

HONDA

PROCESS
BOOK

AU22, Design 5101 & 5200, Sébastien Proulx
Summer Geissman

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PROJECT

HONDA BRIEF

Research customer preordering experience and provide concept with assistive vehicle cargo area

DESIGN BRIEF

Address how drivers can configure and utilize cargo spaces in reference to loading up, traveling with, and unloading groceries.

PROJECT STATEMENT

Focus on configurable cargo spaces that can adapt to the various lifestyles of drivers that travel with groceries.



RESEARCH



PRIMARY RESEARCH

Survey:

- Participants include grocery pre-ordering customers.
- Pain points include vehicle gas mileage, limited space in small vehicles, and damaged groceries/poor packing.

Customers have to deal with their items spilling and damaging each other during the ride:



34%

of pickup customers have received damaged or spoiled goods.



30%

of pickup customers have damaged or spoiled items on their travel home.



67%

of pickup customers rely on items they've purchased to keep groceries from damaging each other.

Out of the 67% of pickup customers that use extra items they've purchased to travel with groceries, 33% use a cooler or cooler bag, 23% use an cargo space organizer, and 11% utilize reusable bags. The other 33% of pickup customers maximize their storage space simply with their own organizational methods: Customers use the trunk (22%), seats (67%), and the floor (11%) as storage space.

Travel Time



30min (22%) 1hr (34%) 2hr (23%)
Next Day (11%)

34%

of delivery customers receive their groceries within an hour.



5min (16%) 10min (11%) 15min (27%)
20min (16%) 30+min (19%)

27%

of pickup customers travel 15 minutes home.

82% of pickup customers live in urban areas with just 18% living in rural areas. Out of the respondents, half of them only shop from one grocery store in a trip while 30% utilize multiple grocery stores in one trip and 20% said it varies.

Customers and Their Cars



55%

of customers drive an SUV while 27% drive a sedan, 9% drive a coupe, and 9% drive a convertible.



45%

of customers appreciate the large cargo space in their vehicle while 19% like having a cargo net and 36% didn't mention anything special about their vehicle.



33%

of customers were split evenly on disliking their vehicle for the small cargo space it had to offer, groceries rolling around during their trip, or quite simply nothing at all.



PRIMARY RESEARCH

Ethnographic Research:

- I observed a Whole Foods worker and learned what items they use and how they integrate technology into the process using an app on their phone. In addition, I learned that some orders require them to pack the backseat once the trunk is full.
- I observed a Kroger worker which showed me how their process is very similar in the steps and technological parts but different in the additions in socialization and customer choices.





PRIMARY RESEARCH

Interviews:

- Participants include gig workers for DoorDash, UberEats, Kroger, and Whole Foods.
- Pain points include inventory, customer communication, ID verifications, damaged groceries/poor packing, GPS accuracy, limited order sizes based off car size.

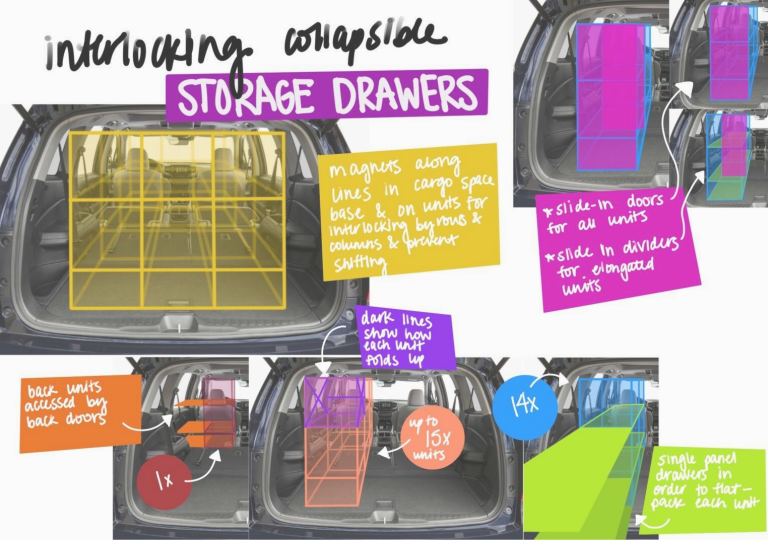
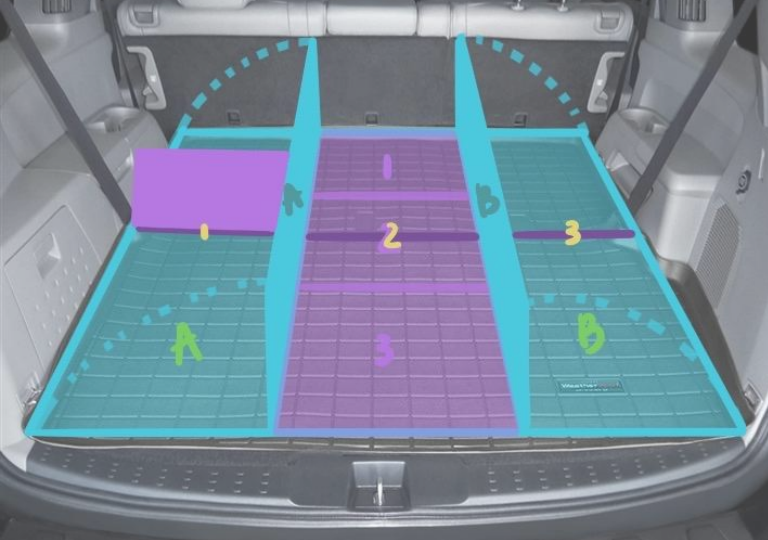


