Thesis Project Portfolio

Cloud-based Endpoint Management Solutions: A Software Engineering Internship Reflection

(Technical Report)

Ethnographic Research in Product Development: Shaping Future Technologies through User-Centered Design

(STS Research Paper)

An Undergraduate Thesis

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Sociotechnical Synthesis

The pace of technological advancement and the nature of consumer preferences continually reshape the landscape of product development. In this day in age, traditional market research methods often fall short, unable to capture all of the unspoken desires and behaviors of consumers. This gap needs a refined approach to consumer research, one that delves into the sociocultural factors influencing product interaction. This thesis explores the profound impact of ethnographic research integrated at the front end of the product development process. It particularly focuses on how this integration can unveil critical user insights and hidden opportunities for innovation, thereby facilitating the creation of products that are not only innovative but also deeply aligned with users' expectations and lifestyles.

The technical report of this thesis includes an application of advanced web technologies in the redesign of a web user interface for a cloud-based endpoint management solution. The technical analysis discusses the methodologies used in transitioning from a less popular programming language to React, enhancing the system's efficiency and the overall user experience. The project underscores the importance of modern UI frameworks in developing applications that are not only functional but also intuitive and responsive to the needs of users.

The STS portion of the thesis examines the role of ethnographic research in product development. It argues that ethnographic methods provide a richer picture of consumer needs and behaviors than traditional research methodologies. Through case studies and examples, the paper illustrates how passive field observations, active ethnographic interviews, and participant observations can uncover deep insights into consumer interactions with products. These methods reveal the needs that are important for designing innovative products that resonate deeply with users across different demographics.

The unifying theme of this thesis revolves around the transformative power of integrating advanced technology and ethnographic insights in product development. Both emphasize the necessity of understanding and addressing the real, often difficult to meet needs of users to design solutions that are not only technologically advanced but also socially relevant and highly adaptable.