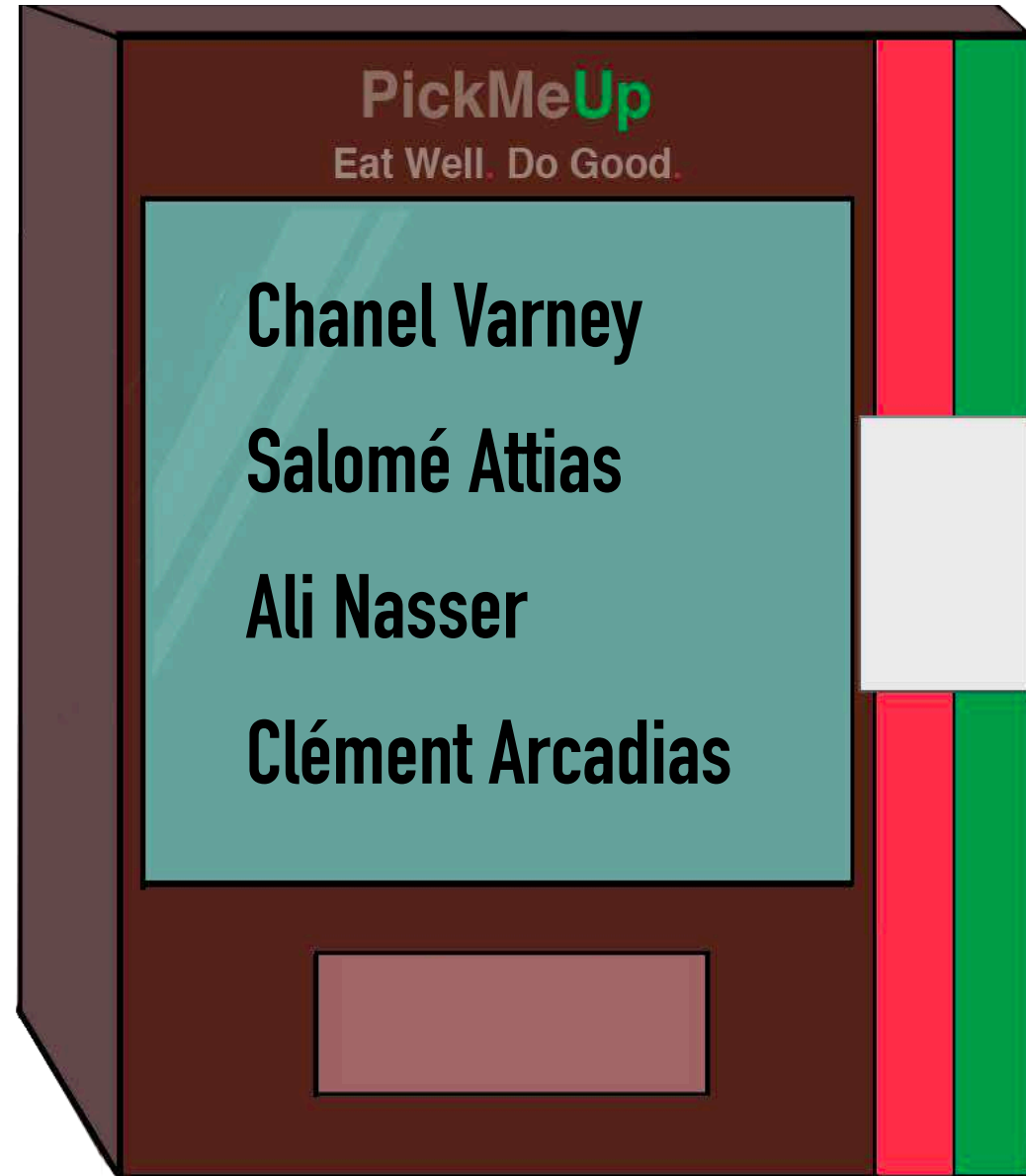




**Eat Well. Do Good.**

**Members.**



# Executive Summary.

PickMeUp is a combination of both an app and vending machine that will transform the vending machine industry and join the war against food waste. In France, the issue of food waste has begun to intensify. France, realizing the gravity of their situation, has ambitiously committed to cutting its food waste in half by the year 2025. (ADEME, 2016) PickMeUp will aid France in achieving this monumental goal, and it will be specifically target the waste generated by supermarkets in the city of Paris. Previous approaches to reduce waste do exist, such as apps, nonprofits, and the freegan movement, but our approach, with PickMeUp and our partnership with supermarkets, will tackle this issue in a unique way as will be discussed further in detail in our plan.

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# What We Do.

With PickMeUp, we reimagine the potential of the conventional vending machine. Rather than serving over-processed and overpriced crackers, candies, and drinks, our machine features your favorite fresh products - **cold yogurts, wholesome sandwiches, crisp salads**. The 5% of pristine Marks & Spencers inventory that needlessly goes to waste each night will now receive a second life in our refrigerated vending machine.



## Why does quality food get wasted?

To maximize profits, offer an abundant selection, and avoid empty shelves, supermarkets tend to overestimate inventory needs. Fresh products enter the store daily and demand shelf space; products that are nearest to their date of expiration lose their shelf space first.



**Manual**



**Electronic**



# Real-Time Pricing.

To curb food waste, supermarkets offer nearly-expired food for sale at prices, oftentimes reducing such prices several times throughout the day. PickMeUp not only takes advantage of this attractive pricing strategy, it enhances its potential to mitigate food waste. Since prices of PickMeUp food appear on a digital screen – not on a physical label – prices can be modified electronically and thus, instantly.



# Adaptive Pricing.

Stores choose starting prices, our algorithm can determine prices after the closing hours of the store. This partnered pricing determination combines the pricing knowledge of supermarkets with PickMeUp's adaptive pricing. No conflict of interest exists between the two parties since both seek to maximize profits and avoid food waste (a.k.a. zero profits).

## What does the algorithm consider?

1. Price gradually decreases as expiration approaches
2. Products must go free upon expiration
3. Prices decrease most significantly after store hours so to avoid competing with store sales



# Most Want Us, Many Need Us.

PickMeUp products are accessible to the same audience that currently shops at supermarkets. However, certain populations benefit from PickMeUp the most:

## Late-Night



- open 24/7 (supermarkets often close on Sundays and after 9:00pm on weekdays)
- young, night-owl crowd staying out late - 11pm-4am
- Late night and early morning travelers

## On-The-Go



- Students between, before, or after classes
- Between, before, or after a work hours
- Travelers rushed to catch a flight - avoid overpriced airport options

## Frugal



- Anyone on a budget
- Savers
- Homeless + Underprivileged Communities (food becomes free upon expiration)



# The Build.



# From Paper to Metal.

For the construction of the physical PickMeUp, we will seek design plans and pricing quotes from multiple custom vending machine manufacturers. Several companies are capable of designing our envisioned machine; in fact, a machine which combines most of our desired technologies already exists - ThyBot's Glacier Series. Other promising manufacturers include Seaga Inc, Alps Kiosks (MagexUSA), which currently constructs machines for GNC, Ben & Jerry's Ice Cream, Puma, and Nescafe's Dolce Gusto.

