

PASS IT ON

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Pass It On harnesses the ubiquitous and influential power of mobile to instill positivity in users through daily challenges that increase gratitude and improve offline interactions.

PROBLEM SOLUTION OVERVIEW

People have the false mentality that if we work harder, we will be happier, which leads to an overdependence on mobile and stress-inducing mobile notifications. It's time that mobile empowers us without heightening anxiety, instills positivity in users, and enhances our offline interactions, instead of just inciting stress. We need to be reminded that happiness is more likely to lead to success than stress or negativity is. *Pass It On* intends to turn one of the 150 average glances at our phone a day into a positive experience for the user, improving their offline reality.

CONTEXTUAL INQUIRY PARTICIPANTS

We recruited the college student and recent alum demographic. We believe that they are more likely to take part in an application like *Pass It On*, especially if the application has a social component. Based on the age demographic of the main participants of the *ALS Ice Bucket Challenge*, we believe this rationale to be valid. We used the Master-Apprentice model by joining our participants in their own personal workspace. We observed their interactions with mobile while they worked, all with their mobile phones close to their workspace. We asked questions to further understand their behavior, as they responded to certain notifications and not others. We then observed them as they exited their workplace, into the daily routine of their lives, to see how their mobile interactions changed while they did other tasks.

Participant #1: MB-- MB is a recent Stanford graduate, living and working in Palo Alto. She was a Public Policy undergraduate, and is currently working on a private stem cell research campaign. MB is hardworking, a particularly effective fundraiser, knowledgeable about current events, and great at event coordinating, as necessitated by her current job. We recruited her for this observational interview by enticing her with free lunch. The contextual inquiry was conducted both at her office in Palo Alto, and then walking down California Avenue on her way to lunch.

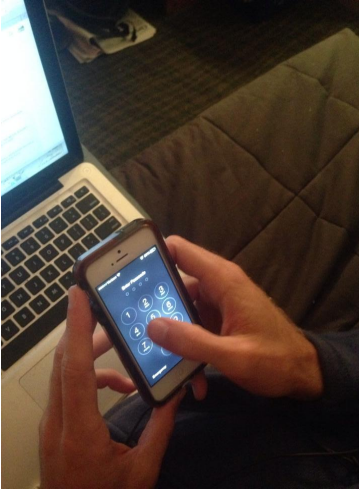
Participant #2: LE-- LE is a Stanford graduate student, living off campus in Palo Alto. She was a Human Biology undergraduate, and is currently studying in the Biocomputing Department at Stanford as a graduate student. LE is a particularly good coder, an avid indie-rock fan, and a cultural aficionado. She didn't need any particular incentive to participate, because she is a nice person. The contextual inquiry was conducted at her apartment in Palo Alto, and then in an Uber on our way out to dinner.

Participant #3: KB-- KB' is a young working professional, recently graduated from college. Extremely extroverted, KB's phone is an extension to an already colorful social life as evidenced by a strong use history of social media apps such as Instagram and Snapchat. I was connected to KB through a mutual friend when searching for someone who would represent an 'extreme user' of social mobile applications. He agreed to do the interview voluntarily and was more than happy to explain his habits and tendencies in the areas our team was investigating. KB was interviewed at his office in SF. The artifacts in KB's office (birthday cards, photos of friends and family) betray his gregarious nature and a road bicycle (mounted to the wall) and weighing scale hint at a enthusiasm for self improvement. KB is a UI/UX designer for a small SF based start up, but seemed to be able to distance himself from his profession when discussing his own engagement with his phone. KB's non professional skills are abundant, however most of all KB stands out as incredibly good at building rapport and maintaining friendships. (I believe KB represents a fantastic user due to his love of other people and his evident passion for self improvement.

