# Tepper Technology Innovation Challenge
Deliverable 1

Value Proposition

Ceres is the only grocery delivery service that provides access to affordable fresh food for low-income residents living in food deserts. The delivery service combines autonomous technology, fresh food suppliers, and government subsidies to create a convenient, accessible, and healthy grocery shopping experience.
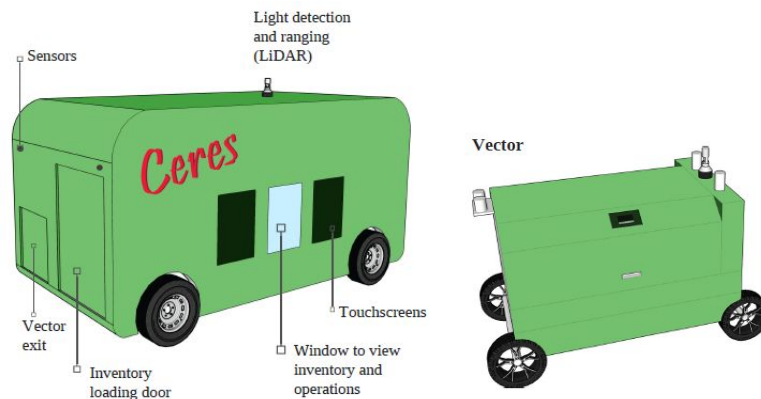
Target Market

Our target market is consumers whose economic and social conditions provide limited or uncertain access to adequate food. Specifically, we are targeting consumers that live within food deserts, are low-income, and lack mobility. Within our target market, we've identified three personas.

Michelle
Occupation: Waitress/Cashier/Do-it-all mom
Demographic: 32 years old, single-mom, high school educated
The financial support Michelle's family gets from SNAP (Supplemental Nutrition Assistance Program) and CHIP (Children's Health Insurance Program) just aren't enough. She often comes home late into the evening and relies on family, friends, and neighbors to help keep an eye on her children. She doesn't feel safe venturing to the grocery store at night and often defaults to bringing home Value Meals from McDonald's. She wants to provide healthy food options for her family but lacks the time, money, and mobility.

Christopher
Occupation: National Coney Island cook/Part-time student
Demographic: 26 years old, single male, pursuing part-time technical degree
Christopher lacks the time and ability to purchase groceries. Most days he doesn't eat until he gets to the restaurant where he waits for a wrong order to come back into the kitchen. He knows he needs to eat healthier but can't find any options within walking distance of his home and National Coney Island.

Marybelle
Occupation: Retired/Social Security-based income/Grandma
Demographic: 71 years old, widow, high-school educated
Marybelle has difficulty with her knees and isn't comfortable getting on and off the public bus. She relies on neighbors to bring her weekly staples from the Dollar Store or the Meals on Wheels program. She wishes she could cook healthy food again but can't navigate to and around the grocery store.

These three personas are unified by their desire to have access to fresh, convenient, low-cost groceries. Irregular work hours, limited mobility, and inability to accept deliveries paired with minimum purchase requirements and non-acceptance of SNAP cause today's grocery delivery services to fail this population.

Market Sizing

23.5 Million people live in a Food Desert[1]

57%, or 13.5 Million of those in Food Deserts are Low Income[1]

9.2%, or 29.7 Million U.S households don't have a vehicle[2]
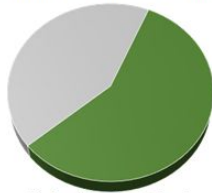
14% or 44.2 Million all people benefit from the SNAP Program[3]

SNAP spending at farmers markets has increased by $14.6M or 347% from 2009 to 2014, illustrating the desire for healthy options [4].

Out of 10,000 new stores from Walmart, Costco, Target, & Safeway opened from 2011- 2015, after removing convenience stores that don't typically offer fresh food, only 250 new supermarkets cropped up in food deserts [5].

23.5 Million people in U.S Live in Food Desert, 57% of those people are Low Income

Our Market's needs are not being met.

Pilot Market – Detroit, MI

50% of Detroit Neighborhoods benefit from the SNAP Program

70% of Detroit Residents are Food-Insecure.
Proximity to Big Three Auto & Autonomous Acceptance.

■ Low Income not in Food Desert   ■ Low Income in Food Desert

Competitive Landscape

Ceres and her Vectors are a unique fresh food delivery service for food-insecure residents. The current competition for the food-insecure includes traditional delivery services, such as pizza chains and takeout, convenience stores, and far-away grocery stores. However, it is difficult to find healthy, inexpensive takeout options, convenience stores do not offer a wide variety of fresh options, and grocery stores are not a convenient option for those living in food deserts.

Current solutions or substitutes to those within food deserts include programs like Meals on Wheels and fast food chains. While Meals on Wheels targets low-income residents with limited

mobility options, it significantly limits the amount of people who can use its service to seniors (60 years or older) who are homebound, no longer driving, unable to prepare food themselves, and do not have a caregiver that prepares meals. Furthermore, fast food chains do not necessarily provide 24/7 access or a healthy food shopping experience for the disenfranchised communities, a key component of our solution. In extreme cases, our target market is forced to go hungry.

