

Empowering and Supporting Remote Software Development Team Members through a Culture of Allyship

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Abstract

Software development organizations and employees benefit from remote work. However, we need more research and tools for more organizations to be successful. Microsoft is in a prime position to do the research, interventions and technology innovations need to advance the benefits of remote work. We discuss the benefits and challenges that remote workers face. We provide remote work guidelines based upon personal experiences of working remotely before the COVID-19 pandemic. In this position paper, we argue for employers to become allies for remote workers and to empower workers to work in their preferred environment. We provide ways to create a culture of allyship within organizations and teams. By creating a sustainable remote work environment and empowering remote employees, companies will find more productive employees with higher job satisfaction.

Keywords: remote work, inclusion, diversity, allyship

ACM Reference Format:

Paige Rodeghero and Tony Hernandez. . Empowering and Supporting Remote Software Development Team Members through a Culture of Allyship. In *Proceedings of New Future of Work.* , 6 pages.

1 Introduction

The traditional workplace changed overnight when the pandemic, COVID-19, spread worldwide [5, 10, 12, 14, 18, 37]. Unless considered an essential employee by the government (e. g. a respiratory therapist), many employees transitioned to work from home. Those that used to work in a physical office started working from home. The choice to work from home varied by location and company. Many states in the United States required non-essential employees to work from home and even created penalties for both individuals and businesses when they did not comply [4].

We want to emphasize that remote work in a pandemic is not the same as traditional remote work (before COVID-19). The traditional remote work and the virtual onboarding process of new employees does not account for the unique challenges that a pandemic brings. With COVID-19, many

people are socially isolated (i. e. living alone) [17, 42]. There are no opportunities to travel to the physical office to meet and form a social connection with the team. There is also a new challenge for many of those with children. Many people must juggle homeschooling (something that most did not do before COVID-19) and work [15]. Not to mention, traditional remote work did not consider that the world is experiencing great loss and a collective trauma [23].

The future of work has and is continuing to change, and the workplace will never be the same as before COVID-19. Some companies have transitioned to allowing permanent remote work. For example, Twitter and Square found that remote work was working for the company and announced that employees could work from home indefinitely [11].

In this paper, we discuss the benefits and challenges of full-time remote work. We provide guidelines for transitioning to full-time remote work. We discuss some of the remote work open questions that require additional research. Both authors of this paper have worked remotely before COVID-19. Rodeghero worked approximately two years in industry remotely, and Hernandez has worked five years remotely. Using their combined remote experience and relying on the research, the authors collaborated to develop guidelines to assist those struggling with the challenges that come with the transition from working in the office to working at home full time. Rodeghero is a visiting researcher in the SAINT group at Microsoft Research and studies software engineering productivity, remote work, onboarding, and program comprehension. Hernandez is a Software Engineer in the Customer Success Engineering organization within the Experience and Devices division at Microsoft. He also leads a virtual team of peer engineers focused on the remote onboarding of software engineers at Microsoft for the Content Publish engineering team.

We argue that employees who prefer remote work should be encouraged to work remotely by software development companies. By supporting and empowering individuals that prefer to work remotely, companies can save money [7], hire top talent [9], and have more productive employees. Employees that can choose their work location are more productive, less stressed, and able to better manage a work and life balance [7]. Companies that create a culture of allyship for

remote work will create a sustainable remote work environment that both employees and employers will find beneficial. Towards the end of this paper, we discuss specific actions that employees and employers can follow to become allies for remote workers. We recognize that during COVID-19, many remote workers face challenges related to COVID-19 that are not traditional challenges of remote work (e. g. homeschooling due to COVID-19). In this paper, we focus on remote work before COVID-19 to focus on the traditional benefits and challenges. However, we do note some of the challenges that are prominent now due to COVID-19. Our goal is to encourage employees and employers to become remote worker allies. For some employees, remote work is the ideal work arrangement. The future of work will include companies operating as fully remote and others following a hybrid model. By advocating for remote employees, we, as a community, can create more diverse, inclusive [20], and productive software development teams.

