meet

Assignment 8: Hi-Fi (Interactive) Prototype

Introduction

Meet the Team

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Value Proposition

meet makes meetings purposeful by transforming the way people schedule and perceive meetings.

Problem-Solution Overview

For many, meetings are perceived as a necessary but often unproductive use of time. Meetings often lack direction, contain unnecessary people, and occur too often. We envision a world where meetings aren't just a part of a process, but also inform the project lifecycle. It is our mission to add purpose, focus, and productivity to meetings. With meet, you can track your meeting data (see Figure A), create meetings with concise talking points, and decline irrelevant meeting invites in a socially acceptable manner.

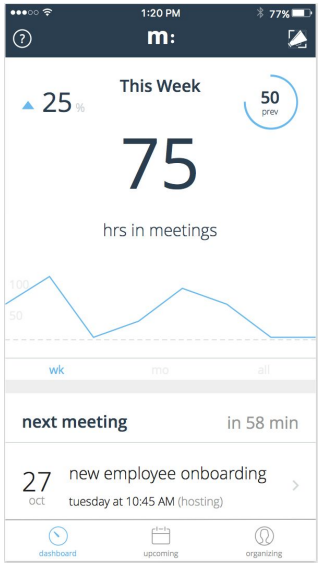


Figure A: dashboard screenshot

Tasks & Final Interface Scenarios

Task List and Rationale

1. Schedule (Complex)

Users begin scheduling a meeting by specifying the name, date, time, duration, and location. Users can then add talking points to the meeting to provide invitees with a clear idea of the meeting's purpose. We chose this task to ensure that meetings are directed and purposeful. We structured the task around the creation of talking points, which forces meeting organizers to think through meeting content before calling a meeting.

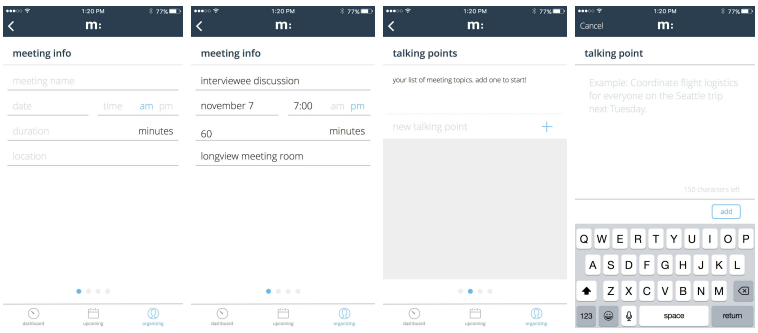


Figure B: Creating Meetings Task Flow

2. Respond and Manage (Moderate)

As part of the meeting creation flow, organizers can also invite attendees to a meeting. Once a meeting invite has been sent, those invited can RSVP by checking off the talking points that are relevant to them. If they are not relevant to any talking points, then they check none and decline the invite. We chose this task because it ensures that only people relevant to a meeting will be in attendance, removing distractions and again, streamlining meeting content.

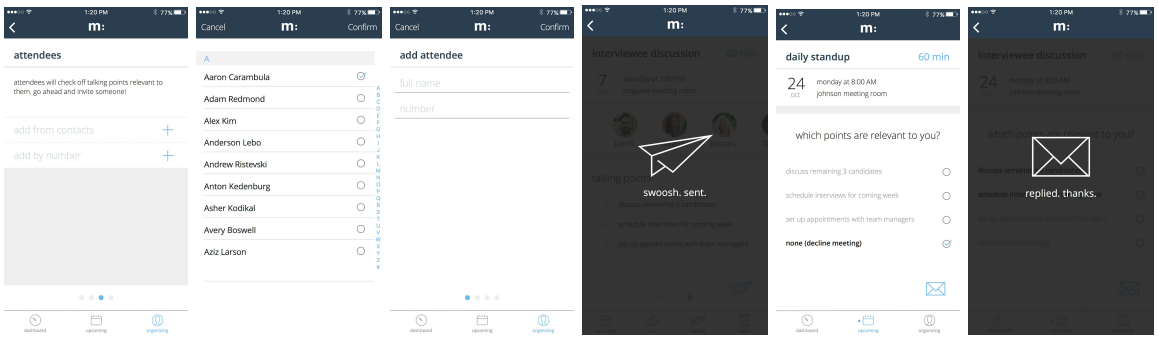


Figure D: Send out Meeting Invitations Flow

Figure C: RSVP to Meeting Flow

3. View Historical Meeting Data to Track Behavior (Simple)

Users can view their meeting data in the current time period and compare it to past time periods to see how their meeting habits have changed. We chose this task because this improves awareness of the user's meeting behavior and incentivizes spending less time in meetings.

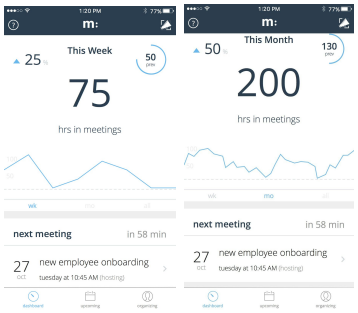


Figure E: Meeting Stats Dashboard

Design Evolution

Needfinding

To test our assumptions that there are issues in the meeting space, we interviewed both students and industry professionals to improve our understanding of meeting behavior and identify key pain points in the meeting lifecycle. These participants were chosen based on their meeting interactions. Some were mostly meeting attendees while others were also organizers. Some attended meetings for volunteer work, some were industry professionals with more hierarchical organizational structure, and others attended student organization meetings where organizational structure was flat. Needfinding was focused on three areas of the meeting process - before the meeting, during the meeting, and after the meeting. Problems found in each of these segments were: general unawareness of meeting content and purpose, lack of group participation and focus during meetings, and uncoordinated follow-up after meetings. Following a set of three experience prototypes, we decided to approach our problem by focusing on redesigning the pre-meeting experience, and in particular, trying to improve awareness of meeting content and topic relevancy to attendees.

