PASS IT ON

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Pass It On: Harness the power of mobile to instill user positivity through daily challenges that are designed to 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.
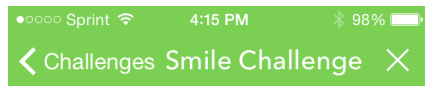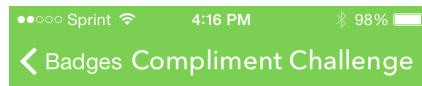
TASKS AND FINAL INTERFACE SCENARIOS

Task #1 Pass it on: User accomplishes a challenge that they think a friend might enjoy, so they pass challenge along to their friend. The user may also think of an original challenge, create that challenge, and pass it on.
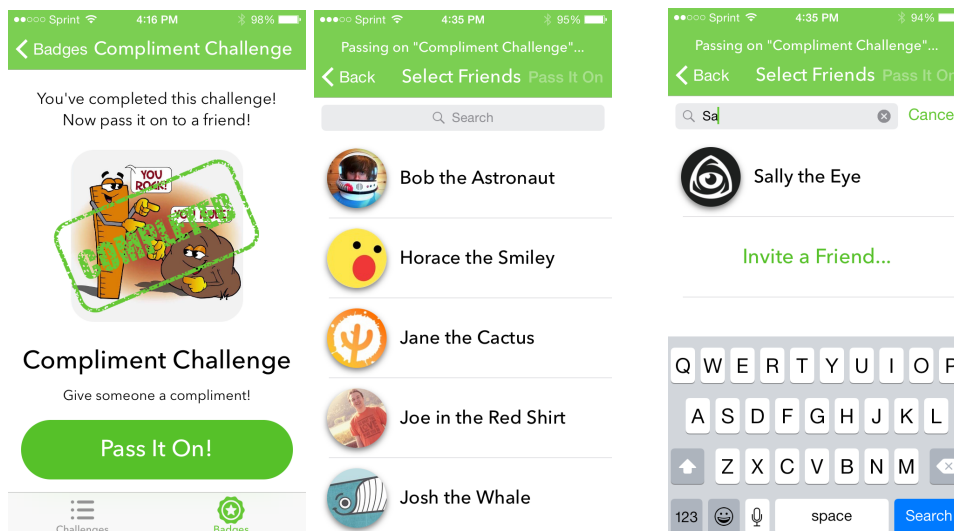
Task #2 Respond to new challenge notification: User receives a new challenge request that they are either excited about or don't want to accomplish. User either accepts and adds the challenge to the challenges homepage, or reject the challenge.

