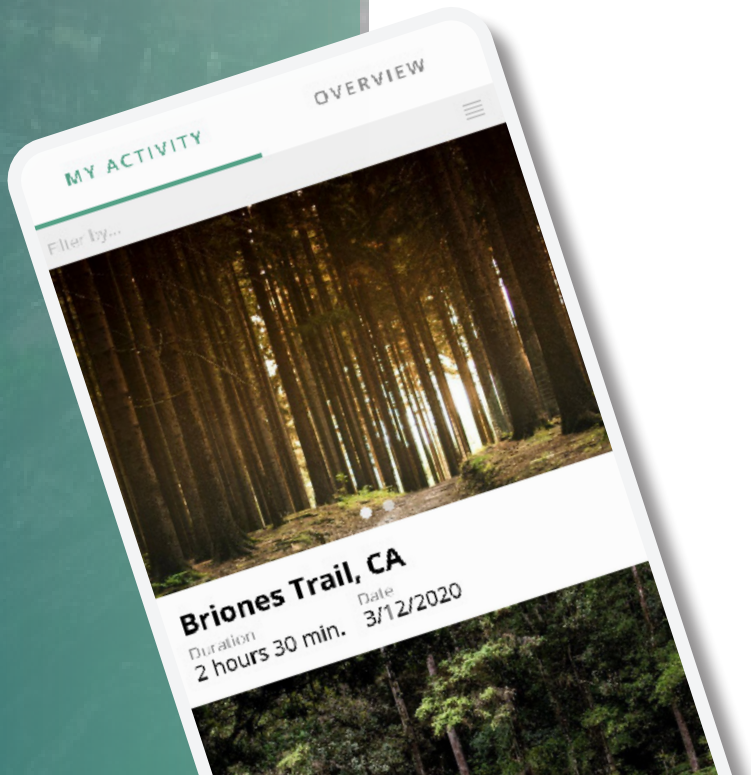
TOTAGO x UMSI

FINAL REPORT 2020



Executive Summary

TOTAGO is an outdoor adventure application that currently lacks adequate functionality to track outdoor activity completion rates amongst its users. The company's mission - "Turn Off the App, Get Outside" - required our team to deliver a solution that promotes user engagement outside of the application.

Our team developed a retroactive logging feature that allows users to log and share their outdoor activity, as well as create, view, and assess their outdoor goals. This report will detail the following phases of this process:

User research	utilizing survey data, interview, heuristic evaluation, and competitive analysis research methodologies
Iterative design	across low, mid, and high-fidelity prototypes
Validation	of our final prototype with A/B testing and surveying

Project Background & Goals

Project Background

TOTAGO offers users a variety of outdoor adventures and transit options to access these activities. However, their application lacks adequate functionality to accurately track activity completion rates amongst its users. Currently, TOTAGO uses MixPanel for funnel tracking: the greater number of steps in the funnel, such as clicks on the "Plan Trip," "Go," "Save," and "Download" buttons, signifies higher completion. Yet, TOTAGO has no user research data that confirms these actions as accurate markers of completion. Furthermore, TOTAGO implements its software onto white-label partners' applications, creating variation in user experience; therefore, TOTAGO may not always be able to track these measures of completion across its network of apps.

Project Goals

Our goal is to implement a design solution that tracks completion rates in a way that does not contradict TOTAGO's mission to get people off their devices and engaged with the outdoors. More specifically, our project aims to achieve the following:

1 Balance high functionality and utility with support of the company's mission of turning off the app.

2 Develop a function for TOTAGO to track user completion rates across all platforms and experiences.

3 Create an accurate profile of TOTAGO's users' attitudes, behaviors, and experiences with regard to their use of technology outdoors.

4 Improve the accuracy of TOTAGO's data tracking to advance TOTAGO's understanding of its user habits and behaviors.

Research Methodology

Research Questions

1 How do current and potential users feel about the integration of technology into their outdoor experiences?

2 How are TOTAGO users currently tracking their completed outdoor experiences via the application, if at all?

3 What value do users derive from tracking their activity within the application?

Methodologies

Competitive Analysis

Heuristic Evaluation

Survey Analysis

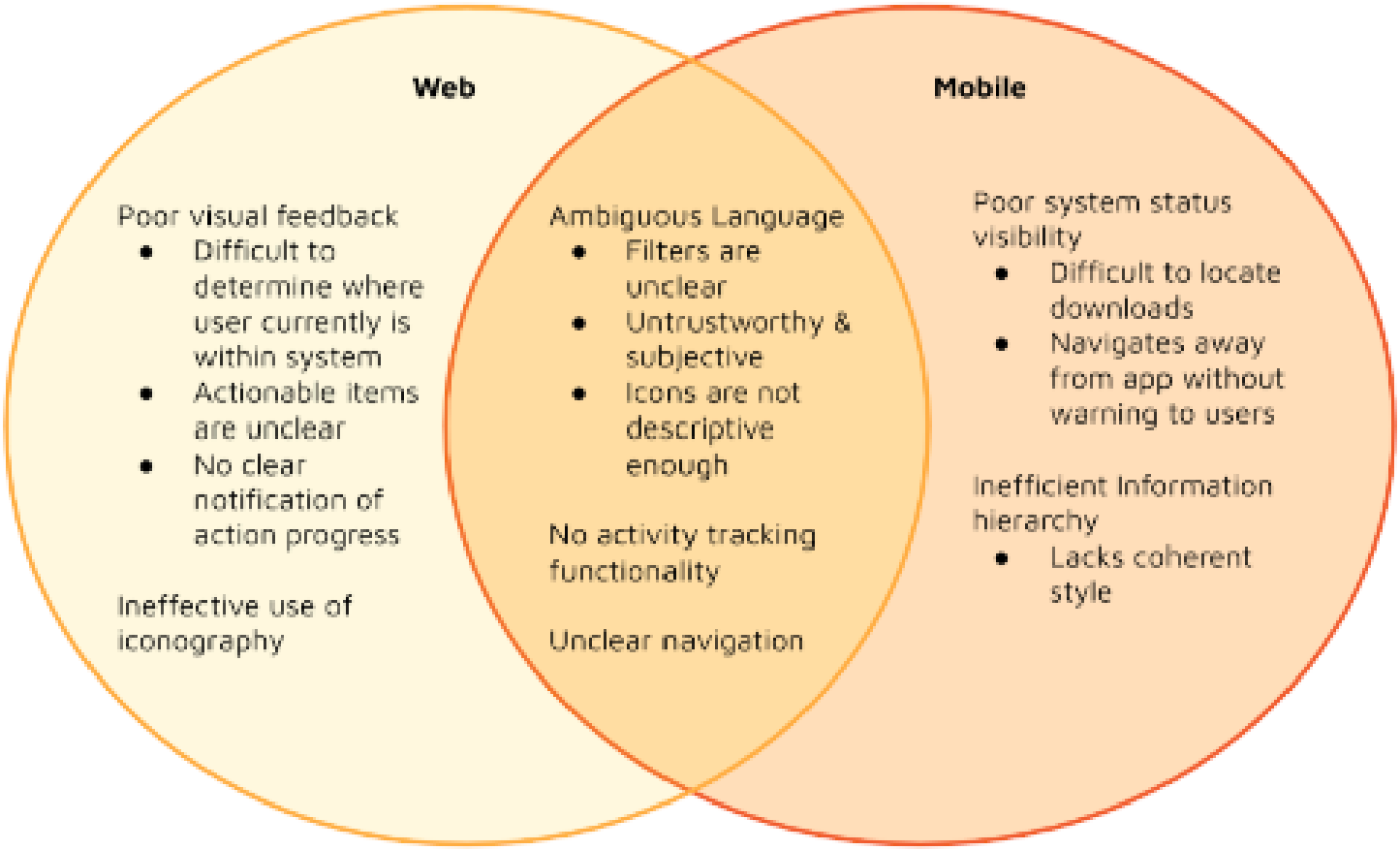
Interviews

Competitive Analysis.

