

Title

Product-IVE

Team Members

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Problem and Solution Overview

Most people have a sense of how and why they are being unproductive. Some people easily get annoyed by the noise, some people spend too much time on social media, some people like to browse websites. From our previous interviews and questionnaire with contextual inquiry target, stakeholder, and participants, we found that most people have concerns about finding the right place for working. Our solution is aiming to solve this general issue, and helping people to find the best environment which fits any working style. By collecting data (such as: noise level, brightness, etc) from each site, our product will suggest a list of locations for working that fits to the users the initial requirement; while the user using our product more, with the user's feedback, our product will calculate and learn the productivity pattern of each user under different environments. Therefore, the more people using the product, the more accurate the environment data will be; and the more each user use it, the better suggestion will be produced for the particular user's style.

Contextual Inquiry Target, Stakeholders, and Participants

In order to get a better sense of people's struggles with productivity, their work lives, and the techniques they use to manage their time, we interviewed different potential users of our productivity tool using contextual inquiry methods. Our observations and interviews all took place either at the University of Washington or on Skype. During our interviews we made sure to keep master and apprentice relationship in mind in order to avoid it feeling like a formal interview. We wanted our participants to come from different backgrounds but all face similar issues with productivity. Since we were mostly interested in their plans and experiences trying to achieve a productive work environment, we found it more useful to ask the user to describe several contexts and scenarios and how they behaved in those circumstances, rather than reducing it to a simple observation. Following is what emerged from these interviews.

Emily

Emily is a Junior at the University of Washington studying Linguistics. As a student, she spends a lot of time doing homework and studying for her classes. She varies between studying in libraries, coffee shops, and at home. She struggles with studying at home due to all the distractions there, but found that separating work and life helped her to stay more focused. We interviewed Emily about the different places she studies and how she manages her productivity. We interviewed her because she embodies a typical college student, which is one of our main categories of users, and had plenty of struggles that most college students could relate to.

Justin

Justin is a Software engineer at Amazon in his late-twenties. Justin usually does most of his working from work, and can't work at home at all because of all of the distractions. He also gets easily distracted listening other people's conversations at work. His favorite place to work is a coffee shop by himself. We chose Justin because he has a job that keeps him extremely busy and wanted to see how he got around managing his time compared to college students.

Owen

Owen is a 21 year old Culinary Arts student at the Art Institute of Seattle. He lives in a house with 3 other people his own age. He always studies at home because he gets hungry often and gets easily distracted by noises and other people in general. He doesn't have significant distractions, but still wishes he could use his time more productively. We chose to interview him because of his contrast with the other two interviewees and because hoped we could get some insights from his more productive lifestyle.

Contextual Inquiry Results and Themes

Avoiding distractions

All participants experienced being less productive due to certain distractions, and each one had a series of tips and tricks to avoid these distractions. Both Emily and Justin avoid studying or getting work done while at home, because of the many distractions they face there. The fact that nobody is around them and they are in the comfort of their own home makes the 5 minute TV breaks last hours and they end up falling asleep especially if doing something boring. According to Justin a walk is also more effective than TV in letting your mind take a break from your work anyways.

Emily and Owen check their phones often, and more often if expecting something. All three of them expressed the fact that to improve work they will leave their phones in other places that are not visible or in immediate reach rather than just putting it on silent.

Choosing a work place

The way people go about choosing a place to work is highly correlated to where they feel they will have the least distractions. This is a way to prevent your future self from wasting time. Emily and Justin do this by choosing public places such as coffee shops or libraries; the atmosphere, lighting, and coffee provide the perfect environment for them to be more productive and get more stuff done there. Justin's ideal spot is the coffee shop near his house because none of his colleagues or people he knows go there.

On the other hand, Owen would much rather study at home because to him being close to people talking and moving around is more distracting than anything he experiences at home, and he can actually focus more when his surroundings are quiet.

Friendly competition

From all of the interviews, the comparison with other people emerged quite often. While all three people said working with other people in the same room reduced their productivity by increasing the possibility of getting distracted, they all mentioned how they get inspired and admire people that are able to be more productive than them and can make better use of their time. For example, Justin spends a lot of time of his observing how the more experienced engineers handle their time and work.

