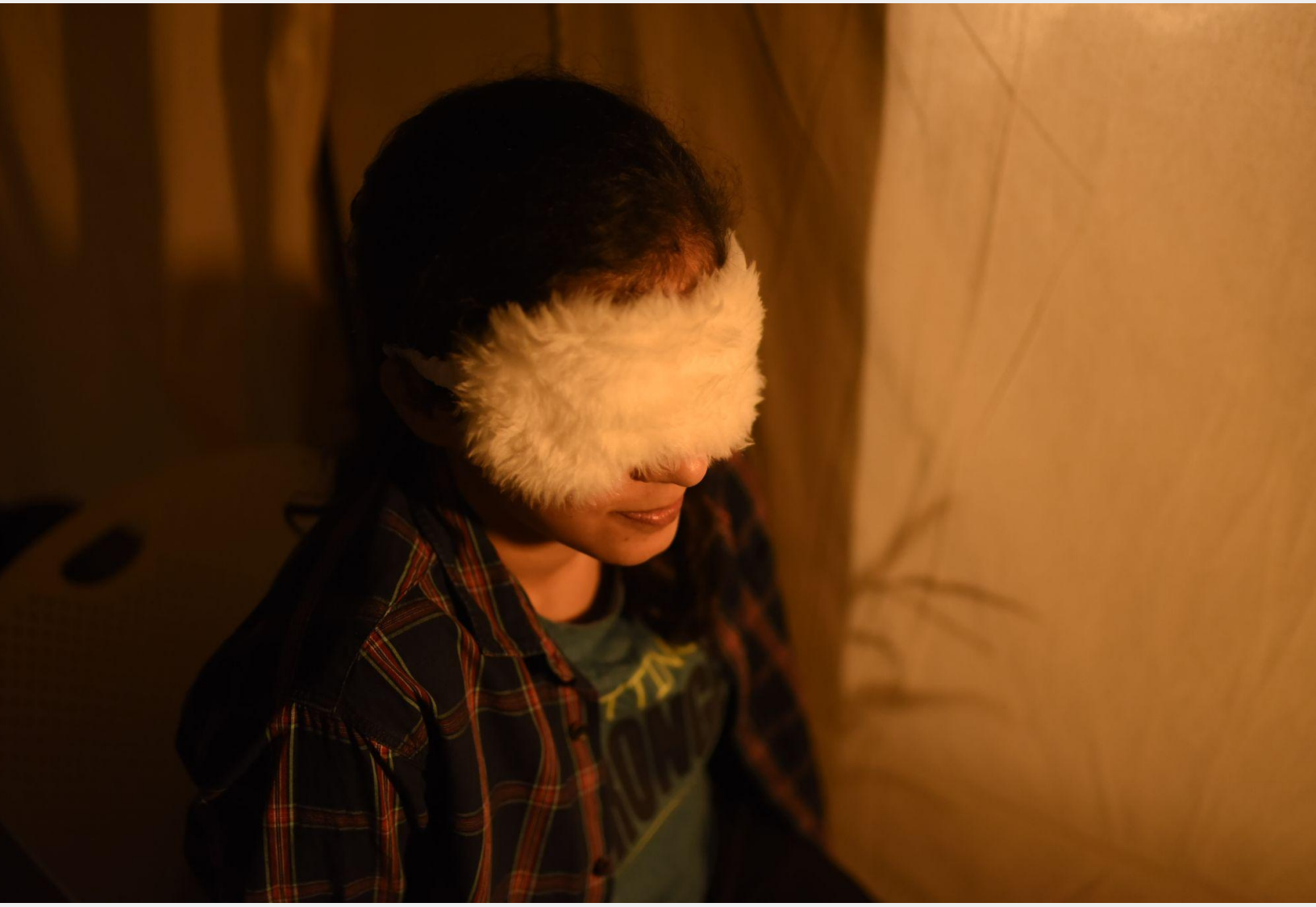

Targeting all 5 senses for a perfect snooze

Snap & Snooze: Whitepaper on New Service Design

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What is a snooze?

