

Revolutionizing Fundraising With Internet + Green Finance

"The first step is that you have to say that **YOU CAN**" - *Will Smith*

501C3HREE x **TKS**

Executive Summary

01

Problem

Poverty and Mistrust

Communities affected by water contamination experience a **20-40%** rate of poverty.

Lack of adequate aid from governments early on led to a **lack of trust** in outside organizations. Leads to a **lower perceived value** of products marketed by outside organizations.

02

Recommendation

Develop an App

Build an app to **generate funds** through users, donations, and ad revenue to **fully cover upfront consumer costs** of a water sensor installation.

App will generate awareness, reputability, and revenue that will aid in current and future initiatives.

03

Outcomes

Funding and Reputability

The ability to install sensors **without consumer upfront costs** and therefore have more residents willing to accept a sensor into their homes.

Maximized representative data of areas for future water boxes, public support of 501cTHREE and future initiatives, and increased perceived value of sensors.

Objective

To install water sensors in a **minimum** 1 out of 100 homes and generate data to prevent contaminated water consumption, place more water boxes, and create social change

The Water Quality Monitoring System

Cost: \$14

Plumber Installation: \$65-175

The WQMS Sensors Detect

- pH levels
- Oxidation-reduction potential (ORP)
- Lead (Pb)
- Electrical Conductivity (EC)
- Flow
- Pressure

Functionality

- Sensor pack is connected that allows data to be sent back to a central server
- Can be achieved by any number of methods including:
 - WiFi connection to the home's wireless gateway
 - Bluetooth connection to a mobile device
 - connection to a IoT device



The Current Situation

"My kid loves water — he loves it — so it was difficult telling him **not to drink** the water"

"If I don't advocate for him, the city isn't going to advocate for him, **I don't trust** they're doing everything they can, and **I don't trust** that they ever will."

- *Shakima Thomas*

Meet Shakima

- Shakima Thomas and her younger son, Bryce, live in Flint, Michigan where **high levels of lead** have contaminated their tap water
- Although lead is not absorbed by human skin, ingesting the tap water could lead to **serious, irreversible damage** to developing brains
- To protect her family, Shakima often purchases bottled water for drinking, cooking, and bathing that causes **massive financial strain**
- Although the city of Newark has provided filters, they **did not help** the situation



Current Situation

The Start

2014

2019

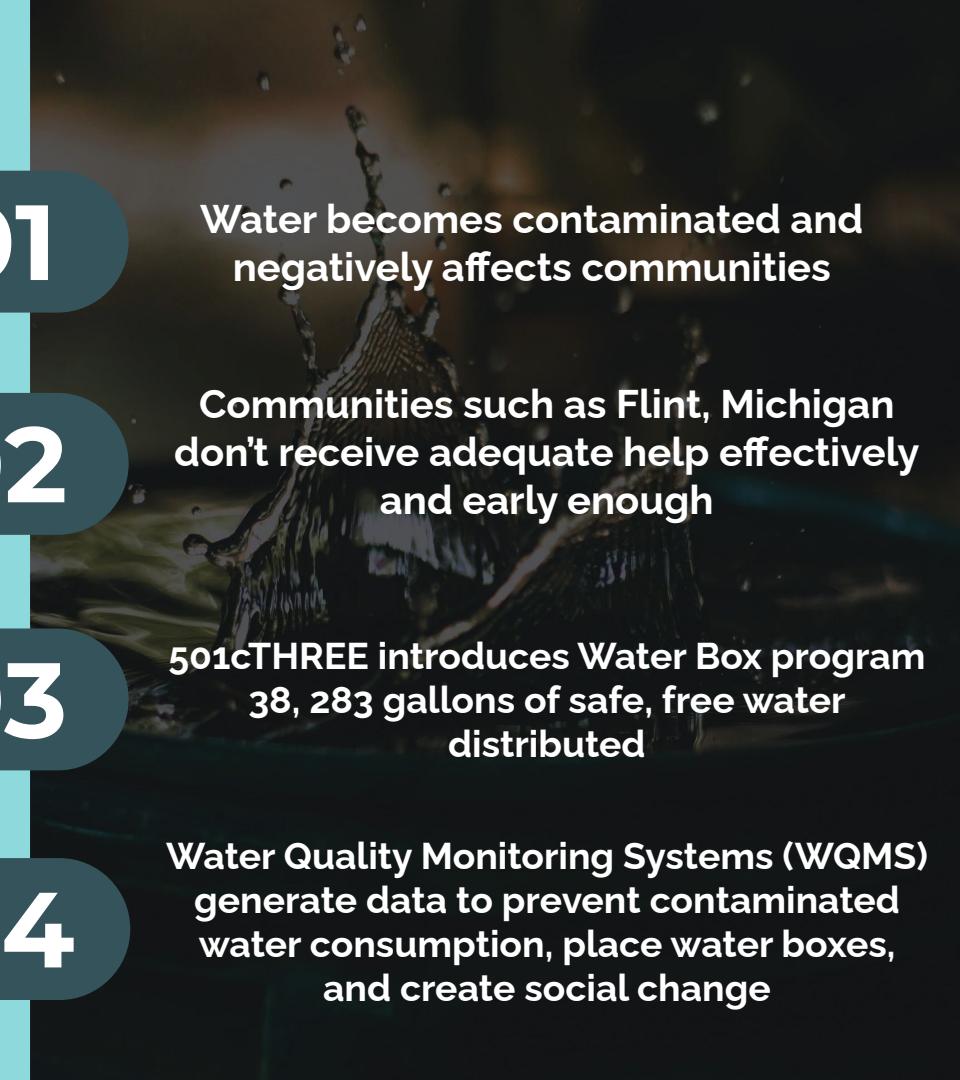
2020

01

02

03

04



Water becomes contaminated and negatively affects communities

Communities such as Flint, Michigan don't receive adequate help effectively and early enough

501cTHREE introduces Water Box program
38, 283 gallons of safe, free water distributed

Water Quality Monitoring Systems (WQMS) generate data to prevent contaminated water consumption, place water boxes, and create social change



What's the Challenge?

Upfront cost of water sensor and installation creates a barrier for the majority of consumers living in poverty

Lack of efficient help from the government creates a sense of **mistrust** with outside organizations

Major Obstacles



Poverty

Upfront costs create a barrier for impoverished people

Those who need it the most are **restricted** by cost



Lack of Trust

Due to many years of **not** receiving effective help from government

Creates a **low perceived** value of sensors that may not match upfront costs



Information

15% of people living in Flint do not have the privilege of graduating from high school

Those who do not have the education will have **difficulty** comprehending the data

Issue of Poverty

40.4% 36.4% 28%



Flint,
Michigan

36.4%



Detroit,
Michigan

28%



Newark,
NJ

26.6% 21.8% 19.5%



Milwaukee,
Wisconsin

21.8%



Baltimore,
Maryland

19.5%



Chicago,
Illinois

Poor people and minority communities are hit the hardest by water systems that violate safety rules. At the beginning of 2019, more than 30 million Americans lived in affected areas according to the Environmental Protection Agency.

