

PROJECT III  
**GROWDEN**

**GIVE A MAN FISH  
HE EATS FOR A DAY**

**TEACH A MAN TO FISH  
HE EATS FOR LIFE**

**-CHINESE PROVERB**

# INTRODUCTION

## PRODUCE SYSTEM IN USA

The only way to truly know where your produce comes from is by growing it yourself.

### -Cradle to Cradle

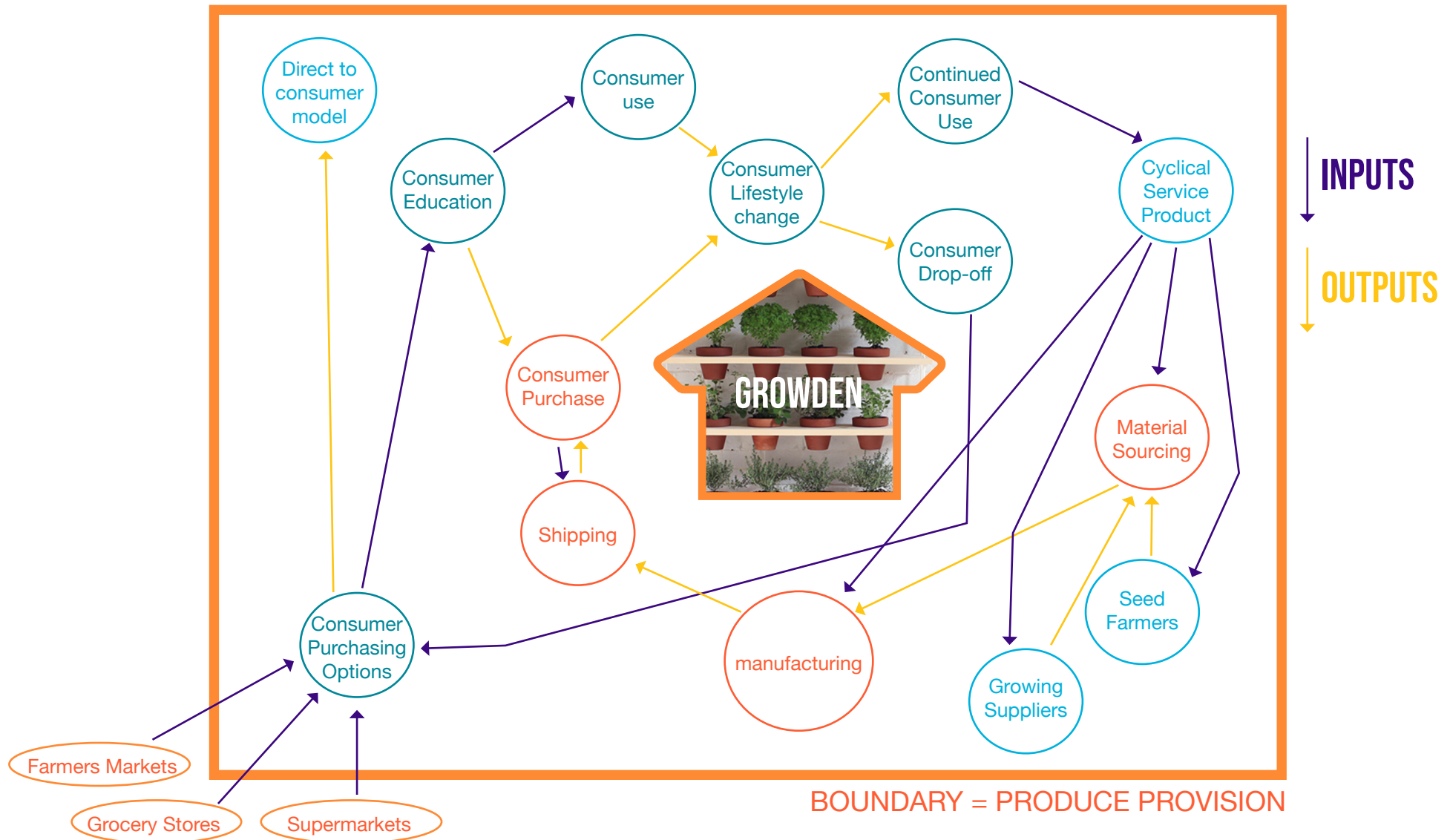
The current state of the United States produce industry is far too monopolized. Even though there are many organizations and farmers working toward more diverse, safer, and healthier produce provisions, the majority of people have to buy their produce at supermarkets or grocery stores with limited produce selection. Even if a person is committed to strictly buying organic you can never be sure about exactly how it was grown, in what type of conditions, and what it took to get to your hand in terms of workers rights and preservatives used. Furthermore, farms are being industrialized and mono-cultured, both of these evolutions put a massive strain on the farmer, the seeds, the ecosystem, and consumers. The farmers are pressured to grow only a certain type of crop through government subsidies. The seeds are being genetically degraded. The ecosystems soils are being leached of important bacterias, minerals, and nitrates while being replaced with pesticides and other harmful chemicals. The consumers are being provided with produce options without being aware of the harms that they could be putting into their bodies and the pressure they are putting on the food system by relying on a nationwide produce operation.

