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Onboarding employees in a fast-growing and knowledge-intensive firm

- Newcomers' perspective of challenges faced when decreasing time to productivity

Master's thesis in Management and Economics of Innovation

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Onboarding employees in a fast-growing and knowledge-intensive firm

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Abstract

Purpose: The purpose was to gain insights into a previously unexplored niche in literature but, most importantly, facilitate and make practitioners aware of the challenges when introducing newcomers effectively during organizational growth.

RQ: What are the challenges to decrease time to productivity when formalizing the onboarding process in a fast-growing and knowledge-intensive firm?

Design/methodology/approach: We applied an interactive research approach, that led to the discovery of an increased time to productivity due to organizational growth. Uncertainty of causes directed the study towards the perception of newcomers. A qualitative research strategy was applied to answer the research question by collecting data from semi-structured interviews with participants who have experienced an onboarding process. The interactive approach allowed us to participate as newcomers during the execution of the study.

Findings: Time to productivity was found to be two-sided, domain-specific and company-specific. The combination of these two seems to be the total time to productivity. Further results are presented in three factors affecting time to productivity. First, it was found that knowledge is becoming fragmented in domains, thereby challenging to obtain. Second, connection and social bonds cross-teams are weak leading to lower knowledge transfer between domains. Third, the difficulties of acquiring information and knowledge due to the organizational informality, i.e., lack of documentation and insufficient access to key person's.

Conclusion: When formalizing the onboarding process in a fast-growing and knowledge-intensive firm, it is important to cultivate and nurture the social exchange between employees and thereby maintain the organizational knowledge transfer.

Keywords: Challenges, Communities of practice, Company-specific knowledge, Domain-specific knowledge, Formalization, Onboarding, Organizational growth, Organizational informality, Time to productivity.

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1

Introduction

The number of people choosing to terminate their employment and work in new organizations is increasing (Bauer and Erdogan, 2011), and 90% of new hires decide whether to stay or leave within the first six months (Johnson and Senges, 2010). In addition, newcomers entering a new organization have about three months to prove themselves as a member (Bauer, 2010). The process through which "*new employees move from being an organizational outsider to becoming an organizational insider*" is called onboarding (Bauer and Erdogan, 2011). A company with an intentional and "thought through" onboarding plan experiences higher retention, increased job satisfaction, and a decreased time to productivity. However, despite its importance, only a fifth of companies engage their newcomers in a proactive and organized onboarding plan (Bauer, 2010). The consequences of insufficient or non-existing onboarding are; costly personnel turnover, lower performance levels, and lower commitment (Bauer, 2010). Additionally, research has shown that attitudes a newcomer develops in the first weeks of employment remain relatively stable (Johnson and Senges, 2010).

Most literature covers different aspects of onboarding, the particular importance of them, and numerous frameworks, practices, and tools. Additionally, some literature emphasizes the need for customizing the onboarding for each unique organization. However, little research addresses the issue of implementing such processes, more specifically moving from an informal or non-existing to a formal onboarding procedure. Therefore, this study aims to shed light on a previously unexplored niche in literature concerning challenges companies face when formalizing an onboarding program. Furthermore, facilitate and make practitioners aware of the challenges of introducing newcomers effectively.

To enable a thorough investigation of the phenomena, the scope was limited to a single firm. The research was pursued as a case study at a firm with high incentives to formalize the onboarding, meaning (1) in the early process of formalizing the onboarding process, (2) under organizational growth, and (3) high cost of onboarding downsides - by being knowledge-intensive, the loss of personnel is very costly as the learning curve is relatively long.

After having an identified literature gap and a research setting, we initially anchored the research in a broader problem formulation; *What are the challenges when formalizing the onboarding process in a fast-growing and knowledge-intensive firm?*

To narrow down the problem to a more researchable scope, we applied an interactive research approach in collaboration with management, where the study results contribute to both practical use and academia. After several initial interviews with top management, uncertainties about the current onboarding process and its formalization arose, which led us to direct the study towards newcomers' perspective and time to productivity under organizational growth.

Having a more specified scope after the initial interviews, a qualitative research strategy was applied by collecting data from semi-structured interviews with participants that have experienced an onboarding process. The interactive approach allowed us to participate as newcomers during the execution of the study and gained impressions and perceptions enhanced our ability to lift the most relevant data in the analysis. The interview data were analyzed using template analysis, which resulted in a set of overarching themes presented as findings, used in combination with theory to describe and explain the challenges of effectively onboard new employees under organizational growth.

1.1 Thesis outline

The thesis is divided into six main chapters. The first chapter introduces the field, purpose, and focus of the study. The second chapter will give the reader a brief introduction to the literature field of onboarding that led to the identification of a literature gap and has been the literature to inform our study scientifically. The theory chapter also includes the supporting theory Communities of Practice for knowledge transfer within informal settings. The research methods chapter introduces the interactive research approach, a brief case description of the studied company, and finally, describes our research process, data collection, and analysis. The fourth chapter consists of the main findings from the data analysis, presented as themes. The themes are further discussed in the fifth chapter, where we sum up the discussion by synthesizing our findings. The last chapter consists of our conclusions from the pursued study.

2

Theoretical Background

The theory chapter introduces the reader to the essentials of present onboarding literature. The chapter provides a general review of the literature field that have been theoretical foundation during the study to direct the research and allow to cover most aspects of onbording. The onboarding section starts with briefly introducing the concept of onboarding, the most used theoretical models, and finally, tools and practices accompanied by a summary. After reviewing onboarding literature, the concept of communities of practice is presented, acting as a supportive theory for knowledge transfer in an informal setting.

2.1 Onboarding

A newcomer entering a new organization will have to learn the knowledge, skills, and behaviors to succeed in the new setting. Onboarding is the process of helping newcomers to succeed and become effective members (Bauer and Erdogan, 2011). The phrase onboarding is defined somewhat different throughout the literature and is sometimes considered synonymous with the term socialization (Bauer and Erdogan, 2011; Bauer, 2010). One of the most used is the definition provided by Bauer and Erdogan (2011) who defines onboarding as the process through which "*new employees move from being an organizational outsider to becoming an organizational insider.*" Some more recent literature distinguishes the meaning of the terms socialization and onboarding by letting socialization define the individual's learning and adjustment process. In contrast, onboarding is the efforts made by an organization to facilitate the individual's socialization (Klein et al., 2015). This thesis will use this distinction of the terms to provide better clarity.

An onboarding process usually occurs within a limited time frame, starting from when the job offer is made and proceeds up to twelve months (Chillakuri, 2020). However, as onboarding deals with the efforts made by the organization, the time frame can vary a lot. The better-performing companies tend to view the onboarding as a longer process than the industry average, more specifically, up to six months compared to one month (Aberdeen Group, 2006).

Central to the onboarding literature is the expected outcomes from successfully pursued onboarding processes. Even though the literature is not entirely consistent, it distinguishes between short-term and long-term outcomes. Short-term outcomes are more related to the newcomer and are stated to be *self-efficacy, role clarity, social integration,* and *knowledge of culture* (Bauer, 2010; Bauer et al., 2007). Concerning the more researched long-term outcomes, studies have found multiple effects of successful onboarding where the most prominent are *higher retention, job satisfaction,* and *performance* (Bauer and Erdogan, 2011; Bauer et al., 2007; Bauer, 2010; Snell, 2006), illustrated in Figure 2.1. A newcomer's level of performance is usually phrased as the *time to productivity*, meaning the time needed for a newcomer to become fully productive, illustrated in Figure 2.2, inspired by Snell (2006). In addition, Bauer (2010) highlights that "the faster new hires feel welcome and prepared for their jobs, the faster they will be able to successfully contribute to the firm's mission."

Figure 2.1: Illustration of onboarding and expected outcomes

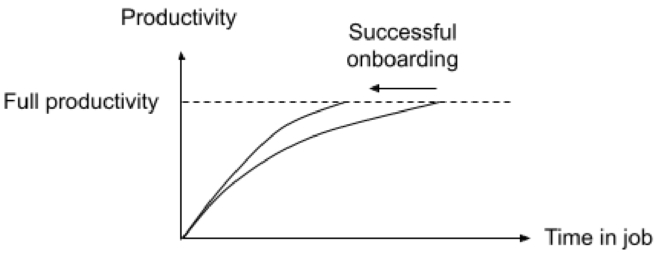

Figure 2.2: Time to productivity

Bauer (2010) distinguishes informal and formal onboarding, describing the informal as a newcomer learning the job without a detailed plan, also called the "sink or swim" approach. Such an approach implies that a newcomer needs to learn how to perform independently (Van Maanen and Schein, 1979) without help from the organization, leaving the success of socialization up to the individual's own efforts (Cambridge Dictionary, 2022). On the other hand, formal onboarding is described as "*a written set of coordinated policies and procedures that assist an employee in adjusting to his or her new job in terms of both tasks and socialization.*" (Bauer, 2010). Continuously, Bauer (2010) argues that "best-in-class" onboarding programs use a more formal approach. Next subsection will introduce three theoretical models a practitioner can use to formalize the onboarding process.

2.1.1 Theoretical models to formalize onboarding

Much research has tried to construct and validate theoretical models and frameworks to understand better what makes an onboarding process successful. One of the earliest and most cited work was conducted by Van Maanen and Schein (1979) who introduces six socialization tactics organizations can use to make up strategic onboarding for newcomers. The theory of tactics provides the practitioner with a set of strategic choices (tactics) to influence the setting a newcomer is introduced to the new organization. Bauer (2010, 2013) shifts the focus to the extent organizational efforts are made to introduce newcomers and provides a framework called the four C's, four building blocks for successful onboarding. The framework covers four aspects to facilitate the newcomers adaption to the new organization and rank them in order, from the most basic level until the most proactive onboarding programs. To formalize the onboarding the strategic choices of tactics and the extent of organizational efforts still leaves the practitioner left with choices of practical tools to actualize the former frameworks. Klein et al. (2015) focus on the content in an onboarding program and introduce the framework *inform, welcome,* and *guide* (IWG) as three categories of essential tools and practices.

2.1.1.1 Tactics - Strategic choices of the onboarding setting

When a newcomer enters a new organization, he or she might experience unexpected behavior and responses. Thereby, the newcomer may seek to understand the social behavior specific to the new organization to reduce uncertainty as they adapt to the surroundings. Organizations can influence the newcomer's process of seeking an answer to the surrounding behaviors by applying tactics (Jones, 1986). One of the first and most recognized works in organizational socialization was written by Van Maanen and Schein (1979), where they suggest six contrasting dimensions of organizational socialization illustrated in Table 2.1 below, called tactics; they are presented as follows.

The *Collective (vs. individual)* tactic refers to when newcomers go through the socialization process in a group, like military boot camp or freshmen weeks. Collective socialization tends to replace individual tactics with a growing business because of cost, ease, and efficiency. In a *formal (vs. informal)* socialization setting, the newcomer is, to some extent, segregated from the original organizational members while being put through a specific set of experiences—for example, attending an academic police school before entering the original police force. Formal processes are usually found within organizations where the newcomer's absorption of appropriate experiences for the specific role is important. In other words, to think and feel like an original member of the organization. *Sequential (vs. random)*, a process consisting of a sequence of identifiable steps, is called sequential, e.g., the school system starts with elementary school and goes through sequences until higher educational graduation. A random socialization process can be considered unspecified; even if some events are required, their order might be random. The sequential approach is preferable when the progression is thought of as simple-to-complex, like an engineering program. In comparison, a random approach can enhance the variety of perceptions and lead to a more innovative orientation. The *fixed (vs. variable)* dimension refers to time, whenever the process has a distinct timetable provided with precise knowledge of when and how long certain events will occur. A variable process is more oriented towards when the newcomer has reached the desired level of socialization. A *Serial (vs. disjunctive)* tactic is when one of the experienced organizational members acts as a role model or mentor for the newcomer. Van Maanen and Schein (1979) exemplifies the two with a serial tactic being rookie police patrolling with an experienced colleague during the beginning to ensure the stability of behavior patterns among the organization. In contrast, the disjunctive tactic might be an entrepreneur with a growing business needing to assign people to newly created organizational roles that leave no or little room for role models with similar experience. In an *investiture (vs. divestiture)* socialization tactic, the newcomer's identity and personal characteristics are confirmed and considered valuable. Usually, the newcomer's values, skills, and attitudes are thought of as an advantage to leverage. On the other hand, a divestiture process seeks to deny the personal characteristics and disconfirm the self-image to be later rebuilt; often, the final self-image gives the newcomer insights into abilities that they did not think they had before.

These six tactics are divided into subgroups by Jones (1986) by categorizing the contrasts into institutionalized and individualized socialization and the tactics into *context, content,* and *social aspects* illustrated in Table 2.1. Jones (1986) also provides empirical evidence that supports the influence on newcomers by the different tactics formulated by Van Maanen and Schein (1979). The empirical evidence suggests that institutionalized processes correlate positively with job satisfaction, commitment, and lower intention to quit. Jones (1986) also highlights the effect of the individual characteristics of a newcomer on the socialization process.

