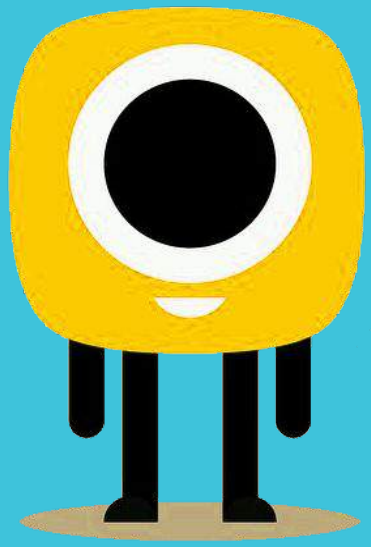
podo

Berkeley Innovation

Spring 2016



Consulting Team

Eunice

Cognitive Science

Class of 2016

Vy

Mechanical Engineering

Class of 2019

Felix

Architecture

Class of 2018

Varna

Mechanical Engineering

Class of 2019

About Podo

Company Goals

Podo is a wireless and re-stickable camera that turns any surface into a photo booth. Just stick, snap and share, using your phone as a viewfinder and remote.

Our Goals

- Define user personas among college students to help Podo Labs target specific user types in their marketing and branding.
- Provide insights into the usability of Podo and its app, the overall intuitiveness and functionality.
- Design an accessory for the Podo camera based on user feedback.

Our Process


Research
User needs
Synthesis
Key findings
Iteration
Prototypes

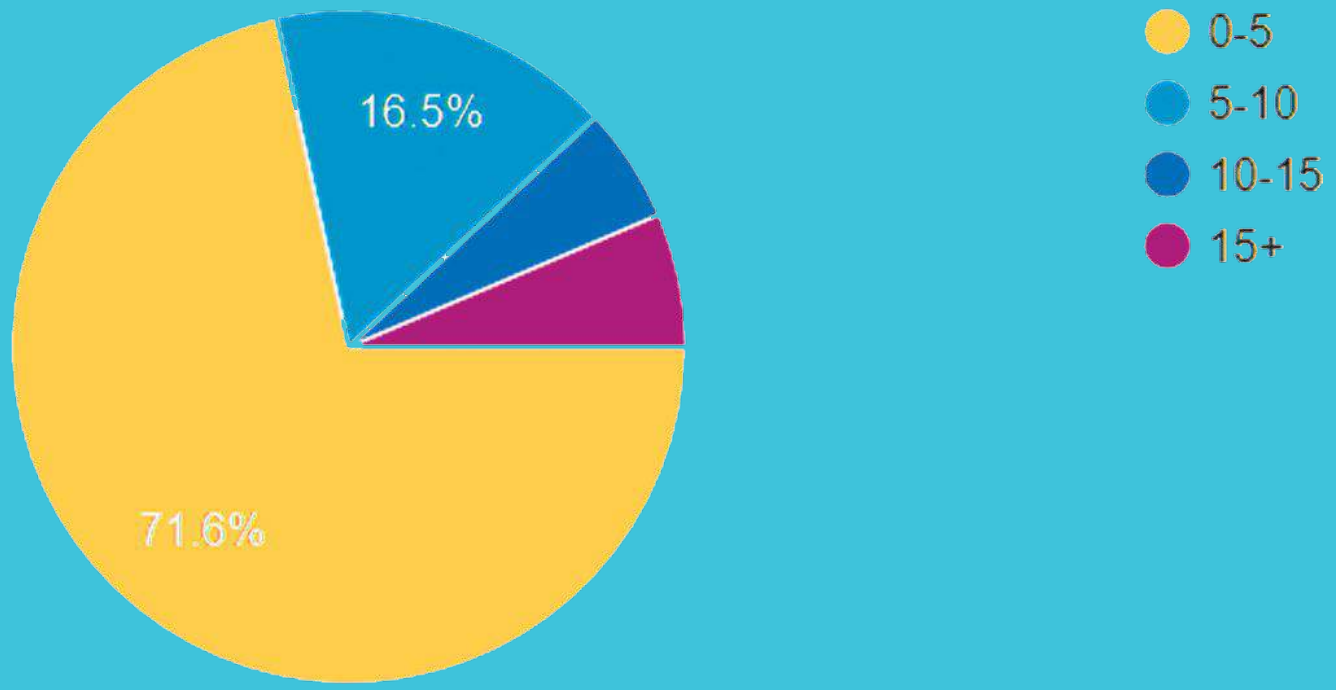
1.

User Testing:
Phase 1

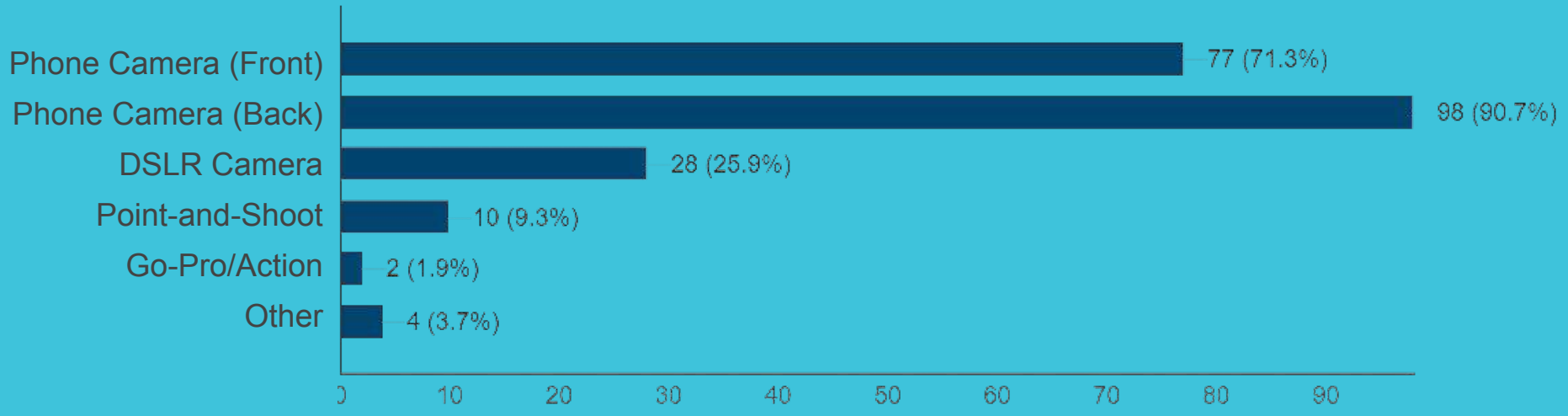
Analysis of Podo App v1

Existing Camera Use Research

How many pictures do you take a day?



What camera(s) do you use the most frequently?



