



## EFFECTS OF SHIFTING FROM IN-PERSON TO DISTRIBUTED WORK ON ROUTINE, CREATIVE, AND SOCIAL COLLABORATION

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### Abstract

*This study explores how the transition to distributed work environments has impacted collaboration processes, team dynamics and overall productivity in Microsoft, Google, Facebook, and Salesforce, all global technology companies included in the Fortune 500 top US companies list. It also examines the role of corporate culture, leadership, social and psychological factor, technological infrastructure, and individual customization in shaping these outcomes. In addition, it discusses strategies for optimizing collaboration in distributed forms of work that balance technological advances with the need for interpersonal interaction. This study contributes to the growing discourse on distributed work and provides valuable insights for organizations navigating this evolving work landscape. The research uses a qualitative approach that enables a deep investigation of the impact that distributed work has had on different types of employee collaboration (i.e., routine, creative and social) and the key factors contributing to a successful transition to distributed work. The findings reveal a differentiated landscape in which distributed work offers flexibility and potential individual productivity gains, but also presents challenges in maintaining effective team cohesion and spontaneous communication.*

**Keywords:** distributed work, routine collaboration, creative collaboration, social collaboration, collaboration tools

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### 1 INTRODUCTION

Advances in technology and digital transformation have changed the working environment (Allen et al., 2015). As modern technologies enable the constant and continuous communication and cooperation between co-workers, distributed work gained significant

attention and changed the working environment. There are many different forms of distributed work (e.g., remote work, virtual work, hybrid work, telework, telecommuting), mainly distinguished by the use of information-communication technologies (ICT), geographical distribution and location of work. Practitioners and academics mainly differentiate between

three forms of work, namely on-site, hybrid and remote (Lamovšek & Černe, 2023). The data shows that distributed forms of work are the future of work, which is why it is crucial for organizations to understand and adapt to them (Malhotra, 2021). One aspect that is significantly impacted by distributed work is employee collaboration. A study by Dahik et al. (2020) found that the switch to distributed work did not result in a loss of productivity on individual tasks for 75% of respondents. However, almost half stated that productivity decreased for collaborative tasks such as information sharing, teamwork and customer contact. This decline in collaboration productivity was most evident among employees who switched from office environments to distributed work. The emergence of distributed work has therefore brought both challenges and opportunities for employee collaboration (Allen et al., 2015; Olson & Olson, 2000).

Despite extensive research on distributed work, a comprehensive understanding of its impact on employee collaboration remains elusive. Existing studies have predominantly concentrated on the effects of various forms of distributed work on individual productivity and well-being (e.g. Allen et al., 2014, 2015; Grant et al., 2013). Additionally, research has explored how ICT influence collaboration in strategic processes, including new product development (Manca et al., 2018) and innovation processes within collaborative work environments (Bala et al., 2017). While understanding how ICT has transformed work environments and processes within companies is crucial, the literature focusing specifically on the effects of distributed work on collaboration is sparse. Moreover, this body of work often considers employee collaboration as a monolithic construct (Karis et al., 2016), neglecting the nuanced differences between types of collaboration. In this paper, we aim to fill this gap by examining how distributed work affects the dynamics of collaboration in four companies, specifically Microsoft, Google, Facebook, and Salesforce, all included in the Fortune 500 list of top US companies. The Fortune 500 is an annual list that ranks the 500 largest United States corporations by total revenue for their respective fiscal years. Therefore, we will try to answer the following research questions: 1) What is the impact of the transition to distributed work on routine, creative and social collaboration

among employees? 2) What factors influence the success of collaboration in distributed forms of work? 3) What are the tools and techniques that promote effective and successful collaboration in distributed forms of work?

We contribute to the scholarly discussion by presenting new insights into the complex relationship between distributed work environments and collaborative processes. We intend to advance the literature on distributed work by introducing the phenomenon of employee collaboration and highlighting how various forms of collaboration are reshaped within contemporary work settings. Drawing on the work by Olson and Olson (2000), our findings resonate with the idea that collaboration in distributed work can be effective, however, certain types of collaboration should be carried out in face-to-face environments. Furthermore, our work not only corroborates the insights of Manca et al. (2018) regarding the enabling factors for successful distributed work but also expands upon them by exploring these dynamics across diverse functional areas within organizations, beyond the innovation process alone. It also complements the existing literature by integrating empirical data from a unique context of Fortune 500 top US companies. Our research findings carry both theoretical as well as practical implications as they provide a deeper understanding of how distributed work environments can be optimized for improved collaboration, thus contributing to the broader discourse in organizational and management research.

## 2 THEORETICAL BACKGROUND

### 2.1 Collaboration

Collaboration is defined as an evolving process where two or more entities actively engage in joint activities to achieve a common goal (Bedwell et al., 2012). It requires combining complementary skills and resources to achieve results that would be unattainable individually (Hartono, 2004). The quality of collaboration demands deep, frequent, intense interaction and a high level of mutual awareness (Frost, 2007). Successful collaboration needs clear goals, mutual respect, communication, openness to learning, and new information (Liedtka et al., 1998).

Effective collaboration positively impacts financial success, customer satisfaction, employee motivation, productivity, and innovation (Frost, 2007). In the following paragraphs, we will provide descriptions of the three types of employee collaboration (Obstfeld, 2012; Sandow & Allen, 2005):

*Routine collaboration.* When work is carried out within repetitive processes or clearly defined steps with the aim of completing a project or task, we speak of routine work (Obstfeld, 2012). Routine collaboration is about coordinating existing processes and making minor adjustments to them. It is based on utilizing existing ideas, inputs, experiences and steps to achieve a predefined, routine goal and its outcomes. Routine collaboration is tactical and process-orientated and relies on the use of existing ideas (Sutton, 2002). Although it also involves adapting and improving processes, its goal is always at least partially predictable (Obstfeld, 2012). Routines deliver proven results, mature processes and proven technologies that generate profit. To be successful in the long term, organizations need new processes to satisfy customer demand and maintain a competitive advantage (Sutton, 2002).

*Creative collaboration.* In order to remain relevant in the market, organizations must foster creativity and promote innovation. Creative tasks are activities that initiate and discover new ideas and routines (Obstfeld, 2012). Therefore, creative collaboration is a process that requires the coordination of new processes and ideas. Creative, innovative or non-routine collaboration takes place outside the usual routines of the organization. Creative projects are about “introducing change with an evolving vision or projection of a new end state and pursuing that anticipated end state through new actions and new ways of working” (Obstfeld, 2012). Creative collaboration is an important source of organizational change and change of routines. Creativity is the generation of new ideas, and innovation is their successful implementation (Nahavandi et al., 2013).

*Social collaboration.* Social collaboration in an organization involves networking, sharing experiences, knowledge, ideas and advice. Networking and knowledge sharing improve the social capital of the organization and vice versa – employees in an organization with strong social capital work better

together (Sandow & Allen, 2005). The social capital of an organization consists of resources that are available to individuals and groups, members of social networks (Villalonga-Olives & Kawachi, 2015). Collaboration in terms of social capital is “socially coordinated action that takes place in a system of social relationships in which everyone contributes to a common purpose” (Sandow & Allen, 2005). The flow of relationships that results from collaboration enables each individual in the network to access the knowledge of the whole.