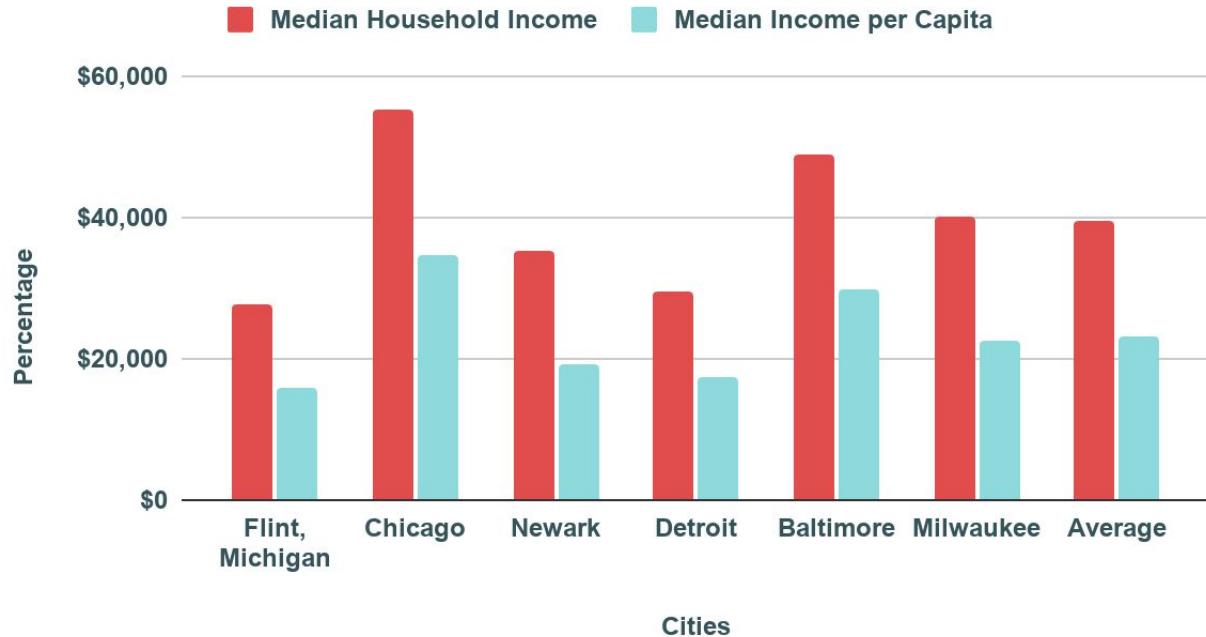
The Cost

These cities affected by water contamination experience **higher rates of poverty** compared to a country-wide wide poverty rate of 10.5%.

Predicted upfront cost of a WQMS include the \$14 sensor and \$65-175 plumber installation. This restricts those who are in need of a sensor but cannot afford or unsure whether the benefits outweigh the cost.

Are People Making Enough?

Income

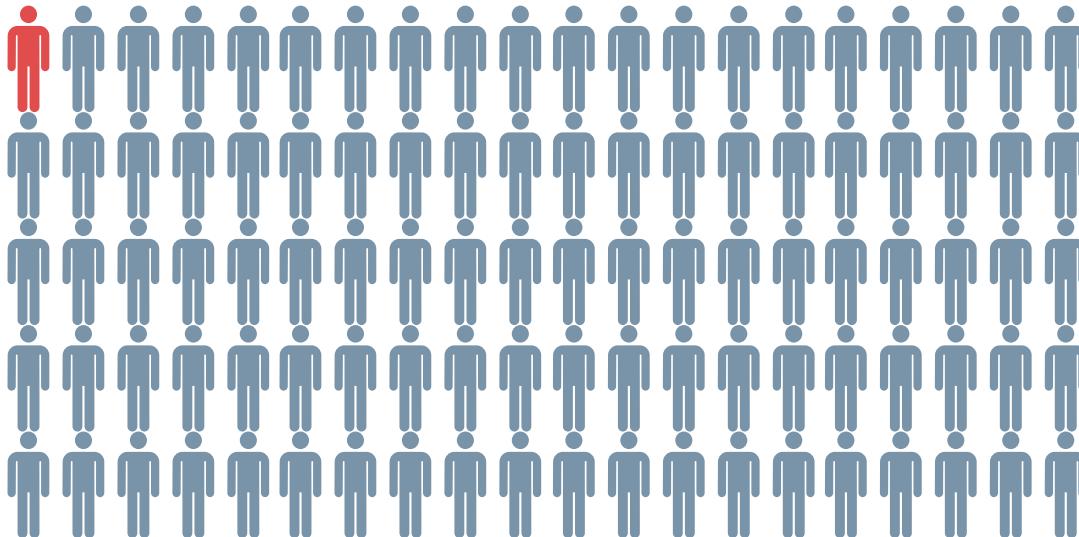


Households in affected communities make humble incomes compared to a 2019 USA \$63, 703 median household income.

With lower disposable income, residents don't make less and are unlikely to take the risk of purchasing a water sensor.

Therefore, people don't make enough to afford the sensors.

1/100



The idea of 1/100 being able to **purchase** the sensor over the whole population is possible.

However, we need to consider that in an underprivileged area, the people that form the group of 100 are **unable** to make that purchase.

Therefore, we must eliminate the cost.

Issue of Trust

\$46 million spent on economic development

In the beginning of 2016 in Flint, Michigan when the water crisis was declared an emergency. These funds **could have gone towards replacing pipes, providing bottled water, or health services** for affected Flint families.

\$14.2 million towards creating 562 jobs

The Michigan Strategic Fund gave \$3 million to iSource Worldwide and SkyPoint Ventures for the "creation of 100 jobs," along with \$5.7 million to C3 Venture Flint for the "creation of 380 jobs." Yet, people still **found trouble finding work** despite the claimed creation of jobs.

Reduced Perceived Value

Perceived value is the result of a consumer's view of the trade-off between sacrifices made and benefits obtained. After experiences in minimal benefit from government initiatives, consumers — especially those in poverty — may have a **lower perceived value of a WQMS** as the sacrifice of its upfront costs may outweigh their assumed benefit of a sensor marketed by an outside organization.

So How Do You Tackle This?

After reviewing the data on poverty and issues of trust, we have come to the conclusion that the main barrier for people to obtain a water sensor is **money**.

We have also reviewed the other programs that 501cTHREE is offering such as fresh food and clean energy options to communities of color.

Our solution is to bring underprivileged people not only free sensors, but everything else that 501cTHREE is offering by providing a solution that **eliminates cost**.

Our Recommendation

Build an App!

What NOW?

Phase 1 MERCH

Selling Carbon
Negative Hoodies



Phase 2 APP

A game that connects
the virtual world with
reality to support
social impact

Phase 1 MERCH



Thoughts

- Use money generated from selling merchandise as starting capital for app development
- Creating multiple revenue streams with merch
- Partnering with sustainable business in Flint (Ex: [Genusee](#))

Goal

- Raise \$240, 000 for V1.0 of the app (6-9 month development)
- Around 4, 800 hoodies without considering upfront cost

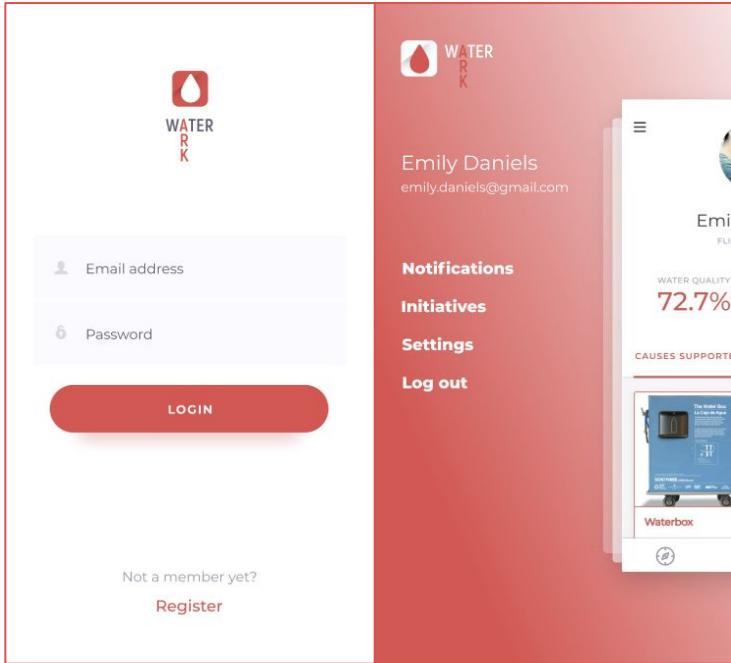
Platform

- Through the social media of Jaden & Will Smith with an unconventional video

Extra

- QR-Code/Barcode to redeem digital in-game coins on the app once it's finished developing
 - Attracts both current and new users
- Make this hoodie limited with the specific number of the hoodie (Ex: No. 000001 on the first hoodie)
 - P.S. — the hoodie is already made by 501cTHREE

Phase 2 APP



Our Idea

Through our review, we noticed that 501cTHREE has already been developing a platform for data collection. We want to add on to it and create a game with a larger online community where people play to help the social cause that they are **deeply passionate** about.

