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**“I can't hear you, you're muted” – Socialization in virtual  
communities of practices**

A case study of how newcomers' transition into a new organization is  
affected by a virtual onboarding process

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Master Degree Project  
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# **“I can’t hear you, you’re muted” – Socialization in virtual communities of practices**

A qualitative case study of how newcomers’ transition into a new organization is affected by a virtual onboarding process

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## **Abstract**

Previous literature on onboarding processes has had its point of departure in physical settings. To contribute to further research on the subject of onboarding, this paper investigates onboarding in a virtual setting. Viewing the virtual onboarding process as a social practice through the perspective of communities of practice (CoP) and, particularly, virtual communities of practice (vCoP) provide new insights into the significance of knowledge sharing and socialization. The paper uses a qualitative approach and is based on a case study, where data was collected through 28 semi-structured interviews with newcomers, managers, and HR professionals. The case organization is publicly owned, operates in a knowledge-intensive sector, and has primarily operated in a virtual setting since the outbreak of COVID-19. Due to this, several newcomers have been onboarded virtually, making it a suitable case for this paper. By using a vCoP lens to analyze the collected data, the paper shows that socialization is essential for transferring tacit knowledge to virtually onboarded newcomers due to their few informal interactions with other employees. The paper further identifies three different social factors that create and develop vCoPs, where knowledge sharing occurs: newcomers’ initiatives, managerial initiatives, and mentorship. A dynamic environment facilitates knowledge sharing. This paper also reveals that experience within technological tools is essential for dynamic interaction to occur. A lack of this can have consequences for long-term innovation and, ultimately, business competitiveness.

## **Keywords**

*Socialization, networking, knowledge sharing, virtual onboarding, virtual communities of practice, innovation, technological tools*

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## Introduction

Due to the COVID-19 pandemic, more people have begun to work remotely in an attempt to prevent the virus from spreading. According to Nordlund (2020), more than 50% of the working population in Sweden has been from home during the pandemic. Other studies indicate that remote work is an upward trend and will be a common societal phenomenon even after the pandemic (Olsson, 2020). The tech-giant Facebook forecast that, within a five to ten-year period, up to 50% of their employees will be located at home (Karlsson, 2020). Other organizations tend to move towards hybrid virtual models, where remote work and work at the office are combined (Alexander, De Smet, Langstaff & Ravid, 2021). Due to the potential future work setting, introducing newcomers into the organization, i.e., onboarding, will to a more considerable extent be held virtually, which implies that organizations must create an understanding of how the onboarding process is affected by a virtual setting. Efficient onboarding processes enable organizations to create knowledge sharing and help newcomers adapt to the new context (Fagerholm, Sanchez Guinea, Borenstein & Munch, 2014). Hence, the onboarding process is about making newcomers' transition into the business as smooth as possible, especially regarding matters directly related to the job and the organization. When newcomers are integrated into the business, they develop themselves and the business (Klein, Polin & Leigh Sutton, 2015; Caldwell & Peters, 2018). Therefore, the onboarding process is vital for business purposes.

Recruitment of new employees calls for the following onboarding process. The design of the process and how well it facilitates socialization and knowledge sharing amongst employees will arguably be affected by the context it is conducted within. Due to the forecasts regarding future remote work (Olsson, 2020; Karlsson, 2020; Alexander et al., 2021), it is highly relevant to investigate further how such a work setting is affecting the onboarding process since this, in turn, impacts the performance of the newcomer and the overall business. Previous strands of literature within the field of onboarding (Caldwell et al., 2018; Klein et al., 2015; Krasman, 2015) primarily have their starting point in physical settings, but new ways of organizing have arisen which has implications for how onboarding unfolds in practice. Arguably, there is a difference between physical and virtual onboarding processes. These differences can significantly impact organizational performance, which calls for new insights regarding virtual onboarding practices. Therefore, this research aims to contribute to understanding how onboarding processes unfold within a virtual setting.

The onboarding process aims to facilitate learning and socialization (Korte & Lin, 2013). Understanding the onboarding process through a community of practice-perspective will provide further insights into onboarding as a social practice. This proves that communities of practice are not solely a way of describing a phenomenon but are also a theoretical point of departure. A community of practice (CoP) is described as a group of people who organize themselves around specific situations, problems, or topics and share knowledge about them (Chang, Chang & Jacobs, 2009; Pyrko, Dörfler & Eden, 2017). Thus, CoPs ensure socialization and knowledge sharing between members. Further, CoPs are highly dependent on the shared context of operation – a physical work setting tend to limit the CoP to timely and spatial

dimensions (Gkotsis, Karacapilidis & Tsirakis, 2011). In contrast, a virtual work setting entails more ambiguous limitations. The onboarding process has previously been investigated in physical settings, and this case study is focused on a virtual setting, which calls for an additional theoretical point of departure. Using a virtual community of practice (vCoP) perspective – sometimes referred to as online communities of practice – on the virtual onboarding process brings new insights into onboarding as a social practice and provides understanding about the process of socialization and knowledge sharing. Using the definitions of Pyrko et al. (2017), Chang et al. (2009), and Gkotsis et al. (2011) on CoPs and vCoPs will further facilitate the investigation on how onboarding is affected by a virtual setting.

The literature upon onboarding processes has evolved into different frameworks, where the inform-welcome-guide is one of them (Klein et al., 2015). Within this framework, emphasis is placed on socialization, knowledge transfer, and help and assistance towards the newcomer. Krasman (2015) emphasizes similar aspects, including organic conversation and socialization. Since the socialization aspect is crucial for successful onboarding, this paper aims to investigate how socialization within onboarding is affected by a virtual setting. The results indicate that a virtual setting makes socialization in onboarding challenging. The paper is based on a case at an organization that almost exclusively operates in a virtual setting, where most employees are not located at the office for a longer period. The case organization is a publicly owned company that operates within a knowledge-intensive sector, with a complex organizational structure and complex work tasks, respectively. This leads to the following research question:

- *How do social interaction and facilitation of knowledge sharing unfold in a virtual onboarding process?*

The paper is structured as follows: First, the theoretical framework, including a definition of the onboarding process and communities of practice, is presented. Second, the methodology used in this paper is presented, followed by the findings section. In this section, empirical results and analysis are gathered into different themes and are continuously presented in each theme. The paper continues with a discussion section, followed by a conclusion, and ends with suggestions for further research.

## Theoretical framework

### **Introducing communities of practice**

Practice theory is argued to be a legacy from the ancient Greeks and has developed into a broad set of theoretical perspectives during the latest years (Nicolini, 2012). Anthony Giddens and Pierre Bourdieu, respectively, have made a mark within the theoretical field of practice with their work on the structuration process and the concepts of habitus and capital (Nicolini, 2012). The field of practice theory has evolved into including several other perspectives, such as strategy-as-practice (Jarzabkowski, Kaplan, Seidl & Whittington 2016; Feldman & Worline, 2016) and communities of practice (Feldman & Worline, 2016; Pyrko et al., 2017; Chang et

al., 2009; Gkotsis et al., 2011; Corradi, Gherardi, Verzelloni, Vendelø, Dehler & Christensen, 2010).

To understand onboarding and the process of socialization unfolds in practice, the lens of Communities of practice (CoPs) can be applied. CoPs are referred to as a group of people that collaboratively share tacit knowledge about a set of specific situations, problems, or topics (Chang et al., 2009; Pyrko et al., 2017). Gkotsis et al. (2011) provide a somewhat different view on CoPs, where more emphasis is put on a shared context for the people participating in the CoP regarding the disciplinary background and work activities. Furthermore, CoPs are described to occur, grow, and mature over time (Chang et al., 2009; Pyrko et al., 2017). The process of developing CoPs can be either spontaneous or organized by the organization (Chang et al., 2009). CoPs are one way to understand learning in organizations, and learning is essential for organizations and their survival (Chang et al., 2009). Gkotsis et al. (2011) mention that many modern learning theories have highlighted collaborative and community learning advantages. Moreover, CoPs can facilitate newcomers' transition process through knowledge sharing since newcomers can extract knowledge, gain skills, values, and norms, and learn the organizational culture through socialization (Chang et al., 2009). Viewing newcomers' onboarding process as a social practice, through the lens of CoPs, makes it possible to understand how their learning and transition process unfolds.

#### *Virtual versus physical communities of practice*

Just as an onboarding process can be virtual or physical, a CoP can emerge in a physical or virtual setting. To understand the virtual onboarding process, it is crucial to distinguish the determinants for the context of the CoP. A physical CoP can develop in various ways, such as in coffee breaks or in pads and papers. A virtual community of practice (vCoP) can develop in, for example, discussion boards or E-newsletters (Chang et al., 2009). Like a CoP, a vCoP is a group of people with common interests who interact and share knowledge (Jimenez-Zarco, Gonzalez-Gonzalez, Saigi-Rubio & Torrent-Sellens, 2015). Though, these interactions take place in a virtual setting. Chang et al. (2009) argues that CoPs and vCoPs share the same characteristics by stating that “virtual CoPs share characteristics of traditional CoPs, although they have some additional characteristics related to the use of technology and a broader network” (Chang et al., 2009, p. 409). Ardichvili (2008) refers to vCoPs as organic systems constantly developed through interactions among its members and interactions between its members and the external context. As previously mentioned, knowledge sharing is essential for organizations' survival. Without the possibility of interacting face-to-face with other people, which is how CoPs interact and how knowledge is shared, vCoPs, together with technology, can be a supplement to face-to-face interactions and still benefit knowledge sharing in organizations (Hafeez, Alghatas, Foroudi, Nguyen, & Gupta, 2019).