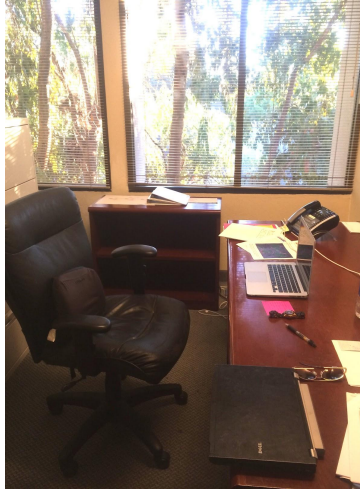
Participant #4: BD-- BD is a CS student at Stanford University. 22 years old, male, and an occasional user of social media applications, BD utilizes his cell phone for more professional purposes'. BD was connected with me through a mutual friend, and agreed to sit down with me for an hour to discuss his feelings towards task organisation, cell phone usage, and communication etc. BD stands apart from my other interview subjects, seeming very much more introverted than KB. Surrounding BD in his dorm room are vinyl records, a TV, and XBox, along with several computer monitors. BD is highly skilled in Computer Science, about to undertake his masters. His skills outside of work seem to be mostly confined to activities performed alone. This juxtaposition with my earlier interviewee made BD fantastically valuable.

Participant #5: AG-- AG is an undeclared sophomore at Stanford University. He is particularly good at all things music, and is "an all around good person" (his words). We enticed him to join our study by asking politely, and he readily agreed to help out. The study was conducted in his dorm room where he works, and then continued on our way to the dining hall.

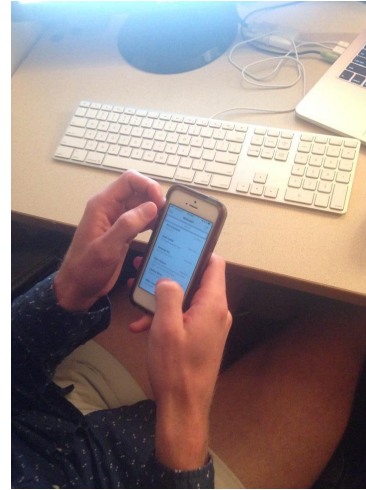
Participant #6: CN-- CN is a sophomore at Stanford, majoring in the both Computer Science and English. She is the roommate of one of our team members, and was recruited as a favor and because she's really interested in human-computer interaction. We recruited her because she is always slow to respond to messages, and sometimes doesn't respond at all, so we thought she would make an interesting case study.



Participant BD



Participant MB



Participant KB



Participant AG



Participant CN



Participant LE

CONTEXTUAL INQUIRY RESULTS

Pushed Notification Trends: All of our participants have multiple types of notifications pushed to their phones. Some users are too lazy to turn off their pushed notifications, even if they don't like them. But when they do opt out of pushed notifications, it is because they find them superfluous or irrelevant. For example, **Participant MB** only links her work email to her phone, and not her personal email. This is because she receives a lot of spam on her personal email, and does not want to distract herself throughout the day with junk. **Participant CN** doesn't push email notifications to her phone at all, because she wants to respond to emails from her computer when she is sitting down and focused.

Some pushed notifications are enjoyed by the users. The users are more likely to enjoy the notifications if they are already in a good mood, or not in the middle of something else. For instance, **Participant LE** sighed in annoyance at a text from a friend while she was trying to code an assignment. But when the same friend texted her later as she walked out of her apartment, she was happy and quick to respond.

Some notifications are inherently more likely to evoke positive emotion. The participants who use Instagram particularly enjoyed its notifications because they are personalized and relevant to the user. We classified these sort of notifications as "self-affirming". **Participant BD** said Instagram was the most gratifying app in terms of the notifications he received, and we believe that's because a notification means one of two things—either a follower liked your photo, or you have a new follower. Either way, it's an incredibly personal notification.

Mobile's Influence on Work and Productivity: All of our participants viewed push notifications as annoying or distracting when working or in the middle of a task. While working, our participants would turn their phones upside down, put them on silent, put them on airplane mode, or hide them from view. **Participant AG** would even put his phone in a drawer so that it would not take any attention away from his work. He is especially annoyed by audible notifications, so his phone is always on silent. **Participant CN** turns off her phone completely during class, so that she is not distracted. It is apparent that mobile notifications break the train of thought of our users, and hinder productivity, and that people actively try to forget about their phones in order to do work.

However, sometimes our participants like to take breaks from the work at hand by sending and responding to messages. **Participant AG** views incoming calls as an opportunity to take a break from his work. From this, we can conclude that while notifications can often be distracting, the true nature of calls and messages from friends is positive. However, if we are really busy, we view them negatively.