Table 2.1: Socialization tactics classified by Jones (1986)

	institutionalized	*Individualized*
Context	Collective	Individual
	Formal	Informal
Content	Sequential	Random
	Fixed	Variable
Social Aspects	Serial	Disjunctive
	Investiture	Divestiture

2.1.1.2 The four C's - Extent of organizational efforts

Differing from the socialization tactics provided by Van Maanen and Schein (1979), Bauer (2010) shifts focus from strategic choices of onboarding setting to different levels of organizational efforts to facilitate the newcomer's onboarding. In the extensive work from Bauer (2010, 2013) in maximizing success for onboarding, the concept of the four C's is presented. The concept consists of four distinct levels of abstraction for successful onboarding, namely, *Compliance, Clarification, Culture,* and *Connection.*

Compliance
Compliance refers to the essential things such as paperwork, computers, network accounts, and facility access, among others needed to carry out the job. Successful onboarding processes take care of this effectively, making the process as smooth as

possible.

Clarification
Clarification relates to the newcomer's understanding of the work role and the expectations. The sooner a newcomer understands their job, the faster they become a productive worker.

Culture
Culture considers the learning of an organization's unique culture. Therefore, the better a newcomer is provided with a sense of both informal and formal norms and can interpret the new organization's culture, the higher the chances that he or she will succeed in the long term.

Connection
Connection refers to the interpersonal relationships and information network a newcomer needs to establish to become a well-functioning organization member.

Bauer (2013) empathizes with the importance of Connection and argues that it is the most critical among the four C's to succeed with the onboarding regarding performance, job satisfaction, and commitment. The organization can use specific connection mechanisms (tools and practices) to facilitate internal connections. In line with both Van Maanen and Schein (1979) and Jones (1986), the consensus of Connection is that social relationships, the existence of role models, and the confirmation of the newcomer's identity are enablers of a successful onboarding process.

Bauer (2010) also provides the concept of Onboarding Strategy Level, summarized in Table 2.2, which emphasizes to what extent an organization leverages the four C's to build a successful onboarding experience. It consists of three levels: *passive, high potential,* and *proactive.* A common challenge among companies is that the onboarding process is merely viewed as "a checklist" of unrelated tasks (Bauer, 2010), not considering the integrated experience and long-term aspects of onboarding.

Table 2.2: Onboarding strategy level from Bauer (2010)

Onboarding Strategy Level	*Compliance*	*Clarification*	*Culture*	*Connection*
Passive	Yes	Some	Little/None	Little/None
High Potential	Yes	Yes	Some	Some
Proactive	Yes	Yes	Yes	Yes

So far, we have covered the literature concerning strategic tactics and the levels of organizational efforts to formalize and succeed with onboarding. Yet, there is no literature introduced that covers practical tools available for the practitioner to implement the former frameworks. Next subsection will introduce a framework that categorizes the available tools and practices, followed by a subsection that reviews the most used tools and practices found in literature.

2.1.1.3 Inform, Welcome, Guide - Three categories of onboarding content

The covered topics within onboarding literature all emphasize *what* to do rather than *how* to do it. Hence, a literature gap underlined by Klein and Heuser (2008) focused on specific activities to facilitate newcomers' socialization. An extensive literature review resulted in the framework *inform, welcome,* and *guide* (IWG) as a way to sort activities concerning the underlying intention. As most activities found were efforts to provide newcomers with information, the category was divided into the three sub-categories *communication, resources,* and *training.* A brief summary of the framework is found in Table 2.3.

Table 2.3: Framework Inform, Welcome, Guide - Adopted from Klein and Heuser (2008)

Inform	Provide information materials, and experiences to help newcomers learn what is needed to become successful in their new role
- Communication	Providing one-way messages or two-way dialogue
- Resources	Making materials available
- Training	Planned efforts to facilitate learning
Welcome	Celebrating the arrival of newcomers and/or providing opportunities for socialization with other organizational members
Guide	Personal guide to help the newcomer navigate the transition

2.1.2 Tools and practices

Many tools and practices are presented when reviewing the literature; a collection sorted in the IGW-framework can be found in Appendix D.

Continuing on the work by Klein and Heuser (2008) and the IWG framework, Klein et al. (2015) investigate the onboarding practices used by organizations and their corresponding effectiveness. The practices newcomers found most valuable were; uninterrupted time with management, workplace being ready the first day, on-the-job training, and being assigned a "buddy."

Bauer (2013) underlines tools and practices to facilitate especially Connection, and these are; assigning a buddy/mentor, key introductions, regularly key stakeholder check-ins, and also effective use of technology such as internal social media platforms. Introducing recurring meetings with key insiders is a proactive approach that can catch the attention of a newcomer before any problems arise (Bauer, 2013). Implementing coaching or mentor networks for newcomers is overrepresented as best practices (Raytheon, 2012). Mentors help the newcomer learn about the organization, and job-related instructions, giving advice and supporting in both a social and political manner. Additionally, newcomers might ask the mentor questions they hesitate to ask a manager (Bauer, 2010). Before implementing a mentor system, one should be aware that the mentoring is likely to take time and reduce the mentor's efficiency (Fagerholm et al., 2014).

2.1.3 Summing up Onboarding

To summarize the covered onboarding literature, Figure 2.3 illustrates newcomers' entering an onboarding process. The onboarding process can either be informal, called "sink or swim" approach, leaving the success of the socialization up to the individuals own effort. Else, the onboarding process can be formal, to some extent, meaning that organizational efforts are made to facilitate the newcomers' socialization as a set of coordinated policies and procedures. The formalization of onboarding can be informed by numerous frameworks and theoretical models, where we present three of the most prominent within literature complementing each other; *Tactics, the four C's*, and *IWG*. The process in short terms aims to give the individual *self-efficacy, role clarity, social integration,* and *knowledge of culture* to efficiently become an integrated member of the organization. Furthermore, the efforts an organization can undertake in order to achieve a successful onboarding eventually leads to; *(1) high retention, (2) increased job satisfaction,* and *(3) decreased time to productivity.*

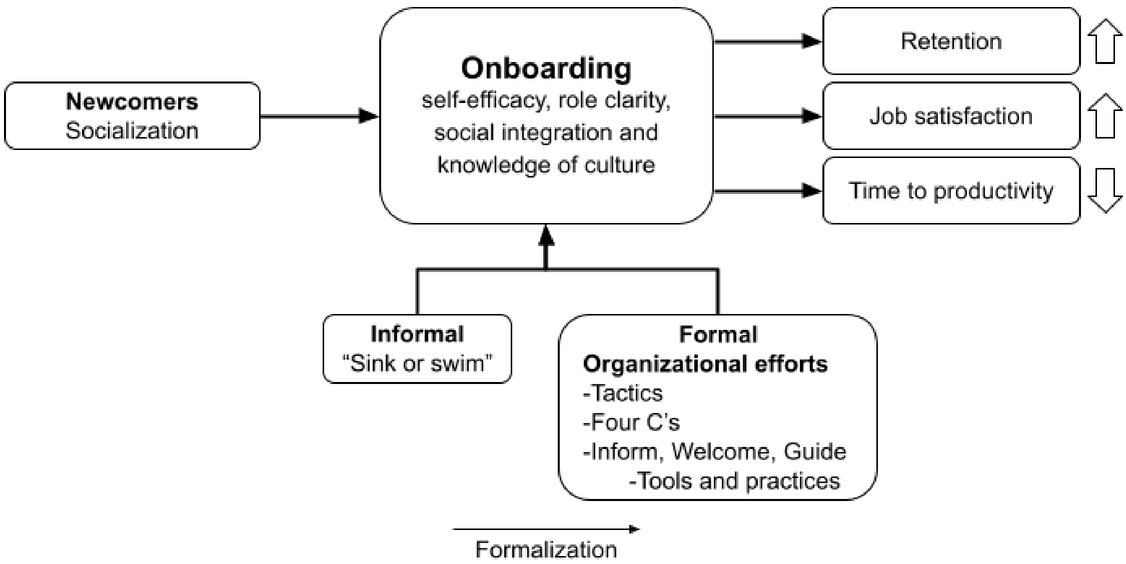

Figure 2.3: Illustration of the covered onboarding literature

2.2 Communities of Practice

As introduced before, onboarding refers to the efforts taken by the organization to facilitate the newcomer's first time, and socialization is the individual's learning and adjustment process. The former is covered in the onboarding section above, hence the literature of onboarding does not cover the informal or "sink or swim" approach by definition, as there are no or low organizational efforts made. Organizations using an "sink or swim" onboarding leave the socialization up to the newcomer, calling for supporting theories in order to understand socialization in an informal setting.

Accordingly, this section will explain the concept communities of practice (CoP) and its relation to the newcomer's learning in the organization, independent of an informal or formal onboarding process.

The concept of CoP was first introduced by Lave and Wenger (1991) in their book *situated learning* and is defined in Wenger et al. (2002) as a group of individuals who share a set of problems or a passion for a particular topic and by interacting with each other deepens shares and acquires new knowledge in that specific field.

However, before continuing, it is essential to distinguish between information and knowledge and further define knowledge as these concepts are often confused and used interchangeably (Wenger et al., 2002; Terra and Angeloni, 2003; Nonaka, 1994). In essence, if an element is easily stored and static, it can be categorized as information. On the other hand, knowledge is dynamic, meaning that it is continually developing and requires human interaction (Wenger et al., 2002; Nonaka, 1994). Consequently, for information to become knowledge, it needs human interaction. Furthermore, knowledge is divided into two dimensions: explicit and tacit. Whereby the former refers to knowledge that can be codified, in other words, written down or communicated in a formalized and systematic way. The latter entails personal qualities and are often bound to a specific context and continuously developed through participation. Therefore, it can not be formalized and communicated systematically as explicit knowledge (Nonaka, 1994). Hence tacit knowledge is a critical factor to competitive advantage seen from a business perspective since it is inherently hard to replicate for competitors (Wenger et al., 2002).

CoP is an excellent practice for capturing tacit knowledge because it involves continuous interaction and informal learning processes such as mentoring among its members (Wenger et al., 2002). However, while CoP emphasizes tacit knowledge, it does not downplay the importance of explicit knowledge and explicitly states that practitioners (i.e., people who use the knowledge) need to be involved in the knowledge management process. The reason is that the practitioners know what should be explicit knowledge and what should remain tacit (Wenger, 2004).

It is time to explain what constitutes a CoP. First of all, a CoP can be amongst others, either large or small in size, heterogenous or homogenous involving people from the same background or diverse, remain or span across several business units, and be either spontaneous or intentional meaning created by the organization or arise because peers need to learn from each other. There exist three fundamental criteria to be classified as a CoP (Wenger, 2004);

- *Domain* - A shared concern, a set of issues in a predefined area needing to be developed and further explored bringing the community together.

- *Community* - A key characteristic is the involvement of people continuously interacting and creating relationships enabling the exploration and sharing of knowledge.

- *Practice* - The need to act in order to accumulate knowledge in the community resulting in elevated abilities, through the sharing of methods, tools, cases and so on. In other words, it is not merely a club of interest but a community of creation.

Members of CoP can be categorized according to three levels of participation; *core, active,* and *peripheral* members, as shown in Figure 2.4 (Wenger et al., 2002). The core members are a smaller group, often community leaders, and take on projects, identify topics, and drive the community forward. The active members participate regularly but not with the same intensity as the core group. The peripheral members keep to the sidelines, observe the interactions by core members, and gain insights (Wenger et al., 2002). A peripheral member can swiftly drift towards the center as their interests are awakened, similar to the disengagement of core members and more profound commitment of active members (Wenger et al., 2002). A newcomer joining an organization moves from an outsider, not part of the community, to an insider and transitions through the various participation levels; a sign of a functioning community is that members are drawn closer to the core, similar to how people are drawn to the heat of a fire, acting as a gravity mechanism (Wenger et al., 2002).

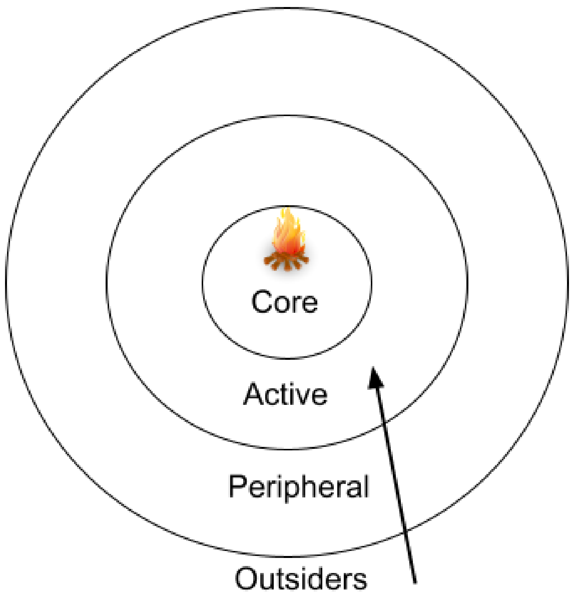

Figure 2.4: Moving from outsider to insider - Adopted from Wenger et al. (2002)

For a newcomer to become a full participator, the individual needs to learn. Lave and Wenger (1991) introduces the situated way of learning in contrast to the cognitive model, viewing and explaining learning as a form of *apprenticeship* through *legitimate peripheral participation.* Cox (2005) summarizes the idea; From a newcomer's perspective, learning occurs in a situation, in contrast to a classroom, further occurring through observation followed by peripheral participation by doing smaller tasks alongside other learners. However, it is inherently task-driven, not limited to "what to do," and is seen as an assimilation of behavior in the profession. In essence, informal rather than formal and, to a large degree, an act of socialization by peripheral participation.