Game Play

The app will constitute different social cause that users can work on. Let's say a user is interested in improving the water quality. By completing **tasks in real life** that will benefit the water quality, the user will be able to claim **in-game** digital coins. The user can then use digital coins to build their central object related to the cause (Ex: water sensors). For every **digital sensor** installed, there will be a **sensor installed in the real world**.

Features

- Interaction with other users
- Create incentive for users to bring in users
- User leaderboard for positive competition
- Real-time data used in the game from the sensors
- Option to donate directly
- Displaying sensor and water box location
- Building trust with those in need

Case Study: Ant Forest

An example of a similar successful model

Received a 2019 Champions of the Earth award

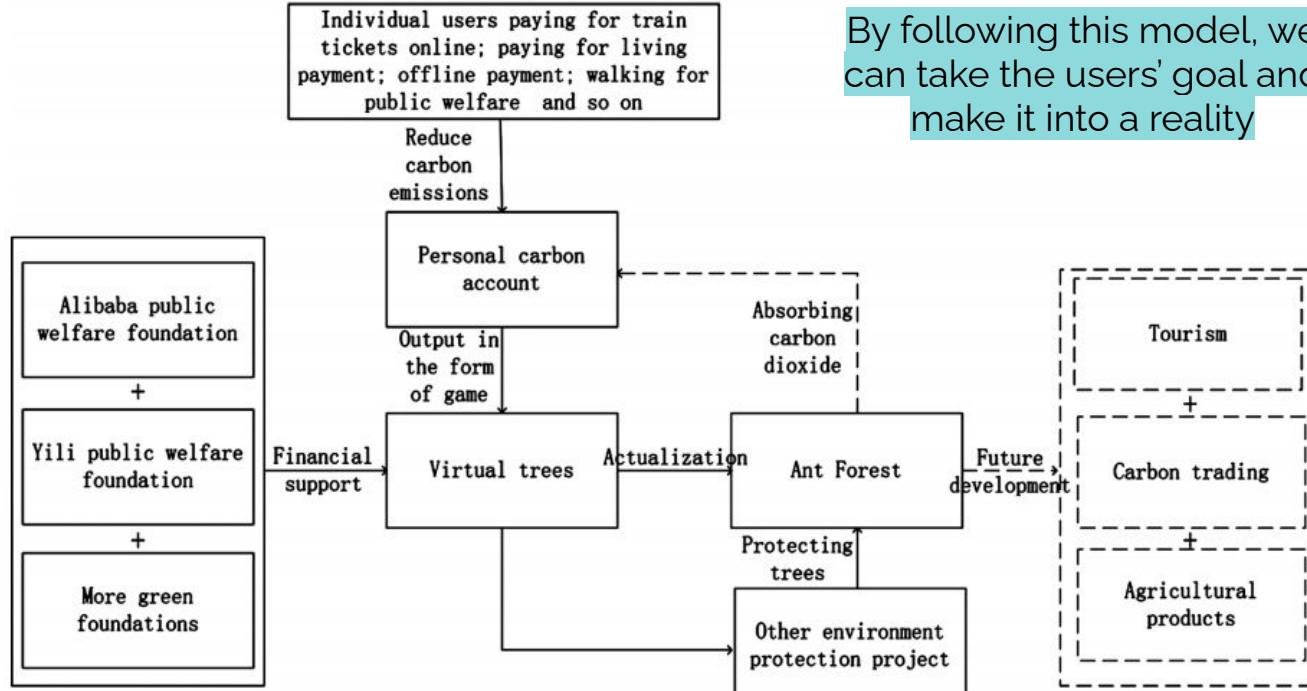
The Problem: Desertification of China's land

The Solution: Created an app on the platform Alipay in which users are encouraged to record their low-carbon footprint through daily actions (taking public transport or paying utility bills online).

For each action, users receive "green energy" points that accumulate. After a certain number of points, an actual tree is planted.



Ant Forest Model



Note: The dotted line and the dotted box show the future development.

Outcomes

122 million trees planted

in some of China's driest areas by Ant Forest's and its NGO partners since its launch in August 2016.

400, 000 job opportunities

created to aid in planting trees.

Generated USD 8.4 million in income

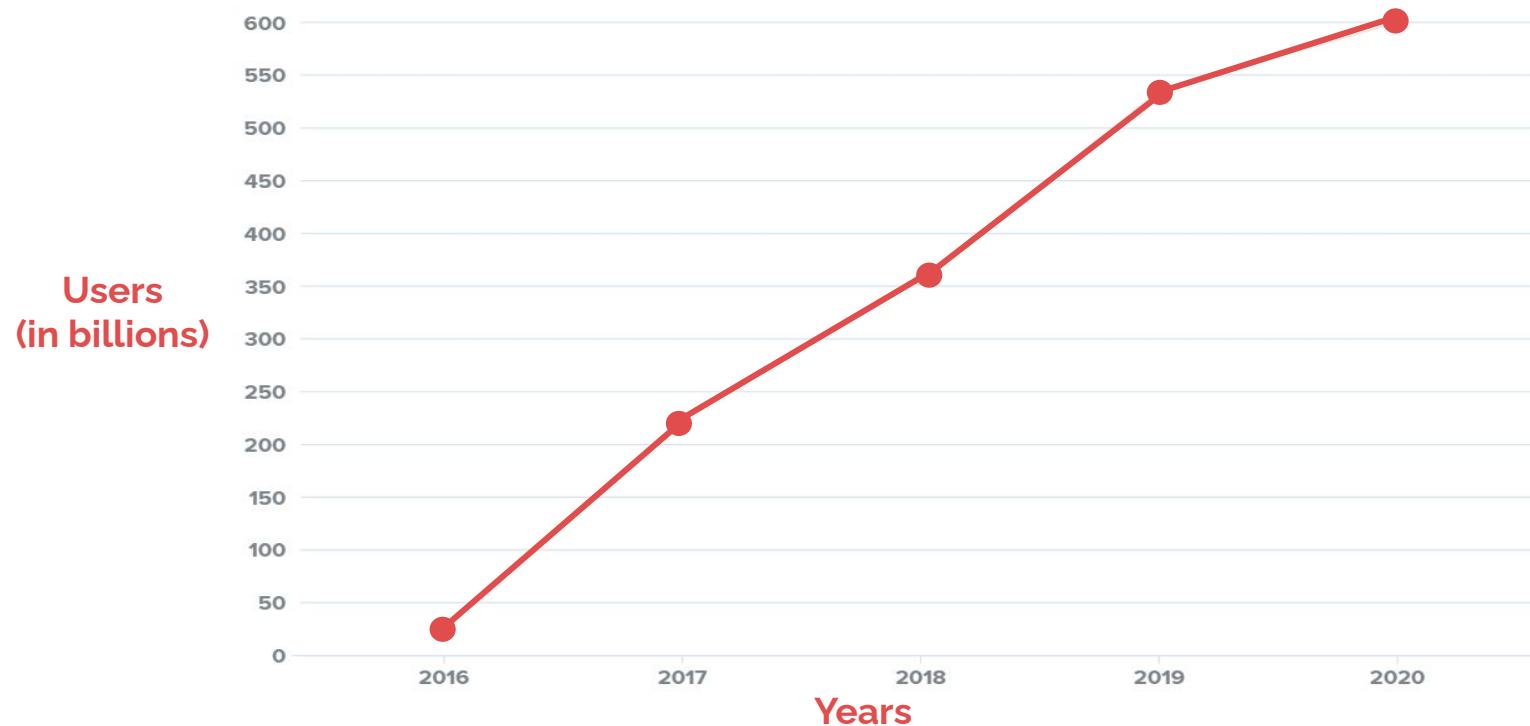
by working with farmers to plant trees, develop organic agricultural products, and connect them with e-commerce platforms.