Emily said she needs the extra motivation and push from her friends to be more productive. In the context of working out, she mentioned how she started enjoying it only after she was peer pressured into joining an

intramural volleyball team by her friends. She also mentioned how her cousin that has a fitbit is running more because he's trying to beat his friends, and how this spirit of friendly competition could be helpful.

Rewards

Everyone we interviewed had some kind of reward system in place for when they accomplished something. Emily said she used to give herself rewards, but then stopped when found that it wasn't helping her stop her bad habits and she would just indulge in the rewards. Justin rewards himself by buying a coffee and cakes when he is studying or working hard. Owen rewards himself after accomplishing his goal by watching youtube videos.

Time Management

Both Emily and Justin try to set a goal before starting to study/work of what they want to achieve, both had issues underestimating the time it took to complete these tasks or believing too much of themselves. Both expressed belief that this was due to getting distracted, Justin stated that he was working at least an extra hour every day to try and achieve this.

Answers to Task Analysis Questions

Who is going to use the design?

No matter what profession you are working in, productivity matters. Getting more done in less time means getting the most out of yourself. Our group is working on designing a technology solution for people who struggle with improving their levels of productivity, and want to find an effective way to track it. Anyone who lacks self-motivation or a goal-oriented strategy to achieve higher productivity can benefit from our data-driven app. Our potential users also include those who are concerned with their colleagues/classmates being procrastinating and want to boost their team productivity.

What tasks do they now perform?

People now pick places to work that they generally are productive in. They also attempt to limit distractions, like friends and coworkers' discussions, phone alerts, and email, though are not always successful. People are usually good at identifying that they have a tendency to get distracted while working on something, though do not always take the appropriate steps to limit the distractions.

What tasks are desired?

Our users want to be able to identify when they are most productive and what things cause them to become most distracted. It might be helpful, for example, to take a short break once an hour, but certain things like Netflix may cause a bigger hindrance to their overall productivity than an alternate activity. Additionally, users want to improve their organizational skills so that they can be more productive. Things like learning what time of day they work most efficiently may also be useful.

How are the tasks learned?

Users generally learn where they best work through trying out different places. They may notice which things they habitually do that hinder their work effort or improve it, and perhaps take that into consideration when choosing how to work in the future. Organizational skills are learned from the internet, friends, and colleagues, though are not perhaps followed through well, as Emily noted.

Where are the tasks performed?

Emily usually gets more work done in school library, and coffee shop with mild music. Our tasks of tracking work sessions are performed in traditional work environment such as classrooms and offices, and in some popular work spots including libraries, home, coffee shops, and study center. Acquiring organizational skills is performed either in interpersonal communication or in mobile devices. People gain insight into their families and friends' experience in discussion, either in person, through phone, or online. And mobile apps keep people organized through their calendar.

What is the relationship between the person and data?

The data is a representation of the individual's work habits. It tracks where and when they work, how long they are productive, noise levels, and various user input. Each location has stats on how many times they have worked there and how effective they were. The data also contains information on what things commonly distract the user and which tasks lead them to be more productive. After gaining enough data, reports can be made to better understand productivity rates in different areas and with different environmental factors.

What other tools does the person have?

Emily had a good experience using a mobile app called Awesome Note, which is a powerful all-in-one organizer that combines notes, calendar, to-do list, grocery list, and reminders on when to do things. She particularly enjoyed keeping everything in one intuitive interface and adding pictures to notes. There are plenty of mobile app for time tracking and management that are freely available for smartphone users. Emily also has a old fashioned planner to create a visual layout of her daily tasks and record ideas, but she find it inconvenient to carry it around.

How do people communicate with each other?

People struggling with productivity find others in the same boat through discussion on social media and online discussion board, and help motivate each other. They can also create the blogs online and share their progress toward higher levels of productivity with broader audience. Those who study in the same schools or work in the same organizations can talk in person, and become accountability buddies that regularly stay in touch about their goals. share experience and cheer each other up.

How often are the tasks performed?

