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Usability Analysis & Results

Who do I contact?

Show me the relationships!

Which ones?

How do we signal them?

Last online is too specific!

Do they want to meet or help strangers?

How do the search boxes work?

What can I search on?

What does 'you' mean?

What were my original goals?

Possible solutions

Fedora Regional Hubs

During the winter of 2016-2017, I did a design project with the [Fedora Project](#) through the [Outreachy Project](#). Over the course of this project, I worked with the principal interaction designer for Fedora, [Máirín Duffy](#) (Mo). With her guidance, I did research and design for the [Regional Hubs](#) aspect of the in-progress [Fedora Hubs](#) project.

The overall Regional Hubs project is being tracked in [ticket #47](#), and research on it in [ticket #279](#).

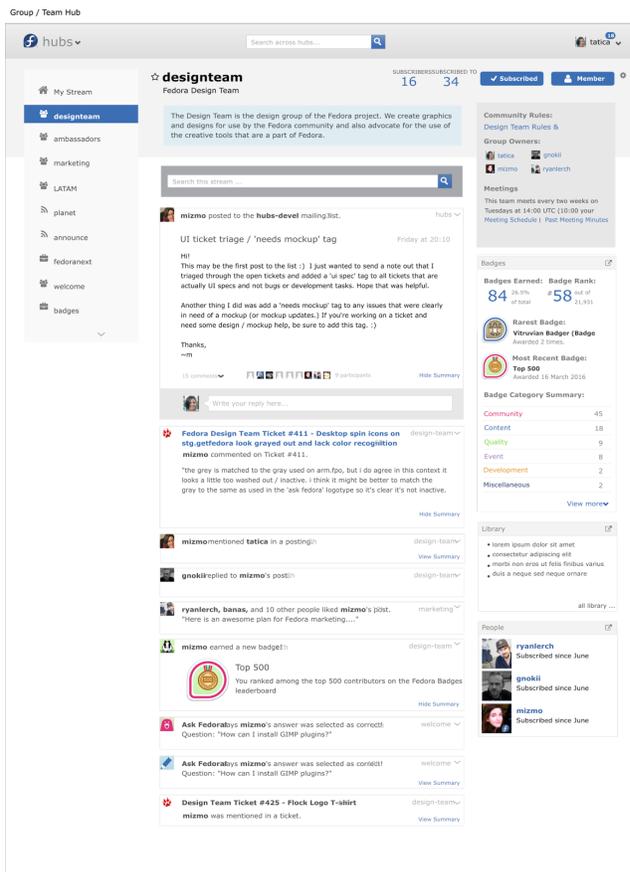
Introduction to Fedora Hubs

Fedora Hubs is intended to [help teams work together more easily](#), [bring new contributors onboard](#), and filter the firehose of information coming from Fedora.

I will briefly explain two screenshots: a team page, and an individual's stream.

First, a team page

A team page is intended to provide relevant information and support for communication within a team. In this example, you can see what a logged in member of the Fedora Design Team sees when on that team's page.

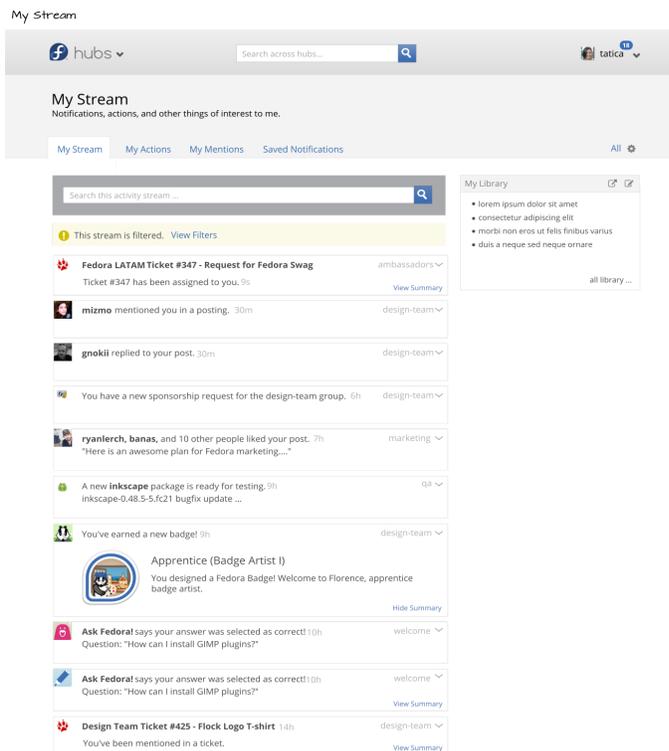


Everything on this page is all related to this particular teams and its members.

Not currently visible is a [chat widget](#) which allows people to talk in real-time with each other. It will likely mostly be talking to IRC, but can be configured based on the chat mechanism a particular team prefers. Precisely how to implement this is still in the research stages, but may involve the use of [Matrix](#).

Second, a stream

One's 'stream', as shown in the following mockup, shows you information about various things within Fedora that are specific to you and your work. It takes the information sent by various applications and activities within Fedora and filters out the part that relates to you. This makes it much less likely that you will miss important notifications, or spend far too much time sifting through your various information sources.



Here, you can see:

- assigned tickets or mentions in tickets
- your mentions throughout the site
- comments, replies, and likes on blog posts you wrote
- testing information for packages you own
- team join requests (if you have the relevant permissions)
- badges you earned
- followups on your replies to public questions.

In every case, the information is relevant to you and your activities, and should make it easier to keep track of the things you need to know about.

Project Summary

Competitive Analysis

Mo suggested that I start by looking at Ubuntu's regional meetup site and meetup.com. Once I'd gotten a sense of those two, she recommended finding a few other services that also help organize geographically co-located groups of people.

My original goals for this analysis were to get an overview of current practices and general structure of existing meetup sites, identify potentially useful techniques and things to avoid, and come with questions for contextual interview and for ourselves.

Who and why?

[Ubuntu's regional meetup site](#), has similar goals to that of Fedora Hubs. Like Fedora, they are a community of people based around the use of a particular Linux distribution. Also like Fedora, they do outreach to the general public in the hopes of attracting more community members.

- [Ubuntu comments and annotated screenshots](#)

[Meetup.com](#) is the most ubiquitous regional meetup site around, at least in the United States. No competitive analysis in this sphere would be complete without it.

