

# Assignment 2 Report

*POVs, HMWs, Solutions, & Experience Prototypes*

## Team Name & Members

"Dream Team" - Gabriella Brignardello, Brian Higgins, Nate Lohn, John Morgan

## Problem Domain

Sleep Habits (Behavioral Change Studio): In exploring our initial problem domain of habits, we found multiple users reporting frustration with productivity. The most expansive influence on this appeared to be their sleep.

## Initial POV

After our first round of needfinding, we built a potential user POV that blended ideas from our initial interviews. This initial POV guided the second stage of our needfinding.

*We met...*

- Sara, a busy student who always wants to be more productive

*We were amazed to realize...*

- she is never satisfied with her productiveness, even when she gets a lot done
- often tracks her goals, but never tracks her habits and routines

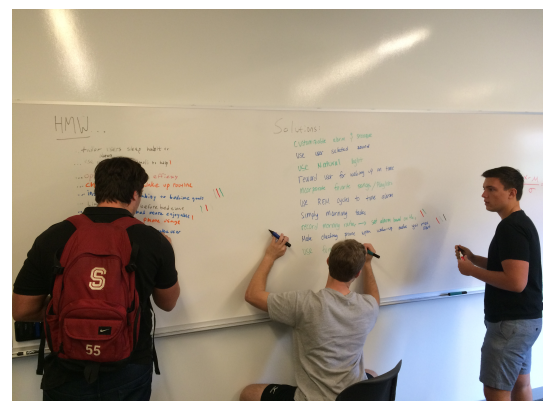
*It would be game changing if...*

- she could be productive at all hours of the day
- she could optimize the time it takes to complete her daily habits



## Additional Needfinding Results

Our first round of interviews focused on both experts in the field of habits and potential users. In our survey and interview responses, we saw that people felt they didn't have enough time, they were frequently unproductive, and they weren't getting enough rest – all of which are affected by one's sleep habits. Thus, our team narrowed our focus to a specific subsection of habits: sleep.



Our second set of interviews delve deeper into three different segments of potential users: high school students, college students, and young professionals.

### Interview #1

Camryn is a high school junior from Los Angeles who feels that she gets easily distracted and sometimes has difficulty committing to her decision to go to bed. Even if she wants to go to bed at 11pm, she ends up spending hours on online shopping or Netflix before she actually does. She feels out of control because her distractions are monopolizing time that should be meant for sleep. Even though Camryn aspires to improve her sleep habits, she doesn't have specific steps to make sure that she meets these target goals.



### Interview #2

Rotto is a fifth year football player at Stanford who feels an overwhelming urge to cross everything off of his to-do list before he goes to bed; otherwise, he is met with severe anxiety. Even though he knows his work is taking over the sleep time he needs, it seems as though he doesn't understand how much a lack of sleep affects his productivity the next day. Work and sleep need to coexist, and both Rotto's performance in the office and on the field would improve if he got a more consistent amount of sleep.



### Interview #3

Tara is a young accountant from San Francisco who commutes an hour to work, forcing her to perfectly optimize her morning routine so she can leave the house in 20 minutes or less everyday. While her morning routine is very efficient, she normally misses her bedtime goals and rarely gets more than 6 hours of sleep. Tara usually won't need more than 2 alarms to wake up, but waking up is never an enjoyable experience – she is groggy for a while after she wakes up and she feels that her mornings are the worst part of her day. If her morning grogginess could be addressed, waking up might become something she looks forward to.



## Revised POVs

### POV #1: High School Student

*We met...*

- Camryn, a high school junior taking 3 AP classes

*We were amazed to realize...*

- she gets easily distracted, spending hours online shopping before bed or watching Netflix, even when she is tired and ready to go to bed
- she thinks the default alarm snooze time is too long and the sound is too abrupt

*It would be game changing if...*

- users could control phone usage before bed to prevent unnecessarily lost sleep time
- users could tailor their alarms to their sleep habits

We brainstormed plenty of potential HMWs; some of the highlights include:

- How might we inspire accountability to the user's bedtime goals?
- How might we make waking up more enjoyable for the user?
- How might we control the user's usage of technology immediately before bed?

The best HMW that came from this POV: How might we make waking up more enjoyable for the user?