2 Benefits of Remote Work

In this section, we discuss the benefits of remote work for employees and employers.

2.1 Flexible Work Locations, a Benefit for both the Employee and the Employer

Flexible work locations are a desire for many employees. Remote work was becoming so prominent before COVID-19 that many software developers never even enter their company's physical office location [16]. Employees can work from their preferred location where they have stable internet access. The employee's preferred location allows the employee to consider numerous variables that are personal to themselves, likely resulting in a less stressful transition. For example, an employee who is a secondary caregiver (e. g. elderly parents living near their current location) does not need to make additional plans for their dependents as part of their transition to a physical office location.

Another example is an employee who is a primary caregiver for dependents with special needs. In these situations, the caregiver likely has a support system of medical professionals and social workers in their community. In the event of a relocation, the employee must find new professionals in the new location and establish a new trust relationship that can take a long time to replace what they had in their original location. With the option of choosing their preferred location, the employee can take this situation into consideration of what is best for their situation.

Other situations are too numerous to list here where the employee having the choice of a preferred location would benefit the employee. This list includes employees with partners who must be in a specific location for their careers, employees with health conditions requiring them to be in a

specific location for access to treatment or better environmental attributes (i. e. dry climates for those with allergies), and employees with school-aged children where relocation would harm academic, social and athletic progress.

When the employee chooses to work in a location other than the physical office, the employer can reduce office space. This saves the company money as overhead is reduced [7, 25]. It is interesting to note that a study found remote employees to be less likely to call off sick from work [44].

2.2 Work Life Balance and Reducing the Gender Gap in Software Development

Employees find that they can better balance work and life [7]. They also find that they have a reduction in their work stress levels [7]. Remote work allows employees to be flexible with their time working and balancing life. It also provides for more part-time work and can be helpful for those with young families. There was a recent study (2017) that found that remote work could help in reducing the gender gap [1]. By finding ways to make remote work more accessible, we can reduce the gender gap and employee stress while increasing employee productivity. In a recent report (2019), 86% of employees surveyed reported being more productive remotely [32]. This is possibly due to a decrease of distractions that are commonly found in the workplace.

2.3 More Opportunities for those with Disabilities

Employees with disabilities (physical and mobility impairments) sometimes struggle to get to physical office locations daily or even at all [13, 21, 33]. One of the broader impacts remote work brings for disabled workers is the ability to work while still being at home. For example, paraplegic and quadriplegic individuals may not be able to leave their homes. This can make it difficult for those to find jobs that pay a living wage, and that interests them. For those with a desire to work as programmers, having a remote work culture allows them to collaborate with a team from home. If all team members are working remotely, those with disabilities are no different from those without disabilities.

2.4 Employers can Hire Top Talent

Remote work has many benefits for employers. Software development companies can hire top talent anywhere around the world [9]. Remote work increases the talent pool for hire. It is important to note that 68% of young workers said they prefer to work remotely in a recent report (2019) [44]. There is higher retention of employees that work remotely [19, 44]. By reducing overhead (e. g. smaller physical offices), employers can pay remote employees more money.

3 Challenges of Remote Work

In this section, we discuss the challenges that come with remote work for both individual developers and teams.

3.1 Creating an Individual Remote Work Routine

One challenge for individual developers is creating a life around remote work. This includes setting up a routine and sticking with it. Remote work potentially requires more self-motivation to wake up and sit at the computer [35]. Getting distracted is easy. Learning to create boundaries and a routine is essential for successful remote work.

3.2 Difficulties Collaborating as a Team

Unfortunately, remote work can cause teams to struggle to collaborate for multiple reasons, such as working in different time zones and the lack of ability for informal meetings [31, 41, 45]. This separation has advantages but causes a problem in that team members cannot ask for help directly or physically work together. They may have to schedule a meeting in advance with someone remotely and struggle with video sharing services.