## **2.2 Distributed work, collaboration barriers and enabling factors**

Distributed work refers to “an arrangement that allows employees and their tasks to be distributed away from the physical location of the company” (Gajendran & Harrison, 2007). It comes with many benefits for both the employees and companies, such as reduced costs and access to a larger talent pool (Karis et al., 2016). However, it also has some disadvantages, such as blurred boundaries between personal and professional life and affect mental health (Kniffin et al., 2021). As we move from the broader concept of distributed work, with its benefits and challenges, to the more focused area of collaboration in distributed forms of work, we see how these principles are applied in the formation and operation of virtual teams.

Collaboration in distributed forms of work typically takes place through regular, intensive face-to-face virtual meetings, followed by less intensive, shorter interactions using faster communication methods such as email and chat tools (Maznevski & Chudoba, 2000). The rhythm of interactions is key to the success of collaboration in distributed forms of work as it allows for a regular exchange of information and prevents duplication of effort. Successful virtual teams are those that can adapt their mode of interaction and communication to the decision-making process, the degree of interdependence and the complexity of the problem. Ineffective virtual teams often work in reverse – they use long video conferences for routine coordination instead of email or virtual chat tools. Virtual teams encounter social and communication challenges (Martins et al., 2004).

Virtual environment offers fewer opportunities for spontaneous interactions, such as impromptu encounters and discussions in the hallway, conversations in the kitchen, meetings in cafés and informal gatherings. Thus, employees miss out on rich informal interactions, lack opportunities to build emotional connection, psychological safety and trust, all of which foster collaboration (Alexander et al., 2020). Moreover, the loss of spontaneous interactions leads to a lack of feedback (Kniffin et al., 2021) and feelings of loneliness and isolation (Choudhury et al., 2021), loss of motivation a feeling of missing out (Grant et al., 2013). The same applies to creative work, since there is less face-to-face interaction in a virtual work environment (Allen et al., 2015), which leads to fewer spontaneous creative collisions (Alexander et al., 2020).

### **2.2.1 Cultural and structural factors**

#### **2.2.1.1 The culture of openness and decentralization of the company**

According to Frost (2007), a culture of openness is the strongest factor for quality collaboration. Similarly, Manca et al. (2018) underscore the importance of organizational culture in collaborative workplaces. Companies with a high level of collaboration cultivate an entrepreneurial culture of openness and are decentralized, which enables effective virtual strategic planning. Factors such as the ability to communicate with all employees, their accessibility regardless of hierarchy and the frequency of collaboration between different departments are crucial. An open organizational culture is characterized by organizational norms and values based on collaboration, respect, trust, interculturality, constructiveness and sharing (Duarte & Snyder, 2011). Companies that foster a culture of adaptability, openness and accessibility are easier to adapt to change (Staples & Zhao, 2006). Flexible and technologically advanced, non-hierarchical organizations perform better in a virtual environment (Duarte & Snyder, 2011).

#### **2.2.1.2 Leadership in distributed forms of work**

Distributed work requires clearly defined rules and methods of collaboration within the company. Just because a manager has led successfully in an

in-person setting it does not mean that they will be equally successful in a virtual environment (Alexander et al., 2020). Managers have less control over employees due to distance, which requires different methods of evaluation and reward. In virtual teams, evaluation and rewards are usually based on results (Kniffin et al., 2021). Virtual teams often work together in cross-functional and cross-organizational environments, so it is important that goals and indicators are clearly defined (Duarte & Snyder, 2011).

### **2.2.2 Social and psychological factors**

Successful collaboration in distributed forms of work requires first and foremost effective communication between employees and their managers (Staples & Zhao, 2006). For effective communication, employees must be connected and cultivate a culture of trust; the organization must invest in building social capital and an appropriate leadership style. Strong social connectedness among employees is key to team culture in virtual and hybrid teams (Alexander et al., 2020). Highly connected teams are more productive (Dahik et al., 2020). The building blocks of trust are clear and timely communication, concern for a positive atmosphere in the team, building solidarity, friendliness and belonging, predictable patterns of behavior, and equal inclusion and encouragement of all participants (Coppola et al., 2004).

### **2.2.3 Technological factors**

Appropriate information technology facilitates communication between the members of a unit, department or the entire organization. It is the most important building block for virtual teams, which could not exist without the internet, email, video conferencing and audio bridges (Daim et al., 2012). Choosing the right technology is critical to the success of interactions, teamwork, collaboration and leadership (Kahai et al., 2012). Technology improves productivity, efficiency and collaboration (Avolio et al., 2014). Employees who are satisfied with their work tools and technology are up to twice as productive compared to those who do not have access to high-quality tools such as video conferencing tools, virtual whiteboards for idea sharing and project management software (Dahik et al., 2020).

There is a wide range of high-quality information and communication technologies on the market that promote close collaboration. However, technology is only effective if employees know how to use it properly (Duarte & Snyder, 2011). The simpler the technology is, the more popular it is (Karis et al., 2016).

**2.2.4 Collaboration tools**

There is no standardized classification of collaboration tools. In the literature, collaboration tools are often differentiated according to their purpose. The collaboration process comprises three elements – communication, coordination and cooperation (Fuks et al., 2008). Communication is used to exchange messages and negotiate between people. Coordination is used to manage people, activities and resources. Cooperation serves the production of products and ideas. Collaboration tools cover all three aspects of collaboration and enable both routine, social and creative-innovative collaboration. They can be divided into communication tools (i.e., synchronous and asynchronous communication, networking, and information exchange, e.g., email, Zoom), coordination tools (i.e., coordination of teamwork and results; e.g., Google drive) and tools for creation (i.e., execution of ongoing tasks, collaborative writing, and editing). Most collaboration tools today are integrated into systems that bring all the necessary programs together in one place, reducing technological noise. Collaboration systems in

companies are ‘socio-technical systems that support employees in their daily work and facilitate mutual collaboration’ (Schubert, 2019). Examples of such systems include Google Workplace and Microsoft Teams. Modern systems often include internal social networks that are a mix of messaging tools and interactive versions of intranets (e.g. Facebook’s Slack and Blue Jeans) – employees use them to share best practices and news, documents, and ideas, find relevant stakeholders, highlight important messages and follow relevant stakeholders and topics. In addition to sending messages, such tools also enable tagging, liking, sharing and other interactive functions (Schubert, 2019). The choice of collaboration tools depends on the context of the collaboration, as shown in Table 1.

In the literature, the instruments are often differentiated according to the synchronous and asynchronous nature of communication. Geographically dispersed teams often communicate via asynchronous tools such as email and shared documents. For intensive collaboration, however, occasional synchronous communication is required, so such teams often meet in the early morning or late evening hours (Karis et al., 2016). Table 1 shows that the choice of tools depends, among other things, on the required communication density of the interaction. Some communications are better conducted face-to-face, especially when it comes to building trust, solving problems, sensitive issues and

*Table 1: Software components for communication, dependent on the context of collaboration*

		Synchronicity of communication			
		Asynchronous communication		Synchronous communication	
		Duration of interaction		Richness of the communication medium	
		Message: short-term	Written communication: long-lasting	Written communication	Multimedia communication
<b>Communication patterns” and “intensity of collaboration</b>	1:1, intensive collaboration	Email	Documents	Chat (messaging)	Screen sharing
	Group collaboration	Blogs, groups	Shared web pages, databases, and instructions (wiki)	Group chat (messaging), social networks	Video conference
	Mass informing	Websites, portals	Official databases, reports, and instructions	Microblog, social networks	Video streaming content

Source: Adapted from Schubert (2019, p. 48).

conflicts. On the other hand, written communication is sometimes even better, as it shortens the time for the individual, allows time for reflection and enables a structured response (Alexander et al., 2020). Microsoft found a 72% increase in the use of messaging apps and a 10% increase in time spent on video conferencing. This is confirmed by the literature in the field of computer science (Hu et al., 2020), which found an increase in the use of video conferencing tools such as Zoom, WebEx, Google Meet and Skype. While the aforementioned technologies became a necessity, the use of tools for project management and creative collaboration is still not widespread. In 2016, Karis, Wildman and Mané found that few organizations were using virtual tools to promote drawing and brainstorming.