## Machine's Physical Features:

Large size window display

Intelligent alarm system

Mechanical pick-up with reduced impact to avoid damage to the goods

Temperature and humidity control: Adjustable from 0°-20°C

144-240 commodities

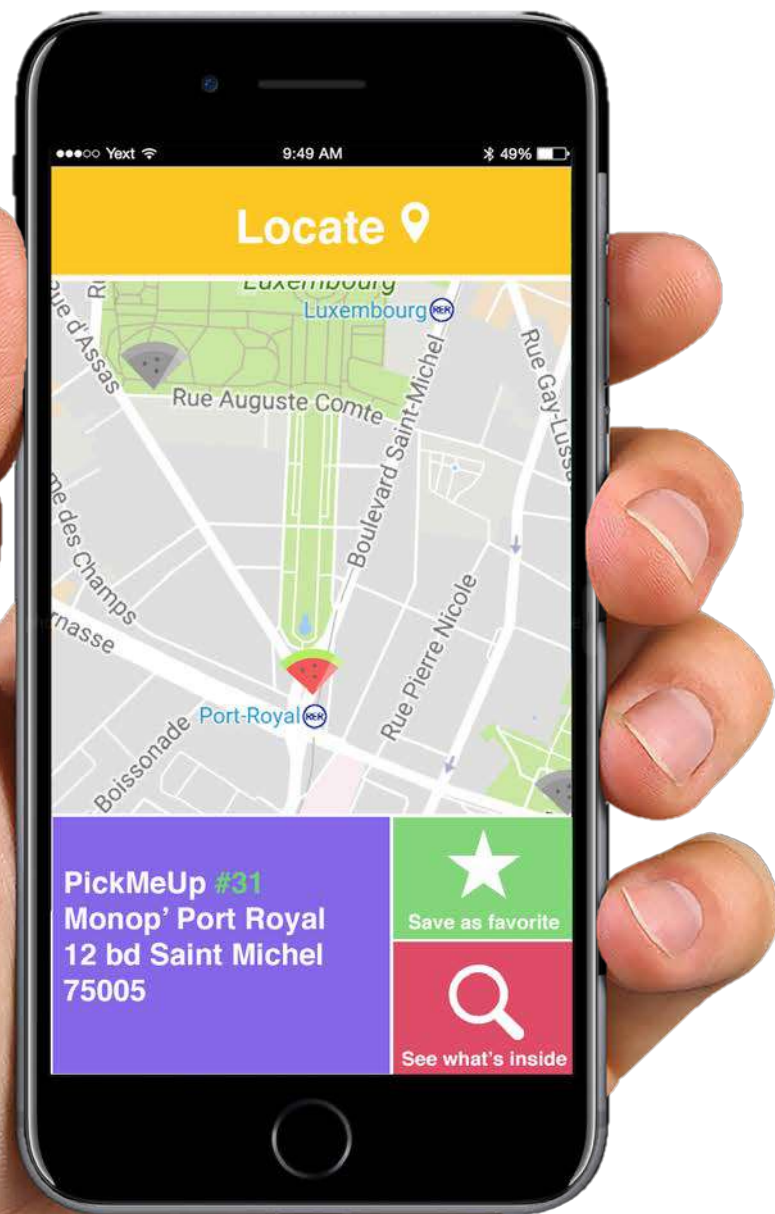


# Talking Tech.

Our design plan for PickMeUps will increase the appeal of the traditional vending machine by adding modern technology. Each machine will include several smart features that both enhance the customer's ease-of-use and provide our company the ability to electronically modify prices.

- User-Friendly Interface - 27" LCD Touchscreen
- Built-in 3G/4G + Gigabit Ethernet - real-time price modification + inventory updates
- Debit Card, Credit card, "Alipay", "Wechat Pay", Apple Pay



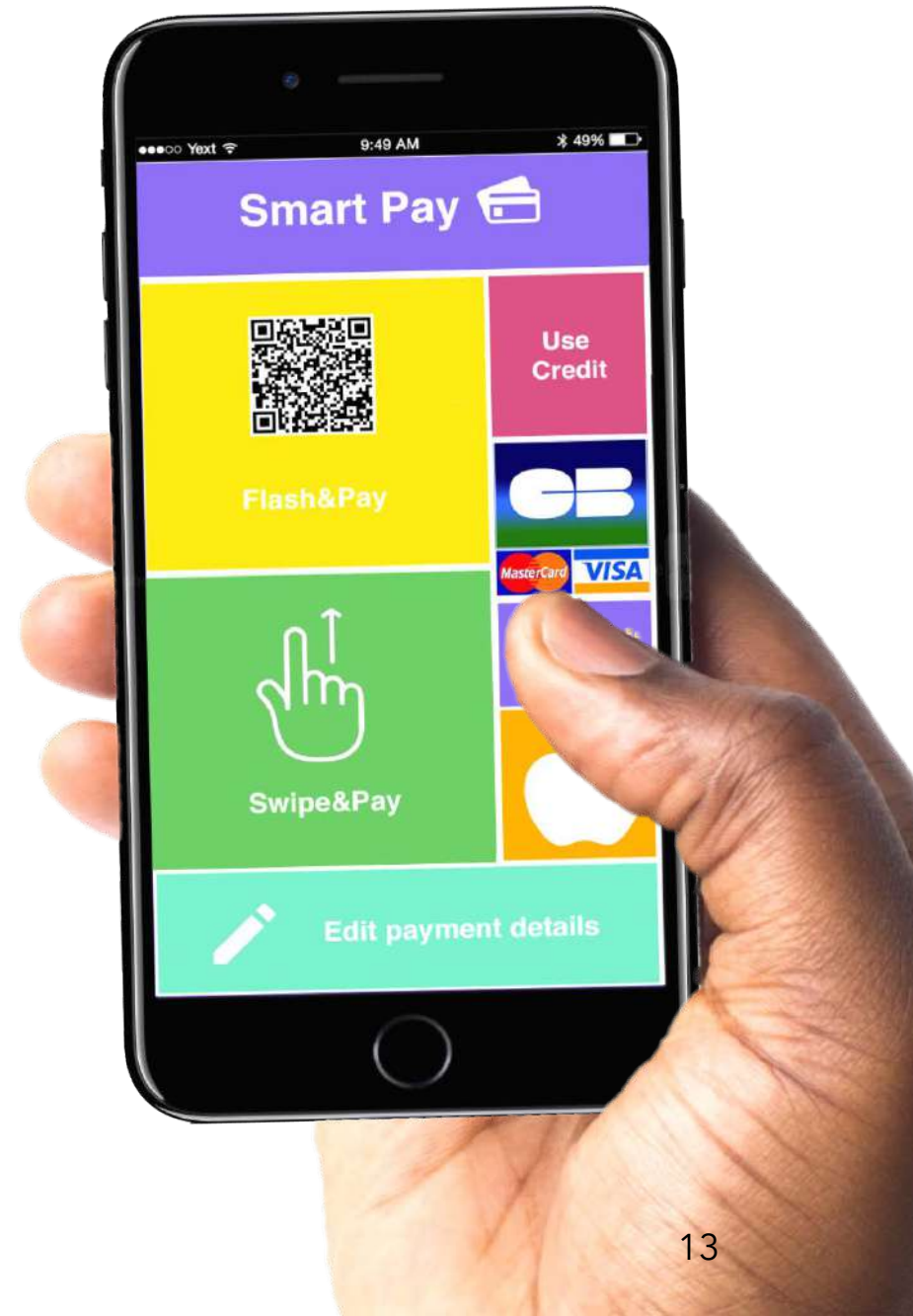


## Super Sidekick.

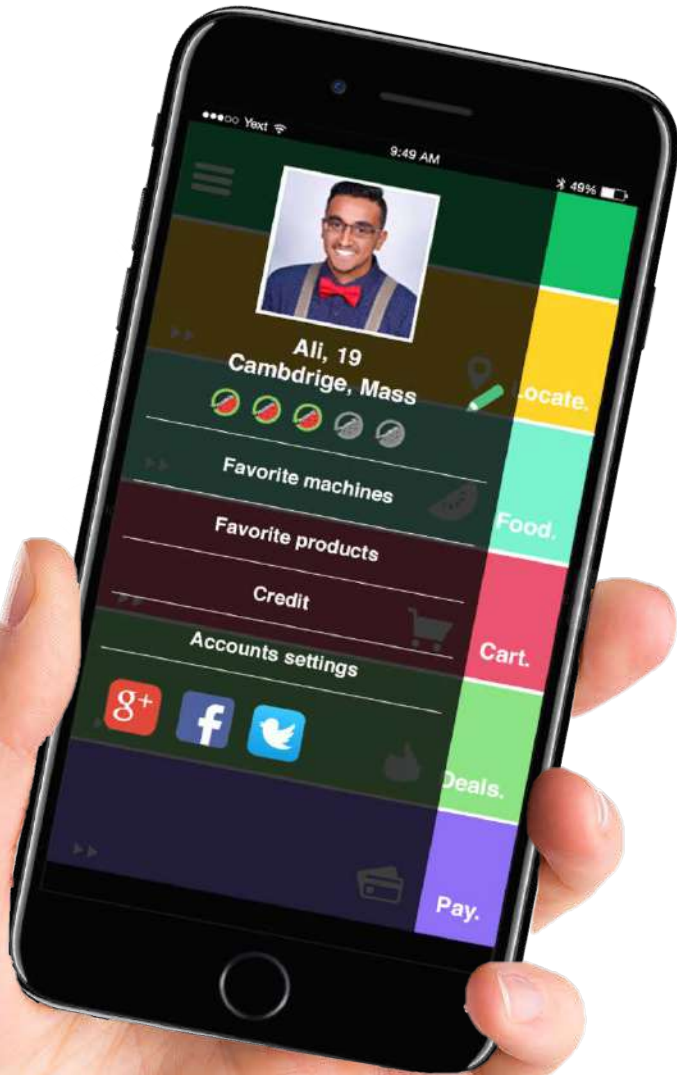
PickMeUp machines are conveniently located at the front of the supermarkets they serve, but to further simplify our customer's experience, we've designed an app. One of the most essential features of the app is its locator and inventory feature, which informs users of the location and food contents of each PickMeUp machine.