How Users Communicate with Other People: Our participants are highly interactive, particularly with Facebook messenger and texting. They frequently will send messages, even in the middle of their work. Sending information to friends is often a positive

experience for the user, and they like to incite positivity in the message recipient as well. For instance, **Participant LE** would always smile slightly when she received a text. When we asked her why, she said it was just nice to hear from her friends.

Users often feel an obligation to respond to communications from other people, especially when the user likes the person who is sending them that message. They are also more likely to respond to people they view as powerful, such as teachers or bosses. **Participant KB** would scan any incoming emails, but only respond right away to his boss. Emails from anyone could wait. When we asked him why, he explained that he wants to give off a good impression to his superior.

Our participants did not all respond immediately to messages, however. **Participant CN** could take days, even weeks to respond to texts or emails. This is because her incoming messages would sometimes get buried from an influx of new messages. It is apparent that our participants are bombarded with many messages, and don't always have the means to sort through all of them.

How People Create and Manage Goals and Tasks: Some of our participants use their phones for task management and scheduling purposes. They use calendar apps to keep track of appointments and meetings, banking apps to manage their budgets, and notepad apps to track to-do lists and shopping lists. Many participants have their calendar apps push event notification reminders to their phones to tell them when something is coming up. Even if the user already knows about that event, they are still happy about the notification because it incites a sense of satisfaction with oneself (as noted by **Participant BD**). There is also a noted positive feeling equated with checking things off of a to-do list for our users (says **Participant LE**).

One interesting use case was **Participant MB**, who tracked her calorie count through MyFitnessPal. She said she didn't necessarily do it to track goals but rather as an idle/boredom thing. We can deduce from this that often people just turn to their phones out of boredom, not always with a purpose!

Not all participants do use scheduling apps, however. **Participant CN** likes to keep track of events in her mind, and doesn't usually write anything out or track it through a mobile calendar.

TASK ANALYSIS QUESTIONS

[Who will use the system?] The people using the system will be college aged students or recent grads. They are more likely to take part in an application like this, especially if there is a social interaction component. We've noted how social our participants are with their friends within apps, and we can capitalize on this innate behavior. We've also noted the virality that personalized challenges to other people inspires, such as the *ALS Ice Bucket Challenge*, so peer-inspired challenges through *Pass It On* could inspire the same virality.

[What tasks do they now perform?] Participants now schedule to-dos and manage goals, but not always in the most effective way. They interact with their friends and schedule meetings with their friends. They partake in productivity/ work related activities, such as sending emails and scheduling appointments. They try to block out mobile distractions while they are working.

[What tasks are desired?] People want to optimize the time that they are contacted by their friends to the times that they can pay attention to the incoming messages. They want to optimize when they are pushed notifications, because many times these notifications are distracting and stress inducing. They want to connect with friends and share information. They want to instill positivity in their friends, and in turn themselves. They want to manage their obligations. And they want to accomplish the tasks and goals that they set for themselves.

[How tasks are learned?] Tasks are learned from users friends. Often they are prompted to download apps at their friends' suggestions. They also could be practices that they adopt from their workplace or school (i.e. downloading the Piazza app after enrolling in a CS class). They could be social norms, such as Facebook or LinkedIn. And, lastly, they find new tasks and the best ways to accomplish them by trial and error.

[Where are the tasks performed?] These tasks are performed everywhere. As we discovered, people rarely seem to disconnect completely. People could be walking to class or the grocery store, and still be performing these tasks. However, we did find that often people want to give their full attention to respond to certain notifications. So, sometimes they will wait until they are sitting and ready to respond to a bunch at once with their full attention.

[What is the relationship between customer and data?] Sometimes this data is personal, such as private goals, shopping lists, etc. This data needs to be stored privately for the user to access freely, but not for other people to see. Other times it is social information that they want to share with their network and friends. Users will post photos, information about themselves, etc. with the sole purpose to share with other people. One issue we will face is determining what data to keep private for the user versus what to share. Goal-setting and accomplishment is usually a personal affair, but it has been shown that by sharing your goals with other people, people have more accountability in completing these goals and are more likely to achieve them.

[What other tools do customers have?] Other tools our customers use are physical sticky notes and notepads, laptops and desktops, tablets, personal or face-to-face interactions, and the storage space inside their own heads.