### 3 METHODOLOGY

In this research we conducted a study of how distributed work affects employee collaboration in international Fortune 500 top US companies. We used the qualitative research method of semi-structured in-depth interviews. This method offers ample opportunity to discover new constructs, factors, dynamics and contexts, and enables a spontaneous flow of conversation (Saunders et al., 2009). Due to its flexibility and openness, this method is suitable for exploring new and not yet well understood phenomena. The analysis of the semi-structured in-depth interviews provides a comprehensive picture of collaboration in

distributed forms of work and offers answers to the research questions posed in the introduction. We chose a purposive sampling method to conduct semi-structured interviews with professionals in different business units of Fortune 500 top US companies in Ireland. The interviews were conducted from June 2021 to August 2021 with ten employees holding leading positions in Microsoft, Google, Facebook, or Salesforce. These organizations were selected due to their progressive adoption of distributed work and advanced collaborative technologies. The interviews were designed to explore personal experiences, challenges and adaptations associated with distributed work. Sample data and interview information can be seen at Table 2.

First, we gathered a purposive sample of ten people employed in international technology companies in Ireland. We contacted the participants via the LinkedIn platform. At the same time, we identified the main themes based on a literature review and individual experiences of distributed working and formulated the initial questions for conducting semi-structured interviews. In the next step, we conducted a test interview and adapted the questionnaire accordingly. Due to the pandemic, the interviews were conducted via the Google Meet platform. We informed the interviewees about the purpose and topic of the research and ensured their anonymity. We explained that the results of the interviews would be published and obtained permission to record them. We recorded the interviews. As researchers, we played an active role

Table 2: Sample Data and Interview Information

Person	Company	Gender	Age	Position	Date of Interview	Duration (minutes)
1	Microsoft	F	30	Key Account Manager	28. 6. 2021	31
2	Salesforce	F	29	New Customer Sales	18. 6. 2021	29
3	Facebook	M	31	Key Account Manager	29. 7. 2021	26
4	Google	F	27	Partner Manager	30. 7. 2021	30
5	Google	F	26	Key Account Manager	4. 8. 2021	20
6	Microsoft	M	33	Sales Specialist	1. 7. 2021	34
7	Google	F	32	Customer Segment Manager	28. 7. 2021	28
8	Google	M	41	Sales Team Leader	4. 8. 2021	32
9	Facebook	F	47	Sales Team Leader	7. 7. 2021	30
10	Salesforce	F	31	Marketing	29. 7. 2021	27

during the interviews. We asked follow-up questions, asked for clarifications, and paid attention to verbal and non-verbal reactions. The interviews were then transcribed. We analyzed the transcripts using thematic analysis. Thematic analysis, or the method of condensing meaning, enables the discovery of similarities (common themes), differences and unexpected findings from semi-structured interviews (Kiger & Varpio, 2020). Although thematic analysis is primarily a descriptive method, the researcher must interpret the results by selecting codes and forming themes. We have broken down and categorized the results of the interviews according to their common meanings. We assigned keywords or codes to these meanings. We took an inductive approach to coding as we identified themes based on the findings from the transcripts. In the next step, we grouped parts of the transcripts with the same code to form common meanings – themes.

## **4 FINDINGS**

The results of the study indicate that the influence of distributed work on employee collaboration in international Fortune 500 top US companies is multifaceted. It emphasizes that while distributed work offers flexibility and potential productivity gains, it also presents challenges in maintaining team cohesion and spontaneous communication. The study also highlights that different experiences are contingent upon factors such as company culture, technological infrastructure and individual role in the organization. These findings offer fresh and valuable perspectives for adapting strategies and tools to improve collaboration in distributed forms of work in the tech industry.

### **4.1 The impact of the transition to distributed work on routine, creative and social collaboration among employees**

#### **4.1.1 Routine collaboration**

Most interviewees noted that self-efficacy in performing routine tasks which require independent and focused work increased during the transition to distributed work. In the home working

environment, employees were exposed to less noise and were less distracted, allowing them to concentrate better. Motivation to get the job done was higher as they desired more free time. Productivity in the home working environment was highly dependent on personal circumstances. The aforementioned respondents lived without children, while the experience of a mother working from home was more challenging.

During the distributed work period, respondents conducted meetings virtually, saving time for commuting and traveling that they could use for other tasks. Most respondents believed that collaborating on simple tasks remotely was efficient, while collaborating on complex problems required more time and planning. Tasks that require synchronous collaboration took longer. Remote work reduced the frequency of collaborative interactions and hindered the free flow of information, leading to an increase in routine administrative tasks and reporting. The distributed work environment required more meetings. Meeting overload was most noticeable in the early months of remote work, but over time, companies have adapted and optimized. Google introduced meeting-free days and weeks. However, respondents were generally dissatisfied with the number and inefficiency of virtual meetings, as they enabled multitasking and thus reduced the attention of participants. The overload caused by meetings was particularly noticeable among Google and Facebook employees, while Microsoft employees noticed an inundation of email messages. For people who have joined the company during the COVID-19 period, collaboration in distributed forms of work presented a particular challenge.

Consequently, distributed work enabled efficient collaboration on routine tasks, but only when the tasks were straightforward. Collaboration in distributed forms of work on complex tasks required more time and planning. Participants noted a general decrease in collaboration; when they could complete a task independently, they did it so. Distributed work had a positive impact on independent routine tasks, as for most respondents the noise in the office was a distraction that had a negative impact on concentration.

#### 4.1.2 Creative collaboration

Most interviewees noticed a decrease in creative collaboration and lower efficiency of creative-collaborative interactions when transitioning to distributed work. Although the virtual environment offered faster organization and international accessibility, employees in business positions had pushed creative work to the sidelines. The lack of face-to-face interactions lead to overwork and demotivation, which had a negative impact on creativity and the desire for it. The most common form of creative collaboration among interviewees was brainstorming. Brainstorming was more difficult in a distributed work environment, especially when there were more participants. Most respondents missed the informal meetings that were used in the past to develop new ideas. Virtual interactions often felt forced.

#### 4.1.3 Social collaboration

Building new relationships and getting to know people was more difficult in the distributed work envi-

ronment due to the lack of informal interactions. It was more difficult for employees to form an impression of colleagues they had only met virtually, which could lead to conflicts more quickly. The interviewees missed spontaneous interactions, such as having coffee together and socializing. Due to the general overload, they took a more considered approach to socializing. Just like building relationships within the company, building relationships with customers was also more difficult. Distributed work offered fewer opportunities for networking and building informal relationships. Meetings needed to be planned and put in the calendar. Due to the lack of spontaneity, people were not motivated to build additional networks. They relied on the networks they built up before distributed work. Collaboration in distributed forms of work with the aim of building a personal network and sharing best practices required a higher level of proactivity than collaboration between employees in the office. The transition to distributed work had a strong negative impact on employees' social collaboration. Table 3 shows the key findings on the impact of distributed work on employees' routine, creative and social collaboration.