Persona Development

	Professional/Enthuaslast	Routine	Adventurous	Fashionable
Typical Camera Use	• Photoshoots/ Portraits • Traveling photography • Stop-motion filmography	• Family photos • Shared camera use with friends and family	• Vlogging • Trick Shots/Cool Angles • Travelling/Photo Documentation	• Fashion accessory integrated into lifestyle • Take pictures of food and various novelties encountered daily
Frustration w/ Current Cameras	• Traditional tripod-and-camera setup is limiting (size and weight/bulkiness)	• Difficulty in use for people of varying photography backgrounds, ages • Easily damaged by children • Need tripod and set up to take family group photos	• Bigger cameras not easily adjustable in 360 degrees • Burden to carry in physically intensive or high-risk activities • Hard to take photos in isolated travel destinations	• Mundane, unstylish appearance (Limited color and customizability)
Expectations/Needs	• Unique and creative angles • Extreme portability • High speed without sacrificing quality • Professional, sleek, elegant look of product (Grayscale colors)	• Long-term lifetime of product (durability, quality of product and material) • Easy to operate for people with limited knowledge and experience in photography High portability and versatility	• Unique angles and usable for trick shots Small, lightweight, easy to carry product during vlogs, hikes, and other travels Durable and impactable cases to prevent damage from shots taken from high-risk angles	• Fun colors to use cameras as a fashion accessory • On top of new trends and gadgets • Update the look of the product on a regular basis • Functional to provide quality photos for social media

2.

User Testing:
Phase 2

Analysis of Podo App v2

Common Behavior in Interactions

Before

- **Orient** Podo in portrait with the 'Podo' logo faced upward
- Look for a power button or lightly double-tap Podo to **turn on**
- No qualms have been expressed about **Bluetooth connection**

During

- Not happy with slow and grainy **preview**
- Struggle to find in-app **gallery**
- Find it more natural to **swipe right** to go to gallery
- Do not notice **tooltip icon**
- Hold **Record button** to record videos
- Mixed opinions about **timer**
  - Want to adjust vs. Good as is
- Too much freedom in **time-lapse** settings

After

- Cannot find the **charging port**
- Stickiness of sticky pad fades away quickly and requires constant **washing**
- Fear that **washing** will make sticky pad even less sticky after **washing**

Pain points of Podo

Rubber plug for charging port doesn't have a place to rest

There is a learning curve in tapping intensity

Sticky pad gets dusty and loses stickiness fast; frequent cleaning needed

Lights don't indicate battery levels while charging

Back flap disconnects easily from camera body after falling

Awkward positioning while charging

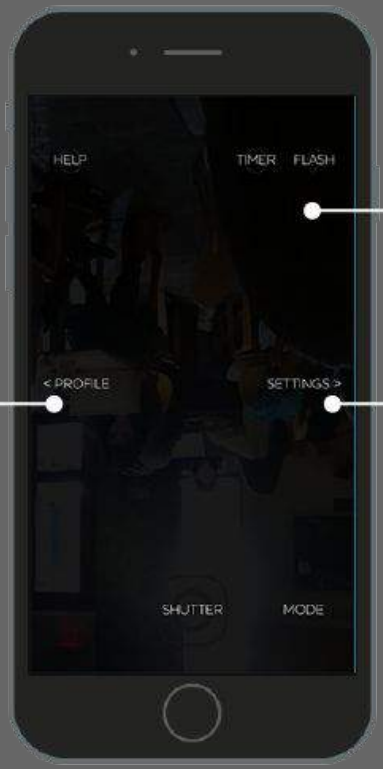
Pain points of Podo App

Tooltip is unnoticed

Lack of range of timer settings

Slow and low-quality camera preview

Slow shutter speed

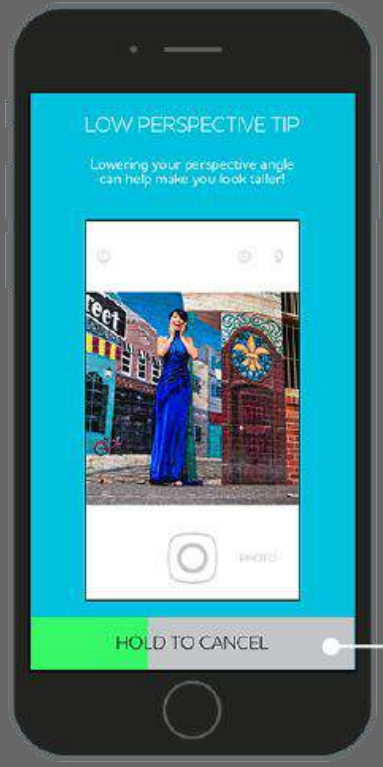


Overlay feels like a separate interface

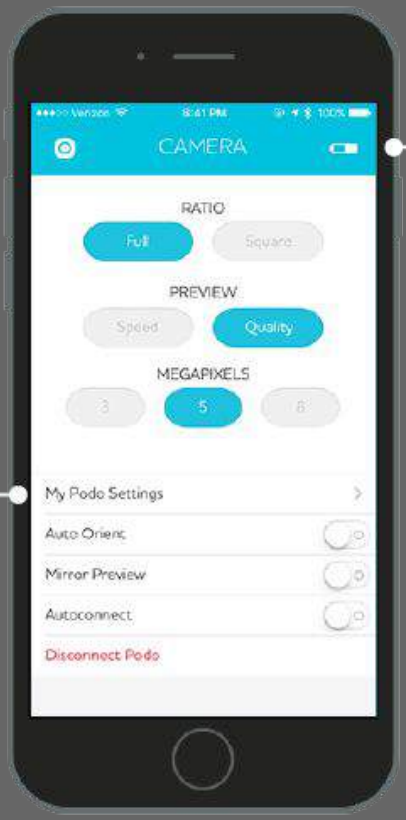
No direct access to gallery

Swiping left and right is not intuitive

Lacks video preview when recoding



Slow transfer time



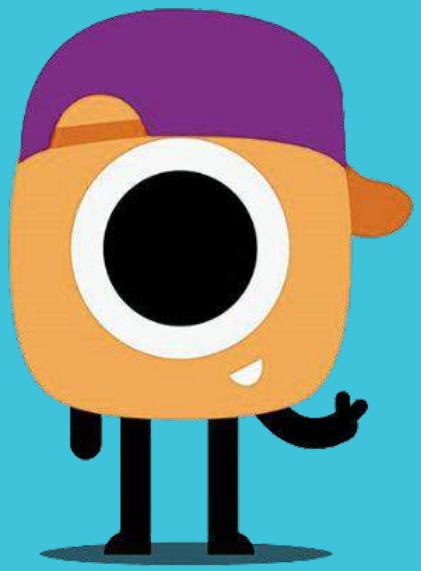
Inability to power off Podo through app

Lack of shutter sound

3.

Industrial Design:
Phase 1

Accessory Ideation &
Lo-Fi Prototyping



Motivation for Industrial Design

User's Needs

Based on feedback from user testing, we synthesized that users wanted protection both while carrying Podo, and during use of the product. Users wanted to take advantage of high-risk photo angles and desired to protect both the lens and outer shell of the camera from damage.

Our Constraints

Must take into consideration that our protecting accessory should highlight the unique "look" of Podo. Our deliverable should aid in the user's quick and easy access to the Podo product. The final design should integrate into the small, portable nature of the product.

