

Tracing Transformations of the Modern Workplace and Imagining its Future

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Tracing Transformations of the Modern Workplace and Imagining its Future

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Figure 1: Co-designed exhibition wall mapping the transformations of office work at BigCorp

Abstract

This paper investigates the transformations of the modern workplace, exploring how changes over time have shaped office work and its future trajectories. Using a mixed-methods approach, it combines interviews, observations, and co-design activities at the headquarters of a global organization. Employees were invited to reflect on their past and present workplace experiences and envision potential futures. Our study identifies significant transformations across three dimensions: technology, office space, and work practices. These changes demonstrate an interconnected progression, with each era building on prior knowledge. To encapsulate this coherence, we introduce the “modern workplace compass”—a conceptual tool helping designers and practitioners understand the current state of office work and explore its future potential. Notably, some challenges discussed two decades ago remain unresolved today. The collaboratively generated visions for future trajectories address these enduring issues through innovative design ideas, culminating in two concrete proposals for the future of office work.

CCS Concepts

• **Human-centered computing** → **Empirical studies in interaction design**; *Empirical studies in collaborative and social computing*; **Participatory design**.



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Keywords

Modern workplace; Tracing transformations; Office Work; Future visions; Co-Design activity; Modern Workplace Compass

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1 Introduction

The workplace has evolved and transformed over the past centuries, to accommodate fundamental changes to our societies, economies, and labor market, as well as changes in the technologies and infrastructures supporting them. Globalization and open labor markets have paved the way for neoliberal labor market ideals, characterized by the rise of knowledge work as an economic engine and a shift from long-term careers to jobs and project-based work [25]. These developments have led to new forms of work and ways of working, a trend further accelerated by the Covid-19 pandemic, which introduced remote and hybrid work practices across industries and levels of employment [38, 49].

Organizations have responded in various ways to these changing work patterns and the growing demand for flexible work arrangements, balancing these shifts against the need to optimize organizational performance and space efficiency. Attention has been drawn to various initiatives introduced over the past decades under different labels such as open-plan office, free-seating, unassigned seating [31, 71], all designed to accommodate more people in the available space. The rise of flexible and “mobile” working policies has cemented the normalization of working from home: “As we head into the mid-2020s [...] almost no one now believes that we will

ever go back to the five-day-a-week office life of even a few years ago” [42, p. 9–10]. Although these policies provide employees with more flexibility in when and where to work, many companies today are struggling to attract employees back to the office [38]. In a way, this development contrasts with the labor market of the last quarter century, characterized by increased work intensity, performance measures, and reduced worker autonomy [12].

Acknowledging the rapid transformations of the workplace over the past four decades [54], this study examines the evolution of *office work* and its impact on everyday work practices. Taking into account the risks of presentism in HCI and CSCW [60], this study aims to map historical and contemporary transformations while critically exploring potential trajectories for the future of office work. To achieve this, we investigate the following question: *How have technological advancements, changes in office spaces, and evolving work practices transformed the experience of office work over time, and what potential trajectories might shape the modern workplace of the future?*

To answer this research question, we employed a mixed method approach, conducting interviews, observations, and co-design activities at the headquarter of BigCorp, a global organization in Denmark, inviting employees to share reflections and experiences from the past and present workplace and their visions for its future. Over four days, we co-designed a 10-meter-long exhibition wall (Fig. 1) with more than 100 employees, collected 71 reflection cards, and conducted 44 mini-interviews. At the end of the week, we also held two co-creation workshops with five employees, focusing primarily on future visions.

Examining the transformations of the modern workplace, *our study identifies and highlights key changes across three themes—technology, office space, and work practice—encapsulated in the “modern workplace compass”* (Fig. 4); a conceptual tool we developed to aid designers and practitioners in understanding the current state of the modern workplace and navigating potential trajectories for its future. While the past workplace was mainly static and predictable, revolving around the individual with personal desks, single-user, and wired technologies that tied the employees to the office, the contemporary workplace appears as the opposite. Modern technologies like cloud platforms, advanced video-conferencing solutions, and the latest Generative Artificial Intelligent (GenAI) tools enabled enhanced knowledge sharing, task completion, and hybrid or remote collaboration. Nevertheless, *our study indicates that several challenges identified 20 years ago remain relevant in the contemporary workplace*. Current technologies still struggle to fully support features such as gestural activities, bodily rearrangements, peripheral awareness, and informal sociability [29, 36], and the need for personalized space and localizing coworkers [3, 4, 39, 65] continue to be significant. Moreover, issues such as noise and a lack of spaces to dwell [6], remain pressing challenges in today’s workplaces. The contribution of this study is twofold. First, it traces the transformation of the modern workplace and introduces the “modern workplace compass”, a conceptual tool that situates current changes within their broader historical and contextual frameworks, emphasizing the interconnectedness of technology, office space, and work practices. Second, leveraging the compass, the paper presents innovative design visions and concrete proposals for the

future workplace. These visions not only address persistent challenges and unmet needs in contemporary office experiences, but also highlight the qualities of the modern workplace that are highly valued, culminating in two concrete design proposals for the future of office work. The remainder of this paper is structured as follows: We begin by laying out the conceptual framework upon which this paper is based, including relevant studies on workspace and office work advancements. We then present our methods, empirical case, and the data gathered. This leads to the presentation of our findings along two analytical dimensions—temporal and thematic—before discussing their implications and situating the transformations of the modern workplace within a broader context.

2 Conceptual framework

To trace and examine the transformations in the modern workspace over recent decades, we draw primarily from studies in Computer Supported Cooperative Work (CSCW) and Human-Computer Interaction (HCI). More specifically, we delve into studies about the role and evolution of the *space* where work occurs, as well as *office work* itself, particularly concerning technologies supporting cooperation. Here, we aim to reflect the development of such research over time and its interconnected objectives across three dimensions: office spaces, technologies, and work practices.

2.1 Space: The evolution and design of workspaces

The so-called modern workplace has been studied since the 1970s, with focus on the architecture of the building, the office space, the interior design, and the roles that collaborative artifacts play in organizations (e.g., [6, 16, 22, 23, 70]). Specifically, the interest in designing office spaces can be traced back to 1976 with the classic book *Planning Office Space* [21], which traces the history and invention of the office. The book points out that the word “office” initially “*represent[ed] tasks, duties, places of authority, greater than the men who perform that office, and which may or may not require some sort of physical framework for their function*” [21, p.16]. It is only later that “office” has become associated with a physical building. The authors distinguished between long-term needs addressed by the office building (“shell”), and short-term needs covered by the interior (“scenery”), and speculated that in the future, short-term needs will become more important than long-term building shells [21, p. 213]. Building on this foundation, Duffy and Worthington argued for greater attention to designing office spaces that accommodate changing work patterns [22–24, 70].