# Quick Pick + Pay.

To improve the efficiency of transactions, the PickMeUp app offers customers the option to pay for their meal by syncing a credit/debit card or by using another form of smart payment such as Apple Pay, Alipay, and WeChat Pay. But for those who are new to PickMeUp or do not own a smartphone, each machine will also accept traditional cash-and-coin.





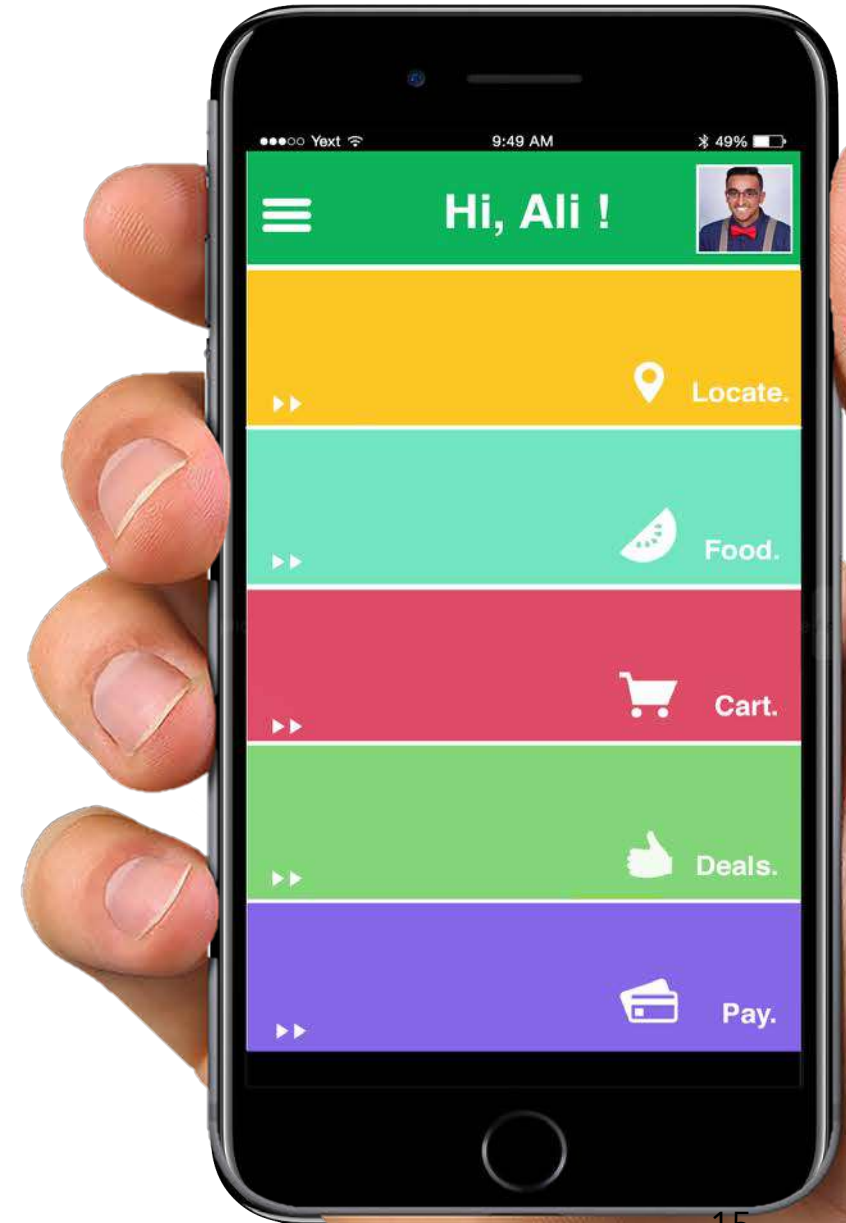


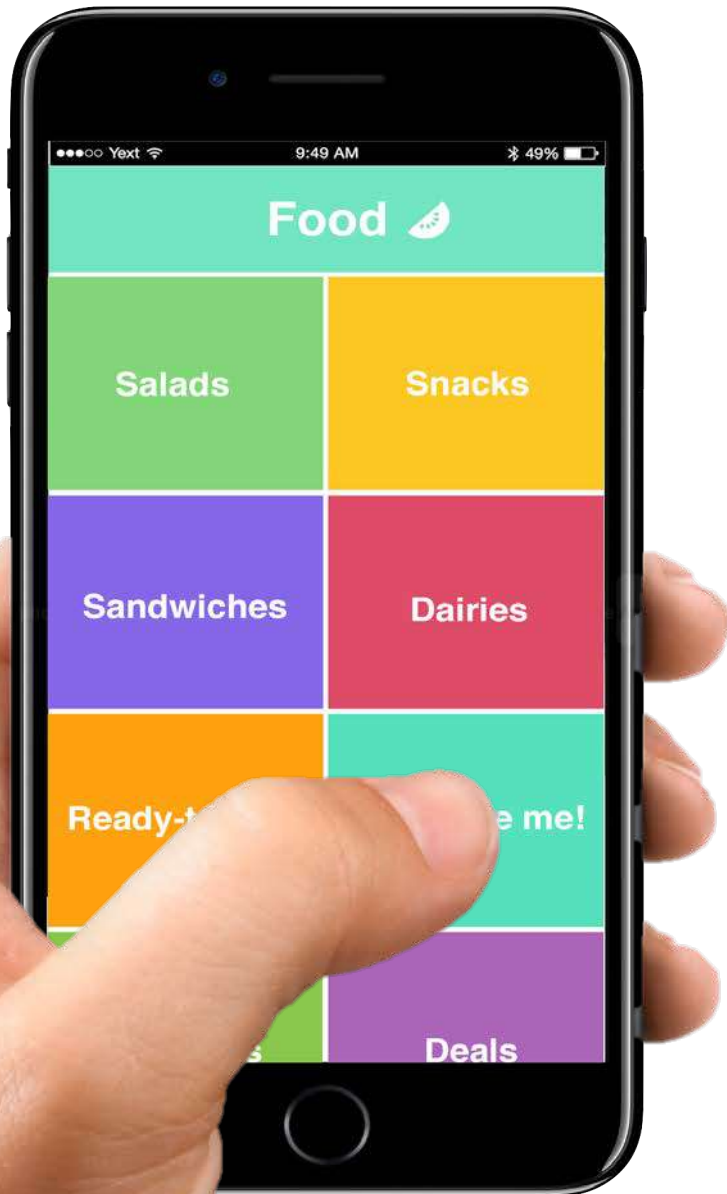
## Personalize & Reward.

In the future, PickMeUp may introduce a loyalty card, but for now users can create a personal profile on the app and accumulate reward points based on total euros/dollars spent on purchases. For example, we may introduce a X€ monetary credit after the user purchases Y€ of food from PickMeUp. Additionally, users can highlight their favorite products and receive notifications when they have been stocked in a local machine.

# Small, But Mighty.

Recognizing the power of big data collection, we will use the PickMeUp app to gather information about the most effective pricing models, store locations, and advertising strategies. The information our customers enter into their personal profiles will allow us to link various demographics to food-buying behaviors such as time-of-purchase and product preferences. The data will provide valuable information to supermarket chains looking to expand or that want to target the advertisement of a product to a certain population.