Satellite Imagery

to enable users to see their impact and trees they planted which motivates them to continually use Ant Forest.



Ant Forest User Base Growth



Ant Forest's Success



122 million

Trees planted in China's driest areas



8.4 million

USD in income by working with farmers to plant trees and develop organic agricultural products



112, 000

Hectares of conservation land

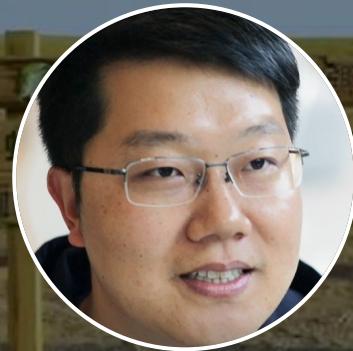


500 million

Users attracted since launch

“I found it so amazing to use my energy to make a tree grow 2000km away.

This is a great sense of achievement”



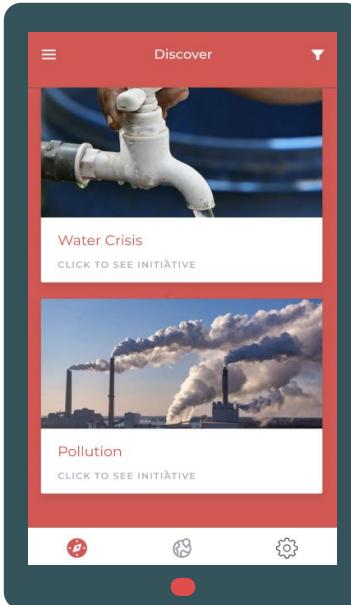
Wang Xiaoying
Ant Forest user

Our App Functionality

Our app will encourage users to complete tasks (ex: riding a bike) that support a cause (ex: water crisis, environmental issues, etc).

Provide sensors for those in need
Users accumulate points through tasks on the app that can then be traded for a water sensor installation in reality.

Builds trust with those in need
Creating a global community who deeply cares about the issues will create trust between 501cTHREE and Flint.



Encourage social interaction

Users will gain more in-game digital coins when completing tasks with a friend. Tasks will be verified through accessing body sensors

Additional features

Options to donate, social aspects (co-op with friends and family), and competition (rankings).

No consumer up-front costs

App aims for **1/100** users to generate ad revenue, donations, and app usage for a minimal 1 sensor installation free of upfront cost for a household in need.

[Click here to view our website](#)

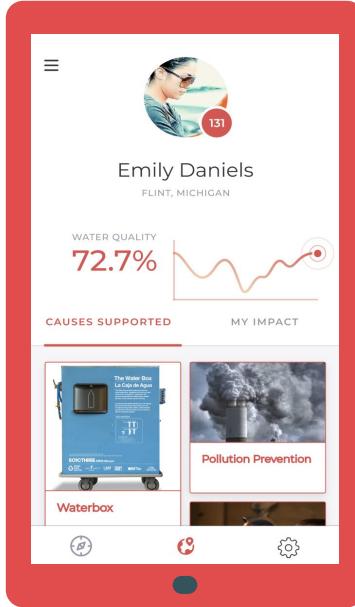
Our App Functionality

View real-time data

Connect the app to the sensors' central server. Users can see placements of new sensors and water boxes made possible through their contributions — allowing transparency.

Raise awareness

Allow users to see their impact through the app and see real-time data from water sensors. Develops greater awareness of water crises and affected communities.



Prevention

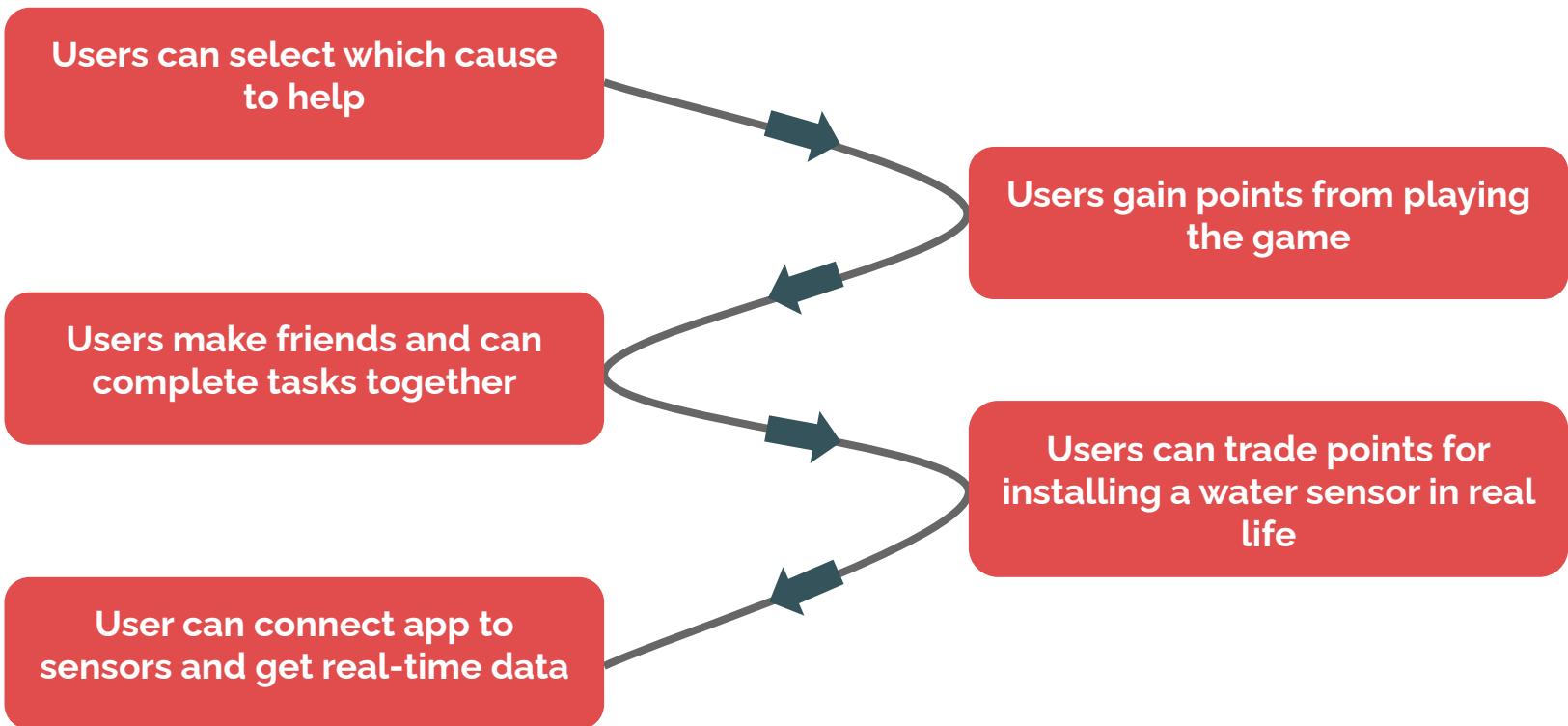
Based on the user's location, the app will send notifications to prevent them from drinking contaminated water. The app will then provide them with directions to the nearest waterbox.