SECONDARY RESEARCH

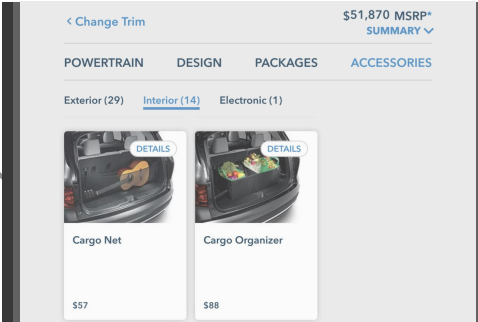
I read 20 articles relating to grocery preordering and separated them equally into predetermined sections correlating with focus, science and technology, business, and arts. From there, I wrote a summary and analysis of each one. I then created a conjecture for each section of articles.

Takeaways:

- Covid's lockdown boosted grocery preordering sales which resulted in investments into omnichannel options in order to adapt to the market.
- Quick changing demand for services like in home deliveries and assistance were added.
- Inflation and additional fees have not made an effect on the sales of these new services.
- Grocery preordering services have a lower carbon footprint than shopping for yourself.



MARKET ANALYSIS



VEHICLE CONFIGURATIONS



- personal vehicles
- commercial vehicles
- before vehicle purchase
- day to day



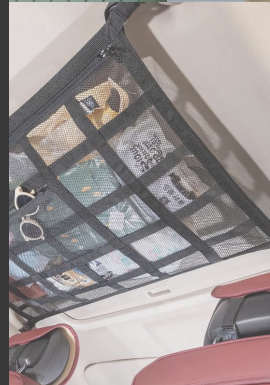
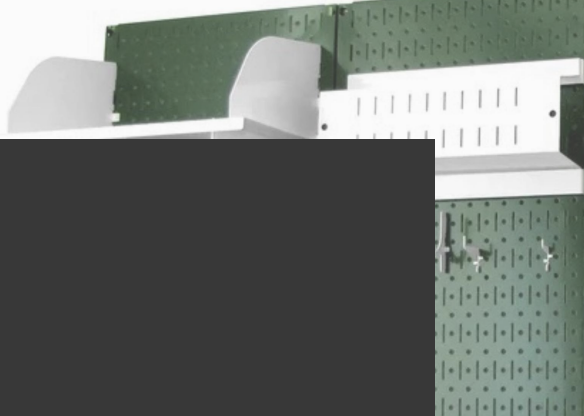
MOOD BOARD

Configurable Storage:

- personal vehicles
- commercial vehicles
- other products

Honda Aesthetic:

- interior
- exterior
- attachments



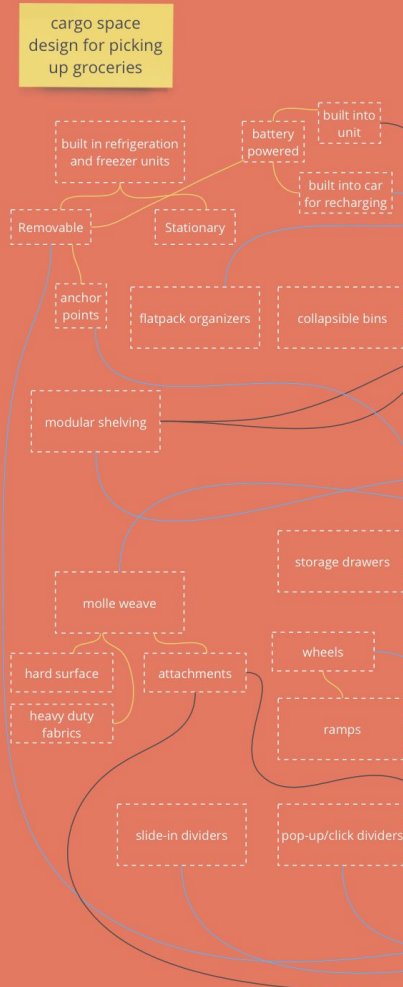
C-K MAP

Here, the concept starts in the knowledge space from trunk organizers offered aftermarket.