A snooze is an afternoon short sleep that is meant for replenishing the energy levels for the rest of the day. In Spanish (which came from Latin *sexta*) it is called Siesta, the sixth hour of the day. In Japanese culture, people take a customary snooze after the midday mead to rejuvenate themselves. In Ayurveda, *Vamkukshi* (Afternoon nap) is recommended for those who suffer from chronic constipation, indigestion, and arthritis. This must not exceed 20-30 mins, or convert into a proper sleep, otherwise, it could damage the circadian clock of the body. In Bengali culture also, there is a term for an afternoon snooze, *Bhaat-Ghoom* (*bhaat*= rice/ *ghoom*= sleep) which is an integral part of the daily Bengali routine.

Importance of Snooze

Snooze, a short nap, power nap, mid-day nap/ Siesta is one type of physical rest that has great health benefits but this cannot amend for last night's sleep discontinuity, nor works as a replacement for sleep in general. It is a brief period of rest to gain focus and mental alertness. Many scientific studies verify the benefits of napping as well as establishing it as an activity to reduce sleepiness. Apart from that, it helps in memory retention, preparation for subsequent learning, boot in motivational stability, etc.

Google, Cisco, and many other conglomerates onboarded sleeping pods designed by MetroNaps. These are stand-alone pods available to employees looking for a private place to snooze. This comes with a dome-shaped top and comfortable seating which is electronically controlled. The pods temporarily cut off the user from outer world distractions for the time, preset by the user, and include a privacy visor, a pre-programmed twenty-minute nap setting, built-in speakers, and timed waking. NASA found that pilots who slept in the cockpit for 26 minutes showed alertness improvements of up to 54 percent and job-performance improvements by 34 percent, compared to pilots who didn't nap. Their ultimate recommendation is power naps between 10 and 20 minutes long.

How to snooze

Our body follows a circadian rhythm often known as the Sleep-Wake cycle. It runs every 24 hours and aligns with our body cycles which affect the secretion of hormones from glands. Exposure to light during daytime causes the body clock to send signals which in return generate alertness and keep us active. In the absence of light, this clock signals the production of melatonin, a hormone that promotes sleep. This way, our circadian rhythm aligns with Day and Night to align sleepiness and wakefulness. This creates a stable cycle of restorative rest that enables proper daytime activity. People suffering from disoriented circadian clock eg. insomnia should not take afternoon snooze as it can confuse the body clock and make to stay awake all night.

Anthropologists and researchers have verified that people used to split their sleep cycle into two 2 parts, the long hours in the night and a smaller snooze in the afternoon. This is called the Biphasic Sleep cycle, and there are many references to this cycle throughout history. In the early 1990s, psychiatrist Thomas Wehr conducted a laboratory experiment in which he exposed a group of people to a short photoperiod (presence of light). By the fourth week, a distinct two-phase sleep pattern emerged. They slept first for four hours, then woke for one to three hours before falling into a second four-hour sleep.

This points towards the consolidated modern sleeping patterns as an artifact of improved lighting technology. To have a proper afternoon snooze, the body clock needs to be trained for the Biphasic sleep cycle, and the snooze should be regulated at the same time every day. The environment/ambiance also plays an important role in the effectiveness of the snooze. In an ideal scenario, the space should be dark, quiet, and roughly 20-24 degrees Celsius temperature. Our body temperature and heart rate lower down when we go to sleep.

Role of our senses for a perfect snooze

Our body has 5 main senses, Vision, Smell, Touch, Sound, and Taste. These sensory organs stimulate neurological signals to our brain guiding and directing our actions both consciously and unconsciously. It's easy to negate the importance of their sensory feedbacks during the sleep state. Many pieces of evidence suggest designing stimulus and their sensorial feedbacks can stimulate a sense of rest and influence sleep.

Stimulus 1: Light

As discussed earlier, our body follows a circadian rhythm that is governed by natural light and darkness. Our eyes perceive sunlight or any artificial light mimicking sunlight as a signal to our brain to stay alert and energized by secreting cortisol, the activeness hormone. During darkness/nighttime, our brain produces melatonin to induce sleepiness and relaxation.

Exposure to artificial light in the evening can delay the circadian rhythm and require more time to feel rested or fall asleep. Studies have found that exposure to light sources with a lux of 10 or higher later in the day can lead to more nocturnal awakenings. A typical sunrise-sunset is considered to be around 400 lux and a small 10 Meter Sq room lit with a single 40-watt tube light is getting around 40 Lux.