- [Meetup comments and annotated screenshots](#)

The next two sites showed up in a list of [meetup.com alternatives](#), and seemed the most relevant of those options.

[City Socializer](#) is a very event-focused site with a good amount of activity.

- [City Socializer comments and annotated screenshots](#)

[Big Tent](#) seems to be focused on group creators. Creating a group and the page for that group are clean and clear and simple. Using those pages and finding specific information on them is much more difficult.

- [Big Tent comments and annotated screenshots](#)

What did I do?

	Loco.ubuntu.com	Meetup.com	Citysocializer.com	Bigtent.com
Home page	Reasonably navigable. The upcoming events navigation map is perplexing in part because it also talks about social messages. Not clear why there are blog posts on the home page of the events page. Maybe they are related to events? Good choice of top navigation elements (both about and how to are especially relevant), but 'events' and 'meetings' are confusing when separate and not explained.	Meetup defaults to a search when not logged in. If you are logged in, it shows you your next event at the top of the page, followed by a search box, your meetups and then suggested meetups. It seems overly busy to me, at least at the end of a long day. This may be due to a combination of their red color scheme and the size of the browser I am using.	Does a good job of explaining why you might want to use this, although there is a _lot_ of information at a first glance. Once you are logged in, it becomes somewhat more organized, although I feel that there is still too much information on the page. I think the BuddyUp feature is a little odd, especially when I hadn't yet put much in my profile to key off. It makes it feel like a dating site.	Their home page is refreshingly simple. It has a big search box over some women chatting (which may suggest they expect women and not men to use the site...), an explanation of what the site is about and why you might want to get involved, and a brief blurb explaining that there is an app.
Finding teams/groups	Clicking on the large map to find teams results in a _very_ difficult to interpret list of teams. There is no real clear differentiation between what is and is not an active group, and the teams which have not been verified are first for some reason. (alphabetical? Verified is after unverified...) It is highly unpleasant to parse through this list to figure out if there is anything	The result page for meetup is reasonable to interpret. There are a sane number of results above the fold, with names and number of members over a photo from the group. For some reason, there is a single slot above the fold which contains a result that relates to other groups of mine, rather than the search terms I used. I don't entirely know what 'recommended'	There aren't really any? You can add people to your network, and you can see what's going on in your area or globally. But as far as I can tell, it's about events and people rather than specific groups of people.	After you search by zip, you get a list of matches. It is not clear what 'best match' uses for its algorithm, and the way they separate bits of information doesn't make for quick or easy interpretation. The amount of information any group includes varies wildly. It's difficult to tell from looking if one might want to join a group at this point. Users would just have to select a few to look at to decide.

I explored each site to identify how meetings were set up, organized, and promoted. I also reviewed how each site helped users interact with one another, especially around meetings. As I explored, I created annotated screenshots for reference.

Once I understood what each site supported and the overall patterns, I started a spreadsheet with which to compare features relevant to the Regional Hubs project. Specifically, I collected details about

home pages; finding other people, groups, and events; joining and suggesting events and groups; and discussion tools.

I used insights from "[Communicating Design: Developing Web Site Documentation for Design and Planning](#)" by Dan M Brown, which Mo lent me, to decide how best to organize the information I was collecting. To keep my main goals for this phase of the project in mind, I created a [document](#) containing the purpose of the analysis, general summaries of each website, links to my screenshots, and all my questions and thoughts.

I included the finished spreadsheet at the end of the [summary document](#) for reference.

What did I find?

Generally, that:

- A simpler home page will help potential users decide if they want more information without overwhelming them.
- Search is very difficult. It's a major challenge to have search that does what a user expects and provides results that are easy to understand and use.
- Including a photo of a group or specific event in search results helps a group seem more approachable.
- Pages without enough spacing and varying font styles to more visibly separate pieces of information are difficult to read and scan.

Specific to each page, that:

- *loco.ubuntu* was designed to prevent an excess of teams in any particular geographic area. They did this by making it complicated to create teams. They also wanted teams and events to be easy to find and join, and the interface for those were much easier to use.
- *meetup.com* was designed so that creating and joining groups and events and interactions with other members were as easy and pleasant as possible. Of the four sites, it had by far the easiest interface for these tasks. However, like Ubuntu's site, we may not want all of these to be easy to do: too many groups in a small area can make it difficult to get very many people at any of them.
- *citysocializer* was designed to encourage people to do things together. There is very little on-site discussion, and neither groups nor teams.
- *bigtent* design seems to be focused on group creators. Creating a group and the page for that group are clean and clear and simple. Using those

pages and finding specific information on them is much more difficult and confusing.

Many questions! Now what?

What should we show the general public?

On one hand, privacy and automated information scraping is a concern when the entire world can see a page. At the same time, we want to support interested folk in learning more about Fedora and potentially joining the community.

- As a result of this question, one of my first mockups was an 'invitation' page for regional hubs. This page was meant to provide enough information for someone to get in touch with someone from the group, know when and where to go for the next meeting, and gather enough context to decide if this group does interesting things. Further discussion suggests that regional hubs are not the only part of Hubs that needs a public face.

How easy do we make each aspect of the site?

- Finding people, events, and information is hugely important for community-building, and currently difficult to do. This became the major focus for my part of the Regional Hubs project.
- Creating groups within Hubs is rarely possible. There are exceptions for project pages for which there is no corresponding concept within the Fedora Account System (FAS) to draw upon, and regional hubs if Hubs has suggested a new regional hub.
- Given that one of the goals of Fedora Hubs is to support new members, joining Hubs should be extremely easy.

Still pending:

- What will we support for search? This is a hard question!
- How visible should discussions/live chat be? Just within groups? Visible to anyone on Hubs? To the general public? Should we let people without accounts comment/ask questions about specific upcoming or past events?
- Should we let people suggest events? What about groups?

On to contextual interviews:

- What are people within Fedora currently using to create, promote, find, and organize events? How are they finding people to help with events? Talking with Mo and searching for Fedora on meetup and the web gave me a starting point, but the information was scanty and varied wildly. These questions were the focus of my contextual interviews.

Contextual Interviews

Creating a useful and usable interface requires understanding what our users and potential users need. Conducting contextual interviews with existing Fedora members who create, organize, volunteer for, or attend events was an important first step toward this goal. My competitive analyses helped clarify who to talk to and what to talk to them about, so it was time to put that information to use.