Table 3: The impact of distributed work on employee work, tasks and collaboration

	Key findings
Independent routine work	<ul style="list-style-type: none"> <li>• Distributed work positively affects the efficiency of independent work.</li> <li>• Fewer distractions and noise increase employees' concentration.</li> <li>• Work efficiency depends on the individual's personal circumstances.</li> </ul>
Routine collaboration	<ul style="list-style-type: none"> <li>• Participants notice a general decline in collaboration.</li> <li>• Distributed work enables efficient collaboration on routine tasks, but only when tasks are uncomplicated.</li> <li>• Collaboration on complex tasks remotely requires more time and planning.</li> <li>• There is a decrease in spontaneous interactions, with an increase in the number of formal interactions.</li> </ul>
Routine tasks	<ul style="list-style-type: none"> <li>• Distributed work increases the amount of routine administrative tasks and reporting.</li> <li>• Distributed work increases the number of meetings and negatively impacts their productivity.</li> <li>• Computer-based meetings allow multitasking and are less effective.</li> <li>• Including and educating new employees is more difficult and takes longer in a virtual environment.</li> <li>• Building a work network, seeking help, exchanging knowledge, processes, and responses in a virtual environment takes longer.</li> </ul>
Creative collaboration	<ul style="list-style-type: none"> <li>• Creative interactions are less frequent and more difficult in a virtual environment.</li> <li>• Overload and lack of personal interactions lead to decreased creativity.</li> </ul>
Creative tasks	<ul style="list-style-type: none"> <li>• Due to a lack of spontaneity, brainstorming in a virtual environment is difficult.</li> </ul>
Social collaboration	<ul style="list-style-type: none"> <li>• Distributed work reduces the frequency of social-collaborative interactions.</li> <li>• Employees find it more challenging to form perceptions of their colleagues, leading to more conflicts.</li> <li>• In a virtual environment, opportunities for networking and informal connections are reduced.</li> </ul>
Social tasks	<ul style="list-style-type: none"> <li>• Virtual networking must be planned and intentional.</li> <li>• Lack of spontaneity demotivates employees.</li> <li>• Employees rely on networks built in offices.</li> </ul>



To sum up, the findings reveal that the transition to distributed work has different implications for the different types of collaboration between employees. Overall, while distributed working has certain advantages for independent routine tasks, it poses a major challenge for routine, creative and social collaboration. The lack of physical presence and spontaneous interactions in a shared workspace significantly dampens the potential for creative output and building strong interpersonal relationships, emphasizing the need for innovative solutions to foster these essential aspects of work in a distributed environment.

Specifically, in the area of routine collaboration, there has been a notable improvement in self-efficacy in tasks that require independence and concentration, largely due to the quieter, distraction-free home environment. This environment has increased motivation and, for some, productivity, especially for tasks that can be completed alone. However, this increase in productivity is closely linked to personal circumstances, with those without caring responsibilities generally performing better than those with children. When it comes to collaborating on complex tasks, the distributed work model presents significant challenges. The efficiency of such collaboration often suffers as more time and careful planning is required. The frequency of collaborative interactions decreases, and the shift to distributed work complicates the synchronous collaboration, which is essential for more difficult, complex problem-solving. This scenario has led to an increase in routine administrative tasks and a perceived need for more meetings, which initially led to an overwhelming number of virtual meetings. Although companies such as Google have taken steps to address this issue by introducing meeting-free days, the general dissatisfaction with the number and efficiency of virtual meetings remains a problem.

Creative collaboration in particular has suffered as a result of the changeover. The shift away from physical office spaces has led to a decline in creative collaboration and the efficiency of creative endeavors, with the lack of face-to-face interaction playing a major role in this decline. While the virtual environment allows for faster organization and international accessibility, it often crowds out creative work due to overwork and demotivation. Brainstorming

sessions, a cornerstone of creative collaboration, have become more challenging, especially with a larger number of participants. The absence of informal meetings, which used to serve as fertile ground for the germination of new ideas, is clearly felt, and virtual interactions often feel forced and are less conducive to creativity.

Social collaboration has been most affected by the transition to distributed work. Building new relationships and maintaining existing ones has become much more difficult without the organic, informal interactions that office environments naturally provide. The lack of spontaneous interactions such as coffee or casual get-togethers has not only made it harder for employees to get to know their colleagues but has also reduced opportunities for networking and building informal relationships with clients. Meetings have become something that needs to be scheduled and planned, losing the spontaneity that often leads to personal networking. This has had a very negative impact on employees' ability to collaborate socially and requires a greater degree of proactivity to build and maintain personal networks and share best practice.

#### **4.2 Factors that influence the success of collaboration in distributed forms of work**

The analysis of the interviews identified the following factors for successful collaboration in distributed forms of work: experience with distributed work and education, culture and leadership of openness and trust, clarity of communication and goals, hybridity of collaborative interactions, psychological and external motivators, and appropriate technology and work environment.

##### **4.2.1 Experience with distributed work and training**

Geographically collaboration in distributed forms of work in Fortune 500 top US companies is widespread. The extent of company's past engagement with distributed work and collaboration tools significantly influenced its ability to foster collaboration in distributed forms of work. The longer individuals worked remotely, the easier and more efficient collaboration became. Individuals learned from the

experience and optimized their collaboration processes. To successfully integrate collaboration in distributed forms of work within an organization, it was crucial to allocate resources for training and teach employees effective techniques for collaboration in distributed forms of work. Participants emphasized the need for training soft skills, such as how to conduct virtual meetings effectively or how to resist digital distractions.

#### **4.2.2 Culture and leadership of openness and trust**

The culture of an organization played an important role in a virtual environment. When the company's culture was strong, employees were more motivated to work together. A company must consciously create a virtual culture and reward adaptability, openness, and trust, and encourage sharing and receiving of feedback. In the absence of physical meetings and shared physical space, maintaining and building a team culture in a virtual environment is more challenging. Companies need to consciously approach virtual culture, promote it and adapt to the new circumstances. Hybrid work brought additional challenges. In addition to culture, leadership also played an important role in promoting collaboration in distributed forms of work. Superiors have less control over employees in a virtual environment, so it is crucial to adapt the leadership style accordingly. In a virtual setting, micromanagement proves ineffective. Our research highlights that trust and adaptability serve as the primary motivators for individuals.

#### **4.2.3 Clear communication and objectives**

To achieve a culture of trust and adaptability, clear and transparent communication is important. In a distributed work environment, it is more difficult to understand non-verbal cues, so it is crucial for managers and employees to promote openness and clarity of communication channels. Alongside effective communication, well-defined objectives play a crucial role in collaboration in distributed forms of work. The distributed work environment demands distinct goals compared to traditional office settings. Additionally, successful collaboration necessitates a precise division of roles and responsibilities.

#### **4.2.4 Hybridity of collaborative interactions**

The interviewees note that sustaining exclusive distributed work in the long run would be challenging for them. Successful collaboration requires interpersonal relationships, which are easier to build when meeting in the same room. The hybrid future of work will make it possible to build personal relationships while taking advantage of distributed work.

#### **4.2.5 Psychological and external motivators**

The ability of a company and an individual to collaborate remotely is influenced by environmental and personal circumstances. Most interviewees noticed fatigue and a general decrease in motivation when working remotely, which affected their willingness to collaborate. As a result, some companies offered additional psychological support to their employees. Distributed work, especially when done from home, blurs the boundaries between personal and professional life. For some people, this form of work is suitable as it offers them flexibility. For others, distributed work means additional stress. An individual's predisposition to such a form of work has a major influence on their desire to collaborate.