Stimulus 2: Scent

Special cells in the nose, called olfactory neurons, receive chemical signals from all kinds of compounds in our environment. These neurons are directly connected to the brain, allowing for rapid identification of smells based on which neurons are stimulated. Scents can reach neurons through the nostrils or from the back of the throat, which is part of why taste and smell are intricately connected.

Since scents can stimulate neurons and articulate brain signals, they are also used to feel calm and rested as well as make you feel more alert and energetic. Aromatherapy with distinct scents may promote better sleep, help you wake up in the morning, or even influence dreams and memory formation during sleep. Circadian rhythms help regulate sleep and influence your sense of smell as well.

Stimulus 3: Haptics

The sense of touch is complicated as it can be sensed throughout our body through the skin. It can be divided into two fundamental senses, sense of pressure and sense of temperature. By targeting these senses separately, we can stimulate them to give signals to the brain.

To stimulate the pressure points, in Chinese traditional medicine, Acupressure techniques were used for relaxation to cure insomnia. According to the study by Suzanna M. Zick, et al, the randomized trial of Acupressure therapy on cancer survivors helped them feel rested and calm and they were able to sleep better. Our hands and feet are one of the most sensitive areas of our body which produces most of our pressure signals every day. These signals can be stimulated to create a peaceful sensation.

The other part of touch is temperature. Numerous study shows that our body temperature falls during our sleep time. When the external environment is conditioned to have a lower temperature than the body, it helps send signals from the temperature receptors to the brain for the secretion of melanin. The body can quickly lower its temperature in this condition and make you feel sleepy.

Stimulus 4: Audio

It is obvious that a person requires a quieter environment to sleep/ rest properly. Loud sounds or unwanted sounds/ noise can cause severe fragmentation and disruption, which in turn has negative impacts on physical and mental health. A human ear can hear a dynamic range from 0dB to 120-130 dB. Above 80dB, it's uncomfortable for ears. The World Health Organization (WHO) and Environmental Protection Agency (EPA) suggest that the level of noise at night in hospitals will not be higher than 35-40 dB. Research even suggests that noise as low as 30dB levels can cause you to shift to a lighter sleep stage or wake up momentarily.

In hospitals, auditory masking, a phenomenon to reduce the perception of a sound by masking it with another sound, is commonly used and a non-pharmacological method. For this, white noise is used, a noise that masks the presence of other sounds in the background so that the sound cannot stimuli the brain activity during sleep/ rest. The

sounds that are used mostly in this regard include sounds like the sound of rain and the sound of ocean waves.