In this presentation I have designed a product service offering that aims to solve for the issues mentioned above.



# CONSUMER PRODUCE PURCHASING SYSTEM

DIAGRAM WITH BOUNDARY, FUNCTIONS, STRUCTURE, AND FLOWS





# GROWDEN

## GROW YOUR OWN FRUITS & VEGETABLES

The seed kit service would be an optimal solution for those that are interested in growing their own food. Purchasing the use of the seed service kit and seeds of the consumers choice they would receive everything they need to grow herbs, vegetables, and fruit indoor or out. Large or small depending on the consumers wants, needs and limitations. Then once they are either finished growing, want to terminate service or resupply, upgrade or expand their grow operation they would use the online platform and customer service communications to use as their one stop shop.

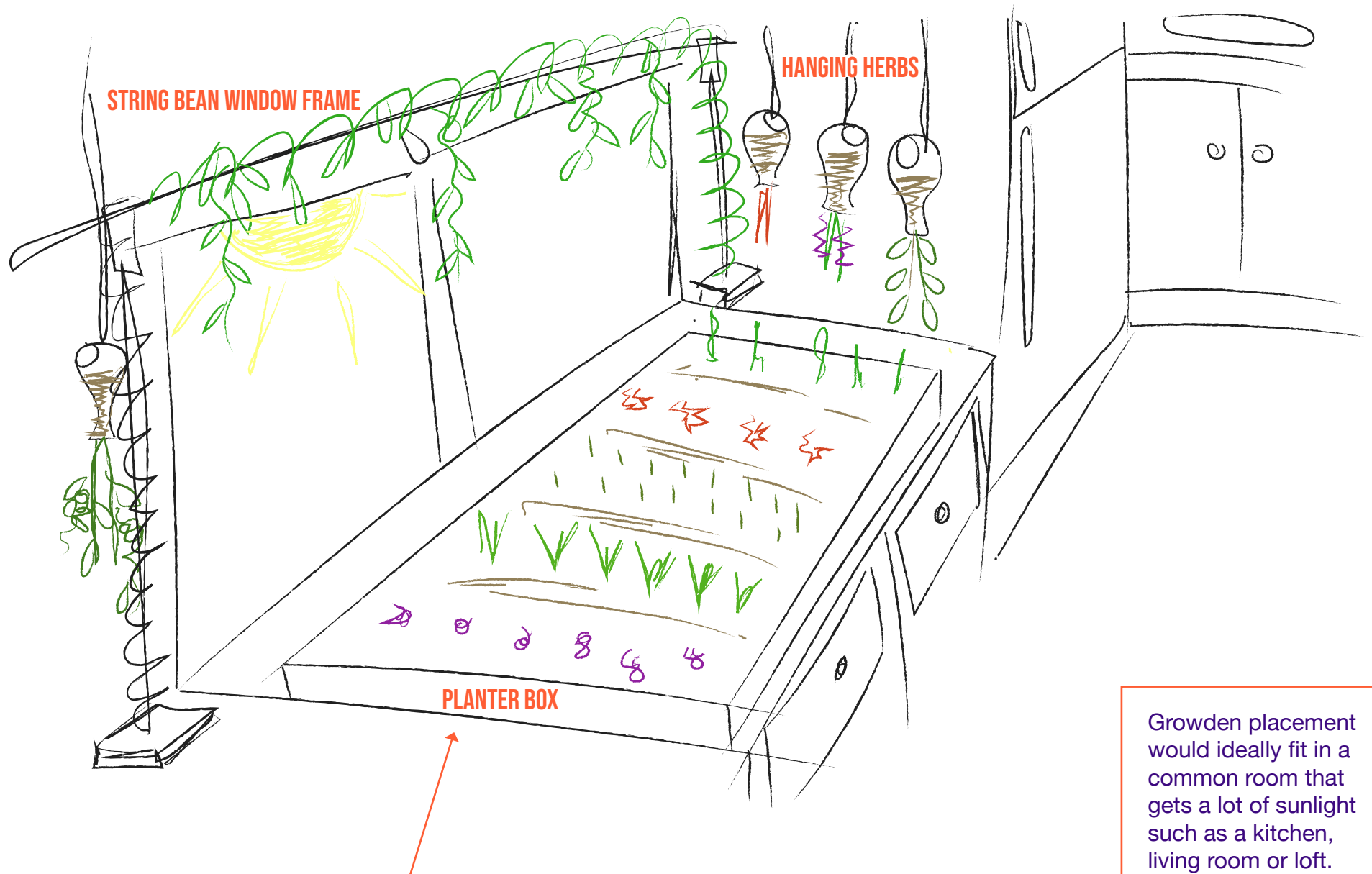
### **This service would eliminate:**

- The need to purchase store bought produce.
- Exposure to harmful produce.
- Rely on a large food system out of necessities.

# GROWDEN PRODUCT

## PRODUCT SKETCH

Olivia Pedersen  
Project 3 - Systems Thinking



# GROWDEN

## PRODUCE SYSTEM FIXES

Olivia Pedersen  
Project 3 - Systems Thinking

1

**GIVE BACK  
CONSUMER AGENCY  
WITH PRODUCE**

Many people currently do not have the means, capacity or knowledge to grow their own food. Their current produce provision options are Supermarkets, grocery stores, and farmers markets. The Growden is aimed to replace the supermarket and grocery store buying options. With a product that is affordable, educates its user in a seamless experience, and provides them with year-round homegrown organic produce they can begin to take the power of their produce into their own hands and not be reliant on a provider.

2

**ELIMINATE EXPOSURE TO  
HARMFUL PESTICIDES,  
CHEMICALS & GMO'S**

Growdens seed offerings will be organic, non-GMO, heirloom varieties ensuring that they are being provided with the best possible produce from the start. This service will also teach its user how to grow indoors, using soil, growing supplies, and techniques that ensure year-round harvests with safe to use growing supplies.