Mo and I discussed the best people within Fedora to approach for these interviews. We began by discussing which selection criteria to use, and from there she suggested possibilities based on her connections within the Fedora community. One of my interviewees also suggested a few people, and I took a look at the ambassadors' email list [archives](#) for active participants and their locations.

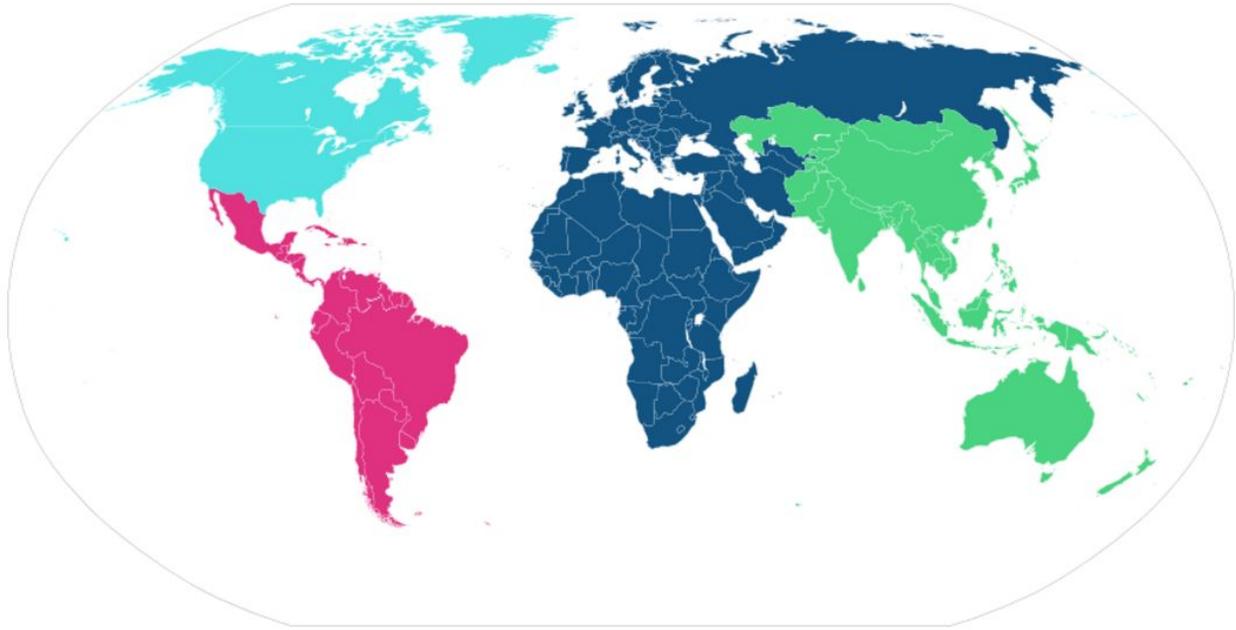
The information that I collected from these interviews provided guidance in identifying the pains that affected more people and more severely. This in turn helped focus our design discussions, brainstorming sessions, and design decisions as the design process continued.

Who should I interview?

The Regional Hubs project is meant to help Fedora members do things with people near them. First, to find other Fedora community members to interact and meet up with. Second, to coordinate events with which to introduce the general public to Fedora. Therefore, the most important aspect of our users is *location*.

Coordination of public events is most likely to be done by Fedora [Ambassadors](#). That said, other Fedora members will also need to create and organize public events. As such, we need to include both *Ambassadors and non-ambassadors*.

How do I pick them?



Legend: ■ Asia Pacific | ■ Europe, Middle East and Africa | ■ Latin America | ■ North America

Where are they?

The [Fedora Community](#) has four major locales: North America (NA), Latin America (LATAM), Europe and the Middle East (EMEA), and Australia and the Pacific Islands (APAC). In addition to these four locations, we also have people who are specific to [college campuses](#). As a result, we decided that we needed to be sure to have people from each of the locales, as well as people who were from college campuses.

Are they ambassadors?

Ambassadors are the public face of Fedora, and therefore the people who are most likely to be organizing events for the public. A major goal of Fedora Regional Hubs is to make it easier to organize events, both within the Fedora Community and including the general public. We know that Ambassadors will need to create public events, and needed to include them in our user set. There are ambassadors for regions and campus ambassadors at colleges and universities, so we thought both were important to include. Ambassadors are not the only people potentially creating Fedora events for the general public, so we

needed to make sure that Ambassador were not the only types of users we included.

What else?

I wanted to be sure to have a variety of ages, at least some people who were struggling with the current processes, and at least some women.

These were important categories to be conscious of, but we were concerned about limiting our pool too much, and Mo correctly thought that they would vary as a result of our existing selection criteria of location and ambassadorship.

Who did we use?

We collected information in a pre-interview survey to get a sense of the demographics of our participants. We confirmed that we had a good range of ages, that our participants were spread around the world, and that we had ambassadors, campus ambassadors, and non-ambassadors.

For more information on our selection process, see my [Research Planning post](#) on Medium.

How did I prepare?

What will I ask?

I first tried to use the categories I found in the competitive analysis: home pages; finding people, groups, and events; joining events and groups; discussions; and group and events creation and suggestion. However, Mo pointed out that these were too specific for this purpose. She gave an example of what she might do instead. This helped me realize that I needed to do a big-picture brainstorm for the kinds of tasks people might use regional hubs for.

The general tasks that I came up with were:

1. Find people who are local to them and interested in Fedora. (maybe not relevant to existing Fedora members?)
2. Set up events (public ones) or meetings (within group).
3. Discuss things about Fedora.
4. Find people to attend the public events (promotion). (potentially part of 2?)
5. Find events to attend/support

What will the interview look like?

I wanted to keep myself and my participants on track during the interview, so I wrote up a few things to keep in mind. I used both Steve Krug's Usability script from [Rocket Surgery Made Easy](#) and "Interviewing Users and Others" in [User and Task Analysis for Interface Design](#) by Hackos and Redish as references for this.