The tasks of productivity tracking are performed as often as people start a work session, which likely occur more often on weekdays than on weekends. Identification of the best work environments can be performed after enough data is gathered. Once it has, this task may be performed as often as necessary, based on changes to data. The tasks of gaining organizational skills are done every few cycles of the previous tasks, whose results are interpreted in order to determine what can be done to improve them.

What are the time constraints on the tasks?

The time constraints of the tasks are long for identifying best practices and where is best to work and latencies are accepted as the product will have to analyze trends and propose ideas. For reducing/removing distractions while working we would have to analyze data in realtime, e.g. detect surroundings would need to be done in somewhat realtime.

What happens when things go wrong?

Emily lacks the motivation to set up a detailed calendar and stick to it throughout the day. This doesn't help allocate her time in accordance with the importance or order of tasks. Moreover, people may be unaware of their most productive time of day, thus failing to matching their most important work with the most productive

hours. Spending the most productive time on easy/trivial tasks will take up the time for more challenging tasks. Lastly, people lacking of continuous motivation are likely to quit as the motivation decreases. Emily mentioned that she went the gym because of a friend. But this kind of external motivation is not predictable or guaranteed to last long, and she may quit as soon as she has no friend to go with.

Tasks

#1: Keeping track of important factors of a work session

Easy

Justin is in his late-20s and is a software developer. He prefers working in a cafe because when working at home he gets distracted by TV, and at work he is distracted by his coworkers' conversations. Justin is convinced, based on experiences, that he is more productive at a cafe. However, he isn't sure if there are other factors he wasn't aware of, such as time of a day and atmosphere. He wishes to track all the factors that can hurt or boost his productivity and identify the ones that would make for his ideal work environment.

#2: Getting motivated through friendly competition

Easy

Erika, 24, is a student at the Art Institute of Seattle, studying Game Art and Design. She often works at home because she needs a desktop computer to do all of her school work. This makes her easily distracted because her bed and TV are so nearby. However, she is very competitive and whenever she goes to class and sees one of her friends has made an incredible project, she is inspired to work harder and be more productive in order to produce something that is even better. She also likes running and has a FitBit, so she wishes that the same spirit of friendly competition over fitness could be translated to productivity as well.

#3: Limiting distractions and improving productivity through positive breaks

Moderate

Max is in his early 30's and is a software developer at Microsoft. He is a bit of a workaholic but as soon as he gets home becomes super lazy. When at work, he could be on the computer for several hours in a row without taking a break. On the other hand, when he has to finish work at home, taking a break easily turns into a nap or a tv series marathon. He heard it is good to take a break often, but is too concentrated on the task at hand while at his office, and when he's at home he always gets distracted. He thinks having something suggesting him when to start/stop a break and for how long would be beneficial for him both at work, by allowing him to clear his mind, and at home, by bringing his focus back to his unfinished work.

#4: Achieving rewards for milestones met

Moderate

Jennifer is a freshman at UW, and is still undecided about her major. She loves watching Gossip Girl and put in place a system where she rewards herself with one episode every time she studies for 2 hours without distractions. However, lately she has been over indulging in her rewards, so she is thinking about stopping because this reward system may not be right for her. In particular, she has trouble defining what the appropriate reward for different milestones should be, and thinks giving herself a reward doesn't feel as validating as someone else giving it to you, so she is searching online for a system that will do that for her.

#5: Learning where you are most productive

Hard

Alex in his 30's and is looking for a job while working part-time as an off-site consultant for a design firm. He often works from home but also likes switching spots so he can take a walk and grab some coffee. He really loves coffee, and usually changes places to find the best cup of coffee around. After having gone to most coffee shops in his area, he wonders which one of these places has the working environment most suited for him and which one contributes most to his productivity, or if he is instead more productive at home.