We conducted a competitive analysis of TOTAGO's main competitors, aiming to answer our research questions regarding how outdoor adventurers currently track and integrate technology into their outdoor experiences. We conducted a standard feature analysis, comparing TOTAGO against seven of its direct and indirect competitors, across twenty-eight assessment criterias and feature categories (see Appendix). Our team created the comparison criteria to focus especially on features relevant to logging outdoor activity.

Heuristic Evaluation

We performed a heuristic evaluation of the TOTAGO web and mobile applications to identify problems and patterns within TOTAGO's application, as well as determine how TOTAGO users currently track their completed outdoor experiences via the application, if at all. Using Nielsen's ten heuristics for user interface design, as well as additional heuristics our team generated to evaluate TOTAGO's existing tracking functionality, we measured the usability, utility, and aesthetic appeal of the current TOTAGO system design.



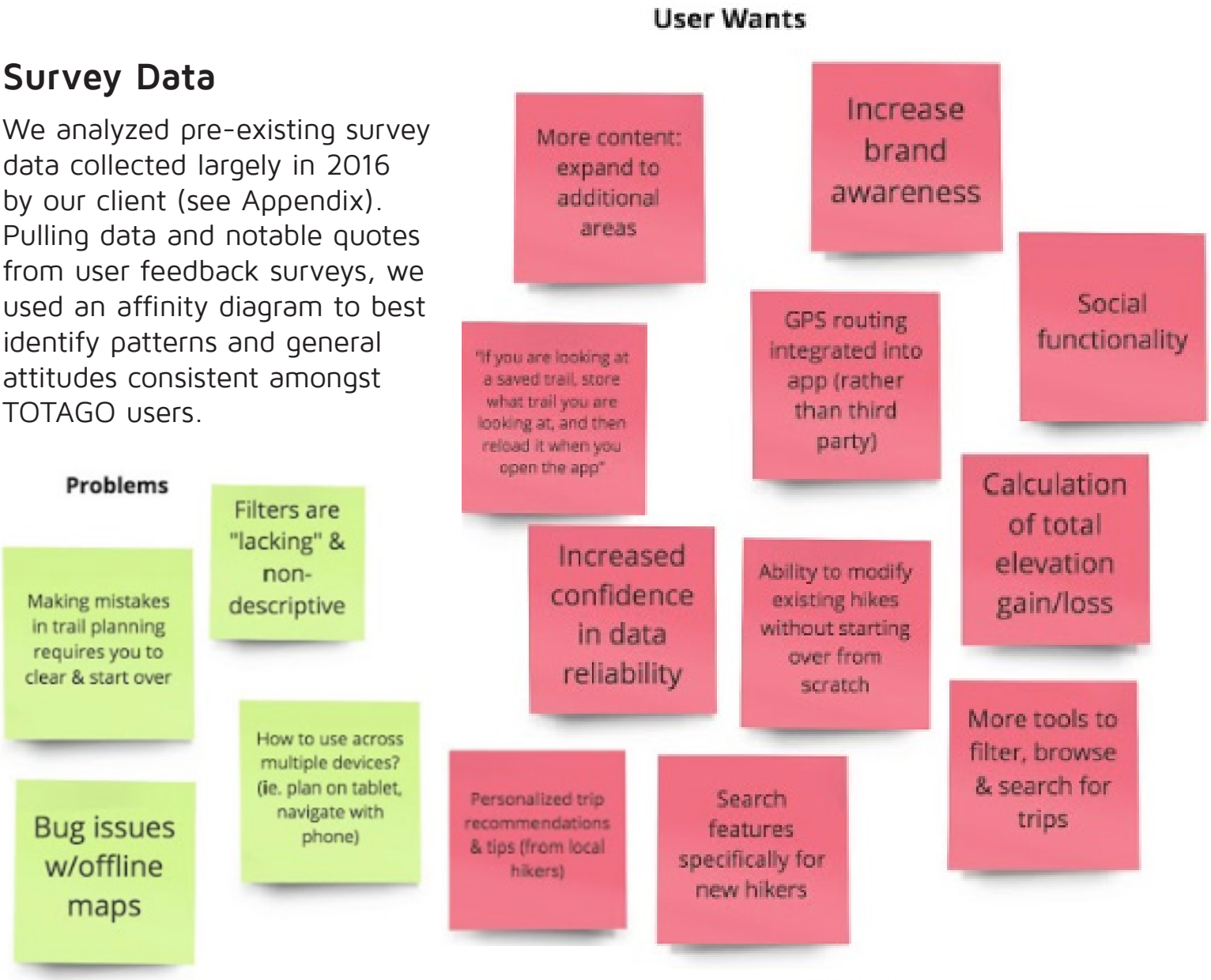
Heuristic evaluation findings

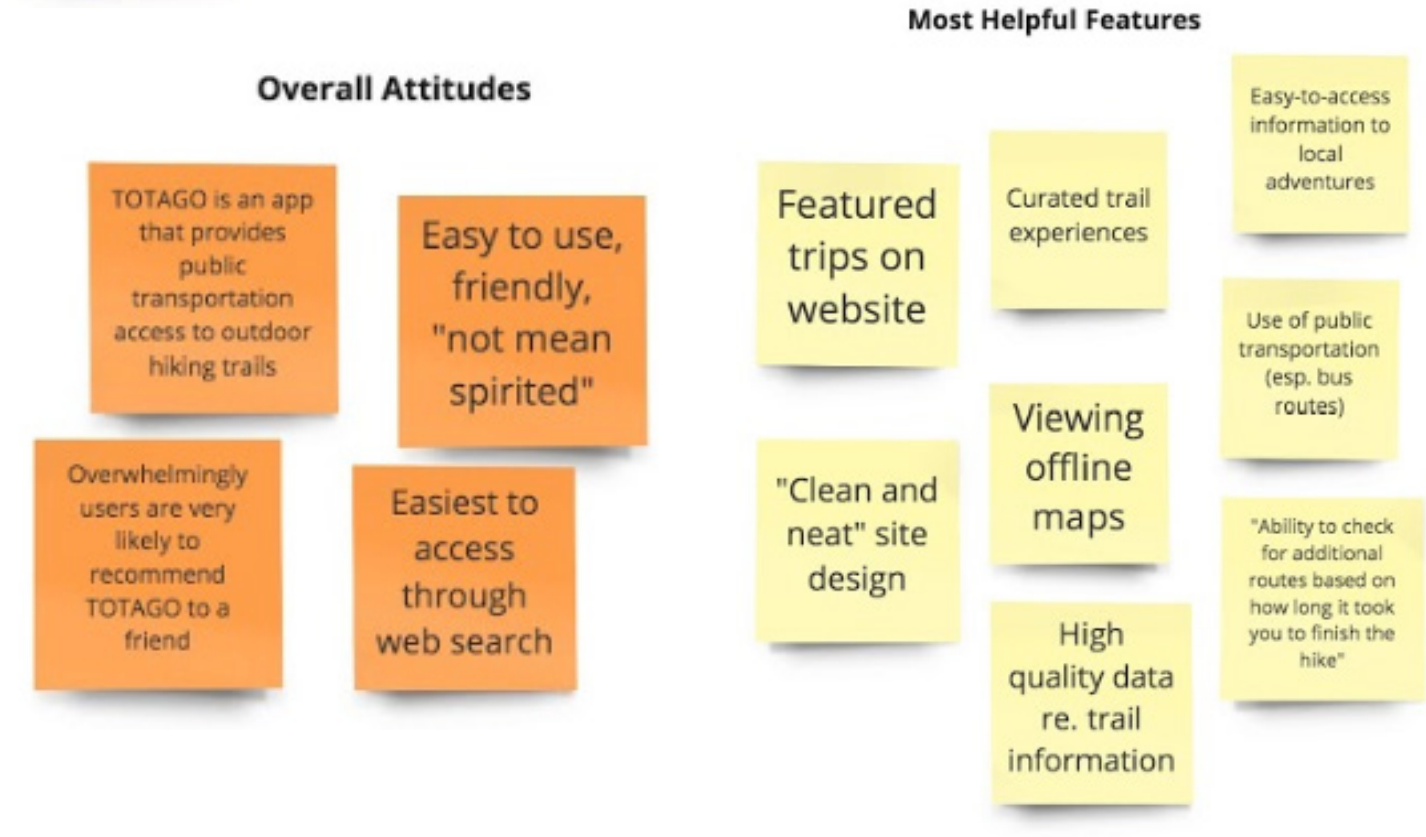
User Interviews

We created two scripts to conduct interviews with current TOTAGO users and non-users, leveraging monetary incentives in an effort to encourage interview participation. We used an empathy map to analyze our findings and identify common feelings and themes amongst users (Appendix).
The current-user script seeks to determine what users value most as part of the outdoor experience, and understand how users currently track their outdoor progress within the TOTAGO app. Our recruitment strategy involved reaching out to current users, with contact information provided to us by the client. The non-user script focuses on determining attitudes held toward the integration of technology into outdoor experiences, as well as how non-users interact with technology while participating in outdoor activities. We recruited non-users by reaching out to University of Michigan students in outdoor activities clubs, as well as MeetUp groups within the Ann Arbor community.

Survey Data

We analyzed pre-existing survey data collected largely in 2016 by our client (see Appendix). Pulling data and notable quotes from user feedback surveys, we used an affinity diagram to best identify patterns and general attitudes consistent amongst TOTAGO users.





Key Research Findings

How users currently utilize the TOTAGO app

Across survey respondents and interview participants, we found the following features to be key motivators for usage of, and most central to experiences within, the TOTAGO app:

1. Offline Access to trail information
2. Personalized Curated Trail Experiences
3. Access to Public Transit Route Planning

