**Sustainability Efforts Application**

Research

**Version: 1.00**

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# General

## Overview

The overall purpose of this document is to log all the research that has been done in regards to the Sustainability Efforts Application.

The secondary purpose of this document is to pick the desired functionality and develop a path for Version 1 of the software that is to be delivered sometime late November of 2014.

## Risks

* SKU numbers are not unique, a devious individual could continually scan the same item and claim that’s what they recycled in order to get rewarded by his/her company?

# Background

## Containers

From my brief research, I combed the WWW in regards to what behavior is related to recycling.

The earliest form of recycling that comes to mind, is not the big blue bins I have sitting in front of my yard as I write this. Rather, it is being 8 years old and standing in front of a supermarket with a very slow line of about 15 people in front of me. These 15 people had about 4 huge trash bags of nothing but aluminum soda cans that they slowly pushed into a machine, one by one. The ultimate goal you was to collect 5 cents per can.

Today I’m 36 and I still find these same people at the gas station rummaging through the green trash bin for cans (among other things).

Before I did my research I assumed the 5 cents was given because that is the value of the scrap metal amount, but I was wrong. The 5 cents is for the cost of doing business of recycling the bottles by the bottling company. There is actual legislation in place for doing such a thing, commonly called, Container Deposit Legislation (see <http://en.wikipedia.org/wiki/Container_deposit_legislation>). Unfortunately, in the United States, the law is not a federal matter, it is a state matter, and so only a few states have passed it. Fortunately, even though no law has been passed, the bottling companies still abide by it in most states.

# Wish List

* (See Background – General section) If we were to inform a company that enforcing recycling the bottles they sell at the lunch room (or a bought from elsewhere) would generate a profit, could we not entice them to share these profits with its employee’s (or those employee’s who make an effort to recycle)? If companies knew about our application they could quantify who recycled what and add a little extra something to the employee’s bottom line.
* (See Background – General section) Recycling machines, for the most part, require you to put a can in 1 by 1. Take a small line at Universal Studio’s, and give everyone on that line about 8 bags each, can you imagine how long it would take you to finally get out of there for about 10 dollars (see <http://replanetusa.com/replanet_recycling_machine.html> for an example of such a machine)? A working person has no time to do this, hence why they don’t care about the refund they receive for recycling. Why don’t we build something into the app, where if you separate the containers and weigh them, you can simply e-mail something to the appropriate recycling agency and they take the bags and give you your money? If you go to any home depot or CVS (among others) they have automated tellers that work on the weight of the products.
* Our app should provide an easily searchable list of recycling centers and/or scrap centers.

# Research

## General

* http://www.wm.com/thinkgreen/what-can-i-recycle.jsp a good guide on what’s recyclable and what’s not
* http://www.padnos.com/scrap-management a recycling company that has a environmental calculator based on what you recycle
* http://www.buffalo.edu/recycling/recyclable.html detailed list of what can and cannot be recycled
* mobile eco apps mainly focus on finding a recycling location, helping you drive more eco friendly or selling their own products such as solar chargers
* excellent explanation of recycling centers types <http://science.howstuffworks.com/environmental/green-science/recycling5.htm>
* Pros and Cons on container deposit schemes (CDS), <http://www.coca-colacompany.com/coca-cola-unbottled/container-deposit-schemes-not-as-simple-as-they-sound>
* Wiki on Container deposit legislation that exists, <http://en.wikipedia.org/wiki/Container_deposit_legislation>
* A video on a common recycling machine and how it works, <http://replanetusa.com/replanet_recycling_machine.html>
* Users should be able to challenge other users to unlock achievements or to do specific actions which will add up points.

## Virgin Pulse

* In order to be part of this program you need to be sponsored by your employer or someone qualified.
* They send you a “GoZone” activity tracker, which records the number of “steps” you walked on any given day, that you attach to yourself.
* The “GoZone” activity tracker has a usb port which you use to upload your “steps”.
* People can create their own custom challenges and provide their own prizes.
* The sponsor is responsible for the prizes awarded for challenges
* If over 7000 steps in a day you get 60 health miles
* If over 12000 steps in a day you get 80 health miles
* If over 20000 steps in a day you get 100 health miles
* Health miles are the “Points” of the game
* Steps reset every day
* Monetary awards are based on custom challenges based on health miles
* Common awards are $20 and $15 amounts.
* Excerpt of advertisement,

“We'll keep you motivated all year long with challenges, contests, team competitions with your co-workers and more! XXXX will also give you opportunities to participate in healthy activities for even more HealthMiles”

## Green Bean Recycle

* Green Bean Recycle https://gbrecycle.com/ is an app where users collect money and other prizes when they recycle.
* It also follows a challenge concept (<https://gbrecycle.com/extra#challenges>) by rewarding users with “stuff”

# Proposal

## Vision

There are many bullet points below, which is a high level breakdown of the work to be done.

I want to take time in this section and just sum up the approach we believe would be best for Version 1.

We want to leverage the behavior and incentives that already exist in the community granted by the Container Deposit Legislation. People already go to the effort of collecting cans and transporting them to local recycling centers for the 5 cent redemption they receive. What we are trying to do in this application is take this existing process and make it a little more efficient and add some publicity and onus to it.

The application will provide a quantifiable way to track recycling endeavors in a particular location. If enough users team up, they can persuade a college, corporation, community, etc (i.e. group owner) to create a recycling location (with-in walking distance) near to them which they can use to recycle more efficiently. The group owner will have the onus of transporting and collecting the appropriate redemption from the recycling centers and may elicit a fee from the redemption.

