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Remote Onboarding for Software Engineers:  
From “Forming” to “Performing”

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A thesis

submitted in partial fulfillment of the  
requirements for the degree of

Master of Science

University of Washington

2022

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Computing & Software Systems

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**Abstract**

Remote onboarding for Software Engineers:  
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Onboarding is defined as the process when a new employee joins, learns about, integrates into and becomes a contributing member of a team. A successful onboarding is essential for moving a team from Forming to Performing stage. It helps increase the new hire’s job satisfaction, improve the team’s performance, and reduce turnovers (which bring the team back to the forming stage). With remote work being the new norm in software engineering, remote onboarding brings a unique set of challenges.

In this project, I aim to identify the main challenges faced during remote onboarding for software engineers, specifically for role-specific onboarding that happens in the team domain, and provide recommendations on improving this onboarding process. To achieve these aims, I conducted a qualitative interview study and activity exercise with software engineers who have

gone through remote onboarding. Nine interviews were conducted with software engineers ranging from junior software engineers to senior software engineers and software engineering managers. I analyzed these interviews to gain insights into factors affecting onboarding. From the interviews, I identified a hierarchy of needs, in which I classified the needs of the new hire into basic needs and needs required for excellence. Needs such as access to tools, clarity of tasks and knowledge were categorized as basic needs to do the work, whereas mentorship, relationship building, and collaboration transform the onboarding into an excellent experience. I then further linked these needs to 5 main themes that emerged during the interviews for having an effective onboarding: (i) having an effective onboarding buddy; (ii) the ability to create relationships with team members and other stakeholders; (iii) being provided with up to date and organized documentation and onboarding plan; (iv) the manager's ability to listen and adapt to remote needs; and (v) a team culture which enables team members to communicate effectively and get unblocked quickly. Based on the interviews' analysis together with insights from the literature, I developed checklists for recommended best practices for effective onboarding. A checklist was developed for each of the main onboarding stakeholders i.e., manager, onboarding buddy and new hire, along with a template of an onboarding plan. Using these checklists will help improve the effectiveness and consistency of remote onboarding for software engineering new hires.

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## **ACKNOWLEDGEMENTS**

I thank Professor David Socha for providing invaluable guidance during this capstone project, particularly for guiding me towards key concepts, how to think about these key concepts and how to communicate my ideas. I am most grateful to all the interviewees and Professor Eric Buechner for sharing their experiences with me. Finally, I want to thank my parents and my wife Sana for their support, particularly my wife for her help in proofreading this paper.



## CHAPTER 1. INTRODUCTION

Imagine a scenario where you join a new company during the peak of Covid-19, working remotely as a software engineer. You do not get to meet any of your teammates or your manager face-to-face. The only interaction you have with the team is a 30-minute meeting with your manager on the first day where she vaguely tells you what they want you to do and point you to some documentation. You are not assigned an onboarding buddy or a point of contact on the team. The tools this team uses are new to you, so you try going through the documentation but find it to be poorly organized and incomplete. You try contacting your teammates and manager, but they point you to the same document. When you point out that the documentation has gaps, they ask you to create a meeting on their calendar, but there are no open slots in their calendars for the next 2 weeks. After a month, you get a call from your manager asking why things are not getting done; you inform them of the trouble you are having e.g., not being able to run the code locally due to missing packages and missing permissions. She sends you a link to an hour-long video which shows all the steps required for building the code. She mentions that the teammate you were contacting earlier for information was in the process of leaving the company and provides a new contact to another team member who will be able to help with questions. Also, after you've been part of the team for a month, the manager adds you to the weekly online team social hour. When you point out that it would have helped you integrate better into the team if you'd been invited to socials earlier, the Manager professes that they had not onboarded a new person recently, so the team onboarding process was very rusty. At the time you wonder why the team had abandoned you for a month and all these steps were not taken initially so you would have had a better

onboarding experience. You lose trust in your manager, team, and this company and start focusing on what is next in your career.

The scenario described above may seem rather extreme, but from my own experience and the anecdotal stories shared with me, unfortunately occurs more commonly than one might hope. At the root of the unpleasant experience highlighted above is a lack of existence or implementation of an effective onboarding process. Even if onboarding processes were previously in place at a workplace, the mode of widespread remote work in the Covid-19 pandemic have thrown some organizational systems developed in the past into disarray. For Software Development in particular, the possibility of remote work becoming a long lasting ‘new normal’ seems likely, for example as evidenced by Twitter announcing indefinite remote work option for employees [1]. Therefore, there is a need to evaluate the effect of remote work on onboarding processes in software engineering firms and present potential improvements to improve the process. This project aims to do just that, in the context of my own software development team, a team which specifically works on legacy code.

## 1.1 REMOTE ONBOARDING AND SOFTWARE DEVELOPMENT TEAMS

Onboarding is the period defined for a new employee to join, learn about, and become part of the team and start contributing to it. Having a successful onboarding is essential for moving a team from Forming to Performing stage [2]. It helps with increasing job satisfaction, increasing teams’ performance and reduce turnovers (which bring the team back to forming stage) [3].

During the pandemic, the shift to remote working/ working from home, has brought its own set of benefits and challenges. The challenges, in particular, have been more profound when a new member joins a team [4]. From straightforward tasks such as asking for help and finding

relevant documentation [4], to overarching factors such as social connection and communication, remote work has adversely impacted the onboarding of new team members [5].

Onboarding for software teams working on legacy systems, which are software systems in the servicing stage with deteriorating architecture [6], is particularly challenging as legacy systems' code is difficult to learn and where documentation does not reflect the actual source code [7]. In such situations, tribal knowledge becomes the dominant source of information. Since this knowledge is known by only a few team members, the process for making change is not scalable [7] and leads to its own challenges for the onboarding process.

There has been some work done on analyzing remote onboarding for software developers during the pandemic [4] [5] [8]. Challenges new employee face include, finding useful documentation, communication and collaboration difficulties, and difficulties building a strong connection with their team [4]. Research points that teams with better documentation and more formal/informal interactions with the newcomer fare better [5]. However, there is still a lack of understanding of how remote onboarding impacts teams working together. This project aims to build on top of the current research and investigate the challenges and effectiveness of current remote onboarding for software developers working together in a team, and provide recommendations on how to make the experience better to help teams go from 'forming' to 'performing' stage sooner. In this project, information has been gathered from 3 resources: reviewing literature; interviewing software developers impacted by onboarding such as new developers, managers, mentors/buddies and other team members; and, finally, by drawing on my own personal experience in software development and onboarding fellow team members as a professional software developer at Microsoft for over 4 years.

## 1.2 PROJECT GOALS

The goals of this project are to:

- identify the main challenges faced during remote onboarding in software teams
- provide recommendations on improving the onboarding process for such teams
- identify and compare and contrast existing onboarding framework
- relate interviewing results with the onboarding frameworks

The stakeholders for this project are software development teams working in a team (including mine) who onboard new team members remotely.

The success criteria for the project is to provide to the reader my experience and findings of going through the literature, interviewing software engineers and then coming up with a framework and a set of recommendations based on my understanding of remote onboarding, which they can potentially build on for their particular situation.

In Chapter 2, I present my literature review on various aspects of onboarding. Initially, I look at the importance of onboarding followed by investigating what specifically is considered to be onboarding and which stakeholders are present in Onboarding. Next, I focus on different onboarding frameworks and guidelines which other researchers have presented, followed by different concepts related to onboarding, such as tacit vs explicit knowledge and trust. Chapter 2's next focus is on remote onboarding and challenges associated with it. Finally, I narrate what my lived experience has been and what factors from literature review I have taken forward in my remote onboarding framework development.

Chapter 3 focuses on the interviewing method I have used in this project. I provide information about interviews, what personas were selected for interviews and why, followed by how interviews were developed and finally on how they were conducted.

Chapter 4 focuses on the initial findings from the interviews. In this chapter, I describe how the interviews were analyzed and provide a brief summary of the interviews. I present my findings from the analysis of the interviews in the form of a hierarchy of needs for onboarding. I then discuss the six needs I have come up with, categorizing them into three basic needs and three needs for excellence which transform an onboarding into an excellent experience.

Chapter 5 focuses on the second set of findings which are identifying the highly impacting factors for remote onboarding. I first discuss the analysis of the impacting factor exercise conducted with the interviewees and how the results show top five highly impacting factors. I discuss each of the five highly impacting factors by detailing themes which came out of the interviews, related works and recommendations coming out of it.

Chapter 6 focuses on the third and final finding of this project: onboarding recommendations and guidelines. In the beginning of the chapter, I discuss the process by which I came up with the recommendations, followed by why they are needed. I discuss some findings from the interviews regarding onboarding being a living process, and outline advice from industry experts about onboarding. Finally, I end this report with a template of an onboarding plan and a set of checklists, one each for the manager, the onboarding buddy and the new hire, which can be used during onboarding to potentially help lead to an effective onboarding.

## CHAPTER 2. LITERATURE REVIEW

In this chapter, I discuss what the literature says about various aspects of onboarding in general and remote onboarding in specific. Let me start with the importance of an effective onboarding.

### 2.1 WHY IS ONBOARDING REQUIRED?

Two interlinked stakeholders can be immediately identified during the onboarding process: the new employee and the team they join. From the point of view of the new employee, according to Du Toit [9], an effective onboarding enables new employees to perform their job in the most cost-effective and least time-consuming way, and to start having a positive impact on the team. As for the team the new hire joins, the team returns to the initial “Forming” stage of Tushman model for building a high performing team [2]. A successful onboarding is essential for moving the team from “Forming” to “Performing” (high-performance) stage [2] by making the new employee a functional member of the team as soon as possible.

The onboarding process has a significant effect on the morale of the new joiner: a positive onboarding experience can make new employees feel more productive and confident at work, provide new employees with autonomy to deliver their best, and can improve their adhesion in the overall team [10]. Bauer [3] argued that when new employees are regularly provided support, feedback and coaching, it helps with increased job satisfaction and improving the teams’ performance. A high morale, in turn, helps improve employee retention [3], [9], [10] which is critical to a team’s optimal productivity since high turnovers bring a team back to “Forming” stage. These arguments are supported by evidence that effective onboarding helps retain employees for a longer time duration [11]. Du Toit [9] further argues that the absence of an onboarding plan leads to a “sink or swim” approach where new employees must work on their own, which Du Toit

contends to be an abusive practice and even considers it to be workplace bullying! In short, employees are more engaged, happier and more productive when they are onboarded more effectively which helps to retain them for longer and keep the team in “Performing” state.

Jeske [12] considers employees' first experiences in the new company to have an outsized impact on their relationship with the company in the future. Du Toit [9] argues that an effective onboarding helps to build a relationship based on trust between the new employee and their team, and helps develop trust in the new company's leadership, which is very important in the modern leader/follower relationship. It helps establish a psychological contract between a new employee and their new company, helping to build employee value proposition, ideally with the new employee becoming the biggest champion of their new company [9].

Heddleston [10] posits that effective onboarding provides a level playing field for all new joiners and can even help with improving diversity in the team and organization. Effective onboarding provides equal opportunities irrespective of the new hire's ethnicity, gender or other markers of identity. If effective onboarding is not present, new hires will need to proactively ask help and generally those that fit in better with the status quo feel more comfortable asking for help.

Onboarding also has a significant impact on the team, the new hire joins into. Based on Tushman model for building high performing teams, a team goes back to the initial stage of forming when someone new joins. The team needs to go through “norming” and “storming” stage to reach the performing stage, where they can perform best. Du Toit [9] argues that having a deliberate and carefully planned onboarding helps the team to get to norming and performing stage much faster. Chen [13] takes this argument one step further to suggest that team performance is actually an accurate predictor of individual new hire performance and vice versa.

In short, effective onboarding is essential in developing a high performing, high morale new hire who can relate to and feels included within the team and is retained longer in the company. Such a high-performing new hire in turn helps their team perform better.

## 2.2 WHAT IS ONBOARDING

Onboarding has multiple interpretations in the literature, varying from what it involves and the timeline associated with it. According to Bauer, onboarding is the period where a new employee joins, learns about, and becomes part of the Team, especially adjusting to the social and performance aspects of their new jobs smoothly and start contributing to it [3]. Jeske [12] defines it as a process that introduces the new employee to teams' processes, practices, policies, values, and teammates to support the positive early experience of the new hire. Du Toit [9] considers onboarding to take place in 3 dimensions: physiological, functional, and cultural. Du Toit describes onboarding physiologically in a team's context; when the new employee starts becoming a (minimally) functioning member of the team, they have been physiologically onboarded. Next, Du Toit [9] argues onboarding functionally signifies the new employee is able to do the job based on the standard expectations. Lastly, Du Toit [9] defines culturally onboarded is when the new employee aligns with the company's culture and values. Thus, for Jeske onboarding is only about early learnings of the new employee, whereas for Bauer and Du Toit onboarding includes the new employee beginning to contribute to the team. Further still, Du Toit considers even aligning with company culture to be part of onboarding.

Davila [11] argues that onboarding can be divided into 4 stages: (1) *Orientation* being a generic time bounded event where new employee gets to know about the company and its processes; (2) *Pre-Onboarding* where focus is to provide the right resources to the employee before they start working; (3) *General Onboarding* which is a generic companywide on-boarding

where intent is to create emotional connection between employee and companies mission, vision and values; And finally (4) *Role-specific Onboarding* where opportunities are provided to assimilate and master into their new role.

My project focuses on Role-specific Onboarding, which is the one stage primarily in the domain of the newcomer's immediate team, where the new employee is provided with specific tools and support to meet expectations of their day-to-day job. My goal is to investigate and provide recommendations on how to improve this aspect of onboarding, since this is where I have seen the biggest impact and variance given that every single team will have their own unique way of onboarding. Since I myself am a Senior Software Engineer, the role-specific onboarding is also within my sphere of influence for my team, as I am frequently assigned to be the onboarding buddy for new team hires. My goal is to understand what has worked well for different teams and then provide generic recommendations which will improve the overall onboarding experience.

## 2.3 WHAT THE LITERATURE SAYS ABOUT ONBOARDING

This section provides an overview of multiple papers, books, videos, and blogs regarding onboarding. It first provides an overview of the stakeholders involved in onboarding; guidelines and frameworks for onboarding; onboarding and the impact of documentation; and finally building relationships and trust in onboarding.

### 2.3.1 *Stakeholders in onboarding*

Four main stakeholders are identified in the literature for role specific onboarding: Managers, Onboarding buddy/Mentor, Team members and new employees themselves.



Figure 2-1 Onboarding Stakeholders

As show in Figure 2-1, onboarding stakeholders can be represented by a pyramid, depending on the level of responsibility placed on the stakeholder in the literature. The pyramid consists of the Manager and Onboarding buddy as the initial building blocks for role-specific onboarding. The overall Team is the next level in the stakeholders' pyramid and, finally, the new hire is at the top of pyramid, such that manager, onboarding buddy and team act as building blocks to the onboarding of the new hire. Extracting information from the literature, I have also added the main roles and responsibilities of each of these stakeholders into the pyramid of Figure 2-1. These roles and responsibilities will be discussed in detail in this section, but they can be summarized

briefly first. The Manager and Onboarding Buddy are considered to be responsible for initial planning of the onboarding process. The Manager is responsible for providing clear expectations, create a culture of building relationships whereas Onboarding Buddy is there to help new hire ramp up with work and company culture. Next, the Team gets its direction from the Manager and Onboarding Buddy. Team as a whole is responsible for working together while subject matter experts help the new hire for specific tasks. Ultimately, the new hire should take ownership for their own onboarding process and should apply themselves completely to the process.

Let's look at each of the stakeholder in more detail. Firstly, the Manager. Du Toit [9] claims that providing an effective onboarding needs to be an essential job of the manager. He argues that managers should be responsible for providing clear expectations to the new employee. He further argues that managers are needed to develop, start, review, and provide sign off on a company competency program for the new employee and provide corrective actions if required. Hemphill and Begel [5] suggest that managers should be more explicitly involved in onboarding activities – e.g., creating learning plans, setting clear and realistic expectations about time-to-productivity, and actively moderating meetings so that newcomers are included and actively participate. Carlos [14] even argues that manager can single handedly make or break an onboarding for new employee.

A number of researchers have emphasized the need for an onboarding buddy and/or a mentor in the onboarding process. According to Du Toit [9], an onboarding buddy should be a team member at a similar level as the new employee who helps integrate the new employee into the team. Klinghoffer [15] focuses on the need of onboarding buddy for a new employee as they provide context, boost productivity, and improve new employee satisfaction. Onboarding buddy help to reprioritize the workload, communicate timing and company culture. Ypina [16] mentions the need for a mentor as well as an onboarding buddy, differentiating the two in terms of time and

scope, where an onboarding buddy is for a shorter time period only responsible for onboarding whereas a mentor helps with long term career goals. Heddlestone [10] recommends good mentors to be like “bumper bowling guardrails”, only there to provide guidance and not to hand hold. Moe and Stray [17] mention a need to study the mentoring process as seen from the mentor’s perspective - for example to consider how mentors (who are often the most experienced developers) balance mentoring and solving their own tasks.

Du Toit [9] argues that whole team plays an essential part in onboarding, and he further argues that responsibilities for different onboarding processes should be delegated to different team members. He further argues that team should have subject matter experts (SMEs) specified and a team member should only be assigned as an SME when they are as good as helping others to learn new competencies as they are of doing it themselves. Bray and Sorey [18] argue that if a new employee is asked to shadow someone, ensure there are clear guidelines of the activity and that there is mutual accountability to report back on the learnings.

Finally, the new employee themselves are responsible for their onboarding. Du Toit [9] argues that the new employee needs to apply himself/herself to the onboarding process, acquire competencies and knowledge required, be honest of what they have not achieved, give feedback and enthusiastically take accountability. Ultimately, it *is* the new hire’s onboarding, not anyone else’s.

### 2.3.2

#### *Onboarding strategies and Frameworks*

Moving on from the stakeholders of onboarding, to the factors discussed in the literature that affect the onboarding process. This section provides an overview of six main resources on onboarding that I consulted in this project. There are multiple other resources that were also consulted, but these six stand out for me to be the most relevant. These six resources include onboarding models,

guidelines and strategies proposed in the literature and other onboarding resources (Books, Papers and Videos). These six guidelines provide varying viewpoints, from the most cited onboarding model paper, to books available regarding this topic in the market, to video talks. Table 1 provides a comparison between the themes discussed in the six different onboarding models, frameworks and guidelines. My analysis of these guidelines uncovered (coincidentally) six themes how the guidelines are similar and a few differences between them.

Table 1 Onboarding framework model/guidelines comparison

|                                      | <i>Du Toit's 5-component models</i> | <i>Bray and Sorey TEAMS models</i> | <i>4-pillar model of Stein and Christiansen</i> | <i>Bauer's onboarding model</i> | <i>Ypina 4 Behaviors Guidelines</i> | <i>Heddlestone Guidelines</i> |
|--------------------------------------|-------------------------------------|------------------------------------|---|---------------------------------|-------------------------------------|-------------------------------|
| <i>Understanding Company culture</i> | ✓                                   | ✓                                  | ✓   | ✓                               | ✓                                   | ✓                             |
| <i>Building social connections</i>   | ✓                                   | ✓                                  | ✓   | ✓                               | ✓                                   | ✓                             |
| <i>Clear role expectations</i>       | ✓                                   | ✓                                  | ✓   | ✓                               | ✓                                   | ✓                             |
| <i>Getting Role competent</i>        | ✓                                   | ✓                                  | ✓   | ✓                               | ✓                                   | ✓                             |
| <i>Coach/supporting new hire</i>     | ✓                                   | ✓                                  | ✓   | ✓                               | ✓                                   | ✓                             |
| <i>Feedback</i>                      | ✓                                   | ✓                                  | ✓   | ✓                               | ✓                                   | ✓                             |
| <i>Manager – sole responsible</i>    | ✓                                   |                                    |   |                                 |                                     |                               |
| <i>Year long process</i>             |                                     |                                    | ✓   | ✓                               |                                     |                               |
| <i>Sale role focused</i>             |                                     | ✓                                  |   |                                 |                                     |                               |
| <i>Automate task</i>                 |                                     |                                    |   |                                 |                                     | ✓                             |

The six common themes are:

- *Understanding Company culture.* Each of the frameworks focus on understanding company culture. It is essential that the new employee understands the company norms – both formal and informal.
- *Building social connections.* All frameworks focus on getting the new team member socially connected, to create meaningful and strong relationships with the team, manager, and other stakeholders the new hire needs to work with.
- *Clear Role expectations.* All frameworks focus on making the role clear to the new team member and on making them competent in that role. The expectation from the new team member should be clearly defined and communicated to them and a plan setup to help them meet it. As mentioned previously in Section 2.3.1, this clarity of expectations is generally provided by the Manager.
- *Getting Role competent.* The frameworks suggest multiple tools to get new hire competent in the role. One of the tools is to create an engaging learning environment in the team. The ability to engage the new employee into the new work and then learn the skills which they need to be successful is essential.
- *Coach/supporting new hire.* All frameworks argue the need to have someone close to the new team member who can help coach and support the new employee. This potentially could be an onboarding buddy or their manager or mentor who can help guide them during their onboarding.
- *Feedback.* All frameworks suggest the need to consistently get feedback from the new team member, listen to it and take steps to incorporate their feedback in the onboarding plan.