The grocery delivery industry is undergoing rapid growth as new entrants like food delivery aggregators (GrubHub, Postmates), UberEats, InstaCart, and Amazon develop their delivery solutions. Our solution takes advantage of this rising trend and brings the experience of convenient grocery delivery to disenfranchised communities. None of the grocery delivery options mentioned currently accept SNAP payments and are generally seen as expensive. Additionally, farmers markets are growing in popularity and have increasingly begun accepting SNAP payments with SNAP spending at farmers markets increasing by $14.6M or 347% from 2009 to 2014. The rise is SNAP acceptance illustrates that the desire to consume healthy food is increasing among low-income families, creating an even greater need for Ceres and her Vectors.

Currently, the target segment has very low buying power. For many consumers, shopping is limited to stores that accept SNAP transactions and are within walking distance (less than one mile) from their residence. Additionally, consumers may only have cash or SNAP as a viable payment option, rather than other market segments that may rely heavily on credit cards.

Suppliers within this industry hold the majority of the power, particularly when it comes to the low-income market segment. By serving as an in-between supplier between the consumer and existing suppliers, Ceres can even the distribution of power between the supplier and buyer. We will negotiate with grocery stores to provide their groceries at a discounted price in exchange for advertising on the side of Ceres and the Vectors. Ceres removes a portion of the suppliers' overhead cost, by managing the distribution of the groceries and can increase the suppliers sales and customer reach.

By combining autonomous vehicle technology with fresh food delivery, Ceres and her Vectors provide a revolutionary solution to those living in food deserts.

Differentiator

After our market analysis and review of the competitive landscape, it's clear that access to fresh food isn't improving at an acceptable rate. This lack of access, along with the significant advances and production readiness of autonomous vehicle technology, provide the perfect opportunity and timing for market entry of Ceres, our autonomous, electric grocery delivery solution that brings the healthy food shopping experiences to disenfranchised communities 24/7.

Each Ceres vehicle, along with her sidekick delivery carts, Vectors, will dock and charge in loading areas of partnering grocery chain locations. Utilizing LiDAR and imaging technologies, Ceres and her four Vectors will autonomously navigate streets and sidewalks. When Ceres

arrives at the designated parking location, two Vectors will deploy for deliveries to the doors of customers and return to reload when necessary, making multiple trips during each hour-long stop. The remaining two Vectors will stay with Ceres and deliver groceries to on-site customers who order using Ceres' touchscreen. An additional screen on the side of Ceres will notify customers how long it will be at its current location and how much inventory remains.

When the Vector meets the customer, it will use facial recognition technology to authenticate the customer and unlock for delivery. If the facial recognition fails, the customer can use a PIN to unlock the Vector. After an hour, all the Vectors will return, and Ceres will move on to the next location. In addition, Ceres will have a reservoir of free, clean water that anyone can access.

The benefits of Ceres compared to her alternatives are numerous:

- **Flexibility:** Competing grocery delivery services require a smartphone and reliable internet for their user experience. Ceres, while enhanced by our mobile ordering app, doesn't require the use of a smartphone and can be scheduled using SMS and cutting-edge chatbot technology. Users can simply text Ceres, and, using natural language processing, Ceres will take grocery orders, answer questions, and agree on a scheduled time and place.
- **Safety:** Food security isn't the only challenge low-income people face. Ceres is outfitted with an array of high definition cameras, sensors, and lighting to ensure a safe and welcoming experience.
- **Mobility:** Ceres is superior to all brick-and-mortar grocery and convenience stores with regards to mobility. Ceres eliminates each transportation barrier for our customers. They no longer need to search for great options. Those options come to them.
- **Affordability:** Ceres foregoes the typical storage and labor costs associated with operating a traditional grocery store as well as the overhead of a traditional delivery service. She also accepts many forms of payment, including SNAP, mobile payments, cash, and credit cards. These measures ensure that having *no* payment options is *never* an option.
- **Healthy:** Given the lack of access to fresh groceries, Ceres is the go-to solution for food-insecure people, who don't typically consider healthy food a viable alternative.
- **Efficient:** By analyzing traffic flow models, optimizing routes and destinations, and processing consumer routines and habits, the network of Ceres is coordinated and efficient. This reduces energy use, thereby reducing transportation costs. It also means each Ceres can get to customers when they need it and sometimes before.

All of these benefits, significant advances in technology, and the growing issues with access to quality food make Ceres the ideal solution to create a convenient, accessible, and healthy grocery shopping experience.

Resources

1. https://foodtank.com/news/2013/05/five-innovative-solutions-from-food-desert-activists/
2. **www.ers.usda.gov**
3. https://www.brookings.edu/blog/techtank/2017/08/29/how-the-amazon-whole-foods-merger-shrinks-food-deserts/
4. Farmers Market Coalition, 2015
5. https://foodtechconnect.com/2017/06/18/annies-john-foraker-calls-on-jeff-bezos-to-end-food-deserts-by-2027/