1. Introduce self. Remind participant of what we're trying to accomplish and about anything involving recording of them, their screen, and their voice. Make sure they are ok with being recorded!
2. Get an idea of their background and get them talking about what they do, especially relating to their interaction with Fedora events. Ask followup questions as necessary for context. Best if they are currently creating an event, but past ones are good, too. *(before the pilot test, I had forgotten to incorporate this information in the next step)*
3. Ask them to show you what they do in relation to what they mentioned about Fedora events. Websites, wiki pages, other artifacts they use while going through the process with you. Turn on screen-sharing at this point for remote interviews.
4. Things to try to cover: how do they create/organize/promote events - timing, location? How do they find out about events that someone else is organizing? How do they find people who might want to help out with or attend events? How do they coordinate with the people they are working with on events?
5. Is there anything they want to add that we have not already discussed?
6. Anything they like about current processes/methods?
7. Anything they dislike about current processes/methods?
8. Thank them!

What did I learn?

Always do a pilot test!

Mo and I had decided ahead of time that we should do a pilot test. These always help find any mistakes and assumptions, and offer a calmer situation to iron out any wrinkles.

We used Hangouts on Air and a private Youtube channel to record sessions and allow for screensharing. It took a bit to get the hang of it, but after the initial setup it's pretty easy to use.

During the pilot, we realized that I had assumed that everyone I spoke to would be planning events local to them, which was definitely not the case. I had also forgotten to refer to the ice-breaker discussion about what they do for Fedora events when I ask them to show me what they do and how they do it.

Finally, the pilot gave me good experience in running a remote interview with someone who was able to provide useful meta-level feedback about what I was doing or not doing.

I found it quite difficult to both run the interview and take notes on it. This was especially true with Mo because she spoke very rapidly. Fortunately, having recorded the interviews meant that I could transcribe them later.

What else did I learn?

Taking notes with people who spoke more slowly or took more breaks between ideas was easier, although I still found the recordings to be useful.

There were technical issues with the video chat client at one point. Because of this, we thought to set up a backup method for all future recordings.

It took a few rounds of contacts to get a responsive group of participants, and I worked with some responsive interview candidates to find more.

Finally, transcriptions

I transcribed the session recordings myself. This is a difficult and time-consuming task. However, these transcriptions were vital for the analysis portion of my research. As a result of this experience, I concluded that it would be best to have a second person to take notes while I run interviews. The Fedora Design team is updating their contextual interview process to include this suggestion.

For the first interview, I did word-for-word transcription. This was in part because I didn't yet have a strong sense of the information I needed to know, and in part because Mo's interview included a lot of explaining of background stuff around events and planning within Fedora. Later, I started summarizing what people said, while still using word-for-word for especially notable or quotable things.

To keep track of data that seemed especially relevant, important, or interesting, I color-coded words and phrases within the summaries. The major color categories were pains people had, follow-up questions that I had for the interviewees, and notes and thoughts for myself.

For more details on the transcriptions and summaries, see the [summary document](#) on the [pagure ticket](#).

Interview Analysis

Overview

What we have

- Summaries of the interviews
- Workflows for each role
- Top pains for each individual
- Major problems identified in interviews and with stakeholder feedback

What did we learn

- Budgeting was insufficiently well-understood for integration into this release
 - We need to have Fedora Hubs be the main place to find local information
 - We need master lists of people, events, and regional hubs/groups
-

Design Thinking Session

I put together [general patterns and workflows](#), and [top pains](#) for each individual. I met with [Máirín Duffy](#) (Mo) - the principal interaction designer for Fedora - and [Matt Miller](#) - the Fedora Project lead, and one of the main clients for Fedora Hubs.

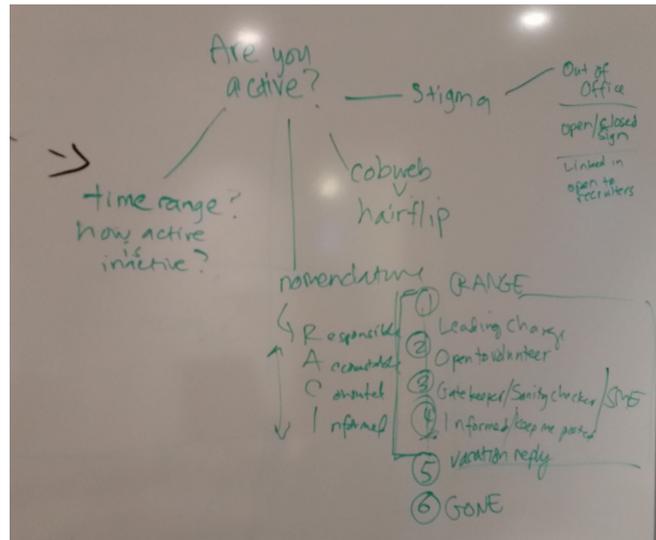
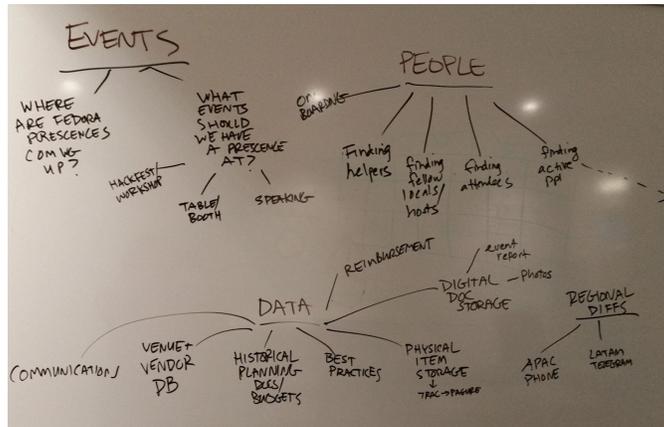
Our main goals were to better understand the context in which we were designing Regional Hubs, share information between other areas of the company, and determine what our next steps needed to be.