Along with similarities there are four differences between the onboarding frameworks. Unlike the other resources, Du Toit's framework [9] places the most emphasis on the role of the manager in the onboarding process. Du Toit [9] argues that the manager is the one who makes or breaks the onboarding experience for the new employee. The rest of the frameworks place the need for the manager to be actively involved but don't make the manager the sole reason for success and failure. Another difference noticed is that Stein and Christiansen [19] as well as Bauer's [3] frameworks define onboarding to be a year-long process, whereas the other frameworks do not define an exact timeline. Also, Bray and Sorey's TEAMS framework [18] is largely focused on sales people as they have a certain kind of job and skillset of getting quotas for selling items fulfilled. The tools defined under engagement and mastery, such as simulations for selling and quota attainment pipelines are not directly transferable to software development engineering. Finally, the other difference worth pointing out is that Heddlestone [10] argues the need to automate as many onboarding tasks as possible, whereas the other frameworks do not raise this point.

Let us look at the frameworks/guidelines one by one, to understand what guidelines currently exist to help with developing one for remote onboarding for software engineers, in no particular order.

*i. Du Toit's 5-component model*

Du Toit [9] had defined a 5-component framework for getting a new employee onboarded:

- Land the fish – period before starting the work
- The first day
- Get to know the giant – learn about the company
- Who is who in the zoo – learn about the department joined; and

- Becoming company competent (lose the learning wheels) – learn the job and company specific competency.

The five components listed above are the sequential goals that the new employee and stakeholders should aim to achieve to have a successful onboarding. These range from pre-arrival of the employee, to the first day orientation, to knowing the company as a whole, learning about the team, connecting with stakeholders and finally understanding and able to deliver work new employees are hired for.

In addition to goals, Du Toit elaborates specific recommendations for the stakeholders such as the company, manager and existing team which can contribute to the new employee's effective onboarding. Du Toit suggests that it is actually the manager who is fully responsible for onboarding whereas the new employee is only accountable for onboarding. The manager together with company wide support must set up a deliberate onboarding process in the team with specific outcomes and goals, and create a learning environment instead of a mere 'exposure' approach. In addition, the entire team should contribute to knowledge transfer to the new employee. Finally, there should be regular reviews with the new employee giving specific and constructive feedback on their progress.

*ii. Bray and Sorey's TEAMS model*

Bray and Sorey [18] provide a framework for onboarding Salespeople, some aspects of which can be extended to software engineers. They suggest the acronym TEAMS which is short for: Talent Acquisition, Engage new hires; Accelerate performance; and Mastery and Progression.

The unique aspect of this framework is the researchers' focus on long-term attitude and skill development of the new employee. Bray and Sorey [18] argue that, during Talent Acquisition, the emphasis should be on hiring people with a persistent mindset which is critical to long-term

success rather than a resistant mindset. With persistence mindset, you keep on exploring solutions even in the face of setbacks. This insight was striking for me personally, because in my opinion, a persistent mindset has become more critical in remote work due to the novelty and multiple challenges associated with working remotely.

Another interesting aspect of this framework is to use the term “Engage” for activities which are traditionally considered onboarding activities. This is because Bray and Sorey consider that actively engaging the new employee and accelerating them towards mastery leads to more job satisfaction for the new employee and more high performing teams. The authors argue that concepts merely presented to a new hire but not applied quickly will be poorly applied if not forgotten. The authors further argue to create specific goals for engagement phase, ensuring that each activity is broken down to job to-be-done level so it can be well understood and coached. A further recommendation in this framework is a customized engagement phase based on the needs of the new hire.

### *iii. The 4-pillar model of Stein and Christiansen*

Stein and Christiansen [19] provide a 4-pillar framework for successful onboarding represented in Figure 2-2. The four pillars are: provide early career support; provide orientation to the firm’s culture and its performance values; provide insight into the firm’s strategic position, intent, and direction; and have activities and experiences that enable the new hire to build beneficial relationships. They also divide the onboarding process into 4 different stages (prepare, orient, integrate, and excel) and provide what pillar need to focus on in each of the stage. They argue that all of these 4 pillars need to be customized and integrated based on the new hire needs, represented by the customization and integration annotation on the left of the pillars. The

governance and administration are also considered part of onboarding but are generic for the same company.

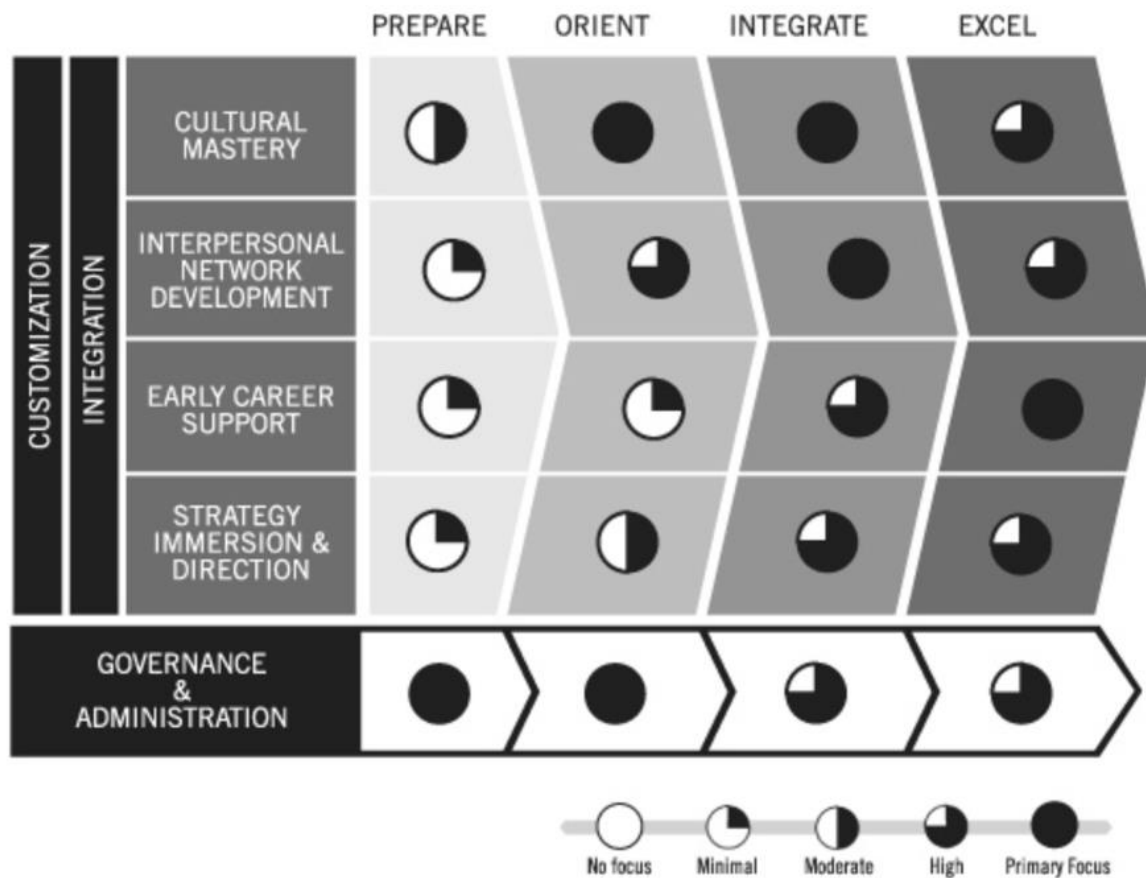


Figure 2-2 4-pillar framework of Stein and Christiansen [19]

*iv. Bauer's onboarding model*

Bauer's [3] onboarding model has been widely cited in the literature. Figure 2-3 shows the schematic of the model. The middle part of the model's figure, represents 4 factors which need to be applied to have a successful onboarding. These four factors are self-efficacy, role clarity (Clarification), Social integration (Connection) and knowledge of culture (Culture). Self-efficacy is the first level and includes teaching employees basic legal and policy-related rules and regulations. Clarification refers to ensuring that employees understand their new jobs and all

related expectations. Connection refers to the vital interpersonal relationships and information networks that new employees must establish. Culture is a broad category that includes providing employees with a sense of organizational norms— both formal and informal. Onboarding model in the outer layer provides 6 processes, helpful in getting the 4 fundamental factors. Processes are identified as: Recruiting process; Orientation; Support tools and Processes; Feedback tools; Trainings; and Coaching and Support.

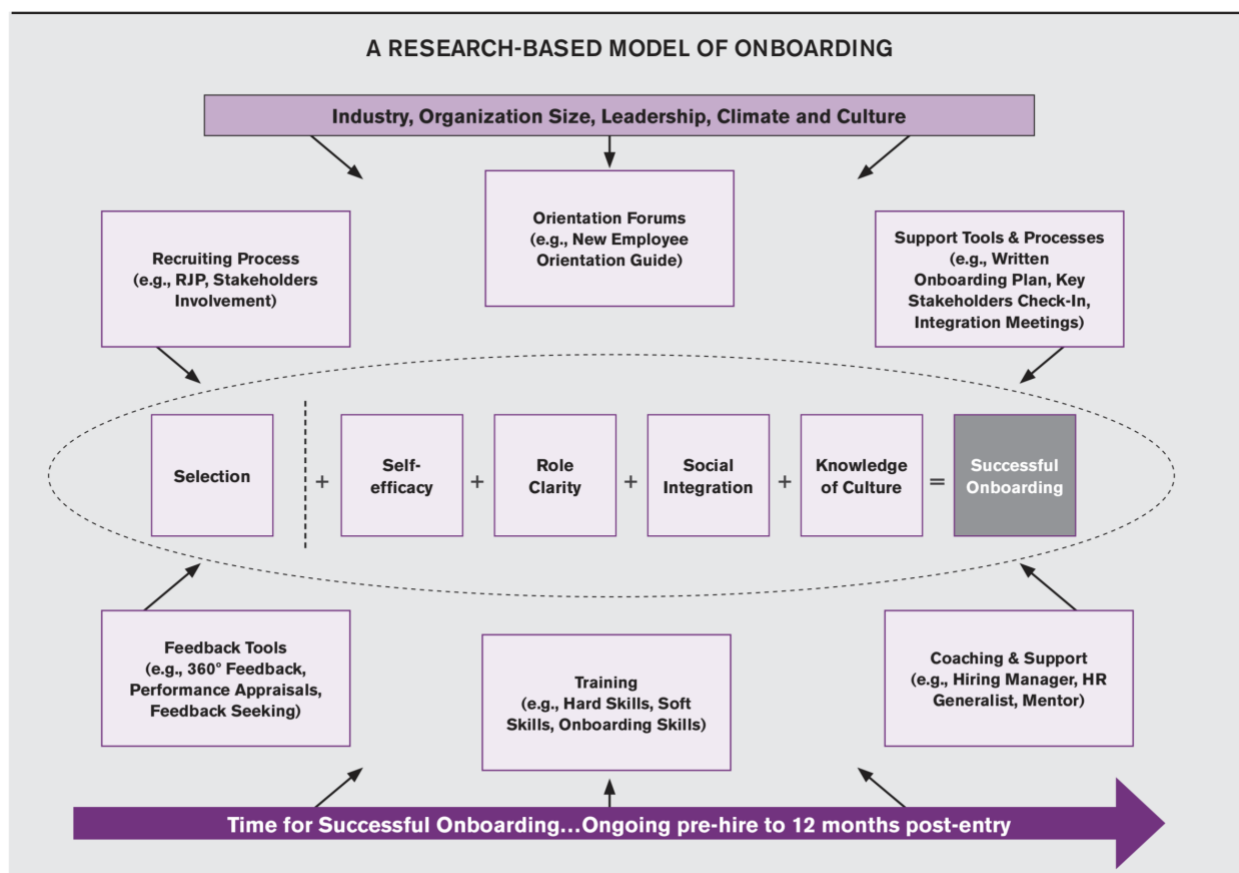


Figure 2-3 Bauer's onboarding model [3]

Bauer's emphasizes that in addition to the fundamental four factors and supporting process, another key to effective onboarding is to engage important stakeholders and new employees in interactions that help them understand one another and how they interact over time to build long lasting relationships. Building lasting relationship in conjunction with Bauer's model, will result

in a faster learning curve for new hires, improved communication, and a more productive and engaged workforce.

**v. *Ypina 4 Behaviors Guidelines***

Ypina [16] argues four behaviors are essential for having a successful onboarding and team integration. The four behaviors are: (1) Seek feedback (2) Role Clarity (3) Relationships with team members (4) Networking outside the group. Ypina argues for the need of constant feedback. He recommends that the new hire should get their work reviewed to make sure they are doing the task correctly. As in other onboarding frameworks, Ypina's guidelines list clarity of expectations as being essential for effective onboarding. The last factor to note is that Ypina emphasizes relationship building for the new hire, not just within the team but beyond it as well.

**vi. *Heddlestone Guidelines***

Heddlestone [10] provides four factors required for effective onboarding. They are (1) Management and Assessment (2) Team Integration (3) Mentorship and Personal Development, and (4) Automation of Repeatable tasks. By 'Management and Assessment', Heddlestone refers to having regular one-on-ones, goal setting and providing routine feedback to the new hire. She encourages new team members to actively take notes when provided guidance about their work and provide them an avenue to actively present their work to check for their understanding.

For improving team integration and relationship, Heddlestone recommends increasing both technical and social communication within team. Team integration can be improved by creating a team map, which provides information about all of the team members and their expertise. Specific social events help as well, e.g. 'game hour' especially when some fun facts to remember/talk to people about are discussed.

To guide Mentors on providing meaningful mentorship, Heddlestone recommends mentors to build a relationship with the new employee to learn about what they want to grow into and then

help them grow into it. If the new hire is enabled to shadow senior team members to learn from them, it would help with a number of aspects of relationship building and learning of the new hire.

Finally, Heddlestone argues to automate repeatable task such as dev environment setup/update or processes for shipping the code. This will help reduce the need/keeping UpToDate for documentation for those tasks. As for repeated items which cannot be automated, he recommends having checklists for such tasks.

In short, the models and guidelines found in literature have these six themes in common, which are applicable for role-specific onboarding and will be used at later stage to develop onboarding recommendations:

- i. Understanding Company culture
- ii. Building social connections
- iii. Clear role expectations
- iv. Getting Role competent
- v. Coach/supporting new hire
- vi. Feedback

### 2.3.3

#### *Documenting Explicit Knowledge vs Tacit Knowledge*

In order to become role competent a very essential need is to get knowledge required for fulfilling the role. Having knowledge documented helps a new team member onboarding quicker. Knowledge is generally divided into explicit, which is easy to transfer and tacit which is not [20]. Generally, explicit knowledge is most often documented but communicating tacit knowledge in a easier way also helps in getting task done. Hemphill and Begel [5] argue that team that has more complete and up-to-date documentation of their processes, including traditionally tacit insider information, such as system code, software tools used, and machine resources used in system

infrastructure, are more effective in enabling remote newcomers to learn team practices. Rodeghero and Zimmermann [4] further argue that providing documentation that provides new hires with workflow information, allows new hires to understand the team's day-to-day language.

How and when to create documentation has been defined by Du Toit [9] by considering a number of different factors. Firstly, the documentation creation and maintenance should have low cost. Secondly, it should be easy to put together and should not take a lot of time such as days to assemble. The knowledge should be repeatable, such that it will be useful again and there should be a good follow-up system, to check if there are missing parts. The documentation should be easy to understand and clear. And finally, it should accommodate any number of onboardings. Bray and Sorey [18] argue to use Eisenhower matrix as shown in Figure 2-5 to decide when a documentation is required and when not required using the urgency and importance of the document.

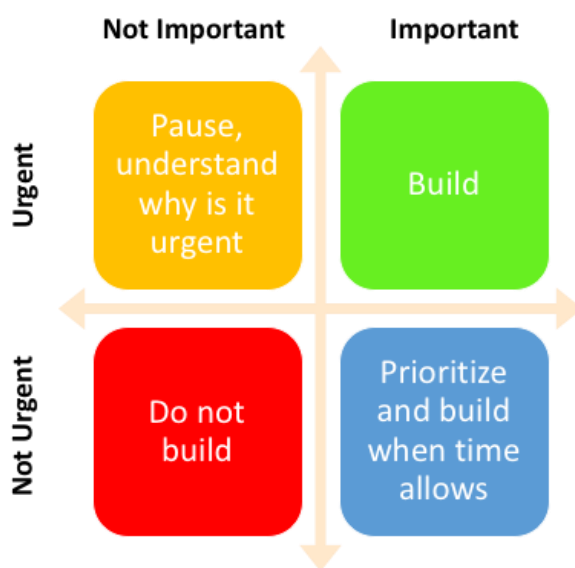


Figure 2-4 Eisenhower matrix for content development

Keeping the document up-to-date and in a managed easy to access is important. Bray and Sorey [18] argue that documentation used by the new employee must be continuously refreshed.

Heddlestone [10] suggest that last person going through the onboarding document, which would be the new employee, should update the document. This helps new employee to take ownership of their onboarding. Heddlestone [10], in his onboarding guidelines, recommended to make tasks automated so that there is minimal documentation and information to transfer.

In short, knowledge is essential in order to get role competent. And having knowledge documented in a complete, UpToDate and easy to access fashions helps with being role competent quicker. But this comes with a set of costs that requires a manager or team to decide what to and not to document.

#### 2.3.4 *Onboarding and Trust*

Building relationships is paramount to onboarding as discussed in previous sections. Martin [21] and Carlos and Muralles [14] argue that the cornerstone for building relationships is building trust, followed by allowing the new team member to bring their authentic selves. Building trust in a working relationship allows for the creation of safety and a sense of support as both the organization's personnel and new hire navigate the challenging orientation and training process.

Building trust is about building rapport as well as accountability in the relationship. To establish rapport with the new hire, Genda [22] and Martin [21] provide recommendations to communicate frequently, communicate clearly and transparently. For the existing team members, Davies-Greenwald [23] suggests to prioritize both communicating and listening, in particular ask for feedback, practice active listening and build a supportive culture. For the manager in particular, trusting can encourage trust in return from the new hire - so Davies-Greenwald [23] recommends the manager should try not to micromanage. Bray and Sorey [18] argue that monitoring rapport helps with avoiding the erosion of trust; therefore, there should be some accountability in the relationship with member doing what they say they will do and setting boundaries together.

In short, building meaningful work relationships are essential for onboarding. Building trust, rapport and accountability are very important in building strong relationships. Communicating clearly, transparently and frequently is key here, along with integrity and accountability in behavior and being open to listen to others.

## 2.4 REMOTE ONBOARDING

The discussion so far in this report is focused on onboarding in general. Vaara Blöndal [24] argue that virtual and office-based onboarding key elements are mostly the same; however, the importance and challenges of specific factors differ. In this section, I have analyzed the discussion in the literature specifically regarding remote onboarding. There are multiple themes being discussed in the literature focusing on remote onboarding which are summarized in Table 2. These themes will be discussed in this section.

