

Thesis Project Portfolio

Amazon.com Delivery Options: Repaving the Last Mile

(Technical Report)

U.S. Military Utilization of Video Games and Digital Media in the Modern Era

(STS Research Paper)

An Undergraduate Thesis

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While the technical project describes a deep dive into working with Amazon's architecture, the STS research paper examines the complex relationship between the military and digital media. The motivation behind my technical project was to modernize old architecture to lessen the burden of changing Amazon's codebase in the future. In contrast with the U.S. military and their recruitment tactics, my technical project had an explicit goal of being imperceptible to the public and was purely an undertaking for the benefit of developers. Regarding my STS research paper, my motivation was derived from a personal love of video games and specifically society's reception of video games. The relationship between video games and the U.S. military is perhaps the most unique in the entire video game industry, as the military essentially changed what the intentions behind a virtual experience could be. Investigating the way *America's Army* was meticulously crafted to be an entertaining advertisement was an appealing task for me, as was decoding the construction of modern recruitment advertisements.

Prior to the completion of my technical capstone project, the checkout page of Amazon.com used an antiquated architecture for selecting eligible delivery options, leading to an inefficient and rigid codebase. The goal was to rebuild the architecture to make the old one obsolete while ensuring that the new workflow for delivery options was completely unnoticeable for the customer. As a member of the Last Mile team at Amazon, I was tasked with leading an effort that had been abandoned the summer prior due to time constraints. The approach involved compartmentalizing operations into two backend components of the new codebase, resulting in a simplified process for generating eligible delivery options and retrieving the frontend structure

for said delivery options. The workflow was classified into three parts: retrieval of delivery options, processing of delivery option data, and rendering of delivery options. The project was a success, as the newly remote-rendered delivery option widget seamlessly replaced the old widget without any impact on the end consumer.

Shifting focus to the STS research paper, how has the U.S. military utilized the popularity of video games and the gamification of modern warfare to influence recruitment? Over the past decade, the United States military has undergone a transformation in the way it approaches recruitment for Generation Z (Gen Z). The U.S. Army-developed video game series, *America's Army*, is no longer the main outlet for recruiters to connect with younger desired audience. Advertisements portraying warfare activities as much more game-like have increased drastically and are seeing better performance in terms of recruitment numbers for Gen Z. The STS framework, Political Technologies, is leveraged in order to provide insight on how exactly the military's use of digital media has affected the technology of virtual entertainment itself. Examining the military's utilization of digital media through this framework will further shed light on the direction digital entertainment is heading in general. That is, how video games and various forms of media will be used by different organizations to serve an alternate purpose than to just entertain the target audience.

Working on both projects simultaneously provided valuable insights into various aspects of each project that would not have been clear had I worked on them independently. The technical project required me to dive deep into Amazon's architecture and rebuild an antiquated checkout page, while the STS research examined the relationship between the military and digital media, specifically video games. While they may seem like unrelated projects at first glance, I found that working on both allowed me to gain a broader perspective on the role of

technology in society. On the technical side, I learned the importance of modernizing old architecture and making it more efficient for developers. This skill set will undoubtedly be useful for any future projects I work on, and I now have a greater appreciation for work that goes into making a seamless customer experience. On the other hand, my STS research paper allowed me to dive into the complex relationship between the military and digital media, and how it has affected the entertainment industry. By working on both projects simultaneously, I was able to connect the dots and see how technology can be used for different purposes depending on the political intentions behind the technology's creation. The experience gained from working simultaneously lead to conclusions that I would not have gained had I solely focused on my technical project or STS research paper. Overall, the value of working on both projects simultaneously was in being able to connect the dots between technology and society. I feel that this experience has given me a unique perspective that will undoubtedly benefit me in any future endeavors.