#6: Finding the perfect work environment

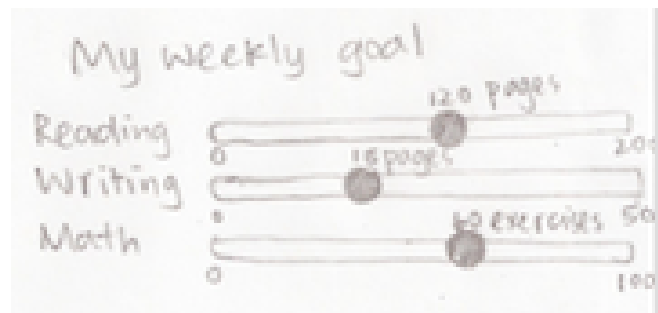
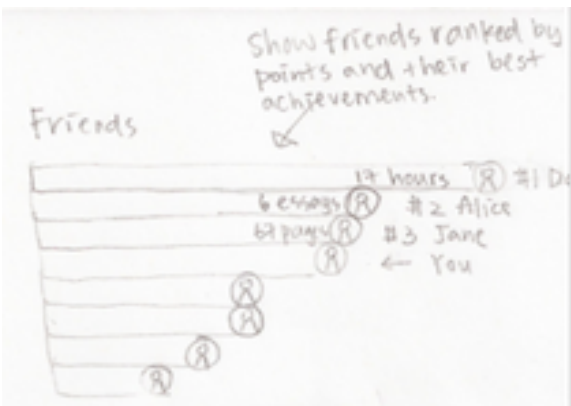
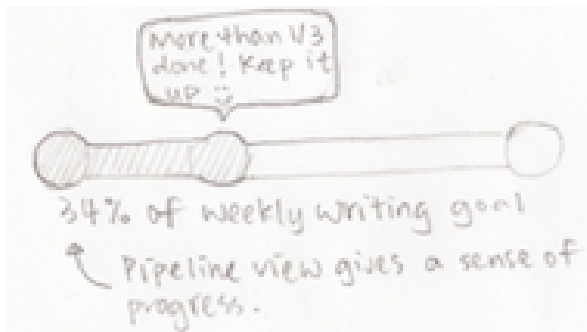
Hard

Alice is a senior at UW, majoring in Environmental Sciences. She enjoys studying at the libraries on campus in the quiet morning with a little bit of background noise, but later during the day the libraries get too noisy and she has to go to a cafe near her house. However it is not always her best choice because it's far away from campus and, being that it's a family run cafe, their hours are not always consistent. She'd love to find a place closer to school but has the same atmosphere as the library in the morning, but there isn't an easy way to do that without visiting each potential study spot personally.