#### **4.2.6 Technology and workspace**

Collaboration in distributed forms of work would not be possible without technology. The interviewees noted that their companies provided good technology and adequate technological support. In addition to appropriate technological tools, interviewees emphasized the importance of appropriate office equipment and space. Interviewees recognized that having the necessary equipment at home promotes a comfortable and focused work environment. Initially, interviewees took advantage of financial support from their employers, who provided funds to purchase the needed equipment. A comfortable work environment positively impacted the motivation of the respondents.

To sum up, the findings highlighted several factors that influence successful collaboration in distributed forms of work. The success of collaboration in distributed work arrangements depends on sev-

eral critical factors that were identified in extensive interviews. First, an organization's prior engagement with distributed work and collaboration tools has a significant impact on its ability to foster effective remote collaboration. The more familiar employees are with distributed work, the smoother and more productive collaboration tends to be. Training plays a central role here, focusing on equipping employees with the necessary skills for remote collaboration, including how to effectively conduct virtual meetings and strategies to resist digital distractions.

The culture within an organization of openness and trust is another important component. In a virtual environment where physical interactions are limited, a strong, adaptable culture that rewards flexibility, openness and trust can significantly motivate employees to work together effectively. Leadership style must also adapt in this context, moving away from micromanagement to fostering an environment of trust and adaptability. Clear communication and clearly defined goals are also fundamental to successful collaboration in distributed forms of work. Since there are no non-verbal cues in virtual interactions, it is imperative that both managers and employees maintain open and clear channels of communication. Setting clear goals and clarifying roles and responsibilities are equally important to ensure that everyone is pulling in the same direction and can contribute effectively. The hybrid nature of future work environments, combining face-to-face and remote interactions, is recognized as a key factor in building interpersonal relationships that are critical to collaboration. While pure remote work makes it difficult to maintain these relationships, a hybrid approach enables the benefits of both face-to-face and remote work to be leveraged.

Psychological and external motivators have a significant impact on an individual's ability to collaborate remotely. Factors such as remote work-related fatigue, motivation levels and the blending of personal and professional life can either hinder or encourage the willingness to collaborate. Companies that offer psychological support and acknowledge these challenges can help mitigate the negative effects. Finally, technology and the appropriateness of the workspace are also fundamental. Effective collaboration in distributed forms of work is not possible without the right technology and

support. In addition, setting up a suitable home working space, supported financially by the employer if required, can significantly increase productivity and motivation.

#### **4.3 The tools and techniques that promote effective and successful collaboration in distributed forms of work**

Most interviewees named appropriate tools as one of the most important factors for collaboration in distributed forms of work. All four companies – Microsoft, Google, Facebook, and Salesforce – use cloud technologies. Most of the tools used by interviewees are integrated into systems. The companies in the sample are also providers of collaboration technologies. Therefore, interviewees mainly used tools developed by their employers (Microsoft: Microsoft Teams, Google: Google Workspace, Facebook: Workplace and Bluejeans, and Salesforce: Slack and Quip). Regardless of the brand of the tools, interviewees use video conferencing, chat and cloud documents most frequently. Respondents were satisfied with the tools, although there were no significant differences in satisfaction between the providers.

Merely having access to these tools was not a guarantee for successful collaboration. Effectively collaborating remotely necessitates well-established guidelines – employees should be aware of the designated tool for communication, the platform for document sharing, and the efficient means to access the necessary information. Companies worked with external stakeholders and customers, so it was important to allow employees to use different tools. Restricting access to tools makes collaboration with external stakeholders and networking more difficult. Video conferencing, chats and documents are the most commonly used collaboration tools. They are used for routine, creative, and social collaboration. The use of specific tools for creative collaboration, such as virtual whiteboards, was not common among employees in business positions. Only a third of interviewees occasionally used tools such as Google Jamboard and Quip.

While collaboration on routine tasks was essential for successful work, interviewees note that social and creative collaboration is less common.

Companies were trying to compensate for the lack of informal interactions and team culture in the office through virtual events, weekly team meetings and office hours. Respondents believed that networking and building a team culture online, especially in large groups, was ineffective as virtual interactions lack spontaneity. Respondents viewed virtual events as unnecessary noise or extra time spent on the computer.

Office hours and occasional social team meetings were more effective as people come together more easily in smaller groups. Company respondents did not notice any programs that encourage virtual creative collaboration. Companies should plan time for creative exchange and approach it in a targeted manner. Creativity requires differently set goals, and the corporate culture must allow for risk and failure.

Employees most frequently use video conferencing, chats, and cloud documents for collaboration. Respondents primarily used tools developed by their employers, with no significant differences found in effectiveness. Successful collaboration in distributed forms of work required clearly defined rules – employees need to know when to use which tool. Participants did not identify effective methods to encourage collaboration in distributed forms of work; routine collaboration occurs as needed, while creative and social collaboration occurs less frequently in the virtual world. Companies were trying to encourage social collaboration with virtual events, informal meetings and office hours, but were not successful in doing so. Respondents could

not identify any particular incentives for virtual creative collaboration but felt that companies could encourage this collaboration by allocating formal time, workshops and relaxing strictly set targets.

Table 4 offers an overview of perceived tools and techniques for encouraging collaboration in distributed forms of work.

To sum up, successful collaboration in distributed work environments is supported by a combination of appropriate technological tools and strategic techniques. These include clear guidelines for the use of tools, encouraging small group interactions to improve social relationships, and deliberately creating space and opportunities for creative collaboration. The effectiveness of these tools and techniques is highly dependent on the underlying corporate culture, which must emphasize openness, trust and flexibility in order to adapt to the challenges of distributed collaboration. Explored companies use cloud technologies and have developed their own collaboration tools, including Microsoft Teams, Google Workspace, Workplace and Bluejeans from Facebook, and Slack and Quip from Salesforce. The most commonly used tools in these companies are video conferencing, chat and cloud document platforms. These tools are essential for routine, creative and social collaboration, although there are no significant differences in satisfaction between the different providers. The use of specific tools for creative collaboration, such as virtual whiteboards, is less common: only a third of respondents occasionally use tools such as Google Jamboard and Quip for creative tasks. Par-

*Table 4: Tools and Techniques for Encouraging Collaboration in Distributed Forms of Work*

	Key findings
<b>Tools for encouraging collaboration</b>	<ul style="list-style-type: none"> <li>• Employees most frequently use video conferences, chat, and cloud documents for collaboration.</li> <li>• Clear rules of collaboration are more important than the choice of provider.</li> </ul>
<b>Techniques for encouraging social collaboration</b>	<ul style="list-style-type: none"> <li>• Larger virtual team events online are ineffective, virtual interactions lack spontaneity.</li> <li>• Employees desire in-person socializing.</li> <li>• Office hours are an effective way for exchanging knowledge and best practices.</li> <li>• Occasional informal team meetings facilitate easier connection among employees.</li> </ul>
<b>Techniques for encouraging creative collaboration</b>	<ul style="list-style-type: none"> <li>• Companies do not offer programs that encourage virtual collaboration.</li> <li>• Companies should dedicate time to creative exchanges and approach them intentionally.</li> <li>• Creativity requires differently set goals; the company culture should allow for risk and failure.</li> </ul>

ticipants noted that effective collaboration in a distributed environment goes beyond simply having access to these tools. Well-established policies are needed so that employees know which tools are intended for communication, sharing documents and accessing necessary information. When it comes to social and creative collaboration, which is less common in remote environments, companies are trying to compensate for the lack of informal office interactions through virtual events, weekly team meetings and office hours. However, respondents considered large virtual team events to be ineffective due to their lack of spontaneity and viewed them as an additional burden rather than an opportunity for real contact. In contrast, office hours and smaller, informal team meetings were seen as more effective in fostering connections between employees. Despite these efforts, there is a lack of formal programs to promote creative collaboration in distributed work. The text suggests that organizations could better foster this type of collaboration by formally scheduling time for creative exchange, conducting workshops, and setting goals that allow for risks and failures.

