03

WAKEUP

I designed an app and product to help people wake up more comfortably and develop good sleep habits which will make them enjoy the process of waking up rather than having difficulty getting out of bed.

Product design | Service design
Individual work

BACKGROUND

In recent years, many Chinese young people, who are called "Get up households", sleep late at night and have difficulty getting up in the morning. They cannot wake up as soon as they hear the alarm clock, and often struggle to get up or take a long nap before waking up.

When it is time to wake up, those who use an alarm "snooze" it an average of 1.7 times.

What impact does this phenomenon have on people?

Inattention | Drowsiness | Grumpiness | Oversleep

PROBLEM STATEMENT

This chronic difficulty in waking up not only affects people's mental state, but also causes a lot of inconvenience in their lives. Therefore, by designing a smart product, I tried to make it possible for people to wake up comfortably every morning without feeling groggy.

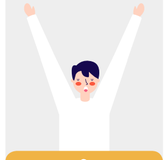
Before

"I feel groggy and want to sleep back."

Enhancing the waking experience

①External factors that Influence Sleep

②Choose better way to wake people up



After

"I wake up comfortably and feel energetic"

RESEARCH

"Get up households" phenomenon → REASON → SLEEP INERTIA

People feel groggy when they wake up in the morning. In the majority of cases, morning sleep inertia is experienced for 15 to 30 minutes after waking.

In order to allow people to quickly overcome sleep inertia when they wake up, I searched for some information related to sleep.

01 Stages of Sleep: The Sleep Cycle

Stage2: Deeper Sleep
Brain Waves and heart rate slow, eye movement stops.

Stage1: Light sleep
Transition between awake and sleep "half awake"

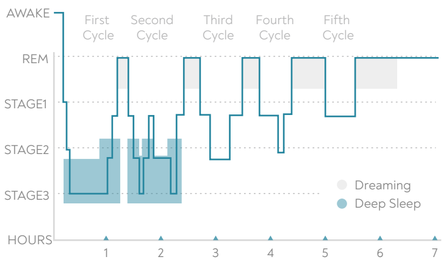
Each cycle lasts around 90 minutes.

Stage3: Deepest Sleep
Slightly different brain activity compared to N2. Difficult to be woken up.

Stage4: Dream and brain activity
Brain activity increases, dreams occur, fast eye movement.

02 Normal sleep hypnogram

This hypnogram illustrates how an individual moves through the various stages of sleep. Deeper NREM sleep occurs early on in the night, while the duration of REM sleep increases as the night progresses.



03 How to overcome sleep inertia?

1. Improve sleep quality

Have a regular bedtime and enough sleep.

Improve the sleep environment.

2. Choose the right wake-up time

Abrupt awakening during stage 3 sleep, produces more sleep inertia than awakening during sleep stages 1, 2 or REM sleep.

3. Effective way to wake up

Natural light | Melodic alarms | Stretching | Smell | Nice Thoughts

USER RESEARCH

In order to study the issue better for users, I investigated the current situation of young people waking up every morning and the reasons why they have difficulty getting up.

Wake-up conditions of young people

47.9% of the youth population are 'Revenge bedtime procrastinators'.

45.8% Difficult to wake up

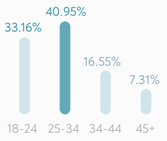
45.6% Can get up but feel tired

5.6% Wake up and feel energetic

3.1% Other cases

38.25% 61.75%

Gender ratio of people who stay up late



Age distribution of people who stay up late

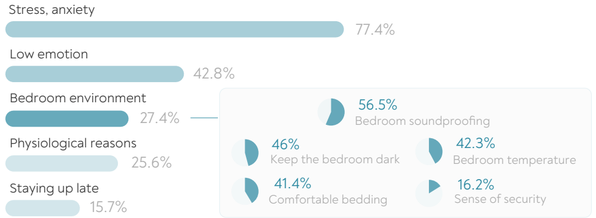
Cell phone use in bed is more common

93.8% Look at their cell phone

6.7% Do yoga and listen to music

2.3% Do strenuous exercise

Factors affecting sleep



Insight:

1. The 90s generation had the worst sleep procrastination, resulting in a poor wake-up experience.

2.Most young people use electronic products before falling asleep.

3.Noise is the biggest factor affecting young people's sleeap in the bedroom environment.