TOTAGO users are currently NOT tracking their outdoor activity within the app, and possess mixed attitudes toward activity tracking

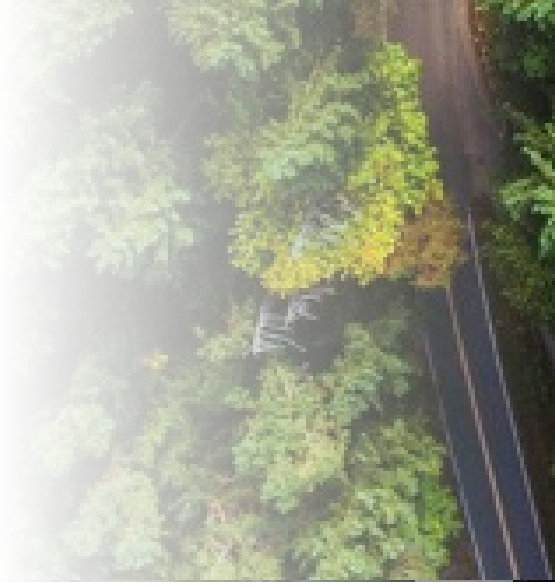
TOTAGO users demonstrated an overall **lack of interest** in functionality like activity logging. User attitudes of willingness to engage in tracking are motivated by a desire to **"help the community".** Users overall acknowledge the potential to benefit from sharing experiences with, and gaining exposure to those of their community

Non-user attitudes toward activity tracking are also mixed

Non-users possessed desire to obtain activity metrics that tracking would provide, especially in relation to activity-related goals. Non-users engaging in outdoor activity recreationally are generally disinterested in participating in activity tracking

Attitudes regarding activity tracking are largely tied to social functionality

Social functionality within and outside of the TOTAGO application offered users/non-users a way to document hikes and trail information. Reviews and recommendations of outdoor activities, generated from users/non-users' social networks, are **crucial to trip planning**. Participants relied on social sharing to provide information to their local hiking communities, with functionality like check-ins, reviews, and photo sharing



User Personas

Primary Persona

Andrew Levere

34 years old
Boulder, Colorado
Expertise: Advanced

Goals

+ To track his past hikes and related metrics in order to improve his ability to set future hiking goals

+ Find suggestions for hikes that are within his typical difficulty range and align with his fitness goals

Motivations

+ Get outside to take a break from the world and the pressures of being constantly connected

+ Live responsibly and ecologically-friendly

Frustrations

+ Finds it difficult to track his hikes without draining his battery

+ Wants to avoid social media but still be able to easily share his hiking experiences with other hikers who are interested

Our primary persona is an advanced hiker who desires to improve his hiking skills, rather than get assistance in navigating outdoor activities.

Secondary Personas

Stacy Vu

21 years old
Los Angeles, CA
Expertise: Unfamiliar

Goals

+ Plan an outdoor activity for an upcoming trip to Ann Arbor
+ Find the best local hiking spots and explore a new city
+ Meet other hikers on her adventure

Motivations

+ Explore the outdoors throughout her travels across the country

Frustrations

+ Lacks knowledge of Ann Arbor and its outdoor opportunities
+ Difficult to get to hikes in unfamiliar areas without an understanding of public transportation

Our first secondary persona is a visiting hiker, unfamiliar with the local outdoor opportunities but eager to engage in outdoor recreation in a new city. This classification was emphasized by our client as an important edge case to consider.