Lesser and Storck (2001) further introduce CoP as a tool for decreasing the learning curve of new employees, thereby ultimately decreasing the time to productivity. CoP Serves as a tool for newcomers to identify experts within the community, guiding them closer to resources and answering questions, and facilitating the creation of relationships between junior and senior workers. In addition, helping the newcomer with the challenge of acquiring a broader perspective to grasp the larger context of the individual's contribution to the organization. Furthermore, seeing how the individual actions affect other individuals and procedures within the firm (Lesser and Storck, 2001). Finally, the community was found to foster mentor-mentee relationships where newcomers could approach more senior members for guidance (Lesser and Storck, 2001). This is further elaborated by Wenger et al. (2002), where the mentoring role is to be shared among several community members. By spreading the mentor role across the community instead of relying on a few senior members, taking up valuable time, the burden of the few can be regulated.

3
Research method

The study was conducted with an interactive research approach. The methods chapter initially explains interactive research in combination with case study design. The second section introduces the reader to the company where the study were conducted and a description of the current onboarding process. The third section outlines the research process by first taking the reader through the interactive research process, followed by the data collection and analysis phases. Finally, we end the chapter with ethical considerations.

3.1 Interactive research approach

In a setting where the company faces challenges in formalizing the onboarding program, in combination with the scarce availability of literature investigating such a process, there are mutual interests in research contribution. Practitioners have internal expertise and close relation to the problems they face, leading to a "home bias" that is challenging to develop new ideas and insights. Research from outside can then facilitate innovativeness by giving new perspectives and input (Svensson et al., 2002). Therefore, both parties would benefit from a collaborative approach where the researcher and practitioner contribute to joint learning. One such collaborative research approach is interactive research, defined by Ellström et al. (2020) as:

"*A collaborative research approach characterized by recurrent interactions and joint learning activities between researchers and practitioners in commonly agreed upon efforts to study change and innovation in organizations.*"

In contrast to most research approaches, interactive research aims to generate new knowledge for practical relevance and scientific contribution by conducting research *with*, rather than *on* the participant (Svensson et al., 2007, 2002). The participants have the authority to influence the research, how it is pursued and the new knowledge created, which means that the researcher discusses the basis for the research with participatory stakeholders when the research takes place (Svensson et al., 2002). See Figure 3.1 for an illustration of interactive research adopted from Svensson et al. (2007)).

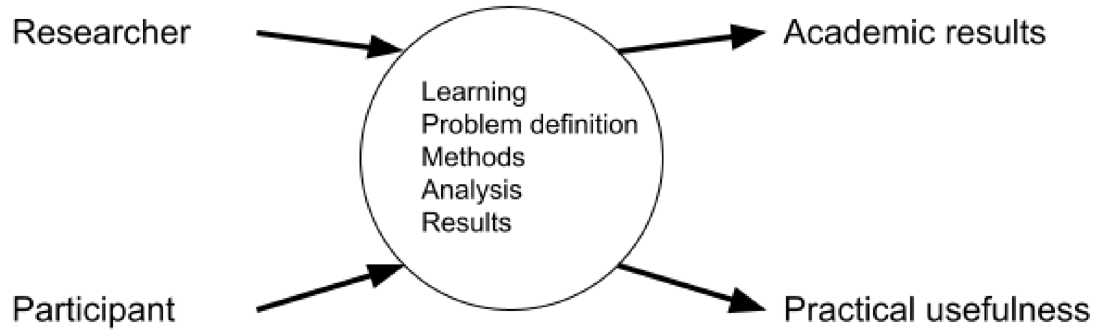

Figure 3.1: Illustration of interactive research adopted from Svensson et al. (2007)

Initially, when formulating the problem, the practitioners are highly involved with ideas in a more creative phase, while in the analysis, usually both parties share and interpret data. Finally, in the presenting phase, the researcher has a more extensive influence in synthesizing the new knowledge, and implementation of the new knowledge is left to the practitioner (Svensson et al., 2002). Ellström et al. (2020) argue that the approach is suitable for studying complex organizational phenomena when a shorter time interval between research and practical implications is desirable. Further, arguments are made that an interactive approach can enhance relevance and innovativeness, thereby making the research more offensive than traditional academic research.

The advantage of interactive research is that the researcher can participate and study very closely with the skilled practitioner (Svensson et al., 2002). Furthermore, mutual interest in generating new knowledge incentivizes both parties to a high degree of commitment. However, a drawback is that the researcher easily immerses into the research setting and thereby risks losing the sense of critical distance (Svensson et al., 2002). While it is important to adopt a local perspective to gain a thorough understanding, it is essential to maintain a distance to enable the generation of general-applicable knowledge. Hence, an issue regarding the balance between closeness and distance naturally arises. Thus the researcher needs to embrace the value of practice while ensuring the development of the theory (Svensson et al., 2002).

With an interactive research approach, where the participants influence the research from problem formulation to analysis, a single case study comes naturally as a choice of research design. A case study is also, like interactive research, suitable for studying complex organizational phenomena (Baxter and Jack, 2008). A single case study implies the research of a single organization, location, person, or event and is widely used within business research (Bell et al., 2019). The main differences between case study design and others are the focus on one particular situation or setting, which allows the researcher to profoundly investigate the topic of interest and is usually favored by qualitative research methods (Bell et al., 2019). The case study design is usually questioned for its low degree of external validity, meaning that outcomes from one specific case are not necessarily applicable for any other case or population.

Therefore, internal validity is important regarding trustworthiness when conducting a case study. The researcher can enhance trustworthiness with multiple methods by relying less on data collected from only one method (Bell et al., 2019; Baxter and Jack, 2008). Continuously, it can also be strengthened by member checking, integrating participants in the analysis to allow for discussion and clarification of the collected data (Baxter and Jack, 2008). Finally, having multiple researchers coding the data separately and then jointly merging it into one dataset further reinforces trustworthiness by increasing consistency in findings (Baxter and Jack, 2008).

3.2 Case Description - Plejd

The study have been conducted in collaboration with Plejd where the interactive approach were applied. The following section will introduce the reader briefly to the company, organizational growth, and the current onboarding process.

Plejd is a leading Swedish supplier of smart light control and home automation in the Nordic market within the rapidly growing smart home industry (Statista, 2021), with product development and production in-house in Mölndal. Plejd provides value by offering their wireless platform, allowing for fewer physical cables, more connectivity, and control options. The wireless platform composes the foundation of the product ecosystem that offers benefits for both end-users and electricians (Plejd, 2021). After the market entry in 2016, Plejd went from an unknown entrant to the market leader in dimmable light control in a few years. Approximately 60% of the organization is devoted to exploration, making the firm immensely knowledge-intensive.

The current structure is built up by management, team leaders, and team members. Plejd has the ambition to remain a flat organization with quick decisions but has recently introduced the “team leader” role since it was insufficient for management to manage all team members. The organization consists of approximately 20 teams that differ from 1 to 20 team members. The teams are physically divided between three floors, with the first and second having mezzanine floor plans. The third floor is separated from the rest of the building. Hence people needing to visit the third floor have to leave the facilities and then take either the stairs or elevator.

Since 2017 sales have increased in parallel with the launch of new products leading to increased revenue streams from 30M sek to 326M sek, an average organic growth of 82% annually (Plejd, 2021). The organizational growth has been extensive; at the writing moment, the organization consists of approximately 200 people, see Figure 3.2 (Plejd, 2017, 2018, 2019, 2020, 2021, 2022). Plejd is currently looking to expand operations in both new product categories and new markets (Plejd, 2021). Historic growth has solely focused on product development and organic growth, naturally leading to deprioritization of other organizational processes, e.g., the onboarding process.

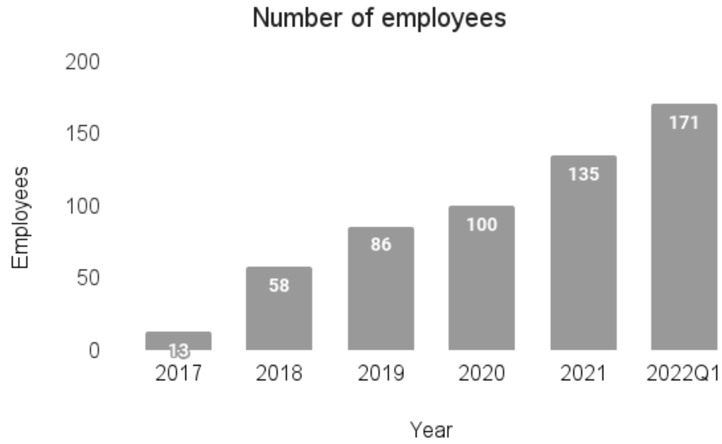

Figure 3.2: Number of employees

3.2.1 Onboarding - How it works on paper

The formal onboarding is divided into *Salary & HR, Tech, Mentor/Manager,* and *Knowledge.*

On their first day, new employees are given a tour of the facilities by HR. Afterward, the newcomer sits down with HR for about 1-2 hours, going through policies, benefits, organizational structure, and other necessary information as a part of the *Salary & HR onboarding.* The tech onboarding refers to giving the employee access to systems, and facilities, handing out the computer, and printing out the IT policy.

After the *Salary & HR* and *Tech* onboarding, the new employee is usually picked up by the team leader and introduced to the rest of the team as a part of the *Mentor/-Manager* onboarding. The document concerning the mentor/manager onboarding states that HR is responsible for booking month check-ups regarding feedback and performance review meetings between the mentor and the employee. The team lead is considered the newcomers nearest manager and mentor.

The last part refers to *Knowledge* onboarding. In the present state, there is a sales pitch presenting the products and the app, which every new employee should attend to understand the products and the company. The remaining parts of the knowledge onboarding are under development, planning to implement activities such as every new employee should be given a goodie bag with company products. A couple of other activities are mentioned; however, these do not concern all teams, e.g., A field trip to an actual site to see installations being made by electricians. In essence, the onboarding beyond the mandatory HR meetings is more or less considered to be a "sink or swim" approach by management.

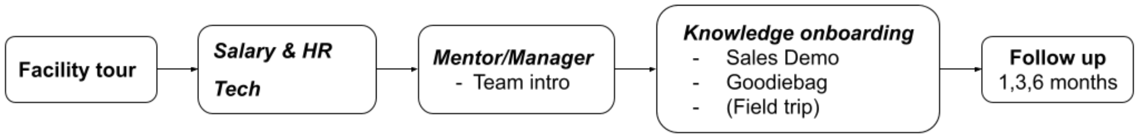

Figure 3.3: Onboarding today

From having participated in the present onboarding process and having access to the onboarding documents, it was possible to classify by applying onboarding theory. Newcomers' first day is standardized and follows a rather detailed schedule. After that, activities vary in order and duration among newcomers', often influenced by the planning of each team lead. In essence, the present formalization of the onboarding process are highly *individualized* regarding content and context but *institutionalized* regarding social aspects referring to Van Maanen and Schein (1979) and Jones (1986) work on socialization tactics. In the present state, the formal onboarding (written set of coordinated policies and procedures) mainly fulfills *compliance* and to some extent *clarification*, which according to Bauer (2010) categorizes it as a *passive* onboarding strategy level, leaving the *culture* and *connection* up to the newcomer as a "sink or swim" approach. Furthermore, the categorized tools and practices Klein and Heuser (2008) used are mainly to *inform* newcomers'. With continuous organizational growth, too much informal onboarding risks becoming insufficient and calls for investigation and formalization.

3.3 Research process

3.3.1 The interactive process

All organizations face challenges, and this company is not an exception. Initially, managers perceived a diverse set of challenges, ranging from issues with single-case onboarding failures to the absence of internal education. The interactive approach initially aimed to understand and conceptualize the issues at hand. At the start, the problem formulation was overly broad and unspecific. We, therefore, needed to consolidate the problem and construct adequate research questions. By conducting semi-structured interviews in a casual setting with management, the scope of mutual interest for all stakeholders could be developed. A semi-structured approach with low control over the topics ensured that the questions were aligned between the interviews but enabled the interviewees' perspectives to shine through (Bell et al., 2019). As the interviews were not a part of the primary data collection, the interviews were not audio-recorded; instead, one researcher took notes as the other was in control of the interview. We later discussed and compiled impressions and notes from the interviews to reach a general view of the problem. Further, to construct and iterate research questions until a specific researchable subject appeared that would contribute to academia and bring significant value to the company.

From the compilation, it became clear that management generally saw a low indication of problems within the organization. However, a coherent perception is that the larger the organization grows, the more indications of insufficient onboarding cases arise. The signs usually play out when newcomers who, after months in the organization, still lack pieces of fundamental knowledge, which is seen as an onboarding failure. More precisely, the knowledge these newcomers lack is rarely related to the work itself but rather an understanding of the larger company context. Leading to the questioning of why some newcomers report this lack of knowledge and not others? Why now, when the organization is larger and not before? When will the processes become insufficient?