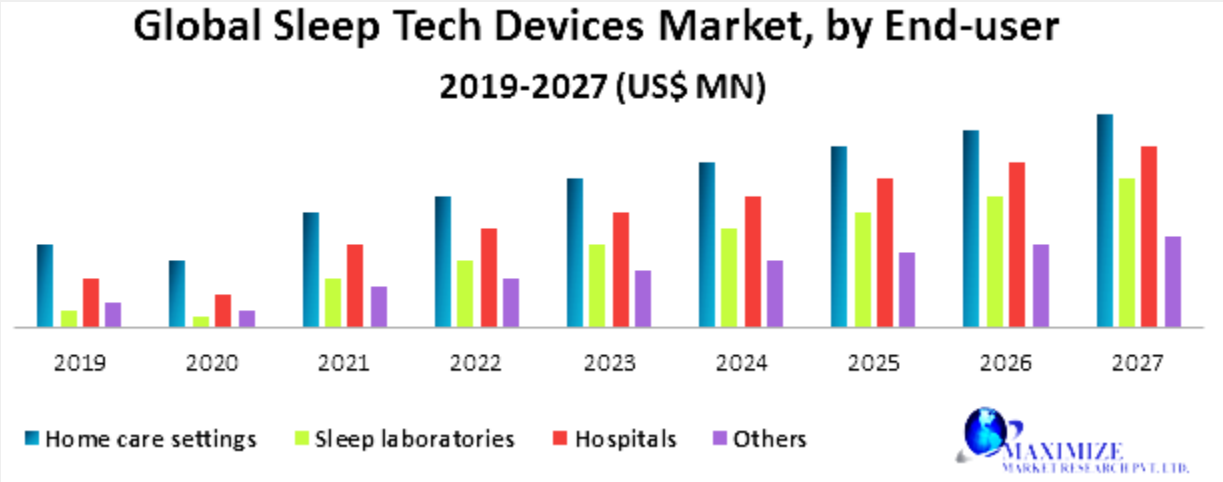
Stimulus 5: Food

Just as the above-stated senses, food, and taste also impacts how our brain delivers a message to our body. The average person has about 10,000 taste buds and they're replaced every 2 weeks and can detect 5 basic tastes, sweet, sour, salty, bitter, and umami. Sensory receptors present in our nostrils together with these 5 basic taste receptors, send signals to the brain through which we recognize these complex tastes.

The food we eat throughout the day and the drinks we consume and their timings can impact our sleep-wake cycle. Certain diets can make it easier or hard to fall asleep. But at the same time, getting enough sleep is linked to maintaining healthy body weight. One caffeinated drink each day, which plays a huge role in sleeplessness. Caffeine might be good for the taste buds but can disrupt your sleep-wake cycle. Alcohol, fatty foods, and food that contains refined sugar should be avoided before sleep. Sugary foods give you energy and cause you to stay awake.

Market trends

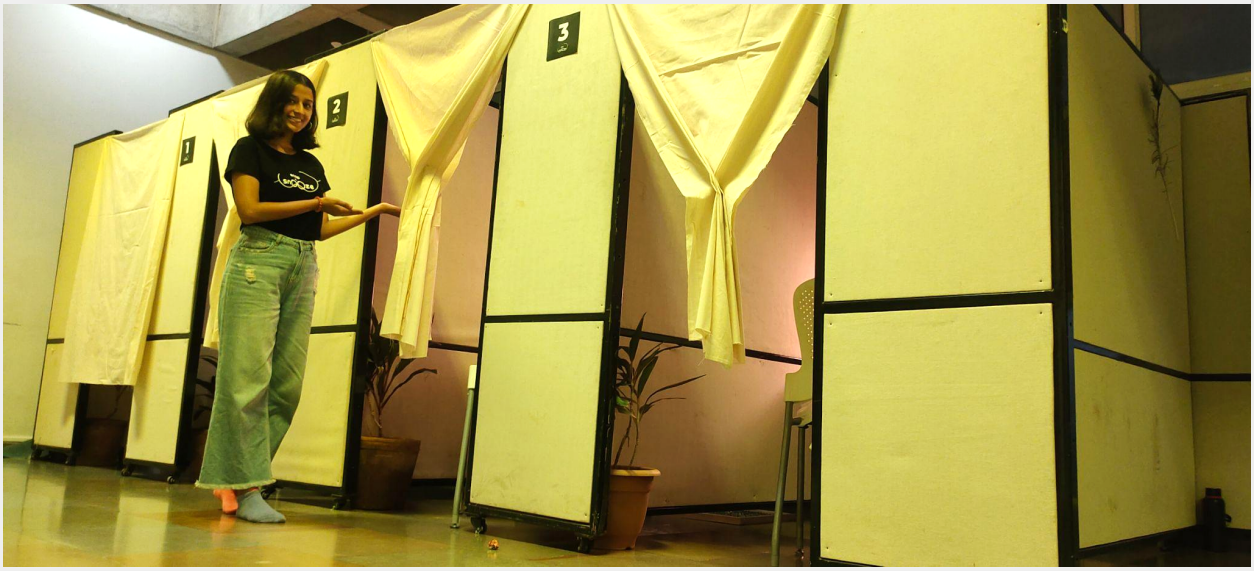
Since the global pandemic hit, people's lifestyle has drastically changed as they're forced to work from home. As a blessing in disguise, people are now investing their time in afternoon naps and sleeping aids which by the way itself is a booming billion-dollar industry worldwide. The global sleep market has a highly diversified product portfolio, as each sleep disorder has its distinct mechanism and symptoms. The growing awareness of the health benefits of sleep has contributed to the increasing demand for smart bedding products as it gathered a revenue of USD 32 billion in 2020. The segment is also witnessing an entry of many new vendors which are following aggressive pricing in the market to gain a significant market share. The medication segment is estimated to grow at a steady pace. The growth of the segment is challenged by possible side effects of sleep medications which are driving the population towards the use of natural sleep aids such as dietary supplements.