DELIVERABLE:
PHYSICAL PRODUCTS

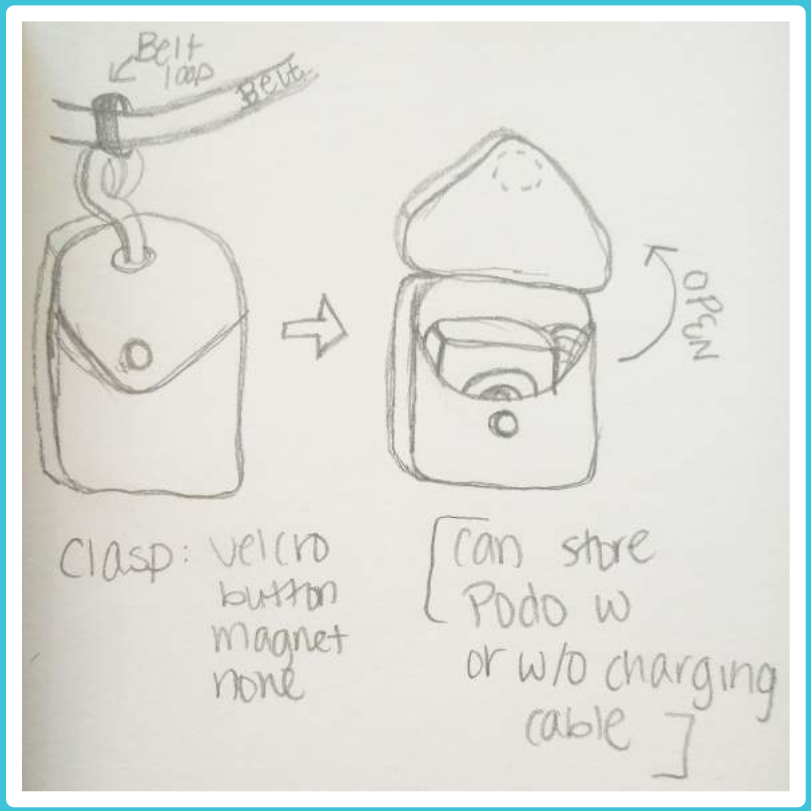
Bumper

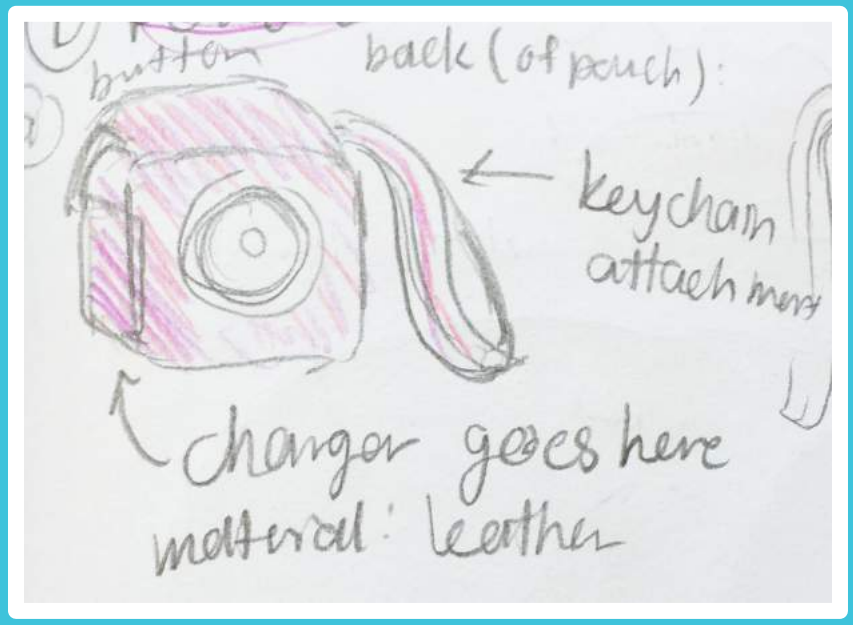
- Practical protection for v2
- Features:
  - Asymmetry (e.g., finger grip)
  - Two-part (top covering part of lens and side band) for easier disassembly
  - Edges protruding upward (by 1-2 mm) to provide protection for lens and LED
  - Edges bent inward to help stay on better
- Material
  - Hard, Elastic (Think: phone cases)

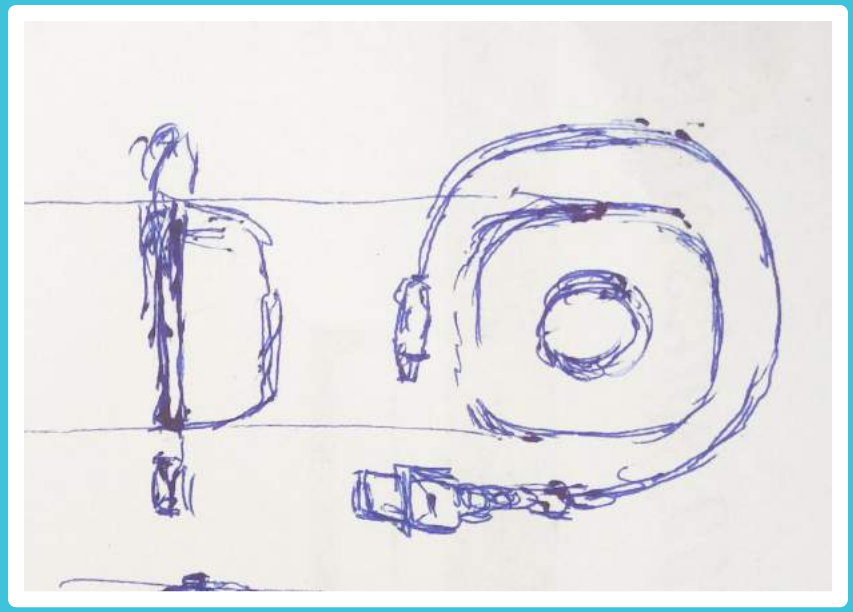
Wristband

- Marketing & branding for the future
- Features:
  - Wedges on band to hold together
  - “Pocket” for camera “merges” into band to give a sleek feel
  - Magnet in pocket for extra carrying protection
- Material
  - Hard rubber/Flexible plastic (Think: Fitbit, Apple Watch)