Task #3 Complete challenge: User goes back to the challenges homepage and either completes the challenge and marks it as complete, or decides he/she no longer wants to complete the challenge and rejects it at this point.
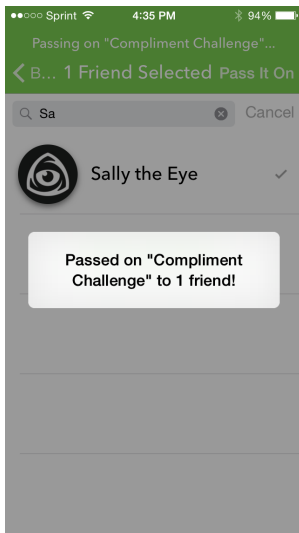
Rationale:
Task #1 is the combination of our Task #2 and 3 from the medium-fi prototype (user enjoys the challenge and passes it on to a friend, and user views archive of completed challenges). These tasks both involved going to the list of completed challenges, and felt very similar and interlinked (for example, you might go back to see your completed challenge, and be inspired by good memories to pass it on; or you might stop to view details of the challenge before passing it on). We also had a lot of feedback to add the ability to create a new challenge and pass it on to friends, so that is now reflected in our new task #1 and high-fi prototype implementation. Task #2 and Task #3 branched off from our original Task #1 (user either accepts and completes challenge, or declines it) because completing the challenge may happen a significant period of time after the user actually accepts the challenge request, and based on the heuristic evaluation results (more below) users wanted to be able to reject the challenge after accepting the initial request if they changed their minds later. The two tasks now represent two very distinct scenarios that the user might be in when using Pass It On: responding to a challenge request notification, and carrying out or deleting a challenge that has already been accepted.
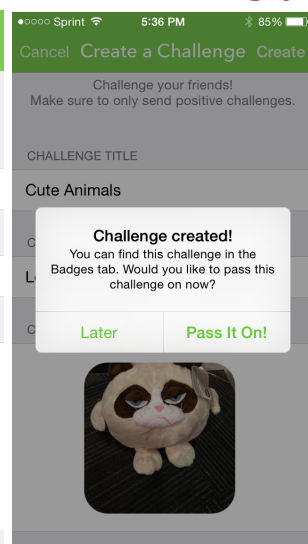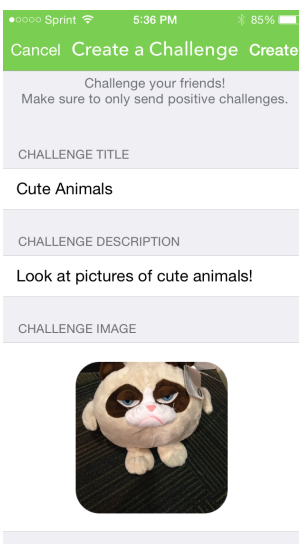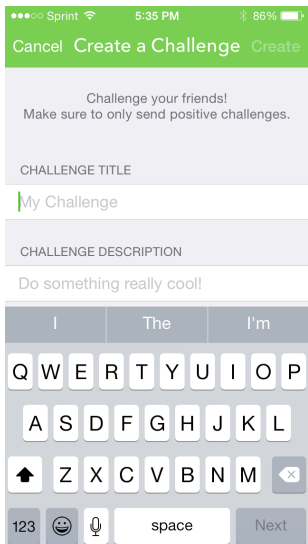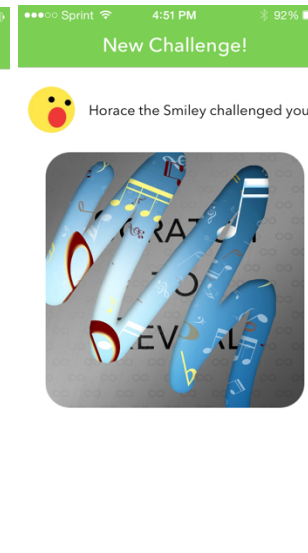
Task #1 Pass it on:

(continued)

Passing on "Compliment Challenge"...
‹ B... 1 Friend Selected Pass It On

🔍 Sa ⊗ Cancel

✓

SCRATCH
TO
REVEAL

Passing on "Compliment Challenge"...
‹ B... 1 Friend Selected Pass It On

🔍 Sa ⊗ Cancel

Sally the Eye ✓

Passed on "Compliment Challenge" to 1 friend!

OR create challenge first

Cancel **Create a Challenge** Create

Challenge your friends!
Make sure to only send positive challenges.

CHALLENGE TITLE

My Challenge

CHALLENGE DESCRIPTION

Do something really cool!

I   The   I'm

Q W E R T Y U I O P
A S D F G H J K L
⇧ Z X C V B N M ⌫
123 😀 🎤 space Next

Cancel **Create a Challenge** Create

Challenge your friends!
Make sure to only send positive challenges.

CHALLENGE TITLE

Cute Animals

CHALLENGE DESCRIPTION

Look at pictures of cute animals!

CHALLENGE IMAGE

Cancel Create a Challenge Create

Challenge your friends!
Make sure to only send positive challenges.

CHALLENGE TITLE

Cute Animals

Challenge created!
You can find this challenge in the
Badges tab. Would you like to pass this
challenge on now?

Later   Pass It On!

Task #2 Respond to new challenge notification:

Challenges +

New Challenges

Horace the Smiley

Bob the Astronaut

New challenge from Horace the Smiley!

Catch Your Breath
From: Josh the Whale

Smile Challenge
From: Joe in the Red Shirt

≡ Challenges   ⚙ Badges

‹ Challenges **New Challenge!**

Horace the Smiley challenged you!