INTERVIEW

Vicky Gao
Auditor
22 years old

Sleep time 00:30 – 01:00

Wake up time 07:00 – 07:30

Waking state

Multiple alarm clocks can wake her up. She feels tired and can't concentrate on work

My daily review of various materials can strain my eyes. As I sometimes play with my phone to delay sleep and stay up late to work late, it makes my sleep irregular.

Yude Kan
Designer
42 years old

Sleep time 01:00 – 02:00

Wake up time 08:30 – 09:00

Waking state

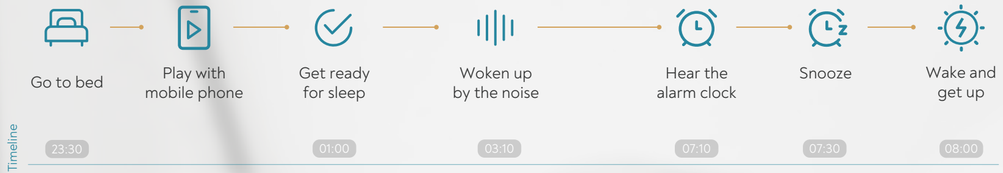
She feels very sleepy and may turn off the alarm clock and continue to sleep for a nap.

I often stay up late to work on designs before project deadlines. In my free time, I sometimes watch plays and books late at night. When I fall asleep, I occasionally roll over or wake up and will fall back asleep.

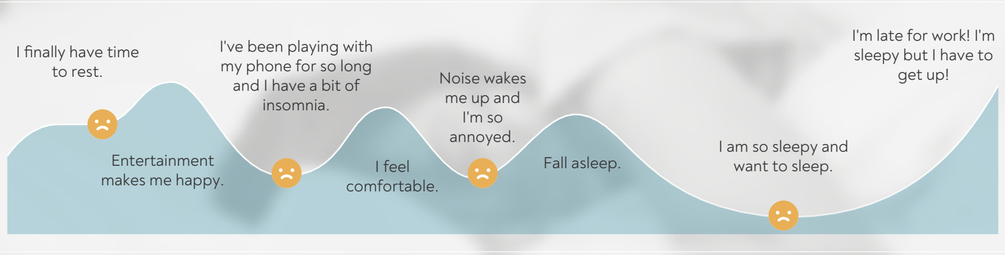
USER JOURNEY MAP

Stage	Time to sleep	Sleeping	Time to wake up	Get up

User Behaviour



User Feeling and Thinking



Pain Points

- People's habit of playing with mobile phones before bedtime can cause them to delay sleep and even make it difficult for them to fall asleep.
- People's sleep quality is easily affected by their sleep environment.
- The alarm clock needs to ring many times to wake people up.
- People wake up feeling very sleepy and sometimes snooze. It often takes them a long time to get up.

Opportunities

- Guide people to relax in other ways than letting them play with their phones.
- Remind people to go to bed early.
- Increase the amount of time people spend in deep sleep and avoid them being woken up as much as possible.
- Wake people up in a soothing way, so that they wake up comfortably and quickly at the specified time.

PERSONA

Upon the survey summary, I formulated a main role to show our main targeted users.

Jimmy

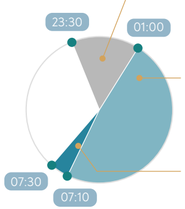
Age: 30
Region: Beijing, China
Occupation: Financial practitioners

"I often stay up late at night and can't wake up in the morning, which makes me miserable"

About

Jimmy has a stressful day at work and sometimes works late. His anxiety makes him want to relax at night, so he spends long hours in bed playing on his phone every night, and over time develops a habit of sleep procrastination. His painful experience of waking up the next morning made him regret sleeping so late at night.

Sleep-Wake Cycle of Jimmy



Bedtime activities

He enjoys reading e-books and playing with his phone for a long time.

Sleeping time

Light and noise easily affect the quality of sleep, causing him to wake up during sleep.