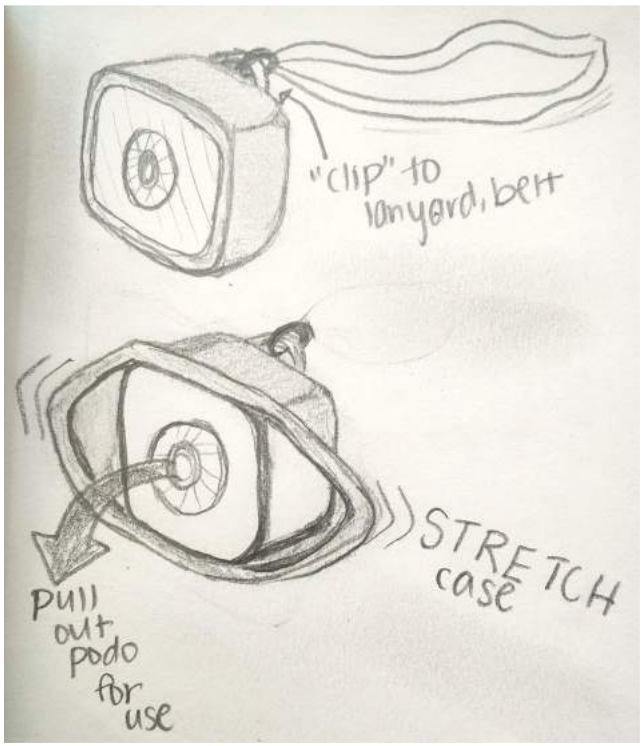
CONCEPT 1:
Pouch

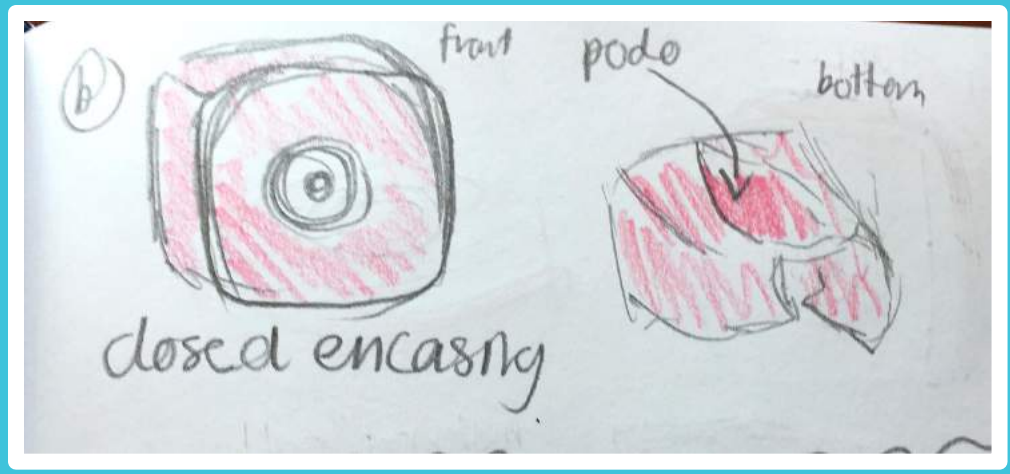


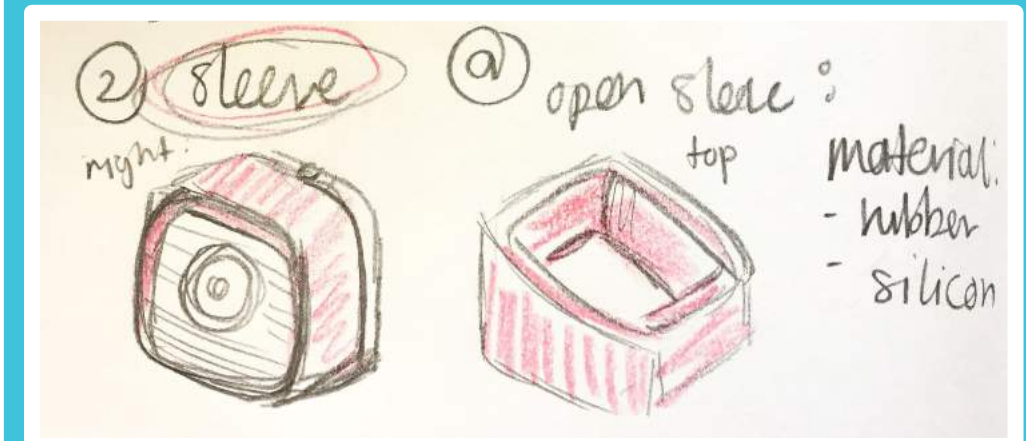




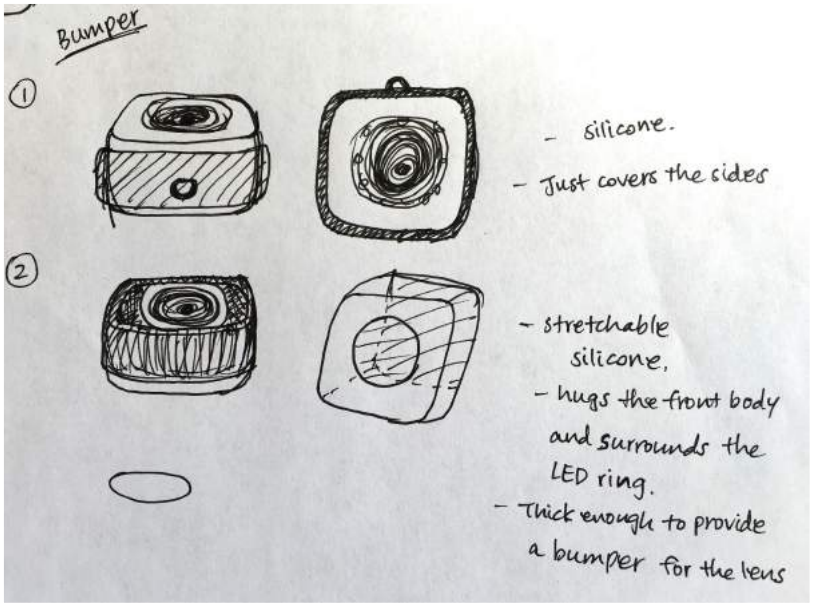
CONCEPT 2:
Sleeve

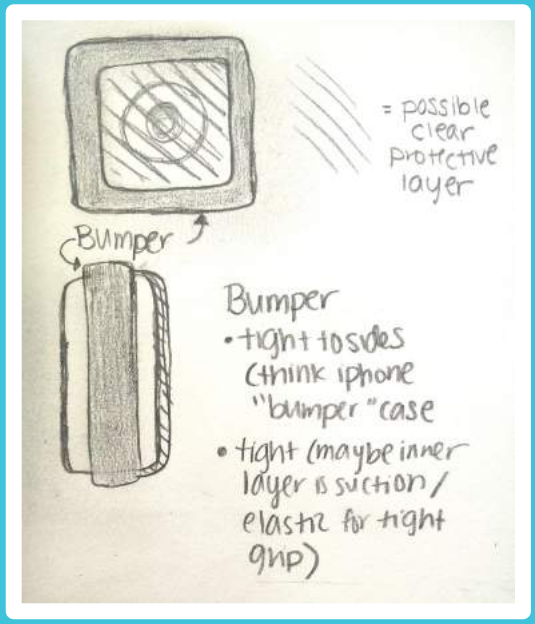


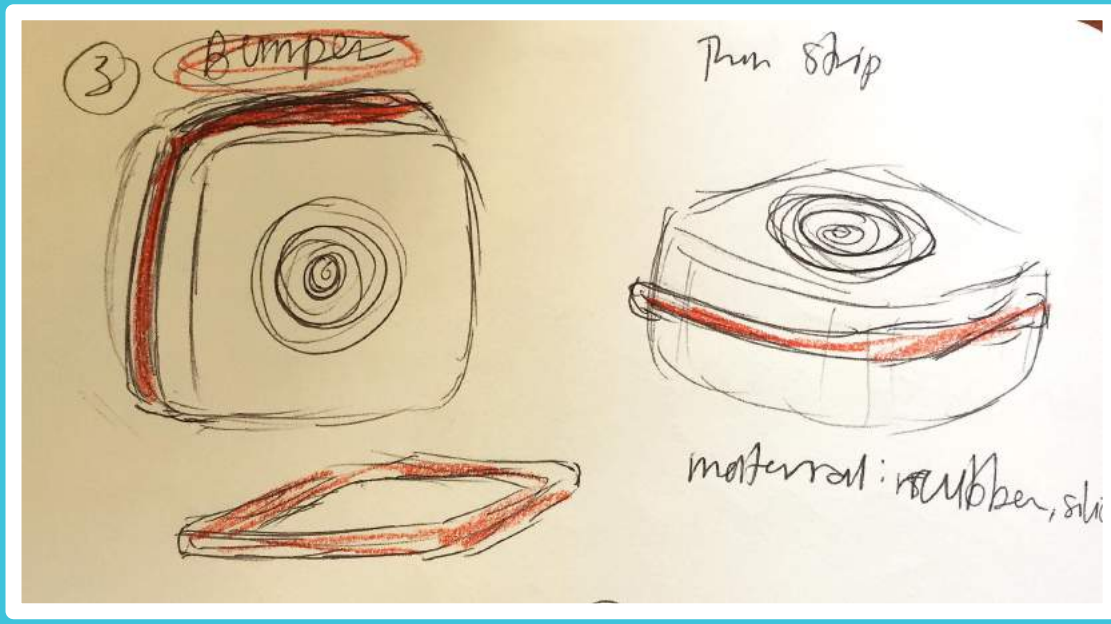




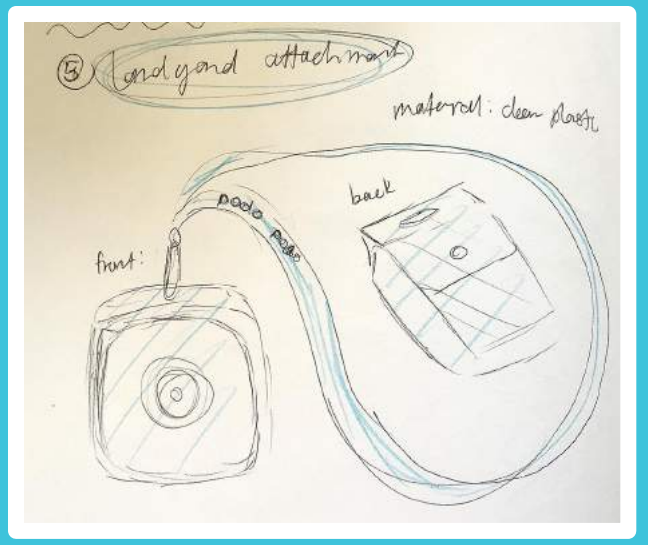
CONCEPT 3:
Bumper

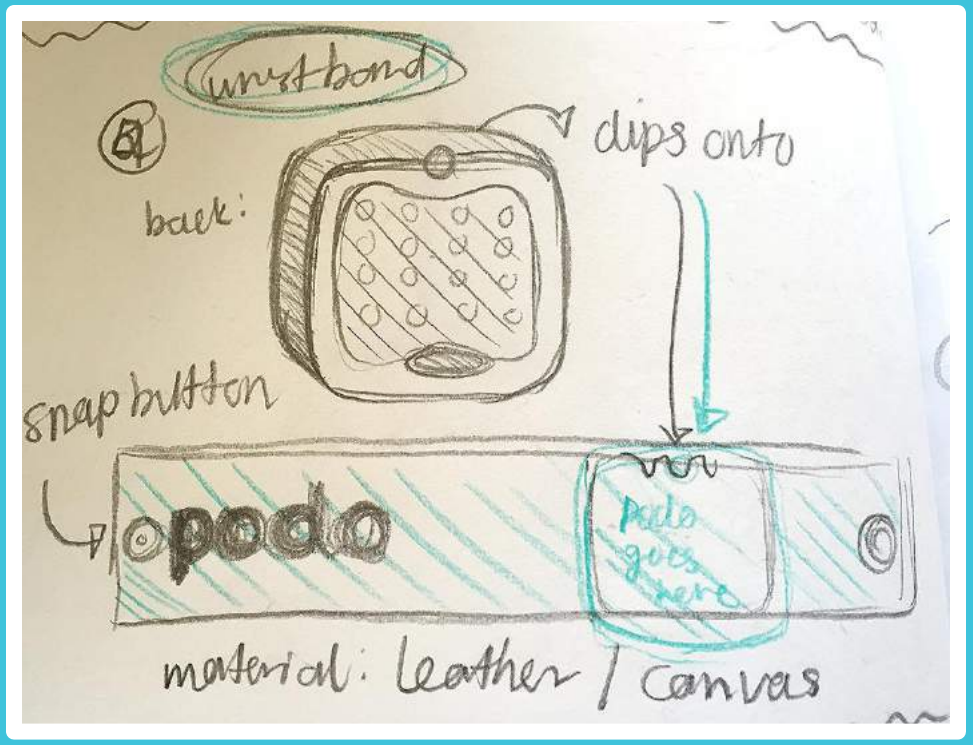


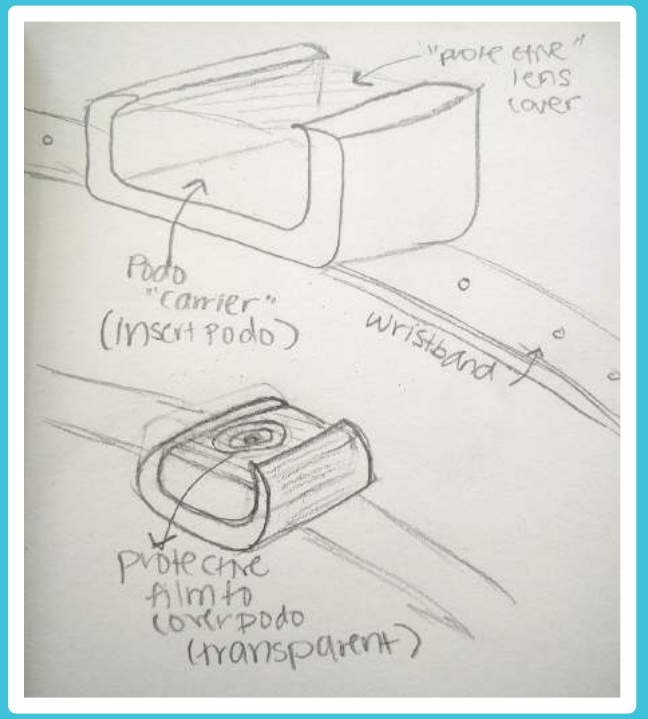




CONCEPT 4:
Wristband/Other





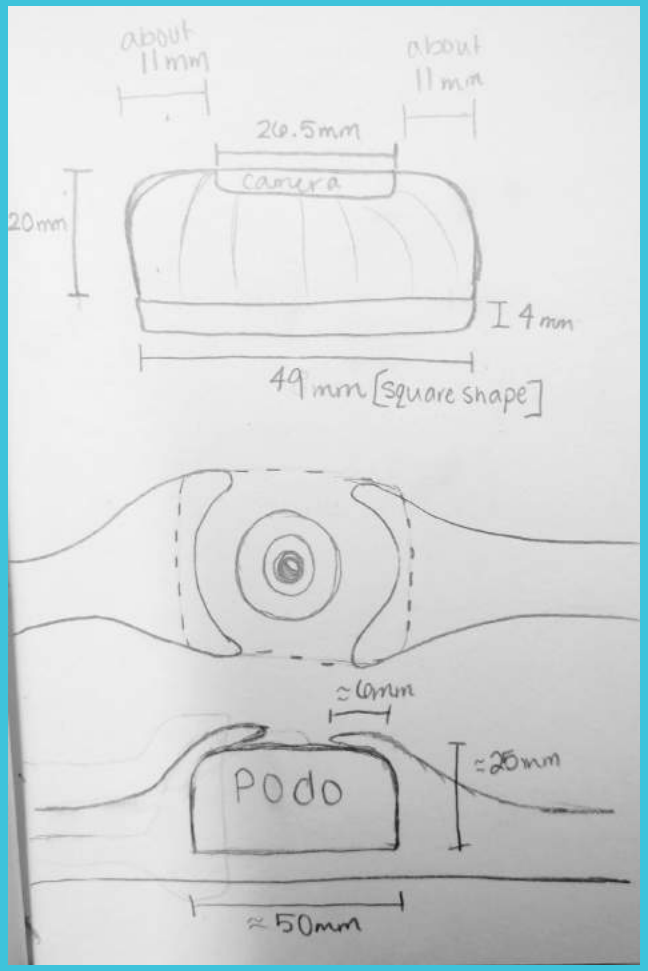


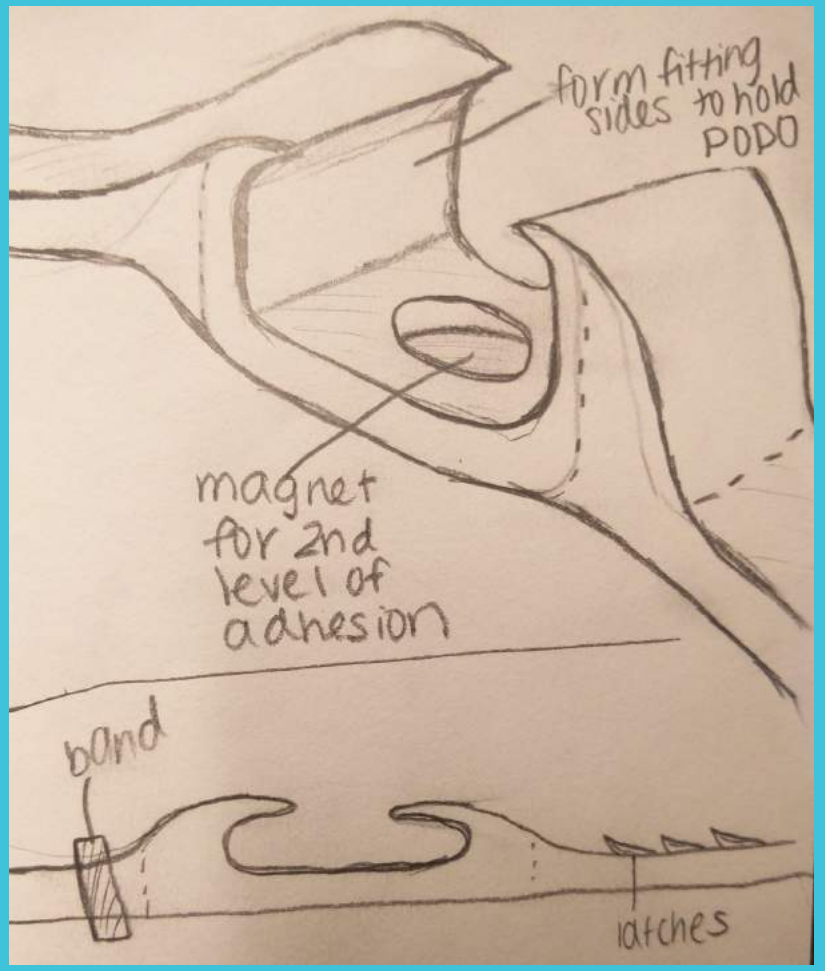
Weighted Criteria Decision Matrix

Question To Answer: Which Industrial Design Project Should We Focus On?