SCRATCH
TO
REVEAL

New Challenge!

Horace the Smiley challenged you!

Task #3 Complete challenge:

MAJOR USABILITY PROBLEMS ADDRESSED

There were 4 heuristic violations of severity 3, and none of severity 4. Each of these are summarized and addressed below:

Violation #5: Add the ability to mark challenges as complete directly from the homepage instead of having to tap the challenge and mark as complete from the page with details of that challenge.
Response: We chose to ignore this violation because we believe it is trivially harder (one extra click) to complete the challenge from that challenge's page rather than the homepage. In addition, the challenge's page provides the detailed description of the challenge while the homepage only has the title, so it makes more sense for the user to refresh or double check details of the challenge before confirming that they have completed it. Finally, having too many

possible user actions on the line for each challenge in the homepage can greatly increase the number of user mistakes - for example, they may accidentally mark the challenge as complete when they only meant to tap to view the challenge details.
(No screenshots because violation ignored)

Violation #6: Challenges are easily lost if the user doesn't scratch to reveal immediately, so it would be helpful to have a list of pending challenges.
Response: This violation has been addressed. The challenges homepage has two sections: a "New Challenges" section for new challenge requests that have not been revealed yet, and an "In Progress" section for challenge requests that have been accepted. (see Figure 1 and Figure 2 for before and after)
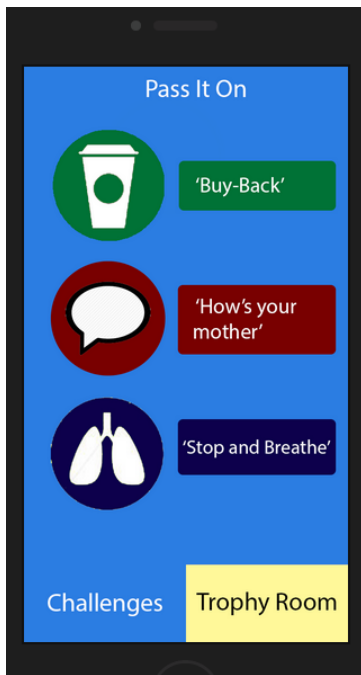

Figure 1   Figure 2
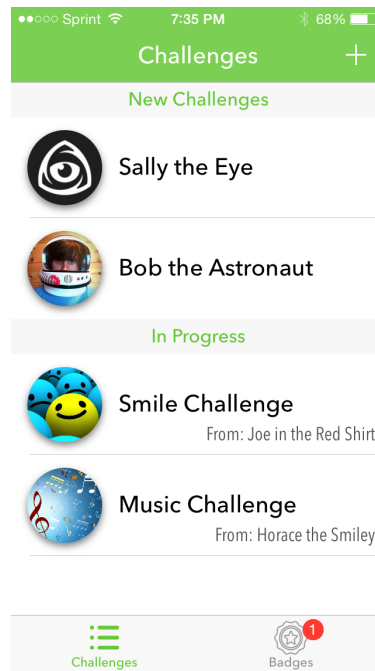Before: unread challenges not stored   After: New Challenges and In Progress sections

