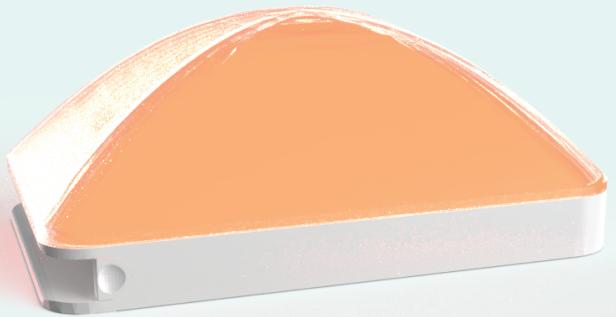




Better Sleep, Better Life. Get Snug



**Team Members:** Juan Alfaro, Ian Geiman, Hafsa Ghias, Leslie Solis, Nirav Suraiya, Caroline Williams

## Product Description

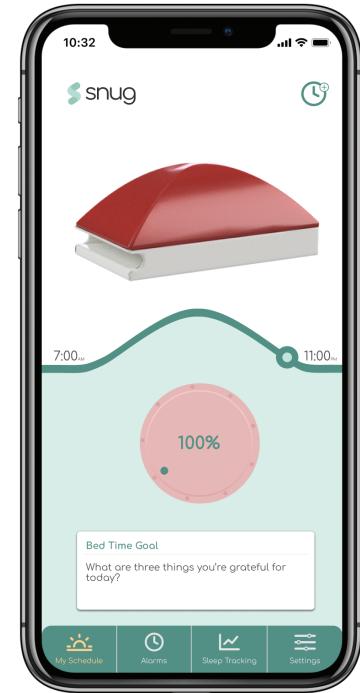
Snug is a natural sleep device designed to help you form better sleep habits. The perfect sleep companion, Snug limits phone distraction before bed and promotes more restful sleep. Its sleek, lightweight design operates as a wireless charging base for your phone, storing it away before bed and throughout the night. Snug's light feature helps you fall asleep and wake up more naturally by using light that mimics the sunset and sunrise.

## Features

<b>Sunset &amp; Sunrise Light</b>	Fall asleep and wake up to natural light tones, helping your body get into a rhythm
<b>Wireless Charging</b>	Charge both Android and iOS devices using the built-in 10-watt wireless charger
<b>Visible Clock</b>	Check the time without having to pick up your phone in the middle of the night
<b>Mobile App</b>	Set alarms that sync with the wake up and bed time light, access sleep analytics, and personalize your sunset and sunrise by controlling the brightness of your light.

## Benefits

<b>Reduce Your Phone Usage</b>	The design and features of Snug encourage you to limit phone usage at night
<b>Natural Sleep Habits</b>	Replacing blue light exposure with red light ambiance helps your body produce more melatonin and fall asleep more naturally
<b>Wake Up Refreshed</b>	Track your REM cycle through our app and wake up to soothing light to feel more rejuvenated



## Product Brief

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Better sleep no matter what's keeping you up at night.

### Scenarios

**Individuals who experience feelings of unease and lack alertness:** Amira is a Magazine Editor in Chief who works in media and has to be tuned into what's going on all the time. She has a bad habit of spending at least an hour scrolling on her phone once she gets into bed. When she finally puts her phone down she feels uneasy which makes it hard to fall asleep. The next day she doesn't feel as alert as she would like. Snug's bedtime alarm and warm red light help Amira achieve the peace of mind that she needs to fall asleep and enables restful sleep so that she wakes up feeling prepared to take on the day.

**Individuals who have to set multiple alarms to wake up in the morning and are always running late:** Savana is an influencer who would literally die without her phone. Even if it is late at night and she has work the next day, Savana is never too sleepy to scroll through Instagram. Sometimes she stays up so late that she sleeps through her alarms so she ends up having to set four or five to wake up in the morning and she is usually late to start her day. Snug makes it easy for Savana to store her phone away so that she can get to bed sooner. The sunrise light feature helps her wake up more naturally without abruptly disrupting her REM cycle. This has led to her waking up as soon as her bedroom is fully lit and she feels well rested so she doesn't have to hit the snooze button. Since using Snug she starts her day right on schedule.