### POV #2: College Student

*We met...*

- Rotto, a student athlete with severe sleep apnea

*We were amazed to realize...*

- he thinks that all of his work for the day has to be done before he can go to bed, causing anxiety of "not getting it done"
- he was unaware of his poor sleep quality before being diagnosed and treated

*It would be game changing if...*

- users could take advantage of self-imposed work breakpoints to better maximize productivity and manage sleep time
- users could have some sort of rating for their quality of sleep compared to others

Some of the resulting HMWs include:

- How might we reward the user for healthy sleep habits?
- How might we break assumptions that getting more sleep means getting less done?
- How might we hold users accountable to set work breakpoints and bedtime goals?

The best HMW that came from this POV: How might we inspire accountability to set & accomplish bedtime goals?

### POV #3: Young Professional

*We met...*

- Tara, a young accountant who has an hour commute to work

*We were amazed to realize...*

- she wakes up every morning at 5:45am and is ready in 20 minutes or less, but feels groggy for a while after waking up
- she lays out everything for the next day before bed

*It would be game changing if...*

- users could become alert faster after waking up
- users could speed up their nightly routine to get to bed earlier

Tara was highly distinct from our other interviews and lead to the following HMWs:

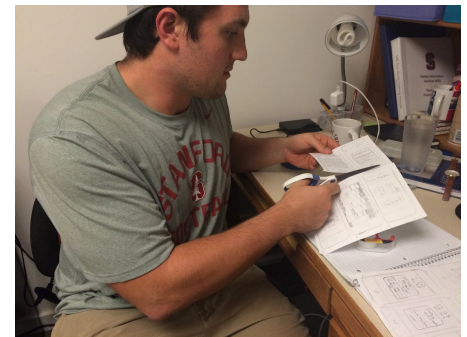
- How might we help optimize the timing of the user's nightly routine?
- How might we change the user's environment to make staying in bed less appealing?
- How might we engage the user at wake up to help them feel more alert?

The best HMW that came from this POV: How might we help users feel more alert when they wake up?

### **Experience Prototypes**

#### Track Sleep Debt and Recommend Sleep Goals Based on User (Wake Up Call)

After needfinding, it seemed that users feel sleep limits productivity and that one must be compromised in pursuit of the other. This led us to some assumptions: first, users might want to know when or how long to sleep; secondly, offering a "sleep mode" will discourage users from looking at their phone and staying up while in bed; and lastly, notifications will encourage the user to get to bed.



To create our prototype, we created paper screens that and then planned the workflow, including specific instructions on an accompanying piece of paper. Each screen was then cut out and taped together to mimic an actual smartphone.



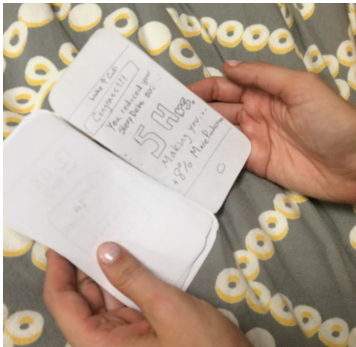
Testing involved meeting the user in their room and giving them a few scenarios. The first was a typical Sunday night, where they download the app and use it to establish their sleep schedule. The next was the following Wednesday, where the student pretended they were working on an assignment which was due soon. Several



alerts appeared and told them that their bedtime was soon, but gave them the choice of staying up to continue working. This was accompanied by information about the effects of not sleeping on their productivity levels for the next day. When the user chose to stay up later, the scenario switched to Thursday where they were prompted to take a nap and catch up on their now accumulated sleep debt. The final scene was the next Sunday, which gave a detailed review their week of sleep.



Users appreciated the productivity alerts that encouraged them to sleep and the weekly update, which gave them analytic tools and reports, educating them on the costs of avoiding rest. We also saw users select the later alarm time in both tests after seeing the opportunity for increased productivity. We did see that users didn't appreciate the frequent notifications and only wanted one when it was actually time for bed. One user said they "would get annoyed with 15 minute or hourly alerts" because it would make her feel more stressed about finishing her work.