Proposed Design Sketches

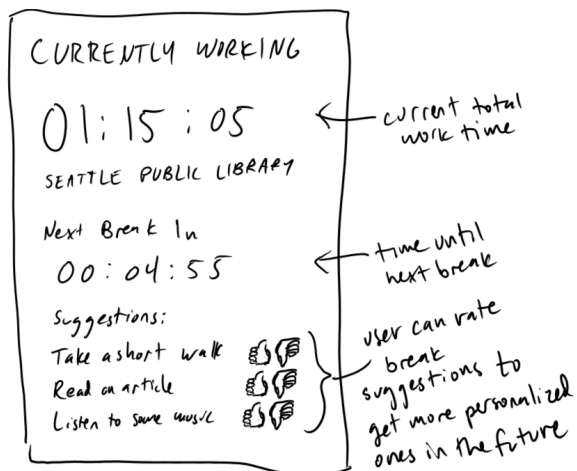
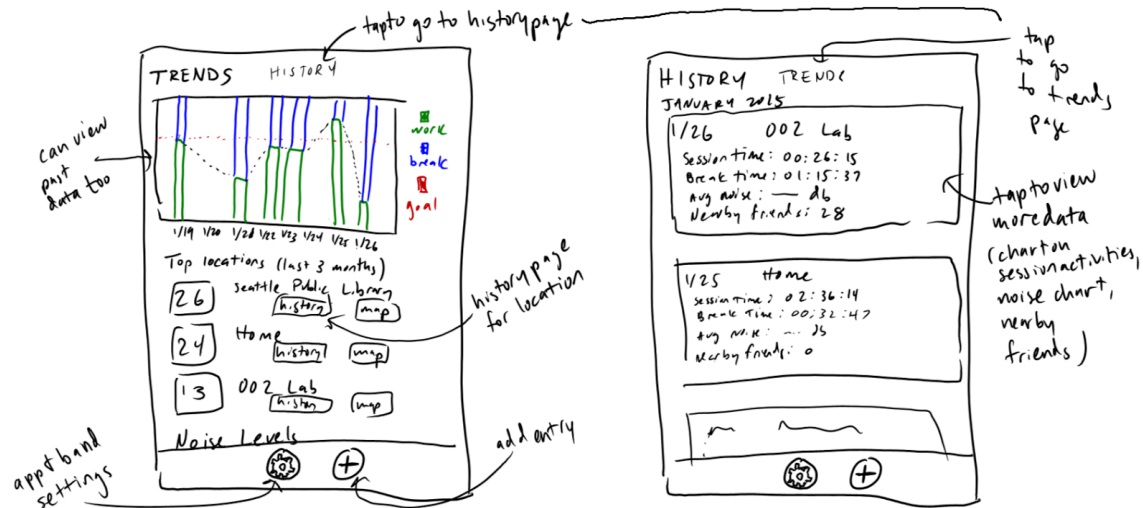
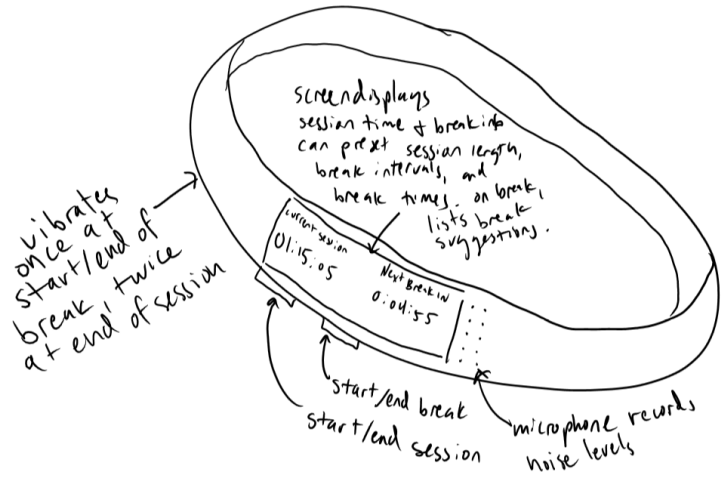
Social web application - Tasks 1, 2, 4

Our first design is a web-based app that turns social media into a powerful motivational tool for improving productivity. We realized that peer pressure data could potentially help satisfy the social and emotional needs to fundamentally change our behavior. By giving users visual rewards, our web app encourages them to celebrate their rising productivity with their friends on social media, and to work with friends having similar goals or at the similar productivity level.



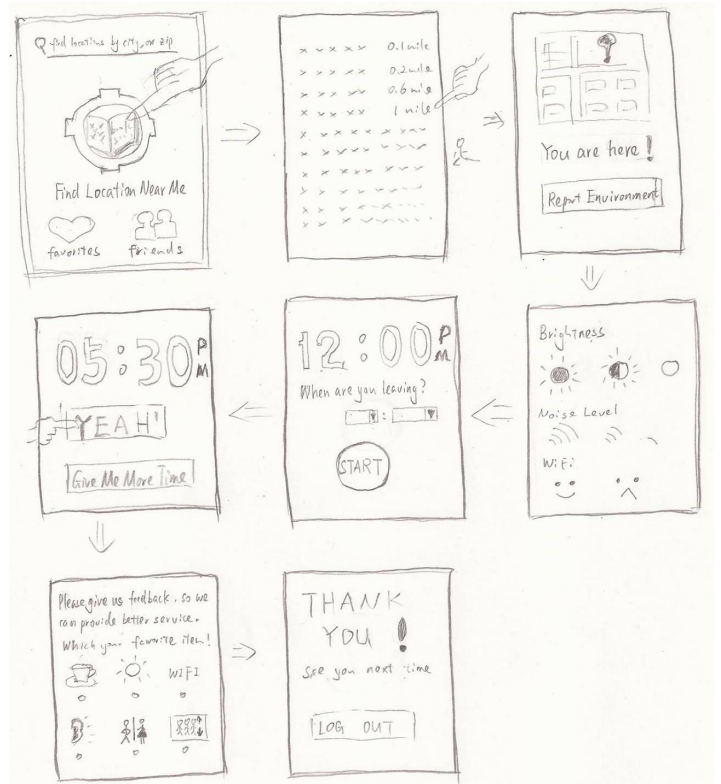
Wearable + app combo for data analysis - Tasks 1, 3, 5