Some characteristics are different depending on which setting the CoP is developed. CoPs face limitations of space and time in physical settings and usually require intentional motivation to grant new memberships (Gkotsis et al., 2011). However, vCoPs tend to have more ambiguous limitations, which allow for peripheral members with less visibility. Jimenez-Zarco et al.

(2015) present the vCoP as divided into three different levels of participants: core members, active members, and peripheral members. First, the core members, by some referred to as central members (Nistor, Baltas, Dascălu, Mihăilă, Smeaton & Trăușan-Matu, 2014), are a small group of 10% of the vCoP members that do 90% of the work and are highly engaged in contributing to knowledge sharing through the online discourse within the vCoP (Hafeez et al., 2019). Second, the active members are also engaged in the online discourse but with a lower intensity (Jimenez-Zarco et al., 2015). Lastly, the peripheral members are not actively contributing to the online discourse but are extracting valuable knowledge. These are often referred to as *lukk*ers (Jimenez-Zarco et al., 2015), or *lurk*ers (Hafeez et al., 2019). A higher intensity of engagement by participants within vCoPs generates more knowledge sharing between members and contributes to development of new knowledge. Thus, more active participation in vCoPs is preferable for organizations. Ardichvili (2008) explains that engagement within vCoPs can be increased by managing trust between vCoP members. Trust is built upon two different pillars: institution-based trust and personal knowledge-based trust. The first pillar consists of structures and procedures that facilitate trustworthy behavior between individuals, and the latter consists of establishing trust between people – trustors and trustees. In virtual settings, the establishment of trust can be challenging. Thus, organizations must consider the communication of structures and procedures so that these are clearly articulated in the organizational context. Ardichvili (2008) further suggests that technological tools, such as video conferencing, can be used as supplements for physical interactions to establish trust. It is also suggested that virtual meetings should be combined with initial physical meetings to create a sense of community inclusion.

As a part of practice, technology enactment can be crucial for knowledge sharing within vCoPs (Ardichvili, 2008; Rivera & Cox, 2016). Still, many organizations fail to develop technologies to support their work (Rivera & Cox, 2016). A typical pitfall occurs when organizations introduce new technology with the act of “technological faith” (Venters, 2010). In such as case, technology itself is thought to improve performance without regard taken its enactment, but simply to the commitment to modernize, change and improve. Thus, organizations must develop technological proficiency amongst their employees through initial- and follow-up training to overcome the barriers to knowledge sharing (Ardichvili, 2008). This implicates that without clear aims for the technology, its purpose will be socially constructed afterward. Therefore, technology is arguably both an artifact of design and enacted in practice (Venters, 2010).

#### *Practice innovation within vCoPs*

Standard practices that follow a specific process can facilitate the achievement of a set of articulated performance outcomes (Jarzabkowski et al., 2016). These practices can maintain performance over a long time but ultimately risk being imitated by competitors. Innovating best practices through the means of practice innovation entails that CoPs can develop and provide enterprises with a competitive advantage. Arguably, this also applies to vCoPs, since innovation can be developed through members’ skills, knowledge, and talents (Jimenez-Zarco et al., 2015). Further, community diversity is a crucial factor since it increases the dynamics of

the vCoP by facilitating member interaction (Chang et al., 2009). This implies that strategic outcomes of practice are highly dependent on the enactment of practice carried out by the individuals within vCoPs. These are referred to as practitioners, and their personality traits, roles, and organizational positions highly impact how practice is engaged, enacted, developed, and transferred, which in turn affects the outcome of the CoP, and thus the learning strategy (Chang et al., 2009; Jarzabkowski et al., 2016). This proves that practices do not occur automatically and are far from static. Therefore, the enactment of practice varies depending on who and how they are enacted. To understand how onboarding processes are enacted in practice, the next section will present what previous literature has found on the topic of onboarding.

### **Definition of the onboarding process and its characteristics**

This paper considers the onboarding process as a social practice by the appliance of a practice lens. Previous literature states that organizational socialization, or onboarding, aims to transform organizational outsiders to insiders through social relations, and by facilitating learning, performance, and well-being (Fagerholm et al., 2014; Korte & Lin, 2013). Further, onboarding involves organizations or people within the organization that engage or enact formal or informal practices, programs, and policies to make the newcomers' transition into the new organization as positive as possible (Klein et al., 2015). It is a way for the organization to introduce the newcomer to various things connected to the job and the organization, such as introducing the work tasks, explaining desired goals and values within the organization, and providing the opportunity to show and explain the organizational culture (Caldwell & Peters, 2018). This process is argued to be important because the faster a newcomer adjusts and understands the unique aspects of an organization, the faster they can create value for the organization (Klein et al., 2015). Literature within the onboarding field often emphasizes newcomers' responsibility (Korte & Lin, 2013). However, it is argued that managers and colleagues also significantly impact the socialization process since the relational dimension between these is highly affecting other dimensions of the process. These are referred to as key socializing agents by Ellis, Nifadkar, Bauer & Erdogan (2017). For example, managers are responsible for providing support and information to newcomers. Many organizations tend to view the onboarding process as a more short-sighted process since they view it as an expense rather than an investment (Caldwell & Peters, 2018). Furthermore, a well-developed onboarding process can create other benefits such as satisfied employees and reduced turnovers (Krasman, 2015). Thus, the onboarding process is an important practice that needs to be considered and developed by organizations.

There are various onboarding processes, depending on industries and businesses (Krasman, 2015). Klein et al. (2015) present the inform-welcome-guide framework, which covers three primary purposes of an onboarding process regardless of the industry or business. The first one, inform, is all practices that include informing the newcomer in any way, such as providing information and materials. The second one, welcome, is the practices that cover the welcoming of the newcomer, such as appreciation of them joining the organization and letting them meet

their new colleagues. The third one, guide, is all practices that cover the guiding and transition for the newcomer, where the organization provides the newcomer with assistance and help.

Krasman (2015) mentions three stages of an onboarding process: the initial resources, the first day, and the initial three months. The initial resources are essential for a smooth transition process from when a newcomer accepts an employment offer until the first day of employment. Often, that time is perceived as stressful and filled with uncertainty, which the employer should reduce. Otherwise, it can give the newcomer a negative impression that could last even after the employment begins. Therefore, questions should be responded to, and the employer should provide initial resources available to the newcomer directly after the offer has been accepted. Krasman (2015) mentions that some examples of this can be the centralization of useful information, communication of timeline, and preliminary introductions. On the first day of employment, Krasman (2015) highlights the importance of the first impression – employers should prepare the first day to make it as memorable as possible. This entails encouraging organic conversation and socialization, providing a shortlist of work assignments, and providing the newcomer with the tools necessary to conduct his or her work. Lastly, Krasman (2015) argues that the next 90 days are essential for completing the onboarding process. Emphasis is being put on the importance of giving and receiving feedback, for example, through a 90-day goal-plan, to assure that the newcomer is provided with the right tools and increases productivity in the new role.

In sum, there is extensive literature on onboarding and its processes. However, less emphasis has been placed on understanding onboarding as a social practice, including the understanding of socialization and knowledge sharing. In addition, it can be argued that the context is a crucial factor for the unfolding of these practices. To gain an understanding of not only what the process is but also how it unfolds in a virtual setting and how it intertwines with the social context, it is relevant to investigate the virtual onboarding process through a vCoP perspective.

## Methodology

### **Research design**

As the study intended to investigate virtual onboarding and its connected practices, a qualitative case study was considered the most appropriate. This since a qualitative approach is suitable when studying actions and behaviors in everyday life (Silverman, 2017). Furthermore, the case study also provides the researchers with an opportunity to gain a deeper understanding of the field (Flyvberg, 2006). Onboarding practices vary depending on industries and businesses (Krasman, 2015). Therefore, this study aimed to collect data at one case organization through a single case study, which is believed to bring more profound insights into the onboarding practices of that specific organization, rather than focus superficially on several organizations and their various onboarding practices. The study has been conducted at an organization where the population is representative for the subject of investigation, the virtual onboarding process. The organization will hereafter be referred to as “Infrastructure”. Infrastructure is a publicly owned organization that operates within a knowledge-intensive sector, where solutions are



seldom standardized and where both the organization and work tasks are complex. The organization consists of approximately 1000 employees, distributed over several sites, departments, and business areas located in Gothenburg and its surroundings. The headquarters is located in central Gothenburg. During the fall of 2020, Infrastructure conducted a major re-organization, spanning throughout the whole organization and affecting the overall organizational structure. This included the establishment of new departments, new roles, and redistributed responsibilities. Parallel to this, employees were encouraged to conduct their work remotely due to the COVID-19 pandemic situation. Employees at Infrastructure express that working remotely has been less common prior to the pandemic. Thus, the transition to remote work has been relatively substantial for many employees.