Initial Sketches

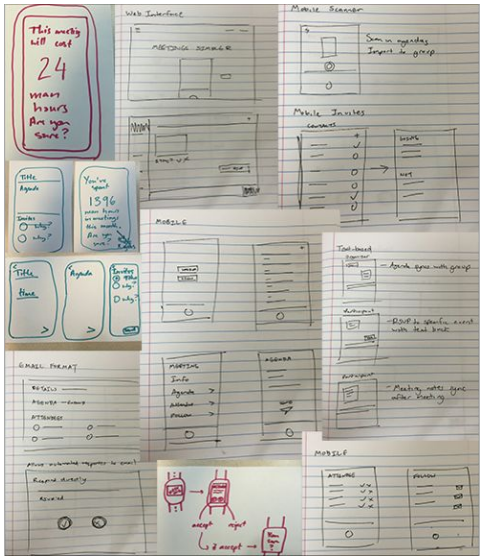


Figure F: Brainstorm of Various App Platform and Sketches

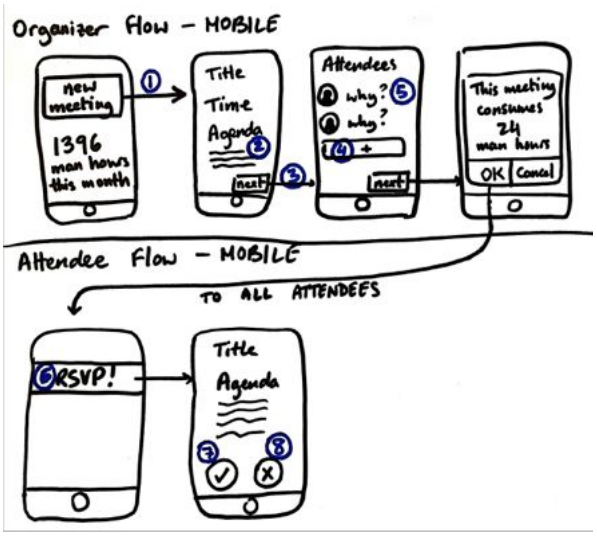


Figure G: Selected Interface Design

During this stage, we storyboarded (see Figure F) to select a preliminary design interface in which to test on (see Figure G). In selecting our interface design, we wanted to place productive roadblocks for the meeting organizer to ensure meetings were created sparingly. We ask the organizer why each person would be invited to make it more difficult for the organizer to schedule the meeting. Moreover, we kept a tally of how many “man hours” had been spent in meetings over the last month. By forcing the organizer to thoroughly consider their choices and see the impact scheduling the meeting has on others’ productivity, we hoped that they would be less likely to invite unnecessary people.

Low-Fidelity Prototype

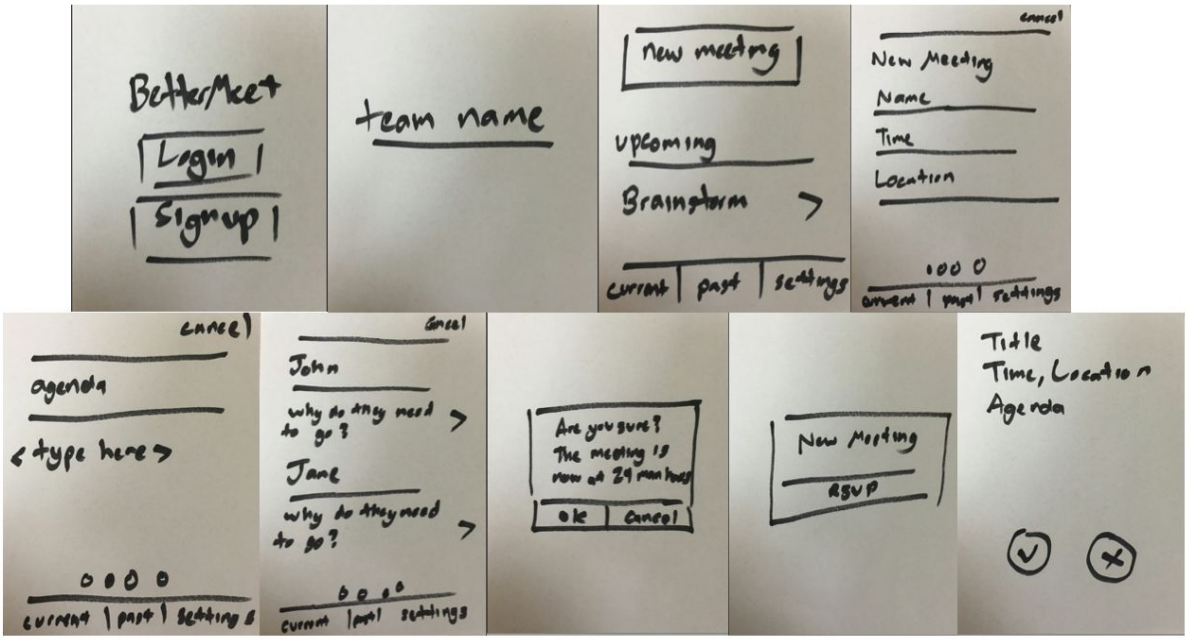


Figure H: Paper Prototype Used for User Testing

In this stage, we created a low-fidelity paper prototype to test our ideas from the previous sketching stage. We tested this prototype with four different participants, each from different backgrounds and comfort levels with technology. The emphasis of this testing was on user flow. Overall, although the participants were able to understand the information displayed on a single screen, they were unsure of how to navigate from screen to screen. The RSVP flow seemed to also be a point of confusion, as our participants weren't sure how to check what meetings they had been invited to or how to change RSVPs. Further, one of our participants mentioned that she did not foresee many people navigating to the "past meetings" tab. Another mentioned that an agenda seemed like something they would want to type on a computer instead of a mobile phone. However, many of the participants did comment that they felt like they should limit the time of a meeting after seeing the pop-up informing them of how many man hours a meeting would take.

