

## **Improving a Customer Support Chatbot**

### **Understanding Resistance to Return-to-Office Initiatives by Investigating the Transition to Remote Work and Its Effects**

A Thesis Prospectus  
In STS 4500  
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The Faculty of the  
School of Engineering and Applied Science  
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Bachelor of Science in Computer Science

By  
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On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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# **Mental Health and Productivity in a Remote Work Environment**

## **Overview**

Having completed multiple technology internships both in person and remote, I gained an interest in how mental health and productivity is affected by remote work. My technical project focuses on diving into the hybrid workplace by describing my most recent internship experience. Then, the research paper leverages literature analysis and review along with interviews to gather a more complete picture of how productivity and mental health is affected by remote work environments. Ultimately, this work will present qualitative analysis on the effect of remote work on employees.

## **Positionality**

Before I present my observations and analysis, I acknowledge that my experiences and conclusions were informed by my standpoint as a white female with a background in the field of computer science rather than health or psychology. My conclusions about overall health as it relates to remote work are drawn by synthesizing the research of experts in the fields of health, psychology, computer science, and business with personal experiences.

Furthermore, with regards to the technical paper, I will be entering my fourth and final year of my bachelor's degree in computer science at the University of Virginia at the time of the events described. While my degree was close to completion at the time, there are likely relevant technical concepts that I lacked exposure to and misconceptions that could distort my description of some project details. Being wary of this vulnerability, I intend to seek out the subject matter experts among my team throughout the duration of the project to attempt to mitigate this risk. Overall, my education and background helped me to succeed in the position and I acknowledge how aspects of my identity affected my experiences, observations, and research.

## **Problematization**

During the Covid-19 pandemic, many companies transitioned from co-located, or in-person, work to a hybrid or fully remote work model to slow the spread of the virus during its peak. While the advantages of this switch in approach were clear during the pandemic, declining case numbers are prompting companies to consider the future of their work model.

With the pandemic-related risks of returning to the office declining, it's valuable to evaluate remote work in terms of other criteria. While remote work has benefits like decreased commute time and costs and increased autonomy, flexibility, and comfort of the at-home environment, two factors I believe to be central to its evaluation are the organizations' and employees' health.

## **Guiding Question**

With a focus on Software Development Teams, how does remote work affect individual health and productivity?

## **Projected Outcomes**

My research aims to help analyze the way we think about remote and in-person work by discussing the methods and tools involved with remote work and this work situation's effect on productivity and mental health. With this knowledge, employees may be empowered to choose working models that serve them best and employers can help facilitate that.

## **Technical Project Description**

For my Technical Project, I will be discussing my internship experience at Microsoft. From May 22 to August 11, 2023, I will be working at Microsoft within the Azure Edge and Platform group as a Technical Program Management Intern. This internship will likely involve frequent meetings with a development team, discussions with the client, and working with stakeholders to evaluate project requirements and roadmaps.

My paper will discuss details of the project I worked on and my contributions to its success. I expect that these contributions will come in the form of creating and refining the requirements with key stakeholders as well as helping to clarify the requirements with the team during development and testing. My paper focuses on the experience of working on this team and how I was able to both leverage the skills I already have through previous academic and professional experiences and learn new skills in order to contribute to the success of the team.

This internship at Microsoft will likely be a hybrid in-person and remote experience, which will help to provide context and personal experience to inform my research.

## **Preliminary Literature Review & Findings**

My preliminary research discussed a variety of aspects regarding the effect of remote work on productivity and mental health. University-affiliated researchers in the fields of psychology, business, computer science, and biology have investigated these topics, yielding varying results. However, one factor that limits the relevance of much of this current research to my question is the pandemic. Much of the research on this subject was conducted in response to the pandemic, focusing on the swift shift into remote work coupled with social isolation from the pandemic rather than focusing on remote work itself.

Many papers have investigated mental health and productivity as Agile teams switch to remote work. Studies analyzing teams reported that a valuable predictor of both mental health and productivity is stress, both job-related and otherwise. Other factors, such as overall mental health,

social isolation, and personal qualities such as comfort with ambiguity and autonomy, have also been shown to affect an employee's remote work experience.