Further, the organization had employed over 100 persons during the year 2020. Consequently, most of these onboarding processes were held virtually. The case organization was considered suitable for this paper since it focuses on virtuality, interaction, socialization, and knowledge sharing between employees. The study has not been of comparative character in regard to that it has compared employees' onboarding experiences before and after remote working was introduced at Infrastructure. Instead, it was relevant to investigate newcomers' perceptions and experiences from their current virtual onboarding processes, rather than investigating former newcomers' experiences from their physical onboarding processes held before the pandemic. Since this study investigated the virtual onboarding process, it did not require a comparative approach to fulfill its purpose.

## **Data collection**

This study was based on primary data obtained through interview sessions as a single data collection strategy. Using a single data collection strategy is considered more effective since it only requires one data analysis strategy (Silverman, 2017). Additionally, it does not allow the researcher to commute between analyzing one type of data with another, making the quality of the data analysis higher (Silverman, 2017). Studies that use a practice theory perspective require a data collection strategy that provides the ability to extract peoples' actions in the social context, e.g., observations, to investigate what people do (Corradi et al., 2010; Rivera & Cox, 2016). Arguably, an ethnographic approach is suitable for these studies as it involves observing situations and people in a social context (Silverman, 2017). However, it is argued that studying and understanding peoples' activities in a virtual setting are rather tricky, with the means of observations (Rivera & Cox, 2016). Additionally, Silverman (2017) argues that it is an advantageous to only to use one single data collection strategy. Therefore, this study only used one data collection strategy since it results in more rich data (Rivera & Cox, 2016).

This study has used interviews as its data collection strategy since it provides an understanding of individuals' experiences and perceptions of the virtual onboarding process (Silverman, 2017). Before conducting the interviews, an initial pilot interview was held with a recently employed employee in a private, but otherwise similar, organization. During this interview, the interview framework was tested so that fine adjustments such as unclear questions or potential misconceptions of questions could be prevented and considered before initiating the sharp

interviews. The initial communication was held with one of the employees at Infrastructure, which resulted in a meeting with an HR professional. The purpose of the meeting was to present a general overview of the organization and its onboarding process and a presentation of the intended study. After that, the HR professional provided an initial set of 21 respondents, followed by a second set of 7 respondents, which gave a total of 28 respondents. Before the interviews were scheduled, the HR professional was provided with a separate document for each type of respondent, one for newcomers, one for managers, and one for HR professionals. These documents included an introduction about the researchers, the intended study, why they are asked to participate in the study, and some examples of interview questions and themes that were going to be asked during the interview. An interview setting is not considered a normal situation, so establishing trust and comfort can ensure honest answers and high-quality data (Kvale, 2006; Silverman, 2017). Due to ethical considerations, these documents aimed at creating a feeling of trust to ensure that respondents felt comfortable when initiating the interview as they were aware of the aim and topic of the study and the interview setting. Further, all interviews were conducted anonymously due to ethical grounds and as a part of the establishment of trust between interviewer and interviewee. Further, pseudonyms has been used when illustrating what respondents have said. Due to time constraints, the interviews were divided between us equally and held individually without the presence of the other.

<b>Position</b>	<b>Number of interviews</b>
Newcomer	18
Manager	6
HR Professional	4
<i>TOTAL</i>	<i>28</i>

*Table 1. Distribution of interviews based on position.*

After finishing the second set of interviews, saturation was reached as no new insights were presented by respondents, but rather confirming what had been presented by previous respondents (Silverman, 2017). The interviews lasted approximately between 45 and 60 minutes. They consisted of 18 newcomers who had been employed during the last six months at the time of the study, 6 managers who were in charge of the employer onboarding process, and 4 HR professionals who were involved in developing general frameworks regarding the employer onboarding process. All interviews were held in Swedish and translated to English, which can have consequences for the study's validity in terms of translation-related decisions (Birbili, 2000). To reduce the risk of misconceptions regarding the translation of the empirical findings, all data was carefully translated with the help of several dictionaries and translation tools. In addition, all translations were revised by both researchers to reduce the risk further. The sampling process is referred to as convenience sampling, where respondents are convenient by their proximity and their willingness to participate in the study (Robinson, 2014). It is noteworthy that using convenience sampling could implicate a risk of gaining skewed data since Infrastructure has partly had the opportunity to hand-pick respondents themselves, potentially those that represent the firm in a better way than a random set of respondents. To manage potential skewness, a set of criteria was asked. The majority of respondents had to be newcomers employed during the last six months when Infrastructure operated in a virtual

setting. We also wanted to interview newcomers with junior and senior positions, since we wanted to reach a nuanced picture from newcomers' experiences and perceptions. Additionally, to reach a nuanced picture on the topic, HR professionals and managers responsible for virtual onboarding processes were requested. When using convenience sampling, the level of generalizability is limited to the sample (Robinson, 2014), which in this study refers to the case at Infrastructure. This way of setting up interviews has saved significant amounts of time, which has been used in other matters related to the study. For example, it has enabled us to conduct a robust coding process and data analysis, which arguably has increased the quality of data extraction and analysis.

The methodology of the interview sessions followed a semi-structured approach, to be able to ask further questions based on responses given by the respondents, but still have a relevant framework (Bryman & Bell, 2017). The interview questions were formed and developed based on four themes inspired by the literature on onboarding and the phenomenon of virtuality, and regarded newcomers and their time before, during, and after their first day of service. Three different interview frameworks were developed to adapt the questions to the respondents' working position, either as a newcomer, manager, or HR professional. In this way, some questions could focus on topics specific to the respondent and allow the extraction of more profound insights to specific areas regarding onboarding and virtuality from the respondents' point of view. Some examples of questions asked to newcomers were: *“how did you communicate with your manager and colleagues?”* and *“how did you experience access to your work tools?”*. Some examples of questions asked to managers were: *“what preparations do you make, as a manager, before the newcomers' first day at work?”* and *“what impressions of the organization do you want to give the newcomer?”*. Some examples of questions asked to HR professionals were: *“what actions does HR make before newcomers' first day at work?”* and *“are there any guidelines from HR on what a manager should introduce on the first day?”*.

Due to circumstances with COVID-19 and authority recommendations regarding social distancing, all interviews were held digitally. One interview was held by phone, and the remaining ones were held virtually through video conferencing at a digital meeting platform used by Infrastructure regularly (Microsoft Teams). One advantage of video conferencing is its contribution to creating rapport, building interpersonal connections, and adding personal touch between the members (Archibald, Ambagtsheer, Casey & Lawless, 2019). Non-verbal cues are generally crucial for interaction and personal contact. Thus, video conferencing is a suitable solution in a context where it might be challenging to conduct physical interviews, which was the case for this study. These circumstances were considered when developing the interview templates so that as much relevant data could be extracted from the interview sessions as possible. Furthermore, based on the point of departure of this study, which is based on the concept of virtuality, conducting interviews virtually provided insights about how the virtual work tools were used and operated within Infrastructure, which has been valuable for us in the means of understanding the setting the respondents are working in.

## Data analysis

All interviews were recorded, which was asked and granted by all the respondents. This facilitated the development of the analysis as it was possible to listen to the interviews afterward (Silverman, 2017). It also made it easier not to miss out on essential findings that otherwise would have been lost. All interviews were transcribed to increase the quality of the data analysis. As the interviews were divided between us two and not conducted together, the process of transcribing the interviews was also divided so that we transcribed the interviews held by the other one. In doing so, we made it possible for both of us to listen to the answers from all respondents and create our interpretation of their answers on virtual onboarding practices. Thus, it gave a more holistic perspective on the respondents' answers, and we did not become influenced by each others' interpretations (Bryman & Bell, 2017).

This study has followed a thematic analysis approach based on previous research using practice theory (e.g., Rivera & Cox, 2016). Specifically, the study has followed the six steps of the thematic analysis presented by Braun and Clarke (2006). The six steps consist of; 1) familiarization, 2) generation of initial codes, 3) search of themes, 4) definition of themes, 5) naming themes, and 6) reporting findings. The first step included transcribing and reading the data, where we also outlined initial ideas based on the data. Secondly, coding was used. We therefore first identified different keywords that were considered relevant for the study (Bryman & Bell, 2017). The initial set included 104 different codes based on relevant keywords, such as *contact routes*, *lack of socialization with colleagues*, and *challenges with virtual onboarding*. These codes were divided into eight different first-order themes: *conditions for introduction*, *the onboarding process*, *managers' participation*, *newcomers' participation*, *knowledge sharing*, *socialization*, *virtuality*, and lastly, *innovation*. The themes were then compiled into second-order themes, relatable to concepts within the theoretical framework. This ultimately outlined the findings and analysis of the study, where the onboarding process is outlined in chronological order, followed by two themes connected to the virtual onboarding process: *networking – the opportunity to share knowledge* and *the consequences of a virtual onboarding process*. The advantages of using a thematic framework for data analysis are that it provides flexibility to the research work and allows us to move back and forth between the different stages of thematic data analysis (Braun & Clarke, 2006). Further, the data analysis process follows an abductive approach, where the initial analytical framework was based on some preconceptions about the topic of onboarding (Dubois & Gadde, 2002). During the data collection on the field, the theoretical framework was continuously developed based on the empirical finding and vice versa.