Our Service: Snap & Snooze

In these unprecedented times where millennials are overburdened with work. There's is a significant lifestyle change with the introduction to Hustle Culture, a state of overworking to the point where it becomes a lifestyle. When people surround themselves with work all the time, taking rest seems a far-fetched idea and sleep becomes a luxury. The toxic work standards also don't promote a good and healthy lifestyle for their employees and overburden them whenever they're free.

To change the status quo and present an idea of rest, our team designed a guided snooze experience to make our users Relax, Refresh and Rejuvenate so that they can spring back to action with a much calmer and focused mind. Our service, Snap & Snooze is a 25 minutes journey that will take you to a before sleep state with our carefully curated experience center targeting all 5 of your senses. This can be squeezed between your work schedule so that you don't have to feel guilty for taking a rest or recharging.



Our service is broken into 3 important stages-

Stage 1:
In this stage, we try to get rid of all extra thoughts generated by millions of neurons firing in our brain. These could be conscious or unconscious thoughts. Our brain needs a new focus point, a diversion to channelize these neurons towards it. So we designed a journey where we're targeting the sense of touch, sound along with movements. We curated a path, filled with Bubble Wrap, on which a user has to walk.

This bubble wrap walk creates a tickling sensation or a softer version of Acupressure. It makes the user feel light and the popping sound created by the bursting of bubbles diverts all ongoing thoughts towards the experience. The bubble bath is 15 feet long and a user spends on an average 20-30 seconds on it, enjoying their way towards the second stage.

Stage 2:

This stage is where we take our user on the snooze journey. The sense of smell, vision, touch, and hearing are targeted in this stage. Since the user has been distracted from their initial thoughts, it becomes easier for them to focus on the small details like the ambiance of the setup, the scent of the atmosphere, and the low-beat meditative music in the background.

The ambiance is designed to mimic the sensation of a sunset. Warm white lighting roughly around 2000-2500 Kelvin was used. The scents were changing based on the experience journey the user has opted for, eg. during the rain and thunder white noise experience journey, musky lemongrass scent was diffused throughout the experience center. The temperature of the space is kept around 24-26 degrees celsius, which is a comfortable temperature and helps lower the body temperature and blood pressure for the resting journey. In the background, surround speakers were wirelessly connected to the main system, playing a meditative soundtrack when a user enters the space and gradually shifting to white noise designed for a particular experience journey. The user is also provided with an eye mask, a water bottle, and a pod. This pod contains their resting chair with an ottoman.