Violation #13: After the user taps on someone to send the challenge to, it would be useful to add a "Cancel" button just in the case the user changes their mind or made a mistake.
Response: This violation has been addressed. There are now cancel/back buttons in all the relevant screens to allow for more user flexibility. (See Figure 3 and 4 for before and after)
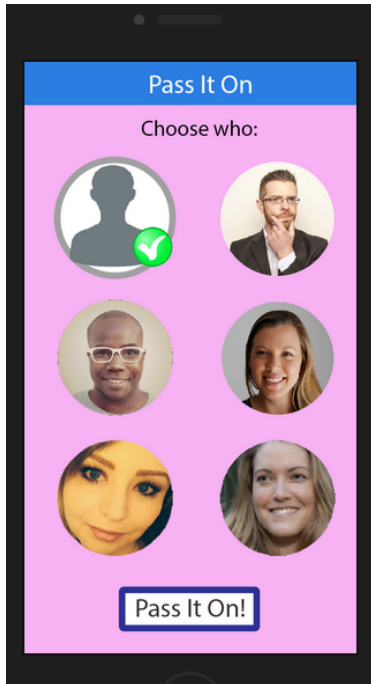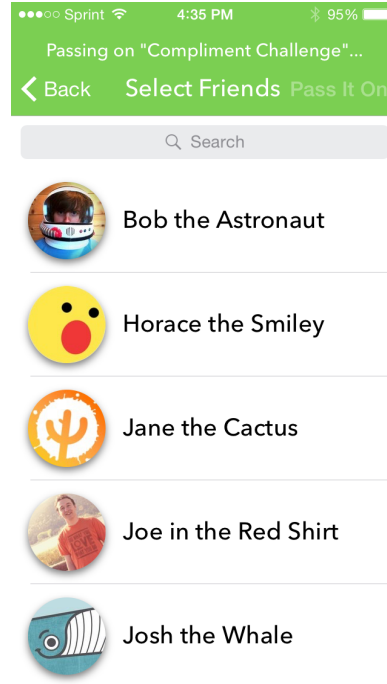
Figure 3
Before: No way to unchoose a person

Figure 4
After: Can unselect and click back to stop passing on

Violation #15: Some profile pictures don't show actual faces, so pictures should have user names next to them so that the user can recognize who they are.
Response: This violation has been addressed. Every part of the application that involves a user profile picture also has the username clearly labeled (pass it on page, challenges homepage, individual challenge pages, etc). (see Figure 3 and 4 for before and after).

These are some other issues we addressed due to feedback from the heuristic evaluation:

1. It might confuse users if "Scratch to reveal" is still displayed after they've already scratched, so the instruction itself is part of the image that gets scratched away, and is no longer present once the user finishes scratching.
2. On the medium-fi prototype, the challenge isn't specified on the rejection screen, so users can potentially forget what they were trying to reject. This is fixed in the high-fi prototype by including the challenge name on the challenge rejection screen.
3. Previously, the user could not remove a challenge once he/she added it to challenges in progress. Our new prototype gives more flexibility by allowing the user to delete the challenge after it's been added as well.
4. On the medium-fi prototype, you could only access the challenges page by clicking the button next to the challenge, but not the button itself, which is something users expect to be able to do. Now in our high-fi prototype, users can click anywhere on the line, including the icon, to view that challenge's page with details.
5. Previously, labels for the buttons had quotes around the names of the challenges, which was unnecessarily and made the interface messier, so those have been removed.

6. On Screen 2 of Task 2 of the medium-fi prototype, it says you have not passed the task on to anyone, but right below it gives you the number of people who have completed the challenge since you passed it on. This was hard-coded in for simplicity in the last prototype, but is something that has been handled by appropriate logic paths in the high-fi prototype.
7. The green check and red x buttons on new challenges might confuse users about what choosing one of these functions means, so we included labels "Accept" and "Reject" for clarification.
8. In terms of real-life metaphors, the icons from completing the challenges are more badges than trophies, so we renamed "Trophy Room" to "Badges."
9. Users might not initially understand that badges correspond to challenges they've completed, so we've made it clear that the user earns a new badge after completing a challenge by having the icon drop into the badges tab.
10. Users could find it difficult to remember challenges by just the icon, so challenge titles have been added to the icons in the badges room.

Here are some of the heuristic evaluations we chose to ignore:
1. When you reject a challenge, it asks if you're sure, because the sender will be sad. The violation said that while it added humor, the label might be confusing, and we should instead stick with "Accept challenge" and "Reject challenge." We chose to ignore this because this message occurs after the original "Accept challenge" and "Reject challenge" options, when the user chooses to reject, so the intent seems clear.
2. There is no way to undo completing a challenge. We decided to keep this in our high-fi prototype despite the small decrease in user freedom, because we also chose to only allow users to complete challenges from the specific challenge page, not from the homepage, so it is very difficult for a user to accidently click the complete challenge button.
3. Have a title that indicates that the badges in the badge room are challenges that you have completed. We chose to not explicitly have a title and instead have challenge icons drop into that tab visually to indicate that icons in the badge room are completed challenges.
4. People may have the same first name/profile picture, which could cause confusion between different users. We chose to ignore this because we are hardcoding all the profile pictures and names of the users for the purposes of this prototype.