Our second design is a wearable wristband with a companion app for data viewing and analysis. It keeps track of how long someone is being productive during a work session and alerts them to when they should take breaks and then get back to work. The user can preset full work session lengths, break frequencies, and break times using the wristband's companion app. During a work session, the band will vibrate to tell the user that it is time to take a break. After the appropriate amount of time has passed, the band will vibrate again to signify that the break has ended. The band vibrates twice at the end of the work session. At any time, the user may choose to start or end a break or even end the work session by pressing buttons on the band.



Location suggestion mobile application Tasks 1, 5, 6

Our third design is a mobile application that focuses on the tasks: location suggesting, data collecting, and pattern learning on each individual user. The strength of this design is in its simplicity, yet also contains compact functionality. It allows a user to explore his or her location options, and personalize options such as when a user starts to work, he or she can choose hit the “start” button to have the phone under no disturb mode to eliminate distractions. After finishing, feedback is collected for the user; and a pattern on a user’s preference can be learnt. This way the application can keep improving, thus providing better options for when the user needs to work again.



Selected design

Our final design will be a wearable, in the form of a wristband, that tracks and record work session data, including relative factors such as time, location, light exposure, noise level, and weather. The wearable will also have the ability to synchronize to a mobile application which will analyze the data, learn patterns and suggest new personalized locations for work sessions based on its data. For our design, we ended up focusing on 2 main tasks:

Task 1: Keeping track of important factors of a work session

Task 6: Finding the perfect working environment

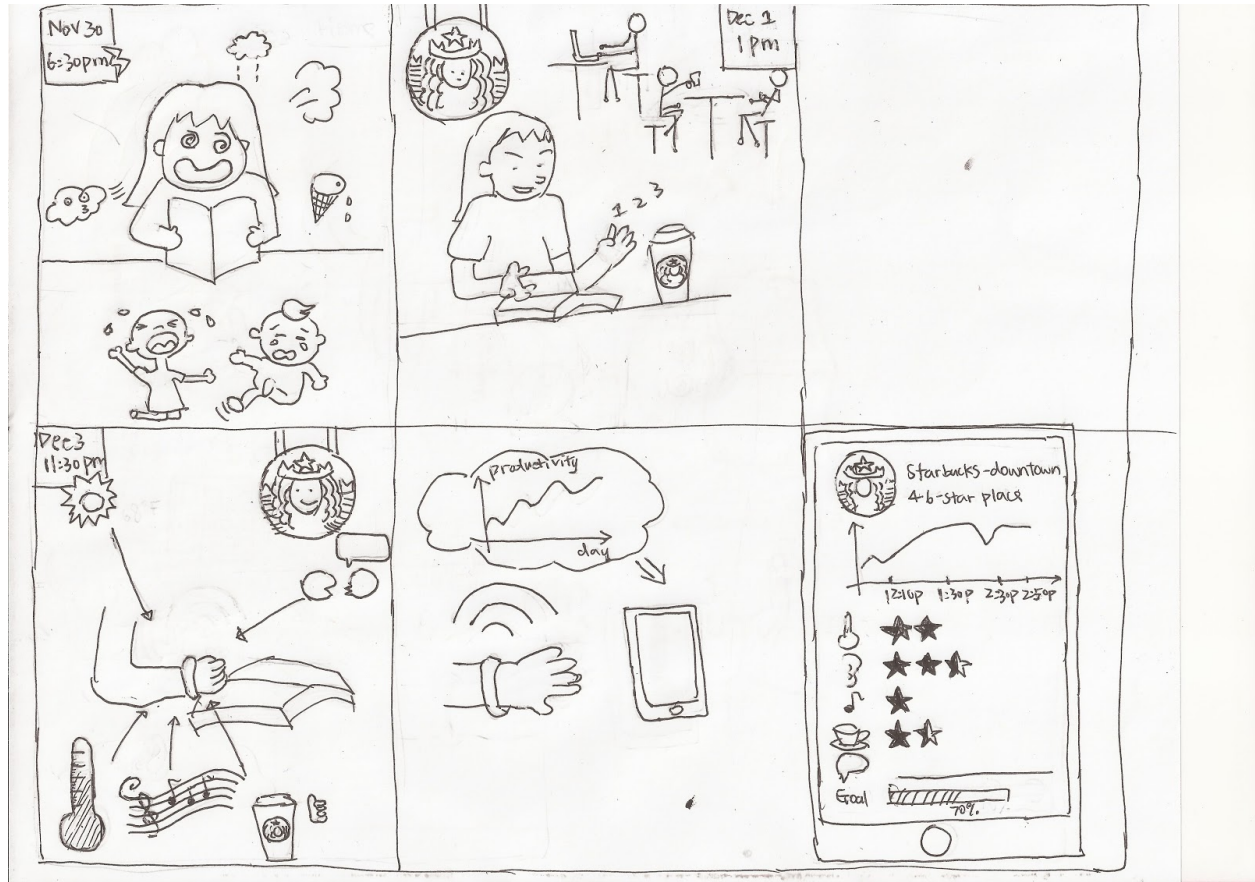
We chose to pursue these tasks because, based on our contextual inquiry, the issue that was raised the most as the main cause of lack of productivity was choice of location. Moreover, it appeared that, although some people had an idea of what environment worked best for them, a lot of others were clueless and did not have a specific method of tracking this. Once they found a place that suited them, they would keep going there, often at the expense of better or more practical locations. In this case, our suggestions would help make the best, and most productive, decision even if someone already has a spot in mind.