Bethany Smith

55 years old
Vancouver, WA
Expertise: Beginner

Goals

+ Plan an outdoor activity to engage in with friends and family
+ Find suggestions for outdoor opportunities that will align with her level of experience and desired difficulty

Motivations

+ Become an advanced hiker and be able to plan hiking trips independently

Frustrations

+ Difficult to share hiking and other outdoor activity information with her family
+ Feels uncomfortable with planning an outdoor recreational activity on her own

Our second secondary persona is a beginner hiker that prefers to stay within her local area. Because of her beginner status, she may utilize the app to navigate during activity, in addition to planning and sharing her hikes.

UX Requirements

Priority I

- Our design solution must enable activity tracking without requiring active technological use throughout the activity.
- Our tracking functionality should be designed to guide accurate user self-reporting.
- Our design solution should enable users to easily document and review their past activity.

Priority II

- Our design solution should promote user control & should not require user activity tracking if users wish to abstain.
- Our design solution should allow users to leverage their social network through the app.

Priority III

- Our tracking functionality must be able to be implemented across the mobile and web apps.
- Our tracking solution must maintain functionality when users are offline.

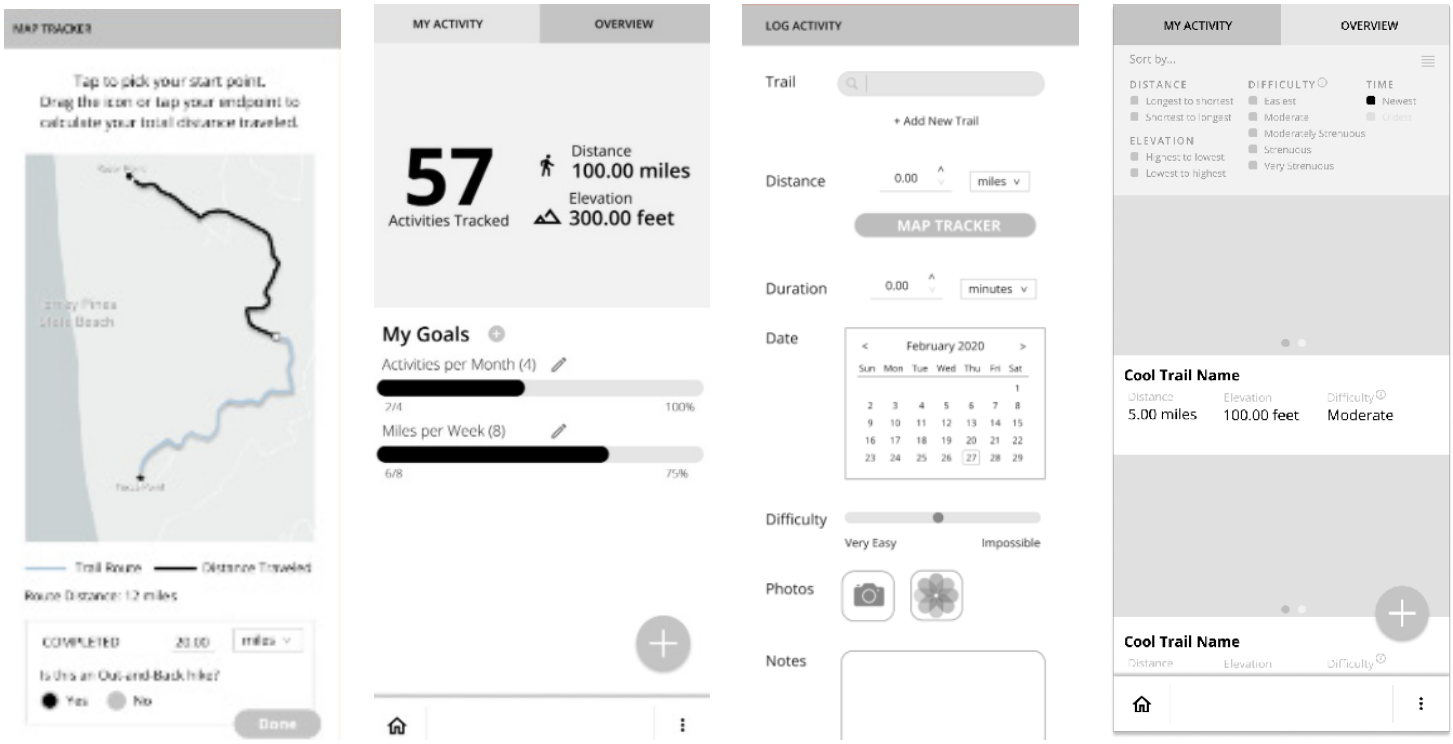
UX Design Process

Overview

Our team underwent three major design iterations over the course of the design phase. Initially, we brainstormed the features and functionality we wanted to include in our design; mainly, an activity tracking interface that enabled users to log specific outdoor experiences. We began designing by creating a low-fidelity prototype, which we used to conduct usability tests with users, as well as receive feedback from our client. After this primary round of validating our designs, we collaborated to create our high-fidelity prototype.

Early Ideas, Sketches & Wireframes

Our team underwent three major design iterations over the course of the design phase. Initially, we brainstormed the features and functionality we wanted to include in our design; mainly, an activity tracking interface that enabled users to log specific outdoor experiences. We began designing by creating a low-fidelity prototype, which we used to conduct usability tests with users, as well as receive feedback from our client. After this primary round of validating our designs, we collaborated to create our high-fidelity prototype.



Initial wireframes

User Testing Insights

We conducted usability testing in order to gain feedback for our next iteration, creating a user testing task list that asked participants to complete basic actions using our low-fidelity prototype. Each member of our team recruited one subject for our initial tests, resulting in four datasets from which we found common trends:

- A majority of the participants we tested noted some level of confusion when distinguishing between the "My Activity" and "Overview" pages within the Activity Log, and determining which page they were currently on

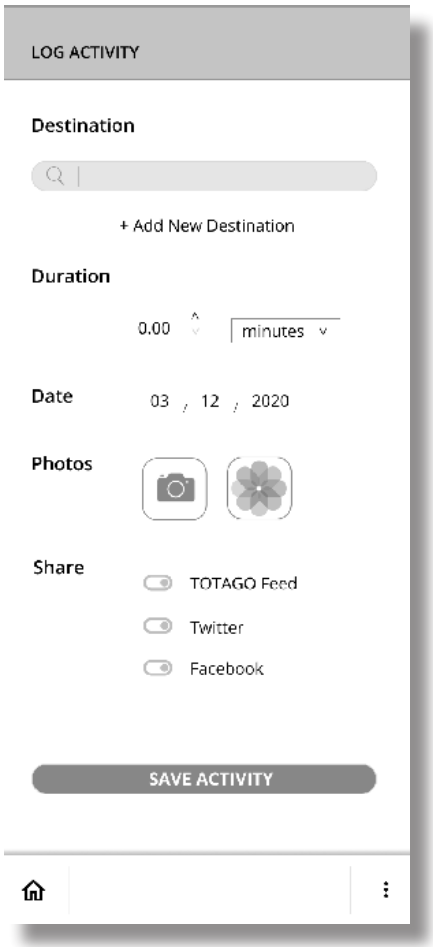
- The existence of the "+" button to log an activity on both screens also contributed to this ambiguity.