[How do users communicate with each other?] The users generally communicate in real-time, because of these felt obligations to respond right away. Although, as we've noted, sometimes users will wait to respond when they're really busy, until they can

focus more on their response. Our users are communicating via text, calling, messenger, emails, snaps, Instagram, and face-to-face.

[How often are the tasks performed?] These tasks are performed constantly. Users never seem to disconnect from their phones. Occasionally they will power off their phones completely, but this is an extreme case and was only apparent in 2 of our participants.

[What are the time constraints on the tasks?] There is a felt obligation to respond quickly, so that serves as a time constraint, but users don't always respond immediately unless it's urgent. If there are read receipts, or if the sender knows they've seen the message, they're more likely to respond quickly.

[What happens when things go wrong?] When things go wrong, users miss notifications or messages from their friends. One friend noted how she purposely tried to ignore her phone while at a concert, but when she checked back on her phone, she had 83 new text messages via group message in GroupMe. There were way too many messages to read, so she ended up not reading the entire chain, obviously missing some information.

REPRESENTATIVE TASKS

1. *Optimizing for the best time to receive notifications* (moderate, high importance, medium frequency)

Our participants all wanted some sort of control over when they received notifications. They did this by ignoring their phone while at work, but this wasn't always successful in keeping their attention on their work. Our participants responded very differently to notifications when they were happy compared to when they were stressed. People are more likely to interpret an event positively if they are already in a good mood, so it is crucial in order to have the best experience possible, that they are not bothered when they are busy and stressed.

2. *Fulfilling the obligations that are necessitated by the content of notifications received* (simple, high importance, high frequency)

Whether it's responding to a text, drafting an email, or buying things from a shopping list, people like the satisfaction of fulfilling obligations that they set for themselves, or are set by other people.

3. *Sharing information with others* (simple, medium importance, medium frequency)

Our participants are incredibly interactive, both via mobile and in person. They share a lot of information with their friends and networks. They schedule and coordinate in-person meetings with their friends via mobile. Connecting with people and transferring information is important in our participants' day-to-day interactions.

4. *Improving offline realities and relationships* (complex, high importance, medium frequency)

People genuinely want to maintain good relationships with their friends and networks, which is likely part of the reason why there is a sense of obligation to quickly respond to people they like, or people to whom they look up to (such as teachers and bosses). Users also want to add value to their lives through the form of gratifications, as is evident by their mobile usage patterns.

APPLICATION IDEAS

1. *killSwitch*

killSwitch is a 60 minute block-out of all incoming and outgoing calls, texts, notifications, and communications. It auto-responds to people who want to get a hold of the user with a message like, “sorry, I’ve hit the *killSwitch* for 48 more minutes. I’ll message you when I’m back online”. Not only would this application get rid of the anxiety-producing notifications people receive when they are trying to work, but it also addresses the need people feel to respond immediately.

[Significance] *killSwitch* would be fairly significant, at least for individuals, because it would allow them to truly turn off their phone and focus on the task at hand. It will instantly absolve the user of the mobile-inducing stress they may be feeling. It also will give the people trying to contact them, the feedback that that individual is currently busy.

[Feasibility] *killSwitch* may not be entirely feasible since it may not be easy to create an app that has access to all other apps and functionalities across the entire phone.

[Interest] We believe that there exists a large market of people who want to disconnect from their phone but don’t want to just turn it off. *killSwitch* would be a solution for them to disconnect while notifying the people contacting them that they are busy.

2. *Grateful*

There is an obvious, proven correlation between gratitude and happiness. *Grateful* would assign you something to photograph each day, following the theme of things the user is grateful for. It would eventually build a collection of all of these photographs the user has taken.

[Significance] *Grateful* would not be that significant. People are already able to take photographs and create albums, so this wouldn’t be a new technology or novel experience. It would, however, be a centralized way to store the photographs of things we are grateful for, which could prove to increase happiness in users.

[Feasibility] This would be completely feasible to create. All of the technology to implement this application already exists.

[Interest] While this application has the power to increase gratitude in people, it likely would not gather that much interest in people because people may not see the value in downloading another picture-taking app. However, if people were to

use it and witness an increase in gratitude, they would likely be more interested in the product. However, that Catch 22 would probably inhibit us from garnering much interest in this application.