Table 2 Remote Onboarding literature themes

| <b>Specific themes encountered in literature on Remote Onboarding</b> | <b>References</b>    |
|---|----------------------|
| Difficulty in communication and collaboration                         | [4], [4], [25], [26] |
| Difficult for new team members to ask for help                        | [4], [4], [25], [26] |
| Building relationships and integration into team                      | [4], [4], [9]        |
| Finding the right information   | [4], [4]             |
| Lack of structured processes  | [4], [26]            |
| Importance of manager   | [8], [9]             |
| Logistic and tools matter   | [4], [9]             |
| Replicating existing practices with remote specific emphasis          | [25], [8], [27]      |
| Gamified onboarding   | [26]                 |

- Difficulty in communication and collaboration

It can be more difficult to communicate and collaborate in remote onboarding, since anxiety of asking for help may have increased with the work from home transition [4] [5].

Rodeghero and Zimmermann [4] and Hemphill and Begel [5] argue that the manager and team

should promote the use of effective communication and make an environment conducive for the team and new team members to talk when required. Managers should provide new hires with guidance and “best practices” to reach out to themselves and other team members. Hemphill and Begel [5] further argue that interacting frequently using synchronous communication technologies will reduce newcomers’ anxiety, help them learn what responses to expect from their teammates, and improve their team's productivity. Vaara Blöndal [24] recommend having face-to-face interaction even in the remote world to deepen connections and collaboration, e.g. by having one-on-one’s with video camera turned on.

- Difficult for new team members to ask for help

The increased difficulty in remote communication has been linked to an increased anxiety a remote new hire may have in asking questions [4] [5]. Rodeghero and Zimmermann [4] and Hemphill and Begel [5] both argue that in remote onboarding it is vital to make it easier for new team members to ask for help. Both set of authors argue one way to make it easier is to have a designated onboarding buddy, who can guide new team member on how to get information, connect them with people and get questions answered. Hemphill and Begel [5] further argue that new hires should be encouraged to be self-monitoring and proactive. This will help with effective onboarding because new hires will be more likely to actively seek information and comfortable interacting with unfamiliar people.

- Building relationships and integration into team

Rodeghero and Zimmermann [4] and Hemphill and Begel [5] both argue that in remote onboarding building team connections and building relationships is a big challenge due to isolation between teammates due to the nature of remote work, scheduling difficulties, the lack of running into peers in the hallway. The authors provide multiple recommendation on what will help with

building relationships for new team members. They recommend having regular inclusive social activities for team bonding such that the interaction space usually offered on-site should be replaced digitally [4] [5] [25]. As also suggested by other researchers, [4] [5] encourage teams to turn on their camera during the meetings, which would help new hires better understand the dynamics of the team and help them bond and form connections with their peers. The authors proposed to have regular and consistent one-on-one with manager and other meetings with team members to help the new hire feel more comfortable asking for help and feel more part of the team. Hemphill and Begel [5] argue that more social interactions in a team, especially informal are paramount to successful virtual teaming and remote onboarding. The author encourages one-one-one, non-work-related interactions between remote newcomers and their teammates to increase a newcomer's social integration. Noting that the new hire wants to connect with others, both on individual and community levels, Pavlina [8] prescribes that proactive and intentional effort needs to be made by the team to build strong connection by introducing new hires to the people in the organization.

- Finding the right information

Rodeghero and Zimmermann [4] and Hemphill and Begel [5] both highlight that in remote onboarding, documentation and finding the right information becomes more critical as communication may be delayed and questions may not be answered as quickly as compared to the traditional office work. Ideally, the documentation provided should be up-to-date, easily accessible, and should provide new hires context about the team's projects. Rodeghero and Zimmermann [4] suggest that documentation should contain workflow information, allowing new hires to understand the team's day-to-day language to bring them up to speed. Finally, as has been discussed previously, a team that has more complete and up-to-date documentation of their

processes, including traditionally tacit insider information is more effective in enabling remote newcomers to learn team practices [5].

- Lack of structured processes

Hemphill and Begel [5] further argue that teams with structured processes, such as regular scrums, may be better prepared to onboard new members remotely. Vaara Blöndal [24] agrees that having clear processes helps with remote onboarding. Clear structured processes are easier to communicate and easier to follow remotely where the new employee is not collocated with team.

- Importance of manager

Pavlina [8] emphasizes the importance of the manager in remote onboarding setting. The author argue that managers need to provide a personalized, consistent onboarding experience leveraging their team and treating onboarding as a team sport. Previously discussed in Onboarding models, Du Toit [9] too had argued that manager is the one who makes or breaks the onboarding experience for the new employee.

- Logistic and tools matter

Pavlina [8] further argues logistics matter, all the way through the new hire remote onboarding experience, e.g. with IT being prepared with remote working. Rodeghero and Zimmermann [4] argues that technical issues, hardware and permission issues make remote onboarding more challenging. Resolving such logistic issues is ultimately the role of the Manager.

- Replicating existing practices with remote specific emphasis

Sapling [27] provides guidelines to replicate best practices from in-office onboarding programming and update them to meet the virtual onboarding needs. A few examples of such practices updated for remote work are provided in Figure 2-5. The author argues to call out cultural norm for remote work, such as defining core hours when all team members are available and

having video on during meetings. Sapling [27] suggest, along with Mets [25] and Pavlina [8], to make expectations clear with the new hire, since physical cues and nonverbal communication get lost in remote work. Sapling [27] recommends scheduling welcome meeting with team and with planned ice-breaker questions.

| Existing Best Practices                | vs. Updated Virtual Best Practices   |
|--|--|
| List of resources by department        | Updated to include best means of communication, such as email, Slack, or call  |
| Outline of schedule for the first week | Outline of schedule for the first week with clear expectations for lunch and rest breaks   |
| Welcome team lunch                     | Set up a Zoom welcome lunch with their team, but have icebreaker questions ready to kickstart the “get-to-know-you” process  |
| Buddy program                          | Give your new hire’s number to their buddy before day 1 so they can kick things off with a welcome call! Feels a little less formal than a Zoom meeting and is a reassuring touch. |

Figure 2-5 Replicate Existing Practices [27]

- Gamified onboarding

Heimbürger and Buchweitz [28] provide an interesting concept of Gamified onboarding. The authors hypothesized that gamifying the onboarding process can help make it more effective. To test this hypothesis, they developed two mobile onboarding apps, one with gamified version and another without the playful version. They tested both apps with 98 participants and found users perceived the gamified onboarding app as more intuitive, more fun and appealing, more supportive

in meeting future colleagues, and they would rather use the gamified version before their first day of work. The authors have the opinion that the integration of gamified features makes onboarding solutions more effective and more user-oriented, especially for employees of the generations Y and Z. Important information can be learned in a playful way and contact with advisors and future team members is facilitated. This potentially will work better in remote setting where people are not collocated.

- Vaara Blöndal's remote onboarding framework built on top of Bauer's

Vaara Blöndal [24] has built on top of Bauer's [3] onboarding framework and the identified four key themes of successful onboarding in the case company focus on process, suitable fit, connection, and clarification provided in Figure 2-6. The author argue that virtual and office-based onboarding key elements are mostly the same; however, the importance and challenges of specific parts differ. The roles of the new hire and a mentor are seen as key roles, supported by the overall team, leader, and cross-company support teams. The author argues that digitalization, clear processes, and a good fit for hire are seen as important in remote onboarding. Understanding the new hire's personality and values and ensuring these fit the team and company when designing a suitable onboarding plan for the new hire is one of the key elements in this model. As noted previously, Vaara Blöndal notes that establishing social connections is challenging in remote settings and face-to-face interaction help to somewhat to overcome this issue. Finally, the author emphasizes an effort for even more clarity of expectations in the world of remote work since the learning curve with tools and processes may be steeper now than in the traditional work environment.

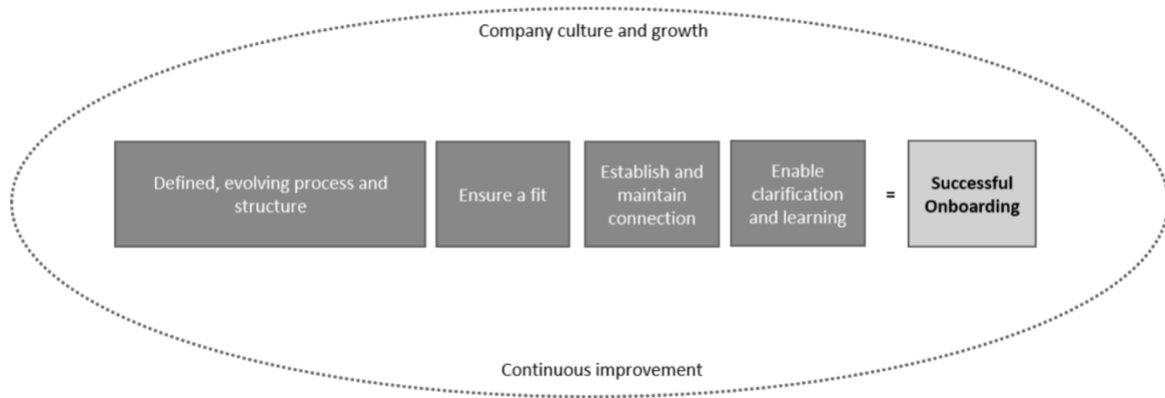


Figure 2-6 Vaara Blöndal's remote onboarding elements

In short, remote onboarding brings its own unique consideration on top of the existing onboarding consideration. From my analysis of the literature, I have derived seven main factors and/or takeaways related specifically to remote onboarding. These are:

- i. communication and collaboration is a big challenge in remote onboarding;
- ii. vital to make it easier for new team members to ask for help – Onboarding buddy can help here;
- iii. building team connections and building relationships remotely is a challenge;
- iv. finding the right information becomes more critical (documentation more important);
- v. teams with structured processes cope better;
- vi. importance of manager;
- vii. and technical issues impact.

## 2.5 MY LIVED EXPERIENCE

I have been working as a Software engineer in a large software firm based in Redmond for more than 4 years. My team owns a product with legacy code base and tech debt with experienced team

members having the bulk of tribal knowledge. In my experience, remote onboarding in my team has been more difficult than in-person onboarding. I have personally seen the challenges with remote on-boarding in my team. During the Covid-19 pandemic, multiple team members joined the team followed by a couple of these same new team members leaving within a few months. Before the pandemic, the team was very tightly knit, going for lunches, coffee/ice-cream breaks together, and it was much easier for new team members to bond with the team and be socially connected. Consequently, it was much easier to onboard and ramp up as new employees could ask for assistance in person easily with team members in the office. Now, with remote working, it has become difficult for new team members to create meaningful social connections with other team members, which I believe in turn makes it difficult to ask for help, especially for small things and in a place where there is a large amount of tribal knowledge. Due to the flexible timings utilized by team members during remote working, many conversations are happening asynchronously which causes delays in getting the right information. For the legacy system my team works on, various documentation is not present at all or if it is present, the documentation is poorly maintained and difficult to navigate for new team members. Furthermore, new team members may not even know that a documentation exists.

## 2.6 LITERATURE REVIEW IMPACTING FACTORS

Going through the general onboarding frameworks and remote onboarding literature, I have identified a number of factors which impact remote onboarding such as communication, team building, manager, etc. These have been discussed in detail in the previous sections and I present a summary of these factors in Figure 2-7. Some of these factors were considered important in the general onboarding literature, whereas others were found specifically in the remote onboarding literature. Finally, some of these factors I have found to be important from my own personal

experience. Taken together, there are a total of 14 main factors listed in Figure 2-7. I used these factors in the next stages of this project when designing interview questions and an interactive interview activity. In Appendix A, I present a summary of the literature references for the individual factors. This concludes my review of the relevant literature and other resources on remote onboarding, with Figure 2-7 listing a grand summary of the factors that were discussed.

| Literature on Onboarding models and guidelines | Literature on Remote Onboarding        | Personal Experience |   | Factors Considered for Onboarding in this study |
|--|--|---------------------|---|---|
| Company culture                                |  |                     | → | Culture   |
| Social connections                             | Communication                          | ✓                   | → | Communication                                   |
|  | Collaboration – Building Relationships | ✓                   |   | Creating relationships                          |
|  | Team connections                       | ✓                   |   | Team building                                   |
|  |  |                     |   | Social aspect                                   |
| Role expectations                              | Managers                               |                     | → | Managers  |
| Role competent                                 |  |                     | → | Training  |
|  |  |                     |   | Learning by doing                               |
|  | Finding information - Documentation    | ✓                   | → | Documentation                                   |
|  |  |                     |   | Tribal Knowledge                                |
| Coach/supporting new hire                      | Asking help – Onboarding Buddy         | ✓                   | → | Mentor/ Onboarding Buddy                        |
| Feedback                                       |  |                     | → | Feedback  |
|  | Technical Issues                       | ✓                   | → | Technical Issues                                |
| Other  |  | ✓                   | → | Challenging                                     |

Figure 2-7 Factors considered important for Onboarding in this study while designing interviews

## CHAPTER 3. INTERVIEWING

In this chapter, I will discuss the process of developing and conducting the interview study for remote onboarding. This chapter includes how I developed my interviewing skillset, selected candidates for interviewing, developed the qualitative interview plan and exercise on impacting factors in remote onboarding.

For this project, I have conducted a qualitative interview study of software engineers who have gone through a remote onboarding process to understand their experiences with remote onboarding.

Initially, a quantitative study i.e. surveying Software engineers was considered. But a quantitative survey would provide standardized answers, lacking the nuance and deep understanding of remote onboarding required in this case [29]. There were logistical issues for the survey as well, such as getting a large enough sample size of software engineers who have undergone remote onboarding to answer the survey. On the other hand, qualitative interviewing allows one to deep dive into the lived experience of the interviewees and provide more context about the individual's circumstances [29]. Therefore, I chose a qualitative interview approach in this project, to gain deeper insights into the remote onboarding experience of the interviewed software engineers.

Considering information from the literature, structured, semi-structured and unstructured interviews were considered, but I decided on using a semi-structured questioning approach. Semi structure allows having predetermined open-ended questions, which allows flexibility for the respondents to provide their experience and drive the conversation [29]. This allows openness to focus on topics based on respondents' answers compared to a structured interview [29]. With this in mind, I have used open-ended questions instead of leading questions. At the same time, such

semi-structured interviewing allows one to compare different respondents' answers to some degree against each other, in contrast to a completely unstructured interview [29].

Also, for interviews, one-on-one, group and panel interviews were considered. It was decided to use one-on-one interviews in order to get the individual respondent's experience using open ended questions without being biased by any other respondent. The intent here is to get the personal experience of the respondent to understand how onboarding has changed for them in the remote setting.

Since this project involves interviewing human subjects, I required an Institutional Review Board (IRB) approval at the Human subject division at UW. Since this study has no more than minimal risk to human subjects, I filed for and got approval for the exempt status for the IRB approval.

### 3.1 INTERVIEWING SKILLSET DEVELOPMENT

To design the interviews and gain appropriate qualitative interviewing skills, I consulted multiple articles, papers, books, and videos, in addition to conducting four practice interviews.

Weiss's book [29] is the one I used to learn multiple tips and tricks and used them for developing and conducting interviews. The following are Weiss' recommendations that I have tried to implement in conducting the interviews. The interviewer is responsible for directing topics which matter to the study. Being a good interviewer requires knowing what kind of information the study needs and being able to help the respondents to provide it. Interviewer should focus on getting respondents to provide concrete descriptions of something he or she witnessed, but should not ask the respondents to provide generalized information as this requires the respondents to partake in the task of analysis, which is the responsibility of the investigators. Interviewer should not introduce/match their own experiences in the interview. Interviewer should permit the

respondent to talk about anything respondent wants to talk about, so long as it is anywhere near the topic. The point of interview is to provide a field report on respondents external and internal experiences.

Weiss also talks about creating an interview guide and provides recommendations on how to create questions for it. Weiss suggests focusing on what information I need to get from the semi-structured interview and to make a list of everything I want to find out using the semi-structured tool. Make sure that each item on the list only consists of one idea and have a question for them. Questions asking about more than one thing can be unclear, confusing and introduce bias. The aim in qualitative research is to get the respondents perspective so the interviewee should be driving the conversation. Weiss [29] talks to establish probing questions for the interview and to use them extensively during the interview. Only open-ended questions should be used to guide the interview instead of any leading questions. I used these suggestions to create an interview guide for the study, which I discuss in more detail in Section 3.3.1.

Lastly, Weiss [29] recommends having pilot interviews to make improve the interview guide and the interviewing process. For this study I conducted 4 pilot interviews to improve the skills/techniques of asking questions and test the interview guide. Pilot interviews helped with setting the right number of questions, understanding how to probe, being a good listener, how to ask focused questions and how to get most of the respondents' experiences. Pilot interviews also helped with streamlining the interview process as I found some issues with my recording systems. It helped me with creating an initial checklist to make sure there are no technical issues. It helped me figure out how to efficiently introduce myself and ask appropriate questions. It helped me figure out how get the most experience out of the interviewees as defining in my intro “There is no right or wrong answer here. Please share as much as possible your experience.” To make sure

interviewees knew what I expected from the interview. Also, I learned how to transition between multiple topics and how to get deeper information. Also, during the pilot interviews, I got the feedback of being very formal, which I actively worked on a balance to help make interviewees feel more comfortable during rest of the interviews.

### 3.2 INTERVIEWEES PERSONA

For this study I conducted interviews for nine software engineers. Interviewees were selected who have had a remote onboarding experience. Software engineers who had changed jobs during the period of March 2020-December 2021 were selected, assuming that onboarding during this time period would be conducted remotely. A wide persona of interviewees was selected, such as male and female, junior/college hire vs senior, individual contributor, and managers, moving to a new company or internal job change.

The potential interviewees were contacted through LinkedIn, from a pool of my LinkedIn contacts. Interviewees were asked if they would be interested to share their remote onboarding experience by participating in one-on-one interviews with me. Appendix B provides an example of the message sent to potential interviewees. It was clarified that this study is being conducted as part of my MS capstone project at the University of Washington. The anonymous nature of the study was emphasized, that no individual names or company names would be included in the project report. The potential interviewees were informed that the interviews would be video recorded to allow me to revisit their responses in more depth. Two people I had reached out to declined to participate citing concerns on the interviews being video recorded.

In the end, nine people agreed to be interviewed. Table 3 contains the interviewees information, such as their gender, number of years of experience before onboarding, role joined into and the company size. In this study seven interviewees were male and two were female. Three

of the interviewees were entry level, had less than 4 years of experience, whereas six interviewees were senior engineers who had more than 5 years' experience. Five interviewees were joining into a very large organization which had more than 200,000 plus employees, two joined into a significant large organization with more than 40,000 plus employees, whereas one joined into a small organization which has 200 plus employees. All of the interviewees joined into organization either based in Washington, California or New York.

Table 3 Interviewee Information

| Interviewee | Gender | Experience<br>/years | Role joined in           | Company<br>size | Date of<br>interview | Duration<br>(mins) |
|-------------|--------|----------------------|--------------------------|-----------------|----------------------|--------------------|
| S1          | Male   | 9                    | Senior Software Engineer | 10,000+         | 03/26/2022           | 38                 |
| S2          | Male   | 14                   | Senior Software Engineer | 100,000+        | 03/27/2022           | 47                 |
| S3          | Male   | 11                   | Engineering Manager      | 100,000+        | 04/02/2022           | 55                 |
| S4          | Male   | 6                    | Senior Software Engineer | 100,000+        | 04/11/2022           | 57                 |
| S5          | Male   | 2                    | Software Engineer        | 100,000+        | 04/16/2022           | 65                 |
| S6          | Male   | 4                    | Software Engineer        | 100,000+        | 04/17/2022           | 57                 |
| S7          | Female | 7                    | Senior Software Engineer | 100+            | 06/03/2022           | 37                 |
| S8          | Male   | 11                   | Senior Software Engineer | 10,000+         | 06/04/2022           | 47                 |
| S9          | Female | 0                    | Software Engineer        | 100,000+        | 06/08/2022           | 33                 |

### 3.3 INTERVIEW PROCESS

For the interview study, an interview guide was developed, along with an exercise to identify the impact different factors have on remote onboarding.

