Thesis Portfolio

Developing a Reliable and Economical Web Portal for Meals on Wheels

(Technical Report)

Problematic Work Practices and Cultures in the Game Industry

(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science
University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree
Bachelor of Science, School of Engineering

Joshua Santana
Spring, 2020

Department of Computer Science

Table of Contents

Sociotechnical Synthesis

The motivation for examining the game industry's work culture was to better understand the reasons why many developers are burning out and what can be done to change the problematic social constructions surrounding it. Inversely, Meals on Wheels is an example of an organization with very positive social constructions but an inefficient workflow that our team aimed to improve. In both cases, good people are being hindered by their work environments but in different ways.

The goal of the capstone project was to improve the volunteer portal of the Meals on Wheels branch of Charlottesville. Through this portal, volunteers are able to manage the routes, customers, and other volunteers necessary to running their operation successfully. In the past, these tasks were done manually until a previous capstone team created the web interface they use today. Other capstone teams have updated it, but now the portal has become very slow and the volunteers are lacking features needed to be more productive. Our team was brought in to eliminate the inefficiencies of the current system and add or rework features to better fit their needs today.

We have identified a set of features that are necessary for Meals on Wheels to operate more effectively, and while some of these features already exist in the current portal, they are not visually intuitive or the processes are not as streamlined as they could be. Others require us to build them from scratch. Either way, we must ensure that staff members are able to add/edit/delete customers, volunteers, and routes, as well as manage data associated with them by printing out reports. Volunteers should be able to view the routes they are driving and the customers they are delivering to, as well as be able to request and fill substitutions for routes. By

improving these processes in our new portal, the Meals on Wheels volunteers will be able to work much more efficiently and can focus on their cause instead of technical difficulties.

The STS research focuses on identifying the issues found within the video game industry's workplace cultures. Across most studios, there are common themes of overworking employees, gender discrimination, and exploitative corporate policies that contribute to a toxic work environment and developer burnout. In response, developers and external labor organizations are putting pressure on the industry to unionize and exposing the ways in which many workers are being mistreated. This research will answer the question, in what ways is the game development work environment problematic and what about the game industry or gaming culture creates these problems?

To answer this question, this research will employ a discourse analysis to capture the work experience directly from developers, as well as documentary research methods to explore in a wider sense the toxicity prevalent within gaming culture. Similarly, the arguments in this thesis will be built on the framework of Social Construction of Technology in order to examine the relevant social groups that affect the work cultures found within the industry.

The goal of this research is to document the problems within the game industry so as to identify their sources and work toward social change. This is relevant to the field STS because it calls attention to the fact that the creation of a technological artifact is not only a matter of science and engineering, but also a matter of the social constructs that surround it and their effect on the people involved.