3. *Pass It On*

Pass It On sends daily challenges to users, which are designed to enhance their real world interactions and happiness by increasing their gratitude. When a user's phone buzzes and they expect an urgent email or annoying reminder, they are instead shown a small, easy goal that lets them refocus their positive energy. It also will keep track of what time of day the user receives the notifications, how long it takes them to open them, and how long it takes to complete the task. This will allow the app to learn the optimal time of day for the user to receive the task. After completing the task, users can pass on the task to a friend or anonymous user, allowing them to reach out to a friend or stranger and instill positivity in them as well.

By giving the user an easy-to-accomplish challenge, they will also be satisfied upon completing it, increasing their daily happiness as well. This application addresses users' needs to receive notifications at an optimal time of day. It also builds upon our observed social nature, and our desire to spread positivity to our friends. Users will feel happy upon completing these easy tasks and will feel satisfied in "crossing them off" upon accomplishment.

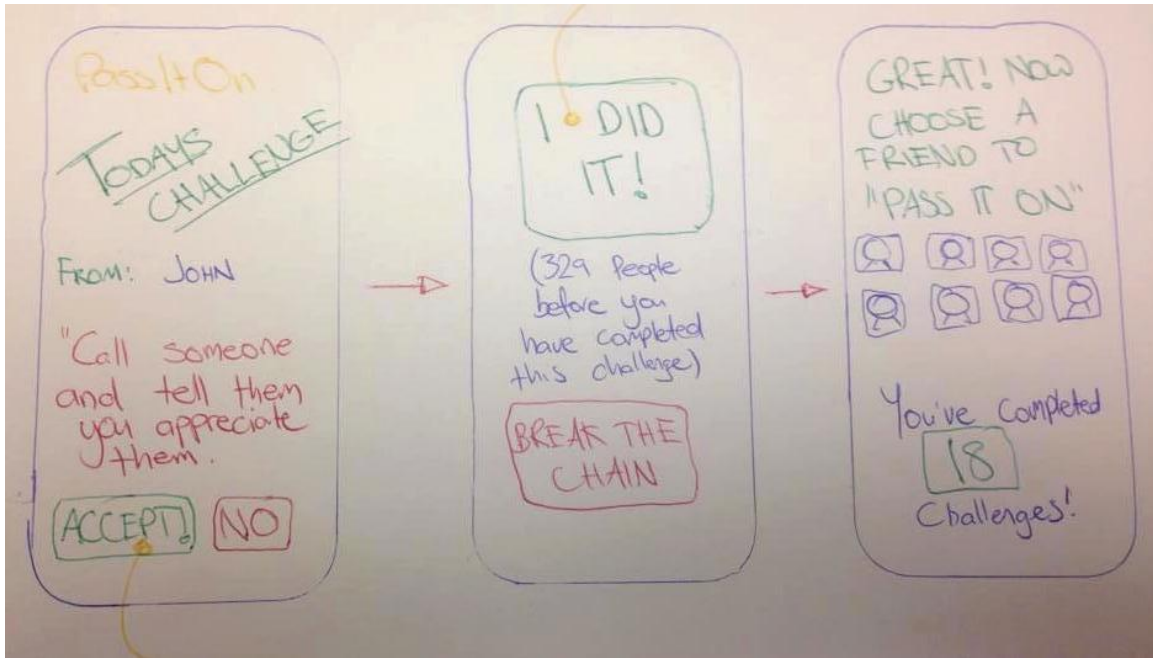
[Significance] *Pass It On* would be fairly significant. Not only would it connect people with their friends by allowing them to send challenges to each other, but it would also make a positive impact in the offline world. By challenging people to smile at strangers, buy coffee for friends, or reconnect with loved ones, the amount of kindness and gratitude in the world would increase.

[Feasibility] The majority of *Pass It On* would be very easy to implement, because the technology to send notifications to phones and allow users to communicate among each other already exists. The main development challenge will come with trying to optimize the notification for the best time for the user. We would need to figure out exactly how we can learn a user's optimal time to receive notifications just through their mobile behavior. But this offers an interesting challenge that we can explore heavily with user testing.