#### 3.3.1 *Interview Guide*

Based on the recommendations outlined previously, an interview guide (see Figure 3-1) was created with semi-structured, open-ended questions. Initially, to design the interview questions, I

summarized all the important topics/ideas from the literature review and my own past experience that I wanted to discuss with an interviewee and then created a single question per idea [30]. I then changed the questions to become broader, probing questions, rather than being extremely specific so that the interviewee can drive the conversation. Questions were designed based on the onboarding topics I wanted to focus on and, at the same time, to get concrete descriptions of something the respondent experienced [29]. The questions went through multiple iterations based on feedback from mentors and pilot interviewees. Major suggestions which helped improve the questions were: to focus on only one idea in a question; focus on the most important thing of the project i.e., remote onboarding; and structure questions in such a way to get most of the respondent's experiences. The interview script which came out of this process is shown in Figure 3-1.

## Intro

Thank you so much for taking the time to talk to me.

I want to start off by mentioning that I will be recording these interviews and then transcribing for the research purpose. This recording will only be used for research purpose and then destroyed. I won't use anyone's name or company information in any publications.

### Check:

- Zoom meeting recording set
- Quick time recording set
- Make sure communication is good

So I am an MS student in Computer Science at UW, where I'm doing a research capstone project about remote onboarding.

I am very interested about remote onboarding and I'd love to hear about your experiences on it. There is no right or wrong answer here.

1. Could you tell me about your remote onboarding experience? Time before?
2. What parts worked well for you? What did not work well for you?
3. How has the pandemic and move to remote work changed onboarding?
4. What in your opinion was the most significant factor to your remote onboarding experience?
5. Which of these things was impacted in remote onboarding? How did it impact? Areas to be improved.
  - Manager
  - Documentation
  - Socializing
  - Communication
  - Team building
  - Mentor
  - Technical issues
  - Learning by doing
  - Culture
  - Feedback
  - Training
  - Review
  - Tribal knowledge

Figure 3-1 Interview Guide

### 3.3.2 *Contributing factors exercise*

Along with the probing questions, an exercise was conducted with the respondents to understand what the most important factors have been in their remote onboarding experience. The initial set of important factors were found by going through the literature review. Section 2.6 provides information about how the impacting factors were found. In the activity, I ask the respondents to stack rank factors based on their perceived importance to their onboarding experience. A Miro board shown in Figure 3-2 was used to conduct the interactive activity. The respondent takes each of the factors listed on the Miro board, drag and place them on the board in order of impact on their onboarding going from 'Least Impacting' to 'More Impacting'. Stack ranking on a Miro board was chosen since it provides a visual view to the interviewee to compare and contrast the importance of each factor. An "other" factor was added where interviewees were asked if there was any factor missing which interviewees found as impacting. Once the interviewees had ranked all of the factors, factors which were most impactful were discussed further to understand why those factors were highly impactful during their onboarding.

This activity was conducted to understand how the interviewees perceive factors being impactful during their remote onboarding process. This information was then analyzed to understand what factors I should focus on to make remote onboarding more effective.

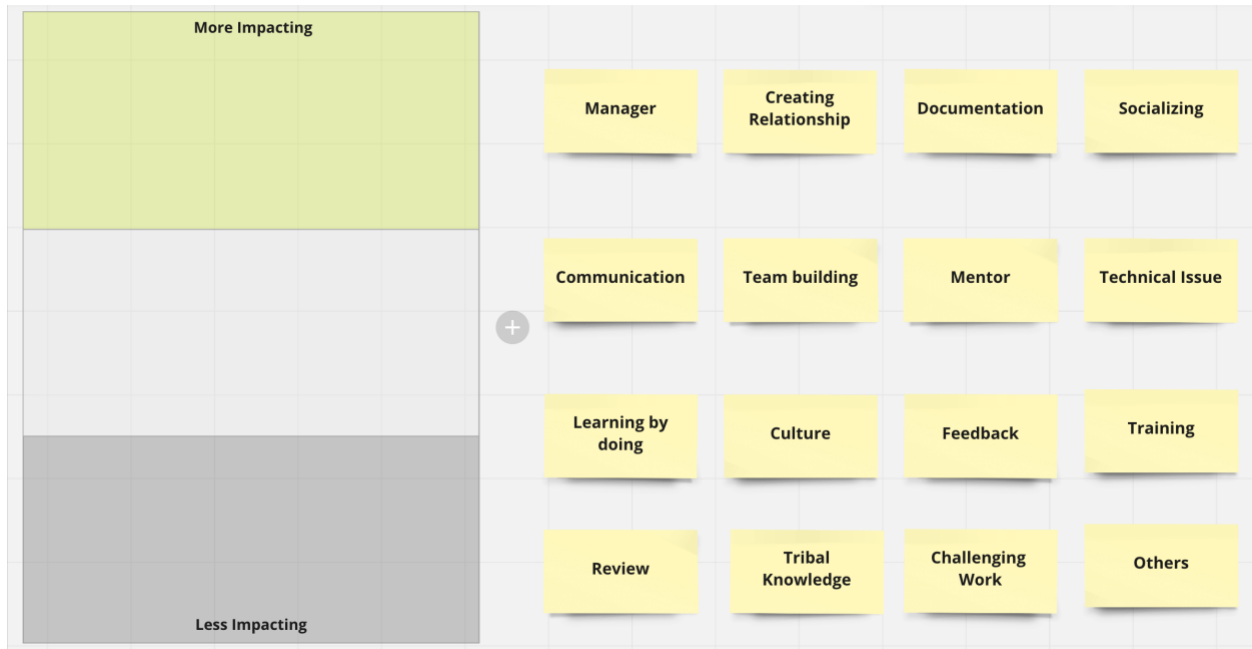


Figure 3-2 Miro board activity to rank contributing factors

### 3.3.3 *Conducting Interviews*

Interviews were conducted on Zoom with video turned on and being recorded. Interviewee were asked to provide a time where they will be in a quiet place and available for an hour. After getting a confirmation from the interviewee for the time and date, I created 60 minutes zoom meeting with interviewees. I conducted interviews from a quiet place as well and kept a printed copy of interview guidelines and a notebook with me. Miro board was already created and opened in a separate tab, ready for screen share when the time came. I had planned to spend 30 minutes for the open-ended questions, 20 minutes for the contributing factor exercise and 10 min for any spillover conversation.

Interviews were conducted in three batches, where S1, S2 and S3 interviews were conducted first followed by S4, S5 and S6 and finally S7, S8 and S9 with a gap of couple of weeks between each group to analyze them. Table 3 also provides information on the date and duration

of each interview. After every set of interviews, the interview questions were tweaked based on the finding of the previous batch of interviews.

During the interviews, based on the response of the interviewee, some times the pattern for the interviews was changed as well. An example is the case of S3: since S3 had gone through two different remote onboardings, the focus was on get information about both, which took longer, so I was unable to conduct the impacting factors ranking activity. In the case of S7, since she had a very good onboarding experience, I had multiple follow-up questions to understand what leads to a successful onboarding. This led to not having enough time for the onboarding exercise during the interview so S7 kindly agreed to do the activity at a later time.

During the interview, I was constantly notetaking specially for the significant factors and was using these notes to ask probing questions with regards to them. Example of the notes are in Figure 3-3, which shows me adding a star with regards to conversation I want to probe further and an arrow direction showing the response on the probe.

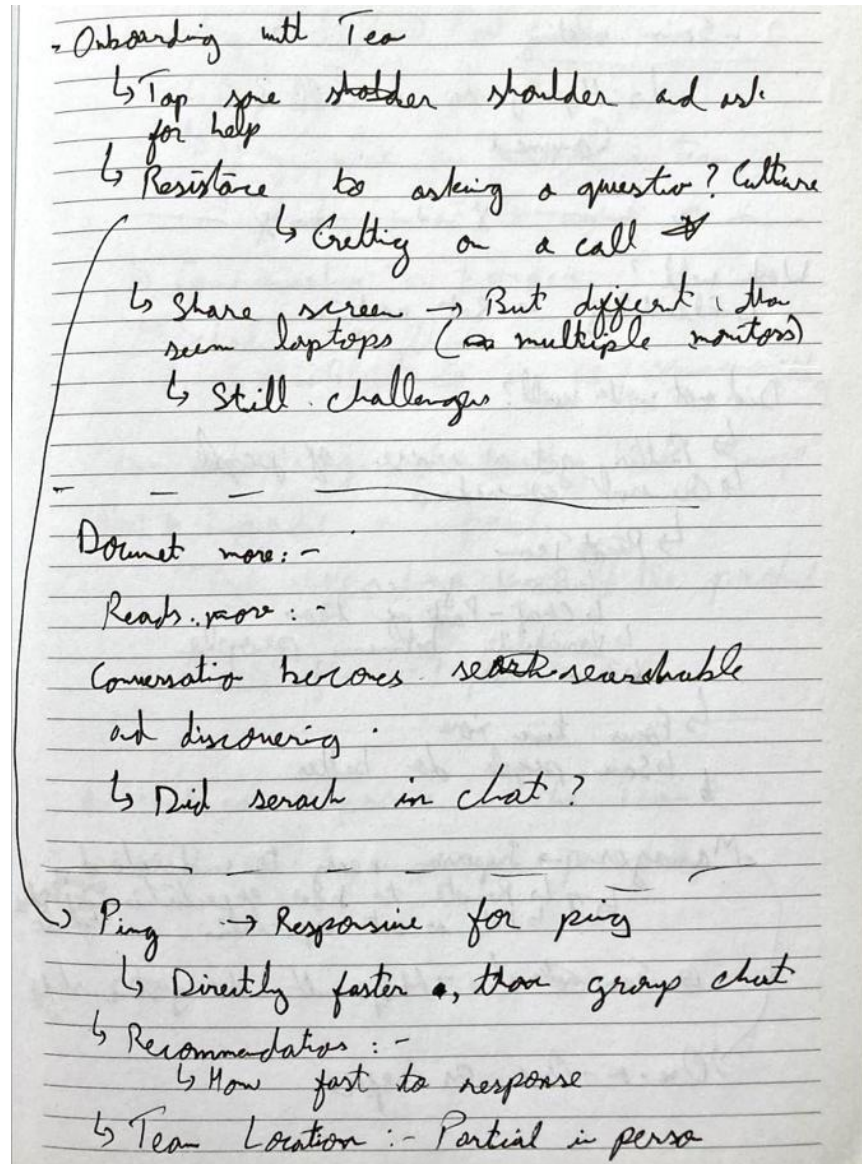


Figure 3-3 Written notes from Interview

As for the ranking onboarding factors activity, Figure 3-4 show an example of the final state of the Miro board after getting response from an interviewee. The example shown is for S6. This filled out Miro board was then later used for further analysis as will be discussed in a later chapter.

After completion of an interview, for next fifteen minutes, I immediately went back to the written points from the interview and added other important points from my memory. I tried to

ensure that all important points from the interview are noted and electronically entered. The recording and transcript from the interview were saved in a folder to go back to for analysis.



Figure 3-4 A representative final response for impacting factor activity

## CHAPTER 4. HIERARCHY OF NEEDS

### 4.1 INTERVIEW ANALYSIS

The previous chapter outlined the methodology for developing and conducting the interviews. In this section, I detail the analysis of the interviews.

I have analyzed the interviews in a seven-step process as shown in Figure 4-1. The interviews were analyzed individually first and then analyzed collectively by considering all the interviews taken together. In the individual interview analysis, the first step started while conducting the interview, where important points from the interviewee were noted down directly in a physical journal. Some of these points were used during the interview to come up with probing questions. Straight after an individual interview concluded, I went back to the written notes from the interview and added other important points from my memory to make sure all-important points from the interview are noted and electronically entered.

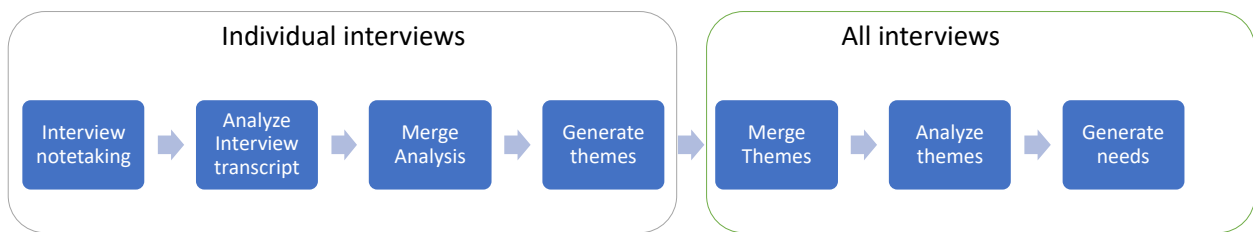


Figure 4-1 7-step interview analysis

Second step was to analyze the interview transcript which were auto generated from Zoom, the software used to conduct the interviews. I read through the interview transcripts multiple times and extracted important points from the interview. In some cases, I watched the video recordings of the interviews again, especially in the cases where interviewee was talking about important points or where the auto-generated transcript did not make sense. The third step was to merge

important points from analyzing the interview transcript with the points written during the interview note-taking. Many of the points were repeated in both analyses, but multiple times new points were found from the detailed transcript and video analysis. Fourth step was to go over these important points and generate themes. Here important points for a particular theme such as documentation or manager or onboarding buddy or communication were grouped together.

Once the analysis of all the individual interviews was finished, I combined themes from all of the nine interviews. I then looked at the combined themes to understand what the main needs of onboarding are. It was discovered that interviewees consider some requirements/needs as essential, without which onboarding suffers and consider some needs as good-to-have which lead to excellence in onboarding. From this analysis, I developed a hierarchy of needs based on the themes discovered from the interviews. This hierarchy of needs is discussed at the end of this chapter.

## 4.2 INDIVIDUAL INTERVIEWEE EXPERIENCES

This section talks about main themes and important points extracted from the nine interviews. A quick summary of the individual interviews is presented in Table 4 and then more detailed information on individual interviews presented in the text. The interviews are summarized by listing the overall onboarding experience (as perceived by the interviewee themselves), and the positive and negative factors experienced by the interviewee (that I identified during my analysis of the interview). Table 4 is arranged in order of the interviewees' improving onboarding experience going from terrible, bad, good to excellent. Overall, 5/9 interviewees had good or excellent onboarding experiences, whereas the remainder had bad or terrible experiences.

Table 4 Onboarding interview summary

| Interview | Onboarding experience | Positive factors  | Negative factors  |
|-----------|-----------------------|---|---|
| S4        | Terrible              | Friendly team<br>Flexible work culture  | No onboarding process<br>No team structure<br>No clarity of expectations  |
| S1        | Bad                   | Friendly Team<br>Helpful onboarding buddy   | Poor documentation<br>No onboarding plan                                  |
| S6        | Bad                   | Good documentation  | Manager not available<br>Inexperienced Onboarding Buddy/<br>Poor guidance |
| S9        | Bad                   | Helpful Onboarding buddy  | Poor documentation<br>No onboarding plan<br>Busy team members             |
| S2        | Good                  | Good documentation  | Difficult to ask questions remotely                                       |
| S3        | Good                  | Good onboarding plan  | Difficult to connect with people remotely                                 |
| S5        | Good                  | Cooperative onboarding buddy  | Difficult to ask questions remotely                                       |
| S8        | Good                  | Good onboarding process<br>Good onboarding plan<br>Helpful Onboarding buddy                                       |   |
| S7        | Excellent             | Helpful, available, and accessible manager<br>Good documentation<br>Helpful team<br>Communication methods defined |   |

S4 experienced a terrible onboarding experience. Their onboarding was very ad-hoc, where a well thought-out process was not established. The team and organization S4 had joined was newly formed and had no structure. S4 found it very difficult to understand what is expected from them within the team and their manager not able to clearly provide this information. S4's team and organization were so new that the team/manager had not planned or prioritized what constitutes an effective onboarding experience. It is not certain if their newly formed team knew what was even expected to onboard someone. On a positive note, S4 found team members to be very friendly

and easy to form relationships with. S4 found team to have a very flexible culture which was very helpful during peak of covid, when S4 had a newborn baby.

S1 experienced a challenging onboarding experience, specifically due to not having an onboarding document guide. S1 had to completely rely on and ask their team members for onboarding and getting information which increased the time. S1's team lacked information on what leads to an effective onboarding experience as well as lack of planning since no onboarding guide was created before S1 joined. S1 found it hard to ask questions and build relationships virtually. But S1 found team members to be friendly and willing to help and get on a call when needed. S1 found onboarding buddy to be very helpful and can share ideas and get suggestions from them.

S6 had a difficult onboarding experience as well. S6 had good documentation available for the onboarding guidelines but experienced a lack involvement from the Manager and the Onboarding buddy. Their manager was involved with product relation issues and was not able to provide time to them, whereas the assigned onboarding buddy was themselves new to the team and wasn't much help with onboarding. In this case, there was a lack of priority from the manager and, because of the inexperienced onboarding buddy, a lack of consistency in the team's onboarding process since the process become very dependent on onboarding buddy.

S9 had experienced a difficult onboarding mainly due to unavailability of easy to access and lack of good documentation. S9 needed guidance from their team members to go over the documentation. S9 found asking for help and building relationships in the team to be difficult because the team members were always. In this case again, there was lack of information on the team's side with regards to what it takes to onboard someone as well as a lack of planning since no onboarding guide or even understanding what was expected from the new hire was created

before S9 joined. In addition, there was a lack of priority as well, since team members were not able to provide time to the new hire, as S9 did not rank onboarding to be higher priority work compared to what they were doing.

S2 had a good onboarding experience. S2 had good onboarding documentation available in wiki and OneNote which helped them ramp up quickly. But found asking questions in remote environment to be challenging.

S3 had gone through two different remote onboarding experiences in the last few years and had a good experience with both. S3 found the onboarding plan created by their manager in both places to be very useful to ramp them up. Their onboarding plan contained: context with respect to business the team deals with; expectations and their timeline; and an ordered list of resources and people to talk to and when. S3 considered the main purpose of onboarding to be building trust with other team members. S3 found connecting with people to be most difficult thing of remote onboarding and appreciated how their team had been conducting weekly social hours to facilitate team-building.

S5 had a good remote onboarding experience. During their onboarding, S5 were heavily dependent on their onboarding buddy who provided 90% of the task S5 worked on and guidance on how to do the tasks well. S5 found communicating with other team members and asking questions being the most challenging part of remote onboarding.

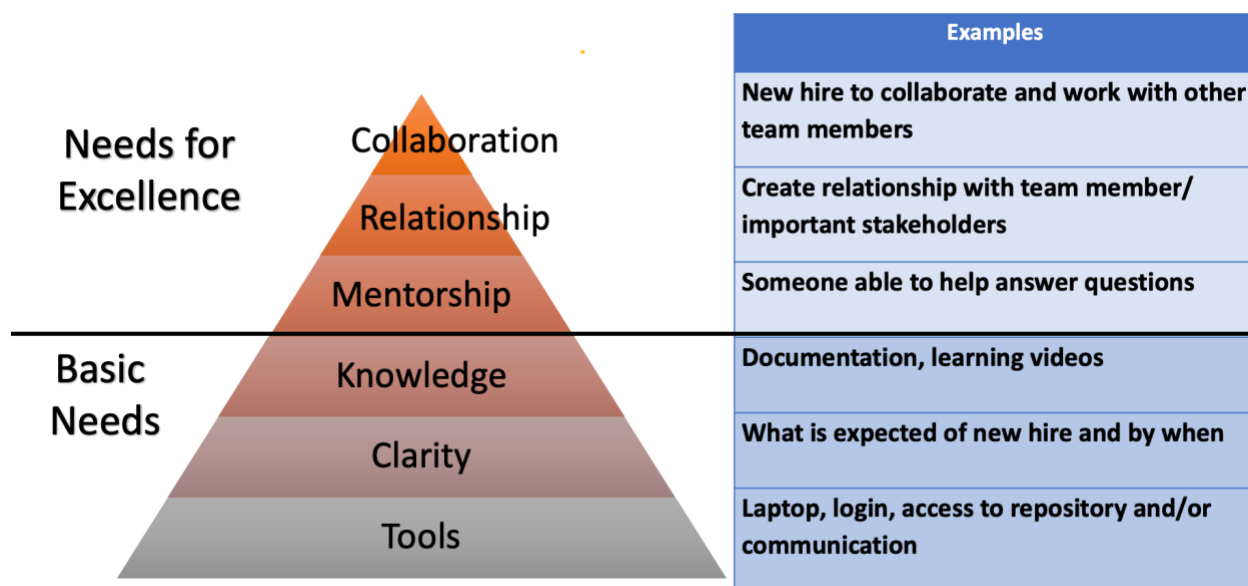
S8 also had a good onboarding experience, mainly due to effective processes set in their company. Their company has a practice of developing a standardized, templated onboarding plan, with clear expectations and what to do and when to do, resources to help and guidance on which people would help with different tasks. S8 had an onboarding buddy, who was responsible for making sure onboarding works well. The company had made onboarding new hire as part of

the onboarding buddy's review, so the onboarding buddy take this responsibility very seriously. In the onboarding process, the onboarding buddy is responsible for making the onboarding plan with the manager. S8 found their team members to be very helpful and easy to talk to.