In the new millennium, Myerson and Ross [48] identified key 21st-century office trends, emphasizing the shift toward human-centered workspaces that align with changing work patterns. They highlighted four key transitions: from “*neutral*” to “*narrative*”, transforming offices into branding experience reflecting company values and fostering belonging; from “*narrow*” to “*nodal*”, viewing offices as central hubs for knowledge exchange and collaboration; from “*negative*” to “*neighbourly*”, promoting offices as social landscapes for community and belonging; and from “*nesting*” to “*nomadic*”, embracing flexibility and mobility over fixed workstations. Another influential typology uses autonomy and interaction axes to categorize office spaces into four types: “*Hives*” for tasks requiring

low interaction and autonomy; “*Dens*” support group activities requiring high interaction but low autonomy; “*Clubs*” facilitate knowledge work requiring high interaction and autonomy; and “*Cells*” for concentrated work requiring high autonomy but low interaction [70].

This typology became foundational for the development of *Activity-Based Working (ABW)*, which recognizes the dynamic and diverse nature of modern work. ABW environments typically entail the creation of distinct spaces to support various work modes and interactions (e.g., collaborative activities, focused work, learning and socializing). Furthermore, it often involves hot-seating policies to maximize space efficiency [71]. However, such initiatives are not uncontroversial, as they can be viewed as cost reduction tools introduced by management rather than worker-centered measures. While ABW offers advantages like accommodating flexible work arrangements, it also introduces challenges, such as the need to constantly search for available workstations, establish territories through personalization, and adjust workstations and ergonomic preferences, etc. [43, 66].

Susanne Bødker—who extensively examined the open office and the modern “new office” [4, 6, 16, 17]—highlights how these spaces render work and activities invisible, with empty desks, walls, and impersonal aesthetics reflecting architects’ priorities over employees’ needs [6]. Together with Christiansen, she developed the concept of “dwelling”, emphasizing that modern office spaces “*lack places to dwell and return to, places to meet coincidentally, shared artifacts and possibilities of leaving traces of current and past activities*” [6, p. 199]. They found that despite their original intention, these open office spaces do not support learning and knowledge sharing [4], and that the absence of shared artifacts “*make legitimate peripheral participation difficult*” [6, p. 207]. Thus, they underscore the importance of supporting “*participation while away*”, highlighting the difficulties of *transitioning between locations (from a screen to a meeting room) and cooperative situations (from casual to focused conversation)* due to physical separation [6].

2.2 Office Work: Collaboration and the role of technology

As noted above, open office structures often prioritize idealized work processes and generic solutions over actual practices, which contrasts with early work in HCI and CSCW. Since their inception, these fields have focused on the interplay between office environments, their technologies—including infrastructures surrounding them— [61] and situated work practice, an approach rooted in early foundational studies [41, 59, 64]. These studies examined how documents mediate information sharing [37], how shared artifacts contribute to cooperation, coordination, and work delegation [6], and how distributed information spaces are formed [2, 4, 9]. The emergence of technologies such as electronic mail [39], alongside other advancements facilitating distributed work [28], has been a key focus of these fields. Here, special attention has been paid to the spatial ordering of coordinative artifacts [10, 58] and their role in supporting cooperation and work delegation [57]. While many studies extend beyond the confines of the office, they underscore the enduring importance of the physical workspace and its technological tools.

From the late 1980s onwards, Xerox PARC and EuroPARC pioneered research on remote and technology-supported remote work and meetings, laying the groundwork for modern workplace technologies. The opening of the EuroPARC lab in Cambridge (UK) resulted in both further work on distance collaboration and work on local use of video in office buildings (e.g., [30]). Shared meeting technologies started with Colab [62] and led to a series of designs including Liveboard [26] and Tivoli [52]. The settings of these experiments overlapped with remote technologies but the main emphasis was on collocated meetings and transitions between them.

The development of media spaces (e.g., EuroPARC) or virtual workspaces [1, 34, 68] was originally driven by the recognition of informal sociability—the “informal turn”—and its importance to collaborative work. While it was acknowledged that *the social is the fabric of collaboration*, it has been argued that media spaces and video-conferencing technologies fall short when it comes to supporting informal social interactions [36]. These technologies support focused collaborative work, with a standard head-and-shoulders view and a conventional face-to-face image, but they overlook the challenges participants encountered when discussing physical objects, such as documents, and find themselves losing sight of each other (*ibid.*, p. 87). Similarly, these technologies are limited in their ability to provide monitoring of gestural activities, bodily rearrangements, and peripheral awareness. Consequently, Heath et al. argue that media space research has not yet fully embraced technologies that achieve a sense of “beyond being there” [35], providing people with “a poor and inadequate approximation of co-presence in which it is difficult to accomplish even the most simple collaboration tasks” (*ibid.* p. 88). They argue that cooperative work seamlessly blends individual and collaborative tasks, requiring people to engage in interconnected activities, relying on peripheral awareness to implicitly coordinate actions with others in their local environment. Objects and artifacts facilitate this coordination, making participants’ activities visible. Collaboration often occurs indirectly, with individuals aligning actions around a common task, rather than through direct face-to-face interaction, enabling continuous adjustment in their engagement with each other’s work.

The rise of mobile technologies has reshaped discussions around space and place, emphasizing not only changes in virtual space but also the significance of mobility within physical spaces [34]. Subsequent studies have examined how these technologies impact interactions and cooperation, leading to new work practices like mobility work and emphasizing the physical localization of co-workers and organizational roles [3, 4, 39, 65]. One prominent topic in the literature focuses on configuring spaces that facilitate spatial and temporal relations, for example, helping people navigate large, open spaces (cf. Suchman [63]). Another topic involves designing spaces and technologies that enhance awareness, crucial for effective coordination [17, 19, 35]. For instance, Bødker and Christiansen [17] design prototypes for flexible work and shared offices that implicitly support awareness through design elements that promote overhearing and overseeing others’ activities.

Since then, digital labor platforms and the new economy have given rise to new types of jobs and workers [25], including digital

nomads, and on-the-go workspaces [32, 50, 55]. These developments have increased employees' sense of autonomy [45] while intensifying the need for awareness, effective coordination, and collaboration in distributed settings [8]. Furthermore, hybrid and remote work arrangements have gained prominence in post-pandemic times, promoting research into designing technologies to support these types of work. These include studies exploring the inclusion of remote participants via shared spatiality [33, 51, 53], advancements of the AR/VR-supported distributed collaboration akin to "metaverse" [46, 69], as well as various technological solutions that try to minimize asymmetries between physical and digital workspaces in terms of physical cues, touch, and vision (i.e., "what-you-see-is-what-I-see" (WYSIWIS)) [40, 47, 72]. However, Bjørn et al. recently argued that such asymmetries are inherent to hybrid work and cannot be entirely resolved [7]. Consequently, people compensate for these asymmetries by mimicking the physical workspace in the digital space [14] or sticking to the fully digital workspace, making the physical office obsolete [20]. However, recent research advocates for experience-driven design approaches that leverage the unique qualities and affordances of hybrid settings, encouraging the design of innovative interactions that extend beyond current efforts [13].