Hypotheses by management are, for example, that with rapid organizational growth, people have been thrown into the organization as a "swim or sink" approach, without enough consideration of its effects. The process of socialization which naturally occurred before in a smaller organization has become less natural. The culture is becoming pallid as the risk of subcultures drawing the company in different directions emerges when teams are drawn further from the organization's core. Consequently, newcomers are not becoming fully integrated into the company and the value proposition it offers customers.

According to management, other outcomes from successful onboarding, such as retention and job satisfaction, are not following the same patterns. The retention is very high, close to 99%, and no indications of low job satisfaction are experienced. Thereby, management mainly associates insufficient onboarding with a long time to productivity. More specifically, the average time to productivity seems to be increasing in parallel with organizational growth. One manager phrased the issue in the following way.

"*How can we duplicate the mindset of management into the minds of newcomers?*"

Implying that the solution would be to transfer the knowledge of management to newcomers.

Furthermore, management is reluctant to implement best-practice structures, only for the sake of formalization, without first understanding what is optimal for the company. Management refers to regression to the mean, meaning that any changes made to the current process are more likely to steer the company towards the mean, risking becoming average and reducing innovativeness. The trade-off between implementing formal structures to challenging the status quo is interpreted as a big challenge. Consequently, many issues are solved retroactively when problems become evident, and action is needed. Before implementing formal structures, management is interested in a scientific basis for informed decision making, leading the firm and us to mutual interest in investigating the current onboarding process, more specifically, the time to productivity.

Given the identified literature gap regarding the process of formalizing onboarding programs, the research setting of a fast-growing- and knowledge-intensive firm, and the company-specific issue, of increasing time to productivity, the following research question was constructed.

What are the challenges to decrease time to productivity when formalizing the onboarding process in a fast-growing and knowledge-intensive firm?

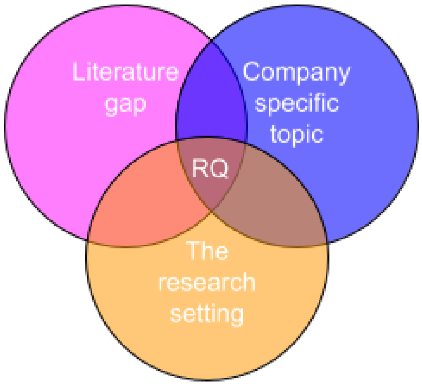

Figure 3.4: Intersection leading to research question

As the current onboarding process is mainly informal, or a "sink or swim" approach that lately has been formalized to some extent, the experiences and interpretations lie in the newcomers' perspective. In order to thoroughly investigate the process from the newcomers' perspective, a qualitative research strategy is needed (Fossey et al., 2002), which is further elaborated on in the data collection section. However, a qualitative strategy is often criticized for being too impressionistic, hard to replicate, and too narrow in scope, ultimately limiting generalization (Bell et al., 2019). On the other hand, the study is tailor-made for a firm requesting the researchers' perspective of the process, and without in-depth knowledge and understanding of the process, this would not be possible.

We have utilized semi-structured interviewing as the primary data collection method in collaboration with management. Where researchers conducted the interviews and management facilitated access and reviewed the interview guide. Furthermore, the interactive research approach allowed us to come in close contact with the organization and its members. Thus, participation and observation were deemed relevant secondary sources of data collection. We were further treated as newcomers in the organization and thereby gained the opportunity to validate and underline the most prominent data collected from interviews, increasing internal validity. In addition, management provided existing onboarding documents of relevance to be reviewed during the study. As a remark, our participation was explicit, meaning that all participants knew that we were students conducting a research study within the organization.

After the data collection phase, all data were analyzed. To ensure respondent anonymity, interactive actions were mainly member checking, the validation of transcripts and debriefing of analytical results by participants (McGrath et al., 2019).

The ability to lift the most relevant data was enhanced from insights gained in participation and observation. The compiled and anonymized analysis were member checked with the help of management to identify any shortcomings and give practical management implications as early as possible.

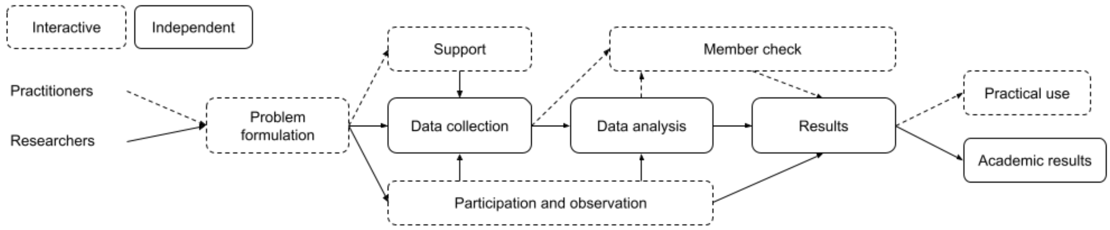

Figure 3.5: The interactive research process

3.3.2 Data collection

In collaboration with the company, the data collection methods were chosen. The primary method was semi-structured interviews, supported by the secondary methods, participation, observation, and document review. The methods were undertaken in parallel as we participated as newcomers in the organization while conducting the interviews.

3.3.2.1 Semi-structured interviews

The reason for using interviewing as a data collection method is the possibility to explore phenomenons in a more profound manner (McGrath et al., 2019). It is also a flexible method, allowing the researcher to emphasize the respondents' perceptions (Bell et al., 2019). Semi-structured interviewing is the combined approach between unstructured and structured interviews. It is preferable when the researcher has a reasonably clear focus (Bell et al., 2019) but still strives to understand the subjective perspective of interviewees, in contrast, to generalize over a large population (McGrath et al., 2019). One central part of semi-structured interviews is the use of an interview guide, that is, a set of predetermined questions to assist the interview and ensure that the same topics are addressed among all respondents, especially if there is more than one researcher conducting interviews (Bell et al., 2019). However, questions may not be asked precisely as in the guide, and the interviewee is given leeway to reply. The researcher usually follows up with additional questions whenever picking up interesting topics (Bell et al., 2019).

After the interactive problem formulation phase, the research aim was clear enough to apply semi-structured interviewing and create the interview guide, Appendix B. Given the high degree of informality in the current onboarding process and uncertainty of newcomers' perceptions, the guide was purposely broad, however specific to the field. The guide included general topics such as background and first impressions to gain context and open the interview with easy questions to make the situation comfortable (McGrath et al., 2019). The outline of the guide was built on Bauer's

4C's, as presented in the theory chapter, ensuring the includence of important aspects in onboarding literature, e.g., *Compliance: Can you tell us about the first time here, starting with the first day? Clarification: How did you perceive your role when you started? Connection: Can you describe your relationship with your colleagues in the team?.* Additionally, some questions opening up opportunities for topics such as inclusiveness and general company knowledge were addressed. The guide was intentionally kept short and broad, allowing each respondent to give their view. After finalizing the guide, management was allowed to review and comment. Finally, as McGrath et al. (2019) suggested, recurring themes and follow-up questions were added to the interview guide after the first interviews.

3.3.2.2 Sampling

Sampling, the way of selecting respondents from a population, is a crucial part of the interview process. There are mainly two ways of sample strategies, namely, probability and purposive sampling. Probability sampling, selecting respondents randomly from a population, may be used in qualitative research when the results are aimed to be generalizable to a wider population and therefore usually more emphasized for quantitative research. On the other hand, purposive sampling, selecting the optimal respondent, is usually more feasible in qualitative research as constraints of the research setting and challenges to mapping a population to randomize from. In order to achieve a high degree of diversity among the respondents, a stratified purposive sampling method was utilized, allowing for the participant to be divided into subgroups according to predetermined criteria (Bell et al., 2019).

Every employee has once been a newcomer; hence the whole organization could be considered a potential sample frame. At the time of entry, the company consisted of about 180 employees, and only a small fraction would be suitable to interview to gain a dataset rigid enough. After receiving a personnel list including contact details, time of employment, team belonging, and organizational position, it was possible to construct a representative sample frame. The sample frame was limited with sample criteria for personnel with the most nuanced newcomer experience to obtain insightful data within the time constraint.

As the firm considers the onboarding to range up to 6 months, the first sample criteria included personnel with a time of employment from 6 months up to 5 years, reasoning that all respondents should be able to recall an entire onboarding but not completely obsolete. However, the criteria were adjusted to 4 months to 3 years as we quickly realized that the rapid organizational growth called for more updated experiences as well as employees with employment time longer than three years had either been a member of an acquired firm or declined interview as the aim and questions of the interview were too diverse from their experiences. Additionally, to achieve some degree of a representative sample, respondents were sampled as diverse as possible regarding team belonging and floor levels.

The approach was sequential, asking a few personnel in the sample frame for voluntary participation. After conducting interviews deciding the following sample within the sample frame purposely, where more data needed to be collected. This process was maintained until theoretical saturation was reached, meaning that no new theoretical themes appeared. The data collection process was also affected by time constraints, meaning a trade-off between continuing the interviews at the expense of a thorough analysis. Hence, when the intersection of collection and analysis was reached, in combination with theoretical saturation, the interviews were terminated.

Finally, sampling bias is a factor to be taken into consideration. For example, more than half of the personnel declined the invitation when asking for volunteers, meaning that it cannot be guaranteed that the volunteers did not have some personality traits in common. Thereby, the sample inherently has the risk of being biased.

3.3.2.3 Conducting interviews

After having a well-defined sampling frame, the procedure of conducting interviews started. Firstly, respondents had to volunteer to participate. Therefore, an information sheet, including research orientation and the interview guide, was sent to the sampled person asked to take a stand, see Appendix A (Bell et al., 2019). To keep the setting as comfortable and convenient as possible, the volunteers were allowed to choose a preferred time, location, and language, either Swedish or English. Respondents were also sent a consent form prior to the interview to inform them about the agreement terms, see Appendix C.

Before the interview started, we ensured that the interviewee had been given the consent form and still agreed to the terms. Furthermore, explained once again that the participation is voluntary and that the interviewee can withdraw their involvement without any questions asked, and further guaranteed their anonymity.

The interviews were conducted in a casual setting with audio recording, similar to a conversation, and the respondents were encouraged to freely elaborate their answers (Bell et al., 2019). However, as researchers we had a strict focus and purpose of collecting data kept in our mind (McGrath et al., 2019). One researcher held the interview, while the other took notes and asked follow-up questions. Immediately after each interview, we discussed and elaborated the notes if necessary. After conducting several interviews, we gained confidence and skills, enabling us to conduct interviews independently. Consequently, the last three interviews were divided and pursued individually for efficiency and convenience.

See Table 3.1 for a summary of the conducted interviews.

Table 3.1: Number and duration of interviews

Employment time	<6m	6m-1y	1-2y	>2y	Total	Avg duration minutes
Respondents	3	4	5	1	13	49

3.3.2.4 Transcription

Promptly after each interview, the transcription was initiated, and the work was shared equally. Concerning the divided interviews, the audio recording was transcribed by the researcher not conducting the interview to ensure familiarization with the data. The transcription phase was considered the primary way to familiarize with the data (King and Brooks, 2016). Whenever respondents mentioned confidential details, e.g., unreleased products, it was left out from transcription to guarantee the absence of such data in the end work.

After transcription, every respondent was given the opportunity to proofread and comment on the material, both by ethical considerations and as a way of member checking the data (Baxter and Jack, 2008). Data has been kept in the original language throughout the process to avoid translation errors. However, citations in the report might be translated to English as the last action.

3.3.2.5 Participation, observation, and documents

As a secondary source of data collection, for the sake of data triangulation and increased validity, participation and observation have been utilized. As the first action of participation, we were considered newcomers to the organization, both in terms of participation in the present formal onboarding process and informally, by socializing and learning about the company as any other newcomer. Many long and fruitful discussions between us, but also between us and organizational members, have given a lot of impressions and perspectives. In addition, both researchers wrote a diary of notes individually throughout the study. The collected impressions have mainly been used when conducting and analyzing the interviews—understanding the company and getting insights from multiple perspectives have facilitated the process of lifting the most relevant data from the data collection.

Besides participation and observation, document review has been a supportive data collection method. However, the documents collected are mainly related to the explicitly stated onboarding process in terms of checklists.

3.3.3 Data analysis

The collected data was analyzed by Template analysis, which is a way to systematically address themes in the data as a subordinate to Thematic analysis. By the use of a commercially available data analysis tool for quantitative analysis, the collected raw data could be imported, labeled, and eventually coded. Using cloud-based software facilitated the analysis process considerably, as both researchers could work independently and remotely on the same project.

3.3.3.1 Thematic analysis

Among different analysis methods for qualitative research, thematic analysis was used. Thematic analysis is a commonly used approach for "identifying, analyzing and reporting patterns (themes) within data" (Castleberry and Nolen, 2018).

