Thesis Project Portfolio

Expanding VIAble Employment for Adults with Autism: A Systems Approach to Increase Nonprofit Sales

(Technical Report)

Perception and Cognition in People with Autism Spectrum Disorder: An Analysis of Workplace Infrastructure

(STS Research Paper)

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Executive Summary

Both the technical and STS research components of this Capstone project share the overall motivation of increasing opportunities for gainful employment for people with Autism Spectrum Disorder (ASD). The technical project is at a much smaller, but more practical scale, in working to increase employment opportunities at a specific microbusiness in the Charlottesville area. The research paper also focuses on employment opportunities for people with ASD but at a much higher, more theoretical level. It analyzes the impact of the design of a workplace on the ability to effectively integrate employees with ASD.

People with disabilities encounter both internal and external obstacles at work that prevent them from maintaining gainful employment in a variety of industries. By working with VIAble Ventures, a local company that the VIA Centers for Neurodevelopment (VIA) runs, the technical component of this Capstone project will increase opportunities for employment of people with autism at a micro business within VIA: VIAble Ventures. This for-profit division of VIA markets goods created by Artisans with Autism, such as bath salts and candles. The program offers persons with intellectual and developmental disabilities on-the-job training and a reliable source of income. The main objective of this project was to boost VIAble Venture sales to give more autistic adults in the Charlottesville area access to employment options. At the moment, manufacturing and sales have not concentrated on Internet sales and rely primarily on volunteer availability and seasonality. Three key areas of attention were online traffic, transaction analysis, and website design to increase online sales on VIAble Venture's website using a systems thinking approach. Our team predicted the best-selling seasonal and year-round fragrances using data analytics and identified higher-margin goods that VIAble Ventures should focus on to boost earnings. To pinpoint issues based on customer input, our team also carried out focus tests on the original website's navigation, specifically focusing on the importance of the tools for navigating and the company's objective. The Square website's final redesign was informed by these findings. By increasing production during currently lower sale months and streamlining the online user experience, VIAble Ventures could increase sales and thus increase the number of artisans with autism employed.

The subject of this research paper is the perception and cognition abilities of people with Autism Spectrum Disorder (ASD), specifically concerning how they interact with a workplace environment. The research answers the question: how do people with ASD's perception and information processing differences impact their ability to operate in a traditional workplace? Susan Leigh Star's theory of infrastructure was employed to analyze how workplace infrastructure, as defined by Star, is accessible or inaccessible to people with ASD because of their unique cognitive functioning. Based on Star's definition of infrastructure, there are key aspects of workplace infrastructure that misalign with employees with ASD. Because workplace infrastructure is not designed with employees of ASD in mind, many current accommodations are not *embedded* in the workplace, a property of infrastructure. Additionally, infrastructure

should be able to be *learned as membership*, just by operating in the scope of the infrastructure, but this is not the case for people with ASD. Fundamentally, it is important to study the perception and cognition abilities of people with ASD so that future workplace infrastructure can be designed inclusively, including improvements to both workplace organization and the physical environment. The different cognitive functioning of people with ASD should be considered in the very foundation of how the workplace is designed, to allow greater access to the economic, emotional, and mental benefits that gainful employment provides.

By working on these projects at the same time, I gained a much more well-rounded and grounded understanding of the topic of inclusive employment as a whole. The technical project allowed me to see the impact of inclusive workplace structure through onsite visits to VIAble Ventures while I was gaining a deeper understanding of the theory of workplace design at a high level. It allowed me to better see practically what elements of workplace design on a small scale were beneficial for people with ASD. Then the research component deepened the understanding of inclusive workplace design at a larger scale and built on that understanding to expand to a larger level, which would expand the access to social and monetary benefits of employment.