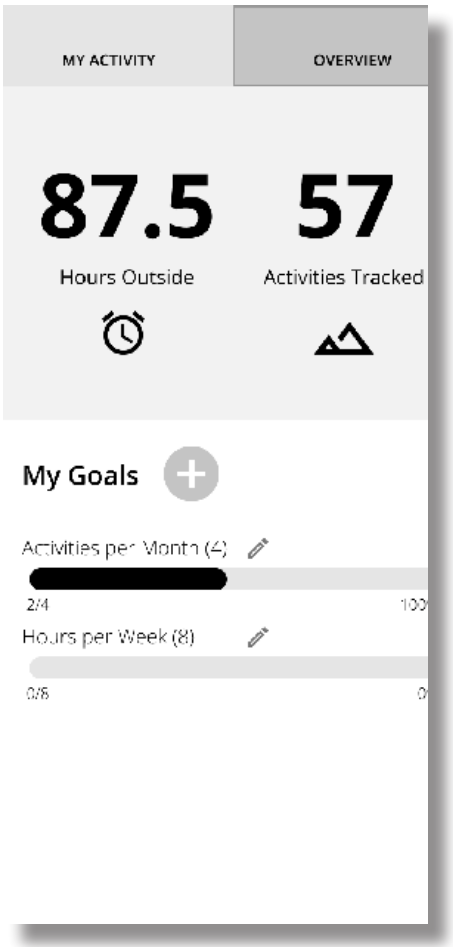
Client Feedback

The feedback we received from our client on our low-fidelity sketches monumentally changed the direction of our design process. Adrian, our client, requested that we design a simplified MVP version of our design, as well as broaden our focus from solely trails and hiking to any type of outdoor activity. In regard to the implementation of a social feed within the TOTAGO application, Adrian asked our team to put a pin in developing that aspect of the solution. While he liked the idea and vocalized a desire to explore its implementation with the TOTAGO team, he preferred to prioritize the tracking solution for our team's efforts and time.

Intermediate Designs

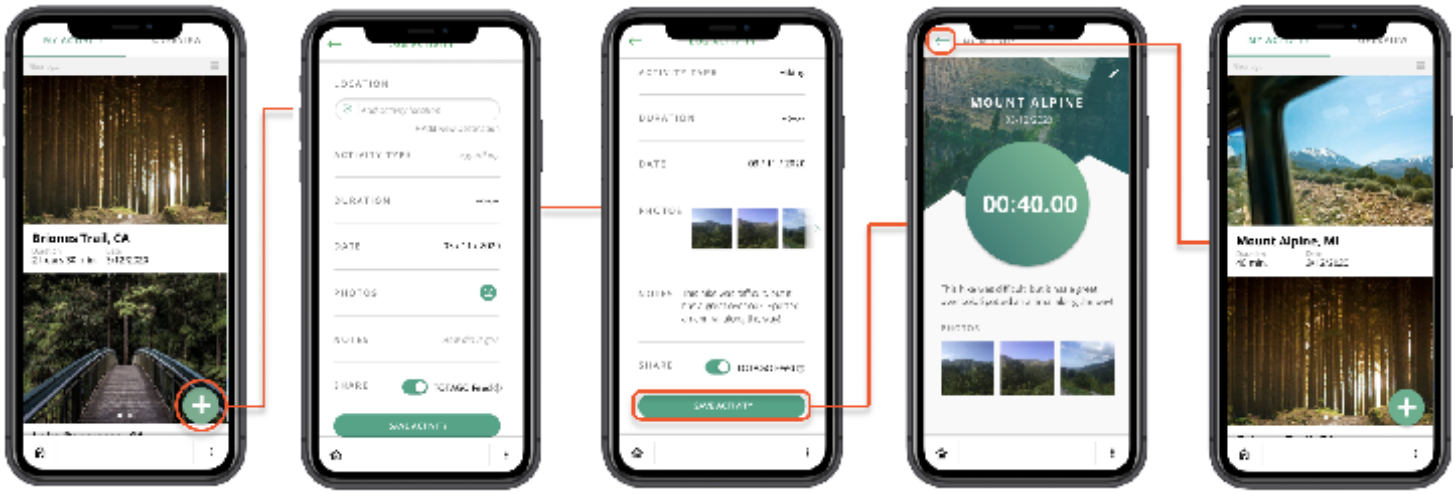
After receiving valuable feedback from both users and our client, our team underwent another round of low-fidelity design iteration. We streamlined and simplified our design scope and functionality. To increase the simplicity of tracking and goal setting, we decided to focus on duration outside as the primary metric, with the number of activities completed as a secondary option. Using language like "destination" rather than "trail name," and removing trail-specific metrics like "elevation," we widened the scope of our solution to encompass all trackable outdoor activity.





High-Fidelity Designs

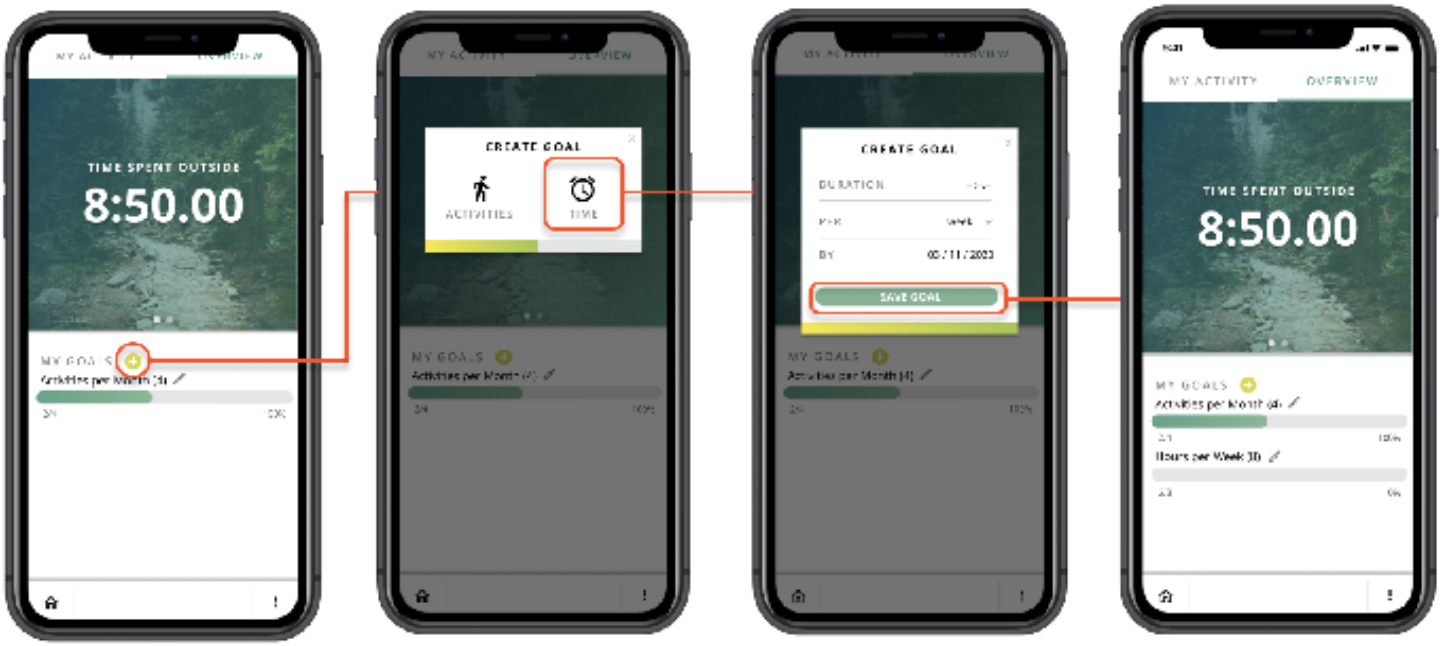
Next, we prototyped a high-fidelity version of our design, which we would use to conduct our validation study and confirm our final recommendations for the solution