S7 had an excellent remote onboarding experience mainly due to their manager. Their manager was very helpful, available, and accessible to provide direction, clarify expectations and link to the right people and resources. In addition, the team's documentation had all the right things such as info about the project, resources, tools, and services being used. Team was very helpful and collaborative and open to help. Methods for communication were explicitly defined and made available, where different channels were established for multiple different objectives.

### 4.3 HIERARCHY OF NEEDS FOR EFFECTIVE ONBOARDING

By analyzing at the factors identified in the previous section leading to negative vs positive onboarding experiences, I have come up with six needs for the new employee during the onboarding process. These needs are defined in a hierarchy pyramid as shown in Figure 4-2. As seen in Figure 4-2, the bottom needs are essential, referred to as Basic Needs, and top ones are good-to-have helping the new hire's onboarding get to a state of excellence, hence referred to as Needs for Excellence. If any of the basic needs are not there, it creates a blocker during the onboarding and leads to a bad onboarding experience. A few specific examples of how these needs can be met are also provided in Figure 4-2. Briefly, the Basic Needs are defined as: having the right tools; having clarity of purpose; followed by knowledge about the work to do. The Needs for Excellence are: mentorship and guidance in doing work; ability to create relationships with team members; and finally having an environment of collaboration.



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Figure 4-2 Onboarding hierarchy of needs

First and the most basic need defined is having the right tools available to do the job. Without having tools such as a company laptop, login, access to repository and/or communication tool such as Microsoft Teams, Slack or Zoom for the company domain, the new employee will not be able to make much progress. Generally, this is provided during companywide orientation.

Second need is the new employee should have a clarity of what is expected of them and by when. New employee should have a clarity about what the team does. This is essential for new employees to know what they need to do in the job and have a timeline of when they need deliver it. Generally, the manager is responsible for providing this clarity, but during the interviews it was found that in some cases managers had delegated this responsibility to the onboarding buddy as well. The interviewee S4 had a terrible onboarding experience mainly due to lack of clarity. For S4 the issue was that the team lacked a good structure since it had recently formed. The team itself did not have clarity on its charter and therefore could not provide clarity to S4 about what was expected from them and timeline of when it was due. Clarity was one of the six themes found during the analysis of onboarding frameworks discussed in the related work Section 2.3.2.

Third and last basic need is the ability to get knowledge to do the work the new employees need to do. Knowledge here can be acquired directly from a person or by going through the written documented knowledge such as team documentation, learning videos, etc. Without this it becomes very difficult to do the actual job. S1, S4 and S9 struggled with acquiring appropriate knowledge and this was a major reason of their poor onboarding experience. For S1 and S4, since their teams were new and did not have much structure, the teams did not have much documentation either. For S9, the team she joined had documentation but it was incomplete, out-of-date and difficult to access. She had to go through a lot of unrelated documentation. Most of the time, in order to get even basic tasks done, S9 had to get knowledge directly from teammates who were generally very

busy with their own work. Knowledge, especially documentation became much more important in the remote setting and was brought up during the analysis on remote onboarding literature in Section 2.4.

The next three needs will help in creating excellence in the onboarding experience. Fourth need is the new employee should have a person who provides mentorship/guidance during the onboarding process. This person should be able to help answer questions or direct towards the right person who can then help. The interviewees described this role being met by a range of personas including a specific onboarding buddy, a mentor, some other senior team member or the manager. All the interviews talked about this persona being extremely important during their onboarding process. For some interviewees (S5, S7 and S8), this persona had helped with guiding for up to 90% of the tasks the new hire performed. In other cases, the onboarding buddy helped with going through the onboarding plan, getting answers to various questions and directing to the right resource/person who can help with work. S6 had a bad onboarding experience since their onboarding buddy was new to the team and was unable to guide/mentor them. Mentorship/Coaching was one of the six themes found during the analysis of onboarding frameworks discussed in the related work Section 2.3.2.

The fifth need is the ability to create relationships with team members, important stakeholders and other colleagues in the new company. Humans are generally social animals and need to be able to build relationship with others, especially with people at work since they are spending a significant portion of the day with them. Having a good relationship helps make it easier to work together and get help when required. During the interviews, this need was the one which was talked about being most impacted by remote onboarding. Seven of the nine interviewees (S1,S3, S5, S6, S7, S8 and S9) mentioned that creating relationships remotely was difficult.

Several interviewees (S6, S8 and S9) lamented that during remote work, several social interactions which happen in in-person office such as going for lunch together or water cooler chats are not happening, thus making it difficult to create relationships. In addition, S9 identified that interactions with people beyond one's immediate team do not occur as frequently because you do not run into a group of people where you can organically get introduced. Instead, S6 noted that with remote work most of the conversations occur in online meetings and mostly revolve around work, which makes it difficult to relate to team-members beyond work and build relationships with them. On a related note, S6 found it difficult to chase down their manager in a remote setting whereas in-person S6 would have been able to know when their manager is available just by checking the manager's desk or office. Creating relationships became more important in the remote onboarding literature and was discussed in Sections 2.3.4 and 2.4.

The sixth and final need is the ability to collaborate in the team. Enabling the new hire to collaborate and work with other team members helps ramp them up faster. It helps the new hire understand the processes and the culture of the team and company. During the interviews, this was achieved in different ways, for example for S5 the onboarding buddy was collaboratively working with them on their assigned tasks. Whereas for S7 the whole team especially the manager was working collaboratively such as S7 was not only reviewing Pull requests but was pushing small fixes directly to improve the team's work performance. This made S7 immediately become a functioning member of the team and helped boost their morale. Collaboration has become more important in the remote onboarding literature and was discussed in Sections 2.3.4 and 2.4.

## CHAPTER 5. HIGHLY IMPACTING FACTORS FOR REMOTE ONBOARDING

### 5.1 ONBOARDING CONTRIBUTING FACTORS ACTIVITY ANALYSIS

During the interviews, I used an interactive activity to understand directly from the interviewees what factors the interviewees consider to be most impacting during their remote onboarding experience. Interviewees were asked to stack rank factors which impacted their remote onboarding. This exercise was conducted to understand how the interviewees perceive factors being impactful during their onboarding process. More details on the method of conducting the activity can be found in Section 3.3.2.



Figure 5-1 Onboarding contributing factor exercise analysis

Figure 5-1 shows the steps I used to analyze the responses from the onboarding contributing factor exercise. During the interview, interviewees were shown a Miro board, and were asked to rank factors in three levels – most impacting, impacting and least impacting. To analyze results, I assigned data from the activity scores from 9 to 1, with 9 being the most impacting and 1 being the least impacting. Figure 5-2 shows an example of how scores were assigned for one of the interviewees. These scores were assigned for all the individual interviews and then added together for all of the interviews to understand contributing factor trends. Figure 5-3 was created by adding the scores from all the interviewees for a given onboarding factor.

| Score |                             |                       |                   |
|-------|-----------------------------|-----------------------|-------------------|
| 9     | Mentor                      | More Impacting        |                   |
| 8     | Manager                     | Creating Relationship | Communication     |
| 7     | Feedback                    |                       |                   |
| 6     | Documentation               | Socializing           | Challenging Work  |
| 5     | Culture                     | Training              | Tribal Knowledge  |
| 4     | Access to Senior leadership |                       |                   |
| 3     | Team building               | Technical Issue       | Learning by doing |
| 2     |                             |                       |                   |
| 1     |                             | Less Impacting        |                   |

Figure 5-2 Contributing factors activity scoring method

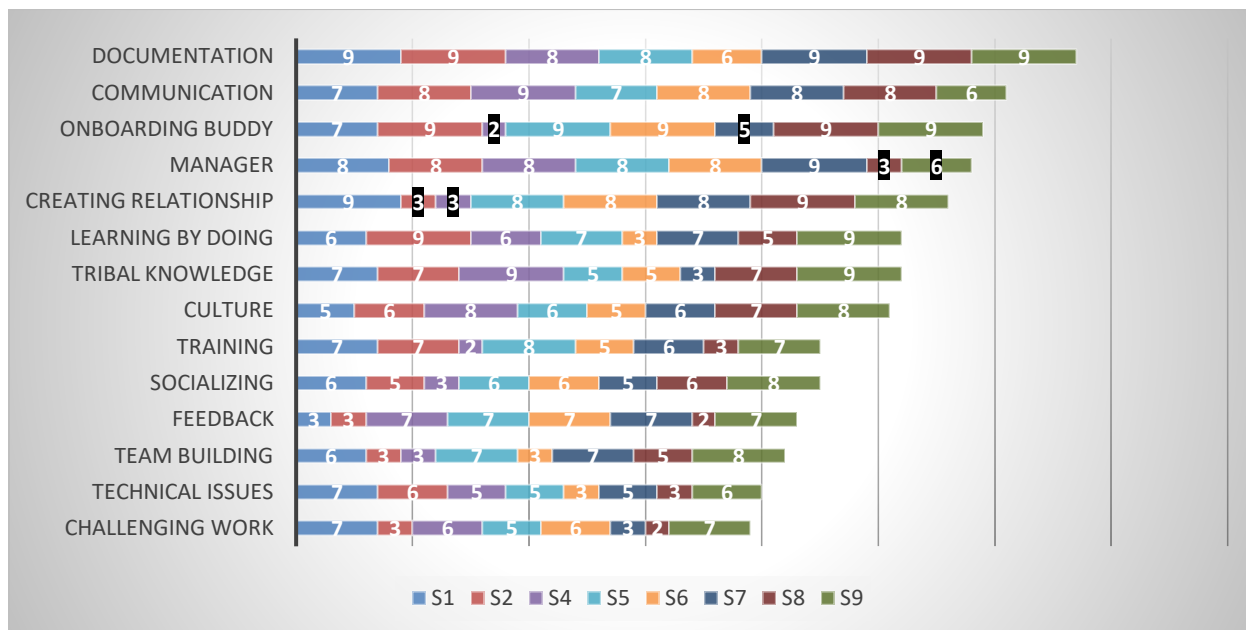


Figure 5-3 Onboarding impacting activity

The data and the answers of the individual interviews were further analyzed and 6 abnormalities discovered in the data, and they were removed to create the final results. Anomalies are highlighted in black on Figure 5-3, where the individual interviewees had a peculiar reason which impacted their ranking for the factor.

Six total number of anomalies were discovered as highlighted in Figure 5-3. First was for S4, where it was discovered that the guidance which onboarding buddy general provides, was provided by another team member, therefore the persona of the onboarding buddy was not correctly defined for S4. Second anomaly was for S7, where onboarding buddy persona was delivered by the manager directly, therefore S7's score for onboarding buddy was an anomaly as well. Next, for S8, the manager had delegated their responsibility to the onboarding buddy, so the manager's persona was unusual for S8. Another anomaly in the 'manager' score was the case of S9, where manager had left just before S9's starting and there wasn't active manager present during their onboarding process. Next, S2 held the rather uncommon opinion that building relationships

is not part of onboarding, therefore S2 gave a low score to creating relationships. Lastly, for S4, the team was changing very often within every few months such that in S4's case creating relationships was not too important during the onboarding process.

These six anomalous scores were replaced by the average score of the other interviewees to give the final ranking of the onboarding contributing factors. The final results are shown in Figure 5-4 and discussed in the next section.

## 5.2 RESULTS OF ONBOARDING CONTRIBUTING FACTORS ACTIVITY

The onboarding contributing factors activity results are shown in Figure 5-4. A cluster of 5 factors are found to have the highest total score. These top rated 5 factors are, in order of decreasing total score:

1. onboarding buddy – a person responsible for need of guidance/mentorship and helps directing the new hire on how to be successful
2. documentation – explicit material used to meet the need of knowledge, where written knowledge is easier to transmit to the new hire
3. creating relationships - activity help with the need of relationships for the new hire
4. manager – a person responsible for providing the need clear expectations of the work new hire needs to do and timeline for it
5. communication - required for fulfilling all the needs such as for getting clarity, knowledge, mentorship, creating relationship and collaboration

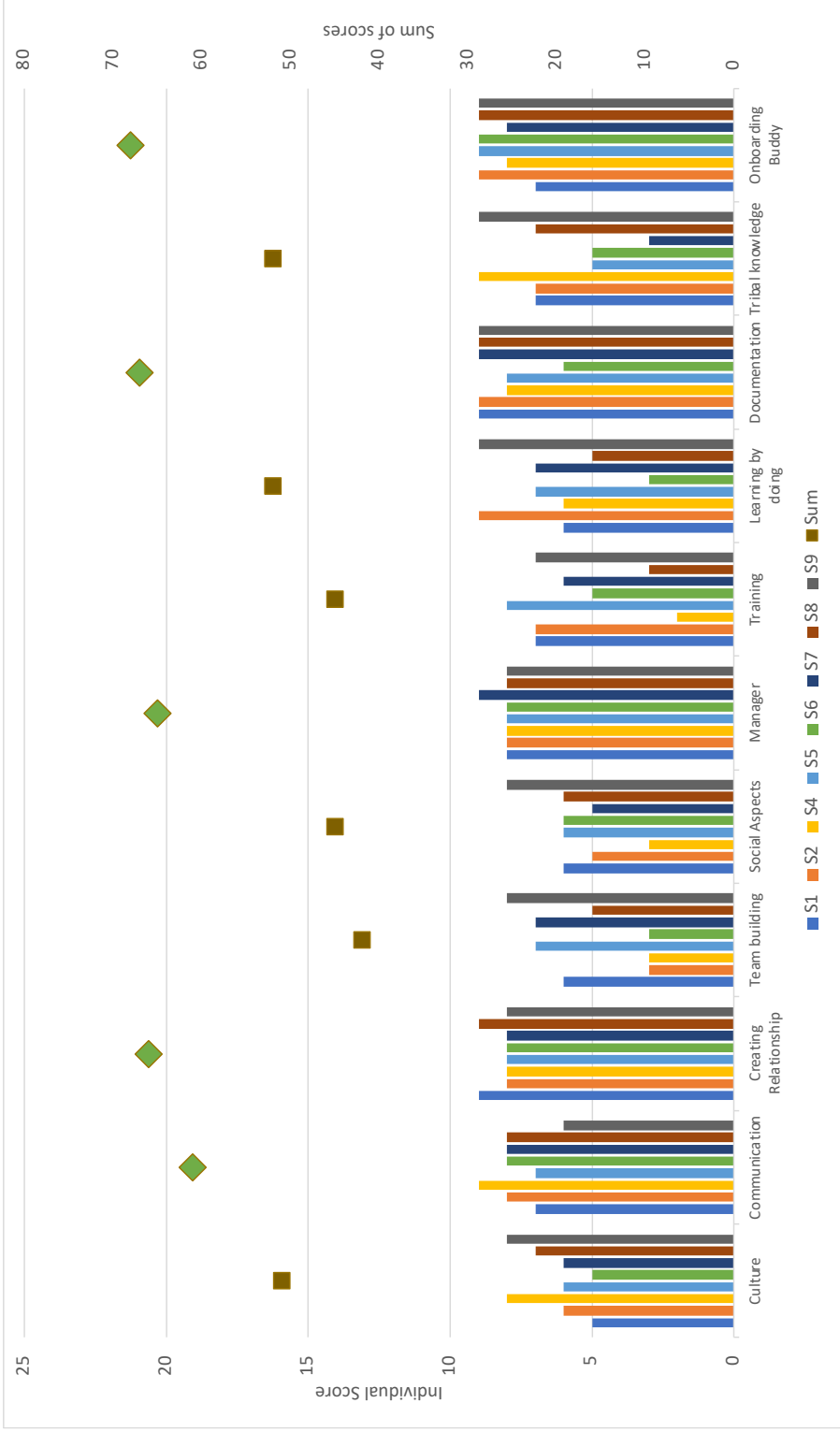


Figure 5-4 Onboarding impacting activity removing edges. Green diamonds indicate top rated factors.

Figure 5-5 shows how these five highest impacting factors can be linked to the Hierarchy of Onboarding Needs which was discussed earlier. Onboarding buddy is responsible for need of guidance/mentorship and helps directing the new hire on how to be successful. Documentation is what is used to meet the need of knowledge, where written knowledge is easier to transmit to the new hire. Creating relationship activity help with the need of relationships for the new hire. Manager is responsible for providing the need clear expectations of the work new hire needs to do and timeline for it. Communication is required for fulfilling all of the needs such as for getting clarity, knowledge, mentorship, creating relationship and collaboration.

The only basic need which is not in the top impacting factors is the need for having the right tools. During the interviews, technical issues, and the need to have right tools were discussed. With time, all the interviewees were able to get the right tools after which basic tools were no longer a concern. For example, S4 was not provided work device for weeks, and had to use a virtual machine instead, but once a device was available it wasn't a concern for S4 and was not important for them at all.

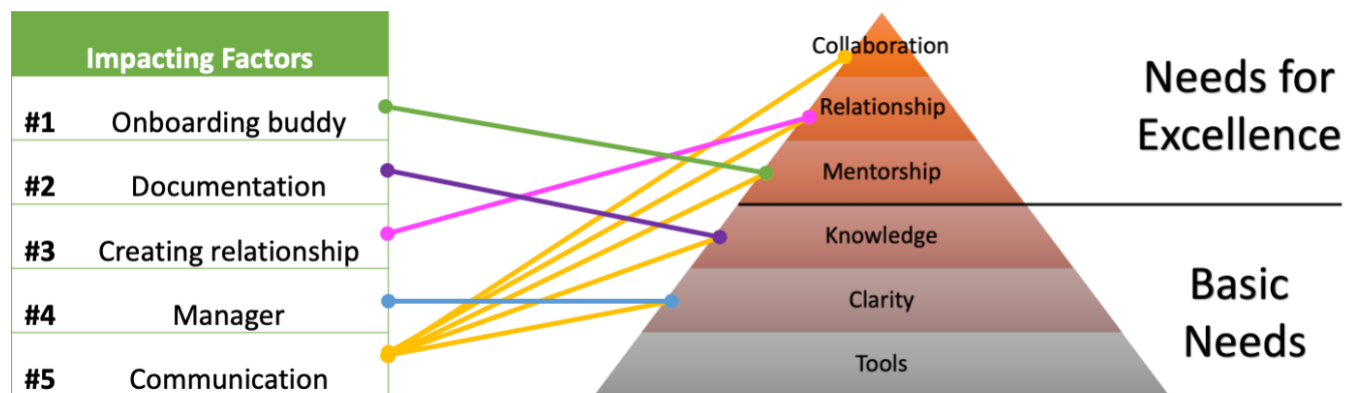


Figure 5-5 Impacting Factors- Needs relationship

In the following sections, the 5 factors identified from the interviews to be highly impacting factors for onboarding are analyzed in more detail in light of insights gained from the existing literature

and the Hierarchy of Needs. The factors are discussed in order of decreasing total score. As I analyzed each of the highly impacting factors in more detail, I began to come up with recommendations to make onboarding effective. A summary of the recommendations is provided in Table 5, which also summarizes the main findings of this chapter. How these recommendations came up will be clear in the following sections as I discuss the insights gained from the interviews and literature on each of the impacting factors (onboarding buddy, documentation, relationships, manager, communication).