3 Empirical case and methods

Our empirical case involves BigCorp, a global distributed dairy production company with more than 20,000 employees worldwide. BigCorp's history dates back to the late 1800s, and its current form has been in place for 25 years. The data were collected over the course of one work week in November 2023 at BigCorp's corporate headquarters in Denmark, hosting up to 1000 employees, primarily engaged in knowledge work enabling BigCorp's production efforts. The building was originally constructed in 2010, featuring four floors and an expansive atrium, and was designed to accommodate relocated employees from various city locations. In 2019, the headquarters underwent a redesign to support flexible and remote work as well as Activity-Based Work (ABW), including shared offices and flexible seating. In line with that, seven distinct "work zones" were introduced, catering to different work patterns. These zones include collaboration and brainstorming areas, meeting spaces, and specialized rooms with dedicated furniture (e.g., phone booths and flow boxes). Following the Covid-19 pandemic, BigCorp made a corporate decision that all meetings must be remotely accessible, typically hosted via Microsoft Teams in equipped meeting rooms. Hence, this study focuses on office work in large (global) companies that offer flexible ways of working and open office spaces at the company site.

This empirical study uses a mixed-method approach, combining interviews and observations with a four-day co-design activity held at BigCorp's headquarters. Hence, it is not a classic ethnographic workplace study with a specifically recruited set of participants but an exploratory driven participatory inquiry into the lived experience of office workers and the workplace transformations they have been witnessing throughout their working lives. To facilitate broad participation, we adopted an open, exhibition-like setup in the atrium—the central and most frequently passed area of the office building (Fig. 2). In line with a democratic and bottom-up



Figure 2: Employee's of BigCorp engaged in conversations while interacting with co-creative exhibition wall

design approach [5], this setup aimed to reach a diverse group of employees and engage them as active co-creators and experts in their own experiences [67] when mapping their past and present experiences and exploring possible futures. The open format allowed employees to participate according to their own schedules, maximizing engagement over the four-day period—especially important given the high number of employees working remotely a few days per week. Furthermore, the physical presence of the setup in the atrium, visible from all corners of the office, helped to bring attention to our co-design activity. In addition, we promoted the activity through printed flyers and a digital invitation sent via the weekly company newsletter. To support the creation of meaningful insights and future ideas that are anchored in past and present practice, we provided employees with appropriate tools for expression [56] that would allow them to contribute within rather spontaneous and relatively short time frames. In the following sections, we describe the study design and the materials used to engage BigCorp employees in exploring workplace transformations and future scenarios.

The research intervention started with the set up of a ten-meter-long exhibition wall for BigCorp's employees to interact with throughout the four-day co-creation exercise (Fig. 1, 2). As mentioned above, the wall was placed in the atrium and featured a pre-defined timeline with three sections: the past, the present, and the future. Starting with the 1980's, every 5th year was marked on the wall in to signify the chronological development and provide structure. For the future section, ten-year steps were used up to the year 2100. However, the timeline did not continue linearly but opened up like a cone, similar to Candy's cone of possibility spaces [18], signifying multiple alternative futures regarding the workplace, social interactions, technologies, and characteristics of work in general.

The first day of the co-creation exercise focused on experiences from the past. Artifacts such as cable phones, stamps, the first Macintosh computer, etc., and pictures from past workplaces were made available for employees to interact and think with. Additionally, employees were provided with two different reflection cards addressing technologies, practices, and experiences that characterized their workplace when they started their professional career. These cards were designed to be filled out and placed on the exhibition



Figure 3: Impressions from the three day co-creation exercise

wall according to the specific year. Figure 3 provides impressions of the co-creation material throughout the three days.

The second day was about reflecting on current tools, practices, and the workplace itself—covering aspects such as the building, type of tasks, and social interactions with colleagues. Like the day before, employees could engage with physical artifacts from the contemporary workplace and were provided with reflection cards (Fig. 3). Each reflection card that was filled out and hung on the wall not only contributed to the co-creation activity but also served as a tool to inspire colleagues to expand on each other’s reflections.

The third day focused on the future, encouraging employees to share their ideas, hopes, and concerns about the workplace ahead. Instead of aiming for concrete design solutions or implementation plans, we sought to expand the design space by prompting participants to imagine freely—unconstrained by real-world limitations like privacy or security. To fuel creativity and dialogue, we provided different types of design cards with prompts that invited them to challenge and reimagine existing practices and tools. For example, one future reflection card asked, “How might meeting rooms look in a smart/playful/effective/wild future?”—prompting employees to select a theme (e.g., playful) and reimagine a familiar concept like meeting rooms. Additionally, visual inspiration cards translated technological trends into accessible imagery for participants to engage with and draw ideas from (Fig. 3). Hence, the material artifacts were used to guide the participants and help them anchor their visions in actual work practice rather than resorting to context-free ideas inspired by pop culture, movies, or news (see also [15]). All contributions were then placed on the exhibition wall, organized by the time frame in which employees envisioned their ideas, hopes, or fears unfolding—not in terms of specific dates, but based on whether they imagined these changes taking place in the near or more distant future.

Throughout the three days of co-creation, two of the authors conducted short interviews with some of the employees before or after their interaction with the exhibition wall. The interviews followed the questions written on the reflection cards, and the goal was to unfold the employees’ written reflections and gain deeper insights into related thoughts that were not written down.

Furthermore, on *the fourth day*, two focus groups were conducted to discuss the future of office work at BigCorp, based on initial tendencies emerging from the interactive exhibition wall. The goal here was to ground the discussion about future visions and ideas for BigCorp’s workplace in actual findings and developments captured through the co-created exhibition wall.

The co-created exhibition wall attracted over 100 employees from across all managerial levels, professional backgrounds, and job roles at BigCorp—all of whom reported actively using flexible work arrangements, alternating between being in the office and working remotely one to several days per week. By the end of the week, the wall contained 71 reflection cards, distributed across the past, present, and future workspace sections. Furthermore, 44 short interviews totaling eight hours of audio material were conducted with 52 employees, along with two focus groups totaling three hours audio material, involving five employees from different backgrounds. The co-creators and informants of this study were a highly diverse group of employees, ranging from student workers to vice presidents; fairly new hires to longstanding employees with more than 20 years of experience at the company, and people from a wide variety of departments, including facility management, finance, IT development, production, and more. All participating employees have been anonymized and are represented by fictitious names. In order to comprehend the extensive qualitative data, we applied thematic analysis [11] and identified 40 initial codes, which we refined into nine themes related to three overarching categories of change: *technology* (1. technology complexions, 2. software and hardware, 3. infrastructure), *work practice* (4. social interactions, 5. work arrangements, 6. task completion) and *workspace* (7. location, 8. office design, 9. workstations) (Fig. 4).