In terms of analyzing the tools associated with remote work, some researchers have begun to investigate a phenomenon nicknamed Zoom fatigue, where workers report feeling mentally and/or physically drained after video conference meetings. Researchers, including Fosslien and Duffy suggest that the source of this feeling is being expected to maintain a "constant gaze" with people's faces, rather than having the freedom to explore the room for visually stimulating or interesting things, and without these visual breaks, our brains become fatigued (Fosslien and Duffy, 2020).

Building on these results and ideas, my research will synthesize human factors and behaviors with the associated technology to evaluate remote work through the lens of employee's mental health and productivity.

## **STS Project Proposal**

STS studies the interactions between science, society, and technology. As someone going into the business of creating new technologies for human use, this interaction is incredibly important. My project focuses on how remote work affects Agile development teams. These teams are all working towards the goal of creating new technology, but the process of this development is a sociotechnical system as well. If work is completed in person using the Agile methodology, the use of technology is offset by physical proximity. However, remote work relies more heavily on the use of technology just to communicate. Are these technologies affording productive work? What effect is remote work having on the individual, in terms of mental and physical health?

These questions evaluate remote Agile development from the perspective of STS, where we acknowledge that our technology affords certain uses and can have real effects on individuals. Thus, this project leverages the STS lens to evaluate remote work compared to in person work.

As such, this project is anchored in ethics and values. I will be using work from a variety of authors and fields to establish the effects of remote work on productivity and mental health, as well as discuss the ethics of working remotely. Authors such as Galanti et al and Russo et al have published research towards similar questions and will be useful in my analysis. First Galanti and their team leveraged surveys to correlate factors such as productivity, autonomy, work engagement, and social isolation, finding that individual leadership and autonomy is positively related to productivity and work engagement. Another key finding was that family-work conflict and social isolation were negatively related to stress when working from home (Russo et al, 2020). Russo and their associates are also established researchers who discuss factors associated with overall well-being in Agile team members who are working from home. Their research cited a correlation between well-being and productivity, and that high-stress levels, the absence of daily routines, and social contacts are the variables that are most directly related to well-being (Galanti et al, 2021). These studies and other similar research will help inform my work as I seek to establish a more complete picture of the remote-work experience and effects.

I will be utilizing a few theories and frameworks to form my analysis. First, I believe Actor Network Theory (ANT) will be incredibly valuable in my analysis because it will help me to understand the relationships between the various factors that I hope to study including organizations, employees, technologies, and society. My preliminary research suggests that mental health and productivity are correlated, and relationships such as these are crucial to my research question. I will also leverage affordance theory to consider the behaviors that are encouraged and discouraged by remote work. Certain behaviors, like “water cooler conversations,” are not afforded by remote work, but is the absence of those conversations detrimental to team bonding and thus productivity? Are interactions like that crucial to employee mental health? Both ANT and affordance theory can help guide me towards valuable conclusions about the effects of these societal and technical constructions on people.

For my research, I plan to combine the use of literature review and analysis with interviews. I believe there is relevant research about certain factors of remote work that will be helpful. However, I think my research would be inconclusive and overall incomplete if I didn’t talk with people who have experience in these areas and learn, firsthand, what their experiences were. Thus, I plan to conduct a thorough literature review and analysis and supplement these conclusions with personal interviews from Agile team members and alumni. I also plan to research and implement Saldana’s Qualitative Coding Manual.

## **Barriers & Boons**

This project’s limitations include knowledge and time. To begin, this is my first major research project and thus, I know there could be missteps in my path towards my goal. While I have some experience with literature review and analysis, this will be the largest research project I’ve undertaken, and that will come with challenges as I improve my research skills and uncover more about the research area. I also have no formal training in psychology or human behavior, and thus will lean on the expertise of others. As the sole author of this paper, I will have a limited amount of time to dedicate to this research, while also balancing other academic work, recruiting for a job post-graduation, and extracurriculars.

## References

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