

Website Redesign: Increasing Accessibility and Accuracy in Search Results

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Abstract

Yext, a New York based software company, decided to revamp its Site Inventory tool, updating the layout and the outdated search tool to make customer product information more accessible. I redesigned the Site Inventory tool to run search functionality based on the Yext Answers natural language search rather than the previously used keyword search. I worked with a team of project manager interns to determine requirements for the redesign of the website. We then determined the most important aspects to be completed during the summer. I used internal Yext products, including Yext Answers, and Yext Pages, as well as knowledge of frontend tools like Javascript and Handlebars to redesign the existing website and add a more efficient search interface.

This redesigned website included all of the consulting products for different clients at Yext, and was used by project managers to keep track of current and past projects. One further improvement to the Site Inventory website would be to have more fields associated with the clients and client projects filled automatically, thus including more relevant information without taking time away from client work.

1 Introduction

Internal company communication is integral to a company's success. Companies build internal knowledge and strategies, but if those strategies are not clearly communicated, they are not beneficial.

Working at Yext, I spent days working on a client update that I could have finished in hours with access to past projects with similar features. Teaching new hires to navigate available projects, and code bases is important for more efficiently integrating them into the workforce. That is why creating tools like the site inventory tool that organize current and past projects is important, especially for a growing company. The information within the tool also has to be easily accessible for the tool to be successful, thus search functionality as a method of site organization is an important topic to discuss when improving a resource's efficiency. A course with a large group project, that forces students to create efficient methods of communication would help students prepare for larger projects in industry.

2 Background

Yext is a software company that focuses on developing new products, like their Answers search functionality, and on managing client websites. I assisted a team that managed company websites, with Technical

Engagement managers, who acted as liaisons for the client and Software Engineers. These Technical Engagement managers manage relationships with up to 40 companies at a time, and need knowledge of both that company, and the capabilities of the software engineering team to create client tickets. Before I worked at Yext, there was a Site Inventory website that held information about clients, but this website was difficult to navigate, with non-alphabetical organization and keyword search. Through my work consulting for the company, and researching problems with the site, I was able to transform the site into a more usable experience.

3 Related Works

In order to address the importance of effective company communication, specifically artificial intelligence in company tools, I looked into a report by Wirtx, et al [2019] discussing artificial intelligence applications in knowledge management. Artificial Intelligence can help search and manage databases for those with limited knowledge of their concepts or database management.

I also examined how current UVA classes are creating collaborative group settings to understand, by looking into the syllabi for previous classes in [Praphamontripong \[2021\]](#) and [McBurney \[2021\]](#). These classes mimicked industry settings, but created smaller groups of 2-4 students working together, thus limiting the scope of communication tools introduced.

3.1 Artificial Intelligence in Knowledge Management

Artificial Intelligence could have a place in streamlining many aspects of the workflow, including automating administrative tasks, and allocating tasks [1]. One area of benefit relevant to the tool created is the benefits of

Artificial Intelligence in Knowledge Management. These systems can generate and transform knowledge in a usable way, and artificial intelligence that creates natural language processing can allow for easier and more intuitive retrieval of knowledge. [1]

3.2 UVA CS Collaborative Classes

Current University of Virginia courses that seek to mimic the industry practices and style are CS 4640: Web PL and CS 3240 Advanced Software Development. These courses focus on creating a project from client requirements [2][3]. Both courses taught important web development languages that I used during my project, but the scope of the clients, and group were much smaller, being 2-4 students within the group. It would be beneficial to incorporate projects with larger groups into a University of Virginia Computer Science course.

4 Process Design

I began the website redesign with research about improvements to be made, as well as the Answers system that I would implement. My main role as the developer on the team of interns was to implement the new search tool. My secondary task would be to make other site updates. Thus, I worked with Technical Engagement manager interns to determine and prioritize the most important other site updates.

I began the summer by researching how to set up the Yext Answers tool. Yext has a platform called Hitchhikers that has tutorials on how to use their products. I started with their basic Answers tutorial so that I could understand more about the product. Yext Answers is built on a connection to another one of their products: The Knowledge Graph. The Knowledge Graph enables clients to create entity types with specific fields, and populate those entities with data. For example, there might be a location entity for

a fast-food chain that has their address and telephone number. The Answers platform used the search tool to search for different entities within a client's website.

The basic structure of an Answers page is the search bar, the different verticals, and the entity cards, and filters. A search page could have different verticals specified, which specifies the domain, or entity set, to be searched. A universal vertical would search all entities, but a user could also click to specify searching just within a specific entity type, for example only searching location entities.

The entity cards refer to the format of the search results. After each search, a number of entities matching that search show up. Each vertical has a specific format for how these results are displayed, which are called the cards. An entity card has relevant information displayed, and can be displayed in a grid or rows. For example, if someone was searching locations, a card for that location would have a picture, address, and phone number for that location. There are also filters that can be specified for different verticals and exclude certain entities.

After I researched into the Answers platform and understood the general structure, I felt prepared to start developing the search function for the site inventory site. When I began working, the site featured two different entities: Pages and ETLs. One request from the technical engagement managers was for Pages to be split up into Pages and Answers, as some Pages featured Answers search functions, which had a different set-up. This was indicated in the knowledge graph for the Pages entity. Thus I created four different verticals, the universal vertical, Pages vertical, Etl vertical and Answers vertical.

I also created different cards for the different entities. For the Pages and Answers cards I used iframe to display an image of the url that they linked to, as well as the name of the page and the company. For the Etl's I included the name and date they were last modified. I used handlebars and Javascript to set up the Answers page, aided by existing handlebars templates that could be included when setting up a basic answers experience from the Hitchhikers tutorial. I used Javascript to give values to the variables that would be used in the handlebars template.

5 Outcomes

At the end of the summer, I successfully created an Answers experience for the site, as well as made four other site updates including alphabetizing the directory and updating the icons of the site. Creating an Answers experience for the search section of the site increased usability by making answers more accessible. Answers has natural language search ability, making it easier to find information. Previously if someone misspelled the name of a Page that they were searching for, no results would appear; but with the Answers experience the search is interpreted and results appear. Also, Answers has the ability to search based on searchable fields in the knowledge graph. Thus, one could search for a site with a locator, and would be able to find it, rather than looking through Pages to find an example.

6 Conclusion

Throughout this project I learned about the importance of company-wide communication. The tool that I helped to create, streamlined the flow of information about a topic. The project meant less time searching for examples of similar projects that had already been done. Working on this project, I also learned about communication within a team, while working with the technical engagement manager interns, as

well as working within a company information source, hitchhikers, to create this project. While creating the site inventory tool, I learned about the importance of creating easy to use and navigate tools, so that anyone within the company could feel comfortable using those tools.

7 Future Work

There are many future steps for this project. As I only had a summer to work on it, the technical engagement managers and I prioritized certain elements, while creating outlines for other elements that could be created later. Some of those elements include linking the site inventory website to another internal tool that finds experts in different areas. A user would then be able to find an example of a project that had a specific feature, and would then find an expert at the company specializing in that feature. A second improvement could be to include more automatically filled fields, so that the tool could have more information, without requiring more work from project managers. Another potential improvement could be deploying the website and linking it to Okta verification. When I left the company at the end of the summer, they were working on a new product called Sites. This product was like the pages product, but with increased security. The Site inventory website is just deployed on the company's test server so that client information cannot be accessed publicly. By moving the site inventory tool to be a Sites tool rather than a Pages tool, it could be deployed publicly, but securely for only Yext employees.

8 Acknowledgments

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