4 Findings

Our empirical data uncovers distinct “waves” of workplace transformations, illustrating changes in technologies, work practices, and workspace design at BigCorp. Accordingly, our analysis considers two dimensions: temporal—past, present, and anticipated future—and thematic. The following sections explore these analytical dimensions, illustrating how office work at BigCorp has evolved over time, shaping the employees’ experiences of being at work. Each section concludes with reflections on possible futures, exploring hopes, fears, expectations, and anticipations about BigCorp’s future workplace. While some of these envisioned futures may initially appear obvious or shaped by emerging technologies like AR and VR, we aim to uncover the underlying desires and needs driving these ideas—and consider what they reveal about the evolving nature of (flexible) work environments.

4.1 Transformations of technologies

Spanning reminiscences from the 1980s onward, we trace the chronological development of technologies at BigCorp. While these

changes may seem unsurprising, their impact on workplace experience is critical. Hence, we consider it necessary to convey the lived experience of BigCorp's employees and how they perceived the development of their specific workplace. The following paragraphs analyze the temporal changes regarding technology complexions, the use of software and hardware, and the infrastructures needed for computer-supported work practices.

To understand how technology has shaped work at BigCorp, we begin by revisiting the past—looking at how earlier technologies laid the groundwork for today's digital workplace. Initially, collaboration at BigCorp involved a significant amount of paperwork and manual labor, where one's "handwriting was [one's] fingerprint" (Lucas). Simpler technologies, such as telephones, punch cards, and (non-electric) typewriters, were used. In the 1990s, some of these were replaced by personal computers, email communication, and initial software for calculations and writing. Files could only be accessed locally at the BigCorp office, and data were stored on physical artifacts: "Cassette tapes were used to store data as they could store more than a floppy disk" (Jan), which were later replaced by CD-ROMs and USB sticks (Michael). At this stage, programming skills were still required to operate computers. However, the introduction of Windows95, with its first attempts of user-centered design, brought computers closer to employees: "Windows95 was a huge leap from DOS and Norton [...] it was suddenly right at our fingertips without any need for coding" (Lars). Around the millennium, BigCorp—like many (non IT-expert) workplaces—gained internet connectivity, opening up new opportunities for computer-supported cooperation but also challenging existing work practices. The initial internet connection operated through the telephone network, which restricted telephone use while browsing the internet (Anne) and hampered simultaneous task completion. Despite these challenges, improving infrastructures and internet connectivity enabled new opportunities for individual and cooperative work. Some employees recall how file sharing via email and later real-time communication with other company divisions or collaborators abroad through early video-conferencing technologies became possible, shortening communication channels and reducing effort. However, as one informant recalls, videoconferencing was mainly reserved for large and important meetings, as it required "dedicated rooms and complicated setups with advanced systems" (Oliver), limiting its use to specific contexts and individuals. During this period, the collaborative workspace became not only networked but also increasingly mobile, transitioning from the wired, single-user, and analogue technologies of the past to the workplace and technologies we recognize today. Many devices, including telephones and computers, began running on batteries, eliminating the need for cables. The introduction and subsequent improvements of mobile phones, smartphones, and laptops further untied BigCorp's employees from their dedicated workstations (Marius, Susan). Interestingly, although technologies became more mobile and networked, theoretically offering flexibility in workplace location, our informants recall that the general expectations remained that work was to be done at the company-owned offices. Participants noted that remote work only became widely accepted during the Covid-19 pandemic (Frank), emphasizing that workplace transformations are not solely driven by technological advancements and that their temporal boundaries can often be indistinct.

While early technologies required significant adaptation and often restricted where and how work could be done, more recent developments have dramatically shifted the digital landscape at BigCorp. Moving from the past into the present, we observe how today's workplace is defined by efficiency, connectivity, and new forms of digital cooperation. Today BigCorp is largely considered a digital workplace, characterized by fast internet connection (Max), cloud computing, and increased availability of data (Jonathan), where "everything is stored in the cloud" (Marcus). Collaborative files, including excel sheets, are simultaneously accessible to multiple people (Marcus), supporting collaboration across distance for BigCorp employees. Furthermore, all-encompassing systems like Microsoft Teams have been implemented as central tools, shifting the main communication and collaboration channels to the digital realm. These systems integrate several functionalities (e.g., chat conversations, calls and video conferencing), thereby reducing reliance on traditional tools such as telephones, mobile phones, or letters. Many employees further highlight how everyday tasks have been optimized by recent technological advancements. For instance, a company-specific version of ChatGPT or Microsoft's Co-pilot plugin supports everyday tasks, such as automatically generating overviews of the content and action points of online meetings (Frank). Additionally, Power Automate, a program for building robotic automation within an ERP system, streamlines smaller technical tasks (Frank). In other words, BigCorp's contemporary technological lineup prioritizes efficiency in everyday task completion and leverages digital and networked resources, "almost mak[ing] it possible to run a whole company from home these days" (Andreas).

However, these technological advances are also criticized for increasing focus on productivity measurements at the expense of social interactions: "They [management] want to give us more time to work [...] so therefore new technology is introduced; to give us more time to be productive, but also less time to socially interact" (Lucas). Furthermore, the networked and digital workplace is not accessible to all employees. Some employees still rely on older machines that are too costly to replace, while others collaborate with less-digitized countries like China or Germany (Christine). Overall, the contemporary technological developments at BigCorp have streamlined everyday tasks, prioritizing efficiency as well as distributed collaboration. Consequently, most individual and collaborative tasks today are deeply dependent on digital technologies and systems. On the other hand, this digital dependency is key to enabling a high degree of flexibility regarding when, where, and how work is conducted.

With these current technologies now embedded in everyday practice, it is interesting to analyze employees' ideas about how technology at BigCorp might evolve in the future. BigCorp's employees imagine different kinds of hardware and infrastructures supporting work-related collaboration in the future, both between people and between people and technologies. These include ambient interactions, holograms, and 3D visualization to aid remote and collocated colleagues: "I think it could be cool to be able to see each other in 3D although you are working from home [...] maybe we would get the feeling of being together although we are not" (Anna). Wearable technologies like glasses or headbands are envisioned to replace physical screens, offering "virtual computers

with screens as big as you want” (Jonathan). Special gloves could enable interaction with a virtual keyboard (Jonathan). “Everything we wear could be smart” (Max), facilitating collaboration in virtual and augmented realities: “Imagine that distance doesn’t matter as you would be able to walk the same virtual space” (Jonathan). Alternatives to wearables could include Hololens or VR-booths for virtual collaboration (Ina). Furthermore, the fusion of technologies is imagined to create multi-service devices, like a phone-projector hybrid for mobile presentations (Simon).

