PROBLEM AND SOLUTION OVERVIEW

We all struggle with waking up in the morning. When the alarm rings, our first impulse is to throw it against the wall and silence it. The problem is further compounded by the fact that many of us don’t get enough sleep in the first place. As a result, we often ignore the alarm and end up being late for appointments, or else we drag ourselves out of bed with a feeling of resentment. The challenge we sought to address is: How can we make the process of waking up more successful and enjoyable? We focus on three main tasks: (1) going to sleep earlier (2) waking up enjoyably (3) creating a healthy long-term sleep routine. Our current idea is a mobile app that solves for these tasks by incorporating a social element to sleeping and waking up: customers can see sleep indicators among a shared social group, and are greeted by voice recordings of their social group in the morning. We realized that part of the problem is that sleeping is a solitary activity; with technology, we can make it social.

UI SKETCHES: INTERFACE DESIGN #1

Our first interface design expanded upon our sketches from last week. We focused on the mobile platform and began to flesh out more details of the main screens.

Figure 1. Customers can create a “cloud” of 12 people who will serve as their social sleep group. If customers do not have a pre-existing group of friends, they can join nearby clouds, shown on a map.
Figure 2. Customers can manage their cloud. The main screen is shown in the bottom left corner. From this screen, customers can tap on other people’s names to view their sleep stats or “storm” people who are oversleeping. Customers can also view their own list of alarms.

Figure 3. When customers go to sleep at night, they see an indicator of how many people in their cloud are asleep. They are prompted to indicate their sleep status by swiping up to “tap out.”
Figure 4. When customers wake up in the morning, they swipe up to indicate they are awake. Then, they hold a button to record a voice message that will be played to all other members of the cloud.

UI SKETCHES: INTERFACE DESIGN #2

Our second interface design was focused around the idea of wearables. We pushed ourselves to think: how could we implement our current app idea, using the platform of an Apple Watch? In creating this design, we tried to make good use of new features offered by the Apple Watch, such as a heart rate monitor, haptic feedback and tapping, and motion sensors.

One big innovation that came out of considering a different platform was the idea of “storming.” We realized that with the haptic feedback, we could create a scenario where if a customer was oversleeping, all his/her friends could simultaneously tap on the watch to send collective feedback to the oversleeping customer and wake him/her up. Without looking at a different platform, we would not have stumbled upon this new design idea.

In addition, the heart rate monitor and motion sensors led to us brainstorming different visual ways we might display this information. We thought it would be visually interesting to display a dark background with neon outlines of the different people in the cloud, and show them moving around in real-time, using data from the heart rate and motion sensors.
Figure 1. When customers go to sleep.

- Prompt the user when it hits their “sleep target” time

  Confirm Alarm tomorrow at 7:00 AM?
  [NO] [Yes]

  Most of your friends have already slept on time...
  You should as well...
  [NO] [Yes] [Not yet sure]

  Good, I will keep my eyes on you...

  [No] Push notification to awake cloudmate to pressure the user to be disciplined

  Edit your alarm...
  6:59 PM
  7:00 AM
  8:11

  Disable alarm [Yes]

  Go to bed!
  Your cloudmates have been notified
  [Exit... Slay...]

  Vibrate

  [No] Push notification to give up on the user being disciplined

  If the user is still doing things...

  Inform other cloudmates that you are in bed

  - Inform other cloudmates that you are in bed

Figure 2. When customers wake up in the morning, they get a “stream” of recordings.

- Play Sarah’s recording

  9:05 AM
  Sarah K. 🌞: 7:19 AM
  Wake up
  Sarah K. 🌞: 7:17 AM
  Fell back asleep 😴
  Adam L. 🌝: 8:02 AM

  7:20 AM
  “Sarah! Stop being such a loser!” - Matt S.

- If Sarah is still sleeping...

  Use the built-in microphone to yell at Sarah, line
  Voice recognition transcriptions your message to Sarah
  Tap on her PC repeatedly to vibrate Sarah’s device
Figure 3. Customers add their own voice recording to the “stream.”