## Empirical results and analysis

In the following section, the onboarding process at Infrastructure will first be presented in chronological order, followed by an analysis. Thereafter, the remaining findings have been divided into two themes connected to the virtual onboarding process; *networking - the opportunity to share knowledge* and *the consequences of a virtual onboarding process*. These

are first presented, then investigated, and problematized through the theoretical lens of CoPs and vCoPs in a following analysis.

## **Introducing the onboarding process at Infrastructure**

### *Prior to the first day*

The newcomers at Infrastructure have to a large extent had their entire onboarding virtually, and the majority of them seem to experience a similar-looking onboarding process. The process begins when newcomers sign a digital employment contract. This triggers an administrative process initiated by HR professionals, which includes placing orders of computers, phones, and other work equipment, as well as creating individual user-profiles and Email accounts. The managers fill out forms sent out by the HR department for the right equipment to be delivered until the first day of employment. The manager and the newcomer often communicate through Email and phone calls before the first day. These conversations primarily focus on practical agreements regarding topics such as time, place, and exact date for the first day of employment. Newcomers have described a feeling of excitement before the first day, but still, feeling nervous about starting a new job, including new colleagues and a new working environment.

It's always a bit like that. You don't know what you have signed up for, really, until you start working. And you do not know the colleagues or anything like that.  
(Harold, newcomer)

The HR department also provides managers with a list of different checkpoints that should be included in the introduction of a newcomer, although not mandatory to use. However, many managers at Infrastructure seem to use them, at least as a template for themselves when preparing for newcomers' onboarding. The checkpoints consist of general instructions for gaining access to different systems, information about emergency exits, and other practical information that is important for a newcomer to be aware of. Infrastructure is a large corporation with various departments and roles within the company and therefore, it is crucial to have a well-developed and adaptable introduction, depending on the role and position of the newcomer. To further adapt the introduction to the newcomer, the HR department has created an additional checklist, similar to a framework, that managers can use to structure the onboarding process so that it suits the newcomer and the department that the newcomer will be employed at.

We have made a checklist available for everyone. And we have also made a checklist that they can use for their department... They fill in what they need to learn there. (Tara, HR professional)

Hence, the manager is responsible for creating a plan for newcomers' onboarding before the first day of employment. This includes both education in different systems and practical aspects related to the position and Infrastructure in general. However, both managers and HR professionals have expressed an urge for better processes and structures regarding the time

before the first day. This implies that Infrastructure does not seem to have sufficient processes or guidelines regarding contact with the newcomer and what information should be sent out.

### *The first day*

The first day of employment generally consists of a physical visit at the office, where newcomers receive an office tour and get an introduction to different departments and facilities. Thus, the first day of employment has not been held virtually, since the newcomers are in need to be personally provided with work equipment, such as a computer and a mobile phone. However, many of the colleagues have been working remotely anyways, so there is still a virtual aspect to the first day as they generally greet their new colleagues virtually. Moreover, the findings show that respondents have had different experiences regarding access to the equipment for the newcomer. Some newcomers have described the process as exceptional, and others have had trouble and inconveniences related to the access of equipment. One newcomer mentioned that the computers were not working, another newcomer mentioned that the phone had not arrived until the first day, and others have had trouble with access to different systems. Some of these issues took several weeks before being resolved. One manager expressed issues about the computers for two newcomers. One of them had trouble with the camera and the other one with the microphone, both crucial when working virtually.

Especially now, in these times, we want to be able to see a newcomer. We cannot sit at a distance and have no contact at all. (Robert, manager)

Generally, the first day is associated with arranging equipment such as computers and mobile phones and making newcomers comfortable with the different systems and Infrastructures' intranet. Newcomers are also introduced physically to colleagues within the team and other employees at Infrastructure that are working at the office the same day as the newcomers' first day. These meetings have been described as informal, where newcomers can start to network and socialize. As previously mentioned, due to the pandemic situation, the majority of all employees were working from home resulting in fewer meetings between existing employees and newcomers during their first day. Therefore, managers often arrange a meeting through a digital platform, where newcomers have an opportunity to get introduced to their new colleagues.

### *The time after the first day*

The time after the first day is highly individual and dependent on both position and prior knowledge about the work tasks, which also affects how newcomers understand and make use of the information provided during the onboarding process. During their first time in their new positions, newcomers have expressed challenges when it comes to learning the many abbreviations used within Infrastructure. This has created a feeling of confusion and made it more complicated to understand and gain the knowledge needed for their roles. "I saw many abbreviations that were not in my organization map, so I got a little confused", Paula, a newcomer, said.

Further, when newcomers have come in place in their new positions, there seems to be a variation in how often managers take initiative to reconcile with newcomers and find out how they have experienced their first time. Some managers say that these meetings often occur spontaneously and that there are few routinized, formal reconciliation meetings except for the regular evaluation meetings every year.

You have to snatch up how people are. Some need a bit more support, and some do not. And then I might not have to call them, because they call me first. I try to ask my questions and check up on them at the same time, while others might be more independent and do not seek contact. In that case, I might call them on Teams or Email them or something. (Jenny, manager)

When asking the newcomer how long they perceive their onboarding processes to be, the answers vary quite extensively. Some view the length of the onboarding as being around two weeks and some view it as being over a year. However, the majority of the respondents saw it as being around three to six months. Some newcomers described the onboarding process as two parallel processes. The first process is taking introductory training and the second is learning the work tasks. This implies that newcomers recognize the length of the onboarding process, but that they make a difference between the onboarding process and pure introduction.

I see it almost as two parallel roads. Well, what to call it? Because I mean, I still took courses digitally so that you could do certain things in certain systems. It was a fire course and other courses in different things. But it happened parallel to my work tasks when I had time for the courses. This has continued during the first six months. However, it somehow flows together, so I have a hard time saying how long my onboarding lasted. If I were to say a pure introduction, it was probably the first day. (Rachel, newcomer)

Some respondents perceived their previous knowledge about technical tools and of working virtually as crucial for how well the learning process evolved. However, Infrastructure has digital tools that potentially could be developed even further to support the employees in their work tasks and during the virtual onboarding process. Some newcomers expressed that there is a lack of functionality that could be developed further, to facilitate how they work in a virtual setting. Furthermore, it has been expressed that working virtually has been a learning process for all employees at Infrastructure, not only for newcomers. Employees within Infrastructure did not know how to behave properly in digital meetings, for example by muting oneself to avoid noises for others attending the meeting.

I felt that there were some technical problems, and it might have been necessary to go through how we should work efficiently. Digital manners... Not everyone was aware of how to behave. If someone does not mute, it will be very noisy and difficult for others to hear, as an example. So I think it has been a learning process for everyone. (Kathrina, newcomer)

Infrastructure also has general introductory days that all newcomers, regardless of position and role within Infrastructure, participate in. These days consist of four separate occasions where representatives from the organization present and inform the newcomer about essential subjects related to Infrastructure. These general introductions are arranged by the HR department and scheduled throughout the year. When a manager signs an employment agreement with a new employee, the HR department gets a notification and schedules the newcomer into one of these occasions. Before the COVID-19 pandemic, these occasions were held physically at the office. However, now they are held virtually instead. During the introductory days, time for visiting Infrastructures' different facilities has also been scheduled. This allows newcomers to see and understand the entire organization and all facilities connected to their business. However, these visits have been removed during the pandemic. Many of the newcomers have expressed it as disappointing since they do not get to see all the facilities. Therefore, they do not get the same introduction of the working context of Infrastructure as other employees have had before the pandemic.

The idea was to visit the different facilities that Infrastructure has, and show us around there to gain some more practical experience. Unfortunately, this is not possible right now, which is a bit disappointing. (Kathrina, newcomer)

Several respondents have mentioned that Infrastructure uses color-coded lanyards for access cards that all employees wear at the office. When an employee is newly recruited, they are given a pink lanyard. After three months, employees exchange the pink lanyards for blue-colored ones. Infrastructure uses this as a way for other employees to acknowledge newcomers. When an employee is carrying a pink lanyard, it illustrates that they are newcomers to the organization, which other employees can easily recognize. Managers and HR professionals believe that this helps newcomers, as it enables other employees to be more helpful and interactive with them. This is believed to facilitate networking. However, newcomers have no practical possibility to make use of these when working in a virtual setting, since other employees can not acknowledge pink lanyards and thus not be extra helpful and greet newcomers in the same way as they would in a physical setting. Moreover, one newcomer also mentioned that the virtual work setting created a feeling of being a consultant rather than being a permanent employee at Infrastructure, and thus the remote working environment makes the newcomer feel less connected to the team and the company. In the following section Infrastructures onboarding process will be investigated through previous literature on onboarding to further understand the barriers in vCoP development in virtual onboarding.

## **Analysis: Introducing the onboarding process at Infrastructure**

### *Discovering the onboarding process*

At Infrastructure, different measures are used to establish a good connection between the organization and newcomers. Newcomers that begin their first day at Infrastructure are often provided with a lot of information and an introduction to the work setting, to colleagues and to other employees. This introduction method follows the inform-welcome-guide framework,



developed by Klein et al. (2015), quite extensively. At Infrastructure, newcomers are equipped with pink lanyards so that employees can easily recognize who is new at the company and thus be extra helpful to those. The pink lanyards are arguably a part of welcoming newcomers to the organization (Klein et al., 2015), as these can facilitate other employees to easily recognize who is new at the company and thus be extra helpful to them. Evidently, this could initiate the transition process from organizational outsiders to insiders (Korte & Lin, 2013). Though, when working remotely, Infrastructure has not carried out a similar practice in the virtual setting and thus, newcomers partly miss out on the advantages related to being welcomed to the organization. In addition, the introductory days help newcomers to gain a deeper understanding of the organization and issues connected to its business. The absence of pink lanyards in a virtual setting and introductory days being conducted virtually instead of physically might have negative implications on the outcome of the onboarding process at Infrastructure.