## Branding.

The app benefits food-stores with advertisement of their products and brand image. All products sold in the PickMeUp machine (and beautifully displayed on the app interface) originate from the store, which effectively makes each purchase a “sample” of the store’s offerings. The locator feature makes the customers familiar with the store’s location, which they will remember if they are nearby and needing to buy food on another occasion. By partnering with PickMeUp, the store conveys its awareness and concern for the problem of food waste. Additionally, the connectedness and simplicity of the PickMeUp app associates the store’s brand with innovative-thinking and modern convenience.



# Inspiration: Biology



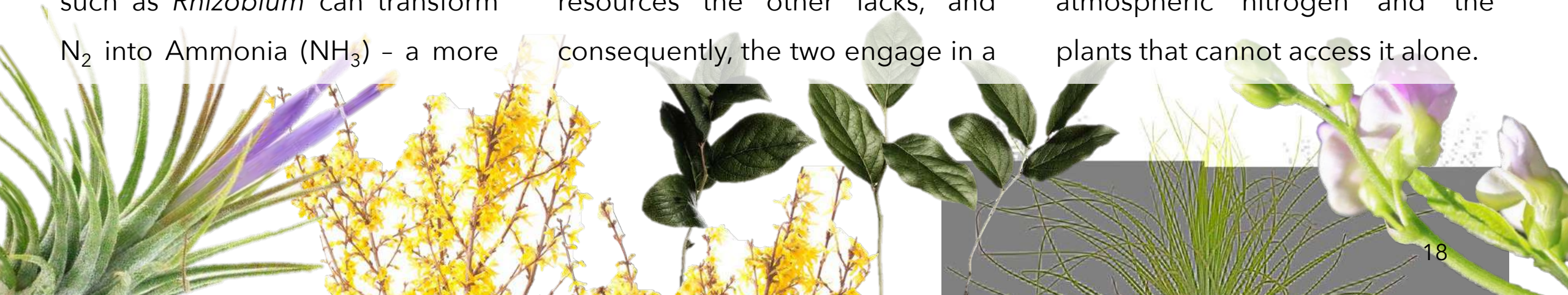


# Plants + Bacteria Analogy.

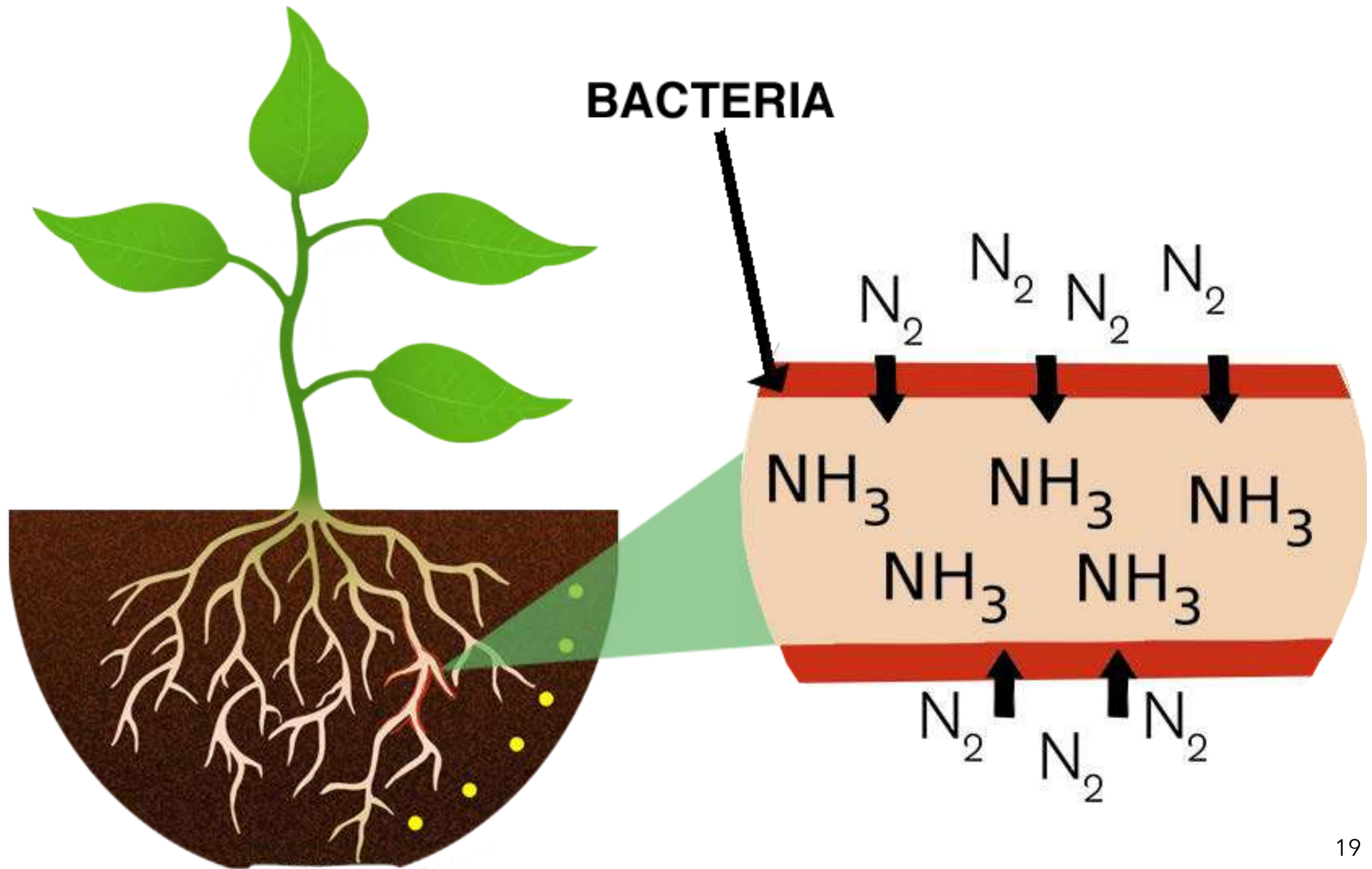
Plants access most essential nutrients from the soil they inhabit; however, nitrogen, a critical nutrient, is inaccessible in its gaseous form ( $N_2$ ) (Harrison, 2003). While plants cannot access atmospheric nitrogen, bacteria such as *Rhizobium* can transform  $N_2$  into Ammonia ( $NH_3$ ) – a more

suitable form of nitrogen for the plants to access (Harrison, 2003). Conversely, these bacteria require an environment that facilitates growth and offers nutrients they cannot obtain themselves. Both the plants and bacteria possess resources the other lacks, and consequently, the two engage in a

symbiotic relationship. Plants permit bacteria to inhabit their roots, a suitable physical environment with access to excess soil nutrients. In return, the bacteria transform  $N_2$  into  $NH_3$ , acting as a bridge between the atmospheric nitrogen and the plants that cannot access it alone.

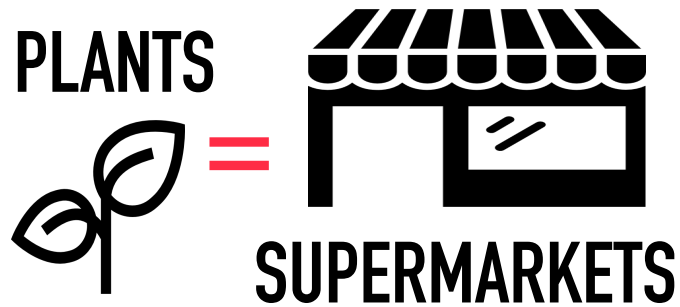






What if . . .

## Two Interpretations.



PickMeUp (bacteria) connects supermarkets (plants) to previously unattainable customers (atmospheric nitrogen), such as late night travelers, night-owls, and those in a rush and in need of an on-the-go option.

Supermarkets (plants) offer space and supplies for PickMeUp (bacteria) to achieve its purpose.



PickMeUp (bacteria) connects customers (plants) to the food (atmospheric nitrogen) that was previously inaccessible due to long lines inconveniences or early closing hours/ Sunday closures.



# Inspiration: Global Issues







# Vision for Change.

Our project targets the United Nations' Sustainable Development Goals (SDGs) 2, 11, and 12. By working with supermarkets to better manage their food waste, our project will help to establish a more sustainable consumption

pattern that did not exist before, and will raise awareness about the potential of surplus food to possess secondary utility (SDG 12). Furthermore, our project will improve the sustainability of the city by reducing food waste

generated (SDG 11). Finally, our project will increase the monetary and physical accessibility of fresh food products with the hope of reducing the widespread issue of food insecurity (SDG 2).