**FINAL INTERFACE DESIGN**

After considering both designs, we decided to choose Design #1 as it was most practical for the purposes of this class and would lend itself to a feasible first-pass prototype. Furthermore, we thought that a mobile platform would lead to higher adoption of our app, because an app based on the Apple Watch would require customers to buy that specific hardware, making the potential customer pool much smaller. However, the design brainstorming for Design #2 was still incredibly useful, as we adapted many of our innovations, such as “storming” and the visual display of information, into our final design for Design #1.

The functionality table below summarizes the different features available in our design.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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<tbody>
<tr>
<td>Join a cloud</td>
<td>A “cloud” is defined as a social sleeping group of 8-12 people. Customers can choose to create their own cloud, name it, and invite people to join their cloud. Customers without a pre-existing cloud can also join a cloud of random strangers.</td>
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<tr>
<td>Sleep tracker</td>
<td>At night, when each member of the “cloud” goes to sleep, he or she “taps out” and indicates through the app that he/she is going to sleep. The app will send a notification to all other members of the cloud. At any time, cloud members can check a screen that will display the sleep/wake status of everyone else in the cloud.</td>
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<tr>
<td>Morning “stream”</td>
<td>Customers can set a desired wake time through the app. In the morning, all customers have the ability to make a short voice recording that will be sent to all other members of the cloud. The first person to wake up will record a message. Then, the second person to wake up will hear the message from the first person, played aloud. The third person to wake up will hear the messages from the first and second. The fourth person to wake up will hear the messages from the first, second, and third. And so on, for all members of the cloud.</td>
</tr>
</tbody>
</table>
As time goes on, there will be an additional feature of themed prompts. Instead of just recording a simple voice message in the morning, customers will be prompted to record a voice message that responds to a theme of the day or question of the day, such as “what’s your favorite food?” “what music are you listening to now?”

In the morning, customers can see through the main dashboard who is awake and who is asleep. If one person is oversleeping, the other members of the cloud can choose to “storm” this person. They do this by holding a voice recording button, which will send their message to the oversleeping person in real time. If 3 people storm one person, the voices of those 3 people will be played in unison in real time to create the loudest effect possible.
UI STORYBOARD #3: THE “STORM”

YOUR CLOUD

AWAKE: 7 AM

AWAKE: 8 AM

ASLEEP!!!

STORM

Josh C. is 10 minutes late

STORM HUM

HOLD

“Josh C.

I’m awake now!”
VIDEO STORYBOARD #1: GOING TO SLEEP

1. 11:30 PM
2. Ignore...
3. Ding!
4. Ding
5. Ding
6. Ding
7. 95% asleep
   Maybe I should sleep too...
8. Tap
   Animation
   Focus in on screen
   Zzzzz....
VIDEO STORYBOARD #2: MORNING "STREAM"

1. First person awake
   BRINGGG

2. Record message #1

3. Second person sleeping
   🛏️⏰

4. Hear message #1
   🛏️⏰

5. Record msg #2
   🛏️⏰

6. Third person sleeping
   🛏️⏰

7. Continue to sleep
   TBC...
   🛏️⏰

8. 🛏️⏰
THE “STORM”

CONCEPT VIDEO DESCRIPTION

Video on Youtube: https://www.youtube.com/watch?v=VB8zXSntwBI

The most difficult part of this video was figuring out how to show tasks that were very simple, such as going to sleep. Beyond just showing someone flopping down on the bed and closing their eyes, how could we depict this task? We opted to create a story around the task and show the entire setup: someone working on their laptop, an alarm clock showing the late time, getting notifications from their cloud, then finally turning out the light and going to sleep.

In addition, we had some difficulty figuring out how to properly depict the social aspect of the app. We solved this problem by showing a split screen with 8 different people going to sleep, thereby depicting all the members of the cloud.

One thing that worked well was setting up the problem at the beginning. Our app turns sleeping and waking up into a social activity, which may be a slightly strange concept to grasp at first. Therefore, we decided to show an example of existing behavior where this already works -- a group of friends waking up from a sleepover. By showing this scenario and explaining that our app was trying to replicate this scenario with technology, it was much easier for viewers to understand the problem we were trying to solve.

The design prep took about 2 hours to brainstorm what we wanted to show in the video and do storyboarding. The shooting took 2 hours for the initial footage and 1 hour for additional footage. The most time-consuming part was shooting the same scene from different angles. The video editing took 10 hours in total.