## 5 DISCUSSION AND CONCLUSION

### 5.1 Discussion

There have been many successful examples of implementing distributed work. Despite possessing robust technological infrastructure and prior exposure to flexible work arrangements, the majority of interviewees have indicated a preference for a hybrid return to the office. This desire for a balance between flexibility and face-to-face interactions with colleagues underscores the appropriateness of the decision made by companies such as Microsoft, Google, Facebook, and Salesforce to transition to a hybrid work model in the coming years. The literature emphasizes flexibility as a key advantage of distributed work (Frost, 2007), indicating that technologically advanced and non-hierarchical organizations thrive in virtual environments (Duarte & Snyder, 2011). This was supported by our study participants, who affirm that distributed work provides them with a greater flexibility including schedule, location of work, better life-work integration and flexibility to customize workspace.

Our study reveals that distributed work results in substantial time savings, as employees no longer need to dedicate time to daily commuting as well as spend less time for business trips. Respondents with well-equipped home offices and conducive work environments, characterized by a quiet atmosphere, demonstrate higher efficiency compared to working in a traditional office setting. They also emphasized a greater autonomy in task execution and increased focus while working on a task. These findings align with the conclusions drawn in other studies, such as those by Allen et al. (2014). It's important to note that personal circumstances and the psychological state of individuals play a significant role in determining the effectiveness of distributed work. While interviewees did not identify a negative impact of distributed work on independent tasks, they did express that distributed work diminishes the frequency and efficacy of collaborative exchanges. This observation aligns with the findings from the BCG study conducted by Dahik et al. (2020), where approximately half of the respondents reported a decline in effectiveness while working remotely. Furthermore, our interviewees observed that, when working remotely and having the ability to complete a task independently, they often opt for individual execution, even though collaboration could potentially improve its quality. While independent task completion can be effective, striking a balance with collaborative work is crucial for achieving optimal company performance, fostering innovation, and maintaining a cohesive and engaged workforce. Consequently, it is essential for companies to develop strategies to encourage and promote collaboration among their employees.

Distributed work has significantly increased the number of meetings and notably extended the cumulative time interviewees spend in meetings. Interviewees believe that meetings in a virtual format are less effective, attributing this to ease and attractiveness of digital multitasking, technology fatigue and employee overload. These findings resonate with similar conclusions drawn in other studies, such as the work conducted by Frisch and Greene in 2020. While participants acknowledge that routine collaboration on simple tasks remains as effective remotely as it is in the office, engaging in collaboration on complex tasks and addressing un-

foreseen issues becomes more challenging. Complex collaboration demands additional time and planning, and the process of obtaining feedback tends to be prolonged. These observations align with existing literature findings (Alexander et al., 2020; G. M. Olson & Olson, 2000). Participants also note substantial increase in reporting as supervisors exert less control over their work, which adds additional workload on employees. These findings are in line with previous research by Kniffin et al. (2021).

There are more challenges for creative collaboration. Participants noted that successful brainstorming requires a spontaneous and physical environment that cannot be created when working remotely. This is also confirmed in the literature. In a distributed work environment, there is less face-to-face interaction (Allen et al., 2015) and therefore fewer spontaneous creative clashes (Alexander et al., 2020). Respondents attribute the decrease in creative collaboration to general overwork and increased reporting requirements. Employees who are overwhelmed with work find it difficult to be creative (Nahavandi et al., 2013). Despite previous findings by Thompson (2021), which suggested that the absence of collaborative interactions may not necessarily lead to a negative impact on creativity in the virtual environment, our interviewees did not corroborate this theory. Instead, our study uncovered a general decline in creativity when individuals are working remotely. It should be noted that most interviewees associate creative work with brainstorming and perceive it as a collective and synchronous activity. However, the process of generating new ideas can also be done asynchronously, which, if done properly can also offer some benefits. For example, asynchronous collaboration allows individuals to think about a problem in their own way and avoid the influence of the group (groupthink) and thus a more diverse input, there is less time pressure and more time to deeply think about the topics and lastly, some studies report increased participation as more introverted participants find it easier to express their thoughts in writing.

Another reason for the general decline in creativity that our respondents identified as important is the increase in multitasking during meetings (Marchewka et al., 2020). Previous study by De Bruin and Barber (2019), distinguishes between rel-

evant multitasking and irrelevant multitasking and while the former is perceived as more acceptable and less rude. However, multitasking during virtual meetings can generally lead to decreased focus, lower engagement, and reduced overall productivity. Participants who engage in multitasking may miss important information, contribute less effectively to discussions, and negatively impact the overall dynamics of the meeting. Creative collaboration in distributed forms of work requires not only appropriate technical equipment, but also undivided attention, as well as high level of psychological safety and trust between team members. In order to achieve that despite distractions and noise that accompany virtual meetings, several companies choose active facilitation of important creative meetings. Social collaboration in remote setting brings similar challenges - interviewees note that it is more difficult to socialize and build relationships in a virtual environment. The diminished visibility into colleagues' work and efforts can give rise to conflicts. Furthermore, the absence of spontaneous exchanges, like corridor chats or coffee breaks, necessitates a more proactive and intentional approach to networking and sustaining professional connections (Sarker et al., 2011).

Our results show that distributed work adversely affects both the creative and social collaboration among employees. As companies are striving to address the lack of social collaboration by organizing virtual events, office hours, and informal meetings it is important to note that respondents tend to perceive these virtual informal interactions as staged or fabricated and generally tend to avoid them. Respondents believe that their employers provide appropriate tools for collaboration. Collaboration in distributed forms of work is most commonly done via video conferencing, chats and cloud documents. Although email communication is still prevailing, respondents in our study do not consider email to be an effective collaboration tool due to congestion. The use of specialized tools for creative collaboration is rare among respondents and it seems companies in our sample are mainly promoting collaborations tools that support productivity. Despite using tools from various developers, there are no discernible differences in the satisfaction levels reported by the interviewees. The interviews confirm the results of the theoretical

part that clearly defined guidelines are required for successful collaboration in distributed forms of work – employees need to understand when to use which tool (Duarte & Snyder, 2011).

Numerous studies have underscored the significance of technology (Zhao et al., 2022). To foster effective collaboration, it is crucial for these organizations to ensure the availability of the necessary technology and tools. In our sample the respondents received a laptop and financial support from their employers to purchase suitable office equipment, such as a screen, desk, chair, keyboard, and mouse. The companies in the research sample provide adequate technological support and tools for collaboration. Employees in the sample have access to chat, video conferencing, cloud documents, telephone, and email. Openness, trust, and adaptability of the corporate culture are important prerequisites for effective collaboration within the company. Companies that want to create a conducive environment for collaboration in distributed forms of work need to invest in building an appropriate culture and social capital. They should also promote charismatic leadership that rewards results and effort. Successful collaboration in distributed forms of work requires clearly defined and achievable goals, effective communication, and well-defined processes within the organization (Alexander et al., 2020; Duarte & Snyder, 2011; Frost, 2007; Makarius & Larson, 2017). Companies should be careful when setting targets. This research has shown that an excessive focus on routine tasks stifles creativity, which was previously shown an important building block for an organization's long-term success (Obstfeld, 2012). Companies need to make creative time available and consciously encourage creativity. The analysis of the interviews shows that companies should adapt their goals more closely to the dynamics of distributed work.