Activity Tracking

Design Rationale

Through our survey analysis and interviews, we identified a need for users to track and view past outdoor activities. We also identified this as a client need in order to improve their completion rate metrics. Most importantly, this is a retroactive feature that doesn't require users to actively monitor their activity throughout their outdoor experiences, which was one of one of our top priorities within our requirements. Furthermore, the filter option on the "My Activity" page works to satisfy our requirement of enabling users to easily document and review their past activity.



Activity Overview

Design Rationale

To encourage users to track their outdoor activity using time spent outdoors, our design emphasizes time by highlighting duration and frequency as metrics for measuring goal completion. The "Overview" page is separate from the "My Activity" page to avoid overloading users who are uninterested in specific metric tracking.

Activity Overview

https://www.figma.com/proto/mnx5J3aBQLfH6x8e0bZhvL/Mobile-Prototype?node-id=803%3A349&scaling=scale-down

Validation Study

Study Design & Methodology

Research Questions

Our validation study was designed to give insight into the following research questions:

1 How does the perceived usability of the activity logging process differ when adding a new destination outside of the TOTAGO database?

2 How do users want to think about timing/ duration when logging an activity?

3 What do users think is the primary purpose of the activity logging tool?

4 Is there value in offering users multiple options, in terms of privacy, for sharing activity log reports with the TOTAGO network?

Study Approach

Our team conducted online, remote A/B testing, accompanied by a post-test survey, to validate our design decisions and receive user feedback in our interactive prototype. To answer our first research question, we decided an A/B test would best enable us to compare the overall usability of our design when adding a new destination vs. searching for an existing destination. In both versions A and B, we measured task completion time, test completion time, task completion, success/ error rate (number of incorrect clicks), and post-task ease, as rated on a scale from one to five, ranging from Very Easy to Very Difficult. These metrics allowed us to determine the perceived usability of each version, in both quantitative and qualitative terms. Our team also conducted a post-test survey, in order to receive more informative qualitative feedback. Our survey utilized a combination of System Usability Scale (SUS) questions, comprehension questions, perceived usability questions, and preference test questions. By including a variety of question types in our survey, we were able to address each of our research questions.

Procedures and Materials

We conducted our A/B test using Google Hangouts, asking participants to screen-share with us such that we could observe their interaction with our prototype. We read participants the task list corresponding to the prototype version they were using (A or B). After the A/B test was complete, we sent participants our post-test survey to be completed.

Version A of the prototype featured a search method to add an activity destination already existent within the TOTAGO database. Participants tested with version A were asked to complete the following task list:

1. Navigate to the Activity Log
2. Search for and add the "Mount Alpine" trail
3. Set the activity duration to 40 minutes
4. Add a photo to your activity report
5. Share your post with the TOTAGO feed
6. Save the activity
7. Return to the Activity Log
8. Navigate to Overview
9. Add a new Time Goal for 8 hours per week
10. Change the goal date
11. Save the goalReturn to the Activity Log

The activity log in Version B of the prototype featured an interface allowing users to add a new destination not within the TOTAGO database. Participants tested with version B were asked to complete the following task list:

1. Navigate to the Activity Log
2. Add a new destination, called "Mount Alpine" to the report
3. Set the activity duration to 40 minutes
4. Add a photo to your activity report
5. Share your post with the TOTAGO feed
6. Save the activity
7. Return to the Activity Log
8. Navigate to Overview
9. Add a new Time Goal for 8 hours per week
10. Change the goal date
11. Save the goal
12. Return to the Activity Log

After completing the A/B test, participants were asked to complete a post-test survey. Our survey incorporated some System Usability Scale (SUS) questions; rather than include all ten SUS questions and risk our survey being too long, such that participants would not be inclined to complete it, we selected the five most important questions for our research questions and study purpose. The trade-off of this decision was that we could not calculate the SUS usability score. However, because our survey aimed to collect mostly qualitative feedback,we were willing to sacrifice the SUS usability score in order to include more relevant comprehension, perceived usability, and preference test questions. The post-test survey questions can be found in the Appendix.

Recruitment

We recruited participants by reaching out to users, utilizing the TOTAGO user email list given to us by our client, as well as non-users from within our communities and peer groups. Each team member recruited two study participants. We sought diversity in our subject pool, attempting to recruit study participants from a variety of demographic backgrounds in order to minimize potential biases during the testing and analysis stages.

Analysis of Results

Sample Demographics

We strived for diversity within our participant pool of non-TOTAGO users in order to get the most accurate results from our validation study. There were eight participants with ages ranging from 15 to 56. In terms of education level, all participants had some degree of schooling ranging from high school to law school.

Statistical Analysis

	Avg Completion Time SD = Strd Dev	Avg Incorrect Clicks SD = Strd Dev	Avg Post-Task SEQ (lower=easier)
Version A	76.75s (SD = 40.8)	9 (SD = 4.03)	1.38 (SD=0.19)
Version B	68s (SD = 42.7)	4.25 (SD = 8.51)	1.06 (SD=0.17)

Completion Time

Version A had an average completion time of 76.75 seconds with a standard deviation of 40.84 seconds, whereas Version B's average time was 68 seconds with a standard deviation of 42.71 seconds. Version A's longer duration is attributed to the fact that participants spent nearly 27.2 seconds alone trying to figure out how to navigate to the activity log page in addition to sharing posts to the TOTAGO feed. In comparison, those same tasks on Version B took on average just 15.67 seconds.