# Product Specs

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## Tech Specs

- Snug Base Dimensions: 101.6 x 28.6 x 177.9mm
- Snug Base Weight: 0.3089kg
- Snug Top Dimensions: 177.8 x 101.6 x 54.0mm
- Snug Top Weight: 0.1024kg

## Materials

- |                    |  |
|--------------------|--|
| • 0.2" LED Display | • Semitranslucent Polycarbonate                              |
| • Processor        | • ABS Plastic  |
| • Screws           | • LED Multicolor Bulb  |
| • Rubberized Grip  | • Gyroscope  |
| • Extended Wiring  | • Universal Air Core Magnetic Coil Wireless Charger Coil     |
|                    | • Small Power Adapter 220Vac to dc 5v 6v 9v 12v Power Supply |

## Functions

Snug's simple interface, wireless charging solution, and mobile application integration makes it easy for you to automate these features without picking up your phone. Even better, Snug's light is designed to help you calmly fall asleep, sleep tight and wake up refreshed.

**Wireless Phone Charger** Snug lets you wirelessly charge your phone while providing a home for your phone.

**Sunrise and Sunset Light** Snug's light helps you fall asleep by regulating your body's internal clock. As you wake up, the light gets you out of bed slowly, gently pulling you out of slumber rather than with a sudden jolt as most alarms do. It fills the room with soft light gradually before your alarm goes off, helping you to wake up feeling happier and calmer. At bedtime, Snug's light slowly eases your transition to sleep by using red bulbs, which are proven to promote melatonin production. The light gradually dims out so that you calmly fall asleep, sleep tight, and wake up feeling refreshed.

**The Snug App** Set wakeup and bedtime alarms in the mobile application before you fall asleep. Through the app, you can view and track your sleep activity, as well as set morning challenges and bedtime goals; giving you total control of your experience.

**Visible Clock** Snug digitally displays the time so that you don't have to keep checking your phone once you store it away.

# Market Analysis

## User Personas

Millennials between the ages of 25-35 who are working professionals and don't have children. Ramon is an example of someone who has identified that healthy sleep habits could improve his lifestyle, but has a hard time implementing those habits into his daily routine, much less sustaining them long-term.



"I wish I could wake up early to go to the gym before work, but I'm always so tired."

AGE	33
JOB TITLE	Investment Banking Associate
STATUS	Single
LOCATION	San Francisco, CA

**PERSONALITY**

- COMPETITIVE
- GENEROUS
- RESERVED
- AMBITIOUS
- ADVENTUROUS

## Ramon Zepeda

### ABOUT

Ramon graduated from the University of Southern California with a B.S. in Accounting and a B.S. in Business Administration. Upon graduating he went into public finance, but decided to pursue an MBA after gaining a few years of working experience. After obtaining his MBA, Ramon became an investment banker in the San Francisco Bay Area. He rents an apartment in the financial district, a seven minute walk to work, so that he can get as much sleep as possible since his hectic work schedule makes it nearly impossible to have a set routine. Additionally, he travels at least one week every month. Most days, Ramon works 12-14 hour days and he occasionally has to pull an all-nighter. Ramon is aware that he needs to prioritize sleep so that he has enough energy to do everything else on his to-do list, but he finds it hard to shut down at night. Constantly checking his phone at late hours of the night, his sleep schedule is disrupted further.

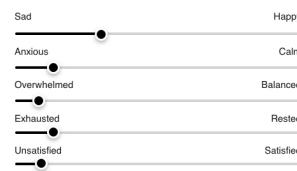
### NEEDS

- To get better sleep so that he has enough energy to achieve his health and fitness goals.
- To wake up early so that he is able to go to the gym before work.

### PAIN POINTS

- Even after he is done with work and able to go to sleep early, he finds himself browsing the web on his phone once in bed.
- He has trouble incorporating fitness into his week because of his inconsistent work schedule.

### EMOTION



### FAVORITE BRANDS



## Market Segment & Sizes

Our target customers will include working individuals between the ages of 25-35 who live in their own households (or share with a partner) and who do not have children. We will segment according to individuals who care about health, specifically as it relates to sleep.