Table 5 Recommendations for themes impacting onboarding

| Themes                        | Recommendations  |
|-------------------------------|--|
| <b>Onboarding Buddy</b>       | B1. Have the right onboarding buddy<br>B2. Have goals set for them<br>B3. Ask for a plan<br>B4. Onboarding buddy should get incentivized<br>B5. Approachable, easy to talk to and have open and honest conversations for guiding new hire  |
| <b>Documentation</b>          | D1. Maintain up to date, organized, easy to access and easy to understand documentation<br>D2. Easy to use tools for documentation<br>D3. Automate processes to reduce the need of maintaining documentation<br>D4. Structured onboarding Plan<br>D4.1. Templated for a team – easy to reuse<br>D4.2. Ordered list of helpful resources<br>D4.3. Should have clear expectation with timeline<br>D4.4. List of people to talk to and how to get unblocked |
| <b>Building Relationships</b> | R1. Encourage a friendly culture in the team<br>R2. Plan meetings with agenda<br>R3. Team social hour/connections<br>R4. Companywide connection building   |
| <b>Manager</b>                | M1. Should be helpful, involved, and accessible<br>M2. Provide clarity of work, what is expected and priorities<br>M3. Should provide the resources and links to the right people for getting work done<br>M4. Should/ or delegate onboarding buddy to create onboarding plan  |
| <b>Communication</b>          | C1. Enable a culture to promote team members to communicate<br>C2. Focus on asynchronous conversations<br>C3. Encourage a culture of searchable teams group chats for asking questions<br>C4. Focus on understanding the outcome expected<br>C5. Asking questions/Getting unblocked<br>C5.1. Defined process for getting help<br>C5.2. Define who can help<br>C5.3. Encourage team to help   |

### 5.3 ONBOARDING BUDDY

In my analysis of literature and interviews, onboarding buddy is considered critical in having a successful onboarding.

Rodeghero and Zimmermann [4] and Hemphill and Begel [5] both argue that in remote onboarding it is vital to make it easier for new team members to ask for help. They both argue one way to make it easier to get help is to have a designated onboarding buddy, who can guide new team members in how to get information they need, connect with people and get questions answered. Rodeghero and Zimmermann [4] recommend having a technical mentor along with an onboarding buddy, who can help with answering low-level details of work. Mets [25] and Vaara Blöndal [24] consider the roles of the new hire and a mentor/onboarding buddy are seen as key roles, supported by the overall team, leader, and cross-company support teams. Microsoft [31] in their research on onboarding found that onboarding buddies help new employees to be more productive and help with expanding new hires' network.

In the interviews too, onboarding buddies' importance is stressed upon. Onboarding buddies help guide new employee to do work. For S5, they depended on onboarding buddy for providing guidance, structure and provided the task to work on and how to do it as well. For S5 95% of their initial work depended on or was linked with their onboarding buddy. S6 considered onboarding buddy to be very important as well and considered the role of the onboarding buddy to guide the new employee. S7 found their onboarding buddy to be helpful in getting them up to speed with work processes and provide guidance on how to deliver value within a few months. In S8's case, onboarding buddy developed their onboarding plan and goals. Onboarding buddy had set goals and their priority, such that the tasks were initially well-structured with slowly increasing vagueness. Onboarding buddy helped multiple interviewees with easing into the company process and culture. S3 talked about how their onboarding buddy made them comfortable in the new company and guided them with respect to the culture with what is acceptable and what is not. Working in remote setting has made communicating and building relationship more challenging,

which makes onboarding buddy even more essential as onboarding buddy is now the main and, in some cases, only point of contact with the team. S1 mentioned that they found it easier to create a relationship with their onboarding buddy, their onboarding buddy was available to guide and help them. Similarly, S3 talked about how they had open honest conversations with their onboarding buddy on how S3 was settling in.

Having the right onboarding buddy is very important as well. S6 recommended that onboarding buddy should be an experienced team member, with appropriate knowledge of company and team systems, and a willingness to guide. S6 argued that with remote onboarding impact of onboarding buddy has amplified as it is very difficult to get help from other team members due to not being collocated. S6 had a difficult onboarding because they were assigned an onboarding buddy who had joined 6 months back, and who themselves did not fully understand what was happening. S6 onboarding buddy directed them to others for guidance which created a large loop. Another thing to consider is to have time allocated in onboarding buddies resource allocation/priority for helping with onboarding. S6 argued that onboarding buddy should schedule some time in sprint specifically to onboarding. S9 had an assigned mentor whom S9 was meeting every day for 30 minutes which was very helpful. In S8's team, mentors were incentivized, by making onboarding buddy part of their annual review process, to help new team member onboard and made responsible of the help.

Based on the interviews and literature review, I am making five recommendations with regards to how onboarding buddy can make the onboarding effective. (These recommendations are also listed out in Table 5.)

**Have the right onboarding buddy (B1).** Always have an assigned onboarding buddy who can guide the new employee. Generally, seniors in the team tend to have more knowledge and connections to guide a new employee.

**Have goals set for them (B2).** Set the goal of onboarding buddy to focus on getting new team member familiar with the processes and team culture to enable them to deliver value.

**Ask for a plan (B3).** Onboarding should be treated as a project where Onboarding buddy is asked to create a plan and have success criteria defined. This plan should include the goals and timeline associated with onboarding where initially tasks are directed with gradually increasing scope and depth of tasks. Onboarding buddy should be allocated appropriate time for this onboarding project.

**Onboarding buddy should get incentivized (B4).** Onboarding someone should be considered an important part of the Onboarding buddy's job. Onboarding buddy should be incentivized to do a good job and there should be some checks on their performance, such as it becoming part of their annual review process.

**Approachable, easy to talk to and have open and honest conversations for guiding new hire (B5).** The onboarding buddy themselves should be approachable, easy to talk to and have open and honest conversations. Onboarding buddy should provide guidance and clarity to the new employee and should working on an getting the questions answered on the new hire, either themselves if onboarding buddy can or direct them to the right person.

## 5.4 DOCUMENTATION

In the sample of interviews conducted in this project, 3/9 interviewees identified documentation to be the most significant factor affecting their onboarding experience. For example, the interviewee S4 had a terrible onboarding experience largely due to unavailability of documentation

combined with a poor team structure. Meanwhile, the remaining interviewees rated Documentation to be highly impacting such that overall 'Documentation' is identified to be the second most impacting factor for onboarding in this study.

In the literature too, documentation is identified to play a key role in leading to effective remote onboarding. Hemphill [5] and Moe [17] both argue that having better documentation helps onboard new employees better and faster. It is not enough that documentation exists but having the documentation accessible and easy to find is important. Rodeghero [4] argues that new employees find it difficult to find needed resources. She argues that new employees find excessive information spread out in multiple locations which makes searching for internal documentation difficult. Together with outdated documentation, this makes onboarding challenging. Heddleston [10] argues that the last person looking at the document should be the one updating it to keep it up-to-date and in sync with the latest resources of the team.

These issues were noted in the interviews, the interviewee S1, S2 and S9, talked about difficulty in accessing the right information due to either no links being provided for the important documentation or links provided to outdated documentation. The interviewees had assumed the documentation to contain up-to-date information only to realize this was not the case when they tried to use the documentation in their work or when they separately spoke to team members. This led to an inefficient onboarding experience in addition to feelings of frustration. S8 encountered a similar issue where documentation was accessible but outdated. Interviewees had to ask team members for assistance as the information had become tribal knowledge. Interviewees S1, S2 and S8 further elaborated that they updated the onboarding documentation with the correct information and links to make the process easier for the next new employee who will go through the onboarding. Documentation provided to S9 was not easy to follow and required guidance of a team

member to go through them. Interviewees found documentation was not organized, and most of it was not related to the team since it was shared between multiple teams.

One strategy would be to automate manual steps in the system, in to reduce the need of any documentation for them. Generally, however, it is difficult to maintain documentation and there is a cost associated with maintaining it. Heddleston [10] argues for the need to automate systems and processes as much as possible to reduce the need to maintain documentation. Interviewee S3 reflected on the need to automate processes and systems. He explained that his team had documentation for how to set up development boxes for running services locally for testing. This documentation gets out of date any time someone updates the service. He proposed to automate the process of setting up development box for running the service by moving to a container so there will be no need of maintaining documentation for it.

Keeping the above insights in mid, a few recommendations related to documentation can be made to improve a new employee's onboarding experience:

- **To maintain up to date, organized, easy to access and easy to understand documentation (D1).** To maintain a culture of having up-to-date, organized, easy to access and easy to understand documentation, which will allow new employees to able to quickly access and act on required documentation. S6 talked about the team having an up-to-date onboarding documentation using OneNote and wikis which was easy to navigate and helped them onboarding effectively, with the new hire being responsible to update the onboarding documentation.
  - Having an ordered list (links) to all the important documents required for onboarding document to make it easier to access. Interviewee S6 and S8 had this

ordered list which was very helpful, whereas Interviewee S1 and S2, had this missing and created this so it is easier for next new team member.

- The last person being onboarded should be responsible for keeping the onboarding documentation UpToDate. (Similar to the contributions that S1 and S2 made for their teams).
- Regular revisiting and updating the important documentations potentially once in 6 months was suggested by S6
- **Easy to use tools for documentation (D2).** The tools used for documentation for the team should be easy to use and have the ability to provide a single source of truth.
  - Source controlled wikis – Markdown difficult to use
  - OneNote/Or other places to store text files
  - Read me file present for each Project which explained how to onboard to and build a project
- **Automate processes to reduce the need of maintaining documentation (D3).** The team should work towards automating as many processes and systems to reduce the need of maintaining documentation and tribal knowledge.

#### 5.4.1

#### *Structured Onboarding Plan*

Within the theme of effective documentation, having a documented onboarding plan makes the onboarding process very effective. Bauer [3] argues that a written onboarding plan, a formal document, or roadmap, that outlines the specific timeline, goals, responsibilities and support available to new hires will help them succeed because it spells out what new hires should do and what assistance they can expect. During the interviews S1, S3 and S5 mentioned that their companies have formal companywide onboarding workshop though which everyone goes through

for the first month to learn technical aspect of work which is helpful in building technical expertise required for the job and to provide a standardized start to onboarding for all new hires. S1 found the onboarding plan missing during their onboarding and created an onboarding document themselves which S1 thought will be helpful for future new team members based on their experience. S1 included a link to all the important documents someone needs to go through in the onboarding plan as well as information about the team and what it owns along with the business reason for owning it. S2 had a good onboarding document which was helpful in onboarding. S2 talked that the onboarding document can further be improved by adding why is there a need of these document. S2 talked that understanding the importance of each document will enhance the motivation of new hire and will cause them to be more involved during the onboarding process. S3 further elaborated on a documented onboarded plan he went through, which provides the expectation, whom and how to talk to and the importance and significance of the team and what team does. S3 found this plan to be very helpful in onboarding especially since their manager had to go on parental leave for first couple of months when S3 joined. S3 found it very helpful to have a single document which contains links to ordered set of important documents to go through, information about the team's projects, user research which helped with getting a better understanding of the business and the space it is in. S3 furthermore elaborated that this documentation contained a list of people to talk to and when. It contains list of team members, peers from partner teams, people from management chain. It provides a timeline or when to meet, which helps with meeting people gradually and incrementally building relationships as there is no overload of relationship building. It set expectation of what to do before and after the meeting, e.g. to get context about the product and the big picture for how all of the teams interact when talking with the scenario management. Documents contains expectations after 2 weeks, 3 months and 6

months. S3 found this to be very helpful as it provides clarity of what is expected and when especially in a remote world. S3 had found this onboarding very useful, so much so that S3 themselves have started following the same guideline when S3 are onboarding someone to their team as a hiring manager.

On the other hand, S4 and S9 had a very poor onboarding experience and one of the factors was not having an onboarding plan. S6 had found their onboarding plan to be through where S6 had the tools and documentation and links to it being provided. But S6 had proposed that it could have been improved further by having a checklist of items to do. S6 had been provided a list of people to talk to, but the timeline for meeting was within few weeks instead of months, so new hires can have more informative and helpful meetings. S7 manager had send out a first email which contains all the information about onboarding document such as link to the projects, services and tools used and their point of contact, contact information about team members and whom to contact for a given issue S7 found to be very useful informative. S8 was provided 6 months onboarding program, which include goals, essentially giving all the power in the hands of the new employee, so that S8 can unblock themselves, and if they're not able to block them there's a team to help as well. It includes details of things happening each week, resources to help, group and people to help with, technical group chat and social group chats.

The recommendation is to have a documented structured onboarding plan setup.

**Templatized for a team – easy to reuse (D4.1).** The company should define a generic/template structure for the onboarding plan. Team should build on top of the generic structure to build a more team specific onboarding plan. Manager should take an ownership of the plan and include what and why teams do and future vision and direction. Onboarding buddy with

the input of New Employee should help with extending the onboarding plan to be customized for the new employee.

**Ordered list of helpful resources (D4.2).** Onboarding plan should include ordered list of helpful resources such as company information, direction and vision and important links for accessing companywide resources. It should include information about the team, what it is responsible for, its charter and vision and 6 months and 2 year plan and direction. It should include the product and what business solution it is providing to the customers and information and design for the system it owns, manages, and extend. Next it should include stakeholders the new employee will be working with.

**Should have clear expectation with timeline (D4.3).** Onboarding plan should have clearly defined expectation with timelines. There should be the new employee specific expectation which includes 2 weeks, 1 month, 3 month and 6 month expectations. It should include information about specific service new employee should be working for and new task to work on and what are expected completion dates

**List of people to talk to and how to get unblocked (D4.4).** Onboarding plan should include list of stakeholders the new employee will be working with. It should include information about what stakeholders own and how to have meaningful conversations. New employee should understand what to expect from these different meetings and how to prepare. Also communication channels should be established so new employees get all of the information.

## 5.5 BUILDING RELATIONSHIPS

Building relationship and social connection are the most impacted with the remote onboarding, based on the literature as well as from the interviews' analysis.

In literature, Rodeghero and Zimmermann [4] and Hemphill and Begel [5] both argue that in remote onboarding building team connections is a big challenge due to isolation between teammates due to the nature of remote work, scheduling difficulties, the lack of running into peers in the hallway. Rodeghero and Zimmermann [4] provide multiple recommendations on what will help with building relationships for new team members. They recommend having regular inclusive social activities for team bonding. They encourage teams to turn on their camera during the meetings, which would help new hires better understand the dynamics of the team and help them bond and form connections with their peers. They proposed to have regular and consistent one-on-one with manager help new hires feel more comfortable asking for help and feel more part of the team. Hemphill and Begel [5] contend that social interactions new hire has with the teams, especially informal and observable, are paramount to successful virtual teaming and remote onboarding. The authors encourage one-on-one, non-work-related interactions between remote newcomers and their teammates to increase a newcomer's social integration. Pavlina [8] further argues that new hires want to connect with others, both on the individual and community levels. Pavlina [8] argues that proactive and intentional effort needs to be made by the team to build strong connection and to introduce new hire to new friends in the company.

During the interviews too, the struggle with building relationships in remote work was talked about. The interviewees mentioned that they acutely felt remote interactions to be lacking non-verbal cues and vibes from body language which are natural in physical interactions. S1 found it difficult to completely understand what others are thinking without being able to see someone's body language. S5 talked about difficulty to get a sense or 'vibe' of people remotely. S6 noted that generally they had less outside of work talk in remote setting than they used to have in in person work. S8 considers that creating relationships requires 'personal touch' and is not happening

outside the new hire's direct team. Connecting with others have become the challenge with remote onboarding. S3 considered this challenge to be the one they struggled with most during their remote onboarding. Some ways S3's team tried overcoming it was to include S3 in a weekly social hour, where the whole team came together, sometimes playing games or having an Ask me Anything session, allowing team members to get to know one another. For S6 too, establishing relationships was a challenge. Despite spending a lot of time with colleagues, the focus was only on work items with conversations in most meetings only being on the set agenda. S7 found it difficult to have social connections in remote setting. For S5 they lacked general comradery in the team due to difficulty of connecting with others. S8 and S9 both missed social connection which were easy to make when they were physically present especially going on lunches and other events with the team. Being physically present and having physical events helped meeting people and connecting with them. But now being remote, it has become difficult to meet new people, particularly who are not part of the direct team. S5 also talked about difficulty in meeting new people, and S7 struggled with building relationships out of team especially non-work relationships. In case of S7, their manager had pre-empted the lack of connection issue and provided info about non-work-related groups at company, but S7 initially did not avail them due to focusing on work related tasks. After a few months, S7 connected with various social groups and found them to be very helpful in connecting with others in the company. For S8 too, the biggest issue was socialization and building relationships outside of the direct team. S8's concern was that relationship are being built in a Silo (direct team only) and not much relationship-building and networking was happening outside the team. Couple of interviewees found their team culture to be very friendly and it helped them with creating relationships in their team. S4 found the team to have friendly culture and didn't have any issues with creating relationships with people. They

found that coworkers were very friendly and very accommodating with setting informal meetings, all the time, and they can talk a person to person. S7 and S8 were able to build relationships with direct team very easily due to a friendly team culture. For them the weekly team social was a great help. Some considered building relationship focused on building trust. For S3 focus of onboarding should be how to build trust and being a manager, they encourage having candid and open talks with team which helps building trust. S3 and S6 both recommended to gradually meet people with understanding of what is expected out of it.

Based on the interviews and literature, there are four recommendations I am proposing to help with building relationships (see Table 5 for summary).

**Encourage a friendly culture in the team (R1).** Encourage a friendly culture in the team. Encourage team to proactively ask the new team member if they need help and provide guidance. Incentivize relationship building in team with adding it to the yearly review process and make this an important part of the job.

**Plan meetings with agenda (R2).** Having an agenda set when meeting someone. Even for social connection meetings, having an initial understanding of the participants is helpful as it makes it easier for attendees to know what is happening in the meeting. Create a plan for the one-on-one with team and other stakeholders and have set the agenda already to gradually meet them.

**Team social hour/connections (R3).** Set Team social hour and avenues for creating team connection. Have team social hours with activities to strengthen team bonding such as game nights, painting events or Ask me anything sessions. These sessions can be conducted on tools such as gather.town, which allow virtual “room” with the ability to move around and interact with other participants based on your locations in the room, just like in real life. Also, the manager should create channels where team can talk about non-work related stuff, they are interested in.

**Companywide connection building (R4).** Have companywide interest groups, such as for foodies or travelers or hikers and make them accessible to the new employee. Have org wide social/work sharing events/brown bags to create cross team communication.

## 5.6 MANAGER

In literature and during the interviews both, managers are considered a very important part of onboarding. Their importance increases further in remote onboarding as new employees are more reliant on them [31].

Pavlina [8] argues that the manager can make or break the new hire onboarding experience especially in remote setting. He argues that managers need to provide a personalized, consistent onboarding experience leveraging their team and treat onboarding as a team effort. Research done at Microsoft [31] indicated the importance of the manager in remote onboarding world. Based on a survey of their workforce, Microsoft reported that new hires were 3.5 times more likely to report happiness and satisfaction if their managers played an active role during the onboarding. Microsoft actively encourages managers to have one-on-one early and often with the new employees and to offer guidance on the job expectations and priorities.

During the interview too, S2, S6 and S7 considered manager to be the most important role in onboarding. These interviewees emphasized that manager should either have an onboarding plan developed or should have this responsibility delegated to another team member. S2 considers it the managers responsibility to have an onboarding plan. S6 further argued that managers should have personalized plans based on the needs and requirements of the new employee. S8 talked about how managers can provide a template and guidance for the plan and then delegate the responsibility to one of the team members. The interviewees mentioned that managers should make themselves available for the new employee. S2 argued that manager should always have

time allocated for the new employee. S6 talked about their manager being unable to provide time due to other priorities, which caused S6 to have a bad onboarding experience. S6 argued that with remote work it is difficult to have quick chats and difficult to reach out to manager, so the manager should be more proactive initially to provide more opportunity to build rapport.