# UN Goals.

**2.1** By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, **nutritious and sufficient food all year round**.



**11.6** By 2030, reduce the adverse per capita **environmental impact** of cities, including by paying special attention to air quality and municipal and other **waste management**.


**12.3** By 2030, halve per capita **global food waste at the retail** and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.





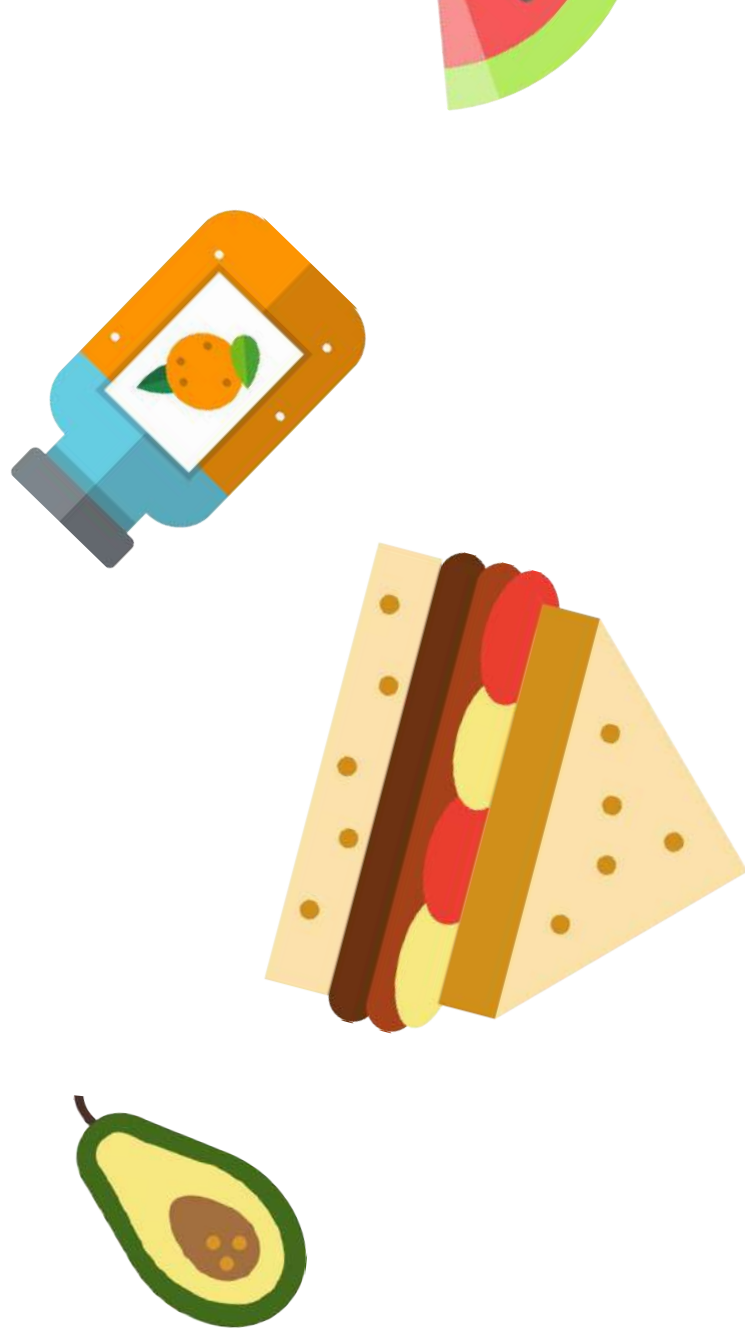


## Food Waste.



In France, commercial food stores generate 781,000 tons in food waste per year. While this number accounts for just 11% of the country's total 7.1 million tons of waste, it results in billions of dollars

in annual losses. In an effort to improve the sustainability and responsibility of its food production, France has passed a law requiring supermarkets to partner with nonprofits, such as food banks and other organizations that redistribute food. If the stores fail to sign a contract with a charity organization, they incur a punitive fine of €3,750 (\$4,366), not to mention substantial fees for weekly food waste disposal.



Although France's legislative efforts propel the country toward its goal of responsible consumption and production, supermarkets still generate food waste. According to the manager of a Marks&Spencer's store in the 5th Arrondissement, food-related non-profits rarely partner with small to medium-sized supermarkets because these stores do not produce enough surplus to supply the charity's efforts. Additionally, surplus from these supermarkets - including his own - tend to be too fresh to last the

sorting and distribution processes of food banks. Food-related nonprofits prefer to work with large supermarkets because they produce greater quantities of surplus; therefore, smaller supermarkets are left with no clear solution for their excess inventory. Enter PickMeUp. The vending machine serves as a secondary sales platform, which allows supermarkets to mitigate lost profits and reduce waste disposal fees.

# Inspiration: Precedents







## Nonprofits Tackling Food Waste.

### **Banques Alimentaires (BAPIF):**

The food bank collects, transports, stocks, and redistributes unsold items to other nonprofits and social centers in the Paris Region.

### **ZeroWaste France:**

The nonprofit raises awareness of waste management, lobbies with political stakeholders in favor of waste reduction, and supports local authorities, nonprofits, and citizens who initiate programs that address waste management.





# Upcycling Businesses.

## WeFood:

This Danish supermarket only sells unsold items (because damaged or past the expiration date) at discounted prices.

## Freegan Pony:

This restaurant, located under Le Périphérique highway, crafts meals out of unsold products from the Rungis international market; it sells its food via "pay-as-you-want" pricing.

## Phénix:

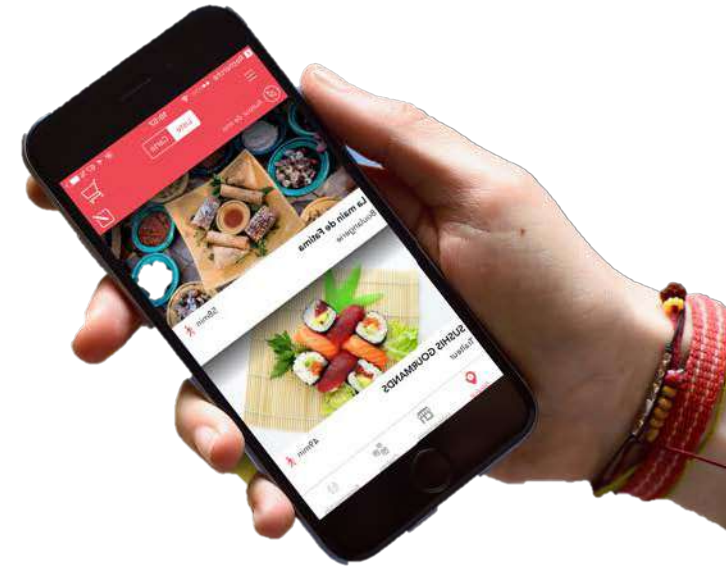
This social enterprise enhances circular economy in commercial industries by partnering with companies to upcycle their waste.



# Apps Against Food Waste.

**Too Good To Go** allows consumers to book, through an app, a “box” of unsold goods at a very low price and pick it up at the closing hour of the shop.

**BestBefore App**, created by a Dutch company, informs users about products in supermarkets whose prices are discounted because they approach their best-before date.



**Optimiam** offers a smart solution for shops and restaurants to sell surplus food at a reduced price. Users can book and pick up the meal at a set time.

# Greens Machine.

Farmer's Fridge vending machines sell on-the-go, healthy, and fresh salads. The company has launched 75 machines around Chicago and plans to expand to 300 by the end of 2017. (Keith Loria, 2017) Farmer's Fridge realizes the potential of the vending machine sales platform to transcend the traditional snack and drink market. Their success validates PickMeUp's



effort to join this wave of innovation since both businesses sell well-rounded meals that are

fresh/highly-perishable, and must be stocked daily. PickMeUp will also sell salads, but for a fraction of Farmer's Fridge's average \$8 salad. Our underlying mission to effectively manage surplus food distinguishes us from Farmer's Fridge, which generates its own food waste and donates to food pantries.