Design Mockup

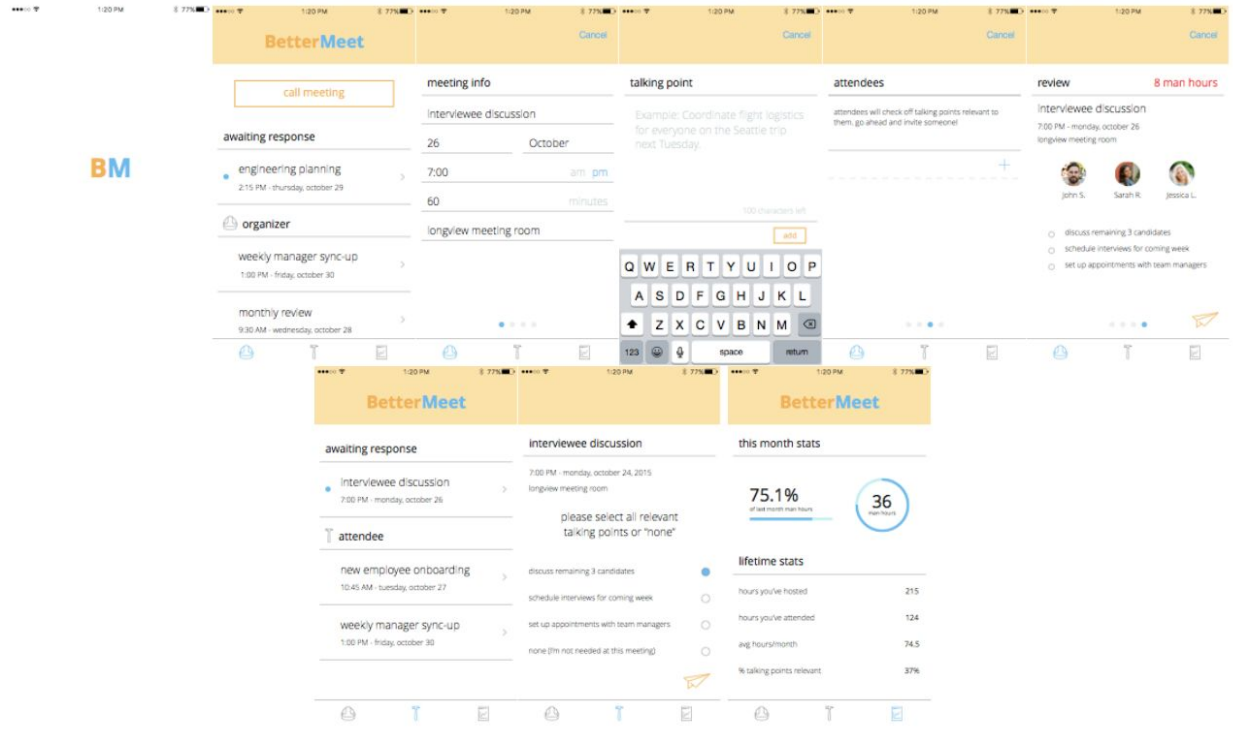


Figure I: First Iteration of Design

In this first mockup, we incorporated design changes from the low-fidelity prototype. We took out the “past meetings” tab, re-organized the tabs so that there was an organizer tab and a responder tab, made our call to action buttons more prominent to increase ease of navigation, and changed agendas to limited input “talking points.” Visually, we wanted to use colors that were professional, yet relaxed; however, the feedback we got from these initial designs mentioned that the colors made it hard to read and that the icons were not intuitive. We decided to go with a more heavily-weighted color scheme that would make it easier to read and changed our icons from a construction theme to icons we have seen as similarly purposed icons in other apps.