Below is a relevant statistic that is important to highlight to better understand our market opportunity:

- The global sleep tech devices market is projected to surpass USD 27 million by 2025, according to a research report by Global Market Insights, Inc. Revenue is expected to achieve over 16% CAGR by 2025, propelled by favorable demographic trends coupled with rising awareness regarding availability of advanced sleep tech devices<sup>1</sup>.

# ● Business Model

## Phase 1: Ongoing Customer Discovery (Business)

- Continue user testing with millennials via surveys, interviews and focus groups
- Determine development needs (funding, methodology, expertise) and initial customer segments to target

## Phase 2a: Product Development (IT)

- Agile phase-based approach to final development of core product
- Developers to work hand-in-hand with sleep experts
- To be determined:
  - In-source vs. outsource development

## Phase 2b: Product Launch

- Once 2a and 2b are complete, deploy product
  - Hire PR agency to create early buzz - Alpha / Beta Test
  - Create Demand - Launch Event / 1st Ship

## Phase 2c: Sales & Marketing

- Build brand awareness by attending conferences such as CES and use content marketing to position ourselves as subject-matter experts in sleep, comfort and rest.
- Grow brand recognition through direct-to-consumer sales via e-commerce platform and by gaining distribution at retailers such as Best Buy, Target and Walmart
- Increase sales and grow market share in local markets
- Launch updates to existing product and expand portfolio by introducing new products around sleep

## Phase 3a: Iterative Product Improvement (existing and new features)

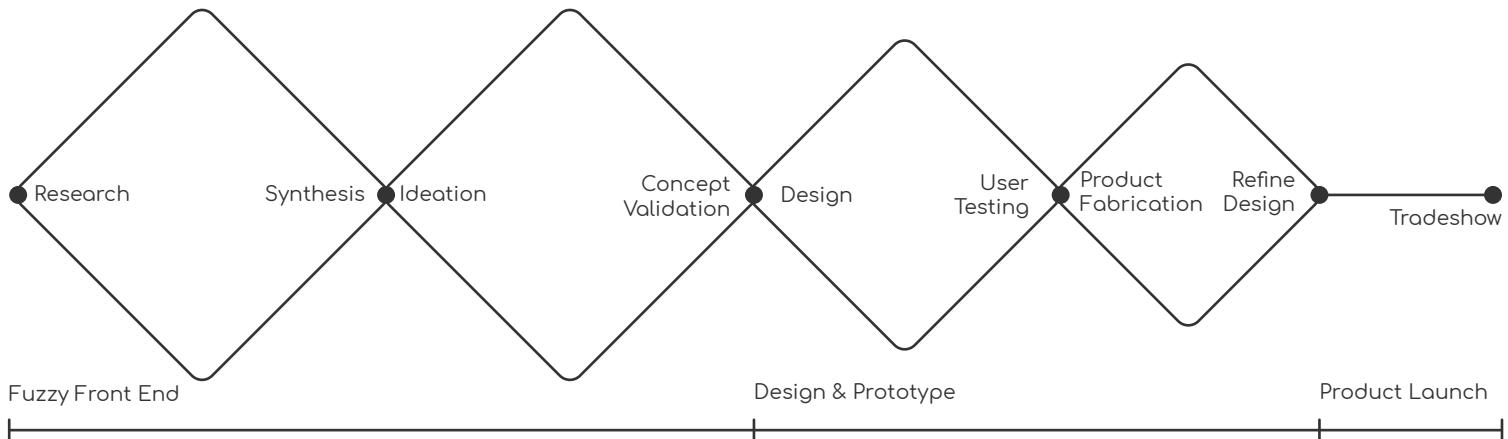
- Real-time monitoring and fixes deployed to app for bugs and improvements
- Roll-out of new features and products

## Phase 3b: Ongoing Sales and Account Management

- Continuous growth of product using DTC and brick-n-mortar retail sales approach
- Increase awareness of product through marketing partnerships and enter new markets

