


Sociotechnical Synthesis

STS 4600

Spring 2021

Sunny Hwang

Computer Engineering

Signature  Date 4/28/21
Sunny Hwang

Signature _____ Date _____
STS Advisor Richard D. Jacques

As technology advances, it continues to transform how things are done in a variety of industries. This especially holds true for the music industry as almost every aspect from music production to music distribution has evolved due to technology. Most improvements aren't noticeable to the average listener, to them music has continued to become more accessible and they enjoy tuning into new songs. On the other hand, artists and music labels have had to adapt to technology otherwise they would not survive in the industry for very long. Some key examples of technology's effects on the industry include but are not limited to the introduction of the internet which leads to illegal downloads, the improvements in production technology lessening the need for instruments, and social media's influence on which songs are promoted. These improvements sparked the change that created the music industry we know today.

The technical portion of my thesis produced a cost-efficient programmable multi-effects guitar pedal. The standard commercial multi-effects pedals are expensive and well beyond the price range for a beginner such that they can create a barrier of entry for the aspiring guitarist. The multi-effects pedal that was created provided a cheap alternative while also providing the flexibility of programming any guitar effect onto it. It was necessary to implement a microcontroller into the design, a requirement by the computer engineering capstone, so the base of the product was an MSP432P401R microcontroller. Complimenting circuits were used to filter the guitar signal such that the microcontroller could process and produce effects on the signal.

My STS research relates to my technical project as I planned to see how technology shaped the music industry throughout the years for better or worse. I specifically sought out to see how technology changed the way music was produced, distributed, and shared and the effects it had on the artists and music labels that create the music.

Completion in both the technical and STS portion of this thesis revealed the technological improvements in music and its effects on the industry. The change has brought forth an age where musicians have to be more technically skilled while still possessing musical talent. Furthermore, jobs and careers are coming at a cost of the advancements in musical technology. Instrumentalists aren't needed when software can mimic the sounds of instruments and a large production crew isn't needed when a

mixer handles their job. Although there are faults, technology has vastly improved the efficiency of the music industry, and most of the music that we cherish today wouldn't have been created without it.

Acknowledgments are made to Dr. Harry C. Powell and professor Adam Barnes for their guidance as well as my groupmates Yaman Shrestha and Jack Galleta for which this project wouldn't have been made possible without them.