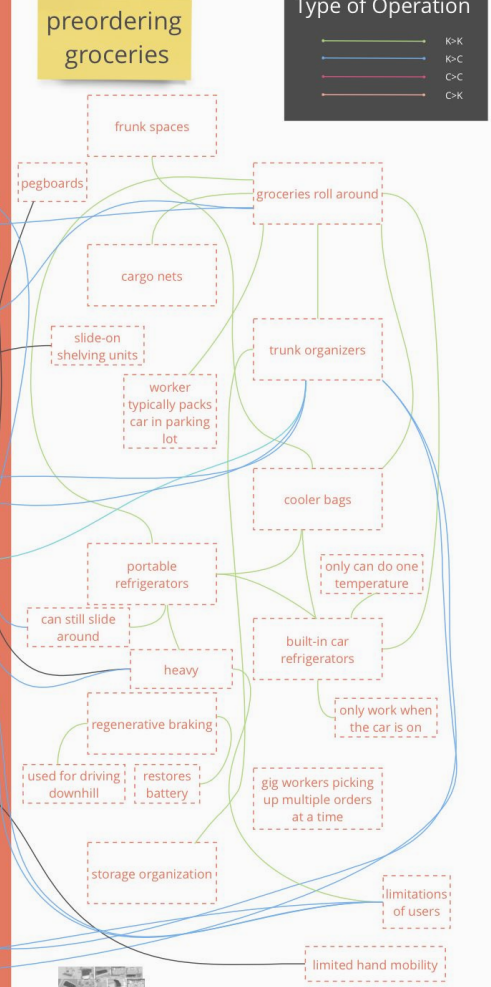
It then moves into the concept space as a molle weave style trunk organizer with materials being either a hard surface or heavy duty fabrics.

When thinking of how to attach the item to the car and the groceries to the item, I remembered reading about how helpful preordering groceries is for those with vulnerabilities. This led to me adding in my knowledge space to think of those with limitations including limited hand mobility.

Concept Space

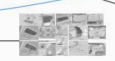


Knowledge Space



Type of Operation

- K-K
- K-C
- C-C
- C-K



PERSONAS



THE RURAL SENIOR CITIZEN

- has arthritis
- runs multiple errands in one trip
- limited mobility



THE GIG WORKER

- works in grocery delivery, takeout delivery, and rideshare services
- needs organization between orders
- needs quick set-up and tear-down



THE TRAVELING EXPLORER

- travels cross-country to explore the outdoors
- needs to only use part of cargo space when traveling with friends
- needs vertical space organization



THE SOCCER MOM

- limited eyesight
- needs to secure food and equipment
- needs organization for soccer equipment and food between children

INITIAL CONCEPT

This first concept was three connected panels (for each row of seats and trunk area) to be made of nylon and stainless steel with nylon fabric, tightening nylon webbing straps, large zippers, and stainless steel D-ring anchor points dangling in along the car's interior walls.

The initial prototype ended up being only one panel long and made of recycled tent fabric, webbing straps, stainless steel cam buckle unit attachments, and stainless steel D-ring anchor points. In order to attach grocery bags, the prototype included carabiners and velcro strips.



FORMATIVE ASSESSMENT



PROCESS

Participants were to set-up the unit, load groceries, unload groceries, and tear down the unit.

Afterwards, they were interviewed on the process.

MATERIALS

Kit included prototype of unit and anchor points, bag attachments, and groceries.

Bag attachments were carabiners and velcro straps. Groceries ranged from soft to hard goods.

TAKEAWAYS

Issues: cam buckle anchor attachment, velcro, driving with bags at topmost anchor point.