# Design Process

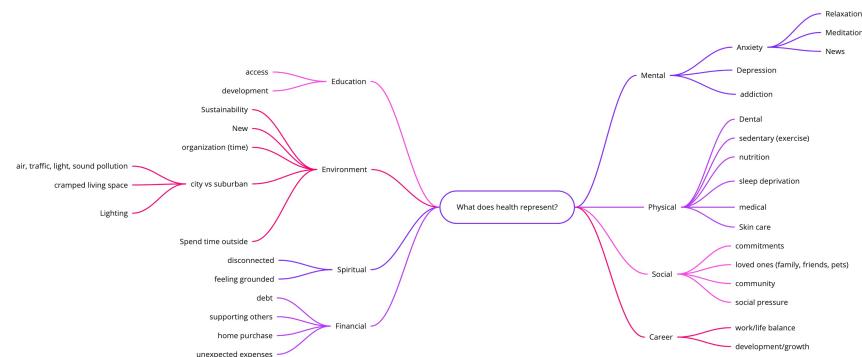
Our team went through two cycles of rapid product development where we diverged and converged by exploring customer behavior, synthesizing our insights, validating concept ideation, and implementing user feedback by prototyping product iterations.



## Research

### Initial Assessment

Given the broad nature of our design challenge, we completed an initial assessment of the problem to help us bucket the numerous categories that contribute to health.



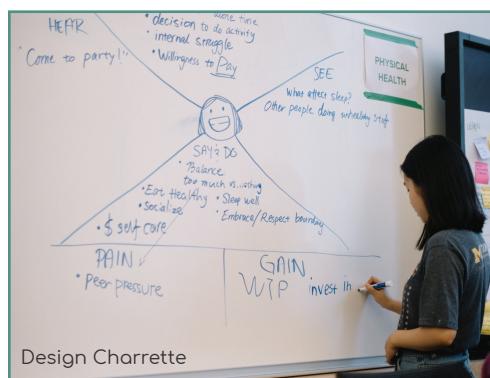
### User Interviews

To better understand the pain points and needs of our target audience, we sent out a survey, conducted interviews, and observed people. We asked general questions about their daily life, habits and behaviors and challenges to living a healthy life. We conducted 35 user interviews and one professional interview with a decision coach.

"More sleep would dramatically improve my life right now."

"I get easily distracted by social media and spend more time on it than I'd like to admit."

"I try to meditate at least once a day, preferably before going to sleep. I'm still working on this."



#### Common Themes

- o Better diet
- o More exercise
- o Improving mental health
- o Financial stability
- o Healthier sleep habits
- o Lack of discipline
- o Work stressors
- o Feeling tired
- o Being consistent

## Secondary Research

From our interviews, we found that the most common challenges adults face fall in the sleep, social and mental buckets. Our secondary research confirms that these are in fact problems that our target audience is facing.



On Sleep Health



On Social Health



On Mental Health

Adults need 7 or more hours of sleep per night for the best health and wellbeing, however 38% of adults are sleeping less than 7 hours<sup>1</sup>.

30% of millennials say they always or often feel lonely<sup>2</sup>. 82% of adults say that cell phone usage at a social gatherings at least occasionally hurts the conversation<sup>3</sup>.

1 in 5 adults live with a mental illness<sup>4</sup>. Mental disorders account for the fifth leading cause of disability-adjusted life, but poor usability of digital solutions limits access to resources<sup>5</sup>.

## Synthesis

### Affinity Diagram

After gathering our initial set of data, we had an affinity diagramming exercise to help us synthesize our findings. This process led us to frame user needs around the emotional tier of the value pyramid, specifically focusing on enabling better sleep, creating meaningful social interactions, and increasing mindfulness.



### Key Takeaways



Higher Sleep Quality



Meaningful Social Interactions



Increased Mindfulness

1. [https://www.cdc.gov/sleep/data\\_statistics.html](https://www.cdc.gov/sleep/data_statistics.html)

2. <https://www.vox.com/science-and-health/2019/8/1/20750047/millennials-poll-loneliness>

3. <https://www.pewinternet.org/2015/08/26/chapter-4-phone-use-in-social-gatherings/>

4. <https://www.nimh.nih.gov/health/statistics/mental-illness.shtml>

5. <https://clutch.co/web-designers/resources/how-to-design-for-users-struggling-with-mental-health>

# Personas

Based on the data we collected and synthesized, we created personas and user journeys to help us empathize and better understand what our customers do, think and feel. This process helped us identify our customer's needs and pain points, as well as prioritize how we might help users accomplish their goals.