Criteria (Categorized)	Weighting (1-10)	Options and Rankings (1-4)							
		Pouch	Weighted Score	Sleeve	Weighted Score	Bumper	Weighted Score	Wristband	Weighted Score
Creation/Presentation of Prototype									
Graphic Design Mockup	5	3	15	1	5	2	10	4	20
3D CAD File	9	1	9	2	18	4	36	3	27
3D Printed Prototype	7	1	7	2	14	3	21	4	28
Ease of Manufacturing (Minimal use of Sewing/Other Materials)	2	2	4	1	2	4	8	3	6
TOTAL	*23*	*TOTAL*	*35*	*TOTAL*	*39*	*TOTAL*	*75*	*TOTAL*	*81*
Overall Criteria for Prototype									
Feasibility of Prototype Implementation	10	2	20	1	10	3	30	4	40
TOTAL	*10*	*TOTAL*	*20*	*TOTAL*	*10*	*TOTAL*	*30*	*TOTAL*	*40*
Usefulness (User Testing)									
Protection during Use	7	1	7	3	21	4	28	2	14
Protection during Carrying	5	4	20	3	15	2	10	2	10
Ease of Access	9	1	9	2	18	3	27	4	36
TOTAL	*21*	*TOTAL*	*36*	*TOTAL*	*54*	*TOTAL*	*65*	*TOTAL*	*60*
Final Product									
Aesthetics	6	4	24	1	6	2	12	3	18
Customizability	4	3	12	1	4	4	16	2	8
TOTAL	*10*	*TOTAL*	*36*	*TOTAL*	*10*	*TOTAL*	*28*	*TOTAL*	*26*
TOTAL	*0*	*TOTAL*	*0*	*TOTAL*	*0*	*TOTAL*	*0*	*TOTAL*	*0*
Net Decision Ratings	**64**		**127**		**113**		**198**		**207**

FURTHER
WRISTBAND IDEATION:



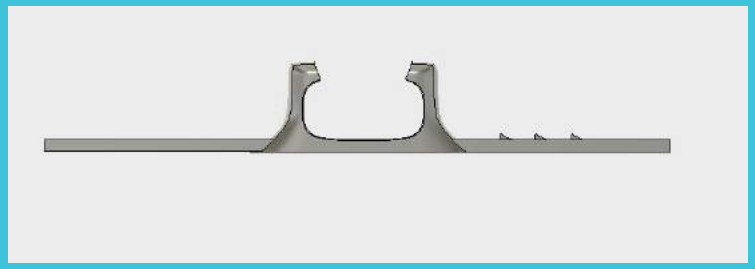


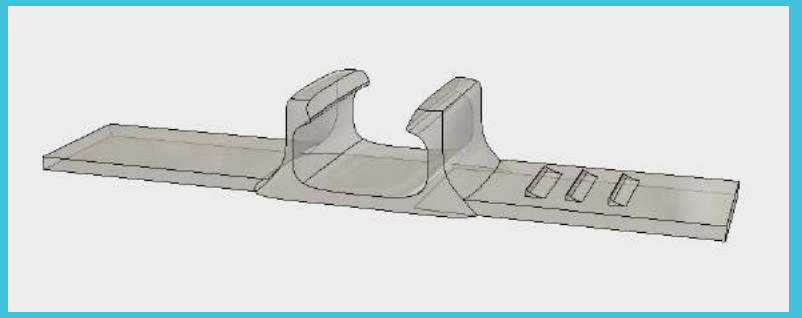
4.