## Precedent Themes.

Requires logistical task force

App navigates food in supermarket/restaurants

Food from variable sources

Makes strong social impacts

Adds economical and social value to food waste.

## How PickMeUp Compares.

Simple Logistics - less than 10m between storefront and machine

App navigates machine locations +

Tangible solution - a physical machine, not a policy change

Food of consistent quality and supply +

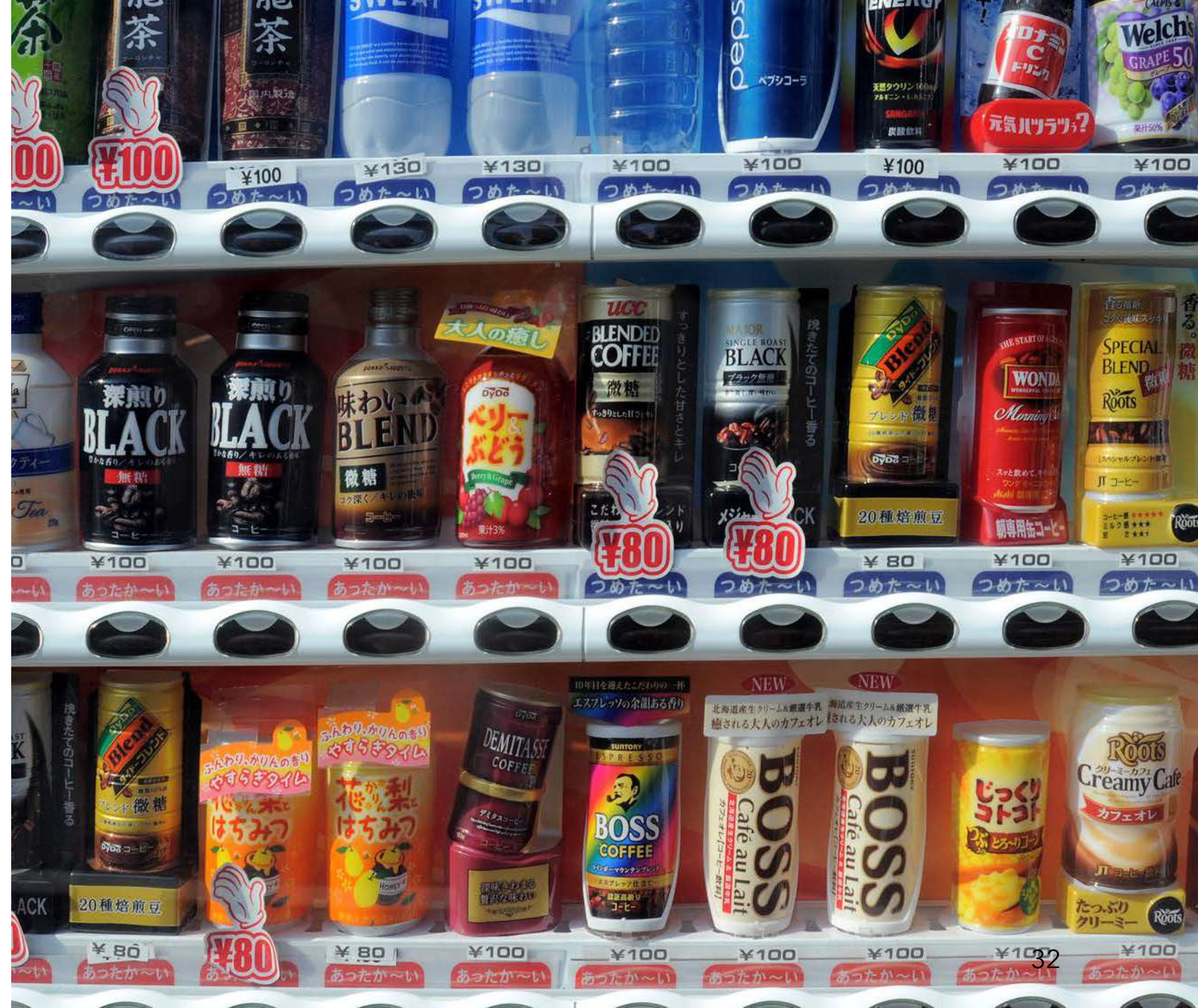
No liability for food quality

Creates healthy, fresh image for reducing food waste

Transforms potential food waste into profits



# Business Details.





# Ideal Prototyping Location.

A map of Paris, France, centered on the Bastille area. A large black rectangle with the white text "MARKS & SPENCER" is overlaid on the map. The map shows various streets, landmarks, and points of interest. The text "M&S Saint Michel: mid-size supermarket, mostly fresh products, franchised" is in a white box on the left. The text "Bd Saint Michel: very wide sidewalks, flows of tourists, high quantity of shops" is in a white box on the right. The text "Staff present to care of controlling expiration and quality" is in a white box on the bottom left. The text "Store already implementing reduced prices on products near expiration" is in a white box on the bottom center. The text "Opens between 8:30am and 10pm, with staff present between 6:30am and 10:30pm" is in a white box on the bottom right.

M&S Saint Michel: mid-size supermarket, mostly fresh products, franchised

Bd Saint Michel: very wide sidewalks, flows of tourists, high quantity of shops

Staff present to care of controlling expiration and quality

Store already implementing reduced prices on products near expiration

Opens between 8:30am and 10pm, with staff present between 6:30am and 10:30pm



## Store's End -

- Store employees replenish machine with new products and clean out expired products
- Store remains responsible for food quality
- Store offers trustworthy and consistent influx of inventory

## Better Together.

**Both have incentive to reduce food waste and, by doing so, maximize profits.**

## Our End -

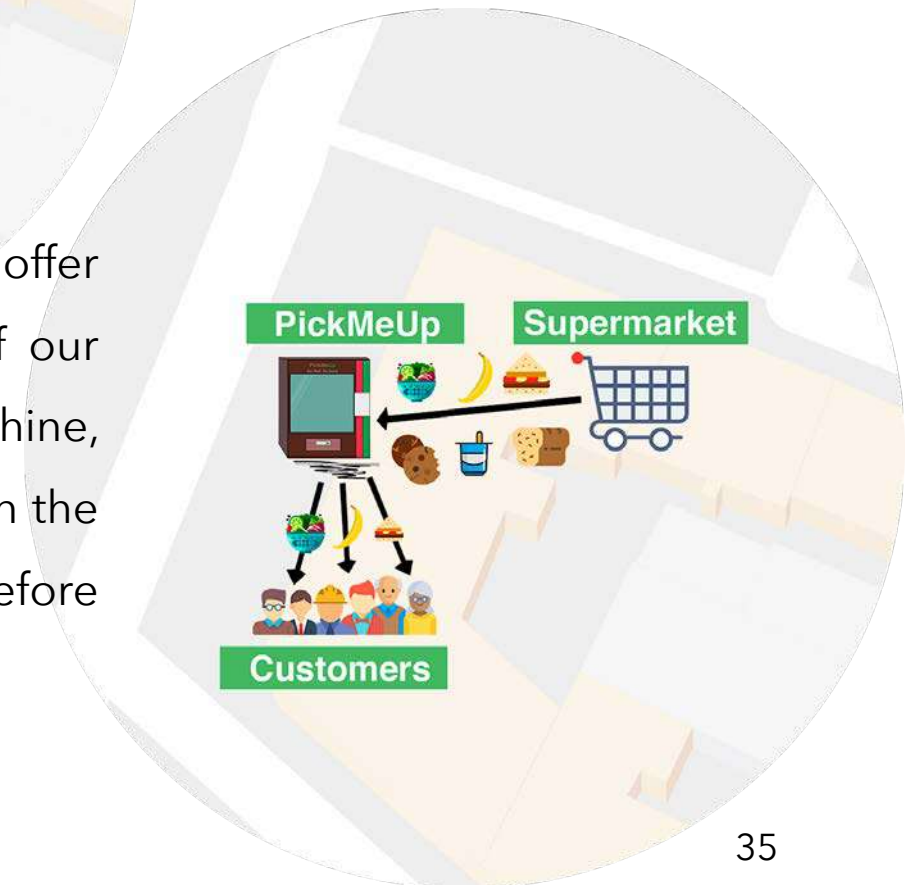
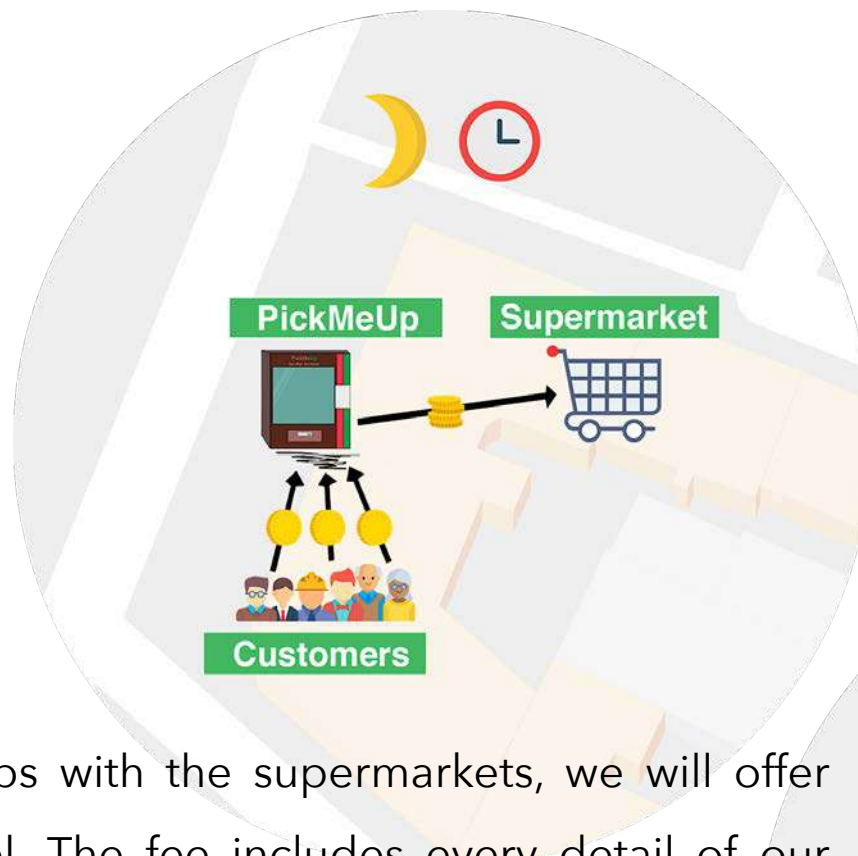
We design, build, and maintain the:

