being "powered by curiosity, creativity, analytical, critical and system thinking," and emphasised that workers would need "flexibility to take on different roles, to socialise with the other idlers, and ability to adapt to new mindsets."

The focus was more emphasis on spatiality and *where* of the work, as one respondent pointed out an important gap: "Locality is described very well—but temporality? What about the times of work and of leisure (and other activities)?" During Round 2, what emerged as a central concern was managing time across different

locations and time zones, with physical spaces possibly working as temporal anchors in increasingly fluid work arrangements. Again, this observation connects with Lefebvre (1992/2004) idea that space and time must be understood as deeply connected in social practices.

Rather than reaching consensus on the paradigm's temporal dimensions, participants revealed fundamental disagreements about how time should be structured in futures of work. One important concern that was revealed was about equity. When working with this vision, participants explicated important insights on the issue. Many asked whether the dimensions of the new paradigm are beneficial to all workers or if they would mainly help certain groups in certain sectors. As one participant directly stated, when asked what is missing from the paradigm, that: "In 2035 there are still a significant number of 'blue collar' workers: plumbers, construction workers, nurses, and so forth." Another questioned the paradigm's focus on both self-actualisation and survival, noting that "self-actualisation and self-expression are at best secondary" if work centers around survival of societies and people themselves. These concerns connect with what Zerubavel (1981) says about how temporal structures and power relations link deeply in society. What emerged as a crucial theme was the tension between survival needs and self-actualisation<sup>10</sup>, particularly between different groups in different locations. Participants did not offer unified solutions to these tensions but rather exposed how deeply contextual temporal needs are and how they depend sector, geography, and socioeconomic position. In other words, responses to the study indicated how the nature and experience of work varies depending on the individual and the context. For example, responses discussed how work could be influenced by factors such as societal norms, socioeconomic conditions, and individual motivations.

Reflecting what we saw concerning Round 1, the paradigm's focus on short work cycles led to interesting arguments. While this structure might give flexibility, participants questioned what it means more broadly. One showed clear skepticism: "For me it is quite hard to imagine that work consisting of short sprints could simultaneously promote curiosity, creativity and empathy." This response exemplifies how participants challenged rather than validated the paradigm's temporal assumptions. It is indicative of competing views about whether fragmented or continuous time structures better serve human needs. Again, this connects with Nowotny (1994) observation about increasing time fragmentation in modern workplaces and what it might mean. What Round 2 responses suggested was that any new temporal structure would need to balance flexibility with human needs for continuity and deeper engagement. This concern was connected to mental well-being considerations when participants emphasised how important recovery periods are and that fast-paced and flexible environments are sometimes against the goals that are tried to be achieved through the environments. As Virmajoki and Laakkonen (2024b) have pointed out, mere measurement, representation, and interpretation of these two are connected to power, values, and goals. Participants constantly brought up questions about control and power related to the temporal orders that the new workspace arrangement would set up.

The paradigm tried to capture the darker side of the future of work as well: "Work means leadership for the few and survival

skills for the many. However, the meaning of survival and survival skills have changed. It is not only about an individual's basic needs but about the survival of society as a whole, not to mention nature." This broadening of survival from individual to societal and ecological scales suggests a fundamental temporal reorientation—from immediate personal timeframes to longer societal and environmental rhythms. The challenge becomes not just managing present needs but actively shaping futures across multiple temporal horizons, from daily work patterns to generational and ecological timescales.

What participants thought about this prospect varied greatly. Some saw that more traditional "Steady (9-5:) work in a set location, with jointly set, long-term goals" might still hold in the future. Some questioned the paradigm's focus on constant adaptation. For example, one participant noted that, "Though the working environments change fast, people may not change as fast in that they would wish to give up from the dream of building life long careers." This highlights the core tension between rapid changes in work environments and the slower pace of human aspirations, as many still seek long-term stability in life<sup>11</sup>. This tension was especially clear in discussions about career development, where the need for continuity to build expertise and trust did not fit well with the paradigm's suggestion concerning constant change and adaptation. It takes time to build certain capacities and relationships that human life requires. It is interesting to note that spatiality sort of fades from the picture, when these issues are discussed. It is time and temporality that is the dominant factor that requires attention through desires for stability. Fixed walls do not matter much if temporal issues are not similarly fixed to serve certain needs.