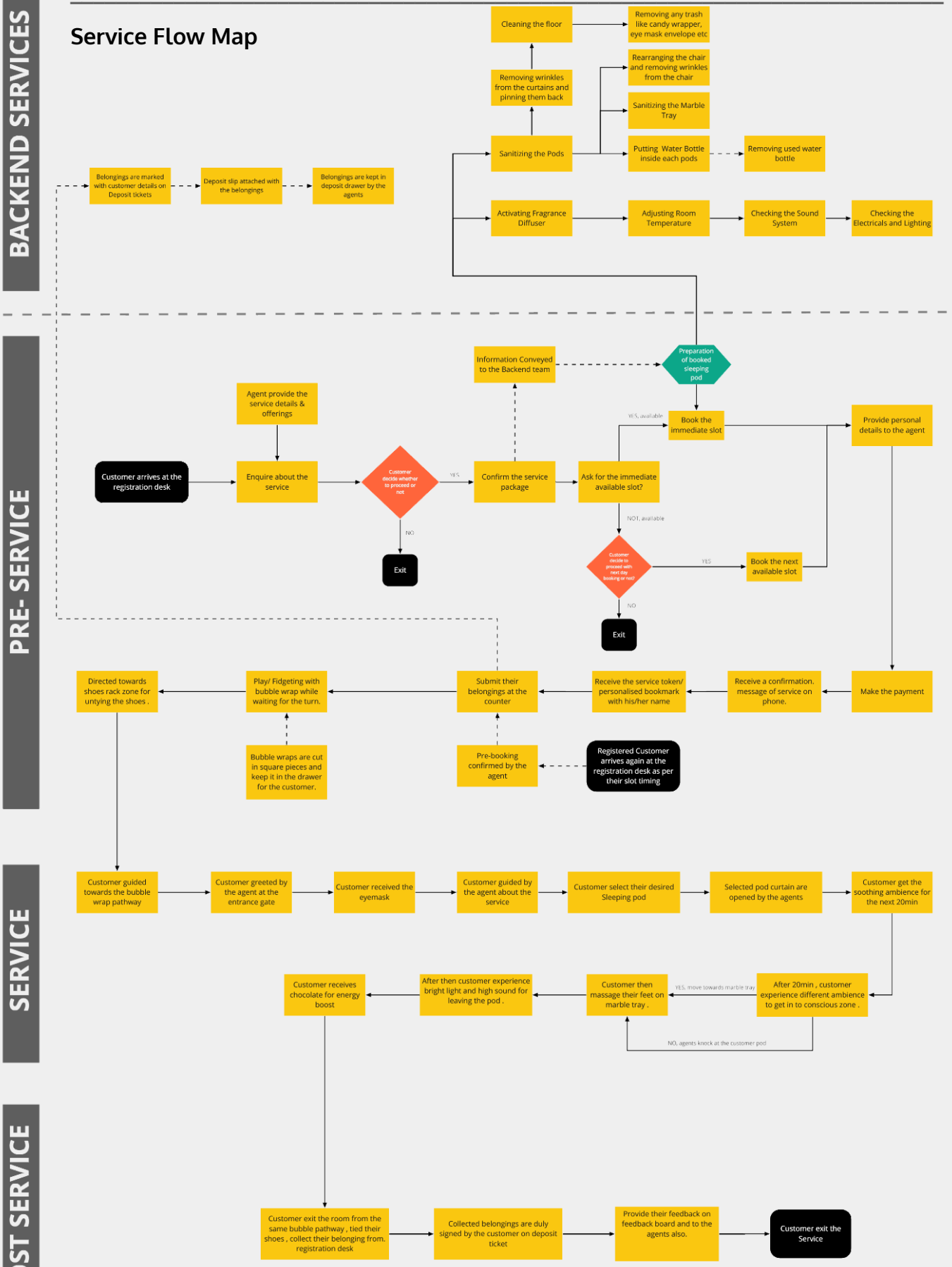
Once the user is settled with the eyemask put on, gradually the lights are being dimmed to zero lux i.e. total darkness. At the same time, there is a slow transition from meditative music to a white noise soundtrack for the next 20 minutes, without any disturbances.

Stage 3:

In this final stage, now we elevate the user's energy levels. Once the 20 min white noise session is over, the background music is again gradually shifted back to the meditative music. This acts as a signal to the users to wake up. Parallelly the lights are being lit up and the user removes their eye mask. They can drink some water, this helps them to break the sleep inertia. This is followed by an Acupressure foot massage. As per Chinese Medicine and studies, several points under our feet, pressed correctly can have calming effects on the mind and body. The users are provided with a wooden tray filled with colorful glass marbles, on which they have to roll their feet for 2 minutes. The coldness of marbles, the pressure points, color, and their rattling sound helps the user gain energy and alertness. The background music stops once the time for a foot massage is over.

Once the user comes out of their pod, they receive chocolate which they have to consume on spot. This chocolate gives a sugar rush and makes the user feel more energetic. The taste-smell of chocolate also helps in complete relaxation. This also marks the end of their journey inside the experience center. The user once again has to walk through the bubble wrap path as this levels up the excitement levels and they feel fresh as a daisy. The service is designed in such a way that a single user or a group of 4 people can experience it at the same time in the prototyping stage. Everyone will have their pods, completely isolated from the outside world.

Service Flow Map



Branding and Promotions

Our service was prototyped at the National Institute of Design for 5 days. The service branding and promotions were done within the campus only due to Covid-19 bio-bubble restrictions. The primary user group identified were the students, stressed and burdened with the ongoing campus activities. Followed by teaching and administrative staff and lastly the housekeeping staff.