Reasons for its everyday use are that multiple data sources can be analyzed simultaneously. Moreover, the analysis can begin before the data collection is complete, and it is sufficient for both inductive and deductive research (Castleberry and Nolen, 2018; Alhojailan, 2012). For these reasons, in combination with the interview guide, based on Bauer's 4 C's as pre-inspired themes, the analysis approach was considered suitable for the present study.

The main idea of thematic analysis is to reduce the collected dataset by coding, merge codes into categories and finally collect categories under more abstract themes (Saldaña, 2021). For novel researchers, codes, categories, and themes are easily confused. Saldaña (2021) explains a code as "a word or a short phrase that symbologically assigns an attribute for a portion of data" as a critical link between data and meaning. Therefore, codes should be kept descriptive and close to the data. Morse (2008) distinguishes categories from themes by clarifying that a category is "a collection of similar data sorted into the same place." Hence, a category is a collection of similar codes that enable the researcher to describe the category characteristics. Continuously, a theme concerns the much more abstract and meaningful essence that narrates the data (Morse, 2008), typically covering multiple categories.

3.3.3.2 Template analysis

To pursue thematic analysis, one can use template analysis, frequently used in business research (Brooks et al., 2015). Fundamental to the method is using a coding template, a hierarchically structured list of codes and categories that develops during a particularly iterative process. Usually, the researcher constructs an initial template at a subset of the data, which evolves and alters the structure iteratively as more data is analyzed (King and Brooks, 2016; Brooks et al., 2015). Hence, one can start applying template analysis while collecting data and achieve a good sense of theoretical saturation. When the coding template has been iterated and no signs of insufficiency exist amongst the data, the researcher uses the final template to code all the data again as a final step. King and Brooks (2016) underlines that the researcher should expect to repeat most of the steps before the complete dataset can be considered analyzed.

Adopted from King and Brooks (2016), a six-step guide to pursuing template analysis is presented below. *(1) Familiarize with data (2) Preliminary coding (3) Clustering (4) Producing an initial template (5) Applying and developing the template (6) Final interpretation*

Accordingly, we followed the six-step guide when analyzing the entire data set, resulting in a final template in Appendix E. Under the analysis phase, we ensured to code the data one has not been transcribing. The iteration of the coding template was altered, so each researcher coded every transcription at least once in isolation, increasing validity (Baxter and Jack, 2008).

3.4 Ethical considerations

Ethical considerations have been highly integrated and revisited throughout the research (Bell et al., 2019). In the present research setting, most ethical considerations concern the treatment of people involved in the study, their right to privacy, and their data. Considerations concerning engagement in activities or potential usage of research results were relevant as activities and research topics have been relatively trivial from an ethical perspective. Four main ethical principles are presented by Bell et al. (2019): harm to participants, lack of informed consent, invasion of privacy, and deception. Polonsky and Waller (2021) offers a student's guide in ethical considerations within business research, complementing the review outlined by Bell et al. (2019).

Topics of consideration throughout this study have mainly focused on participants. Anonymity for participants has been promised since the initialization of the study, somewhat limiting the interactive data analysis with management. However, this is deemed to increase the data quality because the participants become more open in interviews. Referring to Figure 3.5, data collection and analysis have been pursued independently, without interference from management.

Besides anonymity, participants have been well informed about our origin, the research aim, voluntary participation, the degree of engagement expected, and how their data intend to be used (Polonsky and Waller, 2021). This was done by an information sheet (Appendix A) when asked to participate, a consent form (Appendix C) prior to interviews, and an informative interview opening (Appendix B). Furthermore, participants had the opportunity to choose the time and location for the interview and comment on their transcriptions.

Data collected from the interviews, audio recordings, and transcriptions, have been handled as confidential information using official institutional data-storage services and a password-protected project database. Further, to protect any company's confidential information that might have been captured during the data collection. As the interview sample is diverse, citations used in the result chapter have no identifiers to avoid identification by management or any external part.

4
Findings

The findings chapter is divided into two sections. First, time to productivity (TTP) was found to be a combination of two learning curves, domain-specific and company-specific. Newcomers' express it more challenging to learn company-specific knowledge after organizational growth. Second, three main factors were found to affect TTP as the organization grew larger. (1) It was found that knowledge is becoming fragmented in domains, thereby challenging to obtain, and further that (2) connection and social bonds cross-teams are weak, leading to lower knowledge transfer between domains. Finally, (3) the difficulties of acquiring information and knowledge due to the organizational informality, i.e., lack of documentation and insufficient access to key person's. These three factors will be thoroughly presented in respective subsections below regarding their effects on domain and company-specific knowledge and, ultimately, TTP.

4.1 Time to productivity - two types of learning curves

A newcomer entering the organization is faced with the process of learning the job and the company, which is an ongoing procedure of socialization with other employees. We found that learning the job and the company is seemingly disconnected from each other and not necessarily learned in parallel, and indeed from the analysis, two types of knowledge were distinguished; first, *domain-specific knowledge*, inspired by *domain* in the theory communities of practice, covering the knowledge a newcomer needs to complete daily work tasks related to his or her work domain, i.e., area of expertise and shared concerns, which can consist of one or several teams. For example, the software environment used by a product developer to design new products. Second is *company-specific knowledge*, meaning knowledge regarding the processes, value proposition, vision, and product portfolio specific to the company. Hence, not kept in a single domain but rather spanning across the whole organization. For example, as a product developer, being able to design the product to effectively align with subsequent steps in the company's development processes involving other areas of expertise. The latter is not essential to complete daily work tasks and is found to be the minor of the two learning curves, even so, we discovered that it is of importance to become a fully productive contributor. Hence, the company specific learning curve has a smaller impact on the total time to productivity as illustrated in Figure 4.1.

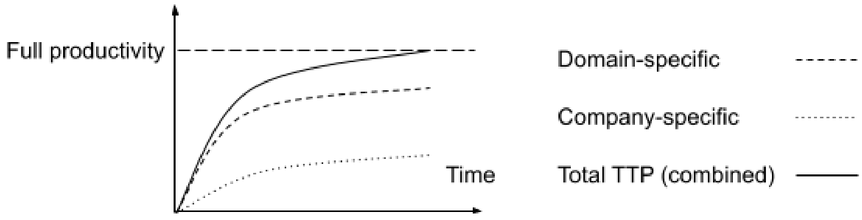

Figure 4.1: Time to productivity - two learning curves

Below follows a more profound report of the findings in regards to domain-specific and company-specific knowledge.

4.1.1 Domain-specific knowledge

The domain-specific knowledge is strictly limited to know-how concerning day-to-day tasks, more specifically, knowledge needed to perform the job. The knowledge may be restricted to the team but often spans several teams working within the same domain, i.e., area of expertise sharing the same concerns.

Newcomers do not express any major issues in learning the domain-specific knowledge because the team members are helpful and share the role of supporting the newcomer. Commonly, respondents express the way of learning domain-specific knowledge as learning by doing with much support from colleagues; in one interview on the topic of learning the job, one respondent expressed the following.

"I knew what I would develop, but not the coding language, it was new, but it was just to learn. I took a lot of help from my colleagues, understand how they do it here. Much contact and ask the nearest colleagues. Not so much documentation, but you talk a lot with each other"

The respondent underlines the interaction and knowledge transfer from nearest colleges as the primary way of learning domain-specific knowledge. Hence, by continuous socialization with the surroundings in the domain, the newcomer experienced a fairly easy process of learning the job. Further strengthened by the following quote:

"You learn a lot by talking to people, just by walking around and seeing what people are working on. It has helped me a lot [...] you go and talk to them, and you learn the different ways they work, and that makes my job easier or even better."

In essence, domain-specific knowledge is learned by natural socialization with nearby coworkers sharing similar work tasks. Domain-specific knowledge further constitutes the majority of learning the new employee needs to become productive as previously illustrated in Figure 4.1, i.e., being able to perform daily tasks as expected.

4.1.2 Company-specific knowledge

In addition to domain-specific knowledge, respondents express that understanding the company and a broader context facilitates the ability to make strategic decisions better aligned with the company aims and targets. It is about fundamentally understanding the processes, value proposition, vision, and product portfolio to relate the individual actions to the larger context. Daily work tasks can be performed without company-specific knowledge. However, it is found to increase efficiency if the individual can discuss topics with teams belonging to other domains, contribute new ideas to future products or adapt individual work to facilitate the next steps of a process. A respondent phrased it as the following:

"We have changed quite a lot in our project just the last two months since we started talking more tightly with [another team]. [...] They came with very valuable input and now we have made pretty big modifications to remove much of those risks. It feels like we could have received that information even a little earlier. [...] Had we got that information now the timetable had fallen completely."

In this quote the respondent underlines that lack of knowledge about subsequent processes involving other teams reduced the ability to be fully productive. Generally, newcomers report more challenges in learning company-specific knowledge than domain-specific. In a couple of interviews, a topic discussed were important factors to become productive whereof the respondents addressed the importance of understanding the company concept:

"Maybe I even have a little frustration still. But, concerning my main task or main project, it does not prevent me from doing what I am expected to do right now, but it does not mean that I have a full understanding of what the products are and why they are developed, or what is the roadmap for the products."

"It might also be good to know a little more about the products and their importance in the whole system. Then we would probably have made other decisions, other design decisions in some cases. It was not an obstacle, but it would have helped if we had more such information."

The respondents express a high level of domain-specific knowledge and complete daily tasks as expected but, as a newcomer, experienced a lower level of company-specific knowledge as a barrier to strategically aligning decision-making and full productivity. Furthermore, when discussing important factors to become an integrated part of the organization, some respondents said that a better understanding would have helped them to become involved:

"It is to realize what one does and how it contributes to the big picture. If one does not see the connection with the work done to the company products, it is probably difficult to feel involved. But now, one can see - that 'what I do adds this to the company,' and then it is easier."

Here, the respondent distinguishes the daily work done with the understanding of its contribution to the company products and claims that it favors involvement. Furthermore, as a facilitator to grasp and understand the firm, being a user of the products is expressed as crucial by a respondent when asked about the importance of product knowledge:

"I would almost say that it should be a requirement, the comprehension is influenced significantly."

To summarize, company-specific knowledge is the minor component of becoming fully productive compared to domain-specific knowledge, as shown in Figure 4.1. However, as suggested by the empirical evidence, learning company-specific knowledge serves an important role for a newcomer to align decision-making with a broader perspective to better meet the company objectives.

4.2 Three factors affecting time to productivity

As stated earlier, the company have experienced a rapid organizational growth. The growth was found to cause three separate factors to emerge, each of the factors creates different challenges for newcomer's to obtain new knowledge. The found factors were (1) knowledge fragmented, accumulated knowledge in the organization stays within domains, (2) weak cross-team connection, distant teams have weak social bonds, and (3) information is hard to find within the organization due to informality. Each of these three factors, illustrated in Figure 4.2, was found to affect the learning rate of domain- and company-specific knowledge differently, presented as "Issues" or "No Issues" in Table 4.1. The upcoming subsections will elaborate and report findings of the three factors in relation to their effect on domain and company TTP, respectively.

Table 4.1: Summary of findings - Three factors affecting time to productivity

Findings	Knowledge fragmented	Weak cross-team connection	Finding information is hard
TTP Domain	No issue	No issue	Semi-issue (Documentation)
TTP Company	Issue	Issue	Issue (Individual charachteristics)

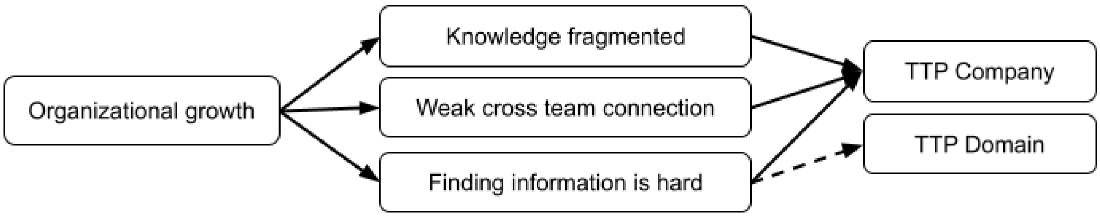

Figure 4.2: Three factors affecting time to productivity

4.2.1 Organizational growth cause knowledge to fragment into domains

When the organization grew, additional teams were created, some more related to each other than others. Consequently, we discovered that domain-specific information and knowledge had been fragmented into teams and departments (domains). The larger the organization, the more distant other domains' specific knowledge is for a newcomer. This effect was found to be both by physical distance and social distance, such as working at different floor levels or in weakly related domains. In interviews, recent newcomers expressed a relatively weak understanding and view of teams not directly related to their team. However, this was also existent amongst more experienced respondents when discussing the topic of different teams and their contribution to the company. In one interview, one of the more experienced respondents expressed the following.

"There are definitely teams that I don't even know that exist. I am part of the development, but I am very little attached to the remaining teams in the company. I have no umbrella view over the company other than the small part that our team is part of.
Have you ever been interested in the umbrella view?
Yes, absolutely, though I do not know how it would contribute to my daily job. But it's always nice to know where you are in the big picture."

This was found to be caused by the rapid organizational growth as the more experienced respondents did not recall the same issue when being a newcomer. In contrast, when being a newcomer today, most informal onboarding is pursued within the team, meaning that the newcomer learns mainly from the team's perspective. In addition, it has been identified that when teams are growing in size, they identify a need for a coherent information base and thereby start to develop specific activities for newcomers that join their team.