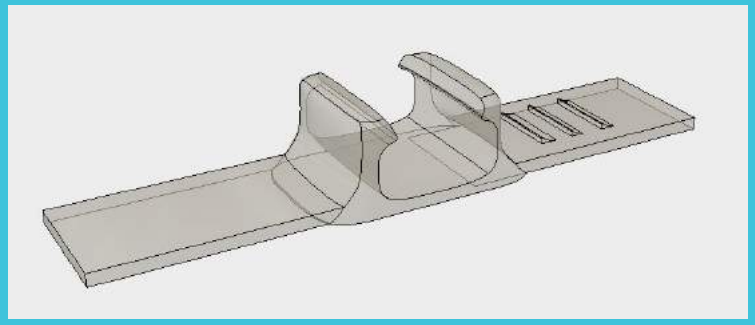
Industrial Design:
Phase 2

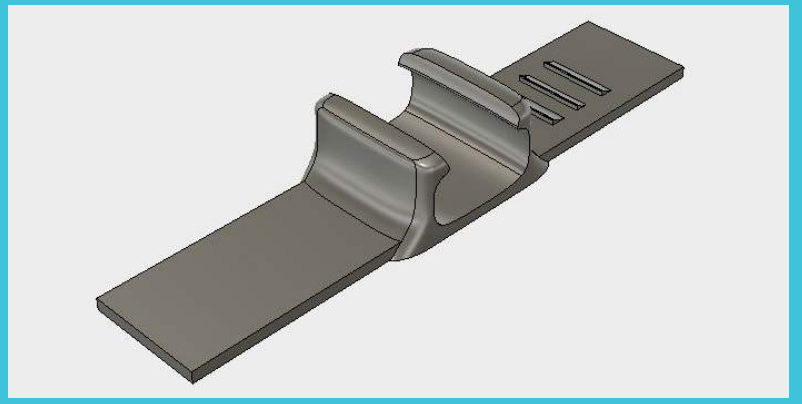
Mid-Fi and Hi-Fi
Prototype & Iteration

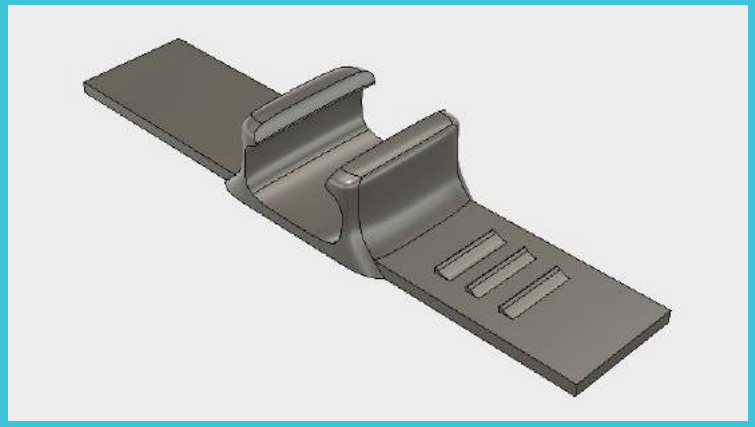
1st iteration









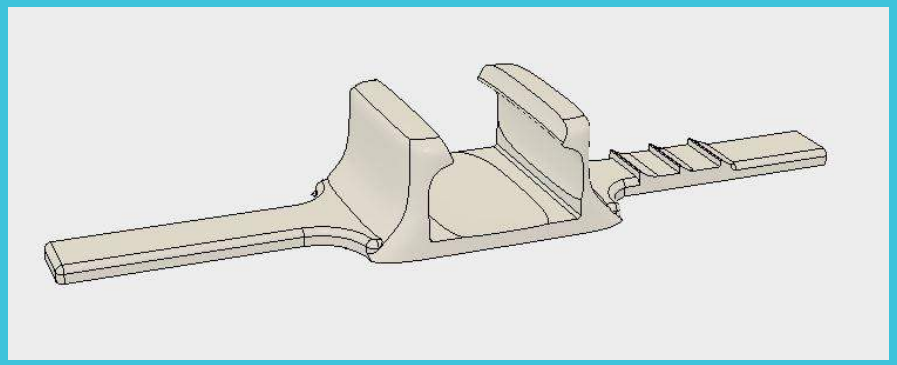


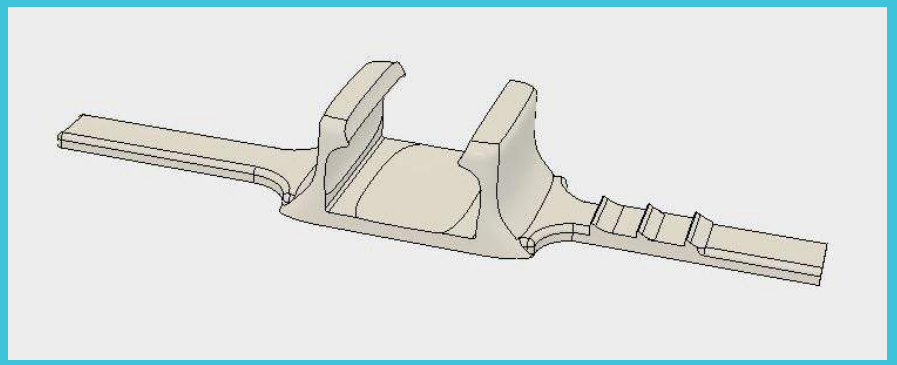
Pocket "merged" into band for a sleek feel

