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puddl: Gamifying Water Conservation

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PROBLEM/OPPORTUNITY

As the global population surges, the demand for fresh water will only increase. With no technological breakthrough on the horizon, it is more important than ever to conserve water and not waste this precious resource. Water conservation is a serious issue, and will only become more severe as global warming worsens. As the global temperature increases, and rainfall becomes more sporadic, it will be important for communities to find new ways to save water. This push has already been made in certain areas in the united states, California, where they were forced to reduce their water consumption by 25%.

Through our fieldwork and other research, we discovered three important factors that would shape our project. The first was all about flow! The flow in a sewage system is integral to its ability to function. If the flow of a sewage system gets too low, you encounter a number of logistical problems. Additionally, if you use too much water, you could adversely affect the ecosystems from which you took the water. Salmon, and their food chain, are affected the most by the overuse of water. When talking with Catherine Howells, we also learned about water conservation. Certain areas in the world, like Perth, Australia, are very good at conserving water, whereas other areas, like Phoenix, Arizona are not.. However, no matter where you are, it is very hard to conserve more than thirty percent of water usage. The average American family of four uses 400 gallons of water per day. On average, approximately 70 percent of that water is used indoors, with the bathroom being the largest consumer. This leaves a large amount of water to be conserve, especially when you consider the average Australian family of the same size uses on 238 gallons of water per day! Also, certain applications use a huge portion of a person's daily water usage, for instance the toilet and washer equal forty-eight percent of a household' water consumption, and by learning new ways to reduce this, families could save a lot of water!

Figure 1: Art mock-ups of the final app

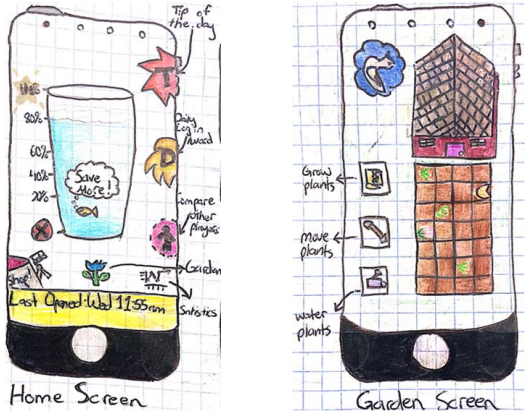
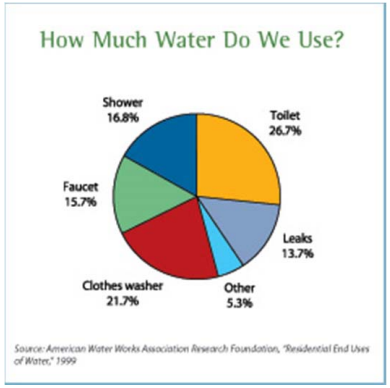


Figure 2: Water used in each appliance



SOLUTION

To solve this problem, our team has come up with a revolutionary idea: make saving water fun. To do this we will create a water conservation app that tracks our daily, weekly, and monthly consumption, along with other stats, such as fixture usage. To make this fun we will create in app game centered on your own virtual garden! Your garden's health revolves around the amount of water you save, with an in game currency based on your water consumption that allows you to improve your garden, or watch it wither. You will be able to spend the currency in our store, where you can buy different, rotating items.

The goal of the app is to facilitate the development of positive water conservation habits, by making it enjoyable. By having a garden which you are invested in, the app becomes more personal, and enjoyable. This will incentivize the user to continue coming back. Citizen plus, one of our fieldworks, taught us a valuable lesson about social altruism, and that the main reason people do something good is for other people to know that they did it. So, as another way of captivating our users, we will integrate the social aspect of altruism. Users will be able to see how much water their friends are saving, what their gardens look like, and how many water points they have. By adding this component, our app will become a social movement to share more water. Additionally, users will be able to donate money to water conservation charities, such as conservation.org, to collect more of the in game currency, and thus improve their garden that way. No matter what, by becoming engaged in our games, users will actively improve water conservation efforts, through the development of positive habits.

After reviewing other water conservation apps on the market, our app is truly unique. Also, we noticed something, all apps fit two distinctive characterizations. The first, they all displayed how much water you were consuming, but never related it to anything meaningful that encouraged you to save more (dropcountr). Also, none of the apps were engaging, and interesting enough to continue using the app for long periods of time.

RESULTS/CONCLUSIONS

We knew our project was going to focus on conservation, and after watching a TED talk we knew how we were going to do it. As another part of our fieldwork, we watched a TED talk by Jane McGonigal, who described how gaming can change the world. In her presentation, she talks about the amazing benefits video games can have, including stimulating creativity, habit development, and a drive to succeed. She said that video games can be an amazing factor for good, and illustrated that point with some of her own games. In one of her games the world has run out of oil, and players have to develop real world habits to adapt to this hypothetical digital scenario. Several years after the game had ended, the players were still practicing the habits they had developed. We saw this as an incredible tool and wanted to incorporate it into our innovation. To gain the necessary knowledge to create a conservation app, we met with Catherine Howells, a professor of a course on water. She gave us the requisite information about how others are already conserving water, the limits of the sewage system as it relates to water conservation, and the ecological impacts of using too much water. We also obtained some amazing help in the conceptual design of our app from citizen plus, a marketing company who works with Adidas, Samsung, T-Mobile, and many others. They helped us look at the design of our app at a basic level, when thinking about what will encourage users to download the app, continue using it, and recommend it to others. We also worked with them to fine tune our design approach to make it more user friendly.

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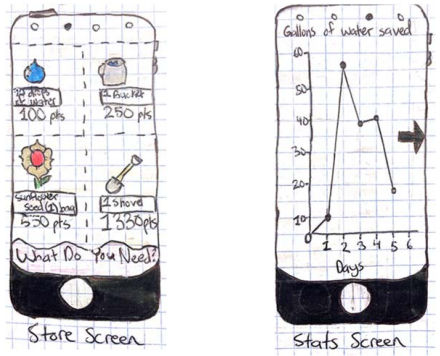

Figure 3: More art mock-ups