Higher reputability and perceived value

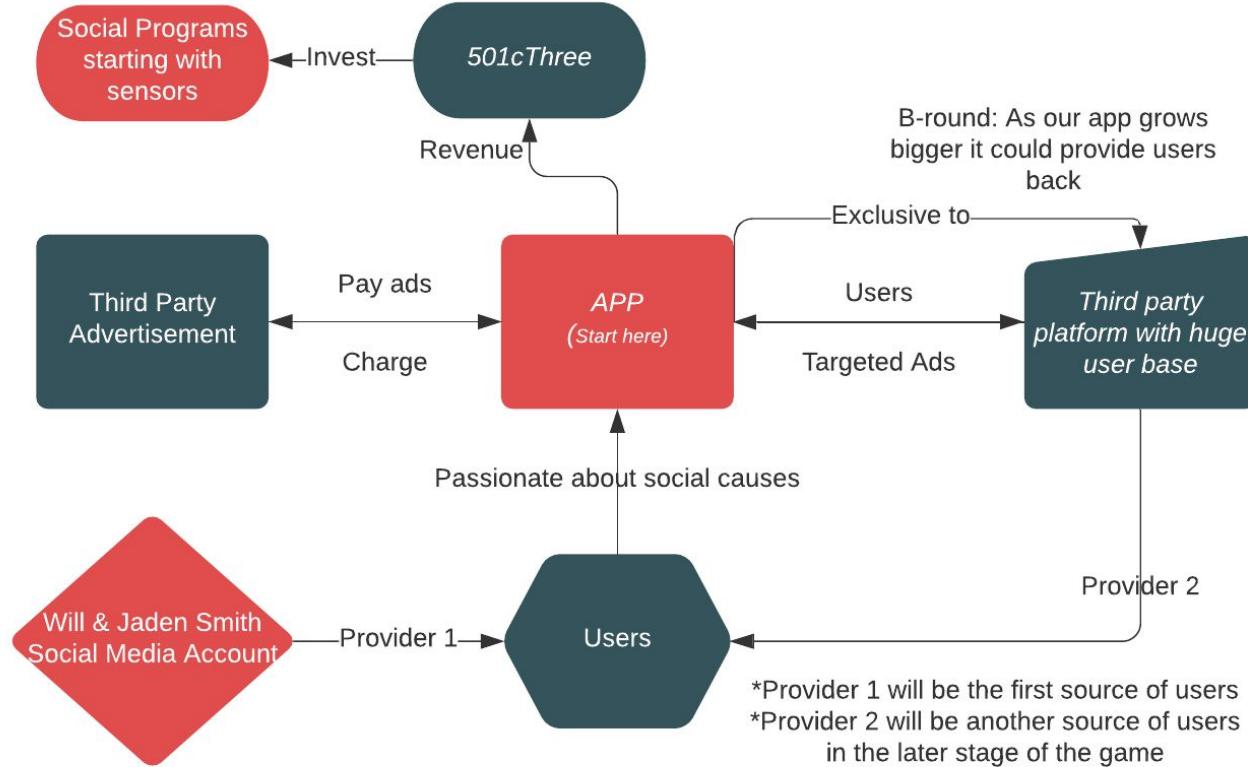
of 501cTHREE and sensors as users and the public experience first-hand the impact of 501cTHREE's mission.

Generates support for future initiatives

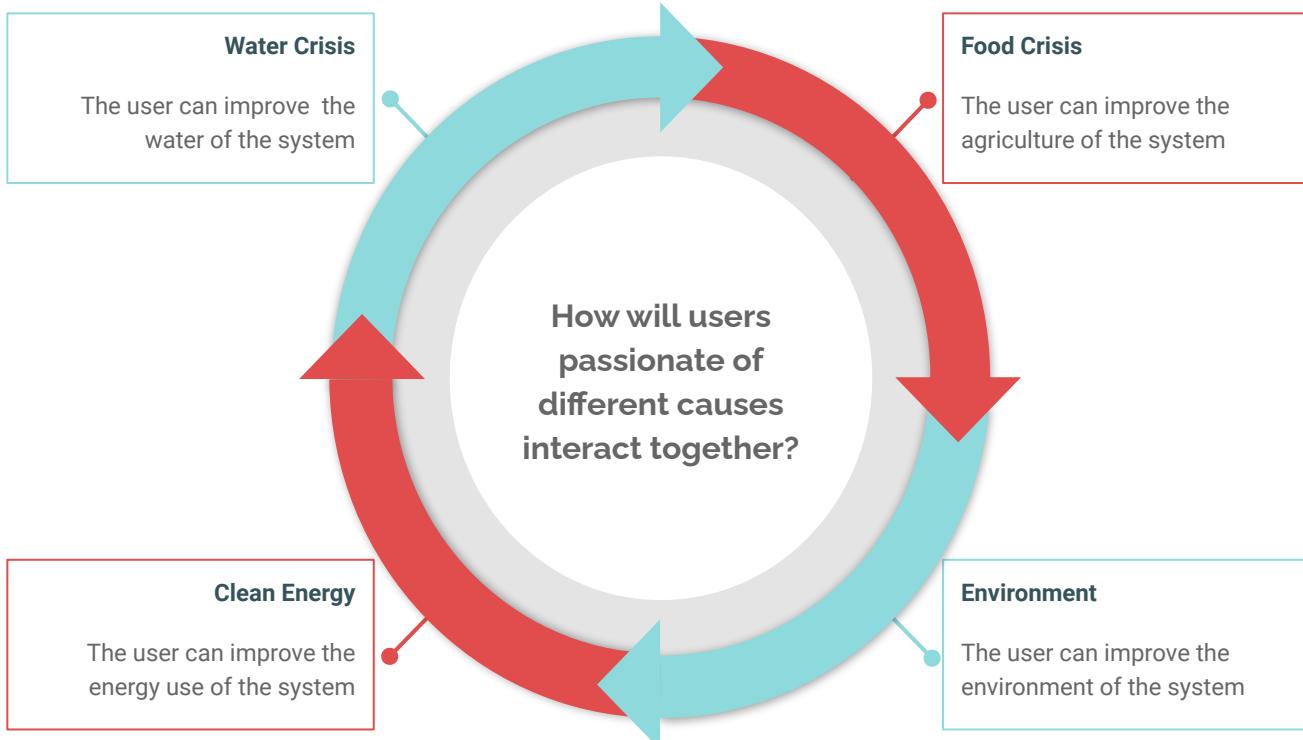
User Interaction



Business Model For the App



The Ecosystem in the App



In the game, users who are passionate of different causes can come together and **work collectively** to build a **better digital world**, resulting in a **better world in reality**

Gamification of the Model

Stage 1 Action

The User's Goal

The user knows that they want to collect points to support a cause. This is the task that the game gives the user.

Stage 2 Feedback

The Reward

When the task is completed, the user is eager to get feedback. The achievement system is one of the feedback they receive in the app.

Stage 3 Motivation

The Result

If this feedback is good, the player will naturally want more, so they return to the Action stage and the cycle repeats.

Cost for Building the App

A Complex App

- \$80,000 to build
- 400 hours to build
- 50 working days @ 8 hours/day
- 10 weeks
- Around 2.5 month

What Affects the Cost of the Application?

