Thesis Project Portfolio

Design and Construction of Modern University of Virginia Themed Pinball Machine

(Technical Report)

The Right to Repair Movement and its Social, Political, and Environmental Impacts

(STS Research Paper)

An Undergraduate Thesis

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Sociotechnical Synthesis

This research prospectus analyzes the modern Right to Repair movement from an environmental and political prospective. This is achieved through a literature review performed through the STS framework of the Social Construction of Technology which implies that the social and technological impacts of the Right to Repair movement are intertwined and deeply connected through the interests of relevant social groups. The technologies interacted with and created for consumers have shown to have deep social, political, and environmental impact indicating the strong interplay between these different groups. The social construction of technology framework connects and explains the various linkages between these involved parties by highlighting the mutual impacts that these groups have on each other. It is through these interactions that technology develops and adapts to best benefit our society. As for the Right to Repair movement, modern consumer technologies have too often stripped device repairability from the hands of the consumer. Often, this is done to increase company profits as the monetary gain from the sale of a new device or in-house repairs trumps the profits of long-term device ownership with consumer repair. The lack of repairability in consumer electronics has subsequently had adverse impacts on the environment and consumers. The severe accumulation of electronic waste in landfills around the country has demanded the development of recycling and waste alleviation programs to combat the issue. The Environmental Protection Agency has created waste monitoring programs to monitor the sale of new technology to predict the waste cycles of the devices new devices are replacing. While these technologies have positive impacts on the environment and work to alleviate the impact of e-waste, they do not slow its production as that responsibility lies on device manufacturers. Furthermore, political reformations have

sought to demand corporations return repairability to the devices they create. Beginning with the motor vehicle Right to Repair act, there has been major political progress spawning from the Right to Repair movement. This has continued into the modern day where major corporations have begun supporting aftermarket repairs. This support can largely be attributed to legislature demanding consumers maintain the Right to Repair their own technologies. While beneficial, these solutions do not properly manage the growing problem of our technological waste and overall environmental impacts. Finally, the act of purchasing new devices upon damage or even simply a couple years of use has a strong financial burden on consumers. Unfortunately, this has been the preferred method of repair for large corporations as it is much more profitable to sell new devices than repair old, broken devices. Critics of the Right to Repair movement have argued that increasing device repairability will subsequently increase the base price of devices. This claim is based on the idea that ensuring consumers have repairable devices will increase the cost of production for corporations. This increased production cost will be reflected in higher base prices of consumer devices. This critique, however, does not factor in the decreased frequency of device purchases or the environmental benefits of reduced electronic waste. With the ability to repair devices, consumers will have less of a need to upgrade and replace their devices. This will decrease the financial burden on consumers as well as decrease the amount of e-waste produced. Additionally, promoting a repair as a cost-effective solution for long-term device management would inform consumers of the benefits available to them by simply repairing their outdated or damaged devices. Combined, the growing environmental, political, and financial issues have heightened the importance of the modern Right to Repair movement. By demanding repair remains in the hands of consumers, the lifecycle of a device will be greatly

increased, reducing the amount of e-waste entering landfills while also leaving consumers with more money. While much is being done, there is still significant effort to be made to ease the repair process and demand corporations better align with standards set in place to benefit the end consumer. By analyzing the needs of consumers, political advocacy groups can apply the necessary pressure on device manufacturers to adjust their practices for the betterment of society. By analyzing the Right to Repair movement through the framework of the social construction of technology, the evolution of consumer electronics becomes clarified. Political standards and societal shifts towards repair will slowly but surely ensure both the environment and consumers are protected from the corporate greed.

Keywords: Right to Repair, Consumer Electronics, Device Repair, Electronic Waste, e-waste