3

**ELIMINATE CONSUMER  
RELIANCE ON A GLOBAL  
FOOD SYSTEM**

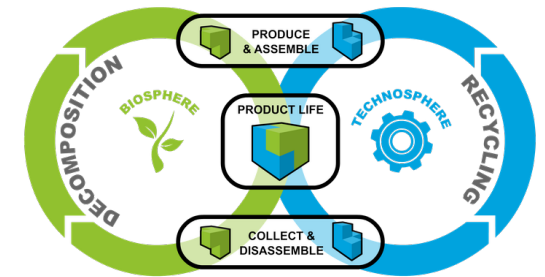
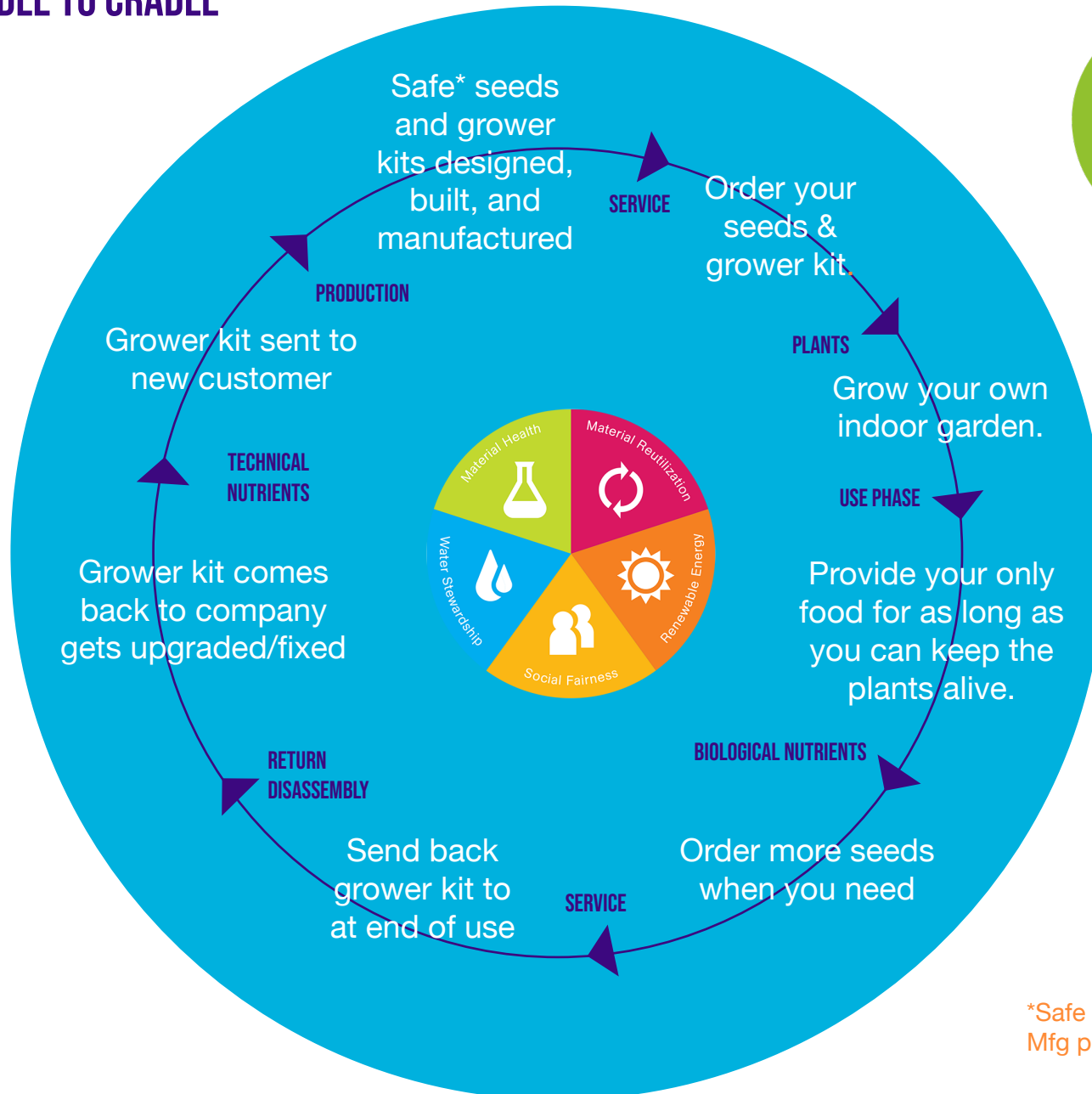
Growden would eliminate the need to rely on a massive food system, knowing exactly where their produce is coming from. Every user of Growden will be provided the seeds, tools, and knowledge to grow exactly what they want.





# LIFE CYCLE PHASES

## CRADLE TO CRADLE



\*Safe = Cradle to Cradle certified design, Mfg process, organic and non-gmo seeds.



# MATERIAL HEALTH

## THE SEED KIT

**C2C certified:**  
**Design & Manufacturing**

Non-harmful and safely produced materials used in the design of the possible seed kit inclusions:

### TECHNICAL

Grow box (e.g. sustainably sourced wood, plastic or metal)  
Solar system (e.g. panels)  
Water system (e.g. drip tubes)  
Plant Cover (e.g. non-leeching plastic)

### BIOLOGICAL

Soil  
Nutrients

## THE SEEDS

**Organic**  
**Non-gmo seeds**  
**Sustainably sourced**

Seeds provisions need to be sourced from a provider that is certified in organic heirloom varieties with a production system built to last and scale.

### BIOLOGICAL

Certified Seeds





# MATERIAL REUTILIZATION

## THE SEED KIT

**C2C certified:  
Return & Disassembly**

Upon consumer termination of service grower kit would be returned, repaired, returned to the service cycle or upcycled or downcycled. Pots or planters are made from renewable grain fibers from upcycled or recycled avenues to avoid raw material sourcing.



## TECHNICAL

- Grow box (e.g. sustainably sourced wood, plastic or metal)
- Solar system (e.g. panels)
- Water system (e.g. drip tubes)
- Plant Cover (e.g. non-leeching plastic)



## THE SEEDS

**Sustainable Farm**

To ensure lasting and scalable results seed revisions would need to be sourced from a farm that can keep up with demand without degrading pureness of seeds.