Incorrect Click Counts

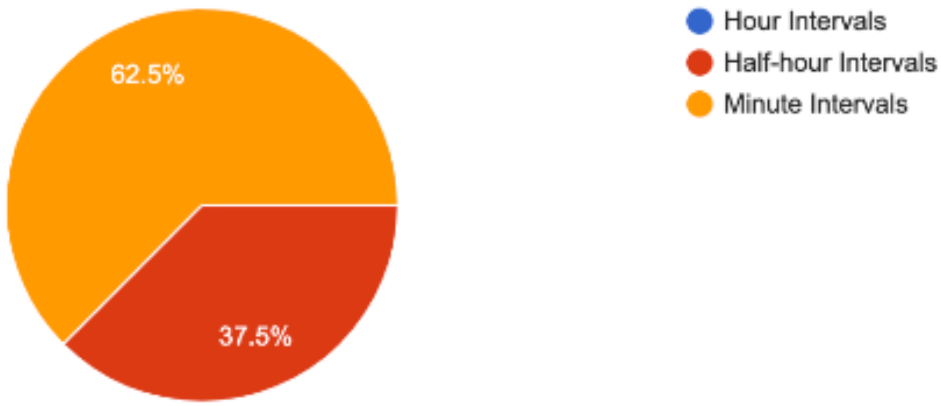
Version A's mean incorrect click count is 9 with a standard deviation of 4.03 whereas Version B's mean count is 4.25 with a standard deviation of 8.51. In Version B, participants made the most mistakes when navigating to the activity log and adding destination "Mount Alpine" to the report, accounting for 3 counts or nearly 70.6% of the overall count.

Post-Task SEQ

The Post-Task SEQ has participants rate each task by level of difficulty, with 1 being the easiest and 5 being the most difficult. Lower values indicate that the task was relatively easy. In Version A, the average SEQ value is 1.38 with a standard deviation of 0.19 while the average of Version B is 1.06 with a standard deviation of 0.17. Again, the difficulty in A stems from participants struggling to access the activity log and sharing contents to the TOTAGO feed while B's difficulty is due to the interface for adding new destinations.

Insights

From our analysis we were able to determine some key insights:



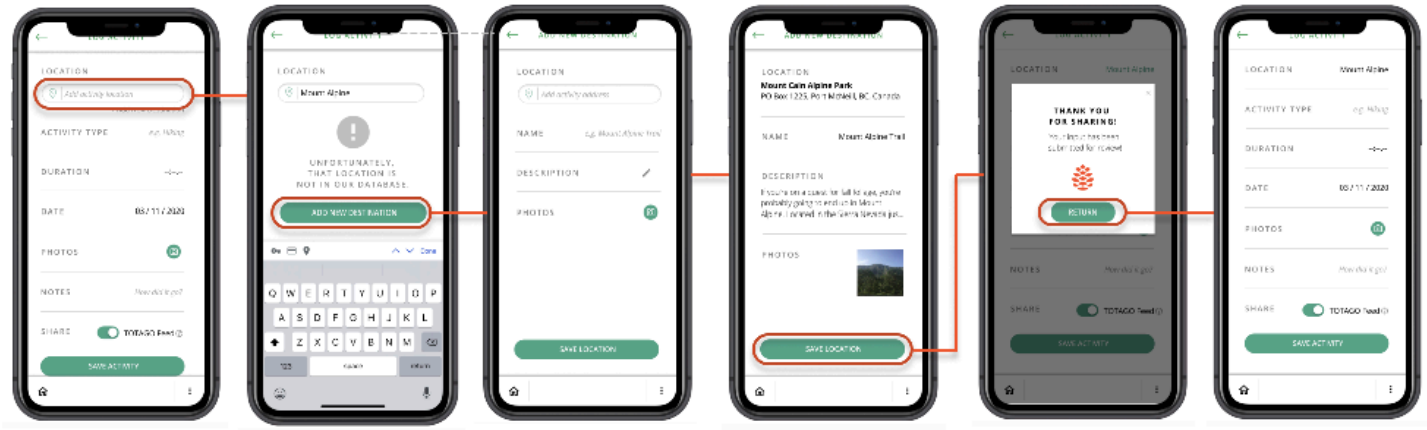
- Inputting information manually, in Test B, caused greater confusion for the user and took more time than searching for an existing destination.

- Inconsistencies in language surrounding activity-sharing throughout the app caused confusion, as well as difficulty in completing the task altogether.

- Users perceive the app more as a personal activity log, in addition to not understanding where the information went once it was public.

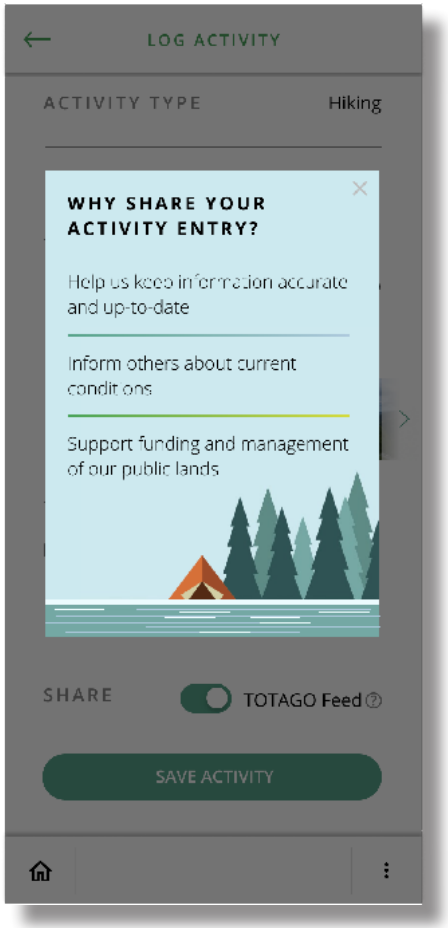
- Users prefer to record their duration outdoors using minute intervals.

Adjustments to Final Design



Clarification in Activity Sharing

Participants demonstrated confusion with the "Public" language to describe post sharing. By switching to "TOTAGO Feed," we hope to emphasize that it is TOTAGO that will be using the data because it is important to their mission. Furthermore, we included a "Why" pop-up to explain to users how TOTAGO benefits from their data-sharing. In doing so, we hope to orient the activity tracking tool toward public, rather than personal, use.