Medium-Fidelity Prototype

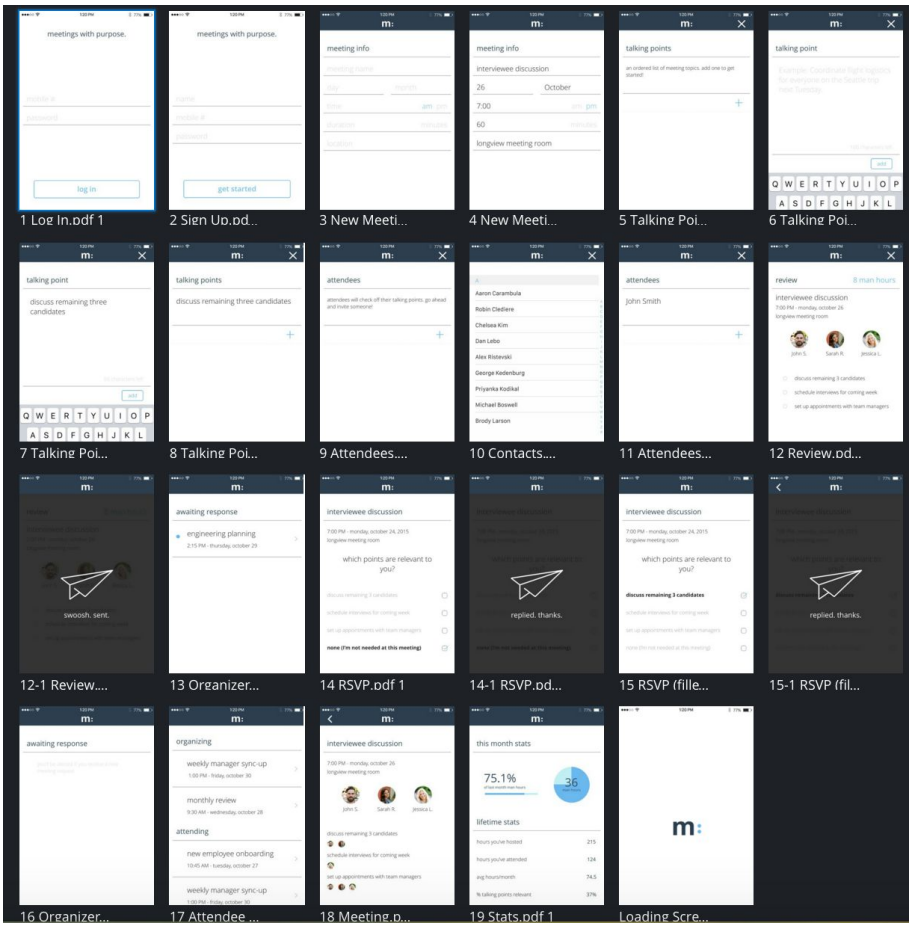
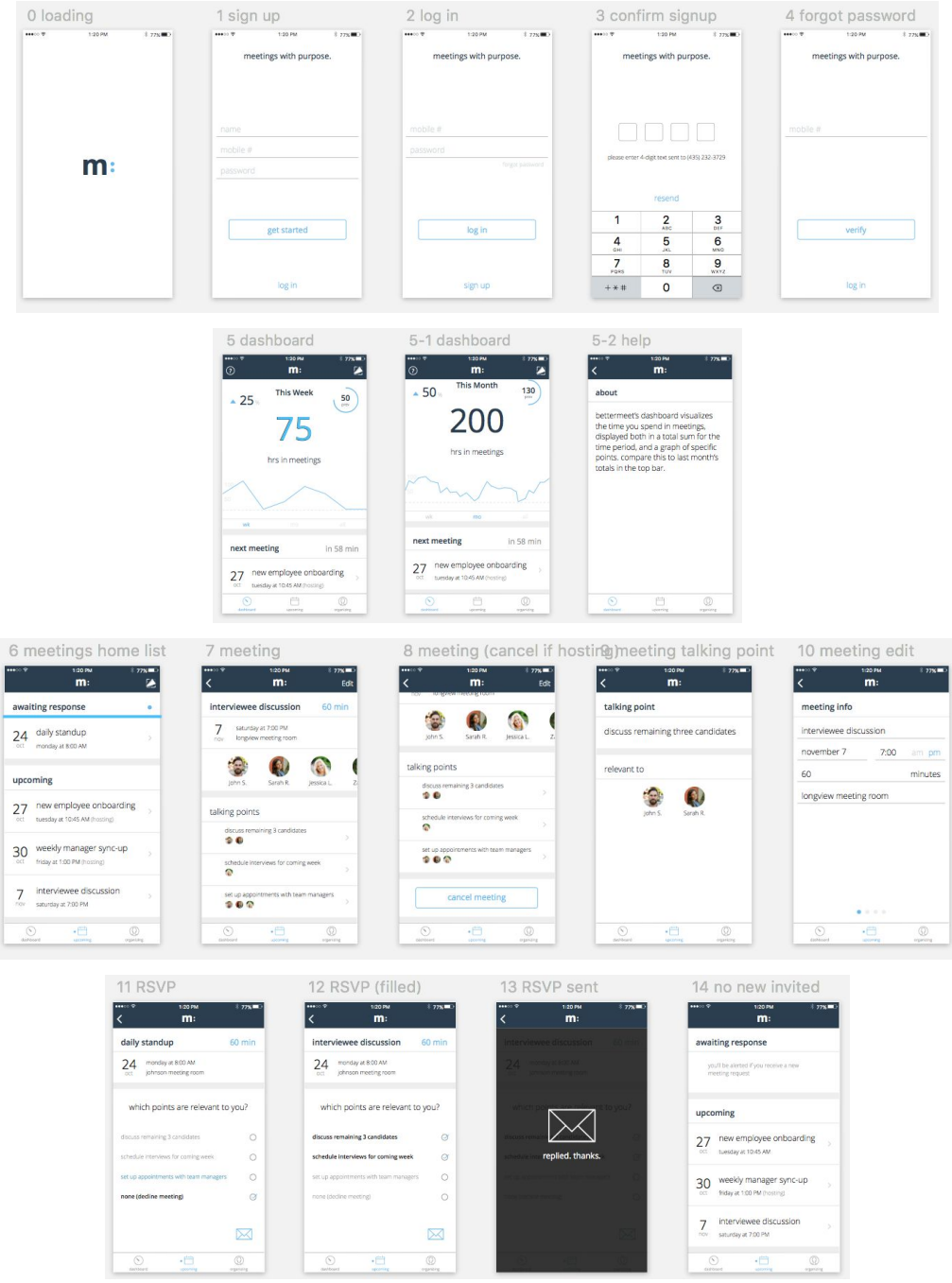


Figure J: Medium-Fidelity Prototype Screenshot from InVision

We created a medium-fidelity prototype on InVision to better test user experience. At this stage, we had other teams do a thorough heuristic evaluation of our app to see what bottlenecks we might have. Most of our recommended changes fell under two main categories: 1) not enough user control and 2) confusion over some of the app's functions. We realized that much of the confusion was occurring because it was not clear how the flow was organized. Because our home screen allows you to create a new meeting, we were not properly conveying the behavioral change we were trying to effect - that meetings should only be organized if they are necessary, as they otherwise break up the workday and decrease productivity. For our high-fidelity prototype, we re-organized the entire flow of the app by starting the home screen on the stats dashboard tab and changing the other tabs to "upcoming" and "organizing," thus condensing the number of icons and reducing cognitive load. We also added more controls to help users such as showing error messages and allowing users to save drafts, exit out of creating a meeting, and edit/delete meetings.