Managers are responsible for expectations setting for the new employee. S6 recommended that manager needs to provide clear expectations; similarly S5 mentioned that particularly in remote onboarding managers need to have explicit expectation set and discussed. S4 talked about his bad experience with their manager, where manager was not able to provide clear guidance and stick to it. Their manager was not able to shield them from other stakeholders, due to manager's lack of experience which caused expectations to not be clear. Another important job of the manager is to link new employees with the right people. They are responsible for getting in employees in the team. S6 and S8 considered it very important that the manager assigns a suitable onboarding buddy and S7 further extended that manager should be linking new hire to other people beyond the team.

During the interviews S7 talked about a great experience with onboarding and one of the main reasons for their successful onboarding was their manager. They talked about their manager being very helpful, involved, and accessible. The manager provided all the right documentation and information in the first email and conducted multiple meetings (2~10 minutes) to talk about the product and blocker in the initial few weeks of the onboarding.

There are four recommendations being proposed for managers to have a successful remote onboarding.

**Should be helpful, involved, and accessible (M1).** Managers should be helpful, involved, and accessible. They should be accessible for quick chats and should set up regular video one-on-

ones with the new employee. The manager should try to build a relationship of trust with the new team member.

**Provide clarity of work, what is expected and priorities (M2).** Manager should provide clear guidelines with regards to work, provide what is expected of the new employee and what will be their priorities.

**Should provide the resources and links to the right people for getting work done (M3).** Managers should provide the resources and links to the right people to new employee for getting work done. Managers should have onboarding buddy and team member assigned for providing help to the new employee and have time allocated specifically for helping with onboarding in the sprint.

**Should/ or delegate onboarding buddy to create onboarding plan (M4).** Managers should or delegate someone to create a customized onboarding plan for the new employee based on their needs.

## 5.7 COMMUNICATION

During the interview's conducted, communication was defined as one of the biggest factors which has been impacted by remote work. Working remotely has moved physical interactions to remote interaction, which has brought in its unique set of challenges and opportunities.

In the literature, Rodeghero and Zimmermann [4], and Hemphill and Begel [5] both argue that communication has been negatively impacted during remote work since anxiety of asking for help may have increased with the work from home transition. The authors argue the manager and team should promote the use of effective communication and make an environment conducive for the team and new team members to talk when required. Managers should ensure new hires be provided with guidance and “best practices” to reach out to their managers and other team

members. Hemphill and Begel [5] further argue that interacting frequently using synchronous communication technologies will reduce newcomers' anxiety, help them learn what responses to expect from their teammates, and improve their team's productivity. Mets [25] argues that it must be ensured that the interaction space usually offered on-site should be replaced digitally for a new employee to get a sense of connection to the team. Mets [25] further argues knowledge exchange can be linked to organizational learning, and this is closely linked to certain aspects of how a new employee can adapt to the organizational culture and have a successful remote onboarding and socialization process. Vaara Blöndal [24] further argues the need for face-to-face interaction to deepen the connection and collaboration, e.g. having one-on-one's with video camera turned on.

Like the literature, interviews conducted show the challenges associated with remote communication. For S4, the biggest issue was not having the ability to have quick 2 minutes conversations. With remote mode of communication, new hire can either have 1 liner conversations on chat or need to create a 30-minute meeting. Whereas when new hires were physically present in the office, new hires can have quick 2 minutes chat when others were physically present.

However, there is something to be said of differences in individual preferences on the mode of communication. For example, S5 found it easier to ping someone directly and then have a quick 2 minutes or longer talk with them. Whereas earlier with in-person work, S5 must book rooms for talking with team members. With remote work, it becomes more critical for the employee to take initiative themselves and to have a culture which gives opportunity for everyone to communicate as needed.

Another blocker for communication which S5, S6 and S9 talked about is that in in-person, you know when someone is available on top of which you can have water-cooler conversations

with various people as well. Whereas in remote setting, you do not know when someone is present, so it becomes difficult to communicate with them. Another point mentioned by S1, S4 and S5 was the changing of the communication to asynchronous format where after posting a chat question potentially it will take some time before getting a response. Interestingly, S8 argued that this form of communication was more efficient for those who are already in the know but not efficient for new team members. S7 argued that planning becomes extremely important with async communication. Other issues brought in remote communication are the other distractions happening. S3 mentioned that for him turning on a video during an online meeting helped him concentrate on that meeting instead of multitasking. S3 found since they were on camera, they had to focus on the conversations happening on the call and helped them become more involved in their meetings. Remote communication becomes dependent on external tools usage, as S2 mentioned the dependency of having the right internet connection to join in the meetings and the access and ability to use communication tools effectively. For S8, technical discussion especially which required whiteboarding become difficult as the tools to draw in remote compared to whiteboard are different. Whiteboarding to have design discussing used to happen when they were physically present, but with remote, S8 has not had any whiteboard discussions.

Remote work brings opportunities with respect to communication. Since most of the communication now is in a written format, it can act as a form of documentation which can be searched later. It allows an opportunity for new employees to search for answers directly in the chat since questions may have already been asked and related information already provided. S1, S5, S7 and S9 agreed that written communication brings in advantages making information more accessible, permanent and easily searchable. S5 further argues that written communication allows team members to provide value added context irrespective of time. S4 found this asynchronous

communication to be extremely helpful as it helped them with setting up their work hours being very unconventional because S4 had to care for young children. In S8's case, async communication helped them get information for a month-old incident for completing a postmortem, since all of the discussion about the incident was documented. S8 talked about their initial hesitation with getting answers from chat, since S8 were used to talking physically, but S8 had a very good experience using data and information from chat, and were able to get many questions answered via chat. S8 attribute this their team's culture where everyone is very active in chats. Their team had set up good processes on how to use chat to reduce clutter and made it easily accessible for everyone, such as adding the chat thread in the right channel for different things e.g. a channel specifically for discussing service health issue.

Keeping all this in mind there are four recommendations proposed to having effective communication in remote onboarding.

**Enable a culture to promote team members to communicate (C1).** Empower a team culture to promote team members to communicate and get answers back quicker. Provide guidelines to the team to make it easier to communicate, such as having a set of core-hours when all the team members are available. Have daily check-ins for the whole team, such as in scrums where team members can get unblocked. Foster an environment where team members are not reluctant to have few minutes phone calls to clarify items.

**Focus on asynchronous conversations (C2).** Encourage the use of asynchronous conversations where team members can look at the information at the time best suitable for them and then provide meaningful input to it. Create guidelines for asynchronous communication by taking input from the team to make sure it meets everyone requirements as best as possible. Also

create appropriate channels for different topics and ask team to use them appropriately to reduce clutter.

**Encourage a culture of searchable teams group chats for asking questions (C3).**

Encourage a culture of teams group chats for asking questions and empower team to be able to search the information in the chat. This can be expanded to have an implementation of Q&A system, similar to stack overflow, where questions can be asked and answered so the information is stored to be reused by others. Potential improvements, although costly, could be to have chat bots powered by machine learning which can cipher older chat data, using it as a source of knowledge and give meaningful answers to someone's questions.

**Focus on understanding the outcome expected (C4).** Fourthly, encourage team members to have one-on-one video chats and have focus on understanding the outcome expected from it. New hire should plan for the meetings to be goal oriented, with clear understanding of what is the expected outcome even if the outcome is to get to know a fellow team member better.

### 5.7.1

#### *Asking question/Getting unblocked*

During the interviews asking for help and getting unblocked during onboarding was one of the main things which was impacted due to remote onboarding, mainly due to the way we communicate remotely without being physically present to ask questions directly face to face.

In literature too, Rodeghero and Zimmermann [4] and Hemphill and Begel [5] both argue that in remote onboarding it is vital to make it easier for new team members to ask for help. Both set of authors argue one way to make remote communication easier is to have a designated onboarding buddy, who can guide new team members in how to get information, connect with people, and get questions answered. Rodeghero and Zimmermann [4] suggest to have a technical mentor along with onboarding buddy, who can help with answering low-level details of work.

Mets [25] and Vaara Blöndal[24] debates the roles of the new hire and mentor are seen as key roles, supported by the overall team, leader, and cross-company support teams. Hemphill and Begel [5] debates that new hires should be encouraged to be self-monitoring and proactive. This will help with effective at onboarding because new hires will be more likely to actively seek information and comfortable interacting with unfamiliar people. Rodeghero and Zimmermann [4] contends manager should be proactive with new hires needs and be open to having multiple onboarding speeds based on new team members experiences.

During the interviews, many interviews mentioned that asking for help when someone is new to a place is difficult, since there is no rapport set and there is generally resistance in asking for help with someone you do not know well. S1 talked about new team members being reluctant in a call or meeting to get unblocked. S2 talked about reluctance in posting messages on team channel as S2 do not know if this will add noise for others. S5 talked about initial difficulty to tap on someone's shoulder and asking for help, and similarly in getting on a call and asking questions. Another issue with initially getting help is that new team members generally do not know who the right person is to get help from and how and when to contact them. Specially in remote work when one is not able to physically see when someone is present and available. S2 discussed that with remote you are not sure when a team member is available as before based on their physical presence you will know when team member are available. S4 talked about their experience where S4 do not know who the right people were for getting information. S4 was only able to talk to few people and that caused them to take longer for understanding things. S6 and S9 talked about difficulty in getting help since their teammates always seemed very busy. Another issue discussed was the time it takes to get response back and to get unblocked. S5 and S8 talked about async communication which is happening most of the time at work. Async communication adds a delay

in response time based on how often someone looks at their chat. S6 further talked about time to unblock is much higher in remote where potentially S6 need to go the calendar and schedule meetings with team members to the extent that even for 5 minutes chat, they had to create a meeting in the calendar.

During the interviews, not just challenges but opportunities for getting unblocked were talked about. S8 mentioned how team members were always available to talk and to help unblock since team members were incentivized to do that. In their company, helping others grow, was an integral part of their annual performance review process so everyone wanted to excel in it. S7 talked about ease getting questions answered and getting blocked due to three reasons. Firstly, the team has a collaborative culture where the whole team is working together and helping each other. This helps encourage asking questions and getting unblocked faster. Secondly, the team being available for call/chat to talk about scenarios or any questions. Thirdly, team members proactively pinged the new hire every day to ask if help was required.

By analyzing the interviews and going through the literature, I propose three recommendations to making it easier to ask questions and get unblocked (see Table 5 for a summary).

**Defined process for getting help (C5.1).** Define process of when and how to get help. Without having a defined process, the responsibility solely falls on individual and during the interviews there was variation in response from the interviewees. During the interview S1, S2, S4, S6 and S9 found themselves to be reluctant to get help initially, whereas S5, S7 and S8 found it easy to get help. There are multiple reasons for this such as some individuals being introverted vs extroverted, the team culture, the availability and approachability of the team members. In order to make it consistent and easy for everyone to get help having a defined process would be very

helpful. One defined process could be where a new employee at least searches for the answer on their own for an hour and if the new employee is still blocked after the hour, they should ask for help. This will make sure that the new employee has done their due diligence before looking for help and new hires will have a better understanding of the question when they are looking for help. Potential ways of getting help include setting up a process where team can talk about blockers in daily standup meetings, setting up specific channels for asking questions and team actively participating in it, encourage new team members to search for answers in the history of channel to check if the question was already answered, encourage team to enable five minute unblocking meetings and encourage team to provide core hours of when team members are available, so new team members will know when to contact them. Also, since with remote communication has moved to async format, provide understanding of the best practices for async communication. One issue with async communication is the potential time involved with getting response back. To mitigate this, provide multiple tasks to work on, so that if someone is blocked for one task and waiting for a response, they can work on another task in the meanwhile.

**Define who can help (C5.2).** Make it clear to the new employee who is the best person to ask particular questions to. This would be subject matter experts for different specific services and the onboarding buddy who is always available to answer general questions and/or direct to the right person to answer or unblock. Also, managers should try to be available as well to answer any questions.

**Encourage team to help (C5.3).** Encourage team to be helpful by creating a culture of collaboration where new team members are regularly checked up on for help as well as where new employees are not reluctant to ask for clarifying questions. One way of doing this which was

provided by S8 was to make unblocking/helping team members grow as a part of review requirement for team members. This will give incentive for collaboration to everyone in the team.

## 5.8 ONBOARDING NEEDS BASED ON INTERVIEWEE EXPERIENCE

During the interviews it was discovered that what is required/considered important for onboarding from new employees changes based on their level and experience. There were distinct requirements for someone who was a junior engineer, senior engineer, and software engineering managers.

For this project, I consider a junior software engineer as someone who has less than 4 years of experience, which was the case for S5, S6 and S9. One common theme discovered from the interviews was that these new hires needed more guidance and training. Junior new hires were more dependent on the onboarding buddy: S5 had 95% of his work being routed through the onboarding buddy, whereas S9 initial only got onboarded to what S9s onboarding buddy was a subject matter expert on. S6 had a bad onboarding experience since their onboarding buddy themselves was new and was not much of help.

I define a senior software engineer as someone with greater than 4 years of experience. Most of the senior software engineers interviewed placed more emphasis on having good documentation, to point them in the right direction to start working. Once senior engineering new hires have some documentation to get them started, the senior engineers are more self-reliant and can figure things out by themselves and ask the right questions as discussed by S2 and S8 .More particularly within senior engineers, S3 was the one software engineering manager interviewed. He considered building relationships and trust to be the most important part of onboarding. For his own team, his focus was on making sure the new hire, including himself, has good relationships with their team-members and with the important stakeholders involved.

The difference between junior vs senior engineers' emphasis on different onboarding factors is more apparent when looking at the impacting factor (explained in Section 5.1) graph in Figure 5-6. Figure 5-6 shows the score of junior vs senior engineers for the high-impacting onboarding factors identified in earlier Section. In my sample size, 3/9 engineers are categorized as junior engineers and the 6/9 as senior engineers. With such a small sample size, the comparison of means is not statistically representative, but rather the purpose of this semi-quantitative comparison is to provide some insight on any differences between the two groups. Figure 5-6 suggests that the junior engineers on average give higher score to onboarding buddy as opposed to senior engineers who place higher emphasis on documentation and the ability to communicate with others as discussed previously.

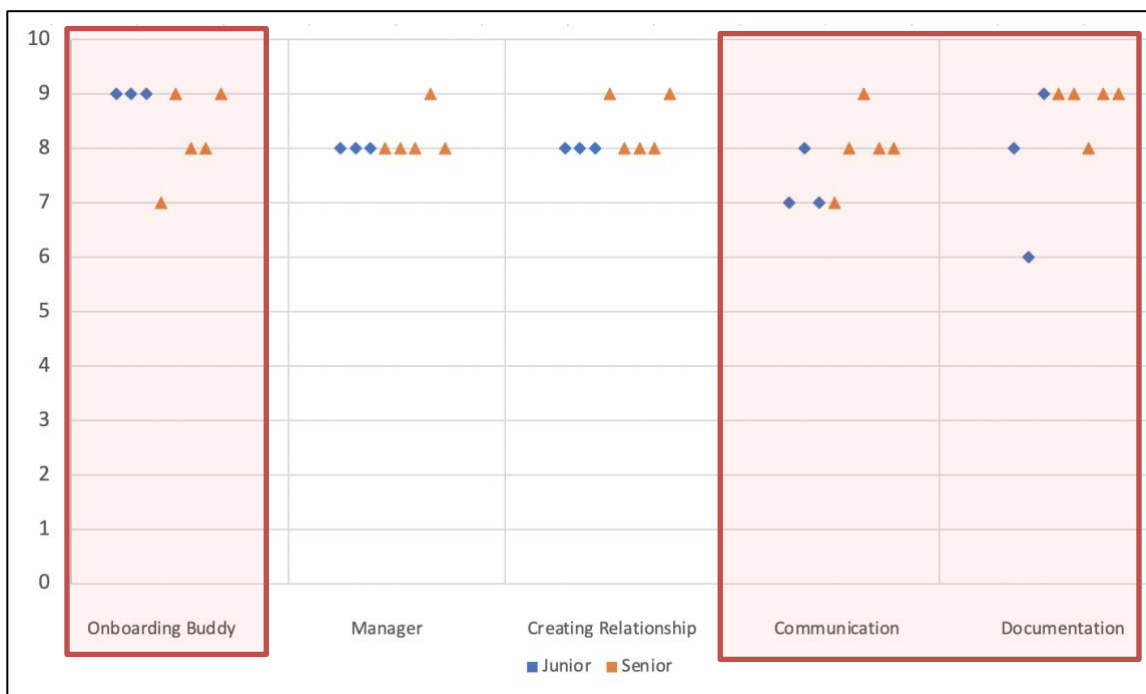


Figure 5-6 Junior vs Senior Engineers Impacting Factor score

## CHAPTER 6. ONBOARDING GUIDELINES

In this chapter, I provide the final output of this project: checklists to get to effective onboarding. First, I discuss how these checklists and recommendations were developed. Then I discuss 2 industry experts' opinions on what makes an effective onboarding. Finally, I present the checklists I created for an effective onboarding plan and recommendations for each of the onboarding stakeholders.

### 6.1 ONBOARDING GUIDELINES AND CHECKLIST DEVELOPMENT

In this section, I discuss the process of checklist development and getting to the recommendations.

During the project, one significant change happened in my understanding of onboarding. Before this project, from my own professional experience, I believed the most important factor in ensuring a successful onboarding was documentation. But when I conducted my literature review and took the pilot interviews, I realized that people and creating relationships in the team are even more important. My mentor helped me get in this direction by bringing the concept of Tacit knowledge into the onboarding concept. There is tacit knowledge that is very hard and expensive to document [20], and it plays an essential part in daily life and work.

Also, learning about the importance of socialization, team building, and culture in literature and the interviews helped me shape my thinking that relationships in the team are an essential part of onboarding. That made me look into the stakeholders involved in the onboarding process and making them an important point to discuss during the interviews.

After conducting the interviews, I found that five out of nine interviewees had a good onboarding experience. I started analyzing the stakeholders' impact during the onboarding process and what were some of the reasons which made onboarding good and what caused onboarding to

be bad. One big shortcoming which I discovered was that onboarding was highly dependent on an individual, how well they know onboarding, what kind of planning they made and how much time and priority they gave it. So, I started analyzing how to bring best practices from them to develop a process-based onboarding process.

To provide onboarding guidance that works across a range of individuals I propose a standardized process where every stake holder's responsibility is well-defined. These responsibilities came from analyzing the individual interviews and understanding themes from them. In order for the stakeholders to meet their responsibilities, I developed a set of checklists which helps them complete the right task. The responsibilities and checklist are built on top of analyzing the interviews specially for the ones who had very good onboarding and taking best practices from them and those who had bad onboarding experience, figure out what they lacked and then having a process which takes care of the shortcomings.

## 6.2 NEED FOR ONBOARDING GUIDELINES

In the 9 interviews conducted for the study, 5 had a very good onboarding experience but 4 had challenging experiences. In the previous chapter, I had gone deeper into some of the interesting themes I had found during the interviews. Whereas in this section, I will focus on how the onboarding can be made consistently better for the majority of new hires. During the interviews there were four main reasons found which caused a not so great onboarding experience. These negative factors are outlined in Table 6 with a summary how these factors led to poor onboarding and which interviewees were impacted by it.

Table 6 Reasons for ineffective onboarding of interviewees

| Ineffective Onboarding Factor | Description of Factor                                       | Interviewees impacted |
|-------------------------------|---|-----------------------|
| Lack of Information           | Stakeholders did not know what was expected of them         | S1, S4, S9            |
| Ineffective Onboarding buddy  | Onboarding changes based on who (person) is helping onboard | S6, S9                |
| Lack of Priority              | Not giving due time for onboarding                          | S4, S6, S9            |
| Lack of Planning              | Lack of pre-arrival and post-arrival onboarding planning    | S1, S4, S9            |

First is the **lack of information** by main stakeholders such a Manager, Onboarding buddy, the company itself or the new hire on what means to have an effective onboarding. The stakeholders did not know what was expected of them which caused the lack of right information and resources for the new hire. This can impact the basic need of clarity and knowledge for the new hire, where new hire doesn't what and when is expected. Based upon some conversation with interviewees and other colleges, it appears that setting up an onboarding guideline which includes checklist of things all of the main stakeholders need to do helps mitigate this issue.

