

Thesis Project Portfolio

Raising Deforestation Awareness Through Online Education

(Technical Report)

Regulation Crowdfunding: An Opportunity for New Innovation?

(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

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Sociotechnical Synthesis

Communicating ideas, sharing knowledge, and transferring resources has become increasingly efficient as the 20th century ended and the 21st began. From humble beginnings as a way for researchers to share results, the Internet has grown and evolved over the past 40 years to become the vibrant global communicative ecosystem it is today. Internet connected individuals, who previously were limited to the people, information, and resources they could physically access, are now able to access nearly any person or piece of information in the world or share any information or resources they wish. Whether it is a website aimed at education about issues important to that person, an advertisement for his or her small business, or a call to investors for backing a potential startup, anyone around the globe looking for it can find it. The following technical and STS theses will discuss how this medium can effectively be used and how it is changing longstanding institutions.

The technical thesis focuses on implementation of a game based educational platform that students will be able to learn and share ideas. The website, created for the Amazon rainforest protection organization Amazon Aid, is intended to provide a fun and engaging way for students all across the world to learn about the wildlife of the forest, how the ecosystem balances, and its role in the global environment. My technical thesis summarizes the work my capstone team did in designing, developing, and testing additions and improvements to the website. The goal of this work was to streamline the process for both students and teachers, allowing the students to more easily access the content and providing a way for Teachers to track student progress and manage student accounts more easily.

The STS thesis explores how the creation of technologies for transferring information, wealth, and resources has fostered a new startup investment ecosystem powered by the crowd as a whole rather than any individual. Additionally, the thesis will try to understand how this new investment route has changed the investment landscape and altered what businesses are considered viable for startup investment. Through consideration of policy changes implemented in 2016 that legitimized crowdfunding, loosened restrictions, and lowered the financial risk for investors in addition to analyzing the investment trends of crowdfunding since its inception, this thesis will try to understand how the new technologies are shifting the innovation markets and creating new opportunities.

The additions and extensions to the Amazon Aid website as described in the technical thesis are of great value to the Amazon Aid team as they try to educate students around the country. With our additions, large barriers that existed for both students and teachers when using the website in a classroom are now gone. My STS work on the crowdfunding phenomena in the internet age provides an in-depth analysis at internet crowdfunding successes in consumer facing industries. While this work is useful when attempting to improve the crowdfunding financial ecosystem, future work should be done as the technology matures.