The paradigm's use of gamification—stating that "Workers accumulate 'points' and work settings are heavily gamified"—led also to careful responses. One respondent said, "Keeping 'score' just sounds like another word for command and control," pointing to concerns about surveillance and loss of autonomy; another noted, "This seems to reduce work to essentially a game, infantilising the world even more," emphasising the risk of trivialising work; and one observed, "Gamification and point systems are mentioned, but how this new system suggestion would be turned into a tool that all stakeholders benefit from is unclear." These responses to issues such as surveillance concerns, infantilization worries and implementation doubts are indicative of how participants discussed innovations shaping temporalities of work with healthy skepticism rather than enthusiastic adoption. Such comments highlight doubts about practical implementation and fairness. The gamification responses revealed concerns about a particular form of temporal control—one where work time becomes structured not by natural rhythms, organisational needs, or worker preferences, but by game-like mechanisms of points and achievements. This suggests a novel temporal regime where work time is chopped into discrete, measurable units of "scoring opportunities". In such future, more organic temporal patterns of skill development and meaningful work engagement would be disturbed.

In contrast to details such as the scoring of points through work, fundamental, even philosophical, questions about *what work* is emerged in participants' responses during Round 2.

Some directly asked about definitions: "What is meant by 'work'? Is it something that has a monetary compensation attached to it? What is the meaning of this word—?" Others emphasised the need for systemic understanding. One stated that "To be able to understand one's role in the big picture [concerning work] there is an obvious need for a deep understanding of systemic challenges." Many questioned the suggested timeline, with one participant saying "2035 is too soon, work-life won't be overhauled so comprehensively in eleven years. The credibility grows the further into the future we extend our horizons. If the horizon was 2100, then I'd say it was very credible." These fundamental questioning responses demonstrate that participants were not simply evaluating the paradigm but interrogating its basic assumptions about work, time, and social change. These striking conceptual and temporal extensions reflect awareness of technological changes and social changes with associated workspace transformations. As one participant commented "Balancing economic development while merging cyberspace and physical spaces needs high infrastructure investments from municipalities, cities as well as businesses."

The paradigm showed a vision of work that enables "service for the common good, building a more cohesive society and securing life for future generations." While this connects with what Milojević (2008) says about needing to work with diverse rhythms of life and work, participants questioned whether it could work in practice. What became particularly clear in their responses was the tension between immediate economic needs and longer-term societal goals. This tension was especially visible in discussions about environmental sustainability and social cohesion, where how fast change needs to happen often seemed to conflict with how fast humans and organisations can adapt. One participant emphasised the speed of change, noting, "It seems likely that emergencies and a sense of urgency are missing. There will be climate emergencies that won't be solved any time soon." As we saw, some suggested that while working environments change rapidly, people may not adapt as quickly, still holding onto their aspirations of building lifelong careers. One even questioned the feasibility of the paradigm in a subtle way: "I think this paradigm is well-built based on future of work aspects. I agree with 'Work is hybrid and multi-local, populating homes, offices, co-working spaces, forests, parks, space and the metaverse' but can't help thinking on how?" The discussion concerning the paradigm thus reveals how the future of work involves multiple, overlapping temporalities. These range from the urgent pace of environmental crisis to the slower rhythms of infrastructure development to the even more gradual transformation of human attitudes and social practices.

To sum up, Round 2's paradigm described a set of changes in the future of work. However, what participants' responses kept showing was practical challenges in making it happen and making it fair. The theoretical insights about temporality help explain why these tensions emerged. The reasons is that they show basic challenges in how societies structure and experience time in relation to work. These temporal tensions exist at three main levels: (1) Between rapid technological change and slower social adaptation. (2) Between urgent environmental needs and gradual infrastructure development. (3) Between individual career timeframes and broader societal transformation.

Needless to say, tackling these challenges cannot be done in this paper. However, what became clear was that temporal tensions are not just abstract concerns but rather shape the very possibility and fairness of future workspaces and their nature and distribution.