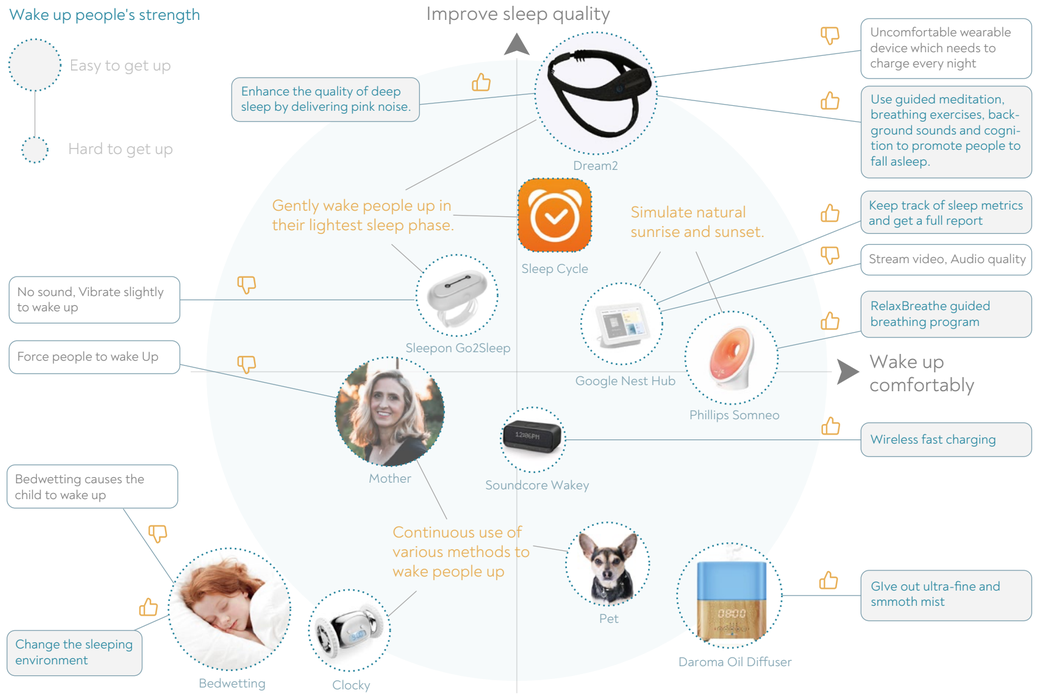
Awaking time

He has great difficulty in getting up in the morning and does not wake up until the alarm clock has gone off many times, and he is awake for a really long time before he gets up.

Goals

He is eager to wake up comfortably and quickly.

COMPETITOR ANALYSIS



Conclusion

I researched many competing products that help people wake up. My analysis shows that a good wake-up product should have features that improve people's sleep quality and allow them to wake up comfortably. Therefore, I believe that non-wearable wake-up products with sleep promotion, sleep monitoring and smart wake-up features will make people's waking experience better.

CONCEPT DEVELOPMENT

To design a wake-up product that meets people's needs, I summarized and analyzed sleep basics, user needs and competitive product research.

Non-wearable Alarm Clock

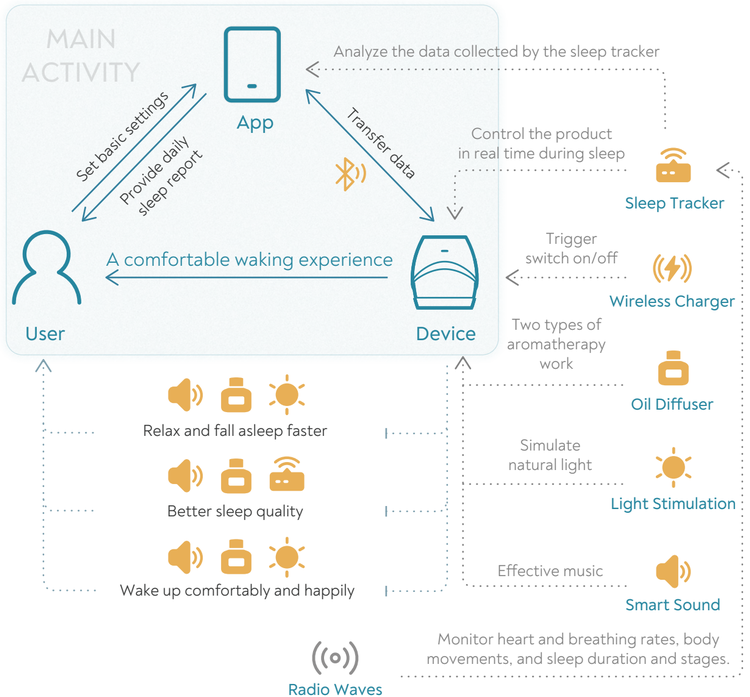
Time	Function	Purpose	
Before sleep	Light-guided Breathing	Decompress people from the day's activities.	Help fall asleep
	Sunset Simulation	Wind people down for bedtime.	
	Oil Diffuser	Relax people's nerves and induces sleepiness	
	Background Noise	Distract people from anxious thoughts.	
During sleep	Sleep Monitoring	Provide personalized recommendations	Improve sleep quality
	Pink Noise	Put people into deeper, longer, and more stable deeper, longer, and more stable.	
	Cool Mist Humidifier	Moisturize people's skin and control the humidity in room.	
After sleep	Bio-alarm Clock	Wake people up in their lightest sleep phase.	Promote wakefulness
	Sunrise Simulation	Wake people up naturally by tricking their biological hardware, help them feel less groggy.	
	Oil Diffuser	Water mist awakens people, makes them feel refreshed and increase their alertness.	