**Amira Haddad**

**ABOUT**  
Amira grew up in Oakland, California with four siblings and two best friends that lived down the street. She stayed close to home for college, graduating with a bachelor's and master's degree in Computer Science at UC Berkeley. Wanting a change of scenery, she moved to New York to work on the financial side of technology. She has been in New York for three years now and has never had taken time off to be with her friends and family for granted. Living in a studio halfway around the country, she's slowly adjusting to not being surrounded by loved ones all the time. She's trying to make the most of her time in New York by meeting new people and making friends which she developed over the years with friends back home and at college. She stays in touch with her family and friends through video calls and messaging. She's noticed that her friends are more focused on their lives. When she's out with friends she finds that they're more interested in their screens than who's in front of them. Everyone's always hustling, worrying about the next thing and she sees that this is the hardest thing for her.

**NEEDS**

- + A new way to meaningfully connect with new friends
- + To understand how to live in the moment and urge others to slow down and enjoy the moment

**EMOTION**

Surprised	Happy
Awesome	Care
Overwhelmed	Bored
Exhausted	Relaxed
Unrelated	Satisfied

**PAIN POINTS**

- \* She tries to connect with new friends but feels like she's missing out because people are always hustling
- \* She has trouble staying in touch with her family and friends back in California because of conflicting schedules.

**FAVORITE BRANDS**



**AGE** 25  
**JOB TITLE** Software Engineer  
**STATUS** Single  
**LOCATION** New York, NY

**INTERESTS**

- EASY-GOING
- CARING
- SMART
- CREATIVE
- PASSIONATE
- CURIOUS



**Ramon Zepeda**

**ABOUT**  
Ramon graduated from the University of Southern California with a B.S. in Accounting and a B.S. in Business Administration. Upon graduating he went into public finance, but decided to pursue an MBA after gaining a few years of working experience. After obtaining his MBA, Ramon became an investment analyst for a hedge fund. He currently works as a financial advisor for a bank. Ramon lives in a seven minute walk to work, so he can get as much sleep as possible since his hectic work schedule makes it nearly impossible to have a set routine. Additionally, he travels at least one week every month for work, so he has to make sure he has enough time to get a good night's sleep all-nighter. Ramon is aware that he needs to prioritize sleep so that he has enough energy to do everything else on his to-do list, but the friends that he shut down at night. Constantly checking his phone at late hours of the night, his sleep schedule is described further.

**NEEDS**

- + To get better sleep so that he has enough energy to achieve his health and fitness goals
- + To wake up early so that he is able to go to the gym before work

**EMOTION**

Surprised	Happy
Awesome	Care
Overwhelmed	Relaxed
Exhausted	Relaxed
Unrelated	Satisfied

**PAIN POINTS**

- \* Even after he is done with work and able to go to sleep early, he finds himself staying up late because he's on his phone once in bed.
- \* He has trouble incorporating fitness into his work schedule because of his inconsistent work schedule.

**FAVORITE BRANDS**



**AGE** 33  
**JOB TITLE** Investment Banking Associate  
**STATUS** Single  
**LOCATION** San Francisco, CA

**INTERESTS**

- COMPETITIVE
- GENEROUS
- RESERVED
- AMBITIOUS
- ADVENTUROUS



**Jon Johnson**

**ABOUT**  
Jon graduated from the University of Massachusetts with a Bachelor of Science in Economics. Upon graduating he was interested in banking, but found his calling early on at a fast growing distilling company and worked his way up to his current position. His work requires a fair amount of travel, so he's constantly on the road with his team. He's been in this role for three years now.

Lately, Jon has been thinking about changing jobs, but doesn't know where to start after being in the same industry for years. The constant need to be online is wearing him out. As an avid news reader, he knows that there are many negative things going on the world and he wants to be more positive. And this is where his colleagues come in; he realizes he has talked to them for some time. The stress of the job and difficult schedule means he has little time to take care of his personal life, so he's looking to connect with his network. He starts to realize that he wants to do more with his work constantly.

