2023

Hawai'i Annual Code Challenge (HACC)

Challenge Title	Reusable Takeout Program App
Department / Organization	Zero Waste Hawai'i (dba Zero Waste O'ahu), 501c3
Subject Matter Contact	Nicole Chatterson
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The Challenge	
Describe situation to be solved	Our non-profit operates a reusable takeout container program (called Full Cycle Takeout) to replace single-use plates/clamshells at events. Currently, we lose between 20 and 30% of our containers to folks who want to take them home. This makes the program unsustainable for the planet (and our finances). We need a way to keep customers accountable for returning our reusables that is efficient for fast-moving events. We think an app and perhaps RFID chips could be used to collect some kind of collateral (money, or something else?) which would be returned when folks return the container. Putting in credit card info is annoying & slow, so we'd love to avoid that if possible.
Preconditions *(How does it work now)*	1. We work with event hosts and their food vendors to swap out single-use containers for reusable ones. 2. We collect the used dishes from customers in well-marked return stations. After the event, we sanitize them, and store them until it is time to recirculate them again.
Assumptions/Issues *(list any conditions that could impact the solution)*	1. Some of our events are fast-paced, sometimes with 1,000+ attendees and few centralized touchpoints with users. It would be difficult to get credit card info from all these folks. 2. Some events may be enclosed, slower-paced, and allow for more time with users.
Current Approach *(how is situation currently being handled)*	1. Currently we rely on food vendors, event announcements (digital and in-person), signage, and event volunteers to coach customers to return the containers. As mentioned above, this is not very effective and we lose too much inventory. 2. We had one event where we collected student IDs in exchange for the use of a reusable (this was at HPU for a student festival), and we received 100% of our containers back. 3. We ran a pilot working with restaurants, at which point we had an app that let customers check out containers and take them home. This app

	had credit card information on file, if customers did not return the containers within 14 days, then we charged their card $7 to cover the cost of the container they kept. We got 96% of our containers back over 1.5 years. This is why we are excited to figure out how to do something similar at events.
Users *(Who would use the application - employees or constituents or both? How many users would there be?)*	1. I imagine this is mostly a B2C interface. Although there could be a B2B component that lets our program track how many containers we've released to each food vendor. 2. There could be 1000s of users at an event. Customers need a way to check their containers out/return them while offering some kind of collateral. Foodservice partners will likely be responsible for checking out the containers to customers.
Business Rules	n/a
Special Requirements	If we are dealing with financial information, it obviously needs to be secure. For this event – a fake payment portal is all that is needed, but security should be well thought out regardless and the ability to integrate a real portal later will be helpful
Technical Platforms *(in use or desired to be used)*	n/a
Data set to be used or collected	Number of users, number of containers checked out, type of container checked out, number of containers returned, location returned to (i.e. there may be multiple return stations at an event venue).
Data set calculations or reporting needs	We offer environmental impact metrics to our clients, including CO2 emissions avoided, gallons of water used/saved, kwh used/saved, waste prevented (tons), and the count of containers used. The used/saved calculations are derived in comparison to a single-use container.
Solution Road Map	
Basic Flow *(steps of user action/system response)*	1. Food vendor checks out reusable to customers using the app and maybe an RFID chip scanner. Or, perhaps there is an event table where the container is checked out and then the customer brings the reusable to the food vendor. 2. Customer makes a payment ($5-$7?) or offers some other digital collateral to check out the reusable. 3. They scan in the reusable and get their deposit back. Or it could be set up to only charge upon non-return.
Goal of Solution	Help us get our containers back so we maintain a circular system and have a net positive environmental impact.

Business Value *(potential financial or time savings)*	A lot. Each container not returned costs $5 - $15.
Success Scenario *(how you know a solution is working)*	We get 95% of our containers back at events. Customers feel that it is easy to check out and return containers and food vendors are happy because they save money by not buying disposables.
To be completed by the HACC Planning Committee	
Community/Industry Data Available	
Potential Community/Industry Co-Sponsors	