MINDFUL PRODUCTIVITY: COMBINING MENTAL WELLNESS AND PRODUCTIVITY TOOLS

AN ANALYSIS ON GOOGLE WAVE'S FAILURE THROUGH ACTOR-NETWORK THEORY

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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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Introduction

The COVID-19 pandemic accelerated the shift to remote work, and although the level of work-from-home has since declined, remote work is still "three to four times as prevalent as it was in 2019" (Smart, 2024). Working from home has offered more flexibility, reduced commute times, and sometimes faster work and productivity (Urrejola-Contreras, 2023). However, remote work also comes with a new set of problems such as mental fatigue, blurred work-life boundaries, increased stress, and a negative impact on mental health for remote employees (Şentürk, 2021). Together, these challenges represent a complex sociotechnical problem: How can we design digital tools that not only support productivity but also prioritize mental well-being in a remote work environment?

There exist mental wellness applications and productivity tools; however, they remain separate. I propose the development of a combined mental health-focused productivity app that reduces these effects by enabling users to set boundaries to differentiate their work and personal lives, support their emotional well-being, and build healthier work habits. This project will support remote workers in maintaining balanced and sustainable work habits. Features of the app will include a screen time tracker, break reminders, productivity insights, and mental wellness resources.

While this project focuses on reducing the issues associated with remote work through the design of the app, a full understanding of how productivity tools can impact a user's well-being requires examining the sociotechnical factors that can contribute to the success or failure of such tools. I will apply actor-network theory (ANT) to examine the social and technical factors that contributed to the failure of Google Wave, a productivity tool by Google that allowed collaboration and communication features. I will investigate the interaction between human

actors, such as the users and developers, and non-human actors, such as the app's design and features.

Addressing both the technical and social aspects is essential since, by just focusing on a technical solution, the app may not effectively support users' mental well-being and productivity without considering how users engage with and perceive the technology. Because the challenge of balancing mental health and productivity in remote work is sociotechnical in nature, it requires attending to both its technical and social aspects to accomplish successfully. In what follows, I set out two related research proposals: a technical project proposal for developing a mental health and productivity management app and an STS project proposal for examining the connection between technical and social factors in the failure of Google Wave.

Technical Project Proposal

Following the COVID-19 pandemic, working from home has grown in popularity and thus has led to an increased reliance on productivity tools to support focus and output (Morieux & Dosik, 2021). While many productivity tools, such as task managers and time trackers, focus on optimizing work output, they often overlook the need for mental health support. As a result, workers often turn to separate mental wellness apps to manage stress, anxiety, and emotional well-being.

Many applications have been developed in order to address workplace productivity, such as *Microsoft Teams* and *Asana*, which offer team communication, task tracking, and collaboration tools aimed to enhance project management and coordination. Other task management apps like *Trello* and *RescueTime* offer features like task scheduling and time tracking, helping users focus on their daily tasks and manage deadlines more effectively (Cusson,

2024). Then there are mental wellness apps such as *Calm* and *Headspace* that offer guided meditation (Timmons & Lamoreux, 2023). Apps such as *Sanvello* and *Moodfit* offer mood tracking, cognitive behavioral therapy exercises, and mindfulness journal prompts (Bell, 2024). These apps provide support for mental health; however, they are separate from productivity tools, leaving users to toggle between productivity and wellness apps in order to manage both work and mental health. Using too many apps contributes to "app fatigue," where users feel overwhelmed by switching between multiple platforms. This constant toggling disrupts focus, interrupts workflows, and can negatively affect both productivity as well as mental well-being (*Too Many Productivity Tools Can Make You Unproductive*, 2021). Instead of increasing efficiency, the overload from managing multiple apps and tools often results in more stress and reduced motivation.

This project aims to integrate mental health and productivity in order to simplify the user experience. It would reduce the need for multiple tools and enhance usability by offering all key features in one application, promoting healthier work habits while also supporting mental well-being. The proposed app would combine task and time management tools with mental health resources like screen time tracking, customizable break reminders, and productivity goals, along with features like breathing exercises and guided meditation. The task and time management feature will help users organize tasks with options for categorizing, prioritizing, and setting deadlines. It is essentially a customizable to-do list that will provide remote workers a better structure to their daily work practices. Screen time tracking will monitor the time spent on various applications and activities in order to show users how they spend their work hours. Workers can then be mindful about their digital habits and optimize their focus periods, preventing digital fatigue associated with prolonged screen time. Customizable break reminders

can be used to remind workers to step away from work and recharge at intervals of their choosing, while setting productivity goals can allow users to define and track their progress. And finally, integrated mental health tools like breathing exercises and guided meditation can be used as support for stress management during the workday. By uniting these features, it provides a complete tool for managing fatigue and promoting mental wellness, making it an ideal choice for remote workers seeking balanced productivity.