Insight:
Using the three senses of hearing, smelling and vision, it naturally awakens people to experience the feeling of waking up from nature.

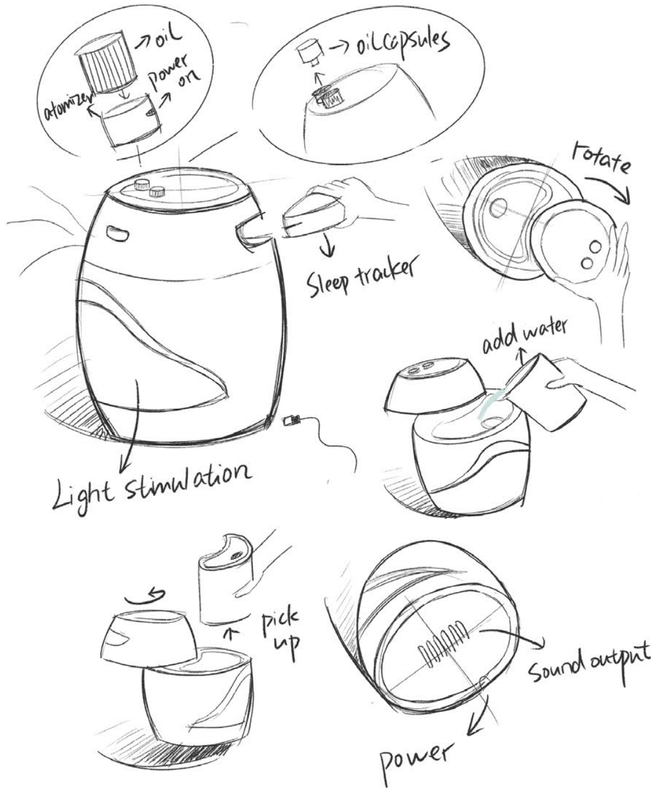
IDEATION

Based on the above research and analysis, I wanted to design an app and product that would help people wake up more comfortably and develop good sleep habits, which would make them want to wake up and not have difficulty getting up.