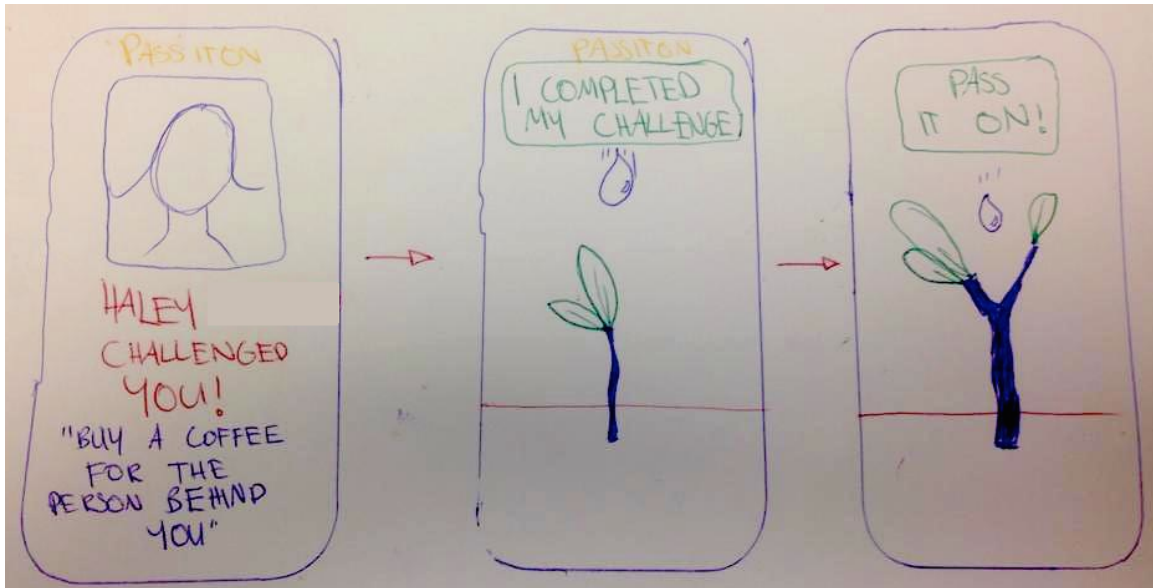
[Interest] There would likely be a fair amount of interest in an application like this. We've noted the virality with which the *ALS Ice Bucket Challenge* spread, and we determined that part of this had to do with the direct challenging of friends. We believe if users start to challenge their friends, we would likely be able to market the application to new users this way and ideally increase the number of new signups. We also think that once people start having pleasant experiences in their offline realities when completing these challenges, users will be increasingly interested in the application.