- machine
- app
- pricing algorithm
- positive image

We reduce food waste and its costly disposal fees.

# Win-Win.

In terms of business partnerships with the supermarkets, we will offer them a fixed-rate leasing model. The fee includes every detail of our services, including the usage of the flexible-pricing algorithm, machine, and app, as well as the maintenance of the machine and updates on the app. The store owns all the food products originally, and will therefore obtain all the profit from products sold.







# Legal Framework.

After meeting with Paris city official, Jérôme Pacaud, we learned that any food-related business can claim 1/3rd of the public sidewalk for temporary structures. Typically, stores and

cafes utilize this this space for chairs, tables, and produce displays, but the term “temporary” can refer to any structure that can be removed within the day. The city grants lease contracts that can span from one to ten years. While unlikely to happen, city construction and civil demonstrations may demand the sidewalk space, so we will design our machine to be readily transportable.



# Funding.

## **Angel Investors:**

Due to the fact that PickMeUp will begin as a relatively small enterprise, we will seek funding from angel investors. We anticipate that our commitment to social good, our strong potential to generate profit, and the straightforward, yet innovative execution plan of PickMeUp will inspire the interest of these investors.

## **French Agency for the Environment and Energy Management (ADEME):**

This agency provides financial support for initiatives that contribute to the French economy and/or the management of waste in France. PickMeUp qualifies for such funding because it mitigates food waste and establish a circular economy.

## **Other Private Funding Streams:**

This sector includes the Monoprix Foundation, which awards grants to projects that improve the social solidarity and general interest of the city. Additionally, the Ellen MacArthur Foundation for Circular Economy could support PickMeUp's efforts to establish a circular economy in France.

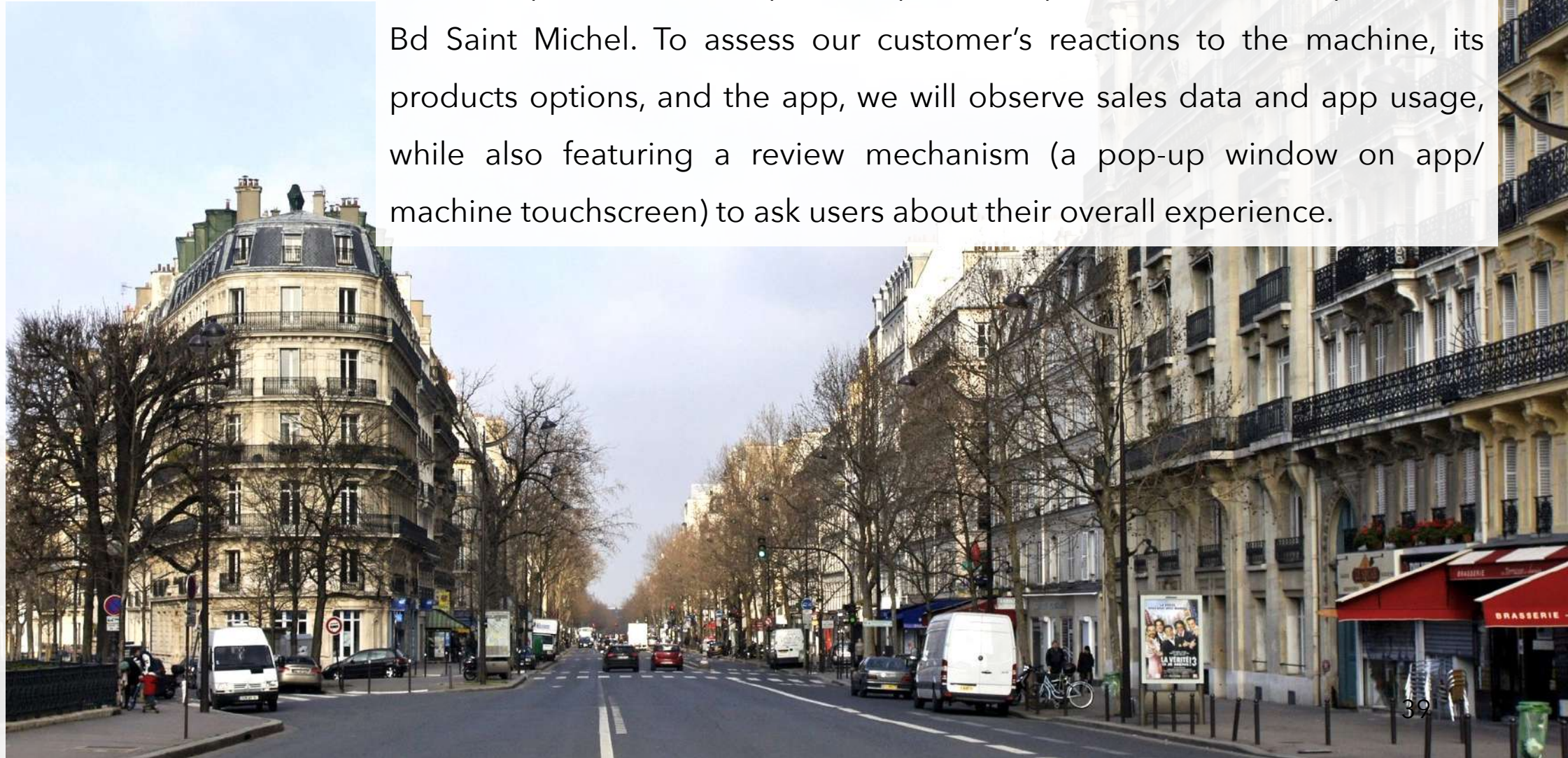
What's Next.





# Phase 1

With machine and app prototypes ready to launch, PickMeUp's first phase of development will take place in partnership with the Marks&Spencer on Bd Saint Michel. To assess our customer's reactions to the machine, its products options, and the app, we will observe sales data and app usage, while also featuring a review mechanism (a pop-up window on app/ machine touchscreen) to ask users about their overall experience.