Furthermore, employees envision AI-powered software optimizing workflows and automating tasks. For example, they imagine an AI calendar managing time (George) and a file finder that retrieves work history: “You have done this task 5 times before and this is what you did” (Lisa). Others foresee software providing task overviews with “a trace back function across different software” (Lena) and visualizing networked documents (Marta). They anticipate software tracking co-worker locations, making it easier to map out who is in the office and who isn’t: “Small filters would be nice showing who is here from this team or the other team and where they are” (Lisa). Also, software is expected to guide against biases: “I would like to have some software that only considers objective information about potential new employees and guides me away from possible biases” (Lasse). Similarly, software could highlight counter-sustainable behavior: “I imagine a software that automatically shows ‘dark data’ [old files] and proposes deletion recommendations to make the cost of this data—financial and CO2 costs—transparent” (Sasha). Despite the many positive visions, some employees express concerns about future technologies: “My initial feeling when thinking about appearing as a virtual person at a [company site] talking to our customers is that I don’t want to be that person. It makes me feel uneasy” (Jonathan). Others worry about power dynamics, such as “who will take over” (Max) as well as the loss of autonomy: “I want to be the master of the technology, not the servant” (Simon). Misuse is another concern, with fears that people might “tweak the technology for their advantage” (Simon). In general, many of the envisioned technological futures are related to efficiency and how “smart” technologies can be designed to lighten employee workloads, while others focus on re-imagining social and practical challenges in the workplace. There is a strong belief in the transformative potential of technology, both for improvement and harm.

4.2 Transformations of work practice

Moving beyond technologies, we now turn to how *work practices* at BigCorp have changed over time, particularly regarding social interactions among colleagues, work arrangements, and the organization of everyday tasks. These shifts reveal how work is not only shaped by tools but also by evolving cultural norms and expectations around how, where, and with whom work happens.

Looking back, employees describe a time when work at BigCorp was defined by structure and routine, with fixed schedules (e.g., 8:00–16:00) and designated office spaces where colleagues typically worked in close proximity. Rather than being bound by managerial decisions, it was the technologies of that era—such as cable telephones, fax machines, typewriters, and later, personal computers—that bound the employees to their workplaces. Work

could only occur where these tools were physically present, as they were directly wired to specific offices or production sites. Furthermore, many of these tools were prohibitively expensive, making them unaffordable for most personal households. However, being bound to the workspace had its drawbacks, affecting work-life balance, especially for women (Sandra). Nevertheless, many participants highlighted the benefits of close proximity to colleagues when tied to the office, noting that “the social interactions were the source of everyday energy” (Lucas), with frequent and spontaneous social interactions “from chair to chair” (Thomas). This proximity facilitated well-defined breaks and effective collaboration, as “everyone was reachable at the office” (Anne). Social interactions often unfolded spontaneously at employees’ desks. Lena recalls a time when they “[...]were allowed to smoke at [their] desks, everyone was smoking collectively at that time” creating a—back then—common culture around the act of smoking. She also recalls how every morning and afternoon a person would come by everyone’s desk with a trolley filled with mail deliveries, wishing everyone a good workday and handing out coffee. Thus, daily rituals, social interactions and communication methods were anchored to people’s desks. Brown, reusable envelopes carrying various documents were sent back and forth within the company multiple times a day, creating an in-house physical mail system that was delivered to the recipient’s desk. Besides physical mail, telephone communication was heavily used among colleagues. Each employee had access to an internal telephone directory and a personal cable phone at their desk, “but people would know their ‘hot-list’ of digits [people] by heart” (Lena). In general, the data highlight that the highly structured nature of office work in the past was experienced as rigid, requiring employees to be in a certain place at a certain time with little room for personal or private needs. However, these fixed structures also fostered spontaneous interactions and small but meaningful social exchanges throughout the workday. While these structured, co-located ways of working defined an earlier era, the rise of digital technologies has since reshaped how work unfolds at BigCorp—introducing new forms of flexibility, but also new challenges.

With the rise of digital technologies, today’s work practices at BigCorp are characterized by hybrid and remote work settings, offering flexibility in planning and choosing work arrangements. This flexibility brings benefits such as cost and time savings on commuting (Mary), reduced travel and CO2 emissions (Ina), and better work-life balance for parents (Katrine). However, it also introduces unpredictability in colleagues’ availability: “Sometimes you arrive at the office and none of your colleagues is there” (Lucas), and challenges in remote collaboration. This has led to new work planning requirements, such as mandatory Teams-links for meetings (Marius), more (digital) meetings (Susan), and varied strategies for hybrid collaboration. Likewise, social interactions at BigCorp seem to have become more planned, either as “walk-and-talks,” digital coffee meetings (Lena), or coordinated office days (Lucas). This shift has affected relationships: “Before working in this hybrid and globalized manner we had a greater team spirit. When sitting together, [...] we got to know each other much better. It is obvious that it isn’t as easy to become friends with your colleagues today” (Alina). Others report that the lack of subtle communication like small unplanned talks also impacts their ability to build new relations: “The

barrier for reaching out to your colleagues raises if you first need to grab your headset and call them via Teams” (Lena). Even in the office, “we have lost our ‘watercooler talks’ because we are constantly sitting with our headset, in our “cheese bell” [collaborating with colleagues that work remotely]” (Lena). However, BigCorp’s employees also describe how they are adapting their work practices to hybrid and remote work by, for example, using functionalities like raising hands in Teams (Marius) and equipping their homes to mimic the company office (Lucas). Overall, the increasingly digitized, distributed and flexible work practices in the contemporary workplace seem to benefit individual employees, especially on a personal and private level, while challenging relation building and spontaneous cooperation with colleagues.

Moving on to future anticipations about how work practices at BigCorp might evolve, several employees discuss the way in which office work might take place in the future, driven by considerations of sustainability and efficiency. While some fear fully remote work (Ella) and advocate for a dedicated building (Lena), others envision a shared-building model, rented by the organization for a few weeks at a time, enabling employees to meet occasionally, before returning home for concentrated work (Simon), extending the way distributed work is currently done. While these ideas represent extreme directions, flexible work arrangements are expected to remain the preferred way of working. However, regardless of the arrangement, BigCorp’s employees emphasize the increased need for surroundings that support work practices. “[...]because otherwise people would figure that they are actually more effective at home” (Jens). In other words, the future workplace is imagined to enable unplanned and meaningful social interactions, as well as provide a place to work and build connections. In general, the compatibility of work and private life is being imagined to continue to blur, for example, by “working out, while working” (George), envisioning a room with treadmills where colleagues physically or virtually meet for walking/running through a digital forest together (enabled by AR) while having a work-related meeting, which would be recorded and summarized automatically afterward (George, Lisa). Others go a step further, suggesting a conceptual shift from work-life balance to life-work balance (Simon), highlighting the hope for an even stronger focus on individual needs at the workplace. Analyzing these future ideas, the anticipations are twofold: On the one hand, there is a strong focus on flexibility, reflecting the status quo of the contemporary workplace and further adapting to personal needs. On the other hand, BigCorps employees seem to long for stronger social relations and common experiences with their colleagues - enabled by new technology.

4.3 Transformations of workspace

As the previous two sections show, our three analytical themes—technologies, work practices, and space—are closely related and intertwined. This final section zooms in on the *workspace* at BigCorp and how it developed over time regarding work location, office design, and workstations.