## BIOLOGICAL

**Certified Farm**





# RENEWABLE ENERGY

Olivia Pedersen  
Project 3 - Systems Thinking

## THE SEED KIT

C2C certified:  
Manufacturing and Use

Manufactured with renewable energy.  
Light source from grow kit could consist of window solar.

### TECHNICAL

Solar system (e.g. panels)



### MFG & PRODUCTION

### USE



<http://fortune.com/2016/05/11/germany-excess-power/>  
<https://www.ecohome.net/guides/1505/growing-food-indoors/>  
<https://www.designrulz.com/design/2015/03/diy-20-ideas-of-window-herb-garden-for-your-kitchen/>



# SOCIAL FAIRNESS

## THE SEED KIT

**C2C certified:  
Employee Manufacturing Fairness**

Ensuring that work environments are non-harmful, safe, and that employees are paid a fair wage.

The product itself needs to be certified safe for user, not leeching any harmful chemicals into the soil avoiding crop contamination.

### FAIR

Schedule  
Pay  
Clean & Safe Work Environment

## THE SEEDS

**Farmer Fairness**

Proper & just market price for seeds.

### FAIR

Fair trade contracts.





# WATER STEWARDSHIP



## THE SEED KIT

C2C certified:

**Design, Manufacturing, Use & Return**

Responsible water use and safe water exposure during design, manufacturing and return.

### TECHNICAL

Manufacturing water use certification  
Responsible water system during use  
(e.g. drip tubes)  
Consumer Water Use Education  
Using less water for more

## THE SEEDS

**Growth of seeds**

Responsible water use and safe water exposure during seed growth.

### BIOLOGICAL

Responsible watering practices







# VISUAL EXPLORATION OF SYSTEM SITUATION

## RICH PICTURES

Olivia Pedersen  
Project 3 - Systems Thinking



Perspective



Persuasion



Point of sale



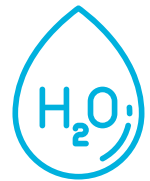
Manufacturing



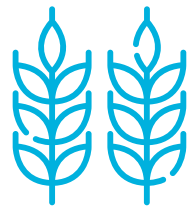
Transportation



Education on best practices  
Reuse  
Long term growing



Energy Needs



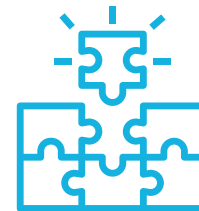
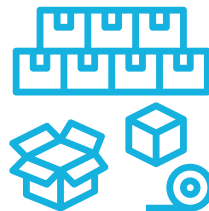
Material Needs



Mobile  
Dynamic  
Nutrient Rich  
Cradle 2 Cradle



Housing/Apartments/Individual/Family/Roommates



Packaging  
Shipping  
User Experience



**CLIENT** Consumers (people with the agency and interested to grow their own food)

**ACTOR** Designers, Manufacturers, Seed and Soil Providers, Transporters



**TRANSFORMATION** Needs innovative material sourcing for planters to avoid harmful plastics and chemicals

**WORLD VIEW** Needs safe and sustainable material sources, needs to educate consumer on use and food growing best practices for longevity and perennial growing.

**OWNER** Online Direct to Consumer Company

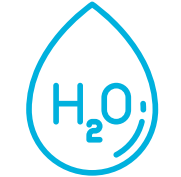
**ENVIRONMENT** Practice Cradle to Cradle practices for product full life cycle. Teach and design grow system to be efficient with water use (i.e. drip system).