Managers, HR professionals, and newcomers, all describe how the time before the first day is structured to a fairly low degree. Managers are ultimately responsible for the entire onboarding process, with administrative support from HR professionals in terms of checklists, ordering of newcomers' work equipment, and general introductory information. Although, the amount of initial resources used before newcomers' first day, which Krasman (2015) argues to be essential for a smooth transition process and to reduce stress and uncertainty, is limited and hardly standardized since every manager is individually responsible for the process. In addition to this, newcomers seldom express that they have experienced feelings of stress and uncertainty before the first day, in contrast to Krasman's (2015) findings. Instead, they expressed feelings of excitement and nervousness. Thus, it might not always be relevant for managers to reduce newcomers' stress and uncertainty before their first day.

Onboarding is perceived by both managers, HR professionals, and newcomers, as two parallel practices, containing both an introduction of the organizational context and a long-term learning process. This includes gaining knowledge about work tasks (Chang et al., 2009) and becoming familiar with the organizations' goals, values, and culture (Caldwell & Peters, 2018). However, the data tends to demonstrate a misconception about what segments are included in the onboarding process, where the introductory days are perceived as separate events. Although, both the learning process and the introduction of the organization and its culture are a part of the onboarding process (Chang et al., 2009; Caldwell & Peters, 2018). Further, the data demonstrate that the length of the onboarding process varies between different newcomers at Infrastructure. However, the overall result indicates that the onboarding of newcomers is not seen as a short-sighted process, which many organizations often do (Caldwell & Peters, 2018). Rather the organization acknowledges that the onboarding and learning process takes time and allows newcomers to learn and adjust over a longer period.

### *Barriers to knowledge sharing*

One insight from respondents at Infrastructure is the usage of abbreviations, which have been mentioned as a difficulty for the newcomer when being onboarded in the organization. The usage of abbreviations can be argued to extend the length of the onboarding process.

Respondents have indicated that this has created a barrier to understanding the organization and fully learning about the organization and the work tasks. Accordingly, this is an important aspect of an onboarding process and what an organization wants to achieve with sufficient onboarding (Caldwell & Peters, 2018). Furthermore, if newcomers have trouble understanding unique abbreviations for Infrastructure, it can take longer until newcomers can create value for the organization, which is a substantial disadvantage for Infrastructure. Another aspect related to this issue is that the usage of abbreviations can create barriers for newcomers to join or develop vCoPs. CoPs and vCoPs are communities who have common ground around situations, problems, or topics (Chang et al., 2009; Jimenez-Zarco et al., 2015; Pyrko et al., 2017). Suppose if the newcomer does not understand the unique abbreviations. In that case, this can be argued to create barriers to joining a vCoP, as the newcomer and other people within the organization have not created common ground where they can relate to each other and collectively discuss and share knowledge. Thus, this can also decrease the amount of learning that is developed between newcomers and colleagues since vCoPs are challenging to establish (Chang et al., 2009).

Newcomers that previously have worked in virtual settings express that they have an advantage, compared to employees who have never worked in a virtual setting before. Working virtually is arguably a practice, which can be enacted in various ways depending on who and how it is enacted (Jarzabkowski et al., 2016). This implies that newcomers with previous experience of working virtually follow a practice that enables them to function better in virtual settings which ultimately facilitates social interaction with their colleagues. Since socialization (i.e. networking) is one crucial aspect of the onboarding practice (Klein et al., 2015; Krasman 2015), it can contribute to successful virtual onboarding. In some cases, it has been expressed that the virtual work practice has not been fully developed at Infrastructure (e.g., how to behave in digital meetings). Others have mentioned that it has been a process to learn and adapt to the virtual working environment. Hence, if a practice is not fully developed, it arguably affects how the social interactions occur, which in turn affects the outcome of a virtual onboarding since social interactions are an essential aspect of an onboarding process (Klein et al., 2015; Krasman 2015).

The findings also show that Infrastructure partially failed to develop technology to support knowledge sharing, in line with the arguments of Rivera and Cox (2016). One can argue that the learning process might become longer since practices that facilitate knowledge sharing have not been established due to the new working environment. In line with Ardichvilis' (2008) arguments, respondents' uncertainty about virtual work practices indicates that Infrastructure could benefit from training in technological proficiency through initial and follow-up training, which also could facilitate the establishment of institution-based trust. Educating employees on this topic would create an opportunity for employees to use technology more effectively. Further, it could also provide Infrastructures' management with valuable insights into how to develop the technological tools even further to facilitate knowledge sharing. Thus, this indicates that technological tools together with vCoPs can facilitate knowledge sharing in line with Hafeez et al. (2019).

The onboarding process at Infrastructure has been presented in chronological order in line with Krasmans' (2015) three stages of onboarding, and thereafter investigated and analyzed. Networking is a crucial aspect of the onboarding process (Klein et al., 2015; Krasman 2015), and the findings further reveal that it is especially important in a virtual onboarding process, the following section will hence present and elaborate on the topic of networking.

## **Networking - The opportunity to share knowledge**

### *Newcomers' contact routes*

In a virtual setting, working remotely tends to put a higher emphasis on the individuals' responsibility in terms of learning new tasks, networking, and reaching out for help and advice from colleagues and managers. Being new in an organization and specifically, being onboarded virtually, also tends to entail uncertainty with regards to who and when to contact other colleagues for help or advice, since newcomers do not know other employees' specific work tasks or specialist competencies. Moreover, since there is no clear contact information, apart from the intranet, newcomers also witness how employees they reach out to do not have the competence that they expect. Searching for help or advice in a virtual setting can therefore be inefficient and time-consuming, even if newcomers do not experience the virtual setting itself as a hindrance for making contact.

It can be the case for newcomers, that there are people you really should get to know, or know what their common functions are, and that it takes longer to find them now. (Jessica, manager)

Depending on how fast newcomers want a response, they make contact with other employees on different digital platforms. Newcomers use chat-or calling functions in the workplaces' social platform for urgent issues, while lower priority questions or issues are often dealt with through Email. At the time of the study, the organization had recently been re-organized, and respondents express how this contributed to a general confusion among both newcomers and existing employees with regards to work tasks and responsibilities, which also made it difficult to navigate within the organization scheme.

I sometimes understand that people are a little lost in the new organization, who does what? I have new colleagues, but it's not just me who has new colleagues, others also have new colleagues and group compositions due to the reorganization. (Paula, newcomer)

Both managers and newcomers perceive the networking process to take a longer time for newcomers and require more effort in a virtual setting compared to a physical office setting, due to the inconvenience of not having the possibility to connect with other employees beyond the own team naturally. This natural way is referred to as in corridors, or at the coffee machine. This implies that ways of communication become longer and that it takes more time for newcomers to reach out to other employees within the organization. At the same time, several

newcomers still think that they are well taken care of, even in a virtual setting, and that colleagues are delighted to help if they ask for it. However, newcomers still see the value of not being spoiled with too much help immediately when encountering a problem. Working virtually from home sometimes requires newcomers to find their answers on their own, instead of asking the colleague the desk next to them.

Well, I get support if I ask for it. But you might wait a bit longer before you ask for it. And sometimes, that is a good thing. Because you force yourself to find your answers, maybe by googling it or reading some documentation. You easily become lazy if you have a guru sitting next to your desk. (Amy, newcomer)

### *Mentorship or independence*

Some newcomers are being supervised by a colleague or manager, and are thus not as independent as those who start their new employment by working independently. These newcomers express how they are often dependent on their mentors' schedule and therefore lack the same opportunities to act by themselves, as well as take their own initiatives within certain issues. This shows that newcomers' independence is conditioned by whether they have a supervisor or not. Not all newcomers are provided with a mentor, however, some employees say that mentorship could be beneficial for certain jobs.

Especially if there is a clear role where you are supposed to learn a set of specific skills, and then you're done. Project manager, for example, within a certain area. (Jessica, manager)

Being supervised by a mentor is perceived as beneficial by some newcomers and managers. Since the mentor often has a long experience within the field and within the organization, they possess valuable skills and knowledge that they can transfer to newcomers. This even entails their network within the organization, which they let newcomers utilize until they have created their own. As a newcomer, being supervised by a mentor often implies a slightly flattened learning curve. The newcomer successively takes over specific work tasks under controlled circumstances instead of being "thrown" right into several work tasks. Newcomers who have a mentor also get the opportunity to be introduced to a broad range of work tasks instead of focusing solely on specific sets of tasks. Sean, a newcomer, mentioned that "we do it case by case because that is how my mentor wants to teach me".