High-Fidelity Prototype and Final Design



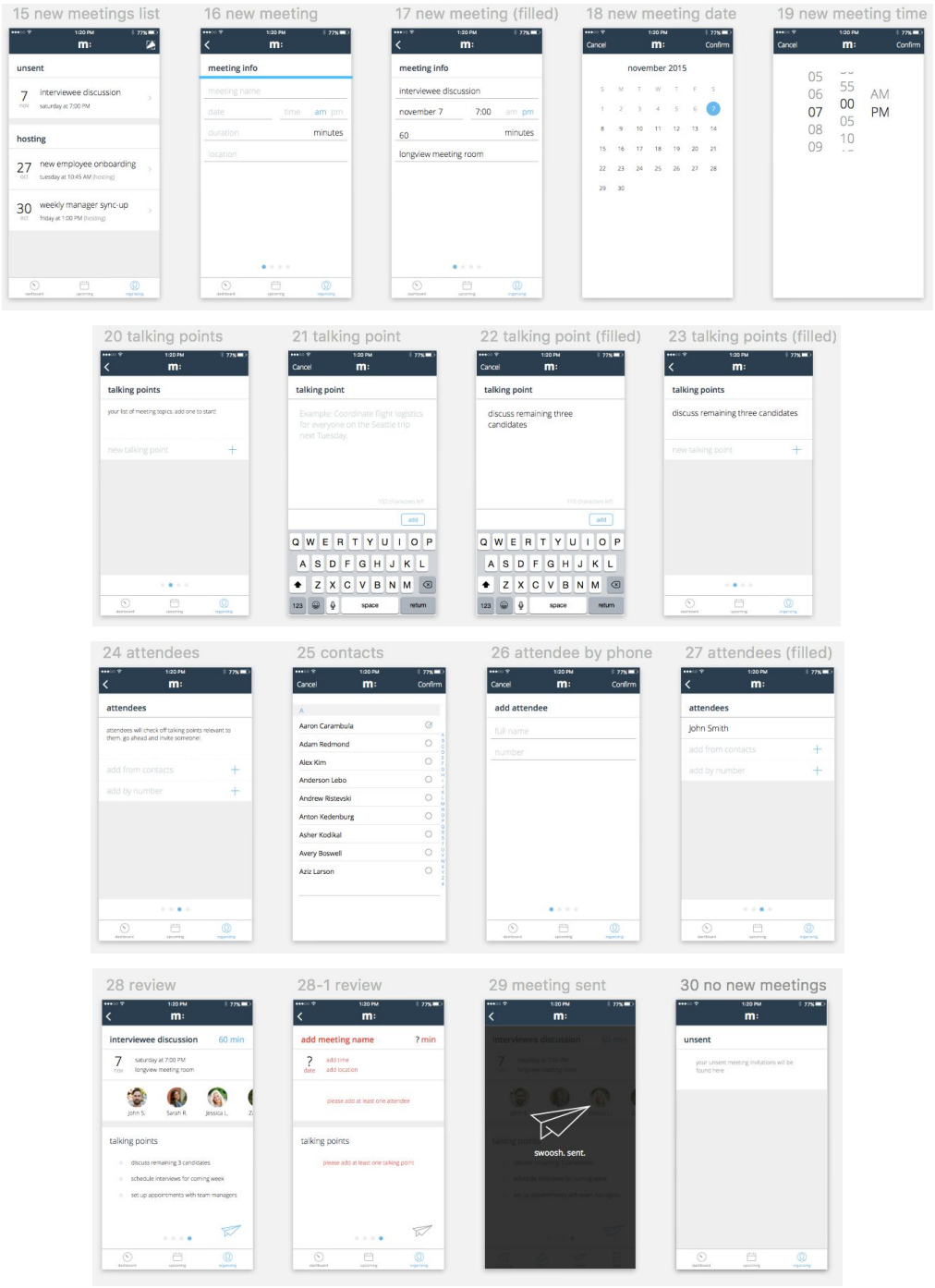


Figure K: Final Design for High-Fidelity Prototype

Major Usability Problems Addressed

Level 4 and 5 Severity Heuristic Violations

1. [H2-3 User control and freedom][Severity 4][Found by: B, C] On the Review screen (screen 12) there is no option for creating another meeting without sending or canceling the current

meeting. If the user wanted to make multiple meetings before sending them to attendees they would not be able to. Implement a save function for meetings.

We agreed that users should be able to quit out of the meeting creation flow without losing their work; however, we felt that a “Save” button was not the best solution since that could be confused with finishing up the creation of the meeting. We decided to implement a drafts screen (Figure 1) where unfinished meetings would show up. Meetings would automatically show up in this screen if users clicked back to leave the meeting creation flow at any point in the meeting creation. There is no comparison to what this screen was before the change, as it did not exist before.

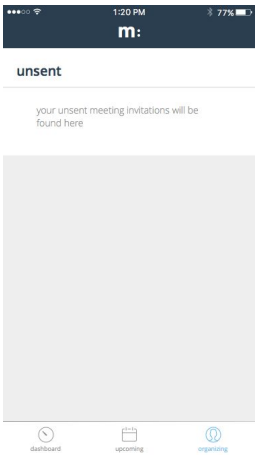


Figure 1: Drafts

2. H2-3 Task 1 [Severity 4][Found by: B, D] In the first ‘create a new meeting’ screen (out of the four in the flow) there is no cancel or X button. This violates the user control and freedom. A user who accidently pressed the ‘create new meeting’ button should have an easy “emergency exit”. Suggestion: add a cancel or an X shaped button in the top of screen similar to other screens in the application.

We decided to implement this change because we agreed that users might change their mind about starting a new meeting or unintentionally enter the new meeting creation flow. We added a back arrow in the upper lefthand corner of the screen (Figure 2-2) where there previously was none (Figure 2-1).