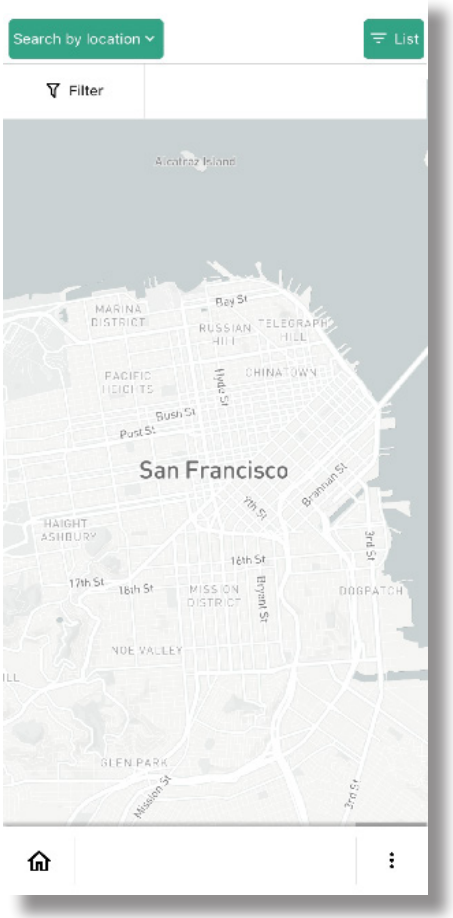
Merge Search & Add New Destination Versions

We merged search versions A and B by implementing the "Add New Destination" button under the search bar. Furthermore, we simplified the process of adding a new destination, still enabling users to search for a destination and only requiring two to three fields of manual input.

Final Recommendations & Next Steps

We merged search versions A and B by implementing the "Add New Destination" button under the search bar. Furthermore, we simplified the process of adding a new destination, still enabling users to search for a destination and only requiring two to three fields of manual input.

Our client has expressed a desire to further minimize the "Add New Destination" process; rather than creating an alternate flow, we recommend integrating that process onto a pop-up that will overlay the original activity report screen. Additionally, at the early stages of the project, we had discussed the benefits of creating a TOTAGO social feed within the app, to which users' activity reports could be posted. While we did not have the capacity to design a social feed solution within the scope of our project, we strongly recommend the implementation of this feature. Not only would this feature strengthen the TOTAGO community, but we believe a social feed would encourage users to share their activity reports and utilize the tracking tool for community benefit.



Appendix

Competitive Analysis

https://docs.google.com/document/d/1tUHXPS20K1izvySpd_ApLCYMwjQz4v3jn8fc1eAPwLE/edit?usp=sharing

Current User Interview Script

https://drive.google.com/open?id=167wBU8ZNu9uIT3NXzTeLT3l9dbcVw8HhG7mJcoR4tyo

Non User Interview Script

https://drive.google.com/open?id=14mBTwYAZ4Oq__Qp5Sapwcg5uhPOWWAKVccZ4KoEJSOo

Post Test Survey

https://docs.google.com/forms/d/e/1FAIpQLScSjuPoHcRFXDRSLZUZpQegkasPand4MTIy-zoL3sJQwcbWPg/viewform?usp=sf_link

UX Specification & User Flows

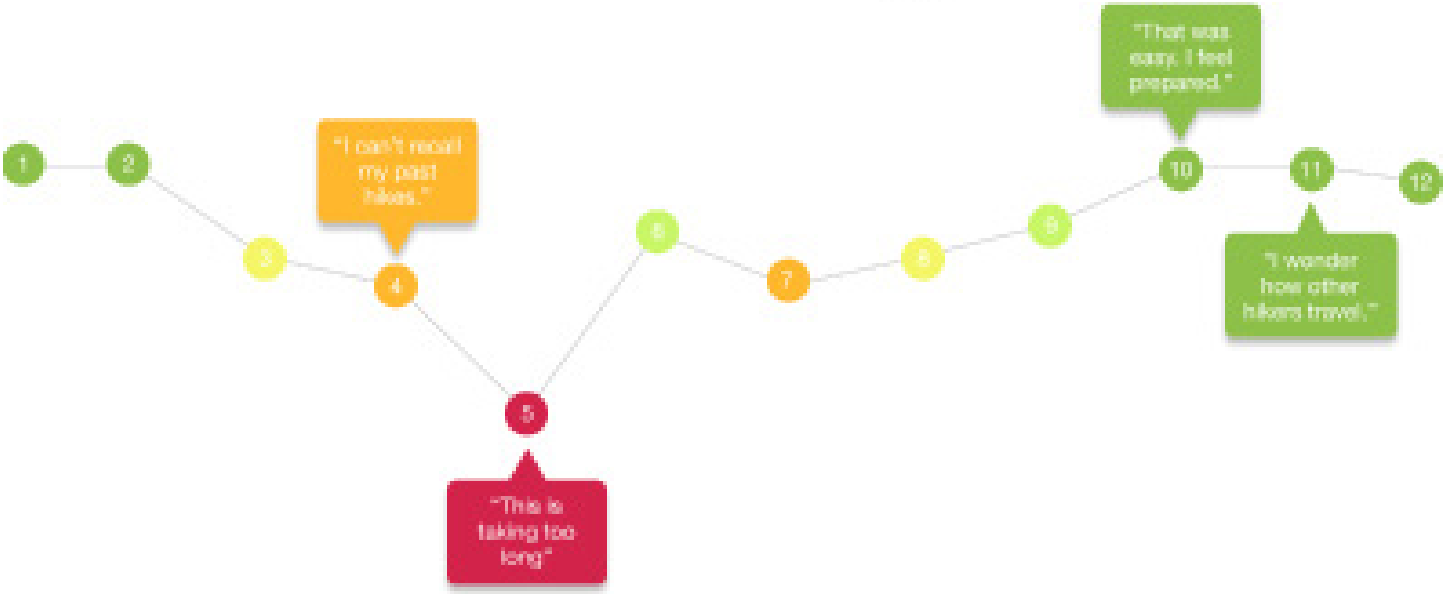
https://drive.google.com/open?id=1fd27prOzkDtlo4tkFLVOS8FuVfwpVwAMTaCgdI4YPn0

User Journey

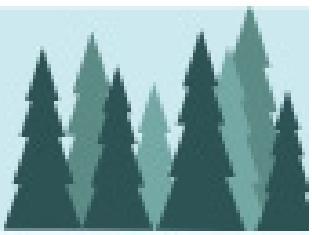
Scenario
Andrew wants to discover a new trail and take a strenuous hike in his local area.

Goals & Expectations
- Discover a new trail
- Review the experience with other experienced hikers
- Conserve the environment
- Easy and reliable access to trail map

Motivate	Plan	Compare	Download	Action
1. Tired of the same trails, Andrew is motivated to challenge himself to a new hike and meet other hikers.	2. Logs into his TOTAGO account on his Laptop to view local trails. 3. Opens hikes labeled strenuous or very strenuous in a new tab	4. Closes hikes that he has taken or hikes that look familiar. 5. He has been on all selected hikes. Andrew expands his search on the map and repeats steps 2-4. 6. Selects the new hike with the shortest travel time.	7. Selects plan trip by public transit and receives error message. 8. Enters starting destination and selects go. 9. Saves trip on desktop app. 10.Opens TOTAGO mobile app and downloads offline map.	11.Follows public transit directions on Google maps and trail directions from downloaded map. 12.Completes hike and posts pick from summit on Instagram tagging location.



Opportunities
- Add an activity log for users to document and recognize their past trips.
- Create a social aspect for users to share feedback and document trip highlights.



Interview Emapthy Map