Thesis Project Portfolio

A New Technological Management System Brings Growth and Success to a Home Services Franchising Company

(Technical Report)

The Techniques that Drive Company Success Around the World

(STS Research Paper)

An Undergraduate Thesis

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Sociotechnical Synthesis

Technological solutions have become the cornerstone of societies today. Engineers work tirelessly to innovate solutions that improve processes. The key to successful engineering hinges on ethical practices. Studying Science, Technology, and Society (STS) highlights the conditions required for technological systems to thrive.

For my capstone's technical project, I worked for a company to better grasp the correlation between success and the implementation of technological solutions. This company, the Premium Brand, is a home services franchising company attempting to revolutionize the home services industry. As the company gains traction in Charlottesville, Virginia, I was assigned the task of designing and implementing a technological management system that would combine the departments of the company.

This task required a thorough understanding of all work flows and systems within the company. Then, once this understanding was gathered, a system to automate and organize the company was designed, created, and implemented. The implementation and process are explained in more depth through this paper and how the finance, training, operations and performance departments were all moved onto a new technological management system. Ultimately, this new implementation was successful and many workflows were able to be automated. The company has now reached the milestone of containing more than 1000 franchisees.

Working for the Premium Brand sparked my interest of what makes the implementation of new technological solutions successfully. Many companies remain using old systems because implementing new systems are complex and there is a high chance of low adoption rates and failure. With that, I analyzed the balance and techniques used by successful companies to implement new technological solutions. To understand this required balance, an engineering perspective was taken. I specifically used the unintended consequences STS framework that Harrison, Koppler, and Bar-Lev introduced.

For my capstone's STS paper, I took what I had learned from my technical project to further understand how companies today are growing to a significant size. Companies are plentiful, yet they have a relatively low success rate. When doing preliminary research, I found

that different regions of the world have companies that have a significant difference in their success rate. The revelation that just 20 years ago, for every 9 companies in the Americas/EMEA region there were 10 companies in the APAC region, but today, for every 6 companies in the Americas/EMEA region there are 10 companies in the APAC region was the foundation behind my research. I wanted to understand the reason behind these changes.

Companies around the world are attempting to prove their worth and successfully implement their system into existing societal systems. This overlap between systems leaves a lot of room for error and failure. With this, I used the unintended consequences STS framework to analyze how some of the most successful companies in the EMEA, Americas, and APAC regions have become successful. To analyze how these companies have become successful, the companies' system is specifically looked at in relation with existing physical, social, and technical systems.

After performing my STS and technical research, I have a much deeper understanding of engineering and the creation and implementation of technological systems. It has been proven that there are complex interactions between technological systems. If these interactions are not correctly examined, then unintended consequences arise.