A background image of a Parisian street scene. It shows a wide, tree-lined boulevard with multi-story buildings featuring balconies and wrought-iron railings. Several cars and a white van are visible on the road. The sky is overcast. The text 'Phase 2' is overlaid on the left side of the image.

## Phase 2

After a successful prototyping phase with M&S, PickMeUp will expand to other M&S storefronts in Paris (12 total). This manageable volume of stores will develop a network of PickMeUp machines to reach a broader market. Starting now, our app will feature its map page to navigate customers to our newly added machine locations. Food waste data from supermarkets and sales data from the app/machines will allow us to ascertain our expansion's success.



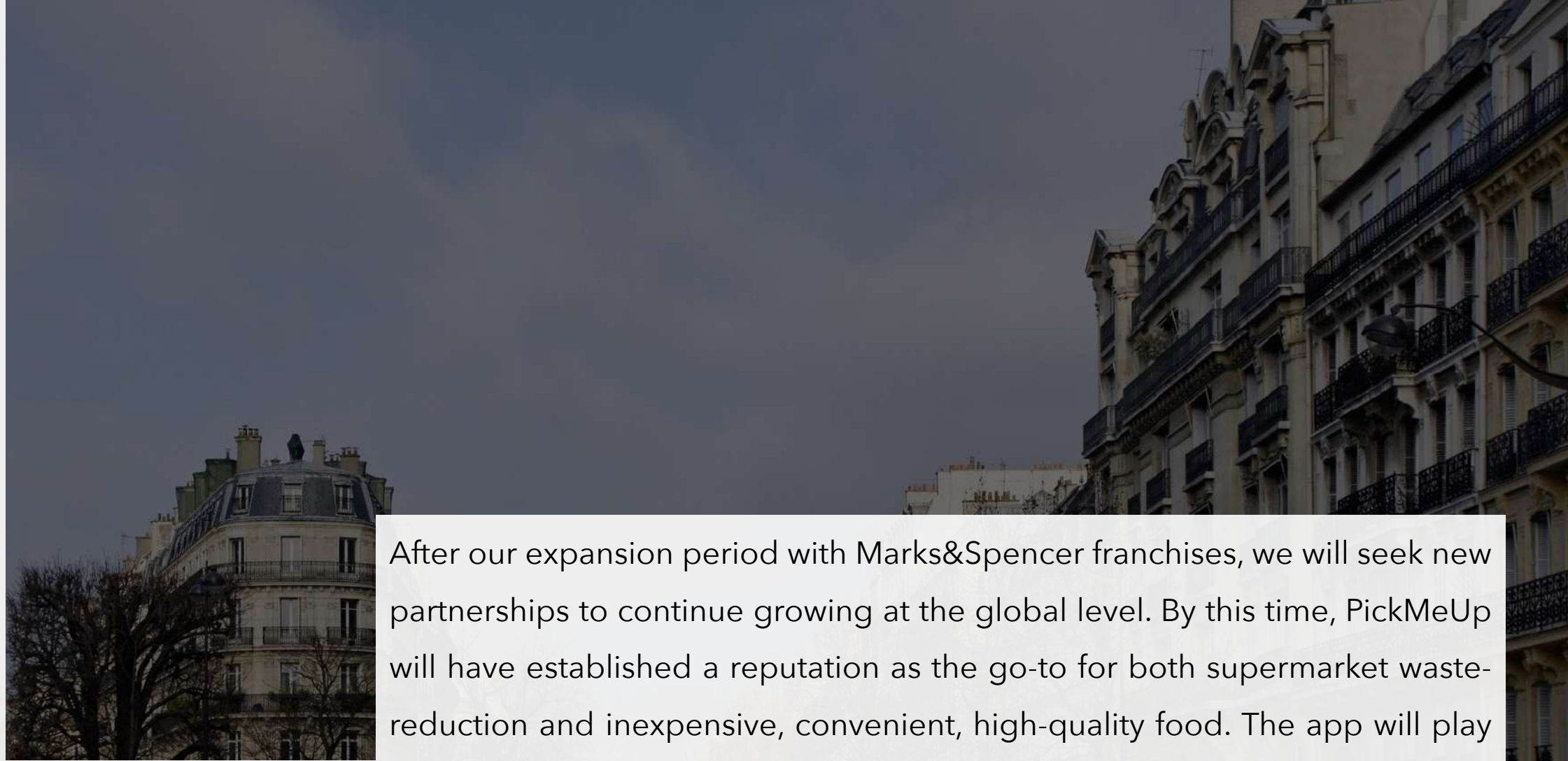


## Phase 3

To further solidify our partnership with the M&S brand, PickMeUp will seek additional locations in the greater France region as well as in the United Kingdom and India (where M&S is well established with over 1300+ total stores). At this phase, we will need to expand our line of PickMeUp machine designs to accommodate the diverse store architectures and municipal regulations of these new venues. Tracking revenue and food waste data will generate an accurate sense of the expansion's effectiveness.







## Phase 4

After our expansion period with Marks&Spencer franchises, we will seek new partnerships to continue growing at the global level. By this time, PickMeUp will have established a reputation as the go-to for both supermarket waste-reduction and inexpensive, convenient, high-quality food. The app will play a crucial role in maintaining the connectedness of all our partners and customers, while also allowing us to assess the success of our initiative.

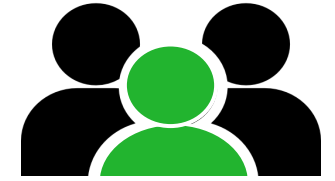
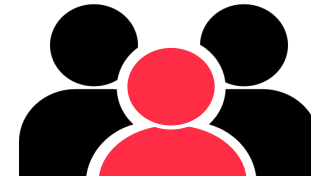
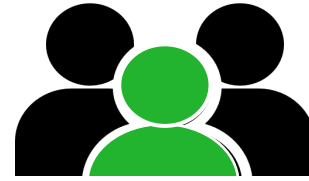




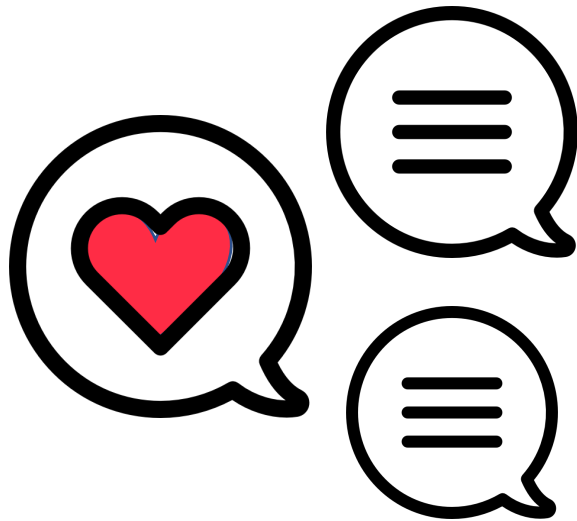
# Assessment.



## How many people use PickMeUp?

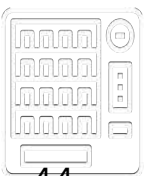


To answer this question, we will look to data from our app and tally the number of users who have created a personal profile. We can also find the number of people who use specific vending machines because the app allows users to highlight their most frequented vending machines.



## Is PickMeUp pleasing its customer segments?

To assess the success of our services to our customers, our app will have a feature that allows it to receive feedback from its users. A notification prompting the users to rate our service will emerge when users are on the app. This information will reveal any shortcomings of the machine and will bring insight on how to improve our customer's overall experience.





# Is PickMeUp effectively reducing waste?

To assess PickMeUp's effect on food waste, we will look to our store relations manager to retrieve data about the store's food waste prior to PickMeUp's implementation. We will also want to test for a correlation between the public's growing

awareness of PickMeUp and the store's overall decline in food waste. This data will help ascertain whether the PickMeUp mitigates enough food waste and lost profits to be worthy of further expansion.







## **Staying True to Good.**

No matter how far our expansion takes us, we are dedicated to our vision of a future without food waste, without hunger, and that established optimal systems for sustainable living.



## Many Thanks.

The PickMeUp team - Ali, Clément, Chanel, and Salomé - would like to thank our mentors - Rob Lue, Adam Tanaka, Jessica Liu, and Julie Le Bot - who aided and inspired us in the ideation and realization of this design plan.

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