- Features and functionality
- Complexity of UX/UI design
- Number of platforms to be developed (iOS, Android, web, etc)
- Backend infrastructure and app administration
- Location and structure of a development team
- App maintenance costs

Outsourced Vs. Local

Outsourced Development

Pros

- Huge talent pool
- Lower rates
- Flexibility

Cons

- Communication
- Time Zone Challenge
- Difference in Culture

Local Development

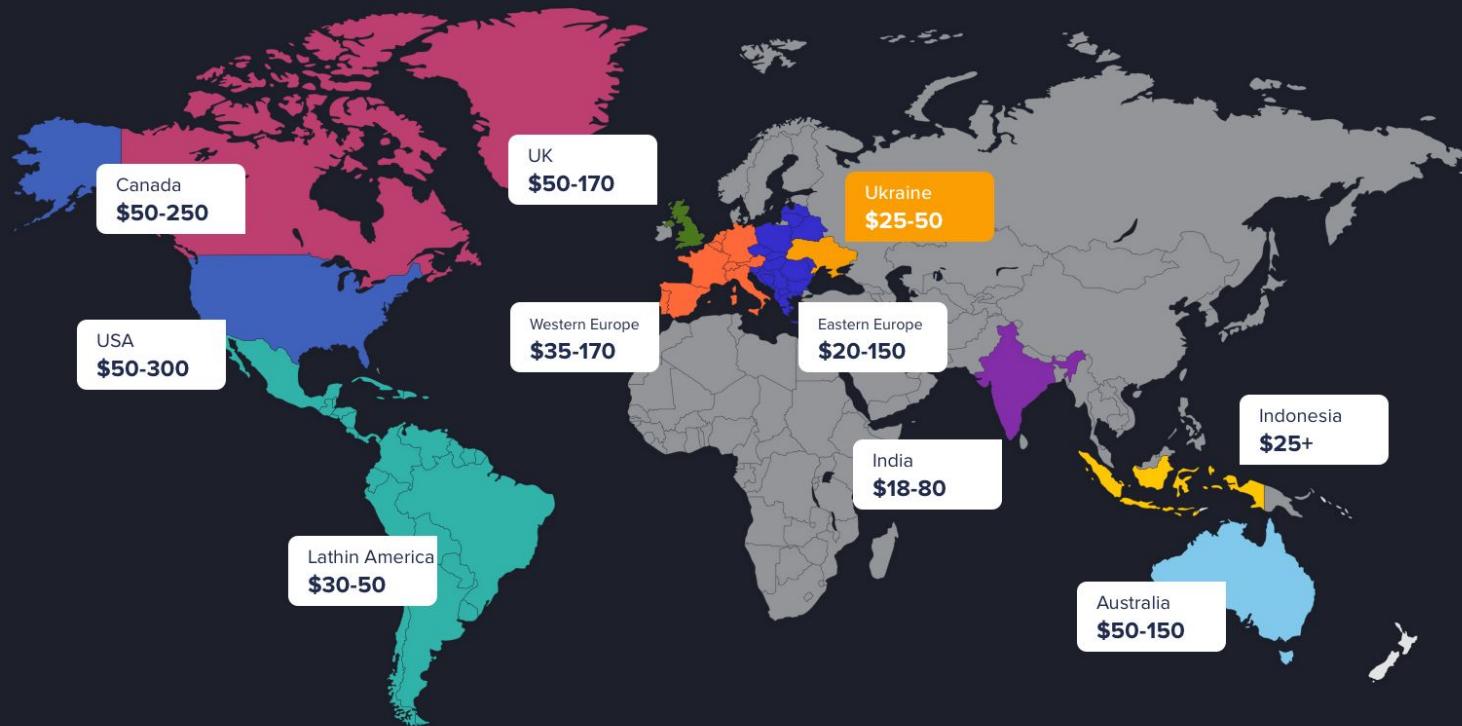
Pros

- Better communication
- More involvement

Cons

- More expensive
- Lack talent pool

Software development rates by region

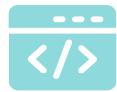


Hiring the Right People



Freelancers

Searching for freelancers is the best place to start depending on their rate. With the increasing amount of people working remotely, the Internet has become a great source to look for reliable workers.



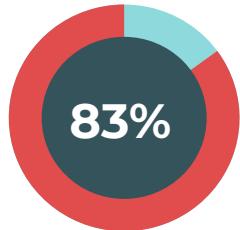
Websites

[SimplyHired](#)

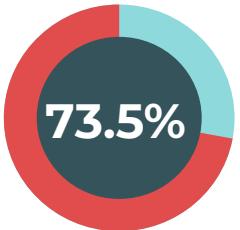
[Toptal](#)

[Upwork](#)

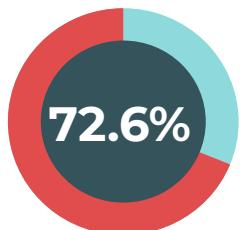
Devices in Flint



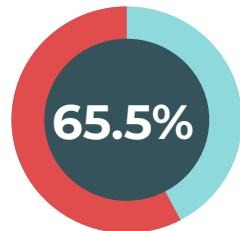
1 device
or more



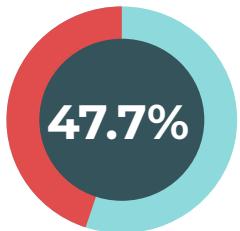
Desk/Laptop



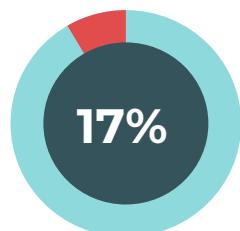
Internet
Access



Smartphone



Tablet



No
computer



With the app, we will be able to provide **easy-to-read** graphs for those with a device

The app will have a share button so the community can **inform** each other

Users can also **share the data** with others by sharing their device with them or through word of mouth

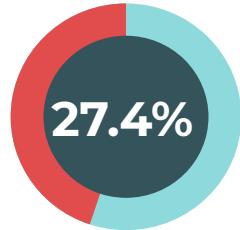
Communication in Flint



Our app can easily **communicate** using both visual and audio aid

With Artificial Intelligence (A.I.), we'll provide:

1. A **read-through** of data and water quality results for those with special needs
2. A **chat bot** for the users to provide feedback through quick one-minute surveys



No Internet access



With the read-through, we can **partner** with the local radio stations and play it or recruit volunteers to read the data

We can set up a **phone line** to automatically call and **update** those with no Internet access during certain hours of the day

501cTHREE and the Community



With our app, we can generate awareness of the different causes 501cTHREE supports.

By creating an online and global community of activists, this will foster trust in the citizens of Flint, Michigan.

Our app will be very transparent about the data collection process. We will include in the terms and conditions an explanation of how the data is being used.