Newcomers without a mentor have experienced the first weeks in the new employment as relatively calm and free from stress. During this time, newcomers often focus on extracting as much information as possible by reading documents, learning the work tasks, and getting familiar with the organization. Some newcomers express that this learning method is well-functioning, provided that they get a proper introduction during the first time in their new position. However, absorbing and remembering all the new information can be challenging. Therefore, it is perceived by some that you learn better if you get a chance to perform the work tasks on your own, instead of only being told how it is supposed to be done. Newcomers who

are not under the supervision of a mentor tend to get introduction from colleagues, who also support them when they have questions or concerns they cannot solve by themselves. Still, the virtual context has created difficulties to gain all knowledge needed.

We have split up into what we call “category meetings”, where you can talk about your issues a bit more. And tell colleagues about how you embrace your work tasks. But it is difficult to substitute this with the knowledge you gain when we meet physically. (Sheila, manager)

### *Managers as a support function*

Managers express that the virtual work setting affects their ability to notice newcomers’ uncertainties connected to reaching out to others within the organization, which they argue can affect the learning process of newcomers. Questions that usually show up over time must be asked at booked meetings instead of being informally answered “as they go”. One example is follow-up meetings, where newcomers and managers both give and receive feedback regarding different topics. Although, access to tacit knowledge, one type of information, is lacking in a virtual setting compared to a physical, regular work setting due to less informal interaction. Therefore, newcomers need to undertake certain issues which can involve contacting other colleagues for help, since the managers are unable to intuitively know when a newcomer needs help. They either have to show their uncertainty to a manager for the manager to pay attention to it, or deal with it independently. Once asking for help, managers express that they strive to be open and easily accessible which many newcomers confirm.

I believe it is up to the other person to find, too. Finding the ways that are. If a person wants to contact me and is not using the contact methods that exist, like Email, phone, SMS, physically or so... Then it is really difficult for me to know. But I sort of try to show that “my door is open” so that one can interrupt and ask questions. (Sheila, manager)

### *Managers’ participation in networking activities*

Several newcomers express that their managers have taken responsibility for introducing them to their teams and initiated a networking process between new and existing employees. This initiative takes various shapes and forms, which is seemingly dependent on every individual managers’ perception of how the networking process can be best carried out. Some newcomers say that they have carried out the networking process on their own, without the guidance of the manager, while other newcomers say that their manager has provided them with an opportunity to meet their team a time before their first day. These meetings have almost exclusively occurred virtually, with a few exceptions. In other cases, newcomers have been introduced to their team and other employees thanks to managers’ initiative, during the first day and the time after their first day. In these cases, managers have e.g., provided newcomers with a list of different people to get in touch with, so they can present themselves and tell more about their specific work tasks. Other initiatives that managers tend to take regarding networking aspects

of newcomers are appointing formal or informal meetings where they can meet other employees and exchange knowledge, ideas, and socialize.

It is somehow about how they work as individuals, which contact they make. But as I always would do, if we are at the office or here, is to encourage the new ones to make contact with... Like, show them the contact routes, whom to make contact with, and stuff like that. (Robert, manager)

Managers' participation in networking activities, in terms of appointing formal or informal meetings between newcomers and existing colleagues and other employees outside their team, is also described by newcomers.

My manager helped me with a bunch of different people who could be good to set up a meeting with to tell a little about their operations and what they do. (Gretchen, newcomer)

### *Networking events*

The issue with newcomers' longer networking processes in virtual settings is by some managers perceived as compensated when helping newcomers with establishing contact with other employees within the organization. Other managers are convinced that newcomers should network based on their own initiatives since they will get to know the organization better in that way. Indeed, a majority of the respondents at Infrastructure have experienced a positive effect of being a part of meetings where they can socialize with other people. Even if these occasions are relatively few, newcomers say these occasions have helped them to create a network and have increased their communication with colleagues and managers.

I am in contact with a lot of people, so there are quite a few introductory parts but maybe not as many informal team-building activities or chatting outside. Like, the meetings often have a goal and an agenda; "Now, we are going to investigate this" or "Now, I'm going to introduce you to this topic" and stuff like that. So, it has not been that much "We are going to get to know each other and play Ludo". (Samantha, newcomer)

Some newcomers have undertaken the mission to initiate these kinds of meetings by themselves since they see the great value in them. Although, the majority of respondents express that even if they have had the opportunity to participate in social events, only a few choose to attend. The reason for not attending is often due to time constraints, or because newcomers do not feel any good or natural reason for socializing and interacting with other employees. In the following section, the theoretical lens of CoPs and vCoPs will be applied to further understand the development of knowledge sharing in a virtual onboarding process.

## **Analysis: Networking - The opportunity to share knowledge**

### *vCoPs sensitivity for the contextual environment*

A CoP occurs, grows, and matures over time (Chang et al., 2009) Arguably, socialization (i.e. networking) between organizational members is crucial for the emerging and development of a CoP or a vCoP. Since the development of vCoPs is organic (Hafeez et al., 2019), the re-organization at Infrastructure can have implications for existing employees' participation in vCoPs, which might have been disturbed. This can make it even more difficult for newcomers to take part in the development of vCoPs. In turn, this affects employees' ability to share knowledge and create organizational learning (Chang et al., 2009).

Mentorship at Infrastructure is seemingly one way of providing newcomers with guidance as part of the inform-welcome-guide framework developed by Klein et al. (2015). Additionally, respondents say that mentorship is one way of transferring skills and knowledge between experienced employees and newcomers. This proves the importance of the relational dimension between newcomers and colleagues, where mentors can be considered key socializing agents (Ellis et al., 2017; Korte & Lin, 2013). Using mentorship as a measure to transfer knowledge arguably makes mentorship one way to establish a vCoP (Chang et al., 2009). Newcomers under supervision by a mentor have presented many advantages with this learning method, such as gaining valuable knowledge and utilizing the mentors' network. On the other hand, employees that have not been mentored still perceive that they have gained sufficient support from other colleagues, which implies that Infrastructure has a well-developed structure in terms of guidance of newcomers. Furthermore, newcomers that are under the supervision of a mentor in a virtual work setting express that the schedule of their mentor partly constrains their possibilities of taking their own learning initiatives. This could have an impact on their learning possibilities and learning pace, as well as the diversity of knowledge they can come across since they are tied up with the supervisor in a virtual meeting. Since a vCoP is built upon shared context and social interaction within a group of people (Chang et al., 2009; Gkotsis et al., 2011), newcomers' possibilities to participate in learning and knowledge sharing within vCoPs might be limited if being under virtual supervision.

The sharing of knowledge and experience within CoPs mainly takes place through physical, social interactions, which enables knowledge sharing on both high and low levels of spontaneity (Chang et al., 2009). In contrast, the data indicates that vCoP might not facilitate the same level of spontaneous knowledge sharing. Newcomers express that informal, spontaneous meetings with other employees are less frequent in virtual work settings. In addition, managers express that it is more difficult to sense when newcomers need help or advice – i.e., knowledge – in virtual work settings. Managers perceive this as challenging, in terms of being able to give the right advice at the right time. In sum, the virtual work setting thus puts more emphasis on the newcomers' individual responsibility to create a network with learning possibilities. Consequently, the responsibility of being a part of the development of vCoPs is placed on newcomers.

One of the greatest advantages of CoPs and vCoPs is the possibility to share tacit knowledge (Chang et al., 2009). Managers at Infrastructure have mentioned the difficulties in gaining access to tacit knowledge for newcomers in a virtual onboarding process, which can result from newcomers not having joined or developed vCoPs. As a result of this, they cannot share or absorb tacit knowledge to the same extent as employees who are a part of and interact in vCoPs. This can arguably be an indication that the time to gain participation in vCoPs is longer than in a physical setting.

Furthermore, the feeling of being a consultant rather than a permanent member at Infrastructure can have negative effects on knowledge sharing as they lack the feeling of belonging, which in turn affects the feeling of trust for the company and their colleagues (Ardichvili, 2008). The lack of trust can make the newcomer feel insecure and afraid of wrongdoing or saying the wrong things, which negatively affects the willingness to participate in vCoPs and thus the willingness to share knowledge within it. These employees may also become more peripheral members within the vCoP, where they do not actively participate in knowledge sharing but still gain some information from other members through lurking (Ardichvili, 2008; Jimenez-Zarco et al., 2015). This is not preferred in a vCoP since most knowledge sharing occurs when members actively participate.

#### *Managers' participation in creating vCoPs*

A vCoP can be created spontaneously or be organized by the organization (Chang et al., 2009). The spontaneous creation of networks is highly dependent on the level of engagement from managers and newcomers' own initiative. At Infrastructure three approaches for creating networks and potential vCoPs have been mentioned. In the previous sections, two ways have been described: newcomers' own initiative or help from their mentor. Some individuals need more support in their networking at Infrastructure, while other individuals create new networks independently. Evidently, the manager can play a large role in network- and vCoP development, which is the third approach identified for creating networks. This also recognizes the manager as a key socializing agent, providing support and information to newcomers (Ellis et al., 2017; Korte & Lin, 2013).

In addition, managers organize the creation of networks between their newcomers to different extents, which seems to be an indication of the level of trust for their employees to take their own initiative. The level of spontaneity in network creating thus affects how a vCoP is created, either organized by the organization or through spontaneous creations (Chang et al., 2009). This proves that a newcomers' ability to take initiative can provide an opportunity to create new vCoPs. However, if a manager has clear participation in the creation of networks for newcomers, vCoPs are rather developed through the managers' involvement and thus become more organized.

