

Zero Waste Pennsylvania: Waste Audit Application

Executive Summary

Community Partners

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Student Development Team

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Background

Zero Waste Pennsylvania (ZWPA) is a non-profit organization and is a part of the Pennsylvania Resources Council (PRC). ZWPA's primary goal focuses on waste diversion, audit, and proposal services that are available to businesses, educational institutions, and other nonprofits. The PRC's mission is "To lead and promote individual and collective actions to preserve Pennsylvania's environmental resources for each generation."

Project Description

Project Opportunity

One of the core services ZWPA provides is waste auditing, where Waste Audit Coordinators tour an organization's facilities and gather notes and observations to compile into a client proposal. If the client wishes to proceed with the audit, the waste auditors will collect data on-site and manually enter information into Microsoft Word/Excel for analysis. The greatest impediment to ZWPA's current waste audit process is its dependency on pen and paper. Re-engineering and enhancing the technology to streamline the waste audit data collection process would add considerable value to the organization, as ZWPA stands to gain both time and revenue from facilitating its fee-based services. Additionally, a faster turnaround in ZWPA reports and audits could encourage client interaction.

Project Vision

Working with PRC and ZWPA, we hope to implement a web application to facilitate data entry, management, and storage in regards to the waste auditing process. In particular, we aim to expedite the Initial Site Visit Questionnaire by allowing direct input, as well as enabling a web option that allows ZWPA staff members to quickly complete necessary fields. ZWPA auditors will also be able to quickly and digitally complete waste audit forms representative of current paper spreadsheets. Audit information will then be downloadable and available for instant analysis. Complementing all of these features is an organized system of note-taking and tracking that can be associated with specific projects and clients.

Project Outcomes

We have developed a mobile-compatible web application for ZWPA that aims to be a time-saving, reliable, and efficient product. The product was completed through the processes of documentation gathering, database and process analysis, conceptualization, and development. We've developed a great relationship within our team and with our community partner as well, so everyone is invested in the project and works together to make the product a successful one. We used Ruby on Rails to develop the application and chose PostgreSQL for the database. DigitalOcean, GoDaddy, and Capistrano were used to deploy our application onto the web.

Project Deliverables

We have delivered browser accessibility of the application and our GitHub Repository. The application is deployed on a website so that it is available for ZWPA's use; the website includes a comprehensive help page. We transferred the ownership of our Github repository to the client for any potential development in the future. In addition, our client has the credentials to the DigitalOcean and GoDaddy accounts for the hosting and domain services. We also provided instructions on how to login to root and deployer accounts for the web server as well as the procedure to reset the production database.

Recommendations

In order to build capacity, continued use of the application will allow ZWPA to leverage technology to meet their goals. Moreover, the centralized design of the application will improve ZWPA's ability to transform raw data into business intelligence. To ensure that the application is as time-saving as intended and efficient for ZWPA, it is vital that current and future users are trained in proper use of the application. To that end, we have provided a comprehensive 'Help' page to allow new users to learn about how to use and maintain the application. Our custom application is catered to ZWPA's processes, hopefully making learning the new system an improved experience.

Student Development Team

Achal Channarasappa was the Technical Lead. He is a third year Information Systems major with minors in Business Administration and Human Computer Interaction, expecting to graduate in Spring 2016. He will be working at Spiceworks this summer and is looking toward a career in project management.

Ryan Donegan was a Developer and UI Designer. He is a third year student majoring in Information Systems and Human Computer Interaction, expecting to graduate in Spring 2016. He will be working at Intuit this summer and is looking toward a career in UX Design.

Katherine Du was a Developer and UI Designer. She is a third year Information Systems major and Human Computer Interaction minor, expecting to graduate in Spring 2016. She will be working at LRNGO.com this summer and is looking toward a career in educational technology.

Maggie Li was the Project Manager. She is a third year Information Systems major with minors in Human Computer Interaction and Business Administration, expecting to graduate in Fall 2015. She will be working at Salesforce this summer and is exploring a variety of career paths including testing, design, management and development.