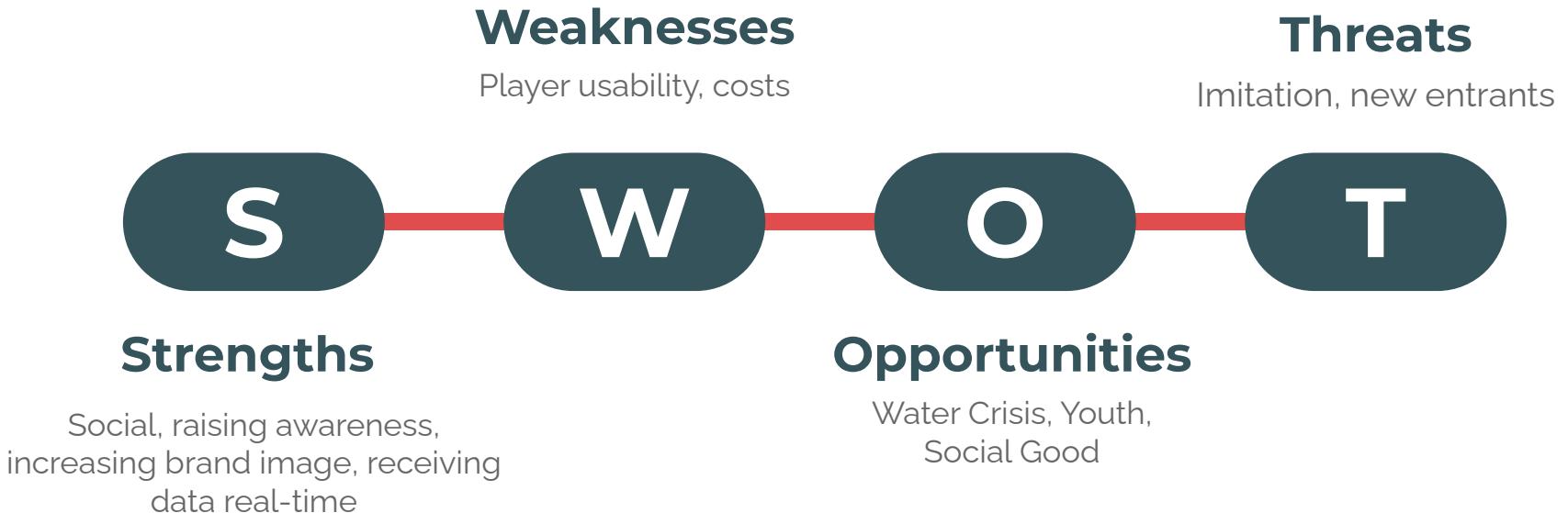


The app asks for permission to access the user's location.

By accessing their location, we can provide directions to the nearest water box.

Furthermore, with the chat bot feature, we can release updated versions of the app — reassuring them that 501cTHREE is committed to helping the community.

SWOT Analysis



Strengths



Social

Spreads quickly and promotes 501cTHREE



Competition

In-game user competition will inspire more users to join and continually interact



Data

Users can see real-time data and water quality results



Real-time Impact

Users can view the real-life impact of their actions through images



Selective Ads

Using A.I. algorithms, the app will promote other causes and generate ad revenue



Donation

Users can donate to 501cTHREE and their missions

Weaknesses



Cost

Developing App



Idea

Risk of the app not becoming popular



Engagement

User engagement may not last

Opportunities



Water Crisis

Demand is fulfilled with supply on the market. There is a water crisis happening, thus an opportunity to fix it.



Younger Generation

The combination of Millennials, Gen Z, and younger generations will be more likely to interact with our app.



Social Good

Since people are able to view real-time data and the effect of their social impact, they will feel accomplished, and therefore motivated to use our app.

Threats



Competitors

Ant Forest could potentially be our competitor because they have the capital to compete.



Imitation

There is a possibility for this app being imitated by other non-profit organizations.

Revenue Streams

Ad Revenue

Items special to the company will be integrated into the game

End Result

Money is invested to making the users' goal into a reality or for more water boxes
Ex: User installs a water sensor in game. One water sensor is installed in real life

Merch Sales

A certain percentage will be invested into the app

Release Limited Edition Merch

Merch will include a code which can be redeemed for in-game currency

Criteria for Success



User Motivation and Incentives

Altruism

Users' ability to **see** water box and sensor placements gives a sense of social good and satisfaction. Appeals to users through a **mix** of enjoyment and sense of purpose.

Social

Ability to interact and play with friends, family, and other users creates a more interactive user base. Users can **collaborate, compete, and share** experiences.

Competition

Leaderboards **creates** a sense of competition that **motivates** users who are rewarded for higher rankings and scores. Allows users to **interact** with one another.

Rewards

Completing environmentally friendly tasks (ex: saving water, riding a bike) **rewards** users with points. Receiving a returned reward for every action gives **satisfaction**.



App Awareness

Social Media

Promoting the app through social media allows **easy sharing** and **widespread** attention. Allows users to share with friends and family.

Targeted Ads

The use of targeted ads can help **reach** specific demographics and **target** users most likely to interact with the app and its causes.



“The Key To Success Is Getting More Users – The More Users You Have, The More Ads You Get”

—**Kenton Low (Former VP of Disney)** 

How Will We Attract Users?

Merchandise

- Sell 501cTHREE merchandise with **a unique tag** (ex: QR-Redeem code) that users can purchase and redeem for in-game points

Social Media

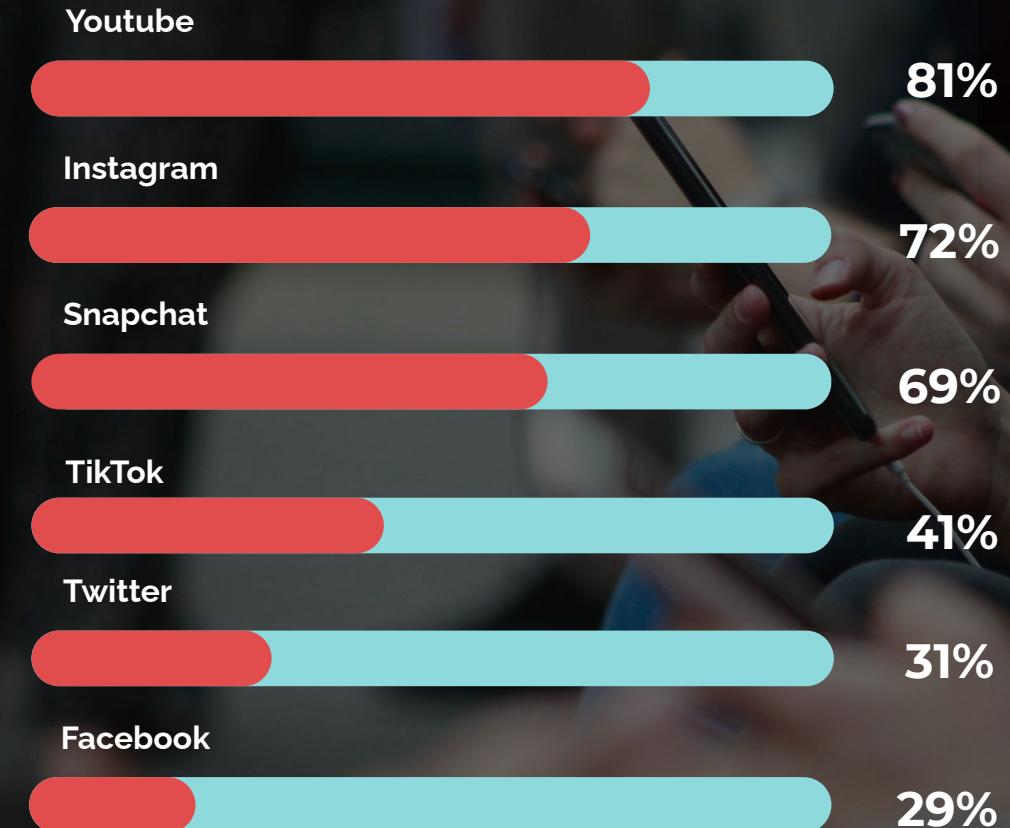
- Marketing through Jaden and Will Smith social media accounts
- **Targeted ads** on a social media platform with a large user base in the later stages of the app
- Partner up **exclusively** with a single social media platform with a large user base
- Allows easy sharing and promotion through friends and family

In-game

- Intuitive app user interface for easy use for all ages
- Incentives for current users to invite friends, family, and others into the game
- **User motivation:** reward systems, social gameplay, competition, etc.