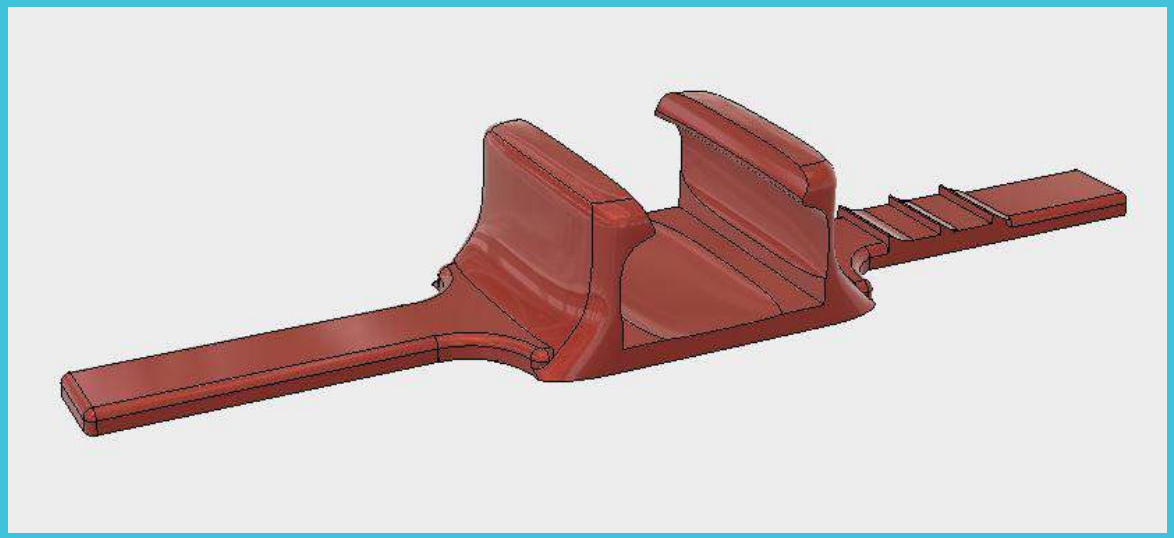
Edges bent inward to hold Podo

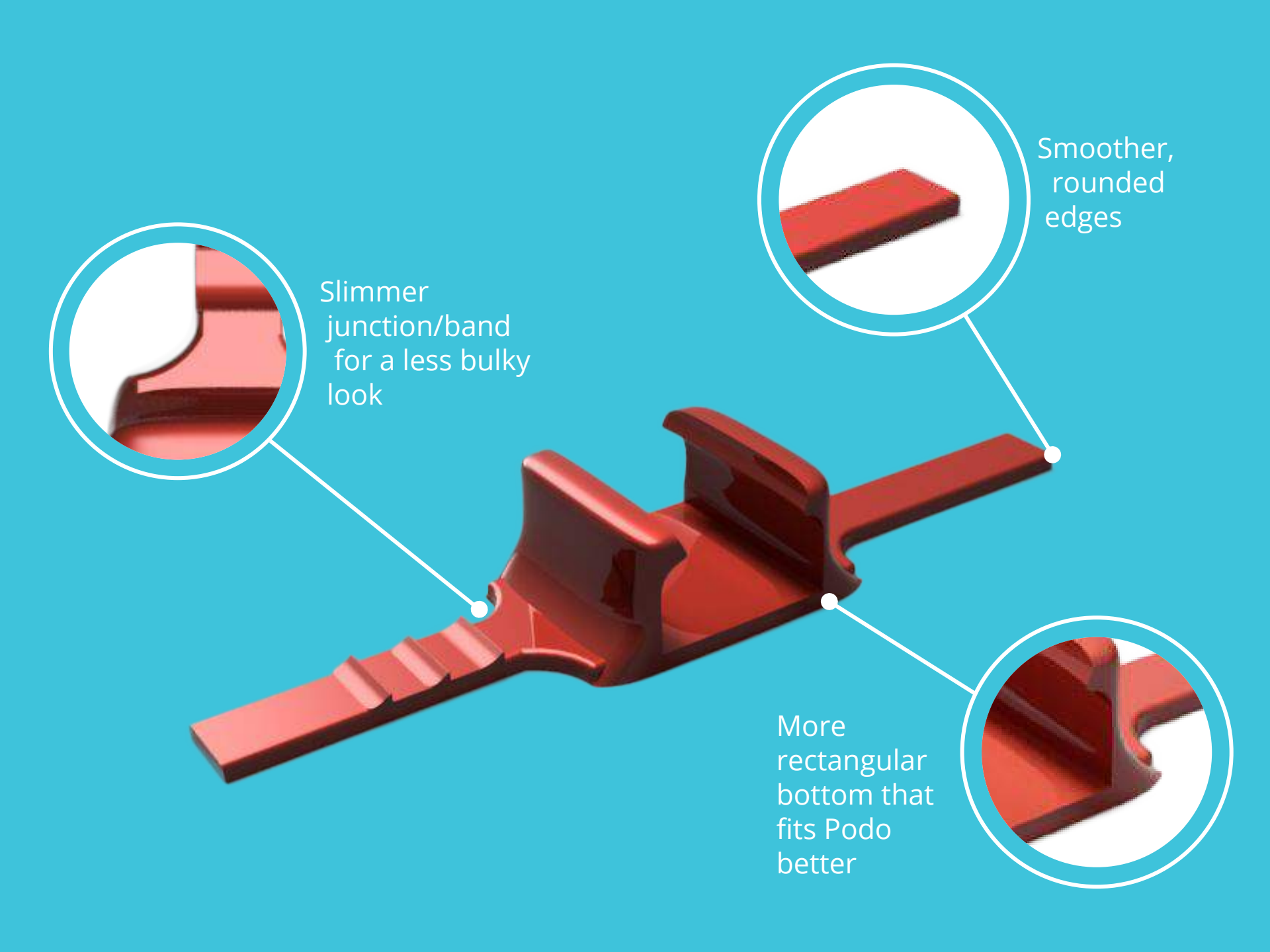
Wedges to clasp band into a circle and allow adjustability

2nd iteration

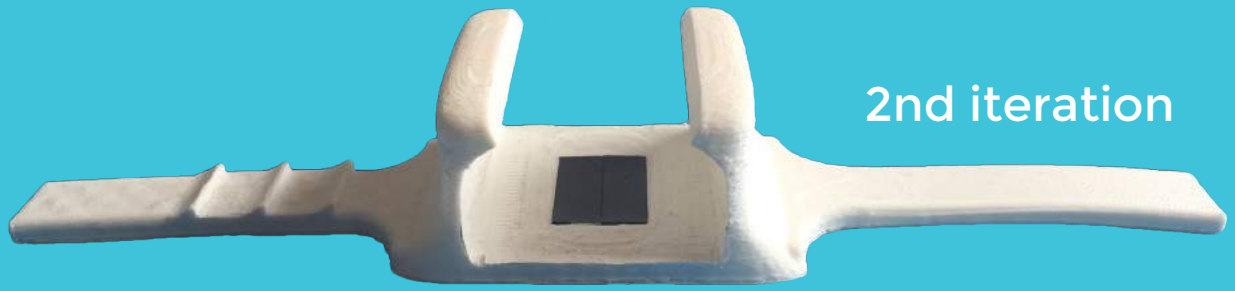







Smoother, rounded edges
Slimmer junction/band for a less bulky look
More rectangular bottom that fits Podo better

DELIVERABLE: PROTOTYPES



Two 3D-Printed Iterations

Strength

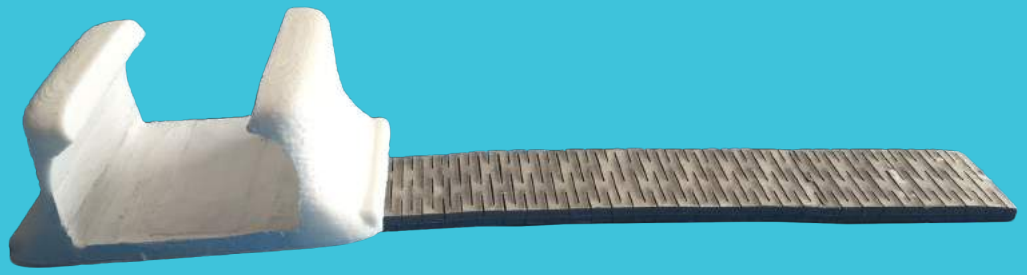
- Accurately represents band and encasement of Podo, with
  - Wedges that slide into the band to adjust circumference of wristband
  - Magnet on which rests the Podo to allow firm adherence

Weakness

- Does not conform to dimensions precisely owing to 3D printing constraints
- Does not demonstrate flexibility of band

Material

- PLA (Type A 3D Printer)
- Magnet



Movable Prototype

Strength

- Demonstrates flexibility of wristband and the ability of the product to be worn on wrist

Weakness

- Not fully representative of all details of product design

Material

- Laser-Cut and Scored Chipboard and Plywood
- PLA (3D Printed Shell for holding Podo)