# LINKS TO THE ENVIRONMENT

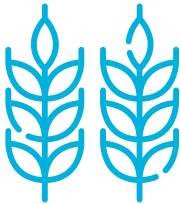
## RICH PICTURES



Energy Needs



Responsible  
Use of Water  
and Passive Solar



Material Needs



Responsible  
Sourcing of  
Seeds and Soil



Manufacturing

Emissions  
Water pollutions  
Raw materials



Transportation

Emissions  
Fossil Fuels



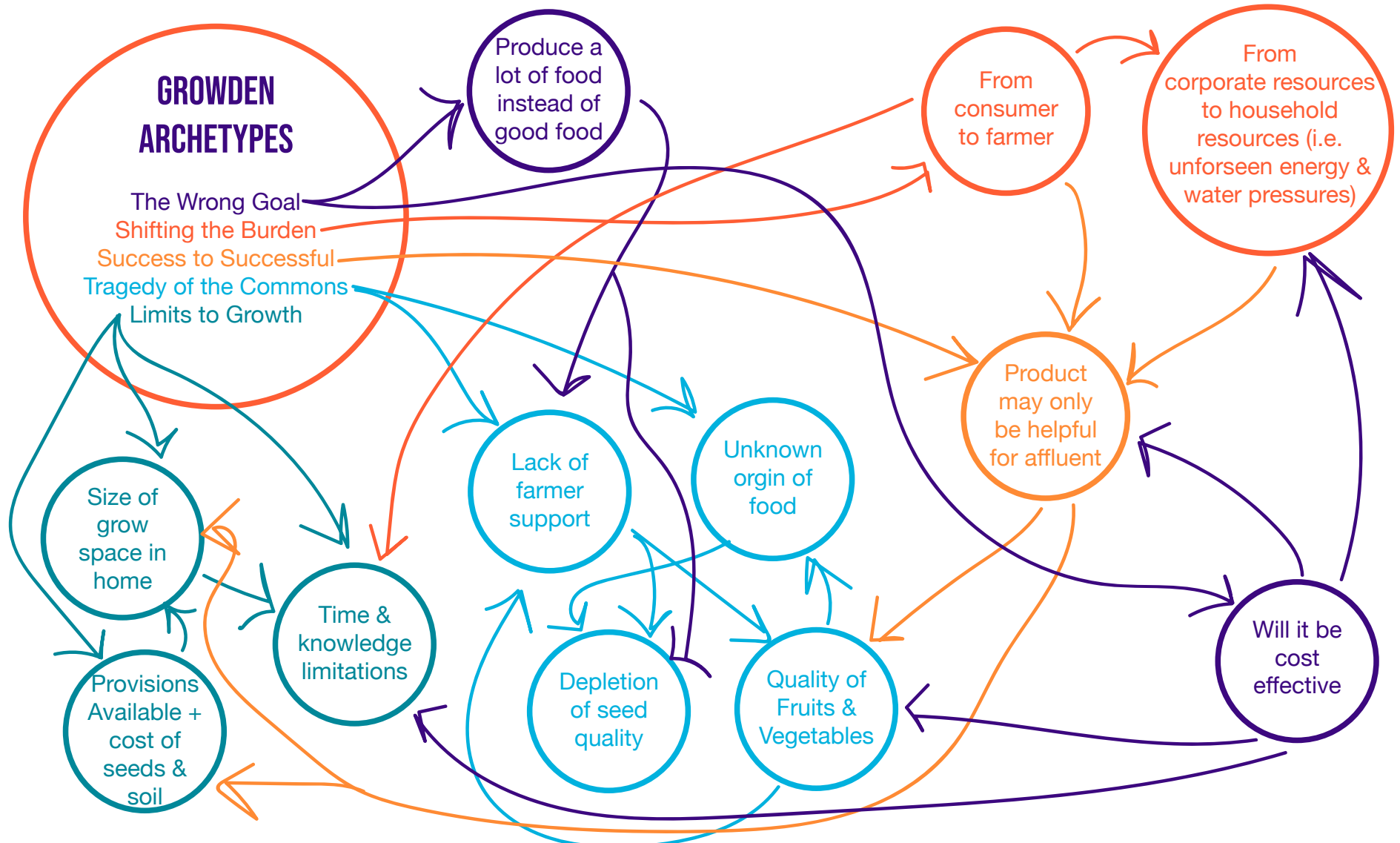
Reuse  
Education  
Long term growing

Saving seeds  
Regrowing from roots and stems  
Best Practice teachings  
Consumer communication  
Optimize User Experience



# INFLUENCE DIAGRAM

ARCHETYPES THAT COULD EXIST FOR GROWDEN OR  
THAT DO EXIST IN CURRENT CONSUMER FOOD SYSTEM



# SOLVES FOR ARCHETYPES

Olivia Pedersen  
Project 3 - Systems Thinking

---

## ARCHETYPES THAT GROWDEN IS TRYING TO SOLVE

---

### Shifting the Burden:

#### From consumer to farmer.

By putting the power of growing back into the consumers hands, enabling them to grow their own food with a quality provision service, could alleviate the market demand on farmers to produce mass quantities of produce and instead focus on seed quality and longevity.