To understand how today’s office environment has taken shape—and where it might be headed—it’s helpful to first revisit the earlier workspace arrangements that grounded employees both physically and socially in a more static, yet familiar, setting. As with

past work practices, *workspace* design was similarly influenced by the wired technologies of that time. Workspaces were characterized by personal offices and small open-plan offices, organized by departments, where everyone had their own desk, tools, and place for personal belongings that could be left behind at the end of the workday (Laura). Although this design provided personal spaces and a sense of individual ownership, it prioritized functionality over aesthetics. One employee, who has worked at BigCorp for more than 20 years, recalled that there were “no nice and cozy places to sit, just working rooms” (Laura), leading many employees to decorate their desks with personal items such as family pictures. On the other hand, BigCorp’s employees noted that fixed workstations facilitated locating and interacting with colleagues. Overall, the workspace design of the past was highly personalized and driven primarily by practical considerations.

Transitioning to today’s workspace at BigCorp, remote and hybrid work practices have heavily impacted workspace utilization and design, reducing office capacity to 0.7 seats per employee (Anna). BigCorp’s office was redesigned pre-pandemic with an open-plan office structure, flexible seating, and activity-based working, including dedicated team areas for individual and group work, cozy areas, as well as phone booths for privacy and silence (Doris). Although some informants acknowledge the economic logic of flexible seating, as many people choose to work from home, many others criticize it, as they “need to come in at 7 am to ensure they have a place to sit [in their dedicated team area]” (Ella). Other drawbacks of the open-plan and flexible office space are a high level of noise and the need to bring personal belongings, including their own mouse and adjusting chairs, tables, and screens on a daily basis (Jane). Additionally, employees need to adapt to different people and their needs: “You never know who you are sitting with today and if they are sensitive to noise or something else. That’s stressful” (Lena). A general lack of space for meetings or confidential talks (Marta), but also spaces to dwell (Lena) makes many of the employees choose to work from home instead or take their laptops to the hallways, making video calls while walking (observation notes). Some find noise-cancelling booths helpful (Jane), others find them too small (Susan). The noisy open-plan office and uncertainty about desk availability lead many to work from home for productivity: “Undoubtedly, I am 50% more effective when working from home, where I am able to focus on my work” (Frank). Concentrating at the office is called an “impossible mission” (Lena), leading many to work from home for focus and family time (Susan). Most informants report similar behavior, and it seems that the contemporary workplace poses an interesting change of paradigm in terms of the role and qualities of the workspace design. While the office becomes a space where employees wish to talk, connect and pursue coordinative tasks, the workspace at home affords concentration and effectiveness but also more time for family.

Amid these everyday struggles with the current office setup, BigCorp’s employees imagine new spatial solutions for their future workplace—ones that might reconcile individual focus with shared experience, and flexibility with a renewed sense of belonging. Several informants envision office-bound alternatives, such as adaptable work stations that can be rearranged to fit various activities and individual needs: “I imagine multi-functional-furniture [...] that would support different activities such as brainstorming

or group activities but then also [transforms to support] individual, confidential tasks” (Jens). Furthermore, these are imagined to be adaptable to personal needs to boost effectiveness, for example, allowing individuals to listen to specific music while working in silence (Jens). Others envision a transparent, drop-down phone booth that provides noise cancellation and privacy in busy office areas where many people are on video calls (Marta). Further, several informants imagine personalized workstations; either as digital tabletops that load personal content via fingerprint (Doris), or as a portable “digital table cloth”, which can both be used at home and in the office space (Marta). Overall, it is interesting how BigCorp’s employees predominantly envision the workspace to move back to a certain office/space, though equipped with smart solutions supporting shifting needs such as concentration, collaboration, and togetherness in inherently flexible work environments.

So far we have presented key transformations in BigCorp’s workplace, analyzing changes, experiences, and anticipated trajectories across time and themes. While the empirical data was collected in one specific company setting, much of the above findings can be applicable to any organizational setting experiencing similar workplace challenges due to increased flexible and hybrid ways of working, such as free seating and open office spaces, employee retention, collaboration, and (informal) interactions across distance [6, 7, 17, 20]. The next section discusses the captured transformations at BigCorp based on existing literature, aiming to elevate our findings to a broader context and scope.

5 Discussion

Our findings reveal a fundamental transformation in the modern workplace at BigCorp, shaped by evolving technologies, work practices, and office environments. We will now revisit existing literature to discuss the implications of these transformations. Specifically, we will examine how they have shaped the experience of office work and what potential trajectories can be anticipated for the future workplace. We begin by introducing the “modern workplace compass” (Fig. 4), a conceptual tool that sums up contemporary workplace transformations and serves as a guide for organizations, designers, and practitioners navigating the evolving landscape of flexible office work. Next, we assess the temporal development of office work, identifying key changes and persisting challenges. Finally, we discuss future workplace trajectories, linking past and present transformations and offering two design proposals for future office work that are anchored in practice.

5.1 The modern workplace compass

We found that studying the future requires a thorough understanding of the present, just as studying the present demands a retrospective examination of the past—a historicist sensibility as Soden et al. call it [60]. Each era builds upon the experiences and knowledge of the previous one, creating an intricate and interconnected progression. To capture this coherence and address our research question, we designed “the modern workplace compass” (Fig. 4), a conceptual tool that situates current transformations within their broader historical context, emphasizing the interconnectedness of technology, office space, and work practices, and outlining its potential future trajectories.

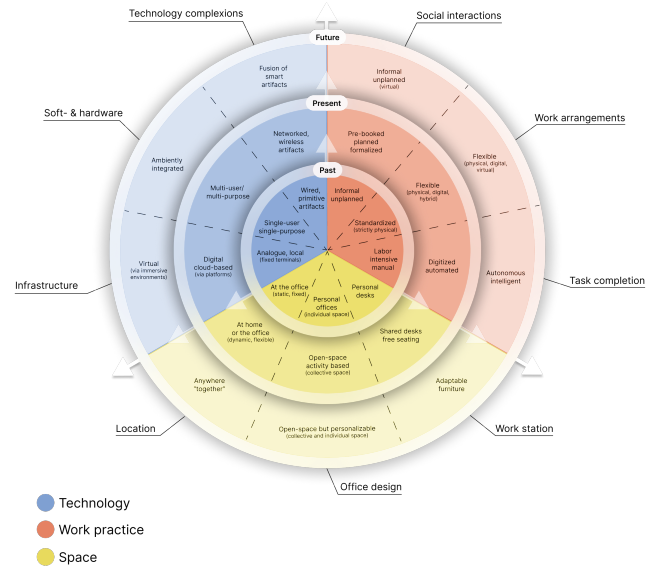


Figure 4: The modern workplace compass. A conceptual tool summing up the transformations and anticipated potentialities of modern office work supporting designers and practitioners in understanding the status quo and navigating toward potential trajectories.