## 7 | Temporality of Future Workspaces

In the previous sections, we have seen how the Delphi study with its different phases reveals how temporal dimensions shape the future of workspaces. It shows how temporal considerations complement, and cannot be separated from, spatial considerations by adding to our understanding of the future of work complex patterns of time use, control, and experience. Through two rounds of expert dialogue, the Delphi process showed how temporal structures both enable and limit workplace innovation and pointed towards important tensions between flexibility and equity when such innovations are to be considered. Also, the evolution of the answers between the rounds is interesting in itself. While early responses focused mainly on spatial innovations—from nature-based workspaces to virtual environments—temporal patterns emerged as equally important in determining how workplaces function and how people can experience their working lives. This change shows growing recognition that *where* and *how* work happens cannot be separated from *when* it happens and in what pace and rhythm.

It is important to notice that this temporal focus—raised by participants themselves in their comments—did not lead participants to converge on unified solutions or singular visions of how time and temporality shape the future of different working arrangements across different sectors, groups, and contexts. Instead, the study revealed deep complexity in how different groups, sectors, and contexts require fundamentally different approaches to understanding how *time in work* is to look like in the future. Participants discussed in their commentaries competing temporal needs. Some pointed out the inertia of predictable schedules while others suggested more radical flexibility and its consequences. Rather than resolving these tensions, our methodology brought to the surface how temporal challenges are inherently contextual and complex. Notice, again, that we did not ask directly about temporalities as such—and still the comments often focused on the issue.

Round 1's provocations and paradoxes made particularly visible deep temporal assumptions that held about work. For example, the tension between “silent working periods & co-creation” showed how competing temporal demands affect workspace effectiveness. Similarly, the paradox of work becoming like leisure while leisure becomes like work pointed towards complex temporal boundary challenges that spatial solutions alone cannot fix. What participants emphasised repeatedly was how the constant drive for efficiency clashed with human needs for recovery and reflection. These temporal tensions became especially visible when discussing technology-enabled work arrangements, where increased spatial flexibility often came with new forms of temporal control.

One important insight from the study is how temporal flexibility often follows existing power structures. This is an area

where temporalities affect workplace effectiveness and fairness. What participants kept emphasising was that access to temporal autonomy remains unequal across sectors, roles, and geographical locations; different “social contracts” was even explicitly mentioned by one participant as a factor shaping how the future of work develops. While knowledge workers might get radical temporal flexibility, those in caregiving, manual labor, or service roles face stricter temporal limits.

Technological and digital development was one central area where such issues of control and power became evident. While technology enables unprecedented spatial flexibility, it also creates what anomalies where more autonomy in choosing work locations exists together with increased pressure to be always available. The participants developed increasingly careful views of temporal flexibility and emphasised how temporal structures determine whether technological and digital innovations, and their linkages to workspaces, actually serve human needs. This development led to critical examination of issues such as the “short sprints” paradigm, where experts questioned whether fragmented time structures could support deeper engagement and creativity.

In general, it was significant how the participants emphasised the need for varied temporal structures within single workplaces. Rather than one-size-fits-all solutions, future workspaces must support multiple temporalities—from focused deep work to rapid collaboration, from structured routines to flexible adaptation. This insight extends Nowotny (1994) analysis of fragmented time by suggesting that successful workspaces must actively manage rather than simply accept temporal complexity. While virtual and hybrid workspaces enable greater spatial flexibility, they simultaneously generate complex temporal challenges around availability, coordination, and recovery. This insight extends theoretical understanding of how technology mediates workspace temporalities.

Moreover, the study makes some theoretical contributions, and points towards several areas of further investigation concerning the possible futures of working life and workspaces.