### Tragedy of the Commons:

#### Unknown origin of food.

Purchasing produce from a grocery store commits consumers to participating in a global market, maybe even without their knowledge. With the uncertainty of how your crops are being grown and with what chemicals or seed compounds are major concerns for knowing what you are actually putting in your body. By providing certified seeds and having the customer grow their own food they know exactly what has been invested in their produce before they consume it.

---

## ARCHETYPES THAT MIGHT OCCUR BECAUSE OF GROWDEN

---

### Limits to Growth:

#### Time and knowledge limitations.

Offering people the agency to grow their own food through a cradle to cradle seed and grown supply provision service would be an amazing offering that could change the entire produce industry. However, expecting people to know how to grow their own food would be a massive oversight since most people have not been growing their own food for generations. By ensuring a user experience that is optimized to teach people how to use the products and grow efficiently for the long term would solve this possible archetype.

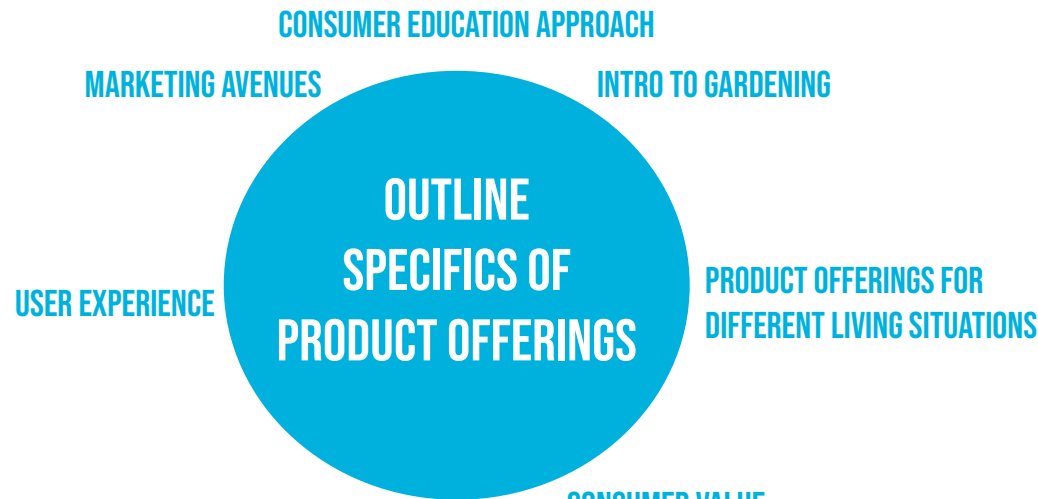
### Success to Successful:

#### Product may only be applicable for affluent.

Not everyone has a home big enough to put in an indoor growing operation nor could many afford more then they are already paying at the store for produce. In the design of this service it will be important to keep intentions focused on multi-situational living as well as cost. For example if that means communicating the long term cost savings of the service if is expensive up front than the educational material would need to illustrate that to show people the long-term benefits.