The modern workplace compass encapsulates the transformations over time as three layers stacked upon one another, signifying their sequential relationship. These layers represent distinct dimensions of change—technology, workspace, and work practices—each highlighted in different colors. The circular shape of the visualization emphasizes that these dimensions remain intricately interconnected and mutually influential. Upon closer inspection of the compass, particularly the past and present layer, it becomes evident that all three dimensions and their sub-themes have evolved in opposition to their historical counterparts: The development of the office space has shifted from being *static and fixed* in the past to *dynamic and flexible* in the present. Similarly, technology has evolved from being *wired and primitive* to *wireless and networked*. Likewise, work practices have transitioned from being *standardized and tied to a specific place* to *flexible* and embracing *hybrid work arrangements*. Looking ahead from the present to the future, the three dimensions are expected to evolve, reflecting either a *need for change* (e.g., shifting from open-space, activity-based designs to more personalizable options), the *continuation of current qualities* (e.g., flexible work arrangements), or the *reinvigoration of past qualities* lost in the contemporary workplace (e.g., informal social interactions), albeit with a modern twist (e.g., virtual platforms enabling informal connections).

The *modern workplace compass* is intended for designers of future workplace technologies and office spaces, as well as practitioners and managers shaping the foundational rules for work practices. It serves as a practical tool for understanding the characteristics and issues of the past and present workplace, while exploring future potentialities related to technology design, work practices, and office space. It is built upon and through our data instead of

resorting to overly speculative and practice unrelated trajectories. Moreover, the compass highlights the interdependent nature of the different factors defining office work, emphasizing how altering one aspect can profoundly impact others (as will be elaborated below). In this way, the compass underscores the responsibility involved in designing new (digital) tools or entire spaces that shape the work practices of countless individuals. Given its abstract and conceptual nature, the compass may risk appearing self-evident. However, its value lies in distilling and synthesizing intertwined transformations and future directions (further developed in the following sections) into a visual format that makes chronological and historical developments easier to grasp.

5.2 The push and pull of transformations in the modern workplace

This section starts by outlining the big brushes of transformation, highlighting the key characteristics of the past and present workplace, before diving into more concrete qualities that have changed as well as core issues that seem to persist.

Our findings show that past workplace experience was characterized by a high level of *predictability*. Wired artifacts and predominantly analogue tools, which were only available in the company office, required the employees to adhere to standardized work arrangements with fixed hours in order to do their work. These rather rigid premises were reflected in the workspace design, favoring individual offices and personal desks. In other words, both managers and employees knew at any time where to find their colleagues, which supported informal social interactions among them, oftentimes fueling the feeling of togetherness and common culture within the organization. However, due to the rather analogue and manual work practices, as well as individual offices, it was found that these types of office work limited knowledge sharing and task collaboration [4, 44]. Initial efforts to innovate focused on the redesign of office spaces [22–24, 70] and technological developments such as shared meeting technologies [26, 52, 62] which marked the first pushes toward the modern workplace.

The contemporary workplace experience is today characterized by a high level of *flexibility*, that has taken root in the above mentioned efforts. Networked and wireless systems have largely digitized everyday tasks and brought about the possibility of working and collaborating from anywhere. Since the Covid-19 pandemic, hybrid work has become ubiquitous, further detaching work obligations from the physical office. As our findings show, work is no longer confined to the office, and employees can largely choose how to organize their workday, when to come to the office, and when to work from elsewhere, e.g., their home. Revisiting the trends for workspace development presented 20 years ago [48], it becomes clear that the 21st-century office has indeed transformed into a “narrative”, and “nomadic” space, where employees do not have their own desk, but share an open-space office according to ABW principles, and where branded interior is guiding the employees where to do what type of work (e.g. team area vs. focus zone). However, this immense degree of flexibility brings with it constant change and little predictability of who will be physically available at the office throughout a week, challenging the workplace to become “nodal”

and “neighborly” [48], a hub for knowledge exchange and collaboration as well as a place for community and belonging. As our findings show, social interactions have become largely formalized and planned, e.g., as digital coffee meetings or certain social office days, making it harder to build strong connections to colleagues.

When comparing the key characteristics of the past and contemporary workplace, it becomes clear that they have evolved in opposite directions, both possessing pros and cons. The past workplace was highly predictable but offered limited flexibility regarding where and how work could be done. In contrast, the contemporary workplace provides extensive flexibility in these areas, benefiting employees on a personal level, but is far less predictable in terms of seating arrangements and social interactions at work, echoing Els-bach and Pratt’s finding that making decisions about the physical environments in organizational contexts always involves balancing a large number of complex trade-offs [27].

In the following, we will zoom in on specific qualities that have changed during the transition from the past to the present workplace, as well as issues that continue to persist.

While earlier studies of open office settings found that it was difficult to share “stuff” while working in the office and outside, and therefore difficult to “participate while being away” [6], our study reveals that this has now changed with contemporary video-conferencing solutions and platforms that better accommodate remote and hybrid participation and cooperation. Looking at the workplace of today, advanced technologies such as cloud solutions and platforms (e.g. Microsoft Teams) as well as GenAI tools (e.g. ChatGPT and Co-pilot), seem to provide better possibilities for knowledge production, sharing and exchange, “almost mak[ing] it possible to run a whole company from home these days” (Andreas).

While current video conferencing technologies and shared cloud platforms provide greater possibilities to access digital tools, such as digital whiteboards, and allow for screen sharing, these are still limited when tangible materials and physical objects (e.g., physical whiteboard drawings, post-itnotes) are used or produced in a collaborative activity. Despite the fact that there is a lot of current research testing the opportunities for various technological solutions that try to minimize the asymmetries between physical and digital workspaces [40, 47, 72] and achieve shared spatiality [33, 51, 53] these attempts are still far from being implemented in practice and are rolled out to companies like BigCorp. In other words, “usual” organizations are today still dependent on affordable platforms like e.g. Microsoft Teams. These systems are still not able to support the sense of “beyond being there” [35]. This shortcoming appears rooted in the assumption that a standard head-and-shoulder view or traditional face-to-face imagery is sufficient for effective communication and collaboration [36], overlooking the significance of gestural activities, bodily rearrangements, and social and peripheral awareness [4, 6, 35].

Transitioning to the space in which office work takes place, activity-based-work implies flexible seating, to improve space efficiency and organizational performance [71]. Referring to our findings, it becomes clear that such open office spaces with no individual work stations and lack of e.g. quiet places challenge the everyday work for many employees due to noise and following concentration issues. Hence, it seems that ABW still inscribes various assumptions which do not always fit the actual work practices on the ground

[27, 31]. This includes the assumption that providing designated spaces for the different types of activities (e.g. “team zone” for team work and “focus zone” for focused work) will better support cooperative work. However, as shown in our findings, providing small remedies such as noise canceling headphones and noise canceling phone booths do not solve the actual problems behind the noisy environment and the lack of spaces to dwell [6, 17]. In contrast, it leads to a compensation strategy—or a change of paradigm—where people prefer to stay home to concentrate and work effectively and come to the office to socialize.