"Now we have an intro where we explain what we do, who we are, what our products are, what our role in the company is. [...]
You basically have your own educational package, what you are, and what you do, for your team?
I hope it is in other teams as well. I have not been Team Lead that long, I do not have so good insight into how others handle their teams."

The respondent clearly illustrates that being a newcomer to the team, the team put in efforts to facilitate learning without coherence with other teams, mainly transferring the domain-specific knowledge internally and continuing to accumulate a fragmented knowledge domain.

To sum up, fragmentation of knowledge is not considered an issue concerning the learning rate of domain-specific knowledge as a newcomer regularly interacts with their team members. However, the more fragmented, the more challenging for a newcomer to cherry-pick vital knowledge from other domains in the organization, making it harder to obtain an holistic organizational view, relating to company-specific knowledge.

4.2.2 Organizational growth lowers cross-team social connection

A prominent theme prevailing in the interviews was the absence of cross-team connection. While respondents perceived good and strong relations within teams, they expressed a weak or non-existing relation with individuals in other, more distant, teams.

"It's not as good, or it's not a bad relationship, but just less existing if you say so."

It was found that the physical boundaries between floor levels lower the likelihood of connecting and developing relations. A respondent expressed that it was probably a challenge for newcomers belonging to the somewhat more isolated third floor and that the respondent managed to create social bonds informally before colleagues transferred to the third floor. Continuously, the respondent commented on the importance of these connections.

"They are absolutely important[informal cross-team connection]. [...]A person knowing another person who works with some things and is responsible for those things. Then it will help finding ways to get information even if there is no constant information flow."

The empirical evidence suggests the distance is two-sided, meaning that it can consist of physical distance leading to a lower likelihood of interaction, or social distance, for example, belonging to two fairly diverse domains, i.e., not belonging to the same area of expertise. Thereby, a greater effort is needed by the newcomer to explore the more distant domains.

"Some groups I have more relation to than others, and some I have no relation to at all because we do not work in the same area of expertise."

The primary driver for respondents to connect outside teams is when they participate in cross-team projects where some teams are much more involved in such projects than others and naturally connect outside the team to a larger extent. Secondary drivers are social activities and individual initiatives for social exchange. Respondents appreciate social activities both for social satisfaction but also for facilitating the creation of social bonds across domains. In one interview discussing cross-team relations, the respondent underlined the importance of such relations; in a project where the respondent was responsible for the product design that was getting near to completion and to be handed over to another team for manufacturing preparations. In an initiated dialogue with the other team, the respondent discovers that the manufacturing process requires certain design features. Knowing this in advance would have increased the efficiency of the project.

The respondent highlights the importance of communication across teams and that earlier and better connection could have increased the efficiency of the current project. An additional observation is that a lack of introduction to distant coworkers acts like a barrier for a first approach, hindering the creation of newcomers' networks. In one interview, a topic regarding making first contact with distant coworkers, the respondent expressed the following.

"I think the barrier will be down a lot for me if I had at least seen the person or said hi once, in the kitchen or so. That he or she exists."

In essence, the weak cross-team connection was found to hinder newcomers' creation of social bonds and the potential transfer of useful knowledge between distant domains, in other words, company-specific knowledge. In contrast, weak connection between teams was not found to effect domain-specific knowledge, due to the good and strong relations within teams.

4.2.3 Organizational growth makes information difficult to find in an informal context

When a newcomer enters the organization, a coherent perception among respondents was that informalities such as the absence of documentation or responsibility roles creates challenges in finding information and knowledge, which was further expressed as *"kept in the head of experienced members"*.

A high level of organizational informality emerged from the data analysis, underpinning the newcomers' search for information. The informality unfolds by respondents requesting documentation and responsibility roles to find information and key person's. Several examples include issues with work tasks and later the discovery of already in-house developed tools for that specific issue or struggles with software bugs that have been solved a long time ago. Most respondents express that easy access to information, or explicit knowledge would have increased their efficiency and learning rate. When covering the topic of learning the job, two respondents separately addressed the issue with the following quotes.

"There is a lack of structures to document systems that exist, how they work and who is responsible. It is more in the head of experienced people."

"Something not functioning very well is documentation. For example, I think it was difficult when I started the project to understand what choices had been made[...] and it seems to be a pervasive theme here [...].
Would you say it would have facilitated your first time if it was a little better ..?
Yes, absolutely, weeks or months even."

The first respondent stated that information and knowledge are kept implicit, making it challenging to obtain. Continuously, the second respondent expressed similarities but underlines that the effect ultimately prolongs the time to productivity.

The procedure to find the implicitly stored information and knowledge as a newcomer is to ask the nearest coworker for guidance closer to the knowledge. By asking around to find the right person, the newcomers create points of contact that facilitate the creation of a social network. All respondents imply that this is the primary way of finding new information or knowledge within the organization and that they get a very helpful response when finding the right person. Furthermore, almost all respondents say it is somewhat unclear whom to ask. An illustrating example, when discussing finding new information, one respondent replied the following.

"I first ask my colleagues, then either they know or they don't, but usually they have an idea of which department and then I usually know who is the team leader of that department and then I can write to him/her 'I need help with this, who can I ask?' and get a name. [...] It may take time, but it may not matter in the end. Because you still build some new contacts by asking around."

The respondent illustrates how the procedure is usually conducted and comments that it might be time inefficient but creates valuable contact points for future information search. Finally, as indicated by the interviews, the success of finding information is highly influenced by the newcomer's personal characteristics. A common perception is that individuals with high motivation for learning and social exchange reach more success finding information. One respondent expresses it like the following.

"There is no lack of people who are very happy to share knowledge so if you are a person who goes around and asks other people, then you will absolutely find someone."

In general, newcomers express issues in finding both domain-specific and company-specific information and knowledge. However, the domain-specific issues relate more to the absence of documentation and key person's, while company-specific knowledge relates more to issues of finding the information or knowledge through the process of asking around, highly influenced by individual characteristics as motivation for learning or social exchange.

5
Discussion

The discussion chapter follow a similar structure to the Findings chapter. First, we discuss on the two-sided time to productivity (TTP), explained by the combined learning curves of domain- and company-specific knowledge. We argue that it is of importance to keep in mind the difference between being a skilled worker in the team and a productive contributor in the organization. Second, the three factors affecting TTP are elaborated in relation to organizational growth and existing literature. Finally, we synthesize the research and discuss the findings in relation to the research question.

5.1 Time to productivity

Decreased TTP as an expected outcome from successful onboarding as presented by Bauer (2010); Snell (2006) bares the underlying assumption that the learning curve to full productivity is one single trajectory of learning. Our findings indicate that TTP consists of two different learning curves combined, relating to domain- and company-specific knowledge. With this additional level of abstraction in TTP, it is reasonable to assume that one learning curve might saturate before the other. Hence, organizational efforts is optimally aimed at the lagging curve. The findings further suggest that domain-specific learning is not directly affected by organizational growth. On the other hand, newcomers seem to have more difficulties with learning company-specific knowledge as the firm expands, referring to Table 4.1. Consequently, the total TTP has been prolonged due to the lagging company-specific learning curve as an effect of organizational growth. The remaining part of the section will discuss this idea.

To contribute to the team and complete day-to-day tasks, company-specific knowledge is not a necessity as presented in the findings chapter. Meaning, domain-specific knowledge is of more importance concerning team projects and assignments. However, as suggested by the empirical evidence, being able to relate one's work to the broader perspective of the firm is arguably essential to understanding one's contribution to the whole and thereby adjusting decision-making accordingly to better meet company objectives. For example, lets consider a developer, not familiar with the customer needs and the value proposition of the company, it might reduce the newcomers ability to discuss new product features. Thus, the combination of domain- and company-specific knowledge is seemingly important to becoming a fully-productive organizational member. The combination resulting in total TTP is illustrated in Figure 5.1 for the early compared to today's more complex organization. The increased complexity in a growing organization creates challenges for the newcomer to learn processes, value proposition, vision, and product portfolio specific to the company.

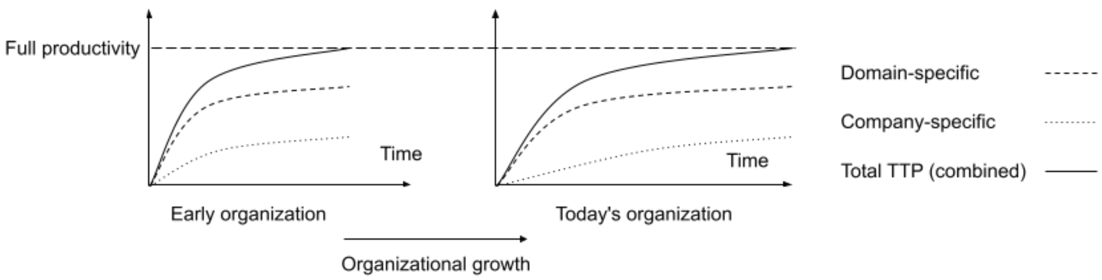

Figure 5.1: Conceptual visualization of the prolonged TTP as an effect of organizational growth

The prolongation of TTP for company-specific but not domain-specific knowledge can be informed by the theory communities of practice (CoP). Considering the company in its nascency and defining it as a single CoP in line with Wenger (2004), meaning a shared concern, a continuous interaction amongst the members, and an ongoing development as a practice. Referring to Figure 5.2, a newcomer (X) joining a small organization where all members know each other, information and knowledge are within arm's reach, and decision-making is instantaneous, informality works, and synergies naturally arise due to the continuous socialization amongst the members. Thereby, knowledge is quickly captured by the newcomer (X) as it diffuses throughout the company, which is similar to the argument made by Wenger et al. (2002), where CoP acts as an excellent practice for capturing tacit knowledge.

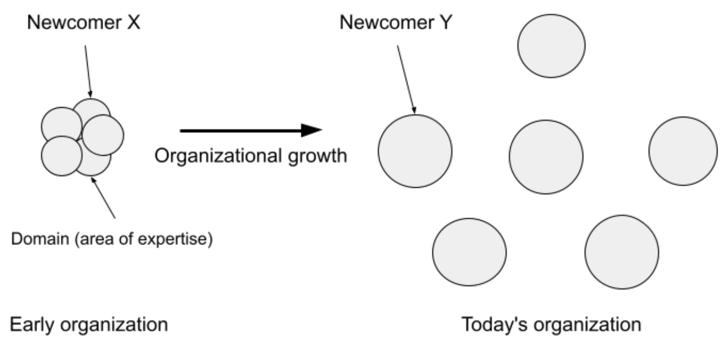

Figure 5.2: Effects of organizational growth on domain- and company-specific knowledge

However, when the organization scales operations, the number of employees increases, and new departments and teams emerge, resulting in the creation of several new CoP's subordinate to the original (illustrated in Figure 5.3), some more distant than others. When the organization consists of one central CoP, a newcomer (X) is being introduced to the single one, meaning that the setting for domain- and company-specific knowledge is the same. However, in the more complex organization, the newcomer (Y) is being introduced to one of several CoP's and is logically experiencing a high level of knowledge transfer within that CoP due to the constant interaction with its members. On the other hand, the company-specific knowledge is now a consolidation of several CoP's, including the newcomer's (Y), and spans across business units (Wenger, 2004), making it challenging to obtain in an informal context as indicated by the findings.

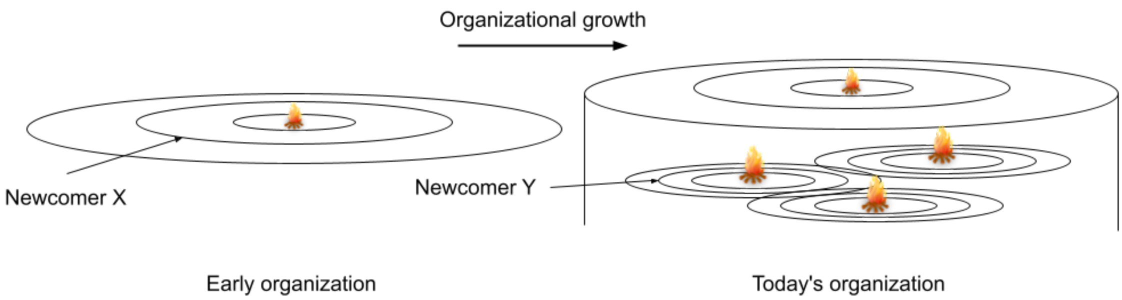

Figure 5.3: A single CoP in the early organization compared to today's multiple CoP's

A further elaboration on the product designer case presented in the findings is made to exemplify this. A newcomer (Y), belonging to the team responsible for designing the outer shape and housing of new products, learns the daily tasks by socializing with very helpful team members. After some time, newcomer (Y) has learned enough to be considered productive and needs a low amount of support to complete daily tasks. In a project where newcomer (Y) is responsible for the design, that is getting near to completion and to be handed over to another team for manufacturing preparations. In the newly initiated dialogue with the other team, newcomer (Y) discovers that the manufacturing process requires certain design features not known within the team newcomer (Y) belongs to. If not for the fragmentation of this knowledge and weak bonds between the teams, newcomer (Y) could have learned about the specific manufacturing process earlier and conducted the project more efficiently.