# NEXT STEPS FOR DEVELOPMENT

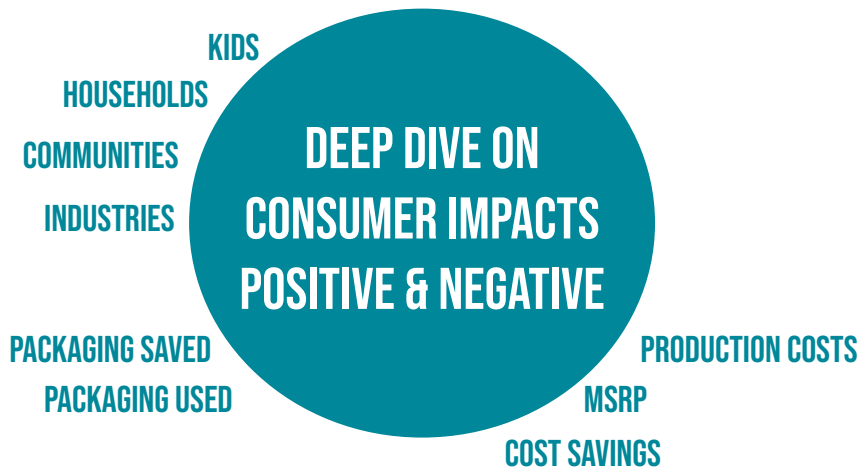


**COULD THIS ACTUALLY WORK FOR MOST PEOPLE IN THEIR HOMES? HOW?**

ADDITIONAL / EXTENSION OFFERING E.G. COMPOSTING SYSTEMS

CONSUMER VALUE  
COST SAVINGS  
TIME SAVINGS

AIRFLOW / HUMIDITY    BUGS / PESTS  
UNFORSEEN ISSUES



SEED PROVISION

SOURCING

**OUTLINE LOGISTICS OF PRODUCT**

PRODUCT DEVELOPMENT

HOW TO DIVERSIFY PRODUCT FOR MULTIPLE LIVING SITUATIONS





# NETWORK FEEDBACK

Olivia Pedersen  
Project 3 - Systems Thinking

## GRADUATE PEER

Jazmyne Geis

Great project Olivia yay for GROWDEN. I think your idea also is supportive to the project work that I'm doing. I also mentioned that to Allison. I like that your project actually tackles the idea of excess consumption and instead of going to a supermarket and buying produce shelled in plastic, actually picking it from the planting experimentation coming right out of the house! Can you imagine how cool that would be for kids?

Overall Feedback:

Great visuals and interesting content

Like how you fully integrated the Cradle to Cradle principals into your presentation

One concern I had is if people would have room for this layout in their home, and if they would be overwhelmed with taking on the responsibility of growing their own food alone. I really liked the way you outlined this in your Archetypes page. I wish I did a page like that as it really clarifies the current patterns and the issues surrounding them all on one page!

Would be cool if you could add a page or so like Curt said about how Growden would incorporate the solutions you are proposing, and then maybe a Next Steps page on how you'd get these ideas rolling.

Cool work!

Details:

-Love the product sketch you added. It really brings the idea to life -What does MFG mean in your diagram of boundaries, functions, structures and flows? Maybe I missed that...

## PROFESSOR

Curt McNamara

I suggest putting the actual plan (pp 2-3) after pp 4. Then add some text about how the existing system will be improved by Growden. For the three fixes, you could put the archetypes on pp 14-15 in there are well. So they can see the big picture (pp 4) some issues (pp 14-15) and then your proposed solution (pp 2-3). Then one slide to show how Growden incorporates three system fixes.

## GRADUATE PEER

Whitley Mike

Overall your project is super easy to read through and to follow along. Great use of color.

I would add a divider slide to set up each system explorations and then one for the solutions. This could just be the title of the system on the next page, and maybe a sentence or two to explain what will be outlined in the system. Set-ups can help show the viewer a snapshot of what your collected information is.

# NETWORK FEEDBACK

Olivia Pedersen  
Project 3 - Systems Thinking

## FRIEND/COLLABORATOR

Greg Hope

Page 2 “limited grocery stores” Wording could be mistaken

Page 2 “this presentation I have designed a product service offering that could be a possible solve for the issues mentioned above.” Awkward wording maybe solution rather than solve for

Page 3 the yellow color on white hard to see, more contrast

Page 4 “those that are willing to grow their own food.” the word willing brings out the wrong idea to me. want something more positive

Page 6 “and techniques that ensure a no harm product and year-round harvests.” Multiple ands as well as wording for no harm was confusing to me.

Page 8 “provider that is confident their seeds” need something more definite than the word confident

Page 11 “Non-harmful, unsafe, or under-paid asks of mfg employees. Certified safe for user.” Reword to make clear on what it would do for the workers

Page 9 biodegradable planters potential problem with the inherent properties of it wanting to biodegrade in soil.

General ideas:

- Make the point that it would be less trips to store as well as less driving for shipping. This would both cater financially to consumer as well as make them feel good about what it is doing for the bigger picture
- Could come with compost system, or ideas for composting. Make it a cycle
- Customer may worry about insect, knowledge and ideas for organic, non harmful means to fix that such as neem oil, insect eating plants.
- General things that growing indoor needs
- humidity: solutions, humidifier, knowledge, near by water, put plants close together.
- Air circulation:
- Temp: smart thermostats, plants based on area
- Light: growing lamps...
- Have more specialized options depended on consumers needs and what they have.
- Possibly have bigger options for community places.

PROJECT III  
**GROWDEN**

**THANK YOU  
FOR READING!**