Another challenge for remote workers is worker status visibility. In a physical, employees can walk over to a colleague's desk to ask a question or for help. When they get to the colleague's desk, they will see that the colleague is at their desk. Then the employee will determine if the colleague appears too busy before starting a dialogue. However, remote work can be difficult to know when an employee can reach out to another employee for help or a status update. Communication and collaboration tools, such as Microsoft Teams, allow for team members to see if a team member is on their available. It is possible that the team member is on their computer, but not free to chat. By creating a culture that requires employees to mark if they are "busy", "available", or "not working", employees could become more comfortable reaching out to their peers. However, these systems also bring in another problem. Employees may feel that they are being watched or tracked when they are working by their managers. This could cause additional stress for employees.

3.3 Company Culture

Company culture is most easily communicated by individuals observing the actions of others within an organization. One challenge with remote work is the risk that the culture within the physical office location will not be easily transmuted to the remote employees. This is even more challenging if the remote employees start working remotely and do not start at the physical office location. Therefore, companies that embrace a remote work culture need to be extra diligent to ensure that their culture reaches remote employees. We believe that more research is needed in this area.

3.4 Career Advancement

There is a common fear that advancement can be slow for remote workers [30]. It can be difficult to be visible when working in a hybrid team. Employees on-site can take advantage of opportunities to be visible to management by virtue

of their physical presence. It may take more effort for managers to remember interactions with remote workers. The physical visibility could reduce the velocity of a developer's career. However, it is essential to note that employees do need to take control of their careers by being visible wherever possible. One way for an employee to be visible on a team is to be an expert in a specific area that the team cannot work without. We believe that there is not sufficient literature on job promotions and software development work. This is an area worth further exploring.

4 Transitioning to Remote Work Full-Time

For organizations that are mainly centered on on-site work, formal and informal processes for collaboration, communication, work tracking/visibility, and work execution are typically heavily optimized for in-person interactions. Tony Hernandez, the second author of this paper, began the journey of transitioning to remote work with a mixture of excitement, confusion, isolation, and stress as he tried to adapt these processes to his new work environment. In addition to the work to adapt the processes, Hernandez also had to figure out what works best for him in his new environment including creating a routine to wake up and exercise. He had to organize his workspace. While all these activities are going on, Hernandez felt the pressure to deliver and contribute to the outcomes of his team and became concerned of the perception amongst those who are on-site and have no visibility into his work which lead to longer hours and stress. As he worked with his manager and peers to change the processes to include the limitations and opportunities of my work environment the confusion, isolation, and stress became minimal and manageable allowing him to become a fully capable, contributing member of his team. The time required to make this transition for him was about two years (approximately 2015-2017). The length of time was exacerbated by organizational leadership changes, changes in direct managers, a role change (from program manager to software engineer), and changes to team's charter. None of the changes were attributed to being remote. It is possible that it could be faster to transition to remote work now that it has been a few years since Hernandez's transition and now that many have experienced the Work From Home (WFH) transition. The transition time is an area of remote work that we feel that the research community should explore further.

It is important to note that transitioning to remote work from on-site work is different for the new-hire and the established employee only in how quickly the employee reaches the state of being fully productive and contributes to their team's success. Otherwise, the process is identical. Many challenges (e. g. creating a new routine and sticking to it) from the transition to WFH due to COVID-19 are challenges that all remote workers traditionally face. However, with

COVID-19, many did not expect to have to go through the transition and it was not a chosen transition for many.

5 Guidelines for Remote Work

Belonging and connectedness amongst peers in a team and managers is critically important for remote employees as the distance can make the remote employee feel isolated. There is a role for both the on-site employees and the remote employee to play to improve the situation. In this section, we provide guidelines for those working remotely and for managers managing remote workers.