Hence, the illustration by example argues for an understanding of the individual's work contribution to the broader perspective and company objectives. Lesser and Storck (2001) introduces CoP as a tool for helping the newcomer with the challenge of acquiring a broader perspective and how their actions affect other individuals and procedures in the organization. Thereby, we argue that it is of importance to not only introduce newcomers' to the CoP related to their specific domain but also to the overarching company CoP. In other words, to reach full productivity, a newcomer needs to learn domain-specific but also company-specific knowledge. Therefore, when formalizing the onboarding process, it is important to consider the distinction between being a skilled worker within one's domain and being a fully productive contributor to the company objectives, and direct organizational efforts thereafter.

5.2 Effects of organizational growth

Having discussed and argued for a two-sided TTP, we will now deepen the discussion on the three factors presented in the findings chapter, affecting the TTP as a consequence of organizational growth. Figure 5.4 illustrates the newcomers' challenges from effects of organizational growth.

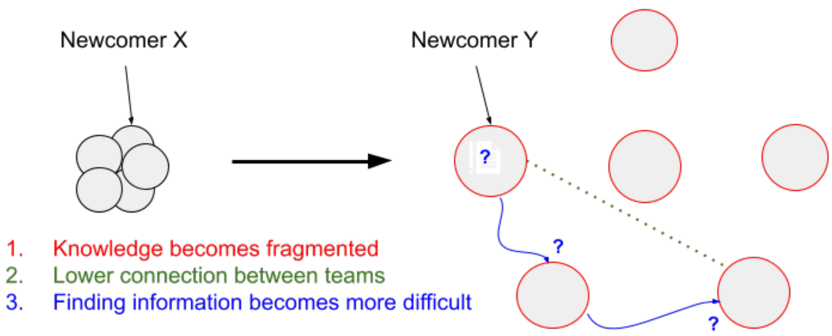

Figure 5.4: Newcomers' challenges from effects of organizational growth

Domain- and company-specific knowledge and their respective learning curves are affected differently by the effects of organizational growth. Findings implicate that information and knowledge accumulate and fragment into the different domains during organizational growth. Therefore, for a newcomer (Y) entering a domain where he or she is supposed to contribute, the issue of knowledge fragmentation is trivial concerning domain-specific learning. On the other hand, because the company-specific knowledge is a consolidation of several domains, it becomes challenging to gain a holistic view of the organization. Hence, knowledge fragmentation does not affect domain-specific learning but introduces challenges for a newcomer's learning of the company.

Lave and Wenger (1991) argued that the continuous socialization between members heavily influences a newcomer's learning, in line with Bauer (2013) that argues for Connection as the most important aspect of onboarding. This is further strengthened by the findings of well-established relations within teams resulting in a faster learning curve for domain-specific knowledge. In contrast, the empirical data reveals a weak cross-team connection, and consequently, a prolonged TTP is seen in regards to company-specific knowledge. Other patterns in the data imply that either one or a combination of physical and social distance lowers the likelihood of cross-team interaction. Using the same reasoning as Lave and Wenger (1991) above, low cross-team interaction is a barrier to transferring company-specific knowledge. However, it is evident from the data that interacting and communicating across team boundaries, either because of projects or social activities, lowers the barrier and facilitates the transfer of knowledge. Therefore, we argue that proactive cross-team interaction activities could accelerate the diffusion of company-specific knowledge and thereby decrease TTP.

The findings clearly illustrate the challenge of finding information as a newcomer. The challenges concerns domain-specific by lack of explicit information and knowledge (documentation). In contrast, company-specific due to the unclear process of searching for information and key person's by asking members for guidance. The explanation was found to be the high level of informality, implying that most information and knowledge are being treated more like tacit knowledge, kept *"in the head of experienced people"*, and thereby transferred mainly by social interaction. Wenger et al. (2002) argued that CoP is an exceptional practice for capturing tacit knowledge through continuous interaction. The weak cross-team connections, presented above, can explain why implicitly kept information and knowledge is challenging for newcomers to obtain when treated like tacit knowledge. However, the present process of searching for information incentivizes the newcomer to create a social network to facilitate future search and acts as the primary mechanism for learning about the company. We view this mechanism as a direct consequence of an "sink or swim" approach, presented by Van Maanen and Schein (1979), where the newcomers are left to socialize themselves without efforts from the organization. Hence, heavily dependent on personal characteristics such as individual motivation for social exchange and learning, explaining why some newcomers reach full productivity faster than others. The challenges and complexities concerning the information search will likely increase for newcomers as the organization continues to grow, and reasonably the TTP as well.

A rational approach would be to implement tools and practices to inform and guide newcomers as suggested by (Klein and Heuser, 2008). If implemented, this should be done by community members because they can distinguish explicit from tacit knowledge, as argued by Wenger (2004). Even so, there is a trade-off between facilitating the search for information and the newcomer's creation of a social network. By formalizing and providing newcomers with information and guidance, the practitioner needs to keep in mind that it likely comes with the loss of advantages from the informal "sink or swim" approach, i.e., incentives to create a social network, which is crucial to reach productivity according to Bauer (2013). Lowered incentives for newcomers to create a social network might further generate a need to maintain and nurture the creation of social exchange among newcomers and organizational members.

5.3 Synthesizing the research

Connecting back to the research question:

"What are the challenges to decrease time to productivity when formalizing the onboarding process in a fast-growing and knowledge-intensive firm?"

We have argued that the TTP is not necessarily one single trajectory of learning to reach full productivity, but rather a combination of multiple, in our case domain- and company-specific. Continuously, we argued that organizational growth leaves domain-specific knowledge rather unaffected, but causes challenges for newcomers' to obtain company-specific knowledge.

(1) It was found that knowledge is becoming fragmented in domains, thereby challenging to obtain, and further that (2) connection and social bonds cross-teams are weak, leading to lower knowledge transfer between domains. Finally, (3) the difficulties of acquiring information and knowledge due to the organizational informality, i.e., lack of documentation and insufficient access to key person's.

Thereby, at least three challenges exist when transitioning from an informal or non-existing to a formal onboarding process in order to reduce time to productivity:

1. Knowledge fragmentation calls for identification and presentation of the most vital information and knowledge in the organization to facilitate the newcomer's understanding of the company.
2. Map and decide the best practices for formalizing social exchange among newcomers and distant organizational members.
3. Carefully evaluate what and how information and explicit knowledge can be made accessible for newcomers.

Considering the three challenges and possible solutions, we can draw upon the theoretical models covered in the theory chapter. A solution would be to evaluate the three challenges according to the most suitable tactics, consider the entire onboarding process from the perspective of the 4 C's, implement tools and practices from the IWG-framework, and ultimately facilitate newcomers' learning rate. However, as argued by Bauer (2013) Connection is the essential aspect of the onboarding process, and from the findings, we agree with this argument. Hence, let us consider formalization of an onboarding process that enhances Connection, meaning social exchange amongst organizational members (Bauer, 2010). Accordingly, if a practitioner were to maintain and nurture the social exchange among newcomers' and organizational members, it would likely create social bonds and enable a higher degree of continuous knowledge transfer (Wenger et al., 2002). This could decrease the degree of knowledge fragmentation, strengthen connection and knowledge transfer cross-teams, and further facilitate the newcomers' creation of social networks for information search. With this reasoning, we argue that it is important to cultivate and nurture the social exchange between employees and thereby maintain the organizational knowledge transfer within an knowledge-intensive firm under organizational growth.

6
Conclusion

The purpose of the study was to gain insights into a previously unexplored niche in literature, but foremost facilitate and make practitioners aware of the challenges when introducing newcomers effectively during organizational growth. This investigation shows that a newcomer's time to productivity is not necessarily one trajectory of learning, but a combination of multiple, in our case, domain- and company-specific knowledge. Further results show that three factors affect the time to productivity. First, It was found that knowledge, important for newcomers, might become fragmented in domains due to organizational growth. Second, weak connection and social bonds across domains lower company-specific knowledge transfer. Third, information becomes less available for newcomers if kept implicit during organizational growth.

The evidence from this study suggests that when formalizing the onboarding process in a fast-growing and knowledge-intensive firm, it is important to cultivate and nurture the social exchange between employees and thereby maintain the organizational knowledge transfer. This work contributes to the existing literature by inviting the discussion to transition from an informal or non-existing onboarding known as a "sink or swim" approach to a more formalized onboarding. In addition, the study provides insights from the perspective of newcomers and the challenges faced during the process.

The scope of this study was limited in terms of a single case study within a small and young firm under organizational growth with a high degree of informal structures. Additionally, the company is located in Sweden, and the absolute majority of workers are located at one facility. These limitations reduce the generalizability, and further work is needed to fully understand the implications of challenges encountered when formalizing onboarding processes. Therefore, future research is recommended to either verify our results more quantitatively. Alternatively, investigate our findings in other contexts and settings to add to our findings in a more generalizable context.

Bibliography

Aberdeen Group (2006). Onboarding benchmark report: Technology drivers help. `https://studylib.net/doc/8092200/onboarding-benchmark-report--aberdeen-group`. Retrieved 2022-05-27.

Alhojailan, M. I. (2012). Thematic analysis: A critical review of its process and evaluation. *West east journal of social sciences*, 1(1):39–47.

Bauer, T. N. (2010). Onboarding new employees: Maximizing success. *SHRM Foundation's Effective Practice Guidelines Series.*

Bauer, T. N. (2013). Onboarding: The power of connection. *Onboarding White Paper Series. SuccessFactors.*

Bauer, T. N., Bodner, T., Erdogan, B., Truxillo, D. M., and Tucker, J. S. (2007). Newcomer adjustment during organizational socialization: a meta-analytic review of antecedents, outcomes, and methods. *Journal of applied psychology*, 92(3):707.

Bauer, T. N. and Erdogan, B. (2011). Organizational socialization: The effective onboarding of new employees. *APA handbook of industrial and organizational psychology, Vol 3: Maintaining, expanding, and contracting the organization.*, pages 51–64.

Baxter, P. and Jack, S. (2008). The qualitative report qualitative case study methodology: Study design and implementation for novice researchers (vol. 13).

Bell, E., Harley, B., and Bryman, A. (2019). *Business research methods.* Oxford university press, fifth edition.

Brooks, J., McCluskey, S., Turley, E., and King, N. (2015). The utility of template analysis in qualitative psychology research. *Qualitative research in psychology*, 12(2):202–222.

Cambridge Dictionary (2022). English dictionary. `https://dictionary.cambridge.org/dictionary/english/`. Retrieved 2022-05-27.

Castleberry, A. and Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds? *Currents in pharmacy teaching and learning*, 10(6):807–815.

Chillakuri, B. (2020). Understanding generation z expectations for effective onboarding. *Journal of Organizational Change Management.*

Cox, A. (2005). What are communities of practice? a comparative review of four seminal works. *Journal of information science*, 31(6):527–540.

Ellström, P.-E., Elg, M., Wallo, A., Berglund, M., and Kock, H. (2020). Interactive research: concepts, contributions and challenges. *Journal of Manufacturing Technology Management*, 31(8):1517 – 1537.

Fagerholm, F., Guinea, A. S., Borenstein, J., and Münch, J. (2014). Onboarding in open source projects. *IEEE Software*, 31(6):54–61.

Fossey, E., Harvey, C., McDermott, F., and Davidson, L. (2002). Understanding and evaluating qualitative research. *Australian & New Zealand Journal of Psychiatry*, 36(6):717–732.

Graybill, J. O., Carpenter, M. T. H., Offord, J., Piorun, M., and Shaffer, G. (2013). Employee onboarding: Identification of best practices in acrl libraries. *Library Management*, 34(3):200–218.

Heimburger, L., Buchweitz, L., Gouveia, R., and Korn, O. (2019). Gamifying onboarding: How to increase both engagement and integration of new employees. In *International Conference on Applied Human Factors and Ergonomics*, pages 3–14. Springer.

Johnson, M. and Senges, M. (2010). Learning to be a programmer in a complex organization: A case study on practice-based learning during the onboarding process at google. *Journal of Workplace Learning*, 22(3):180 – 194.

Jones, G. R. (1986). Socialization tactics, self-efficacy, and newcomers' adjustments to organizations. *Academy of Management journal*, 29(2):262–279.

King, N. and Brooks, J. M. (2016). *Template analysis for business and management students*. Sage.

Klein, H. J. and Heuser, A. E. (2008). The learning of socialization content: A framework for researching orientating practices. In *Research in personnel and human resources management*, volume 27 of *Research in Personnel and Human Resources Management*, pages 300–320. Emerald Group Publishing Limited.

Klein, H. J., Polin, B., and Leigh Sutton, K. (2015). Specific onboarding practices for the socialization of new employees. *International Journal of Selection and Assessment*, 23(3):263–283.

Lave, J. and Wenger, E. (1991). *Situated Learning: Legitimate Peripheral Participation*. Learning in Doing: Social, Cognitive and Computational Perspectives. Cambridge University Press.