This research has shown that the amount of time spent in meetings increases significantly when distributed work. Virtual meetings are often ineffective as participants multitask (Frisch & Greene, 2020). The virtual nature of meetings can quickly exhaust employees. Organizations can improve meetings by training employees on effective online presentations, the importance of rules, defining the purpose of the meeting, and encouraging feedback (Frisch & Greene, 2020). Organizations can reduce employee

overload by implementing weeks or days without meetings. Previous experience of distributed work plays an important role in the success of collaboration in distributed forms of work (Dahik et al., 2020). Companies that are not used to this type of work can gradually transition to distributed work and test a hybrid model first. To achieve effective collaboration in distributed forms of work, employees need to be trained (Duarte & Snyder, 2011). In addition to the use of collaboration tools, soft skills are also important. Respondents expressed a desire for training in effective virtual communication, presentations and virtual brainstorming. In a virtual environment, it is more difficult to understand individual challenges and problems due to the lack of non-verbal communication. As the boundaries between work and leisure are blurred, employees can burn out. For companies opting for remote or hybrid working, it is advisable to invest in training and psychological support for employees (Dahik et al., 2020). It is also important that companies implement programs that ensure respect and inclusion of all employees.

What respondents miss most about distributed work is the spontaneity of relationships and live interactions. Social connections are easier to make when teams spend some time in the same place. Occasional face-to-face meetings build trust and make it easier to ask less awkward questions and receive feedback (Karis et al., 2016). Face-to-face meetings allow for getting to know each other, building personal relationships and spontaneity. Especially when integrating new team members, training sessions, team events and creative collaboration should take place in a shared location wherever possible. Companies should encourage office hours, informal team meetings and occasional team events. To make it easier to maintain the culture of collaboration, companies can choose a hybrid working model that gives employees freedom while allowing for sufficient face-to-face contact and lively collaborative interactions (Alexander et al., 2020).

## 5.2 Theoretical implications

The paper advances the literature on distributed work and extends the classic discussion on modern work environments by offering insights into their impact on employee collaboration. Our theoretical con-

tributions are threefold. First, we argue that collaboration should be regarded as a multifaceted construct, segmented into various subtypes rather than viewed as a monolithic entity, as suggested in previous literature (Frost, 2007; Karis et al., 2016). Drawing upon the works of diverse scholars (Obstfeld, 2012; Sandow & Allen, 2005; Sutton, 2002), we introduce a novel classification of employee collaboration, segmented into three distinct types: routine, creative, and social. While distributed work has been shown to be an effective arrangement (Olson & Olson, 2000), the efficacy of such arrangements for collaborative tasks remains unclear. We posit that individual tasks and routine collaboration can be conducted with comparable efficiency in distributed settings as in traditional face-to-face arrangements. Conversely, creative and social collaborations necessitate in-person interactions to yield substantive outcomes.

As our second contribution, we highlight the importance of enabling factors that contribute to successful transition and collaboration to distributed work. We confirm that organizational culture, HR practices, ICT and physical layouts are critical for collaborative workplaces (Manca et al., 2018). We further emphasize that psychological and social factors are as equally important for successful employee collaboration (Alexander et al., 2020; Coppola et al., 2004). In addition, we provide an overview of tools that make collaboration easier.

Last, our study makes a significant empirical contribution by situating the analysis within the context of the Fortune 500 top US companies. This approach not only enhances the relevance and applicability of our findings but also affords a comprehensive understanding of how distributed work and employee collaboration are operationalized at the highest levels. By focusing on these leading companies, we are able to draw from a rich dataset that includes a variety of industries, organizational structures, and work cultures, thereby providing a robust and nuanced view of the current state of distributed work. Moreover, the inclusion of these companies allows us to examine the intersection of advanced technological infrastructures, organizational strategies, and collaboration outcomes, offering invaluable insights for both academic research and practical application in understanding the evolving dynamics of the modern workplace.

### 5.3 Practical implications

The findings of this study on distributed work have several practical implications for managers who want to optimize collaboration and the distributed working environment.

Firstly, managers should provide their employees with the necessary technology tools and support to set up an efficient home office. This includes hardware such as laptops and ergonomic office furniture, but also software and collaboration tools. The suitability of the workplace and the adequacy of hardware and office equipment play an important role in distributed work (Dahik et al., 2020). A high degree of technology acceptance is typical for companies with a high degree of cooperation (Frost, 2007). Investment in education and development and the provision of appropriate technical support play an important role in this (Duarte & Snyder, 2011). In addition to technical training, companies need to provide their employees with appropriate information about working from home, support programs and psychological resources to encourage collaboration in distributed forms of work. The latter include feedback, support and maintaining connection through regular video calls (Kniffin et al., 2021). They should also provide training and support to help employees adapt to distributed working environments, which includes training on effective virtual communication, managing work-life boundaries and supporting mental health.

Secondly, managers should ensure that employees have access to effective communication tools and understand how to best utilize them. This includes video conferencing, chat applications and document sharing in the cloud. Managers need to also provide guidance on when and how to use these tools effectively for different tasks. They can encourage the use of technology through training and appropriate technical support and ensure that all employees have equal access to technology regardless of their position or location (Duarte & Snyder, 2011).

Thirdly, managers should address collaboration in distributed forms of work challenges. For example, they should recognize that distributed working can reduce the efficiency of collaborative exchanges and brainstorming sessions. Therefore, they have to develop strategies to encourage collaboration and creativity, even in a distributed environment. This



could include setting aside time for creative work and ensuring that meetings are focused and facilitated effectively. They could possibly introduce 'meeting-free' days or weeks to reduce overload. Organizations in which managers encourage individuals to network and collaborate with each other are more successful (Sandow & Allen, 2005).

Fourthly, managers should promote social interaction and team building. Strong social connectedness among employees enables collective productivity and is an essential prerequisite for effective communication, efficiency, knowledge acquisition and innovation within the organization (Dahik et al., 2020). Therefore managers should create opportunities for informal virtual interactions and, where possible, organize face-to-face meetings or events to strengthen team cohesion. To maintain motivation, employees need to feel safe and heard. Such a space can be created through virtual calls, shared calendars, updates and joint planning of goals and outcomes (Karis et al., 2016). Spontaneous interactions are also key to building collegial relationships, social capital and trust. While social bonds often form spontaneously in a physical environment, the virtual environment requires a more targeted approach. Leaders can encourage interactions through team experiences and organizing sufficient group events (Alexander et al., 2020). Social bonding happens more easily when teams spend some time in the same place, so it's a good idea for virtual teams to organize occasional face-to-face meetings. Such events encourage spontaneous communication and collaboration, integrate distributed team members into the central team, simplify handover and coordination in event planning and allow easy access to each other. Occasional meetings build trust, which makes it easier to ask less awkward questions and receive feedback (Karis et al., 2016).