#### *Socialization – a catalyst for knowledge sharing*

Newcomers express that they put a lot of time and effort into networking (i.e., socialization) in a virtual work setting to acquire information. Jimenez-Zarco et al. (2015) argue that members



of vCoPs participate in the development of the vCoP and the process of knowledge sharing to different extents, depending on the level of participation. The more active members, the higher level of participation and the higher level of influence over how and what knowledge is shared within the vCoP (Jimenez-Zarco et al., 2015). During an onboarding process, the aim is to transform newcomers from outsiders to insiders (Korte & Lin, 2013) which could be equated with transforming newcomers from peripheral members into active members within vCoPs (Jimenez-Zarcos, 2015). Arguably, events that facilitate socialization (i.e., networking) can be seen as crucial for creating more active members. However, in a virtual setting, the lack of face-to-face interactions can be devastating for the creation of trust and participation within vCoPs. Therefore, using live video conferences for social events can be important for establishing personal knowledge-based trust (Ardichvili, 2008) between vCoP members. At Infrastructure, socialization events have resulted in some positive effects for newcomers, as they have been able to get to know their colleagues and share knowledge. These effects of the socialization events arguably result in a feeling of belonging for newcomers, where ideas and information can be exchanged. Thus, these events are significant for the level of participation in vCoPs at Infrastructure and highly impact knowledge sharing and, therefore, the outcome of a virtual onboarding process.

On the other hand, some respondents also mentioned that they do not participate in these events due to various reasons. One of the reasons was the lack of a good and natural reason for socializing and interacting with other employees. Arguably, some newcomers do not understand or feel the need to socialize with their colleagues and other employees at Infrastructure and consequently, choose to not participate. This supports Ardichvilis' (2008) arguments regarding lack of feeling a sense of belonging to a community, which in turn can make the level of participation in vCoPs decrease. Seemingly, socialization events are fundamental for trust to be established in vCoP and Infrastructure may need to put more effort into creating these socialization events, which in turn can supplement face-to-face interactions. This can result in higher levels of participation and more knowledge sharing in the vCoPs (Ardichvili, 2008) which is highly beneficial in newcomers' onboarding processes.

In the previous sections, the unfolding of Infrastructures' virtual onboarding process has been presented, investigated, and analyzed where socialization is seen as crucial in vCoP development. To further understand organizational implications, the next section will present the consequences of a virtual onboarding process.

## **The consequences of a virtual onboarding process**

### *Effectiveness and efficiency*

Working remotely is by several respondents perceived as both positive and negative with regards to work effectiveness. Harvey, an HR professional at Infrastructure, mentioned that the results from an efficiency measurement show that they "have become more efficient, overall". Working virtually makes the working environment less social and dynamic, and newcomers specifically express a lack of social interactions with employees outside their own team.

Although, the virtual work environment also prevents employees from being disturbed. Therefore, many respondents prefer to work from home, since “so much more gets done” as Rachel, a newcomer, mentioned about working remotely. Many respondents also appreciate the flexibility since employees do not have to commute to the office and therefore get more spare time. This is believed to facilitate more efficient work. Additionally, many of the respondents express how remote work seems to create more structured meetings since they always follow a proper agenda. However, this effectiveness and efficiency do not only result in benefits for Infrastructure. The number of meetings and check-ins have increased during the time that Infrastructures’ employees have worked remotely. Unlike working at the office, this results in employees sitting in front of the computer in longer sequences without breaks. As Donna, a newcomer, expressed “I can sit for four hours straight in this chair and have one meeting after the other”.

The calendars are visible for other employees at Infrastructure and some respondents have expressed concern regarding this. Open calendars entail that employees can be scheduled for shorter meetings or check-ins in between two longer meetings, even if there is only a short break between two other meetings.

Because people book me in, like this afternoon, I had fifteen minutes between three meetings and then someone found those fifteen minutes, so I was booked in just before this interview. (Donna, newcomer)

This makes it more difficult for employees to have time for their work tasks or to take a shorter break. This would arguably be different if the employees were located at the office. As Samantha, a newcomer at Infrastructure said, “at least then you have a break when you go to the other meeting room”. Other respondents have also mentioned the virtual working environment as causing stress. They feel more pressure to be effective when working virtually, from home, compared to when they are located at the office. It is explained that when they are at the office it is normal to take coffee breaks and socialize with colleagues, however, taking breaks at home makes them feel unpleasant which in turn makes the respondents feel more stressed.

You aim at being 100% efficient, but it is not possible. This makes you feel bad because you are not as efficient as you could be, you do not work all the time during the day. Although, it is easy to forget that you are not constantly efficient at the office either. (Mike, newcomer)

Furthermore, respondents at Infrastructure also argue that they are more productive and result-oriented when looking at a short-term basis. Although, respondents also express that this could impact the ability to innovate, from a long-term perspective. When employees work virtually without establishing physical contact with other employees, it seems like the organization develops ways to operate more effectively. However, still in similar ways and not reinventing themselves. Therefore, the continued development and innovation within Infrastructure get affected by the virtual setting.

It is easy to continue doing what you have always done, although you do it better, more efficiently, and so on in a virtual setting. But all businesses need to be reshaped and reconsidered. Therefore, I think we can have an obstacle if we do not find a way to work with that. (Harvey, HR professional)

The same perception is shared by managers who think that work time located at the office seems to benefit the organization regarding development work and creativity.

You can manage it with some good will for a while, but you notice that you need to meet each other when it has been a while. Development work and creativity benefit from the presence of each other. (Jenny, manager)

### *Returning to the office*

Newcomers that have been virtually onboarded are excited to meet their colleagues and managers physically. However, many respondents also mention that they still want the flexibility of working some days virtually during the week, since it comes with many benefits as well. Therefore, the common answer to questions related to returning to the office is that newcomers hopefully will get the opportunity to partly work at the office and partly work from home, combining them both. Although, it has been expressed that returning to the office potentially can result in challenges. Employees at Infrastructure have developed a new way of working and this process may be hard to continue at the office. Thus, it will be challenging to continue working in the same way, and therefore, employees may need to change practices when going back to a physical work setting. This will, once again, imply an adjustment for employees at Infrastructure.

What may be then, is that you need to look once again at “how do we sit physically, in the office”, you need to talk about the rules of the game again, maybe. You have become accustomed to working in a certain way when you work virtually. It may not work just to apply that way of working into the office. (Ava, manager)

A virtual onboarding process seemingly has implications on organizational effectiveness and efficiency, which in turn can affect the ability to innovate. This will further be analyzed in the following section.

## **Analysis: The consequences of a virtual onboarding process**

### *Effectiveness – the cost of innovation*

The number of scheduled meetings and check-ins have increased for newcomers, during the time that Infrastructure has been working virtually. This is arguably an indication of an increased need to feel secure and to assure trust within the vCoP. With these meetings, newcomers at Infrastructure get the opportunity to supplement face-to-face interactions with video conferencing and create a feeling of trust and belonging to their colleagues as it is easier to understand and see nonverbal cues (Ardichvili, 2008). As many of the newcomers have had

their first day at the office, it probably strengthens the sense of trust in line with Ardichvilis' (2008) arguments, which in turn also affects knowledge sharing.

It is not surprising that the number of scheduled meetings and check-ins has increased since newcomers would have had more spontaneous encounters within their CoPs in a physical work setting. A virtual setting does not allow the same spontaneity and thus, interactions within vCoPs need to be scheduled. Newcomers at Infrastructure have shown that there is a lack of interaction between themselves and employees outside their team in virtual settings. Thus, newcomers have fewer interactions with other employees, which implies a lack of dynamic interactions within vCoPs. Further, the practices within each team have become more effective since they are repeated rather than reinvented daily. This implies a lack of diversity and dynamics within the team, which can have severe effects on practice innovation and learning (Chang et al., 2009).

The pandemic situation will supposedly not continue forever, which implies that newcomers and existing employees at Infrastructure will return to their work in a physical setting. Based on respondents' experiences, it remains unclear whether the pandemic will have a permanent impact on employees' perception of virtual work settings and how they will prefer to work in the future. Several of the respondents, both newcomers, managers, and HR professionals have expressed how they potentially will prefer to work virtually part of the time. This proves that employees tend to have fulfilled their needs of trust and security (Ardichvili, 2008) even in a virtual work setting. Thus, they can extract the advantages of both physical and virtual work settings by combining them. Through the use of practice innovation by challenging and changing standard practices, such as through alternating between physical and virtual work settings, could potentially lead to innovation (Jarzabkowski et al., 2016).

In sum, the findings of this paper show that socialization is largely affecting the development of vCoPs and thus how knowledge is shared. Both education in and development of technological tools could benefit socialization and knowledge sharing in a virtual onboarding process. Three social factors, newcomers' initiative, managers' initiative, and mentorship have effects on how vCoPs are developed. Feeling a sense of trust within vCoPs is highly enabling knowledge sharing since it has implications for the level of participation in vCoPs. The level of participation within vCoPs has implications for vCoP development, and knowledge sharing. Lastly, non-dynamic interactions (lack of socialization outside the team) can have implications for the ability to create innovation within the organization. This will be further explored in the following discussion.