When it comes to theoretical contributions, we may notice the following. Historically, it is interesting to note how the Delphi results confirm Thompson (1967) classical thesis that organisational structures shape temporal understanding in fundamental ways. This is seen for example when digital platforms create new temporal anomalies between spatial flexibility and temporal rigidity. The findings also deepen our grasp of Nowotny (1994) notion of fragmentation of time by showing how different sectors, roles and positions will be positioned within different temporal orders simultaneously. Moreover, some people experience what could be called ‘the future’ earlier, living with highly flexible, technology-driven temporalities, while others continue in more traditional time structures for longer. Moreover, through the discussion that emerged about unequal access to temporal flexibility across sectors, the results lend support to Zerubavel (1981) and Freeman (2022) arguments about power relations embedded in temporal structures. The findings also extend Lefebvre (1992/2004) rhythm analysis by pointing towards how natural rhythms and recovery periods remain crucial even in highly digitalised work environments.

The study suggests that biological and social temporalities cannot be fully separated in future work arrangements. Finally, and in general, the results indicate the need for theoretical notions such as Virmajoki and Laakkonen's (2024b) concept of time-needs, as the study makes visible how measurement, control, power and experience of time work together inseparably to shape how different groups engage with new work arrangements and new workspaces. Time and temporality have various aspects, and all of them were brought up at one point or another by the participants.

When it comes to further areas of investigation, our study indicates how temporal organisation of activities often determine whether spatial innovations work as intended or create new forms of exclusion and stress. This finding adds to existing spatial analyses by showing time as an active design element rather than neutral background. What expert insights also make visible is how temporal equity (i.e., the unequal distribution of temporal flexibility across different sectors, roles, and positions) needs more attention in workspace design. The finding that temporal flexibility often remains tied to specific roles suggests that creating truly inclusive workspaces needs dealing with both spatial and temporal access barriers. Analysing further how time is tied to equity and how spatial and temporal barriers can be broken in tandem is a task for researchers who wish to work towards better workspace futures.

Other areas that require further attention in research include how organisations can better support multiple temporalities while keeping necessary coordination, how temporal equity might be improved across different sectors and roles, and how workspace design might better connect with human temporal needs and natural rhythms. Moreover, it would be of utmost importance that future research study how different cultural contexts shape temporal expectations and experiences in workspaces. What the study's geographical context and limitations suggests, and is also mentioned by participants, is that findings might vary greatly across different cultural settings with different temporal norms and practices.

While keeping scholarly distance, we may still say a few words on more practical issues. The findings point towards important considerations for workspace design and organisational practice. What the study shows is that successful workspace innovation needs equal attention to temporal and spatial dimensions. Organisations implementing new spatial arrangements (in the wider sense including digital solutions as workspaces) should pay attention to matching these arrangements with temporal coordination. Moreover, the findings suggest that dealing with temporal equity might be as important as spatial access in creating inclusive workspaces. This might mean developing new approaches to scheduling, availability expectations, and performance measurement that better work with diverse temporal needs and limits.

What the analysis ultimately suggests is that time is a crucial yet often overlooked dimension in workspace futures. While spatial innovation gets immediate attention, temporal patterns deeply affect whether such innovations succeed or fail in practice. Creating sustainable and equitable future workspaces needs careful attention to how temporal structures either enable or

limit different ways of working, particularly as organisations deal with increasingly complex combinations of physical and virtual collaboration.

## 8 | Conclusion

This Delphi study examined expert perspectives on the future of workplaces through provocations and paradoxes. The main finding of the study is that successful workplace transformation requires equal attention to both spatial innovations (where work happens) and temporal dimensions (when and how work is structured). Without attention to changes in time and temporality are and their relationship to spatial and technological changes, futures of work that are organized equitably, cannot be fully understood.

This paper began from the study based on the premise that workplace transformations are changing how we work in basic ways. However, it was noted that discussions often focus on spatial innovations while missing temporal dimensions. As organisations try different hybrid arrangements, multilocal settings, and virtual environments, understanding temporal patterns becomes more and more important. It became clear that time is not just an operational detail but rather shapes workplace effectiveness and equity in fundamental ways. The question, then, was how temporal dimensions work together with spatial innovations to create either opportunities or barriers in future work environments. This study was particularly timely given how workplace change in the context of *the twin transition of digital and green*. By seeing time as an active element in workplace design rather than neutral background, we aimed at understanding better how future workspaces might serve human needs while supporting sustainability and inclusion.