Fifthly, managers should clearly set the goals and expectations and make sure they align with the dynamics of distributed work. Managers should avoid overemphasizing routine tasks at the expense of creative and collaborative work. For collaboration in distributed forms of work to take place across team boundaries, it is important that the entire organization embraces this way of working. An organization can ensure the acceptance of distributed work with the mechanisms, such as effective communica-

tion (e.g., managers must make it clear that distributed work is not just a passing trend, but a new way of doing business that leverages knowledge and skills and embraces diversity), and clearly defined procedures and objectives (Duarte & Snyder, 2011).

Last but not least, managers should adapt leadership style and organizational culture to support distributed work. This includes promoting trust, openness, adaptability and a results-oriented approach. Duarte and Snyder (2011) identify the following competencies of successful virtual team leaders: coaching and managing for success without traditional forms of feedback, appropriate selection and use of collaboration and communication tools, leading in an international environment, the ability to develop team members, building and maintaining trust, networking across hierarchies and organizations, developing successful organizational processes to support the virtual team. Team leaders play an important role in building trust. They should foster a culture that values teamwork, communication, learning and diversity, is open to change and supports collaboration (Duarte & Snyder, 2011). Collaboration on routine and creative tasks is easier when there are clear processes and communication rules within the team (Makarius & Larson, 2017). Rules shorten the time it takes to start a collaborative task and prevent unnecessary reinvention (Duarte & Snyder, 2011). Successful distributed work requires appropriate human resource policies that enable hands-on work (Duarte & Snyder, 2011). The organization must ensure the integration of systems and provide employees same level of recognition, support, and rewards to all employees regardless of where they work.

#### **5.4 Limitations and future research directions**

The study is based on insights gained from a purposive sample of ten individuals employed in international Fortune 500 top US companies, namely Microsoft, Google, Facebook, and Salesforce, that are known for high levels of digitalization. The provided sample enables the attainment of the study objective, namely the development of guidelines for successful collaboration in distributed forms of work. Because these companies are incredibly advanced in their ways of working and have due to their global nature had extensive prior experience

with virtual collaboration, we were able to identify both benefits as well as disadvantages of distributed work. The small and purposive sample comes with limitations. The opinion of ten people employed in one sector is difficult to generalize to the entire population. While interviewees answered some questions similarly, certain answers vary depending on the company in which they are employed. Experiences of remote creative collaboration would likely be different if the sample included employees from the creative industries. Responses would likely differ depending on the level of digital transformation in the company and the country of employment.

The results of the semi-structured interviews can be used for further research – to understand the general impact of distributed work on employee collaboration, the results of the study could be summarized in a survey and tested for general significance on a broad, representative sample. Survey data collection would also enable structural equation modeling analysis to test the causal relationships between different types of collaboration in distributed forms of work and employee outcomes, including job performance, job satisfaction, work engagement, and innovative behavior. Moreover, multilevel analysis could be conducted to understand how employee collaboration is affected by team characteristics and firm characteristics. While the literature review and the analysis of the interviews answer the research questions, new questions arise regarding the future of distributed work, for example: What impact will distributed work have on employees' creative, routine, and social collaboration in five years' time?, How can companies cultivate a successful long-term virtual culture?, What impact will the transition to distributed work have on employee collaboration in the creative industries?, What is the impact on employees in less digitized companies?, How do different types of collaboration in distributed forms of work affect individual, team, and firm level outcomes?

## 5.5 Conclusion

In conclusion, this study has shed light on the complexities of collaboration in distributed forms of work. While the rapid development of information and communication technologies has prompted nu-

merous companies to endorse virtual and hybrid work environments, it is important to better understand the nuances of different types of collaborative interactions. Virtual setting has definitely empowered independent work and routine collaborations, while engaging in collaboration for more complex tasks, as well as creative and social collaboration within a virtual environment, presents greater challenges.

The success of collaboration in distributed forms of work is influenced by technological factors (appropriate technology and work environment), cultural and structural factors (experience with distributed work, training, culture and leadership of openness and trust, clarity of communication and goals, hybridity of collaborative interactions) as well as social and psychological factors (motivation, safety, isolation, etc). Organizations need to approach collaboration in distributed forms of work consciously and consider these factors of collaboration. Providing appropriate technologies for collaboration, investing in employees' soft skills, building a culture of openness and trust, setting clear goals and offering psychological support will go a long way in increasing individuals' commitment to the organization and thus their willingness to collaborate.

In essence, as companies navigate the evolving landscape of collaboration in distributed forms of work, the profound need for genuine human connection is emerging as more important than ever. Successful collaboration, rooted in trust, feedback exchange, and the spark of spontaneity vital for creativity, thrives on social contact. Therefore, for virtual teams seeking to amplify their collaborative efforts, a suggestion surfaces—to intentionally allocate moments for shared physical presence. Occasional face-to-face meetings become not merely a formality but a cornerstone, fostering the bonds that drive collaborative success online and offline. Companies, recognizing the transformative power of such encounters, weave them into the fabric of their work culture through initiatives like regular team building activities, office hours, regular all team meetings, offsite events and retreats. By streamlining reporting processes and embracing a flexible or hybrid working model, organizations can transcend the constraints of distance, empowering teams to unleash their creative potential and forge connections that endure.

## EXTENDED SUMMARY/IZVLEČEK

V študiji avtorji raziskujejo učinke porazdeljenega dela na sodelovanje zaposlenih v Fortune 500 podjetjih, kot so Microsoft, Google, Facebook in Salesforce. Cilj raziskave je proučiti, kako prehod v decentralizirano delovno okolje vpliva na procese sodelovanja, dinamiko skupin in produktivnost. Raziskava uporablja kvalitativni pristop, ki omogoča poglobljeno preučevanje vpliva porazdeljenega dela na različne vrste sodelovanja zaposlenih (npr. rutinsko, ustvarjalno in družbeno) ter ključne dejavnike, ki prispevajo k uspešnemu prehodu na porazdeljeno delo. Rutinsko sodelovanje na daljavo je sicer lahko učinkovito, a je mnogo kompleksnejše. Ustvarjalno in družbeno sodelovanje pa je v virtualnem okolju oteženo. Ugotovitve kažejo, da čeprav je samostojno delo na daljavo zaradi napredka tehnologij učinkovito in vpliva na povečano individualno produktivnost, pa le-to hkrati zmanjšuje sodelovanje med zaposlenimi. Največji izziv je vzdrževanju učinkovite skupinske povezanosti in spontane komunikacije. Na uspeh porazdeljenega dela vplivajo tehnološki, kulturni, strukturni, družbeni in psihološki dejavniki. Podjetja morajo za uspešno sodelovanje na daljavo razumeti in upoštevati te dejavnike, zagotavljati ustrezno tehnologijo, graditi kulturo odprtosti in zaupanja, jasno postavljati cilje in nuditi psihološko podporo. Integracija novih zaposlenih, izobraževanja in ustvarjalno delo naj, če je mogoče, potekajo v živo. Za uspešno sodelovanje je pomembna družbena povezanost, zato naj virtualni timi del časa preživijo skupaj. Občasna srečanja v živo krepijo zaupanje in spodbujajo ustvarjalnost. Podjetja lahko sodelovanje spodbujajo z virtualnimi dogodki in sestanki ter zmanjšajo poudarek na poročanju, saj s tem omogočajo več časa za ustvarjalno delo. Rezultati raziskave jasno kažejo na zaželenost prehajanja na hibridni model dela. Ta študija prispeva k vse bolj popularnim razpravam o porazdeljenem delu in ponuja dragocen vpogled v izzive sodelovanja na daljavo ter hkrati predlaga strategije za optimizacijo porazdeljenega dela v organizacijah.

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