As a team, we think these two tasks are the most compelling because they address specifically the needs of our target audience, incorporating the ability to choose for themselves or listen to our suggestions, providing that aspect of personalization that often lacks in productivity-based products.

We feel this design is best suited for the people we are targeting because the conclusions come directly from the contextual inquiry participants. We are targeting that generation that wants to be as productive as possible, is tech-savvy, and hates entering data and filling out things.

Storyboards and Scenarios

Task 1: Keeping track of important factors of a work session



Jessica is a part-time student with a full time job. She doesn't like to work on her school work at home, because her children often distract her. Therefore, she always picks a public place to do her school work. She worked in public library very often, believing that the quiet environment contributes to her productivity. One day, on her way to the library, she stopped and bought a coffee from a coffee shop that has many big tables, and ceiling to floor windows with nice sunshine coming through. She saw that there were already a few people working. "Why don't I just study here," she thought. And she took the gamble. Then a great thing happened -- she got more work done here than in the library and could save 20 minutes walking there. She was a little confused, since the coffee shop had more traffic and noise than the library, so theoretically it was not an ideal place for her. Later, she discovered IVE, and she wore it to both the library and coffee shop to test what factors contributed most to her productivity. The IVE band worked very well; it recorded all the surrounding information and analyzed it. After reading the analysis, Jessica found there were factors, in this case sunlight and coffee, that positively contributed to her productivity, while noise wasn't an issue. These were things that she never thought about. She is amazed by the IVE band. She now knows what she should look for to find a perfect work environment and takes her IVE band with her to find other factors that may impact her work.

Task 6: Finding the perfect work environment



Jeremy is an accountant for a small company in Seattle. He often gets distracted by his coworkers and prefers to get his work done elsewhere or at home. He meets with some friends for lunch in a nearby city and plans to get some work done afterwards. However, he is not familiar with the area and isn't sure what places would be most conducive to being most productive. Since he has been using IVE for a few months, he has a lot of data stored related to his work location preferences. He launches the app on his phone and searches for nearby locations that match his workplace preferences. A few nearby spots appear as matches, and he picks one that sounds nice to work at. After he finishes his work, he opens up IVE again and submits his feedback on the location so that his preferences are known for future sessions.