Thesis Project Portfolio

Truth Bounties: Combating Misinformation Through Economic Incentives

(Technical Report)

Healthcare.gov and Sociotechnical Barriers: An ANT Approach

(STS Research Paper)

An Undergraduate Thesis

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Table of Contents

Sociotechnical Synthesis

The development of Truth Bounties, a platform designed to combat misinformation through financial incentives and expert arbitration, shares compelling parallels with Healthcare.gov's implementation challenges. Both projects involve creating complex sociotechnical networks that must successfully translate between various stakeholders while maintaining system stability. While my technical project focuses on building such a network from the ground up, my STS research examines how similar networks can fail when translation mechanisms and inscriptions are poorly designed.

Truth Bounties is a web-based platform that allows content authors to place monetary bounties on their work, which can be challenged if found false or misleading. The system creates an intricate network of authors, challengers, arbitrators, and administrators, connected through a sophisticated technical infrastructure. Key features include a portable verification icon system that visually represents content status across different platforms, secure payment processing for bounties and challenge fees, and a comprehensive public case library. The platform must carefully balance technical requirements with user needs while maintaining trust and transparency throughout the challenge and arbitration process. One of the most critical aspects of the system is its ability to preserve and verify content integrity, ensuring that bountied items cannot be altered after submission.

My STS research examines Healthcare.gov's 2013 launch failure through Actor-Network Theory (ANT), arguing that the platform's collapse resulted primarily from failed translations between key actors and problematic inscriptions in technical systems. The analysis reveals how poor communication mechanisms, misaligned incentives, and rigid technical architectures created cascading failures that undermined the entire network. By examining government oversight reports, contractor documentation, and contemporary media coverage, the research

demonstrates that successful technology implementations require more than just technical expertise—they demand careful attention to how relationships between actors are translated and inscribed into systems.

Working on these projects simultaneously has provided invaluable insights into building stable sociotechnical networks. Healthcare.gov's failures directly influenced Truth Bounties' design choices, particularly in how we structured communication channels between stakeholders and designed technical systems to reinforce trust relationships. For example, understanding how Healthcare.gov's fragmented contractor structure led to communication breakdowns informed our decision to create integrated collaboration tools for arbitrators and administrators. The STS research highlighted the importance of creating effective translation mechanisms between different actors, leading us to implement features like transparent case tracking and detailed decision documentation.

These parallel investigations have reinforced the crucial lesson that technical systems cannot be designed in isolation from their social context. Moving forward, I will approach technical development with a deeper appreciation for how design choices inscribe particular patterns of interaction and how careful attention to translation mechanisms can help stabilize complex sociotechnical networks.