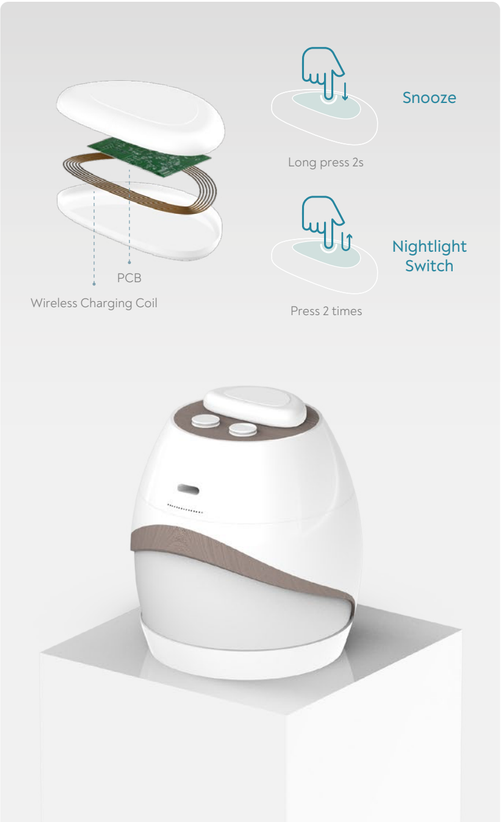
SYSTEM MAP



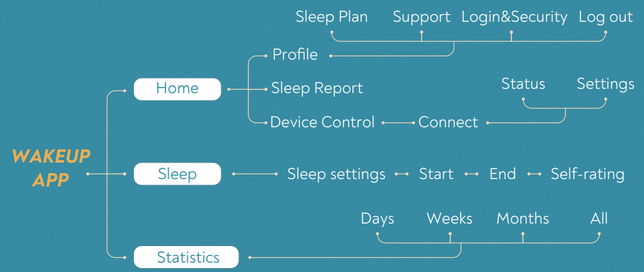
SKETCH



PRODUCT DETAILS

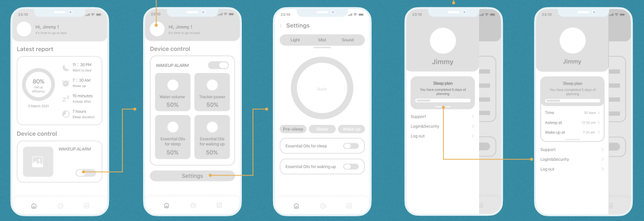


INFORMATION ARCHITECTURE

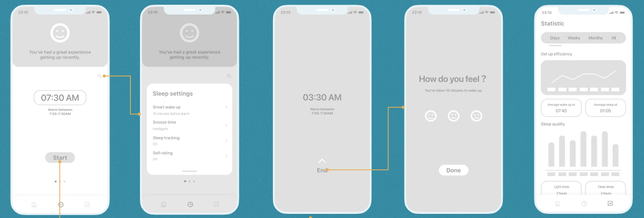


INTERFACE DESIGN

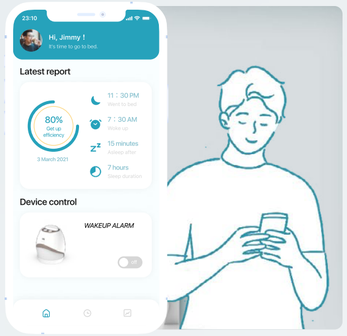
Home Module



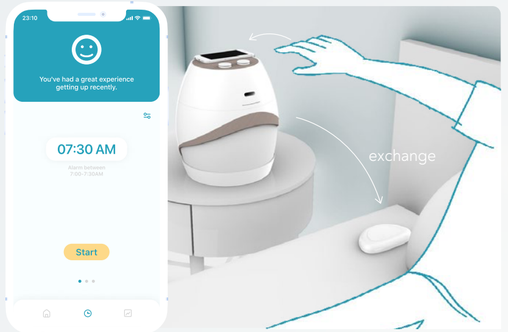
Sleep Module & Statistics Module



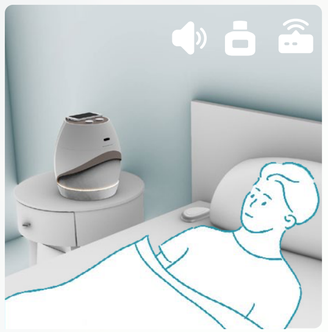
FINAL OUTCOME



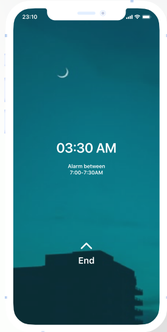
Receive sleep reminder from the app.



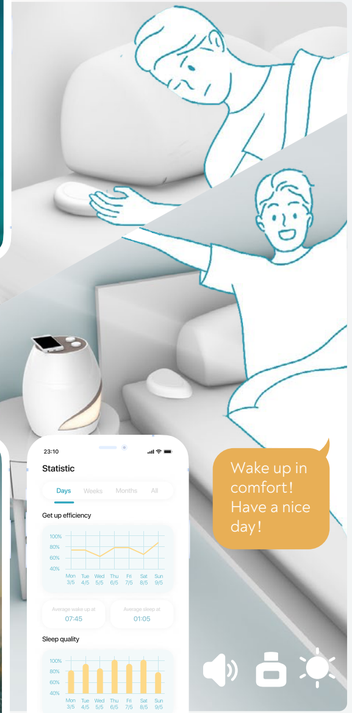
Trigger the device to switch on with mobile phone and place the sleep tracker next to pillow.



Use aromatherapy and pink noise automatically improves sleep quality based on sleep tracking.



Use the sleep sensor as a controller for snoozing.



START 01 02 03 04 05 06 WAKE-UP TIME

Fill the water tank according to the information from the app.

Use the app to set up information about the device.

Use light therapy, aromatherapy and nature sounds to promote sleep.