The interactions points were strategically placed and blended with the promotions. These were positioned in spaces where users were mostly alone with their thoughts. We identified these spaces inside the campus where people perform mundane activities or can reflect on their thoughts without disturbances. We designed posters and small standees which include service detail, registration detail, and experience center location data for the users. The posters were placed in the washrooms adjacent to the mirrors and on the water coolers. These posters were interacting with the user by inducing the effect of yawning in them. Similarly, yawning standees were placed in the library and faculty lounge.

We also designed a billboard-styled message which was placed on the library glass wall, facing the academic block. The billboard size was approximately 18 feet wide and 10 feet high. The message was "*Powernaps: It's claimed these were used by Leonardo Da Vinci, who slept for 15 minutes every 4 hours*" and it was selected to induce the feeling of importance and establish its connection to the greatest painter, artist, sculptor, architect, engineer ever known to mankind. Simultaneously, we floated closed group messages as a part of our telemarketing strategy via WhatsApp and emailers.

Our logo was crafted keeping brand perception in mind. The logo was introduced to every interaction point and service artifact. Agents were given "Snap & Snooze" branded t-shirts, which also was an indicator of active service and brand recognition. Service artifacts included the eye-mask, brochure, token-cum-bookmark, and water bottle.

Business Model

two major business models were orbiting around the service model. The first one is the service subscription model, in this, the user can also opt for a 2 or 3 consecutive day package. We curated 3 different experience journeys for each day during the prototype stage. This also helped us understand the conversion rate from single-day experience to 3 days service experience.

The key differentiating factor in our service is total isolation and the guidance of agents. During our primary research, we found that people feel shy and ashamed of taking rest during work hours. They feel overwhelmed by the responsibilities of work thus resulting to avoid power naps or snoozing. We also discovered students relying on their friends to wake them up in case they're taking a nap and not relying on a digital alarm. During our internal snooze prototype testing, we found students felt reliance on agents was keeping them less worried. Students were not comfortable with snoozing in the academic blocks as there was no isolated space and they felt conscious around other students which heightens their attention span and disturbs the resting time.

The pricing model was detailed out keeping both internal and external factors in mind. Internal factors were the time when the prototype was executed and cash debit experienced by the students at the campus for common mess fees. External factors are the timeline getting overlapped with *Navratri* and *Garba* night and the cash debit on celebrations. Another parallel event "Listening to Sleep" was occurring at the NID auditorium which was organized by the New Media Design department. Keeping all these constraints in mind and the group's initial seed funding, we designed our pricing strategy.

Experience	Take Aways	No. of Days	Price
Basic	1 Eye Mask + Token/ Bookmark + Water Bottle + Chocolate	1	₹100
Classic		2	₹150
Premium		3	₹250

Our second business model was selling Eye-Mask as a sleep accessory, It was placed as an addon accessory for those who might want to buy another pair for themselves or their friends and family. It was priced at ₹75/ piece.

Critical Reflection of the service prototype

What worked

Apart from designing the whole service experience, our diverse team of 4 Strategic Design Management students had some advantages due to their experience directly or indirectly. We were able to design, iterate and develop the brand language, experience ambiance, materials-props, service artifacts, etc. This saved our time and expense of outsourcing. We were also fortunate enough to get access to campus space, electricity, air-conditioning, materials, and lab resources.

Our team of 4 was divided into 2 parts, 2 agents (let's say team A) operating the reception desk where they explained our service and offerings to interested students/ staff and guided them throughout Stage 1. Stage 2 was handled by 2 agents(Let's say team B) inside the experience center guiding them through the experience center journey, facilitating them with service artifacts, and helping them out if needed. They are also tasked with operating the Light, Sound, and managing the entire process. Stage 3 was partly handled by both teams A and B. The team was not consistent, they were changing as per need, eg to make female users comfortable inside the experience center, Female agents were handling operations and male agents were handling Stage 1 and the onboarding process at the reception desk.