DESIGN EVOLUTION

The creation of our app was characterized by a cyclical process of designing, user testing and evaluation. This meant that many of our hypotheses and design decisions were questioned and our design (hopefully) improved with each iteration. Beginning with our goal of enhancing users offline interaction, we moved from a low-fidelity, paper based rendering to an interactive prototype (using Marvel) and finally arrived at our fully functional application coded in Xcode. At each step, we sought out user testers (including an extensive heuristic evaluation for our medium fidelity prototype). These interactions with our users represented the cornerstone of our

development and proved immensely beneficial to our design. Amongst a plethora of small tweaks, the following represent our most notable user-driven design changes:

Colors VS Simplicity.

Our medium fidelity interface design was truly saturated in color. We used strong and contrasting colors to create a visually exciting experience. After seeing the app in motion, we quickly decided the aesthetic to be a little overbearing, so we began again with a far more minimalist approach with a strong bias towards leverage existing behavior (based on existing UI/UX experiences) combined with novel and interesting features only when such additions would add to the experience (scratch to reveal, slingshot animation etc.). As a result, later designs (including our final product) saw a departure from this medley of hues, instead opting for a largely white interface with color used sparingly to highlight important parts of the interface.

This design is aligned with our mission with Pass It On. By stripping down the flashiness of the design, we can maintain the users focus on the 'positive offline interactions' that the application is ultimately seeking to create.

Figure 5
Before: A highly colorful, unconventional interface with a obvious leaning towards heavy saturation.
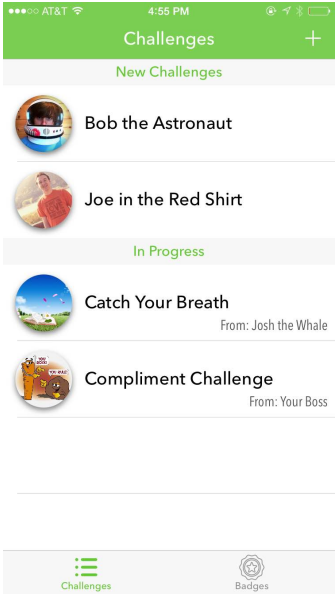

Figure 6
After: A simplified, minimal design combining modern design vernacular with exciting, purposeful UX elements.

Leveraging social components.

Discussing the app with users, it quickly became apparent that the *source* of the challenge was almost as important as the challenge itself, so we were determined to implement a design that drew a constant connection between the users who sent the challenges and the challenges

themselves. As a result, a review of the final iteration of the application will reveal that a challenge never appears without the app communicated *who* sent the challenge. Avatars and names of the users themselves dominate the homepage under the 'New Challenges' category, and even 'In Progress' challenges are sure to remind the user who sent the challenge (ie. (From: Josh the Whale). This interface tweak is an attempt to emphasize the intrinsically social nature of the app, and perhaps in the process increase the challenge completion likelihood by ensuring the task remains cognitively attached to its sender.

Slingshot

With a name like 'Pass It On', it's obvious our development team believed an important part of the app would be the sharing of challenges. In order to make this task novel and exciting, early iterations of the design featured a 'slingshot'. The concept was that upon opting to share the challenge, the user could 'pull back' the challenge and launch it into the avatar of another user, thereby sending them the task. While the team felt positively on the idea, some user testing suggested that the action could be slightly confusing for some and discouraged sending the challenge to multiple users. Instead, we opted for a more 'user-familiar' click pattern that simplified the process as much as possible, and better accommodated sending challenges to multiple users. However, remnants of the original slingshot design can still be seen in the animation that occurs after the user 'Passes it on', as the challenge picture is recovered (with the scratch to reveal layer) then retracted and finally flung out to the users you've selected to send the challenge to. User testing suggested this little animation successfully communicated the meaning of the event, and attracted a great deal of praise amongst our testers (Full credit to Thomas Zhao and Rebecca Wang for a beautiful implementation of the idea).
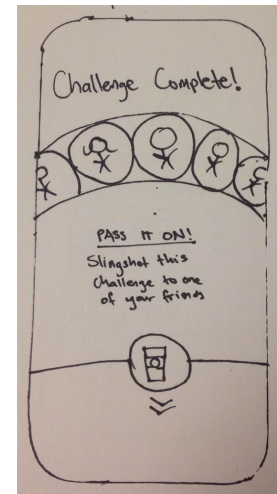