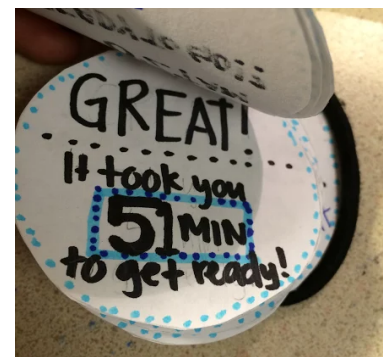
Two assumptions were valid: users felt sleeping limits their productivity, and thus, there is a trade off; and users want to know if they are getting enough sleep. However, we were surprised to learn that users will not actually be more likely to go to bed if they are alerted of their set bedtime. Instead, we believe users will want to set their own bedtime if their schedule needs to be adjusted. Also, we feel users want to know more about why sleep debt is important, but want minimal alerts and only at key times.

### Make Waking Up More Enjoyable (iWake Watch)

Another need that we identified was making the mornings more enjoyable. We approached this with a wearable app experience that would allow the user to set their routine, customize their alarm settings, and start their day with an app of choice.

Several of our initial assumptions include: first, users were unaware of exactly how long their morning routine usually takes; second, users seek a more customizable alarm system; and lastly, users like engaging with specific apps right when they wake up.

To construct this prototype, we created 18 different watch "faces" with the different content that we wanted to test on the user, including setting up the watch's customizable settings (i.e. snooze



time, alarm sound style, and wake-up app). We decorated the “faces” to make them easier to engage with, and fastened them to a flexible hair band to allow multiple potential users to each interact with the prototype.



In testing, we presented the watch as a new item that the user just bought. We allowed the user a couple minutes to examine the product and figure it out themselves. Then the user read the instructions aloud and chose their settings. The tester acted as the alarm watch and walked the user through tracking their morning routine and acting the situation out. Then the user set their alarm based on their desired leave time, went to sleep again, and was woken up by their new alarm, which used the routine tracker to set the wakeup time.



Users really liked the customizations, but realized there weren't enough instructions or the ability to edit the individual morning routine. They were also surprised to realize how long their morning routines took them and liked that the watch could set their alarm using their desired leave time and average morning routine time. However, some users felt that having their favorite app open at wake up would be distracting.

Our assumption that timing a morning routine would be beneficial for users was valid for both users tested on this device. The users also confirmed our assumption that they would like to customize the way they wake up. However, moving forward, we now assume that users need flexibility in their morning routine because of changing schedules and we want to explore how tracking movement would help waking up.

### A Change in Environment When It's Time to Wake Up (Rise & Shine)

For our third prototype, we assumed that: alarms don't engage all of a user's senses; technology could be used to change the user's environment (i.e. making the bed colder, dripping water, controlling room lights); and users want to be more alert when they wake up.

We made a basic paper prototype for the selection mechanism, on which the user picked which type of alarm(s) they would like. We then attached a bag of water above the bed so that the user could be sprinkled with water, put a fan next to the bed to simulate a cold bed, and labeled the light switch so that we could control it during tests.





We presented the user with a scenario in which they needed to wake up after only having gotten a few hours of sleep: an important job interview after a late night of studying. They used the paper prototype to select their alarm and then, the user entered a relaxed, meditative trance to imitate sleeping. The tester then initiated each of the user's selected alarms.

Most users preferred being hit with water, particularly in the event they were waking up for was of high importance, because it was more startling than a traditional alarm. The second preferred option was a bed that would become

very cold, which stimulated with the fan; however, this is an idea that needs a more analogous test in order to be certain.

Users generally seemed receptive to a more intense alarm experience and said they "would definitely use this if [they] *had* to be up."



### Prototype Success

The two most divergent prototypes – the one which monitors sleep (Wake Up Call) and the one which changes the sleep environment (Rise & Shine) – seemed to be the most successful at achieving their desired solution. While the former focuses on incentivizing consistent sleep and getting to bed, the latter forces users to wake up by making staying in bed less appealing. However, since more extensive testing would be needed to see the actual efficacy of the wake up methods employed by Rise & Shine, user reception was incredibly important in measuring success at this stage. For Wake Up Call, users responded very favorably to new information about their sleep patterns because they were given measurable quantities and the 'app' worked with their schedule to make sleep recommendations. This information is also easily attainable from the user and would allow us to provide insights to the user that would help them create and maintain healthy sleep patterns, aligning with our goal to get users to choose sleep over work more often and to change the misconception that less sleep means more productivity.