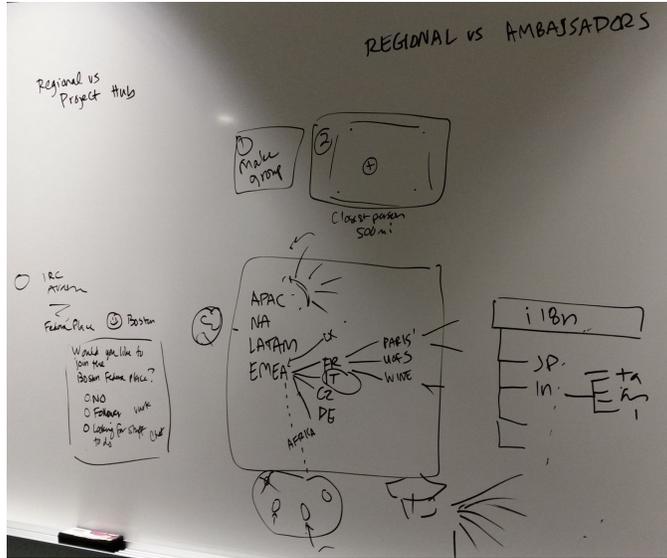
During this session, we looked specifically at:

- The lack of support for event funding management and tracking
- The difficulty in finding people nearby
- Better integration, support, and publicity to help bring new folks into Fedora

- How to best location support into Fedora Hubs, and how to handle privacy concerns around it.

We also sketched possible interfaces for joining or creating groups. I've included photos below of the whiteboards from this session.



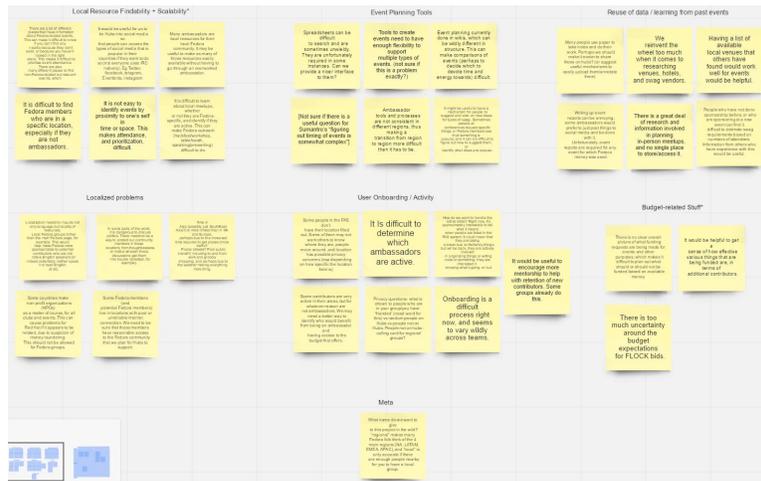


- ## TO SOLVE
- ### NOMENCLATURES
- ① naming for inactive
 - ② naming for "regional"
 - ③ PPL WHO DON'T HAVE LOCATION FILLED OUT
 - allow for cyberspace location
 - allow for updating location
 - is your location public to others → general v. specific

→ suggest an update if publication may include bios
 - ④ Event reports
 - ⑤ Mentorship → new fields in FTKs general
 - ⑥ Onboarding ↔
 - ⑦ Funding Dashboard
 - \$ spent vs #contrib gained
 - ⑧ Privacy →
 - what is shown to logged in vs not logged in → calling card for regional groups
 - ⑨ Top level view of funding reqs./events → timeline
 - oct cop for next March

Organization and prioritization

After the design thinking session, I collected together all the [problems](#) we'd found through the interviews and the design thinking session. I pasted them into [realtimeboard](#), which automatically created sticky notes for each problem.



Mo and I then organized the problems into categories through affinity mapping, labeled those categories, and prioritized them based on a combination of the number of people likely to be affected by problems in those categories and how severe the impact would be on those affected.



Brainstorming

Over the course of an [IRC conversation](#), Mo and I dove into the details of the two highest priority categories. After deciding that we did not have enough information about the budget category, we looked at each problem in the local resource category, sticky note by sticky note.

Our overarching goal was to have people looking for local Fedora information use Fedora Hubs by default. To support this, we decided that we needed filterable, sortable master lists for regional hubs, events, and Fedora people. We then discussed possible constraints and needs for the master list interfaces.

For more details on the brainstorming session, see my [affinity mapping and brainstorming post](#) on Medium.

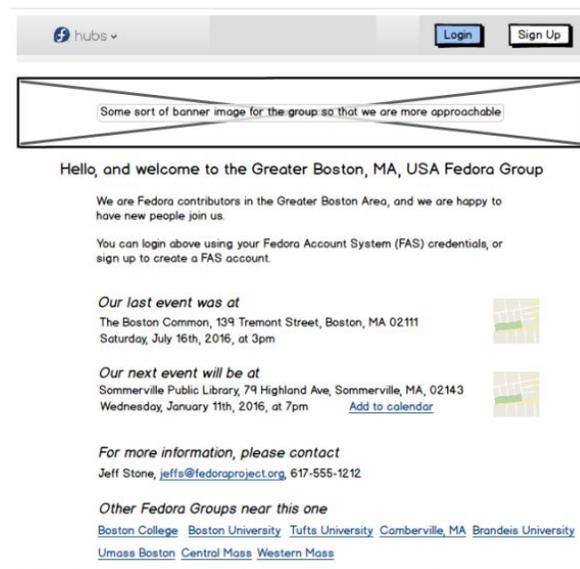
Start sketching

While preparing for the affinity mapping session described above, I developed basic mockups for the [“invitation page”](#) for regional hubs, various aspects of [locations](#), and [joining a regional hub](#). Discussion and feedback about these were originally done through email, and the preceding links are to pagure tickets created for easier tracking and discussion.

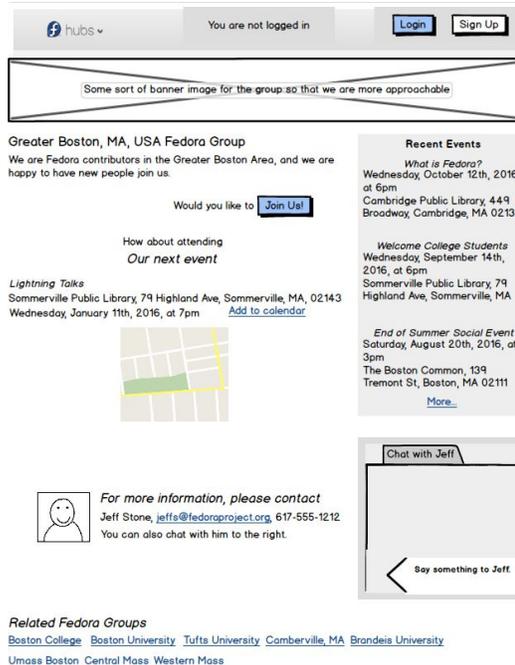
These mockups turned out to be related to each other. For example, *joining a regional hub* soon included the need to allow people to sign up for an account as part of the join up process. The *join up and sign in* process itself needed a non-logged in place to start from, for which the *invitation page* was perfect. Finally, the *locations* mockup included the ability to create an account. These mockups eventually dovetailed into a [single prototype](#).