Benefits: carabiners, anchor locations, loop length variation, groceries don't roll, organization, additional configurations

CONCEPT DEVELOPMENT



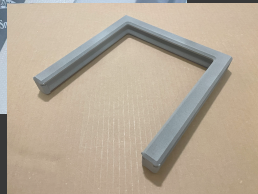
ORGANIZER

- Change to slit weave from webbing strap weave
- Switch from nylon to Sunbrella recycled acrylic
- Two different alternating slit lengths
- Support straps hidden inside
- Middle layer of gray fabric added
- Loop anchors instead of cam buckles

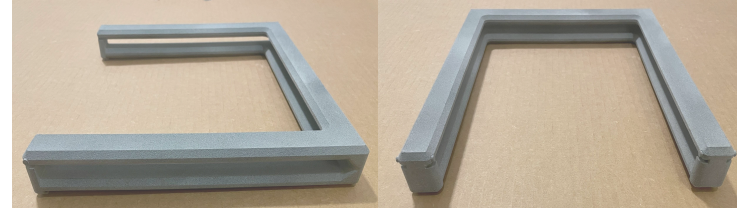
ANCHOR POINTS

- No more D-rings
- Switch to retractable nylon straps
- Carabiner connector to molle weave
- Anchor points now flush with cabin of vehicle
- Anchor point doors slide into vehicle to be hidden in use
- Press button to open doors and expose carabiner straps

FINAL CONCEPT: SUV CABIN ORGANIZER



Abstract



When delivering groceries or driving home from the grocery store, items roll around the back as drivers are only able to use the seats and floor of the vehicle. Car makers boast the storage volume of their vehicles, yet users are only provided the interior's base for storage if they don't wish to stack their items.

This flat, rectangular, and bendable fabric organizer can cover SUVs interior volume from the rear hatch to right behind the front seats. This adaptable organizer has equally spaced rows of horizontal cuts for attaching items stored in the rear end of the vehicle.

The interior cabin of the vehicle has been designed to include 24 anchor points, with 3 rows of 4 on both sides, that attach to the fabric organizer in various ways. Included are steel carabiners and slide-in shelving hangers to sort and secure grocery bags.

This provides users with the ability to not only use but also modify and secure items in the entirety of the cabin space from behind the front seats to the trunk and from the floor to the ceiling.

ANCHOR POINTS



- 4 anchor points along the top of each side of the interior shown in blue
- 4 anchor points along the middle of each side of the interior shown in yellow
- 4 anchor points along the bottom of each side of the interior shown in red



CONFIGURATION
SUGGESTIONS



CONFIGURATION
SUGGESTIONS



CONFIGURATION
SUGGESTIONS



CONFIGURATION
SUGGESTIONS

JOURNEY MAP: SET-UP & TEAR DOWN



Press button to open anchor point doors

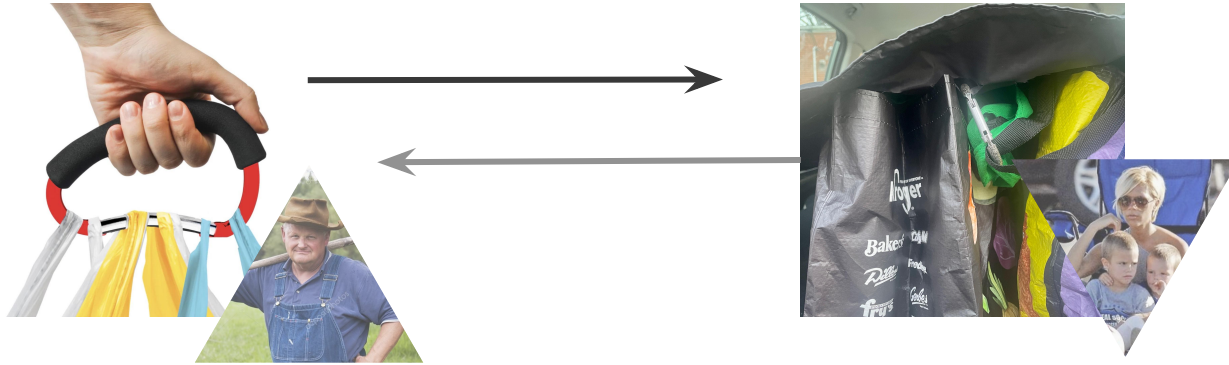


Pull needed carabiner straps out from anchor points one by one to attach to main unit



Open carabiner and slide through loops on organizer

JOURNEY MAP: LOADING & UNLOADING



Open bag carabiners and slide bag handles through

Keep carabiner open and slide through slits in the organizer



TAKEAWAYS

- Collapsible reusable thermal boxes or bags would be a nice addition to this
- Can it be made more automated without losing configurability?
- Add hooks to slide-in hangers to secure bag handles better and keep them from sliding on the hanger