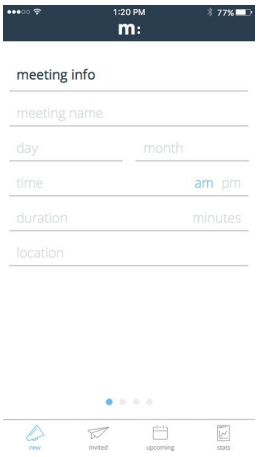


Figure 2-1: No Back Button

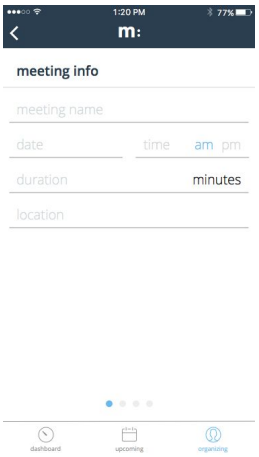


Figure 2-2: With Back Button

3. [H2-3 User control and freedom][Severity 5][Found by: A, B, C, D] On the Meetings screen (screen 18) there is no way to edit/delete a meeting. If the organizer makes a mistake while creating the meeting or wishes to not have the meeting (if not enough items were clicked) then there is no way to change or remove the meeting. Add an edit/delete button of the Meetings screen.

We decided to implement this change because we felt that users should have the ability to change their decisions or actions after the fact. We added an “Edit” button in the upper righthand corner and a “Cancel Meeting” button at the bottom of a meeting description, which only appear if the user is a host. See below for the before screen (Figure 3-1) and the after screen (Figure 3-2).

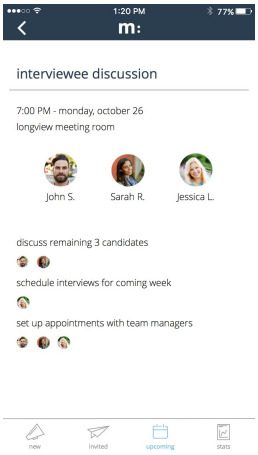


Figure 3-1: No delete, edit

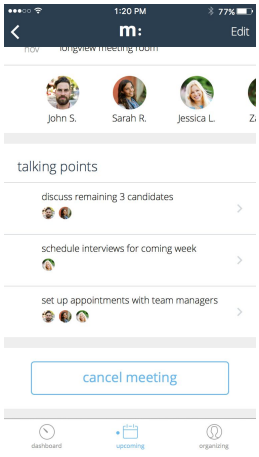


Figure 3-2: With delete, edit

4. [H2-6 Recognition rather than recall][Severity 4][Found by: B, D] On the Review, Organizer Home, RSVP, Attendee Home, and Meeting screens (screens 12, 13, 14, 17, and 18) the

duration of the meeting is not displayed. This is important information that the organizer may not remember and the attendee will not know. Add the duration of the meeting to the Review, Organizer, RSVP, Attendee Home, and Meeting screens.

We originally displayed the number of man hours that a meeting would take; however, we realized that people may not be keeping track of the exact number of meeting attendees, and thus it might be confusing for meeting organizers. As a result, we decided to go with the change this evaluator suggested and changed the man hours figure in the top right corner (Figure 4-1) to the meeting duration (Figure 4-2).

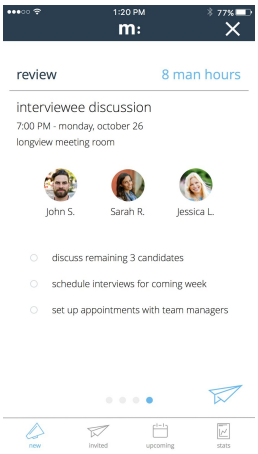


Figure 4-1: Man Hours

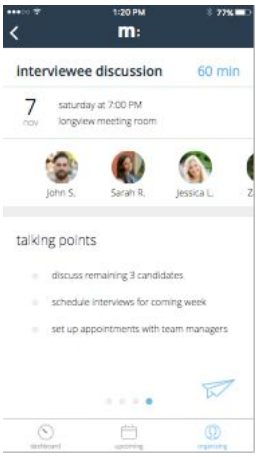


Figure 4-2: Duration

5. [H2-6 Recognition rather than recall] [Severity 4][Found by: A, B, C, D] On the Stats screen (screens 19) the “% of last month man hours”, “avg hours/month”, and “% of talking points relevant” are a bit confusing. If the user has a hard time understanding what the statistic is referring to they will not be interested in the statistic. Make the titles for these statistics more specific or have an option to view an explanation for the statistics.

We agreed that the stats screen is useless if users are unable to understand it, so we wanted to go with a more simplistic and straightforward interface. In the original (Figure 5-1), we had a lot of different kinds of stats, but we realized that not all of them were what people would be interested in seeing. We decided to show trends over time since that is what users are most likely to be interested in. We also took out the lifetime stats, as we realized that most users probably did not care about their total hours spent in meetings as much as how much they were spending in current time periods or in the last time period (Figure 5-2).

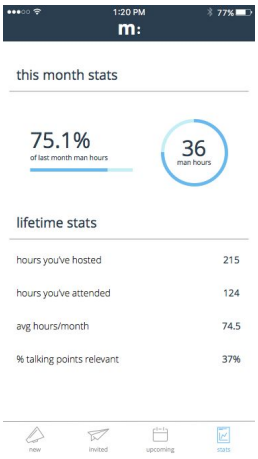


Figure 5-1: Old Stats Screen

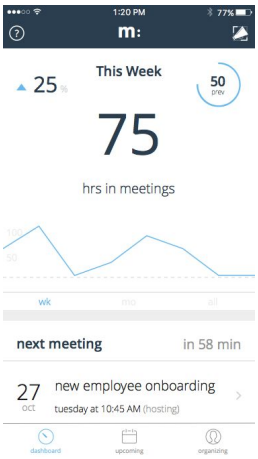


Figure 5-2: Stats Dashboard

6. [H2-7 Flexibility and efficiency of use][Severity 4][Found by: A, B, C, D] On the Contacts screen (screen 10) there is no option for selecting multiple people, all people, or groups of people. If the attendees have the option of selecting they are not needed at this meeting then the organizer may want to skip selecting specific people and just select a group and have the members decide if they should be there or not. Add a select all or allow for creating contact groups (recent, frequent, mobile team).