Reviewing the locations mockup also illuminated a major assumption that I had been making about the underlying complexity of locations (which I will describe later in this document).

Invitation Page



My first try at an invitation page.



Invitation page after feedback from Mo

This is the page that the general public would see when they visit a regional hub. This offers a way to contact someone in that group, get a general idea of what the hub does, and potentially attend a local meeting of Fedora members before joining Fedora Hubs.

We expect that regional groups will offer a deeper connection than is possible through online-only interactions, thus increasing the chances of prospective members joining and staying involved with the community.

The latest version of this mockup is in [this ticket](#).

Locations

For this mockup, there were a number of different possible situations. Sometimes this information was already available through FAS, albeit with varying degrees of completeness. Other times, this was an entirely new user who had probably never heard of FAS.

I created a [flowchart](#) to get a general sense of where this might need to go.

With the help of this flowchart, I was able to identify various situations in which we needed to consider location information. First, that of creating a Hubs accounts for someone who already has a FAS account, and for those who do not. Second, the ability to change your location, and select and adjust one's privacy settings. Finally, I needed to be aware of possible levels of granularity for location information, and how pushy we wanted to be when asking for location information and when asking people to update their location information.

I then started sketching things on paper to get things down and play around a little with what things might look like. Sketches for these and other interfaces are located in this [flickr album](#).

Locations - First login, some existing info

First login with an existing FAS account and location information existing

hubs wispfox

Search across hubs...

Hello, Wispfox. Welcome to Fedora Hubs.

As this is your first time logging into Hubs, we would like to verify that we have the correct location information for you and offer you the opportunity to add additional information. This will allow us to provide more precise recommendations for groups and people near you.

Your privacy is very important to us. Later in this introduction session, you will be able to say who, if anyone, can see where you are.

Note: the default privacy setting shows your state, country, and time zone.

We show you as being located in [Massachusetts](#) [United States of America](#)

[Add more location information](#) On click →

Clicking these will allow in-line editing, and the red x will allow deletion

Street Address

City

Zip Code

Other types of location information

We have your timezone as being

And your email address as [wispfox@gmail.com](#)

Note: the default privacy setting does not show your email address. People can use in-hubs messaging instead

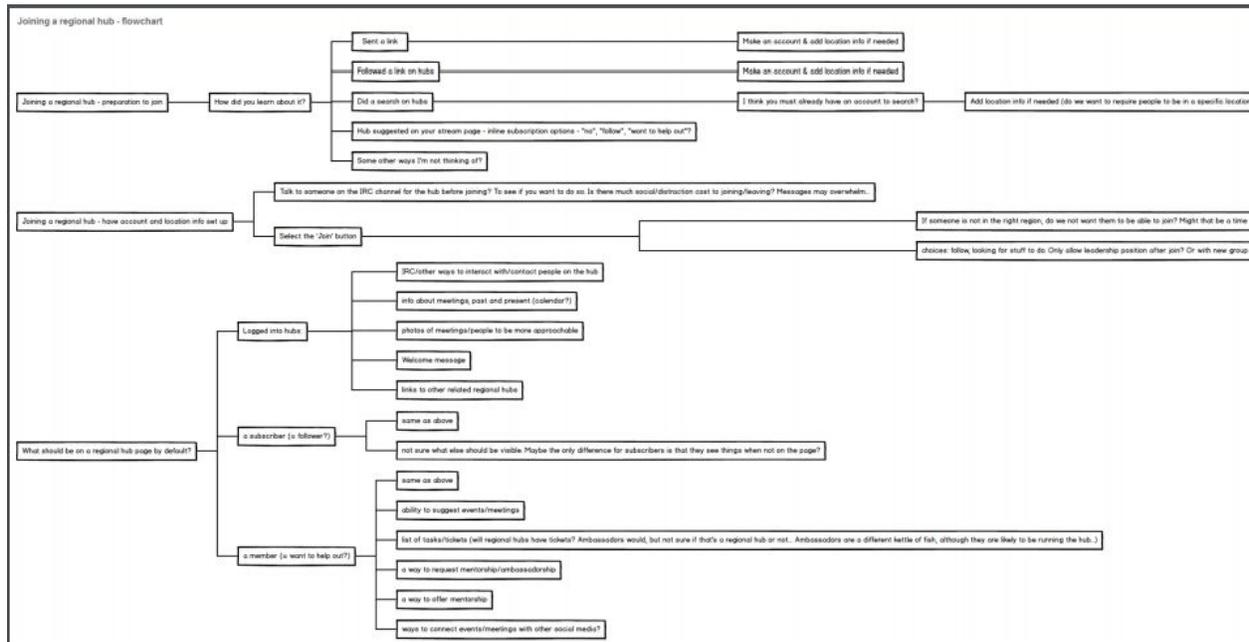
[Continue on to privacy settings](#)

First login with existing fas account with some location info

I made some initial mockups in Balsamiq from these sketches, and continued bouncing back and forth between sketch and Balsamiq while I figured out what I wanted to do. For the rest of the early mockups for this section, see [this flickr album](#).

I sent the initial mockups to Mo for feedback, and created a [locations ticket](#) using mockups adjusted based on that feedback.

Joining a Regional Hub



Flowchart for joining regional hubs

Here, I was trying to figure out the context around, reasons for, and the actual process of joining a regional hub. As in the previous section, I made a flowchart to get my mind around the topic.

I had two major goals with this flowchart: figure out where people thinking about joining a group might have come from, and determine what information would help people decide to join a regional hub. I did a [quick sketch](#) to keep in mind the various points that seemed most relevant, and then used Balsamiq to create an initial mockup.