The development of the project will be done using an Agile/Scrum methodology to allow for continuous improvement based on user feedback, ensuring the app effectively supports remote workers. Each development cycle, or "sprint," will produce an app prototype, allowing for regular testing and refinement to address real user pain points and evolving needs. User-Centered design (UCD) principles will be prioritized throughout the design process and include conducting user research and feedback surveys to shape and refine the app's functionality and interface. For the frontend development, the app's user interface will be created using HTML, CSS, and JavaScript. The design will utilize frameworks such as Bootstrap and implement a user experience that is simple and intuitive to navigate. The backend will utilize Python and use the Flask framework. After deploying the app, user interaction data such as screen time and feature engagement, productivity metrics, and feedback from the users will be used to assess the app's effectiveness in improving mental health and productivity. This data will be important to enhancing the app and will identify the areas that need improvement and further support.

STS Project Proposal

In 2009, Google created Google Wave, a product that combined email, instant messaging, and document collaboration into a single communication tool. It promised to revolutionize online

communication and collaboration, generating significant anticipation before its launch (proseditor, 2024). However, despite initial enthusiasm, Google Wave was discontinued in 2012 due to various issues. When examining Google Wave's failure, other writers have identified several contributing factors, including the platform's design complexity, lack of intuitive features, and barriers to adoption (*What Was Google Wave and Why Was it Discontinued?*, n.d.). Poor marketing and limited communication about the platform's purpose also left users uncertain about what Google Wave's role was in their daily workflow (proseditor, 2024). Even with its early closure, many acknowledge that Google Wave influenced future collaboration tools such as *Slack*, which successfully streamlined similar features to enhance usability and collaboration (Raza, 2020).

Previous analyses have linked Google Wave's failure to its design complexity and limited marketing (*What Was Google Wave and Why Was it Discontinued?*, n.d.). However, these accounts have not fully examined all of the social factors such as user expectations, workplace adoption norms, and user collaboration practices. They fail to consider the broader sociotechnical network, which includes users, technology, social habits, and organizational factors. All of these elements combined influenced how users integrated Google Wave into their work routines and contributed to its lack of adoption. Understanding these social dynamics is key, as they reveal the deeper reasons behind user disengagement.

It is important to have a holistic understanding of the sociotechnical context to effectively align technology with users' actual needs. Google Wave's failure was not solely due to technical issues, but rather a disconnect between the platform's design and users' social contexts. Factors such as collaboration practices and workplace technology adoption norms shaped user engagement and demonstrated that Google Wave did not fit into existing workflows. By ignoring

these social dynamics, the platform struggled to maintain user engagement, which then led to its failure.

To analyze Google Wave's failure, I will apply actor-network theory (ANT), a framework developed by scholars Michel Callon, Bruno Latour, and John Law within the field of STS (Cressman 2009). ANT examines how heterogeneous networks of human and non-human actors are constructed by network builders to address problems or achieve goals. Network builders actively recruit and align these actors into a functioning system, emphasizing the importance of maintaining coherence within the network (Cressman 2009). By using ANT, I can investigate how Google Wave's design, user practices, and broader organizational and technological contexts interacted to eventually lead to its discontinuation. This approach will highlight the complex dynamics between social and technical elements in Google Wave's adoption challenges. To support my analysis about Google Wave's failure, I will reference sources that offer insights into its technical and social aspects. These will include journals and articles such as Laddawan Kaewkitipong's study, *Diffusion of an Online Collaboration Tool: The Case of Google Wave Adoption Failure* (Kaewkitipong, 2012).

Conclusion

To conclude, the technical project will develop a mental health-focused productivity app that improves upon existing applications by combining both mental wellness and productivity features. This design will provide a more balanced and efficient tool for remote workers that will help increase productivity while also supporting mental well-being. The STS project will research and analyze Google Wave's failure. It will offer insights into the importance of aligning technological design with user expectations and workplace practices. By applying ANT, I hope

to reveal how social factors like user engagement practices, workplace technology adoption, and collaboration habits influence the success or failure of productivity tools. These insights will guide the technical project, ensuring the app is not only functional but also resonates with users' social and practical needs in the workplace. Together, these projects address the sociotechnical challenge by combining technical design with an understanding of social factors to create a productivity tool that supports the mental wellness of remote employees.

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