We agreed with this evaluator, realizing that meetings might have upwards of 10 attendees and inviting each individual attendee could get annoying. We implemented a multiple select feature (Figure 6-2); however, we did not want to implement groups, as that would defeat the purpose of requiring the organizer to make the decision of whether or not someone should be at a meeting. By adding groups, people irrelevant to a meeting could potentially be invited.

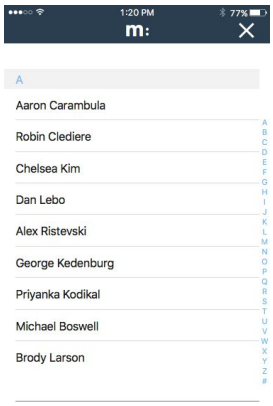


Figure 6-1: Single Select

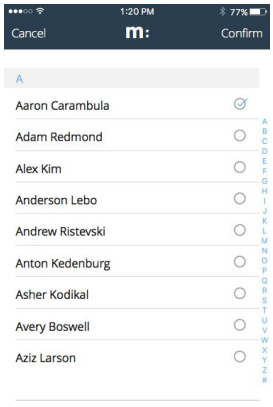


Figure 6-2: Multiple Select

7. H2-2 Task 1 [Severity 4][Found by: C] The first screen when a user opens the app is the ‘create a new meeting’ screen. This is a violation since it does not conform to the logical user

flow. Most users are likely to be interested in checking their upcoming meeting first. While setting a new meeting is an important screen, it should probably not be the first screen the user sees when they open the application. Suggestion: The first screen when the app is opened should be the list of upcoming meetings. To make it more intuitive the symbol ‘upcoming’ should be moved to the far left.

We agreed that we should change the home screen, but not to the upcoming meetings. At first, the home screen opened to let you create a new meeting (Figure 7-1). We felt that the opening screen should be the stats dashboard so that we could create that behavioral change where users would first see how many hours they’ve spent in meetings and thus be less likely to schedule a new meeting. On the same screen below all the stats, users can scroll to see their next meeting (Figure 7-2). We felt that this screen not only best portrayed our mission, but also provided the most logical functionality for a home screen.

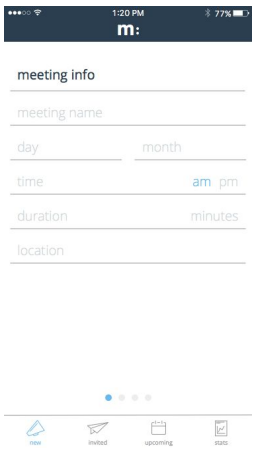


Figure 7-1: New Meeting Home Screen

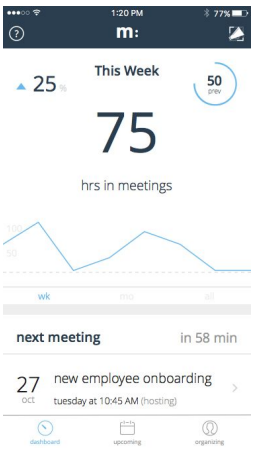


Figure 7-2: Stats Dashboard Home Screen

8. H2-2 Task 1: [Severity 4][Found by: C] On the login screen the user is requested to insert a phone number and a password. Assuming that user has already opened an account it would make more sense if the login screen requested a user name rather than a phone number. This is a violation since inserting a user name is a more common industry standard than using a phone number. Suggestion: once a user has registered for the app on subsequent log-ins the user should be asked to fill in their username and password.

We decided not to change this because most apps can be programmed to open to where you left off instead of automatically logging you out every time you close the app. Furthermore, industry is starting to accept adding mobile numbers as well since that allows you to receive texts on your phone for authentication codes from the app.

9. H2-3 Task 2: [Severity 4][Found by: C, D] In the response to an invitation screen there is no way for the user to easily decline the invite. This is a major violation since the user doesn’t have an easy and quick “emergency exit”. Furthermore, such an easy way to reject an invite is highly necessary considering the purpose of the app is to minimize the time spent on

attending meetings. On the other hand, a participant might need to be present at a meeting but just not be able to make that specific time. Suggestion: add a ‘decline invitation’ button or a ‘decline with comments’ option.

We originally considered the “I’m not needed at this meeting” option to be the same as a “decline meeting” button, but after getting this evaluator’s comments, we realized that the wording may have been confusing to the invitee. We changed the text from “I’m not needed at this meeting” (Figure 9-1) to “decline meeting” (Figure 9-2) to make things clearer for our users.

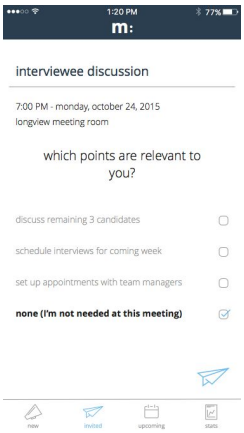


Figure 9-1: Ambiguously-worded Decline

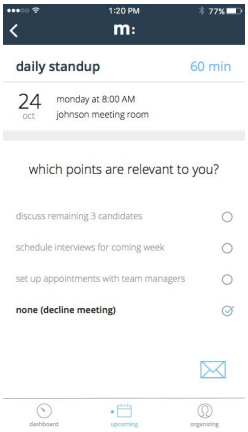


Figure 9-2: Explicitly-worded Decline

10. [H2-9: Help Users with Errors][Severity 4][Found by: D] In general, it’s hard to tell how error messages will be designed, if at all, because they weren’t worked into the medium-fi prototype. Some places that error messages would be particularly helpful include setting meetings for dates/times in the past, durations that exceed a certain threshold, leaving out required fields, etc.