First, the on-site employees must be aware of their remote peers in all interactions. When scheduling meetings, on-site employees must consider the time zone of the remote participant. At the same time, remote employees should understand that their availability for meetings might need to include hours that do not fit into their established schedule. Second, meetings should always include an online meeting in addition to a physical location. On-site employees need to ensure the telecommunication equipment in the physical location is connected to the meeting before beginning. If possible, all interactions should include a working camera. There is enough communication that happens without words that, without a camera, communication between team members can suffer. Third, when an on-site employee needs to interact one on one with a remote employee, they should reach out to the peer in the same style as they would if the person were in the office. If that style is to visit the other person in their office, the on-site employee should video call the remote employee. The remote employee must consider their video calls as the front door to their office as if they were on-site and answer the call just as they would accept a visitor. Additionally, the on-site employee should be available to take video calls from remote employees like they would take visitors to their office. Finally, both on-site and remote employees need to keep their status up to date in the organization's collaboration tools (e. g. Microsoft Teams).

In a work environment where there are many accepted meetings, we recommend that employees use the features of their calendar to enable transparency of details of their scheduled meetings. This way the remote employee can make more informed decisions about when to schedule a meeting with on-site people. If privacy is a concern, meetings should be marked as "private," so details are not shared broadly.

6 Allyship for Remote Workers

In this section, we discuss what allyship looks like for remote workers. Remote workers can feel isolated from their team [6, 29]. By empowering and supporting remote workers, those remote workers will have a higher job satisfaction and will be more productive. Allyship for remote workers means that managers and team members take responsibility for including those working remotely. Steps to be an ally include:

- 1) invite remote workers ahead of time to any meeting that they may be interested in or that you think that you may need them in (they can easily join via a video conferencing tool),
- 2) reach out to remote workers and communicate with them regularly (just because they are not in the same physical location does not make them and less of a team member), and
- 3) try to have formal and informal social activities that are inclusive to the entire team for building morale (and if possible, sometimes in person as an entire team). When it is not possible to have a few team events in person, organizing social activities that are completely online and having the organization subsidizing individual meal reimbursements or gift card prizes could be effective in continuing to bring teams together. We note that allyship is not just the responsibility of the manager. The manager does have some responsibilities, but it is also the team's responsibility to make sure that everyone is included, regardless of location.

7 Other Open Questions that require Additional Research

Many open questions are surrounding remote work that requires further research. First, most of the research on onboarding has been focused on onboarding in a physical office or to Open-Source Software (OSS) projects [8, 24, 34, 38, 39, 43]. As remote work and onboarding to a company virtually becomes more common, we need to investigate further how to best onboard new employees to a team virtually. As research in software engineering continues to find, team productivity requires communication and collaboration [3, 26, 40]. Team members need to feel that they are part of their team. Team members need to be able to build trust quickly and be able to rely on one another. Building these working relationships can be more difficult remotely [2, 22, 27, 28, 36].

Using sensors around work environments, including laptops and computers, could help to determine employee availability better and adjust status on a tool such as Microsoft Teams. For example, a microphone or a camera could be used to determine whether an employee is in a meeting, sitting at a desk, on the phone, or concentrating on a problem. Sensors could also determine if an employee is having a discussion with someone else nearby. By exploring ways to adjust availability statuses automatically, employees could focus on work rather than worry about switching statuses to prevent interruptions. Another area of research that needs to be explored is the differences between moving a team from a physical office to remote work or a hybrid system, rather than a team starting out remotely. With the COVID-19 pandemic, we saw this happen. Many teams moved to remote working. Most of the research on remote work focuses on teams that started out either 100% remote or hybrid. With teams transitioning to remote work, the challenges that they face may be different than those that started out working on

remote teams. With this quick transition, researchers need to quickly to focus efforts on the interactions between peers in the collaboration tools that software development engineers use to facilitate better team connection and inclusivity.

8 Conclusion

We have presented the benefits and challenges for software engineers working remotely. We provided guidelines for those transitioning from working in a physical office to remote work full-time. We discuss allyship for remote workers and how to empower and create a sustainable remote work culture. This paper aims to encourage employers to allow employees to work in locations that allow for both productivity and the best work/life balance possible. By allowing employees to choose where they work, employees will report higher job satisfaction and will be less likely to move on to another company a few years after joining. Employers can reduce the gender gap, create more diverse and inclusive teams, and at the same time, they can save money on overhead. Remote work is the future of work, and with it, we can create more diverse, inclusive, talented, and happier software development teams.

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