## Discussion

Knowledge sharing is a fundamental part of the organizational strategy and highly affects the organizations' survival. The concepts of CoPs and vCoPs can be used to understand knowledge sharing within organizations (Chang et al., 2009). This paper shows that networking is vital for developing vCoPs, and a virtual setting has implications for the amount of time it takes to take part in these. If the amount of time it takes for a newcomer to join development of vCoPs

increases, the length of the onboarding increases due to fewer interactions that can facilitate knowledge sharing. Arguably, the longer it takes for newcomers to adjust and understand the organization, the longer it takes before they can create value for the organization (Klein et al., 2015). Newcomers that engage in socialization during their first time in their new positions, gain relevant information and knowledge. However, a virtual setting is a challenge regarding socialization, since the establishment of trust within vCoPs is more difficult than in regular CoPs (Ardichvili, 2008).

Jimenez-Zarco et al. (2015) describe how vCoPs consist of different member groups; core, active and peripheral members where the latter are not active in maintaining and developing the vCoP but are extracting valuable information. Arguably, more active members are important for the organizations in terms of managing and developing knowledge sharing within vCoPs (Jimenez-Zarco et al., 2015). The findings of this paper reveal that socialization events facilitate newcomers' transformation from peripheral members to active members. Although, this benefit does not seem to be fully utilized due to a lack of participation, resulting from the poor establishment of personal knowledge-based trust (Ardichvili, 2008). This could imply that the creation of motivational factors for becoming active members in vCoPs is challenging. Thus, virtual onboarding can be considered a challenge for organizations prone to making the onboarding process as smooth as possible. Further, this paper reveals that the establishment of institution-based trust is facilitated by education in technological tools, which play a vital role in establishing socialization and ultimately the development of vCoPs.

The findings of this study also indicate that employees have experienced the advantages of a virtual work setting and are considering alternating between physical and virtual work settings in the future by combining their strengths. Based on the findings in this study, working virtually tends to increase the effectiveness of work effort. On the other hand, a virtual work setting seems to limit dynamic interactions between employees, which in turn can affect innovation (Chang et al., 2009). Vice versa, a physical work setting facilitates dynamic interactions and thus can create innovation, while constraining work effort effectiveness. In sum, effectiveness can be considered the cost of innovation. Consequently, newcomers that are onboarded in a virtual setting gain access to less dynamic interactions in vCoPs than in CoPs in a physical setting, which can affect the ability to innovate in a long-term perspective. Since innovation is considered a competitive advantage, this could potentially affect business competitiveness. As previously highlighted, trust is a large contributor to engagement in vCoPs (Ardichvili, 2008). Additionally, it is suggested that some initial physical meetings can create a sense of community inclusion and trust in vCoPs. Therefore, virtual onboarding processes should consist of some occasions where newcomers can interact in a physical setting. Further, this implies that future organizations need to set a virtual work setting against a physical work setting and evaluate its advantages and disadvantages to determine a well-balanced workplace solution. Suppose organizations use a hybrid virtual model (Alexander et al., 2021) and thus alternate between a virtual work setting and a physical work setting. In that case, they could potentially benefit from both, without experiencing the negative effects that come if only one workplace solution is applied. Further, alternating between the two could also increase the trust and engagement in vCoPs (Ardichvili, 2008).

The paper shows that the development of vCoPs in a virtual onboarding process is determined by three social factors; mentorship, newcomers' initiatives, and managers' initiatives. In addition, the context, such as the networking strategy or the work setting, is highly affecting the development of vCoPs and interactions within vCoPs. The case organization within this study has recently been re-organized, which seemingly has disturbed the vCoPs within the organization. Arguably, organizations with an indistinct networking strategy can impact managerial influence over newcomers' knowledge-sharing activities. The literature suggests that the development of vCoPs can be organized by the organization which in turn can facilitate knowledge sharing (Chang et al., 2009), but a too distinctive managerial influence can be considered a risk for newcomers' dynamic interactions with vCoPs since they are bound to networks provided by the manager. The influence of a mentor can also have negative effects on dynamic interactions within vCoPs since newcomers' independence can be constrained by a mentor. This in turn can potentially affect knowledge sharing and innovation. This challenge becomes even more evident in a virtual setting, where informal meetings that entail knowledge sharing are limited.

Further, the paper also indicates that it might be more difficult for newcomers to participate developing vCoPs compared to CoPs, where people interact in a physical setting instead of a virtual setting. At the case company, respondents have expressed that employees who have been onboarded virtually, and thus have interacted with their colleagues in a virtual environment, have struggled with gaining tacit knowledge associated with the case company. In CoPs, tacit knowledge is being shared between participants (Chang et al., 2009). Considering the findings in this study about shortcomings in gaining tacit knowledge for newcomers, it can be argued that it is more difficult to participate in vCoPs. Following from that, it is more difficult to get access to tacit knowledge in a virtual environment compared to a physical environment, where newcomers would have had the opportunity to interact in CoPs. Thus, the virtual context of an onboarding process is highly affecting the transition from newcomers being organizational outsiders to becoming organizational insiders (Korte & Lin, 2013).

## Conclusion

This paper has investigated how the onboarding process in a case organization unfolds in a virtual setting by examining the experiences and perceptions of newcomers, managers, and HR professionals. Emphasizing socialization and knowledge sharing has provided insights into how vCoPs are created and developed, and what implications this has on the onboarding process as a social practice.

Socialization and knowledge sharing are essential for the onboarding process, regardless of the setting, physical or virtual. This paper reveals how networking is vital for the transfer of tacit knowledge within a virtually held onboarding process since newcomers do not have the same ability to establish informal contacts with colleagues within their organization in a virtual work setting. This becomes considerably distinct with regards to newcomers and employees that do not operate in the same team, where the barriers to making contact seem to become higher

when working virtually. In addition, the virtual work setting affects managers' ability to capture subtle signs of newcomers' need for help or guidance, which can affect the length of newcomers' learning curve and thus the onboarding process. Ultimately, this affects how fast newcomers can start to create value for the organization.

Further, the paper shows that the networking and development of vCoPs are based on three different social factors: newcomers' own initiatives, managerial initiatives, or supervision from mentors. The virtual work setting tends to increase the newcomers' influence over which of these factors are important, and thus how well knowledge sharing is carried out within vCoPs throughout the virtual onboarding process. To exemplify, newcomers that are assigned a mentor tend to have a stronger possibility to utilize the mentors' network to create their own networks and access to vCoPs. Likewise, managers can also support newcomers' networking by providing a clear way to connect to other employees within the organization. Newcomers that are not assigned a mentor or are provided guidance from a manager, have greater opportunities to develop their own networking strategy, but more is required of them to succeed. Since newcomers have individual personality traits and preferences, this means that their own networking strategy is not always successful. This paper contributes to the theoretical field by implying that mentorship could play a more important role in virtual settings than physical.

By having knowledge about the use of technological tools and an understanding of technological enactment, it is easier to establish trust between members of vCoPs and thus facilitate knowledge sharing. Therefore, insufficient knowledge in technological tools will make the social interaction within the organization in general and vCoPs in specific, unsatisfactory for knowledge sharing. This paper reveals that networking, and thus social interaction, will take a larger amount of time in a virtual work setting than in a physical work setting which ultimately implies that the desired outcome of the onboarding process will take a longer time to achieve in a virtual work setting.

Lastly, this paper shows that newcomers and existing employees perceive themselves to accomplish their work tasks more effectively in a virtual setting, where they plan their time more wisely. However, this also has implications for innovation. Since a virtual work setting decreases the dynamic social interaction between newcomers and employees, within the organization in general and vCoPs in specific, the ability to innovate practices and invent new solutions will potentially be harmed in a long-term view. Due to this, organizations risk losing some competitive edges. In sum, organizations must consider how virtual onboarding could be a cost of innovation from a long-term perspective and take actions to prevent this risk from harming the organization's competitiveness.

#### *Suggestions for further research*

Based on the contributions of this paper, a virtual onboarding process could potentially harm the organizations' competitiveness from a long-term perspective. This study has been conducted at a case organization that had not developed practices for how a virtual onboarding process and working in a virtual setting should be conducted. Therefore, the context

(organization) could potentially affect organizational actors' attitudes towards physical and virtual work settings and therefore, it is a relevant topic for further research. This study is based on data collected from semi-structured interviews, which only makes it possible to draw conclusions based on respondents' experiences. Using another methodology, such as observations, may be possible to extract other valuable insights that could be done in future research on the topic. Further, this paper has analyzed a case organization that has carried out the majority of its onboarding process virtually, and the focus has been on virtual onboarding practices and vCoPs. Investigating the topic of onboarding through a comparative approach regarding physical versus virtual onboarding could further draw distinctions between key determinants for these processes respectively.

Additionally, virtually onboarded employees who return to a physical office would potentially need an introduction to the physical work setting, which could require a second onboarding phase. Thus, it would be an interesting subject to investigate further. Lastly, previous research has shown that a good onboarding process is crucial for employee well-being and reducing turnovers (Krasman, 2015). This study cannot conclude any long-term effects since it lacks a longitudinal approach. Therefore, it is relevant to further investigate the long-term effects in organizations that have conducted a virtual onboarding process.

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