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Carrot Sticks: Addressing Food Waste

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Abstract

This is a research paper. This paper details my findings and experiences while endeavoring to create a website (Carrot Sticks) that connects unwanted crops with people in need. The project was motivated by the increase in gardening awareness that resulted from the COVID-19 pandemic, as well as some troubling statistics about food waste in America. This project took place over the course of six weeks in the Fall of 2022, and my outcomes and takeaways are contained herein.

Introduction

For my Bachelors of Applied Science capstone project, I wanted to explore an issue that makes a negative impact all across America: food waste. According to the World Trade Organization, the United States is the second leading importer of food, as well as the third largest grower (Opportimes, 2021). And yet, approximately 10% of Americans lack access to enough food to lead a healthy, active lifestyle (USDA.gov, 2021). How could this be possible?

While researching this phenomenon, I came across a startling statistic: about 40% of the food in America never gets eaten (Ireland, 2013). That prompted me to wonder what could be done to get some of that 40% into the mouths of the people who need it. I also became fascinated with the massive shifts in our habits during the COVID-19 pandemic, such as the rise of remote work and cottage industries sustained by people in lockdown. One of the effects of the pandemic was an explosion in gardening: it makes complete sense, given that the one thing we couldn't completely pause during the pandemic was the acquisition of food (be it from restaurants, grocery stores, or by growing our own). Many found gardening to be a way to both pass the downtime peacefully, and also to produce something of value without leaving the home. According to a study performed by University of Georgia researchers, one in three Americans took up the hobby sometime during the pandemic (San Fratello et al., 2022).

While considering this information, I came across an idea that I thought would address food waste by capturing the heightened interest in gardening. Speaking from experience, I know that successful gardeners tend to yield more food than they intended to grow, and often more than they can eat. Sometimes a neighbor or relative is happy to take home the surplus, but what if I could get that food into the hands of people who truly needed it? Thus, Carrot Sticks was born,

a website that connects gardeners who have extra crops with anybody looking for a little extra nutrition.

Planning

In order to bring this idea to life, I needed to plan my approach, as well as learn quite a bit about building a website. I had some rudimentary experience in site-building, but not enough to accomplish this project with ease. I was going to need to find ways to spread the word about my project, as well as design the whole operation in a way that made sense to users. I realized pretty early on that ease-of-use is a major factor in a website's success: people just aren't willing to fuss with something that's clunky and difficult to manage.

First, I started to think about internet trends, and how modern "crowdsharing" sites like Uber, AirBnb, and Moovit were successful at allowing people to pool their resources to create win-win situations. If Carrot Sticks was going to work, it would need to harness that same energy and willingness to solve problems. Granted, many crowdsharing sites have been monetized to great effect, and that's not the goal of my operation, but the need to connect "wants" with "haves" is important. I decided to limit Carrot Sticks initial area of operation to the Northern Virginia towns near me, so that everybody involved was working inside of the same geography, time zone, and within driving range of each other.

Next, I needed to decide how the site would be organized. I wanted to make the design as simple as possible, to make sure that navigation wasn't a barrier to successful connections. I decided to create an optional registration system, so users could opt to register and network with other users, or also just use the site as a guest and accomplish their goal without signing in. I started breaking down the categories of crops that users could post their offerings under.

Obviously, garden crops can be broken down by an infinite number of features and to unlimited degrees of granularity, but I didn't want to overwhelm anyone (nor did I have unlimited time). I went with nine categories: bulbs, flowers, fruits, fungi, leaves, roots, seeds, stems, and tubers.

Execution

I spent about 10 hours combing through the major website-building services, like Wix and GoDaddy, to find one that would meet the needs for my project. I decided that WordPress was the route I should take, due to its capacity to build what's called a directory website. A directory website is one that allows users to post, and retain editorial control of, offerings without the explicit permission of the webmaster, very much like Craigslist. One may notice that the current build of Carrot Sicks is at 2.2, this is due to having started and restarted a number of times before settling on the proper combination of hosting service (Bluehost) and WordPress plug-ins (Directorist).

I went about constructing the website, addressing issues as they arose, and also considering things that hadn't occurred to me in the original planning. I was faced to answer questions like "how much contact info should a poster be required to share?", and "should the poster be required to assign their offering to a category and/or attach tags to the post?" In the end, I went with the most minimally invasive options to keep the site functional: include whatever information you like and leave out whatever you think you should. In the end, this is a philanthropic venture, and so I found it wise to put faith in humanity to share the right amount of information to make a proper connection.

I launched a trial run, using just myself, my wife, and a friend to gather feedback. At the time of the trial run, the website showed some significant bugs. Many of the links that were used

to navigate the site, like the link to “all listings” as well as the links from the postings back to the search results, didn’t work. As well, the postings were populating with too little information, based on what had been entered into the posting form. I went back to square one, and after a series of trial-and-error changes, managed to work out the identified bugs.

Results and Conclusion

After many hours working out bugs, I now have a functional website. I invited more friends and relatives to use the site and encouraged them to share it with anybody they chose. There have been multiple successful swaps on the site.

There are still many benchmarks I would like to hit, including some that I had originally planned at the outset of my project. I would like to increase usership, and reach out to local non-profit organizations who may benefit from the site’s ability to help those in need. I intend to keep up with the site, and will continue to search for ways to improve its functionality. One issue that cropped up during the project, and that can be addressed in the future, is that to date, the website has not been functional during a prime gardening or harvesting season. At the time of this writing, there are not many crops being pulled out of the ground, but that will soon change when spring arrives in a few months.

I believe that Carrot Sticks has tremendous potential to make a dent in America’s food waste problem. As Shelley Burgin at Western Sydney University points out, gardening and crop-sharing can be a driver for “social sustainability”, which are the core characteristics of a community that can help it thrive, as well as withstand times of economic downturn (Burgin, 2018).

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Appendix

Capstone Project site: <https://nah.ohl.mybluehost.me/>