Figure 7
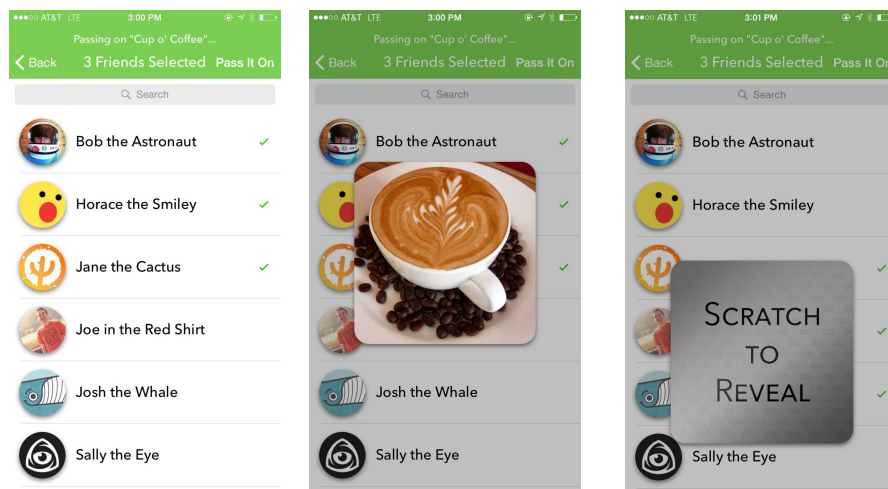The original slingshot Pass It On concept

Figure 8:
Final 'Pass It On' animation, marrying the visual metaphor of the slingshot
concept with the familiarity of a scrollable checklist

PROTOTYPE IMPLEMENTATION

The hi-fi prototype is designed with Xcode, the integrated development environment used to create native iOS applications.

Current versions of Xcode use Storyboards as a way to interactively and visually design user interfaces, by creating independent screens and connecting them with "segues". Storyboards were used to create the user interface as much as possible, with manual UI code limited to a minimum.

Storyboards helped our development, since they allow for quick changes to the UI to be immediately reflected on screen without needing to compile and run the app. The ability to use segues allows us to visualize the connections between screens in our application and create them in a visual and easy to understand manner. Adding screens, buttons and other UI elements is trivial and can be done even without iOS or coding knowledge.

However, Storyboards are also limited because they do not require code. Certain elements, such as the scratch-to-reveal element, were not simulatable via Storyboards alone, and required code to implement. In addition, the layout system on iOS (AutoLayout) is not immediately intuitive, and requires some very careful planning and consideration to make sure UI constraints are set correctly, or otherwise the application risks looking wrong at runtime.

All of the challenge data is currently hard-coded, and there is no actual transmission of data between devices or to a server. We used a Wizard-of-Oz technique to simulate the reception of a notification. Normally, such an operation requires a server to push notification data to Apple's servers. However, we instead triggered a notification dialog to appear and perform the appropriate tasks whenever the user gently shakes his phone. This allows for the app to appear functional in that aspect even without using an actual server. There is a limited number of challenges stored within the app itself, and the app is not capable of receiving more. However, for demonstration purposes, the number of challenges is enough. These could all be added in a future implementation. Other potential areas of expansion include a user profile, finding potential friends through Gmail/Facebook contacts, having more strict requirements on creating challenges (checking for no profanity, tasks should be done in a short amount of time, etc.), and adding ratings to challenges.