Aside from that, the application will provide a quantifiable redemption value from all the efforts of the users. The 5 cents redemption can then be used by the group owner to provide the users with an “incentive”, monetary or otherwise, so the users can continue or even double their efforts. In a way, the application seeks to provides checks and balances between the users and the group owner.

Lastly, the application will provide ancillary services, such as displaying recycling center locations on the map, and the appropriate weight of what they plan to recycle. Hopefully, recycling centers can take advantage of the application and speed up the process of recycling by simply abiding by the weight calculated by the application instead of having people stand in a long slow line.

## General

* There are MANY types of recycling that are discussed in this briefly prepared document. I believe Version 1 should only include bottling and things of that nature which already have established recycling efforts and incentives behind them. Aside from that, I believe we can actually do a sensible form of tracking of these items to keep people honest.
* Groups need to have the ability to determine what they will include in the company policy that benefits recycling. For example, recycling a car battery has no effect on the company or any of the company group participants, and should not be counted in any beneficiary programs. Although, if the same user were part of a community group, then it would definitely count.

## Presentation

* For anyone browsing (without logging in) the site needs to be a dashboard which shows who has recycled the most of each type of material. The site would show who has the best recycling of a certain type by day, week, month, year and overall.
* For anyone logging into the site there needs to be a dashboard that is based on the group(s) which shows what your recycling efforts are and how it compares to the group.
* Once a group has been established, the landing page of every user should have a dashboard displayed to them of their groups. The dashboard should display recycling information as it relates to the users versus the others enrolled in the groups.
* We should have a screen that provides a map with tags of the location of groups you are enrolled in, as well as, tags of recycling centers and/or scrap yards.

## Reinforcement

* Behaviors that last are something that have lasting effects. Throughout my research I see that money talks and legislation is already doing this for us, so I suggest we leverage this.
* If a company doesn’t want to do a money-wise approach, then maybe we can translate the money aspect into a complimentary time-off incentive.
* The dashboard should display how their recycling efforts would translate into actual revenue. This is to ensure the group owner is invested, as well as the user. The thought process here is, if users are recycling at a certain area and they are aware how much redemption value their efforts are translating into, they will keep the group owner honest and create some sort of incentives for those who work hard. In turn, the group owner will be invested in making sure they have proper recycling area’s that are labeled accurately in order to maximize their redemption efforts.
* A single point should be analogos to a penny.
* Users that are not part of any group will still have the ability to scan and geo-code their efforts. However, we should treat this somewhat like forming a union at a workplace. If enough users are doing this independently recycling through our application they can then take this data and show a potential group owner the benefits and have the owner enroll in our program. At this point, the group owner can decide if the history of these users (based on the geo-coded scans) can be imported into the newly created group.
* W should provide a weight for a specific range (based on dates?) of scanned items. We can then entice scrap yards and recycling centers to use our weight measurements, by enrolling in our site, and speed the recycling and scrapping process up.

## Validation

* Apple and Android has already built in technology to scan barcodes and such that we could leverage.
* The easiest thing to track would be to do a barcode bottle scan with the use of the phone.
* When a bottle is barcode scanned, it should be geo-coded and associated with a group the user is assigned to based on distance (configured by the group owner).
* Groups should apply on the website with the most important piece of information being the address or address(s) of the working establishment.
* A website administrator should go through some form of validation process for group requestors, to ensure they are valid entities.

# Questions

* How do we quantify an individual who never uses a plastic bottle to drink water versus an individual who keeps his fridge stocked with them? In this scenario, the individual who never uses a plastic bottle is the Eco-Sensitive individual, not the person who recycles more bottles. The same argument could be made about electricity.

I think the thought process here has to be, someone that HAS to consume something versus someone who doesn’t HAVE to consume anything but does anyway (in great amounts) needs to be measured. This point, I leave up for discussion.

* I think the application needs to be limited to chemicals or compounds that NEED to be in containers or are subject to a chemical change when exposed to the atmosphere. Commonly, this is usually all carbonated drinks, such as soda, wine, champagne, paint.. etc.
* People know that they should recycle, however, just a small percentage do it. When you tell someone that "Each ton (2000 pounds) of recycled paper can save 17 trees, 380 gallons of oil, three cubic yards of landfill space, 4000 kilowatts of energy, and 7000 gallons of water", that has more impact that just saying that recycling is important. The application can show some sort of conversion between recycling items and the actual saving. However, one single recycling action can save many things (http://www.lessismore.org/materials/28-why-recycle), so what can we choose to represent the savings?
* If there is some sort of reward associated to recycling and saving energy, should we consider all efforts equal? (i.e. is it the same recycling 10 bottles of water as turning off a light for a period of time?)

## Thoughts

* I believe sticking to quantifiable items are preferable and feasible as part of this project. Apple and Android has already built in technology to scan barcodes and such that we could leverage. So, abiding by the only law that currently exists, container deposit legislation (CDL), is where I think Version 1 should focus.
* Start small and aim high, by hopefully proving that we can increase awareness and recyclability, leveraging the CDL legislation, we can gain a foothold in the recycling community that can later be leveraged. I have done a rough research on what’s available out there regarding applications of this type, and I see this as a very open space. The applications I find are mostly for finding a recycling center or scrap center.