**NEEDS**

- + Make time for taking care of himself by not letting work overwhelm everything
- + Manage emotional wellbeing by knowing what triggers the negatives and what causes positivity

**EMOTION**

Surprised	Happy
Awesome	Care
Overwhelmed	Relaxed
Exhausted	Relaxed
Unrelated	Satisfied

**PAIN POINTS**

- \* Travels for work ~50% of the time so he's rarely home - making it difficult to take care of himself
- \* Feels surrounded by negativity, both in job expectations and the news cycle
- \* Lacking time to stay in contact with his friends and family

**FAVORITE BRANDS**



**AGE** 30  
**JOB TITLE** SVP, Operations  
**STATUS** Single  
**LOCATION** New York, NY

**INTERESTS**

- EXTRAVERTED
- DRIVEN
- SENSITIVE
- STRESSED
- PRACTICAL
- THOUGHTFUL

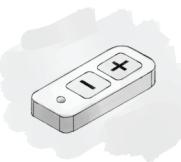
How might we enable more meaningful social interactions by incentivizing people to put their phones down while in a group?

How might we encourage sleep by limiting screen time?

How might we increase mindfulness by helping users focus on positives?

## Ideation

We had a brainstorming session where team members could be creative and build upon each other's ideas. We came out of that session with 4 concepts that focused on the areas of sleep, social and mental health.



**Clicky**  
Mental Health



**Gratitude Board**  
Mental Health



**Sidekick**  
Sleep

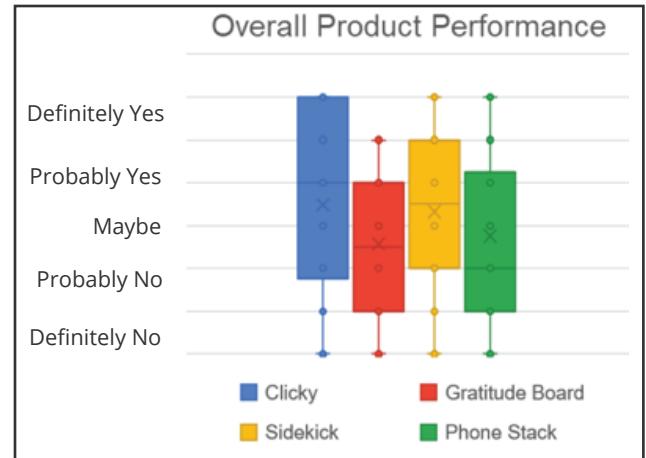
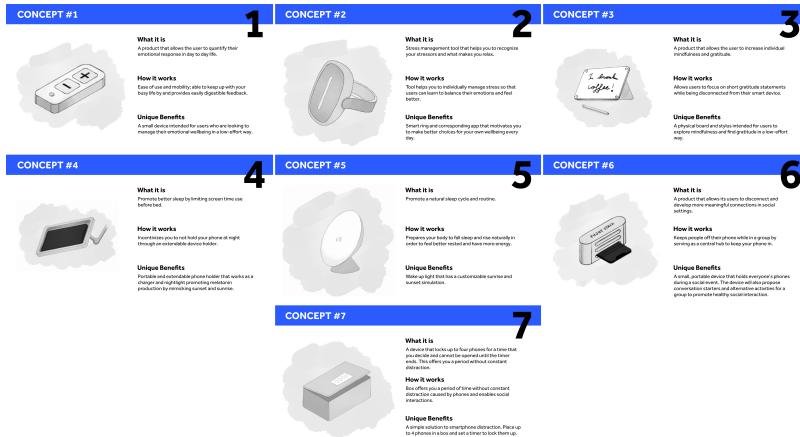


**Phone Stack**  
Social

## User Testing

To validate our ideas with users, we tested low fidelity prototypes of our concept designs along with products that currently exist in the market via a survey and in-person interviews. Our evaluation provided feedback on how users feel about our concepts and informed us as to whether they could see themselves using the products.

The graph shows the rankings of our surveyed products. At a score of 3, clicky was the most coveted product, but its high standard deviation suggested it was a polarizing product. Sidekick was the second highest ranked product, with a lower standard deviation than clicky.



## Design

### Secondary Research

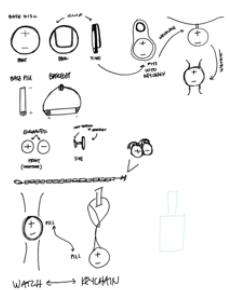
We conducted secondary research on the two products that ranked highest (clicky and sidekick) and one product that our team felt strongly about despite it not ranking as highly (the gratitude board). This led us to narrow our concept scope from 4 to 2 products.

