

Thesis Project Portfolio

Sage Feedback: Form and Search
(Technical Report)

Feedback Driven-Development

Impact of Feedback Systems On The Enhancement of Software Applications

(STS Research Paper)

An Undergraduate Thesis

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Sociotechnical Synthesis

Over the summer, I worked at Capital One to develop software, though I wasn't exactly sure what I was going to get into at first. During my first week there, I was introduced to the subsection of this company known as Sage. At that moment, I was introduced to a key point of this platform. While the user base of Sage, a call quality platform leveraged by US Card, increases to 16,000+, we must find a way to democratize the ability to give feedback on the application. Along with my team, we developed the solution of creating feedback form and search features for displaying feedback. By the end of the summer, I ended up developing the front-end using Tailwind, Vue.js, and an internal GUI tool known as Connex. For the back end, I developed two eAPIs using Typescript, AWS Lambda, Node.js, and storing the data in an OpenSearch index. After running through many errors throughout the process, I was able to deploy both the UI and eAPI to QA and received praise from various teams in the Capital One Card Tech Space. This project was introduced to various groups such as software developers, higher ups, those working in the customer service space, etc. I was able to get a good overall understanding of how much this work would affect the company and bring about a big change within the Sage subspace. Future work would include modeling different statistics from the feedback data and utilizing machine learning algorithms to classify submissions with specific issues and solutions. My final goal would be to deploy both UI and eAPI to Prod after achieving 100% code coverage with testing. I was able to connect my technical expertise to a larger view goal by the end of the project. In order to promote customer happiness we must take in feedback through a common platform such as an electronic feedback form. I was able to conclude that customer satisfaction has a positive impact on profitability, the main goal of all companies.

In the context of a software company, the main objective is to deliver products efficiently while ensuring sustainability. Sustainability here means aligning with consumer needs, which requires understanding those needs through direct communication. We can define the main term of this project: feedback. According to Merriam-Webster, feedback is "information regarding reactions to a product's performance or a task, used as a basis for improvement." I will explore various case studies to determine if feedback can enhance software development practices and related tasks. I will be exploring within a specific space of information. Feedback comes in various forms, but in our digital age, electronic feedback mechanisms offer the most effective means of gathering valuable insights. This shift to digital platforms enables administrators to collect and analyze data more efficiently, leading to significant improvements within the organization. Compared to traditional methods, digital feedback mechanisms offer advantages such as easier data access, quicker data analysis, reduced physical storage requirements, and streamlined information consolidation. Feedback acts as a guiding compass, helping to establish desired proficiency standards in tasks and pinpointing areas for improvement. My research focuses on examining the impact of data-driven feedback systems on enhancing software applications. My main argument is that feedback plays a crucial role in the evolution of software development and should be a priority for companies.

I built my STS research paper topic directly off the topic of my technical paper. As I mentioned before, over the summer, my project was focused on developing a feedback form and necessary auxiliary functions for Capital One. The project I did my STS research on delved into the necessities of feedback in a software development environment, though it wasn't necessarily limited to that. I was able to use what I learned over the summer to guide my research and gain important insight into the effects of feedback on company success. It is important to know the

needs of the customer before you proceed with any sort of development. Figuring out how to tailor your product to your clients' needs is essential for any company that wants to grow. I will be going into further detail about each side of the argument, both technical and societal, through my papers.