The research used an innovative two-round Delphi study that combined traditional expert/participant consultation with provocative paradoxes and creative futures thinking. This methodological approach, based on transformative and critical foresight frameworks, made visible hidden assumptions and complex tensions about both spatial and temporal dimensions of future work. Round 1 used deliberate provocations to question usual thinking, while Round 2 developed these insights into a new paradigm of work. When interpreting the answers in this paper, we paid careful attention to how experts understood and worked with temporal patterns in relation to spatial arrangements. What the study's design did was encourage participants to go beyond simple solutions to work with basic questions about how time structures shape work experiences and outcomes. This approach showed how temporal considerations often determine if spatial innovations work or fail in practice, especially when it comes to supporting diverse work needs and ensuring sustainable patterns across different sectors and roles.

The key contribution of this study shows how temporal dimensions shape the effectiveness and equity of future workspaces in fundamental ways. The study made visible that while spatial flexibility gets immediate attention, temporal structures deeply affect whether such innovations achieve their goals or create new forms of exclusion and stress. What participants

insights pointed towards was how access to temporal flexibility often follows existing power structures which suggest that creating truly inclusive workspaces needs dealing with both spatial and temporal barriers. The findings also emphasised that workplaces need to support multiple temporalities - from focused deep work to rapid collaboration, from structured routines to flexible adaptation. This understanding opens new ways for workplace innovation that better connect with human temporal needs while supporting sustainability and equity.

Looking ahead, the research suggests that successful workplace transformation needs equal attention to both *where* and *when* work happens, and especially focus on how temporal patterns can either enable or limit different ways of working. As organisations keep dealing with increasingly complex combinations of physical and virtual collaboration, this connected understanding of spatial and temporal dimensions becomes a central issue for creating workspaces that truly help human needs while supporting broader societal goals.

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### Data Availability Statement

The authors have nothing to report.

### Endnotes

- <sup>1</sup>By “temporal” we refer to time-related issues and aspects of phenomena. See more discussion in Section 3.
- <sup>2</sup>That is, people working together but at different times.
- <sup>3</sup>In this paper, for the very reasons we discuss the issues of time and temporality that emerged through the Delphi study, by “temporal structure” we refer to how time is organized, measured, represented, controlled, and experienced in work contexts. This includes not only schedules, expectations of availability to work (and associated work rhythms), and coordination systems related to time and its use and experience, but also the underlying power relations that determine who sets temporal boundaries, how time gets valued and monitored, the cultural assumptions about “normal” working hours, the integration of natural and social rhythms, and the ways temporal patterns either enable or constrain different forms of work and worker autonomy.
- <sup>4</sup>For this novel foresight method, please see Heinonen et al. 2024 and Heinonen et al. 2025.
- <sup>5</sup>See also Virmajoki and Laakkonen 2024b on the issue of control and power related to temporal structures.
- <sup>6</sup>For example, Khallash & Kruse present a scenario where an employee is seen as a valuable asset and there is a strong emphasis on skill development. However, they imagine a situation where people feel existential angst and burnout because due to this, since employees in this situation have to choose between skill development during leisure time and the time spent with family and other meaningful activities (Khallash and Kruse 2012).
- <sup>7</sup>Findings from our literature review also highlight the importance of recognising the different values of future generations (Kuosa et al. 2022).

<sup>8</sup>This issue was also noted in a Future Clinique. One of the groups focused on the imbalance between teleworkers and those who make teleworking possible by mining the needed metals for computers and smartphones. The group imagined a preferred future where there is a social movement, which aims to make teleworking available for all (Heinonen et al. 2024).

<sup>9</sup>For example, Halal et al. point out that even though a lot of manual labour has been automatized there are occupations that are so complex, like barber, cooks or gardeners, which cannot be easily automated (Halal et al. 2016).

<sup>10</sup>The self-actualisation scenario of the Millennium Project (Glenn et al. 2020) can be characterised as extreme idealisation.

<sup>11</sup>This notion is supported by earlier studies. Schulte et al. argue based on literature review that one major health hazard related to future of work are psychosocial challenges related to precarious labour market and the need to work as efficiently as machines and algorithms (Schulte et al. 2020). Technological developments change the work environment but also the expectations of the employers.

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