#### Clicky

"It takes 66 days to form a habit."

##### The Habit Loop

- Cue to remind you to take action & engage in habit
- Routine to encourage repetition until behavior becomes automatic
- Reward to tell your brain to repeat the behavior



#### Sidekick

##### Melatonin production stifled with high temperature light

Morita, Takeshi, and Hiromi Tokura. "Effects of Lights of Different Color Temperature on the Nocturnal Changes in Core Temperature and Melatonin in Humans." APPLIED HUMAN SCIENCE Journal of Physiological Anthropology, vol. 15, no. 5, 1996, pp. 243-246., doi:10.2114/jpha.15.243.



##### Red light aids in melatonin production

Breus, Michael, and Mehmet Oz. The Power of When: Learn the Best Time to Do Everything. Vermillion, an Imprint of Ebury Publishing, 2016.

### Refine Product

#### User Values Meet Our Values

The team took a step back once more and developed refined How Might We statements, product briefs and personas for clicky and sidekick to help us envision how each product would work from the user's perspective and what features would be most valuable. Collaborative discussion led to a more informed decision, concluding that sidekick would be the most impactful product for the user and our team.

**How might we encourage sleep by limiting screen time?**

## Refined Product Brief Clicky

**Description:** Clicky is a small accessory that connects your goals to your daily life. When you click the plus or minus button on the device, data is displayed on your mobile app in digestible snippets allowing you to correlate time or day to positive or negative click. Clicky wants you to make positive lifestyle changes therefore goals are active for 2 months in order for you to actively form a habit. The user can track positive and negative experiences in different health related categories (i.e. physical activity, positive social connection, drinking more water, etc.)

**Features:** Manual, colorful, analytics, and lifestyle

**Benefits:** Simple and compact

**Competitors:** Feel



Price: Under \$100 Surface: XSmall, Resin/acrylic Case: 46mm x 26mm x 8.5mm Ribbon: 50mm x 9mm x 8.5mm

Assembly: Laser cutter; order ribbon online; use resources in STAMPS to complete rapid prototyping and final prototype

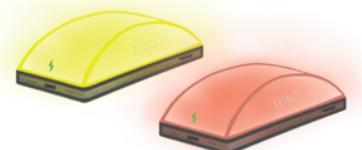
## Refined Product Brief Sidekick

**Description:** Sidekick is a phone charging device that turns into a light which mimics sunset and sunrise. To activate the light, you set your phone face down on your nightstand and place the device over your phone. The light is only activated and turned on once the phone is locked in place and begins to charge. Sidekick wants you to take control of your sleep by helping you achieve optimal sleep as soon as you are ready to call it in a night or wake up and start your day.

**Features:** App enabled to set time dimmer, charging indicator for phone

**Benefits:** Simple and sleek

**Competitors:** Philips Smart Sleep, Casper Glow Light



Price: Under \$100 Surface: Small, plastic/silicone

Assembly: Injection molds, purchase wireless charger on Amazon; use resources in STAMPS to complete rapid prototyping and final prototype

## User Testing

### Conjoint Analysis & Costing Model

In our survey, we presented different versions of our product: Sidekick. Each version represented a combination of the following features: price, light, wireless charging , time display, and a mobile app.

Average of 25 "non-noisy" regressions	
Average Customer Regression	AVG Willingness to pay by feature
Intercept	7.528
Price	0.037
Light	-3.367
Wireless Charging	-1.933
Time Display	-1.904
Mobile App	-0.673
Average coefficient	
Light	92.112
Wireless Charging	52.875
Time Display	52.087
Mobile App	18.422

Sidekick - Cost Structure Draft	
Purchased Parts	
9w, 600 Lumen multicolor Bulb	\$ 6.00
Cell phone Q5 wireless charger	\$ 1.10
waterproof push button switch (3)	\$ 6.45
0.2" LED display (4)	\$ 2.12
Processor	\$ 5.00
Small Power Adapter 220Vac Power Supply	\$ 1.80
Total Purchased Parts	\$ 22.47
Material Costs	
Top Part	\$ 5.22
Bottom Part	\$ 0.67
Total Material Costs	\$ 5.89
Machine time Costs	
Top Part	\$ 0.16
Bottom Part	\$ 1.04
Total Machining Costs	\$ 1.20
Fixed Cost Contribution (Molds, Application)	\$ 0.64
Estimated Costs	\$ 30.85