Second is an **ineffective onboarding buddy**, where onboarding changes based on who is helping onboard such as an Onboarding buddy. Onboarding buddy is the biggest source of knowledge for new hire and having an ineffective onboarding buddy will lead to a lack of need of knowledge and mentorship. This is because the onboarding becomes people dependent, based on who is the one involved with onboarding. Again, this can be mitigated by onboarding guidelines and checklist to make sure there is repeatable process available, with clear expectations laid out for the different onboarding stakeholders.

Third is the **lack of priority** for onboarding. Onboarding requires active participation by multiple stakeholders and if anyone of them have other higher priorities which allow them not to give due time for onboarding, onboarding then becomes challenging for the new hire. This again can impact the basic need of clarity and knowledge for the new hire, where new hire gets information from required stakeholders. This is something which needs to look into by the company and executives, as having effective onboarding will be very difficult if onboarding is not prioritized the stakeholders involved.

Fourth is the **lack of planning** - onboarding a new hire requires a lot of pre-arrival and post-arrival planning to make the onboarding experience pleasant. Planning and what works needs to happen can be standardized and can become part of the process and the checklist for important stakeholders.

### 6.3 ONBOARDING AS A LIVING PROCESS

From the interview analysis three main themes with regards to onboarding as a process were discovered. First is that it helps if there are company guidelines with regards to onboarding. S8 talked about a companywide onboarding template, which was used as a basis to create an onboarding plan with clearly defined expectations and timelines. It made clear who is responsible for onboarding and made them accountable for it. The template had gone through multiple iterations in the company and now was giving much more value rather than creating an onboarding plan from scratch. Secondly when a new team is created, as was the case for S4, or someone new hasn't joined a team in some time, the first new team member who onboards struggles a lot. Gradually based on the experiences of the 'first' new hire, the onboarding process improves over time. S1 and S9 talked about not having a good onboarding experience due to processes not being setup since their teams had not onboarded anyone in a long time. But S6 who onboarded to the

same team as S9 a year later had a much better experience, as the team had improved onboarding process after getting feedback. Thirdly onboarding is a living process which keeps on evolving and improving based on the needs of the new employee and what is required for the team. During the interviews 4 out of 9 interviewees specifically mentioned that they are updating the onboarding document based on their experience to make it easier for the next person to get effectively onboarded.

Thus, if done right, onboarding in a team can improve successively as each new member joins the team, and having company-wide templates can help to make the onboarding experience better for the first team members that join a brand-new team.

#### 6.4 INDUSTRY EXPERTS OPINION ON ONBOARDING PLAN

During the project, two managers with expertise on onboarding others were consulted and asked about what their onboarding plan for the new employee joining their team will be.

A manager (M1) who has more than twenty years of management experience talked about having a checklist which can be handed to the new employee. M1 stated this checklist can be divided into what the person needs such as machine or networking software enlistment and a list of people new hire need to know. Clarity of expectations and timeline for tasks should come from the manager. The Manager should assign an onboarding buddy who will help new employee during the onboarding, initially holding their hand to help getting things done, such as getting through the first build check-in and pull request. The onboarding buddy is responsible for helping the new hire build out their social network and foster relationships the new hire can go to for getting information such as managers, PM and team members. Building relationships has becoming challenging in remote setting, therefore special care must be taken to help the new hire in this regard. M1 recommends having regular social events, at least once a quarter, where team members are

physically present. If it is not possible for team members to be physically present, M1 recommended to use technology and apps such gather.town, which mimic the physical communication in the remote environment.

Another manager (M2) who has been managing for the last five years and have themselves gone through onboarding two times in the last year emphasized having an onboarding plan. M2 stated that onboarding plan should contain three things: expectations, resource links and information of people to connect to. Expectations for the first 2 weeks, 3 months and 6 months should be clearly provided. Next, an ordered set of important documents and links should be provided. Finally, onboarding plan should include a list of people to talk to and provide context on what they are working on/responsible for. The managers need to make sure to communicate clearly and precisely what is expected out of the new employee. M2 mentioned that the manager should assign an onboarding buddy to help ramp up the new hire. M2 identified how challenging it can be to build social connections in remote work, and to overcome this, his solution is to set up on-on-ones with team and other stakeholders in a gradual fashion and use these to build connections. M2 also talked about enabling good communication for the new employee by creating appropriate communication channels for them. For M2, the end goal of onboarding is to earn new employees' trust.

In short, both managers stressed on the need to have an onboarding plan, which potentially could be a checklist. They both want new hire to be provided clear expectations, an onboarding buddy to guide and a list of stakeholders to talk to. Both stated building relationship has become more challenging in remote work environment.

## 6.5 ONBOARDING STAKEHOLDERS AND RESPONSIBILITIES

From the interviews and literature review companies need to define their onboarding processes in order to have a consistent effective onboarding process. The onboarding process might differ based on needs of every company. I am proposing a general process from analyzing the interviews for the new hires who had an effective onboarding.

One main aspect identified by the industry experts to make effective onboarding consistent is by having clear expectations and checklists for different onboarding stakeholders. There are 4 main stakeholders discussed previously in the onboarding process. These stakeholders are listed out again in Table 7, this time with my understanding of what the responsibilities should be for each of them. I have outlined these responsibilities so that the expectations can be clarified for each of the stakeholders to lead to an effective onboarding.

First is **company** which needs to make a policy of developing an onboarding process for them. Company needs to allocate resources for the onboarding process such as for managers and onboarding buddies appropriate time needs to be allocated for onboarding new hire. Also, company needs to develop a feedback system, such as surveying new hires at certain milestones to understand the effectiveness of onboarding. Once the Company has provided the right resources to managers and onboarding buddy, the manager and onboarding buddy should be made accountable for providing effective onboarding by including onboarding in the OKRs (responsibilities).

Second stakeholder is the **manager**, who is mainly responsible for providing the direction for onboarding. Manager should create a template for an onboarding plan for their team. Section 6.6.3 provides a checklist for what needs to be present in an onboarding plan. Checklist for onboarding plan include goals, expectations, resources, what to do and important people to talk to

and ways for getting unblocked. Manager should be able to provide clear expectations for the new hire for different milestones. Manager need to make right resources available. One very important step for the manager is to assign right onboarding buddy, work with them for creating the new hire specific onboarding plan and then delegate them to lead the onboarding process. Section 6.6.1 provides a checklist for what Manager needs to do before arrival and after start of the new hire. Manager Checklist also includes what to consider when selecting an onboarding buddy.

Third is the **onboarding buddy**, who has the day-to-day responsibility of ensuring an effective onboarding. Onboarding buddy along with Manager develops the onboarding plan and is responsible for executing it with the new hire. The responsibility of developing and executing the plan could be something which the manager can own as well, but to have a scalable process I have assigned it to the onboarding buddy instead. Especially since there can be multiple people joining the team and it will be difficult for manager to manage all the new hires. Executing the plan Onboarding buddy guides the new hire through their work and team culture. Onboarding buddy is the main point of contact who is available and accessible for the new hire. Onboarding buddy are responsible to enable building relationships between the new hire and rest of the team and other stakeholders. Onboarding buddy are responsible for unblocking the new hires. Section 6.6.2 contains the checklist which onboarding buddy needs to go through before and after the start of the new hire.

The final stakeholder is the **new hire** themselves. New hire is responsible to lead their own onboarding plan. New hire should have a clear understanding what is expected of them and actively communicate with onboarding buddy to get guidance on how to make the expectations possible. New hire should be proactive in building relationships with other team members on the team. One

way of building relationships is to schedule one-on-one with the other team members. Section 6.6.4 provides a checklist for new hire of what they need to do during their onboarding.

Table 7 Onboarding process stakeholder responsibilities

| <b>Stakeholders</b>     | <b>Responsibility</b>   |
|-------------------------|---|
| <b>Company</b>          | <ul style="list-style-type: none"> <li>• Setup onboarding processes</li> <li>• Provide resources for onboarding</li> <li>• Get feedback from new hire</li> <li>• Make manager and onboarding buddy accountable for onboarding</li> </ul>  |
| <b>Manager</b>          | <ul style="list-style-type: none"> <li>• Provide clear expectations</li> <li>• Make right resources available</li> <li>• Assign right onboarding buddy</li> <li>• Develop templated onboarding plan</li> <li>• Work with and delegate daily onboarding responsibility to onboarding buddy</li> </ul>                  |
| <b>Onboarding Buddy</b> | <ul style="list-style-type: none"> <li>• Develop new hire specific onboarding plan</li> <li>• Enable relationship building of new hire and team</li> <li>• Main point of contact, available for the new hire</li> <li>• Responsible for unblocking new hire</li> <li>• Guide through work and team culture</li> </ul> |
| <b>New Hire</b>         | <ul style="list-style-type: none"> <li>• Lead own onboarding plan</li> <li>• Actively communicate with onboarding buddy for guidance</li> <li>• Understand clearly what is expected</li> <li>• Actively work on creating relationship with team and other stakeholders</li> </ul>                                     |

## 6.6 CHECKLISTS

Based on the interview analysis and literature review, I developed checklists of tasks to fulfill the responsibilities which I have recommended for three important stakeholders: manager, onboarding buddy, new hire. I also developed a checklist for the onboarding plan. This section shows these checklists. The checklists summarize the main responsibilities and recommendations I already discussed in this chapter and the previous chapters, but just presents the guidelines in a format that can be directly taken by a software team to help make onboarding in the team more effective.

## **Onboarding Checklist – For Manager**

### *Pre-Arrival*

- Lead onboarding process
- Define clear objective/goals for onboarding the new hire
- Identify onboarding buddy
  - Onboarding buddy is someone who can help with onboarding goals
  - Block time for onboarding buddy for the onboarding work
- Develop onboarding plan along with onboarding buddy

### *After-Start*

- Greet the new employee in the company
- Introduce to the team and company
- Twice a week one-on-one and accessible other times – provide best way of reaching out
- Provide Clear expectations
  - Expectations for 2 weeks
  - Expectations for 3 months
  - Expectations for 6 months
  - Provide clarity of what is expected and when, especially in remote world where don't see people around physically
- Encourage a friendly team culture – help with creating relationships of new hire with other team members
  - Introductory email and meeting with the team
  - Encourage onboarding buddy to help with scheduling 1-on-1 meeting
  - Set-up social hours in the team
- Actively collaborate with onboarding buddy for getting feedback and how to make onboarding better

### *Qualities of a good onboarding buddy:*

- Someone interested/willing to help with onboarding
- At-least one year experience in the team
- Strong performer in the team
- Can relate to the new hire
- In the same team
- Have the availability to be onboarding buddy
- Has positive attitude about the job and company
- Has strong knowledge about the work team does

### **Onboarding checklist – For Onboarding Buddy**

#### *Pre-Arrival*

- Understand the goal/objective of being an onboarding buddy
  - Add onboarding as a part of annual review
  - Set appropriate/estimated time to be spent for onboarding
- Understand what the objectives/goals of onboarding the new hire is
- Create an onboarding plan with Manager
- Provide the right information - First email sent by Manager/Onboarding buddy which contains
  - Link to the project
  - What and why of the project
  - All of the service used
  - Technology used
  - Sister teams, what they do and point of contact

#### *After-Start*

- Schedule three times week one-on-ones and openness to talk – provide time when available to talk
  - Make comfortable in the new company
  - Get to know new hire professionally and personally
  - Guide the culture to what is acceptable and what is not
  - Provide info about teams' management style
  - Guidance on how to communicate effectively being remote
  - Open to having honest conversations
- Enable systems to get new hire unblocked
  - Channels created for helping new hire/ Questions
- Bring new hire to team and company social events

### **Onboarding Checklist – Onboarding Plan**

- Goal: essentially empower the new employee, so that they can unblock themselves, and if they're not able to block them there's a team to help as well
- Expectations are clear
- Resources to help
  - Ordered list of documents to help with task
  - Videos and trainings
  - Repository
  - Tools used and how to use them
  - Company info and direction
  - Important links for accessing companywide resources
  - Team charter and vision
  - Systems team own – Info about them
- Details of things happening each week
  - Plan of task with timeline
  - Simple work items are set earlier to get an understanding
  - Start with clearly defined task and slowly add vagueness to them
- Group and people to help - Contains a list of people to talk to
  - Team-members
  - Other peers working with
  - People in management chain
    - Provided context about the product and how it overlaps
  - Stake holders
  - Define subject matter experts for different services and parts
- Set expectation of what to do before/after meetings
  - Define a timeline on when to meet whom
  - Meet people gradually so there is not overload of relationship building – Build relationships incrementally
- Add to communication channels
  - Technical group chat
  - Social group chats
  - Any other relevant

## 6.6.4

*Onboarding Checklist – New Hire***Onboarding Checklist – New Hire**

- Lead own onboarding process
- Understand what the expectation of the new role are
- Reach out to onboarding buddy/manager/team
- Become comfortable with team and company culture and what they do
- Understand the process to get unblocked
- Understand the norm of communicating in the team
- Plan meeting with agenda
- Active participation in social events
- Provide feedback
- Improve onboarding process
  - The last person to be onboarded should work on the documentation to update it for the next person

## 6.6.5

*Onboarding Checklist – Survey*

I am currently in the process of conducting a survey about this checklist with the nine interviewees. I have provided interviewees the four checklists and then provided them the survey shown in Appendix C. I have received response from five out of nine interviewees. Overall, I have received a very positive response about the checklists. For the question “*How will you rate the overall onboarding checklists?*” I received an average score of 4.8 where 5 was considered excellent and 1 being needs considerable work. On the second question “*If these checklists had been used for your remote onboarding, would it have been helpful?*” I received a score of an average score of 5, where 5 was considered helpful and 1 as being not helpful. I also received four suggestions on how

I can make the checklists better. In the future, I am planning to schedule meetings with interviewees to discuss the checklists and get their detailed feedback.

## CHAPTER 7. FUTURE WORK

There is a limitation to the onboarding checklists I have developed in this project. During the interviews, I found that all interviewees had a unique onboarding experience and unique needs, so they need to have a customized onboarding experience, whereas, in this study, general themes for remote onboarding were focused on. I found that senior software engineers might potentially have different needs compared to junior software engineers. Also based on individuals' personality too, onboarding might change as it was discovered that one interviewee found 2-minute quick conversations to be difficult while another interviewee preferred short quick chat communication. Moving forward, an improvement on the project can be made by concentrating on making the onboarding experience customizable based on a person's needs.

In the future, I am looking into publishing my findings to a broader audience to help teams conducting remote onboarding. This may be in the form of an academic journal article, industry white paper and/or presentation given to relevant stakeholder internally in my company. With the current trend of remote/hybrid work for software engineers, remote onboarding is here to stay. Having an effective onboarding is essential and potentially this guide and checklist will help teams having consistently good onboarding experience. Teams can potentially pick and choose the guidelines which works for them and create their own effective onboarding checklists.

## CHAPTER 8. CONCLUSIONS

In this project, I have explored how onboarding for software engineers has evolved for remote work. I conducted a qualitative interview study and impacting factors exercise with nine software engineers who had gone through remote onboarding. These interviews were analyzed, and challenges faced by software engineers were investigated. From the interviews, I identified needs which must be met to have an effective onboarding. I developed a hierarchy of needs model, in which I classified the needs of the new hire into basic needs and needs required for excellence. Needs such as access to tools, clarity of tasks and knowledge were categorized as basic needs to do the work, whereas mentorship, relationship building, and collaboration transform the onboarding into an excellent experience.

I examined the interviews and impacting factors exercise and realized that remote onboarding was much more than just having the onboarding documentation. It has to do with people especially Onboarding Buddy, Manager, and the new hire themselves. From analyzing the interviews five main themes emerged:

- Having an effective onboarding buddy
- The ability to create relationships with team members and other stakeholders
- Being provided with up to date and organized documentation and onboarding plan
- The manager's ability to listen and adapt to remote needs
- A team culture which enables team members to communicate effectively and get unblocked quickly

I also discovered that the experience new hires have during the onboarding varied considerably. By focusing on four interviewees who had bad onboarding experiences, I noticed a lack of four things in the onboarding process which led to a poor onboarding experience. These

four factors were: lack of information, ineffective onboarding buddy, lack of priority and lack of plan. I developed checklists for recommended best practices for effective onboarding to eliminate the four factors leading to a negative onboarding experience. A checklist was developed for each of the main onboarding stakeholders i.e., manager, onboarding buddy and new hire, along with a template of an onboarding plan. Using these checklists will help improve the effectiveness and consistency of remote onboarding for software engineering new hires.

Throughout this project, I have gained valuable knowledge on importance of people in software engineering especially during the ramp-up onboarding of new employees in a team. I investigated how onboarding can be considerably improved and the factors impacting it. During this project, I learned the skill of developing and conducting open-ended interviews. This has helped improve my personal communication with others. I also learned how to understand and analyze interview transcripts and extract meaningful information from it. Finally, this project helped in improving my skills for articulating and communicating my ideas, both in written and verbal format.

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## APPENDIX A : IMPACTING FACTORS LITERATURE

| <b>Section</b>                  | <b>Onboarding Guidelines - 2.3.2</b> | <b>Remote Onboarding - Error! Reference source not found.</b> | <b>Personal experiences - 2.5</b> | <b>Other sections</b>      |
|---------------------------------|--------------------------------------|---|-----------------------------------|----------------------------|
| <b>Culture</b>                  | [2] [9] [10]<br>[16] [18][19]        |   |                                   | [17] [32]                  |
| <b>Communication</b>            | [3] [9]                              | [4] [5] [25]<br>[26]  | ✓                                 | [7] [12] [17]<br>[22] [21] |
| <b>Creating Relationships</b>   | [18]                                 | [4] [5] [8]   | ✓                                 | [12] [14] [21]<br>[23]     |
| <b>Team building</b>            | [3] [9]                              | [4] [5] [8]   | ✓                                 | [12] [32]                  |
| <b>Social Aspect</b>            | [4]                                  | [4] [5] [8]   | ✓                                 | [12] [17] [32]             |
| <b>Managers</b>                 | [4]                                  | [4] [9]   |                                   | [12] [32]                  |
| <b>Training</b>                 | [2] [9] [10]<br>[16] [18][19]        |   |                                   | [17] [32]                  |
| <b>Learning by doing</b>        | [18]                                 |   |                                   | [7] [32]                   |
| <b>Documentation</b>            | [9] [10] [18]                        | [4] [5]   | ✓                                 | [12] [17] [32]             |
| <b>Tribal Knowledge</b>         |                                      | [5]   | ✓                                 |                            |
| <b>Mentor/ Onboarding Buddy</b> | [4]                                  | [4] [5] [25]<br>[26]  | ✓                                 | [7] [12] [17]<br>[32]      |
| <b>Feedback</b>                 | [2] [9] [10]<br>[16] [18][19]        | [4]   |                                   | [12] [17] [32]             |
| <b>Technical Issues</b>         |                                      | [4]   | ✓                                 |                            |
| <b>Challenging</b>              | [3]                                  |   |                                   | [12]                       |

## **APPENDIX B : INTERVIEWEE INVITATION MESSAGE**

Interviewees were messaged on LinkedIn using LinkedIn's messaging service.

Following is an example of message sent out to a potential interviewee:

Hi Joe,

How are you?

How is everything going?

I am currently working on my Capstone project at UW on Remote onboarding and its impact.

I am planning on taking video interviews of people who have had remote onboarding.

Will you be interested to provide an interview for this study?

I am expecting the interview to take an hour.

Thanks,  
Abdullah

## APPENDIX C : SURVEY OF CHECKLIST

How will you rate the overall onboarding checklists? \*

|                        |                       |                       |                       |                       |                       |           |
|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------|
|                        | 1                     | 2                     | 3                     | 4                     | 5                     |           |
| Need considerable work | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Excellent |

If these checklists had been used for your remote onboarding, would it have been helpful? \*

|             |                       |                       |                       |                       |                       |         |
|-------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------|
|             | 1                     | 2                     | 3                     | 4                     | 5                     |         |
| Not Helpful | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Helpful |

Any suggestion on how the onboarding checklists can be improved? \*

Long answer text

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