Our findings further highlight how flexible seating arrangements challenge the ability to localize colleagues and engage in informal social interactions. Already two decades ago, it was found that these spaces fail to support learning, knowledge sharing, and (legitimate) peripheral participation [4, 6] as cooperative work entails constant transition between individual and collaborative tasks, where people participate simultaneously in several interrelated activities [36]. Today, this is further challenged by the insecurity if colleagues are working from home or somewhere around the office building, leading to highly formalized social interactions that need to be pre-planned in order to happen. Hence, the eminent importance of informal sociability at work [29, 36]—which initially has given rise to some of the development of media spaces [17] does not seem to be adequately supported by contemporary workspaces. Moreover, contemporary office spaces still appear to rely on idealized work processes and standardized solutions, offering limited support for transitions in cooperative situations. These transitions often require relocating to a different physical space, disrupting both collaboration and workflow [16]. For example, moving from one workstation to another may involve carrying personal items, equipment like keyboard and mouse, and adjusting furniture and screens with each shift.

With these changes and persisting issues in mind, it is interesting to assess the different future ideas that were produced by BigCorps employees. The following section unfolds potential trajectories for the modern workplace, culminating in two concrete design proposals that are built on speculative ideas but anchored in lived workplace experience and existing literature.

5.3 Visions anchored in practice

Our findings show how BigCorps employee’s use the language of predominantly non-existent technologies to communicate preferred future trajectories—both indicating unmet needs as well as highly appreciated qualities of the contemporary workplace—providing concrete ideas as well as innovative conceptual guidelines for the design of future office technologies, collaborative practice and workspace design.

The future workplace at BigCorp is imagined to go beyond what is known in the present workplace, with technology-driven innovations such as VR, AR, wearables, holograms, and 3D-visualizations as well as GenAI and robotic automation becoming available in the usual workplace, making it possible to move beyond predominantly screen-based technologies, further untying employees from static work arrangements.

Multi-user and multi-purpose soft-and hardware are imagined to continue to exist but extend from digital, to ambient interactions

and availability, expanding the possibilities of the collaborative space. In other words, while we currently seem to have these clean cut spaces where work—and social interactions—take place, for example, in digital or physical or hybrid work settings, these spaces are imagined to be more interconnected and blurred in the future. Wearable technologies such as glasses or headbands are imagined to support ambient interactions and collaboration between partly remote and partly collocated colleagues, making it possible to work on physical objects together or “go for a walk in the same virtual space” (Jonathan). The vision of *being virtually together anywhere* is very prominent in our findings and mirrors the longing for informal sociability [29, 36] and the possibility to localize and spend time with coworkers [39]; a workplace that supports unplanned social interactions, and a sense of “beyond being there” [35] without requiring one to compensate for asymmetries regarding physical cues, bodily rearrangements, WYSIWIS etc. [14]. Hence, these visions can be seen as an attempt and hope of being able to come to terms with the persisting issues regarding informal social interactions and limited collaboration options across distance presented in the above section, while still wanting to keep up with the high level of flexibility that is granted by the contemporary workplace.

Design proposal 1: We propose that a design challenge for future office work is to create feasible “*blurred*” spaces that seamlessly merge physical, digital, and virtual interactions, fostering shared presence and informal sociability while preserving workplace flexibility.

Along similar lines, the space in which work takes place, including work stations, is imagined to become adaptable to personal needs, solving problems of noise by offering a reverse concept to ABW where employees usually adapt to the space and change their position according to tasks. In the future, adaptable furniture is envisioned to support concentration and provide places to dwell [17] while at the same time being able to transform into other shapes that allow for more social or group activities. In other words, rather than dividing the physical office into different topic zones, the merging of all four types of office spaces (hives, dens, clubs, cells) [70] into one piece of transformative furniture is imagined to better reflect the changing needs of employees throughout a work day. With virtual workspaces and shape-changing furniture at the forefront, it seems that the focus of interest today—as speculated by Duffy and Worthington nearly 50 years ago [70]—circles indeed around the office interior, the “scenery” and its versatile and flexible qualities. Already today, it seems as if the building shell—the physical office building—has taken on a secondary role with the increasing demand for flexible work arrangements [38] and focus on personal needs and work-life balance. The future ideas presented above indicate that the focus on individual and personal needs is highly appreciated and hoped to extend in the future. This is evident in both small-scale desires—such as creating a cozy atmosphere with personal music to support task efficiency—and broader aspirations, such as reimagining “work” within a conceptual shift toward life–work balance.

Design Proposal 2: We propose that a design challenge for future office work is to create an office interior that prioritizes and dynamically adapts to individual needs,

enabling task-specific spaces that can transform to support focus, collaboration, or social interactions.

The value of the produced visions in this study is twofold. First, they present innovative design ideas that can inspire a fundamental rethinking of workplace potentialities, aligning with the suggested design proposals. Second, they provide valuable insights into the current workplace experience, highlighting highly valued qualities and identifying challenges, such as the imbalance between technological advancements, spatial affordances and existing work practice. With this in mind, we want to draw attention to the interrelatedness and mutual dependency of all factors shaping the experience of office work, as captured in the “modern workplace compass” (Fig. 4). We hope this tool will guide designers and practitioners in navigating future transformations—whether driven by technological advancements, re-designs of office spaces, or evolving work practices.

6 Conclusion

The modern workplace has undergone profound transformations over decades, driven by technological advancements, socio-economic changes, such as—most recently—the Covid-19 pandemic, which accelerated remote and hybrid work across industries and levels of employment and set off a chain of reactions impacting the physical work environment and experience of office work. In this paper, we delved into the transformations of modern office work and how technological advancements, changes in office spaces, and evolving work practices changed the workplace experience while shedding light on its potential future trajectories. Actively engaging the employees at BigCorp in the collaborative mapping of their lived experiences in the modern workplace has provided us with deep empirical insight. Based on these insights, we have created the “modern workplace compass”, which we believe can be used as a conceptual tool by other designers and practitioners to understand current office work and to navigate toward its potential futures. We found that some longstanding challenges, such as the ability to “share stuff” and “participate while being away” have been addressed by technological advancements such as video-conferencing and digital platforms (e.g., Microsoft Teams), and tools like digital whiteboards, screen sharing, etc. Other issues, such as difficulties supporting gestural activities, bodily rearrangements, and informal sociability across distance are receiving increasing research attention but continue to be problematic in usual organizations and everyday work practice. Similarly, challenges like finding spaces for concentration, dwelling, and localizing coworkers persist in activity-based working (ABW) environments and open-office structures. Many of the envisioned trajectories for future office work address these issues and suggest innovative design ideas that are clearly anchored in everyday work practice. Based on these future ideas, we provide two concrete design proposals to inspire design processes toward a more balanced office work experience.

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