A very sketchy mockup of the join interaction

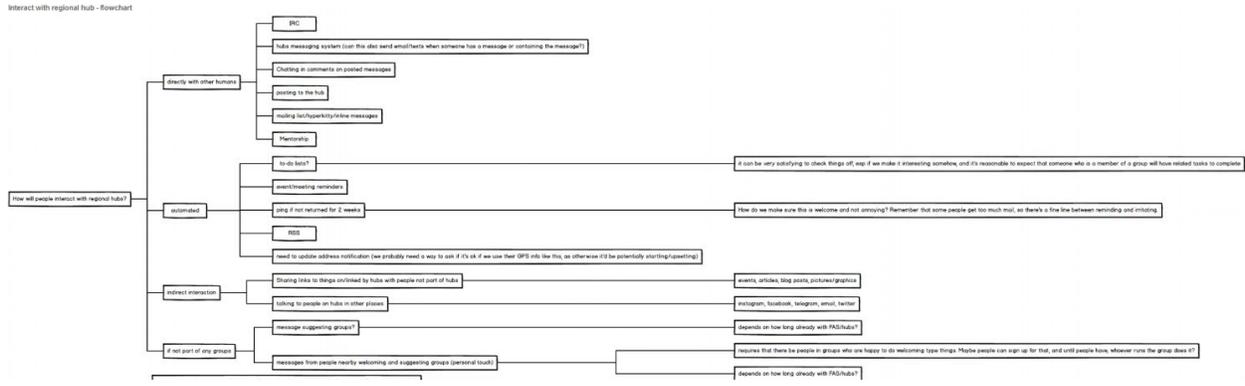
See the [join regional hubs page ticket](#) for more details.

More Information Required

In addition to the mockups described above, Mo and I had discussed other areas that might need mockups. After some research and even more flowcharts, I realized that those topics were too broad to address right then. They seemed more useful to keep in mind as we went along than to try to create mockups for them. I made tickets to keep track of the information that I had, and to make it easier for others to keep their ideas in mind.

How might people be interacting with regional hubs?

Specifically, what kinds of widgets for a hub, profile, or stream would be useful? What about stream notifications and email communications?

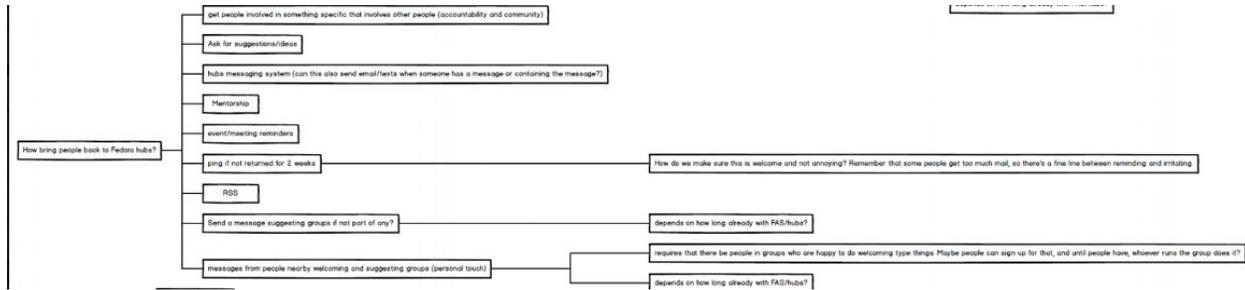


Flowchart for interacting with hubs

See the [interaction with regional hubs page ticket](#) for more details.

How do we bring people back to hubs?

In addition to providing them a useful tool, how do we encourage people to come back to Hubs?



Flowchart for bringing people back to hubs

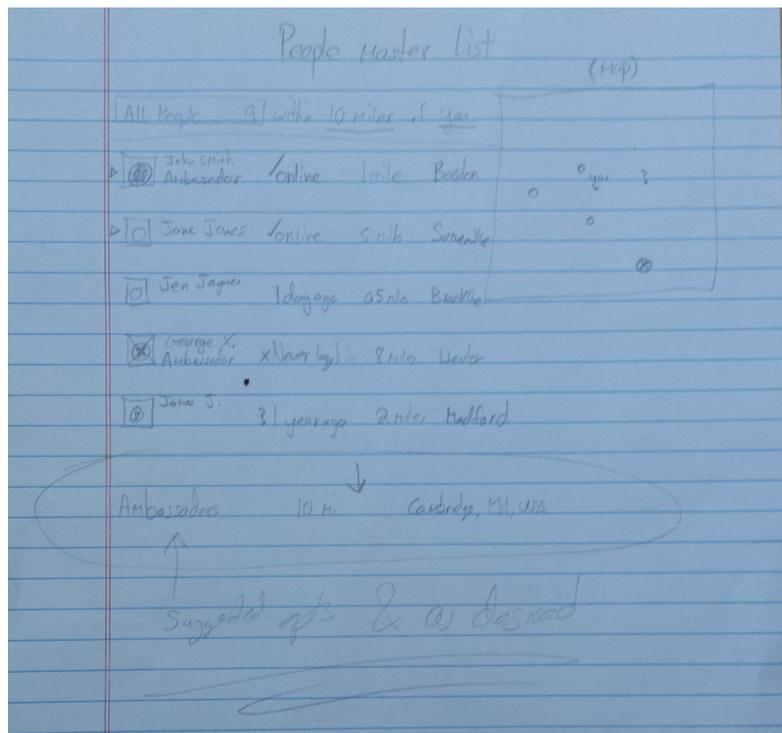
See the [bringing people back to hubs page ticket](#) for more details.

Targeted Mockups

Most of what Mo and I discussed during the brainstorming session was more easily understood as mockups than as text. Because of this, I will now show and explain the reasoning behind each of the major mockup categories. For additional details on the brainstorming session and the mockups I created, see the [affinity mapping and brainstorming blog post](#).

During our brainstorm, we identified four interfaces to mock up: the filterable, sortable master lists of people, events, and regional hubs, and notifications. After the brainstorming discussion, I had enough information to work on all but the regional hubs master list. I instead created a [pagure ticket](#) for that one, for tracking purposes.

Fedora People



Paper sketch of the master list of Fedora people

The master list of Fedora people was about making it easier to find active fellow Fedora members, both ambassadors and not.

In the interests of reducing complexity, we initially showed the 20 people closest to a target location. We also offered the ability to search by a specific name, to adjust the search range, the target location, or the number of people to show.