Brand positioning and marketing were effective due to the small, close-knit community of 100+ designers and staff. The spaces where promotional activities were held were carefully planned and surveyed by shadowing students. The location of the Snap & Snooze experience center was also an advantage. It was in the main academic block, near the Library, and on the way towards the faculty lounge and administrative block. We received assistance from the NID support staff for everyday cleaning which saved our time and resources so we could focus on operating the center.

We also designed our word of mouth by designing our service artifacts and props aimed to spark a conversation between students and faculty. The eye mask was a great success as users were flaunting them on their forehead which spark curiosity and interest among other students to try out our service. Followed by the customized token-cum-bookmarks.

For the main service part, our users were able to settle down quickly and within 5 minutes they were calm and able to relax. During the feedback session, we found that users were focusing on the White noise soundtrack, and with the eye mask on, they were able to imagine a dream-like state. Some users also reported that the scent unlocked their distant memories which they were able to recall during the 20 min session. There was also a loss of sense of time which helped them perceive the snoozing session as more fulfilling than the usual 20 min, this gave a sensation of longer rest time.

What didn't work

At first impressing our service interactions didn't convey the perfect sense of the service, people started perceiving it as a sleeping area and felt no need for that. The promotions failed to promote snooze/ naps different than actual sleep. People were unaware of the sleep cycles and stages of sleep.

The real need which our service was targeting was lack of proper rest and the lack of properly isolated space for the same. People felt they just need a cup of coffee/ tea to feel then refreshed and they can go back to sleep during nighttime. It gained momentum in terms of users when they got feedback from word of mouth via our early adaptors.

We faced a difficulty of accommodation during peak times i.e. after lunchtime. During the prototyping stage, we were able to cater to 4 users only and it took 30 min to complete a cycle. Users demanding service in between cycles were asked to wait but we found them getting anxious and it felt a waste of time to wait for the service, so they left and we coordinated with them on the next available slots. The waiting time was making users anxious and due to their busy schedule and work pressure, many users dropped out.

There were a few service components we failed to anticipate before the prototype session. We encountered a problem when a student twisted her ankle and was using a wheelchair. When she visited our service, the sitting position in the second stage was not helpful for her as she was unable to raise her leg. This was a critical moment for our service where we failed to anticipate the needs of users with physical disabilities.

There were also moments where users were experiencing their deep latent memories and some of them were not happy moments, which made few users disconnect with the experience and created distress. That was a major flaw that we came across during prototyping. Some users were also unable to connect with the white noise soundtrack as they have not experienced those journeys in real life.

Our service had a major reliance on the ergonomics of the resting chair. This needs a recliner with a comfortable sitting resting position with armrests. For the service prototype, we repurposed common office chairs by locking their bent plate. This created a pseudo recliner effect covered with white sheets and pillows attached to it. The problem with this chair is the ergonomics and the creaking noise it was making which sometimes disturbed the users during service tenure. We also realized total soundproofing of individual pods is a must. There were instances where one user had to leave due to some reason and it disturbed the other 3.

The Way Forward

These reflections during and after the prototyping stage cleared many uncertainties and opened new perspectives for Snap & Snooze. As a service model, there are numerous possibilities to automate trivial processes and redirect agents towards the service stages. The user data also reveals there's a high demand for our service in high-stress environments which can be replicated in areas like Hospitals, Factories, etc.

The business scenario with the agent inclusive model is novel to the billion-dollar sleep market, as companies are focusing too much on producing products, not services. To scale this model, in short term, Snap & Snooze can collaborate with firms and set up the experience center at their premise and introduce either a monthly subscription model or a company-sponsored service model for their employees. Additional to this, Snap & Snooze can use the experience center to promote, advertise and sell sleep accessories, tapping into another million-dollar industry.

About Team Snap & Snooze

From Left to Right

Swati Bouddh | Shubham Das | Amit Kumar | Miti Makwana

Our team is currently studying Strategic Design Management at the National Institute of Design, having diverse backgrounds and experiences. Swati Bouddh hails from a Fashion Technology background, having work experience in production line management. Amit Kumar holds a bachelor's degree in Commerce background along with Branding and Promotions work experience. Miti Makwana graduated with a bachelor's degree in Bio-Technology and Shubham Das has an Architectural Design and Interiors background. Together all of us stand as the founding pillars of Snap & Snooze adding and building experience for our Service.