SKETCHES

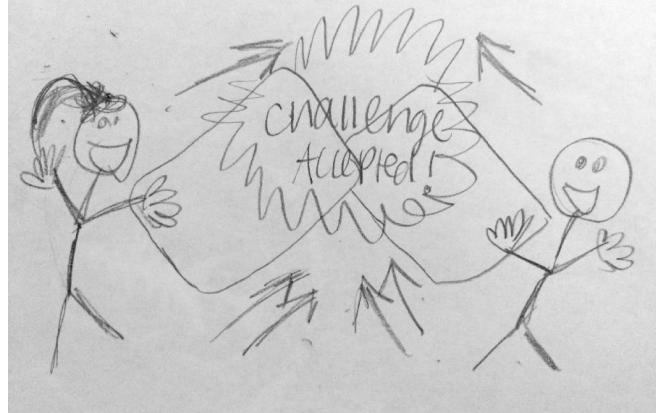
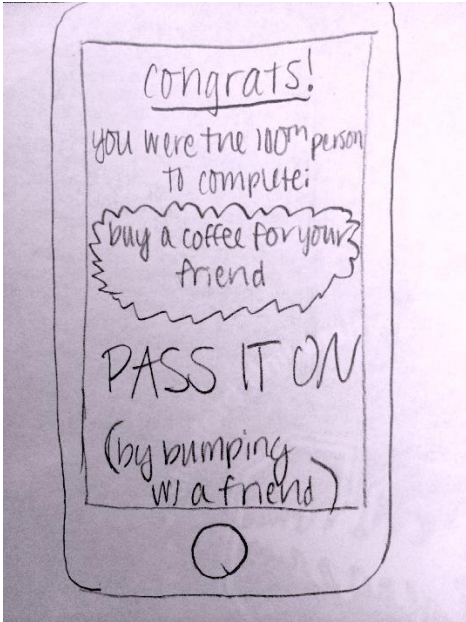
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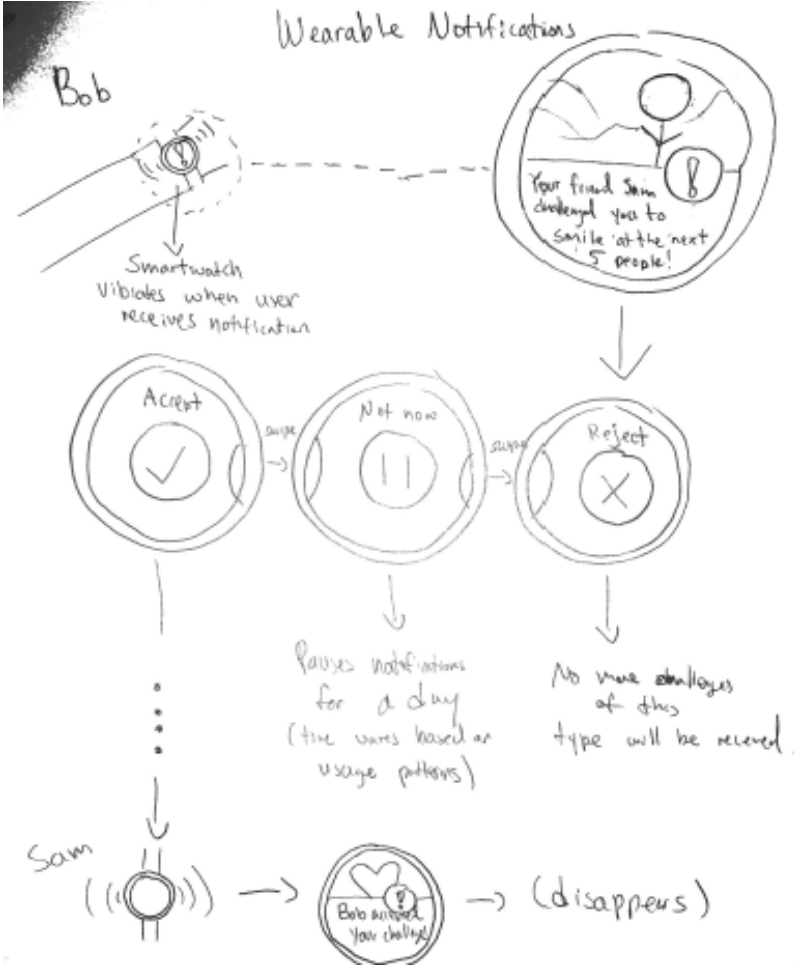
#2:



#3:




#4:




#5:

NEWSFEED

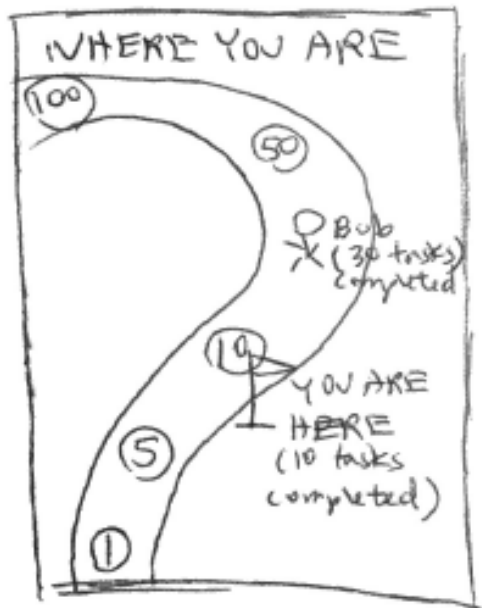
-  Bob has just smiled at the next 5 people!
- 1000 people have completed your task "Have a conversation with a stranger." Congrats!

↓ scroll for more

Find new challenges!

-  Give a flower to someone!
603 people have completed
- Open the door for the next person!
561 people have completed
- Smile at the next 5 people!
Bob and 900 other people have completed

↓ scroll for more



PROFILE

 10 tasks completed!

DASHBOARD

- View your tasks
- + Create new task
- Challenge a friend!
- Incoming challenges