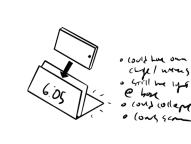
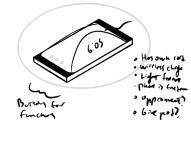
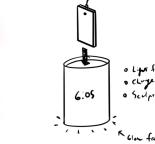
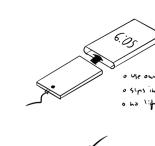
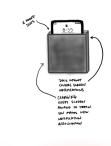
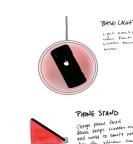
The light feature was the most coveted while the mobile app was the least. Wireless charging and time display held similar value. Despite the low value added generated by the app, the feature represented the lowest cost, so our team implemented all 4 features.

## Product Fabrication

### Form Inspiration



### Form Factor Ideation



## Prototype Creation

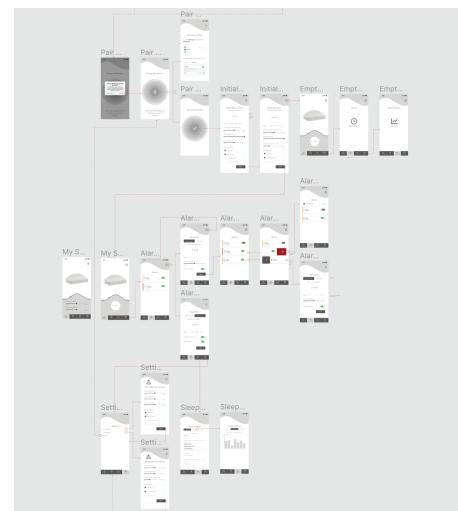
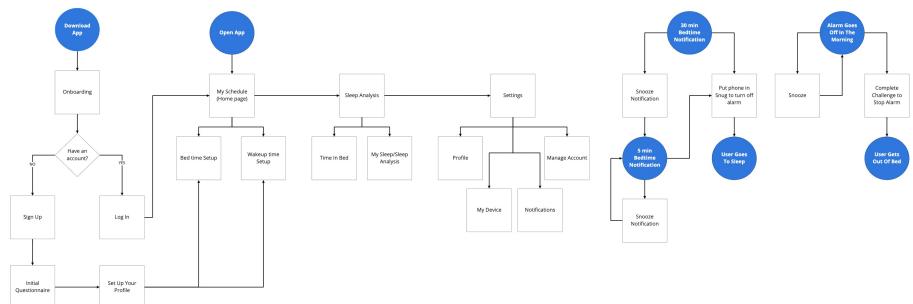


## Final Design Version 1

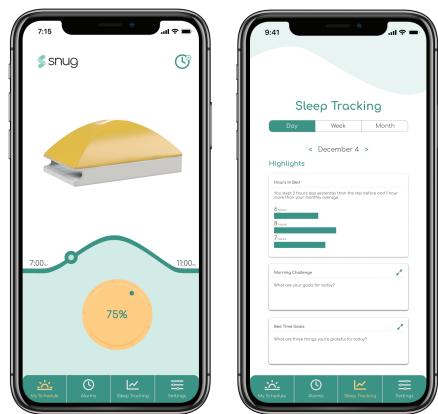


## App Wireframe

To design the app, we first mapped out the user flow, focusing on how the user would control and interact with the product through the app.



## Final Design



## Tradeshow



### Product Website:

<https://igeiman.wixsite.com/snug>

### Product Video:

[https://www.youtube.com/watch?v=atLzFub8Tro&feature=emb\\_title](https://www.youtube.com/watch?v=atLzFub8Tro&feature=emb_title)

### App Prototype:

<https://www.figma.com/proto/9xmDwaSab1KMyIkoqU-JQrY/Snug?node-id=120%3A24172&viewport=1584%2C-867%2C0.4838922321796417&scaling=scale-down>