Lesser, E. L. and Storck, J. (2001). Communities of practice and organizational performance. *IBM systems journal*, 40(4):831–841.

McGrath, C., Palmgren, P. J., and Liljedahl, M. (2019). Twelve tips for conducting qualitative research interviews. *Medical teacher*, 41(9):1002–1006.

Morse, J. M. (2008). Confusing categories and themes. *Qualitative health research*, 18(6):727–728.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization science*, 5(1):14–37.

Plejd (2017). Annual report 2017. https://mb.cision.com/Main/13880/2467982/802588.pdf. Retrieved 2022-04-28.

Plejd (2018). Annual report 2018. https://mb.cision.com/Main/13880/2782014/1020726.pdf. Retrieved 2022-04-28.

Plejd (2019). Annual report 2019. https://mb.cision.com/Main/13880/3240822/1337882.pdf. Retrieved 2022-04-28.

Plejd (2020). Annual report 2020. https://mb.cision.com/Main/13880/3240822/1337882.pdf. Retrieved 2022-04-28.

Plejd (2021). Annual report 2021. https://mb.cision.com/Main/13880/3555550/1570874.pdf. Retrieved 2022-04-28.

Plejd (2022). Quarter 1 report 2022. https://mb.cision.com/Main/13880/3559151/1573686.pdf. Retrieved 2022-04-28.

Polonsky, M. J. and Waller, D. S. (2021). *Designing and Managing a research project: A business student's guide*, chapter Ethical considerations, pages 85–110.

Raytheon (2012). Raytheon professional services llc & training industry, inc - onboarding and knowledge transfer. https://trainingindustry.com/content/uploads/2017/07/onboarding-and-knowledge-transfer-report.pdf. Retrieved 2022-05-27.

Saldaña, J. (2021). *The coding manual for qualitative researchers*. Sage.

Snell, A. (2006). Researching onboarding best practice: Using research to connect onboarding processes with employee satisfaction. *Strategic HR Review*, 5(6):32–35.

Statista (2021). Smart home report 2021: Statista digital market outlook - market report. https://www-statista-com.eu1.proxy.openathens.net/download/MTY1MzkxNzUxMSMjMTA2ODk2NCMjNDIxMTIjIzEjI251bGwjI1N0dWR5. Retrieved 2022-05-27.

Svensson, L., Brulin, G., Ellström, P.-E., and Widegren, Ö. (2002). *Interaktiv forskning-för utveckling av teori och praktik*, volume 7. Arbetslivsinstitutet Stockholm.

Svensson, L., Ellström, P.-E., and Brulin, G. (2007). Introduction–on interactive research. *International journal of action research*, 3(3):233–249.

Terra, J. C. and Angeloni, T. (2003). Understanding the difference between information management and knowledge management. *KM Advantage*, pages 1–9.

Van Maanen, J. and Schein, E. H. (1979). Toward a theory of organizational socialization. *Research in Organizational Behavior*, 1:209–264.

Wenger, E. (2004). Knowledge management as a doughnut: Shaping your knowledge strategy through communities of practice. *Ivey business journal*, 68(3):1–8.

Wenger, E., McDermott, R. A., and Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge.* Harvard business press.

A
Information sheet

Information sheet - interview invetation

Hello!

Our names are Lucas Ebers and Niklas Karlsson. We are enrolled at the master's program Management and Economics of Innovation, Chalmers University, and are currently writing our master's thesis at Plejd, you may have seen us walk around and talk to people. Our thesis concerns the process that new employees go through to become part of the workplace, more specifically the first six months. Part of the studies includes gathering previous experiences and perceptions. We are searching for volunteers for interviews who have previously undergone such a process.

We have been allowed by HR to ask the staff to contribute to our study. You are one of those who we believe can add value to ultimately help improve the process for future employees at Plejd. It is estimated that the interview will take 30-60 minutes.

The interview will be recorded and transcribed for the purpose of the scientific method. Your answers will be anonymized in the publication of the study, and it will also be possible to proofread the interview afterwards.

We ask you to respond to this message if you would like to participate in an interview or not.

Questions we would like to ask, during the interview, are the following:

1. Tell us briefly about how you started working at Plejd.
   (a) Education, previous work, degree project, internship
   (b) Can you describe your first impression of Plejd as a workplace?
2. Can you tell us about your first time as an employee at Plejd?
   (a) How did you perceive your role when you started?
   (b) How did you learn your tasks?
   (c) Did you have a role model or appointed mentor?
3. What was the most important thing that helped you get into your job?
4. Can you describe the relationship with your colleagues in the team?
   (a) Can you describe the collaboration within the team?
5. Can you describe the relationship with your colleagues outside the team?

6. Is there anything in your opinion that is particularly important for feeling part of the company?
    (a) Have you been to the sales demo?
7. How would you describe the corporate culture at Plejd?
    (a) How do you learn this culture you describe?
8. What distinguishes Plejd's products?
9. Do you feel like you want to add something about what's affected your first time here?

B

Interview Guide

Interview guide

First of all we would like to thank you for participating. It contributes to our master degree as much as it contributes to Plejd.

Our names are Lucas Ebers and Niklas Karlsson. We are enrolled at the master's program Management and Economics of Innovation, Chalmers University, and are currently writing our master's thesis. Our thesis concerns the process that new employees go through to become part of the workplace, more specifically the first six months. Part of the studies includes gathering previous experiences and perceptions. We are having this interview because you have gone through such a process.

In the first message we informed you that the interview will be audio recorded for the sake of the scientific method but everything will be anonymized. Do you still agree to that?

Start recording

You have had the possibility to read the consent form and you agree to it?

Name:
Team:
Employment time:

1. Tell us briefly about how you started working at Plejd.
    (a) Education, previous work, degree project, internship
    (b) Can you describe your first impression of Plejd as a workplace?
2. Can you tell us about your first time as an employee at Plejd?
    Starting with the first day
    (a) How did you perceive your role when you started? *Did you perceive it as clear?*
    (b) How did you learn your tasks?
    Would you say that it was up to you as an individual to search for information?
    If yes - How did you find that information?
    (c) Did you have a role model or appointed mentor?
    If yes - How was that person assigned to you?

3. What was the most important thing that helped you get into your job?
4. Can you describe the relationship with your colleagues in the team?
   (a) Can you describe the collaboration within the team?
5. Can you describe the relationship with your colleagues outside the team?
   If the relations are weak - What do you think is the main reason for that?
6. Is there anything in your opinion that is particularly important for feeling part of the company?
   (a) Have you been to the sales demo?
   If yes - What is your thought about it?
7. How would you describe the corporate culture at Plejd?
   (a) How do you learn this culture you describe?
8. What distinguishes Plejd's products?
9. Do you feel like you want to add something about what's affected your first time here?

Italic text is frequently recurring follow up questions.

C
Consent form

Master thesis - Onboarding

Request for informed consent:

- I have been provided with information regarding the scope of the study (in the first request message received) and have been given adequate time to consider it.
- I have been given the opportunity to ask questions (via Slack) about the study and any questions have been answered to my satisfaction.
- I understand that my participation is voluntary.
- I understand that taking part in the study will involve me being interviewed and I agree to this interview being audio-recorded.
- I understand that my personal details such as name and employer address will not be revealed to people outside the project.
- I understand that my words may be quoted in publications, reports, and web pages but data collected about me during the study will be anonymized.
- I understand that I can withdraw from the study or choose not to answer any specific questions at any time and I will not be asked why.
- I understand that if I withdraw from the Study my data will not be used.

Contact details:
Lucas Ebers exxxx@student.chalmers.se
Niklas Karlsson nxxxxxxx@student.chalmers.se

[This form is based on the template provided by Bell et al. (2019)]

D

Onboarding tools and practicies

Inform - communication
Assigned time with manager
Meet with HR
Chat or forum
Check-in meetings by stakeholders
Inform - resources
Inform how to find information on company website
Workplace ready first day
Glossary of ‘buzzwords’ in the company
List of contact information to important people
Printed material
Short-form content (quick reference guides)
Computer-based orientation
Knowledge repository/e-library/wiki
Written onboarding plan (timeline, goal, responsibility, available support)
List of “Frequently asked questions”
Inform - training
Facility tour
Orientation programme with other newcomers
Employee video
Online orientation programme
Presentation from experts in certain tasks or procedures
job-specific training
Instructor-led courses
Short E-learning pieces
Lectures
Rotational assignments
Work shadowing
Welcome
Personal welcome from senior manager
Personal welcome from team leader
Exercises to get to know fellow coworkers
Gathering/lunch to get to know fellow coworkers
Newcomer celebration

Invite to social activities
Gift bag for new employee
Announce newcomers in email or company newsletter
Guide
A single point of contact as a source of answering questions
Coaching
Mentor network/buddy or sponsor system
Paired work
Guided experimentation
Facilitate the newcomes own onboarding
Engage in small talk with coworkers
Arranging informal social activities
Participating in voluntary company functions
Building relationship with supervisor by completing assignments
Gamification (QR-hunting, Company Quiz, Team Bingo, and Onboarding tree)

Table D.1: Onboarding - tools and practicies

Adopted from Klein et al. (2015); Raytheon (2012); Bauer (2010); Graybill et al. (2013); Snell (2006); Heimburger et al. (2019).

E

Template - Final iteration

1. Compliance
    1.1 Formal onboarding procedures
        1.1.1 Unclear onboarding procedures
            1.1.1.1 Goodiebag
        1.1.2 Clear onboarding procedures
    1.2 Team specific onboarding
2. Clarification
    2.1 Organizational informality
        2.1.1 Documentation
        2.1.2 Finding information
        2.1.3 Responsibility roles
        2.1.4 Safety or security
        2.1.5 Tacit knowledge
    2.2 Role clarity
        2.2.1 Joining from ad
        2.2.2 Related working experience
        2.2.3 Learning the job
        2.2.4 Learning the company
            2.2.4.1 Sales demo
            2.2.4.2 Other demos
            2.2.4.3 Knowledge about facilities/environment/surroundings
        2.2.5 Perceived initial workload
        2.2.6 Join as a student
        2.2.7 Summer job
        2.2.8 Joining through contacts
        2.2.9 Several interviews
    2.3 Organizational formality and structure
        2.3.1 Good structure
3. Culture
    3.1 Open culture
        3.1.1 Learning culture
            3.1.1.1 Learning encouragement
            3.1.1.2 Management listens to ideas
            3.1.1.3 Staying up to date
        3.1.2 Helpful culture
            3.1.2.1 Prestigeless and information sharing
            3.1.2.2 Response when asking questions

- 3.1.3 Inclusive culture
- 3.2 Culture definition
  - 3.2.1 Perceived culture
  - 3.2.2 Culture not explicitly stated
- 3.3 Sub-cultures
  - 3.3.1 Sub-cultures among teams
  - 3.3.2 Sub-cultures among floor levels
- 3.4 Digital culture - Slack

4. Connection
   - 4.1 Importance of individual characteristics
     - 4.1.1 investiture
   - 4.2 Connection online - Slack
     - 4.2.1 Barrier to approach people vi Slack
   - 4.3 Relations within teams
     - 4.3.1 Good relations within teams
   - 4.4 Social activities
     - 4.4.1 Work hour activities
       - 4.4.1.1 Games
       - 4.4.1.2 Fika
       - 4.4.1.3 Sports activities
     - 4.4.2 Off work hour activities
       - 4.4.2.1 Parties and AW
       - 4.4.2.2 "Torsdagskväll"
   - 4.5 Connect with members outside the team
     - 4.5.1 Separate floor levels
     - 4.5.2 Cross team projects
     - 4.5.3 Weak or non-existing relations outside team
     - 4.5.4 Importance of relations outside the team
     - 4.5.5 Activities that connect outside team
     - 4.5.6 Individual initiative to connect outside team
     - 4.5.7 Slack to connect outside team
5. Feeling welcome
   - 5.1 First impression
   - 5.2 Workstation ready first day
   - 5.3 Team introduction
   - 5.4 HR-management
   - 5.5 Onboarding timing
6. Outcomes from well performed onboarding
   - 6.1 Job satisfaction
     - 6.1.1 Freedom
     - 6.1.2 Responsibility
     - 6.1.3 Staff well-being
     - 6.1.4 Feeling valuable or needed
     - 6.1.5 Authority to make decisions
     - 6.1.6 Motivation
       - 6.1.6.1 Celebration

- 6.1.7 Passion
- 6.2 Organizational commitment
  - 6.2.1 Product engagement
    - 6.2.1.1 Low product engagement
    - 6.2.1.2 High product engagement
  - 6.2.2 Company engagement
- 6.3 High performance level

7. Role model and mentorship
   - 7.1 Manager as mentor
   - 7.2 Self assigned role model
     - 7.2.1 Role model with personal connections
     - 7.2.2 Role model with work related connections
   - 7.3 Mentor role divided among team members
   - 7.4 Drawback of mentorship
   - 7.5 Assigned mentor
8. Others
   - 8.1 Covid-19
     - 8.1.1 Remote work
     - 8.1.2 Proactivity due to Covid-19
   - 8.2 Community
     - 8.2.1 Monthly letters
   - 8.3 Self managing teams