Marketing

Percentages show the amount of users between the ages of 13-25 on the platform in America



Social Media Marketing



Videos

80% of video marketers
claim that video has
directly increased sales
[\(Hubspot\)](#)

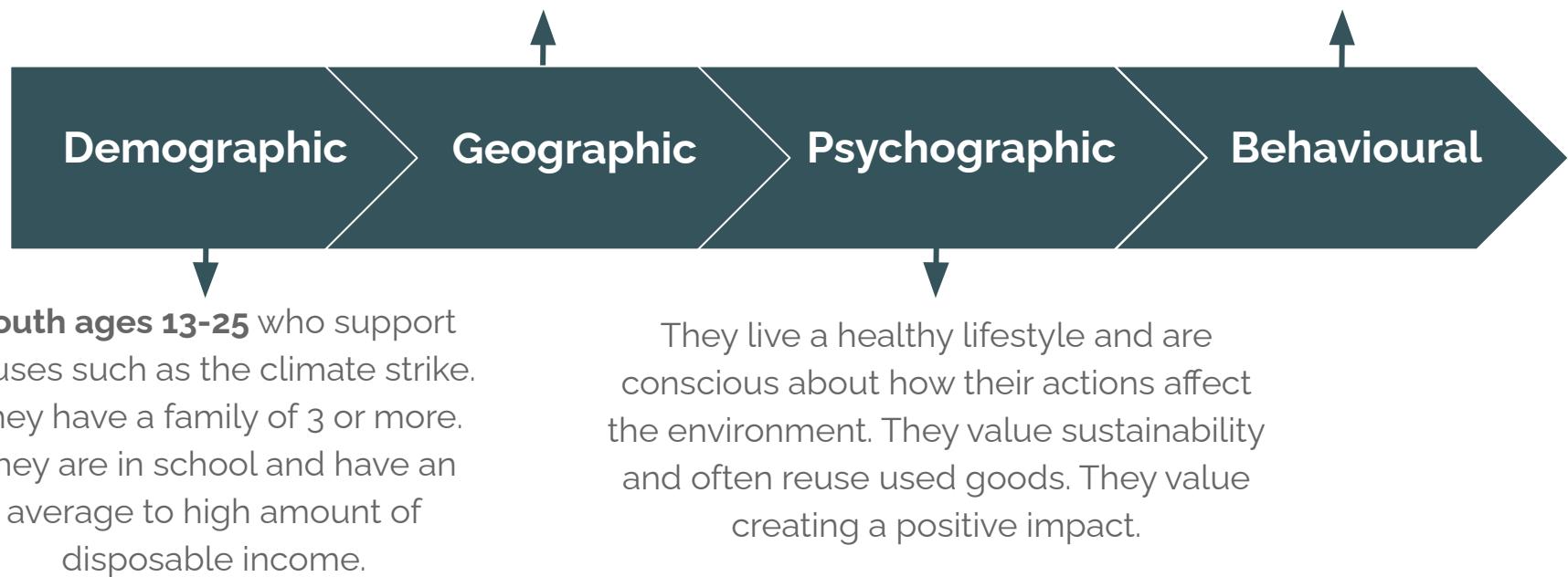


Videos vs Posts

Brand videos generate
more engagement than
social media posts as

92% of mobile viewers
share videos with others
[\(Social Media Today\)](#)

Target Market





Outcomes

What will happen?

Profit Use



**FREE
Water Boxes and Sensors**

throughout Canada and
the United States

**INCREASE
Environmental Causes Supported**

throughout Canada and
the United States

Next Steps

01

02

03

Merchandise

Promote merchandise and invest portion of revenue for following following steps.

App Development

Portion of revenue from merchandise goes towards developing an app aiming to generate further revenue and awareness.

Free Sensors

Revenue from app can be put towards providing sensors with no upfront costs to those affected and in poverty.

Next Steps

04

05

Re-invest

We understand that a game app isn't the ultimate solution for providing a sustainable revenue stream. Therefore, we propose to take a large portion of the revenue and **re-invest through funds**, creating a viable revenue after the game.

Continuous Growth

After this, 501cTHREE will have the necessary capital to start any programs fighting social issues.

**And still
going
strong!**

Who To Contact



Beth Manning

Board of Directors,
Flint Rivers Water Coalition

bmanning@umflint.edu

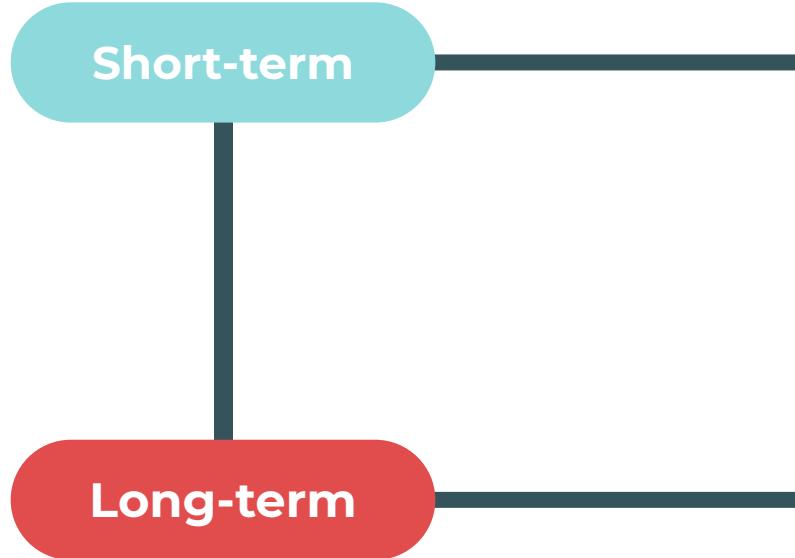


Cindy Compeau

Administrative Group,
Charles Stewart Motts Foundation

+1(810)-238-5651

Goals



Sensors

A percentage of merchandise revenue will go directly into purchasing and installing water sensors.

Another percentage of revenue will be invested in app development.

Greater Profit

With the app, 501cTHREE will gain long-term reputability and exposure, an increase of water boxes and free water sensor installation, and enable them to create current and future change.

Re-cap

Problem: How do we get sensors in 1/100 houses of the affected population?

- Build an App
 - Display data from the water sensors and placements of new water boxes and sensors
 - Users play a game that can result in real social good
 - Special “events” inspires user-competition to invite new users
 - Different social good causes can interact with one another to promote varying initiatives
 - Profits from the app can fund the upfront installation costs for more homes
 - As app gains profit, re-invest a certain percentage into the app

Our Team



Angelina Lim



Water is an essential part of life. Thank you 501cTHREE for the amazing opportunity. Not only am I able to learn from this experience and work with incredible teammates, I can also bring my passion to this project. Thank you very much!



Rohan Jagtap



Over the past month, I had an exceptional time thinking about this problem and working with my team to find a solution. I am confident that I have gained new bonds and knowledge. Thank you for this challenge!



Caitlin Ambrose



Thank you 501cTHREE for this opportunity! This past month I learned and gained new insights as my team designed our recommendation. This experience was both irreplaceable and valuable. Thank you!



Louis Zhu



I am deeply thankful to 501cTHREE for this opportunity to work on a solution for the water crisis that has affected millions in the world. Knowing that my solution might be implemented in the real world has been my motivation. Thank you very much!

Appendix

Research Hub

All our research in
one link!

Important Research Links

Main Sources

Primary Research Google
Document

Ant Forest Model Research
Google Document

Google Documents

Notes from the Question
sheet/All about 501CTHREE

501CThree

Appendix

Website!

Website

Problem with Flint Michigan

Are People Able to Buy the
Sensor

Flint Research

Phase One Research Merch

Phase Two Build App

How Game/App Will Be
Developed

Phase Research

Why to make sensors free

Personal Story/Related
Research/Notes

Solution Research