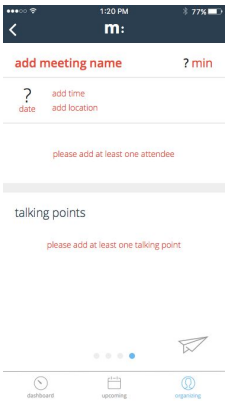


Figure 10-1: Error Display

We agreed that error messages would be important to help users figure out what we need from
them. We designed a screen that would show how various error messages in different places on the create meeting page would be displayed (Figure 10-1). We put the errors in red to go along with industry standards of how error messages are displayed.

11. H2-7 Flexibility and efficiency of use[Severity 4][Found by: A] – The interface does not have an options for previous meeting templates that might be useful for frequent users with routine meetings. Add an option to load previous meetings or save them.

We didn't make this change because we felt that allowing users to create templates would enforce the idea that scheduling regular meetings just for the sake of regularity is productive. We want people to be more purposeful with their meetings and to schedule meetings when they are necessary, so we want to add the roadblock of making users go through the flow of creating a new meeting in the app every time they want to schedule a meeting.

12. H2-10 Help and documentation [Severity 5][Found by: A]–There are no help or settings screens. Not part of the tasks, but it's important to remember to include settings and consider adding a help/tutorial option.

We felt that most of the app followed a fairly intuitive and industry standard flow; however, we did agree that there were certain parts that could benefit from having some kind of help/tutorial option. In particular, we changed the dashboard screen to have an option to click on a question mark button (Figure 12-2) to learn more about how to use the dashboard (Figure 12-3). The original stats screen did not have a question mark (Figure 12-1).

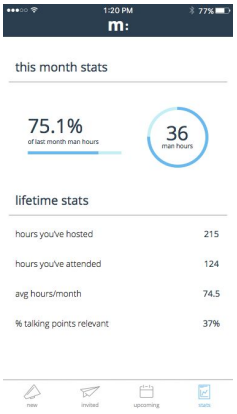


Figure 12-1: No Help

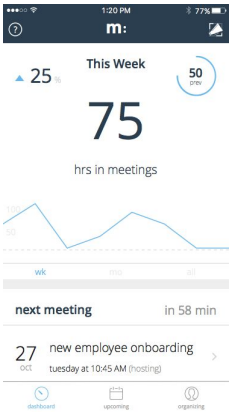


Figure 12-2: Help Button in Upper Left

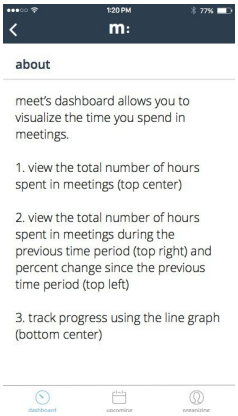


Figure 12-3: Help Page

Other Changes

In addition to the changes made above, we also changed the app navigation. We felt that the interface was a bit messy and that rather than split the tabs into tasks, we should split the tabs into relevance based on time. We saw this as things that are relevant at this very

moment (this would be the next meeting and the stats view), things that were coming up (both meetings that you have organized and meetings you were invited to), and things that are ongoing (meetings you are organizing). We felt like this took out a lot of the uncertainty of where to RSVP to a meeting and how to see which meetings a user was hosting versus the meetings they were invited to. This change didn't add or take away any functionality, but changed user flow.

Prototype Implementation

Tools

We designed the app in Sketch and then built it in Xcode using Swift. Sketch was used for static mockups. It lacked collaboration capabilities, but was quick for iterations and showing user flow. Xcode was helpful because it allowed for the creation of a functional native application and provided easy access to many useful frameworks. For example, Apple's UIKit framework provided components such as TableViews and ScrollViews that were used extensively in our app. Further, Xcode has a useful Storyboard view that allows you to easily visualize your app and implement quite a bit of UI through drag-and-drop. Aspects of Xcode that weren't helpful were the lackluster collaboration capabilities and the fact that developing the app was relatively time consuming since Xcode is intended for building fully functional and app-store-ready applications.

Wizard of Oz

None.

Hard-Coded Data

Historical meeting data is hard coded into our backend to show the utility of using the app over an extended period of time in the prototype.

Next Steps

While we have much of the major functionality down, we felt that the approach we are taking right now treats meetings as a binary in the sense that either a meeting happens or it doesn't. However, in reality, meetings run on a spectrum of productivity - productive meetings, unproductive meetings, and no meeting. In order to create even more behavioral change, we would like to make people not think about just whether or not a meeting occurs, but whether or not a meeting is occurring productively. Something we could do in the future to start implementing such a mentality switch is to have a popup at the end of every meeting that simply asks, "Was this meeting productive?" Then, the user could respond yes or no, and that data could be added to the stats dashboard to show users what percent of their time spent in meetings is productive. This will create awareness around meeting productivity and enable users to start thinking more intentionally about how to make their meetings more

productive if they currently are not. Furthermore, it would streamline the meeting scheduling process to have our app integrate with calendar apps such as Google Calendar or Sunrise so that when you schedule a meeting, it automatically adds it to your calendar as well.

Summary

Our team strongly believes that today meetings are a bottleneck in project productivity. In order to address this problem and make meetings more productive, we went into the field to test our hypothesis and adapt our point of view to real human behavior and experience. We wanted to build something that would not only add focus to meetings, but also help people think differently about meetings. We brainstormed and created various sketches and then selected our favorite interface design to create a low-fidelity prototype. We used this prototype to do user testing in order to determine which task flow was most intuitive to our end user. With this feedback, we created a medium-fidelity prototype using InVision. Other teams then completed a heuristic evaluation of our prototype, and we leveraged their detailed evaluations to create a high-fidelity prototype. We believe that meet will enable meeting organizers to be more intentional when organizing meetings while simultaneously giving potential meeting attendees a clear understanding of a meeting's purpose and a way to decline irrelevant meeting invites in a socially acceptable manner.