Master List of Fedora People

hubs Search across hubs...

All People within 10 miles of you. (20 of 30) People Events Hubs

Name	Online	Count	Location
Jen Smith			
John Holsberg			
Jorge Coveras Ambassador	✓ Online	1	Boston MA
Saanvi Nethala Ambassador	✓ Online	1	Boston MA
Aadi Jaynes Ambassador	✓ Online	5	Somerville MA
George Jaynes	✓ Online	5	Somerville MA
Heather Jaynes Ambassador	✓ Online	5	Somerville MA
Jen Jaynes	✓ Online	5	Somerville MA
Jane Jones	1 Day	0.5	Brookline MA
Francisca Jones Ambassador	2 Days	0.5	Brookline MA
Fred Jones	3 Days	0.5	Brookline MA
Sadeepan Alluri Ambassador	7 Days	0.5	Brookline MA
Maria J Ambassador	? 6 months ago	2	Medford MA
Eesha J	? 9 months ago	2	Medford MA
James Jaques	? 1 year ago	2	Medford MA
Vajra J	? 5 years ago	2	Medford MA
George X	✗ Never logged in	8	Newton MA
Gajrup	✗ Never logged in	8	Newton MA
Jose Javeres Ambassador	✗ Never logged in	8	Newton MA
Tikva X	✗ Never logged in	8	Newton MA

You can change distance, what your point of focus is, and how many results it shows you. When you change something, a way to save the new search should appear, perhaps a plus sign?

14 Salem St, Brookline, MA

Changing this will also change the list, and vis versa. You can also expand the map to be larger than the list if that's your preferred way to search.

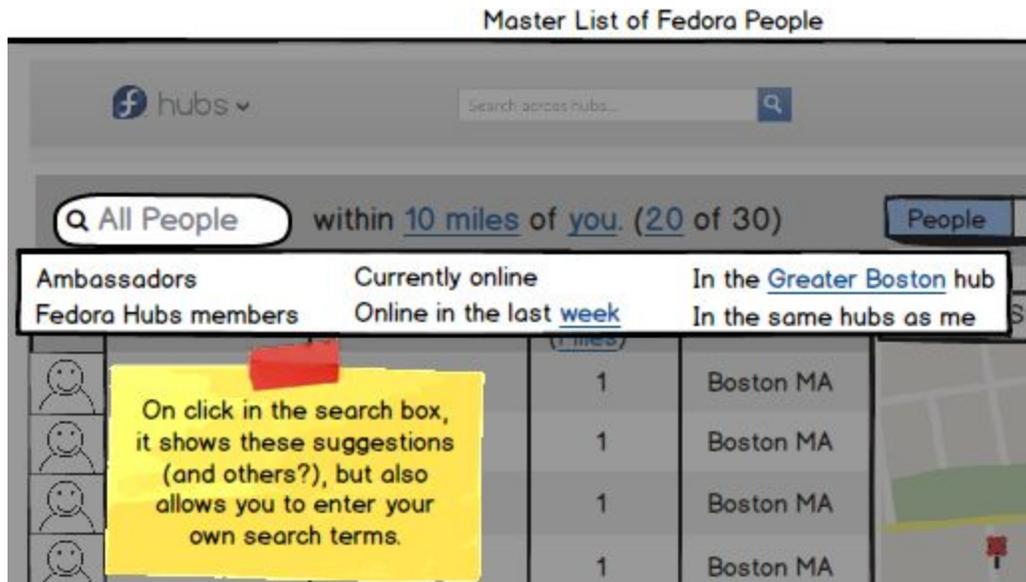
master list of Fedora people

A major criterion of being a Fedoran is having an account in the Fedora Account System (FAS), so we included everyone in FAS in this list. However, people who are in FAS but have never logged into Hubs will show up at the end of the results list. This way, we are not signalling more information than we have about how active they are.

Activity on Hubs may be the best approximation we have of someone's activity within Fedora. Given this, we decided to list people in order of their last login to Hubs.

To make it easier to scan a list of people, I added visual indications of one's 'last login' state: currently online, recently online, logged in a long time ago, and never logged in. These include both color and shape, to accommodate colorblind folks.

Ambassadors have access to and knowledge about more things than most Fedorans. To make it easier to find them, I included ambassador status on relevant people's listings.



Possible search for master list of Fedora people

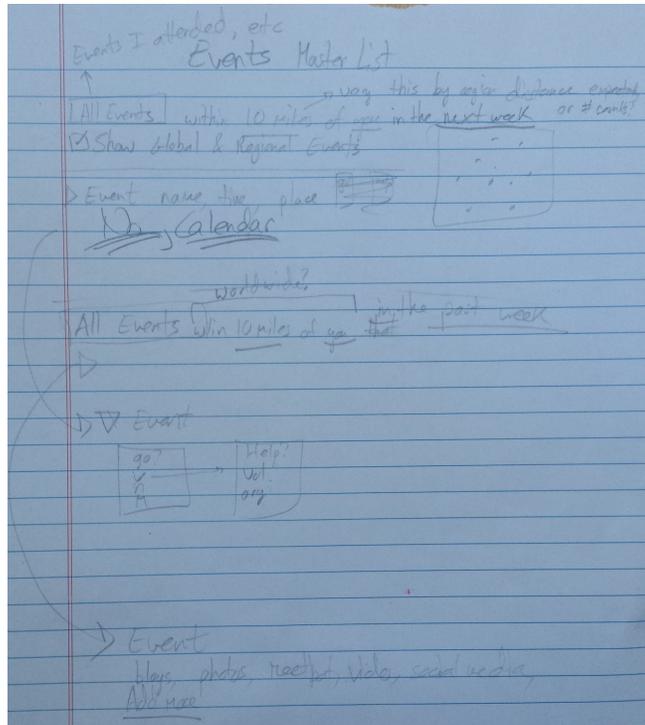
Typically, one is searching for other Fedora members near them, or near a specific location. To help with this, I added information about people's cities and distance from the target location. We also wanted to include a list and a map view to make searches easier to understand and use.

Filters can be confusing if they are not obviously filtered. To avoid a situation where someone doesn't realize that they have no results due to filtering, we wanted the filter to be as obvious as possible.

The search box and filtering area were challenging, and required a great deal more discussion at this point.

For more details, see [ticket #279](#).

Fedora Events

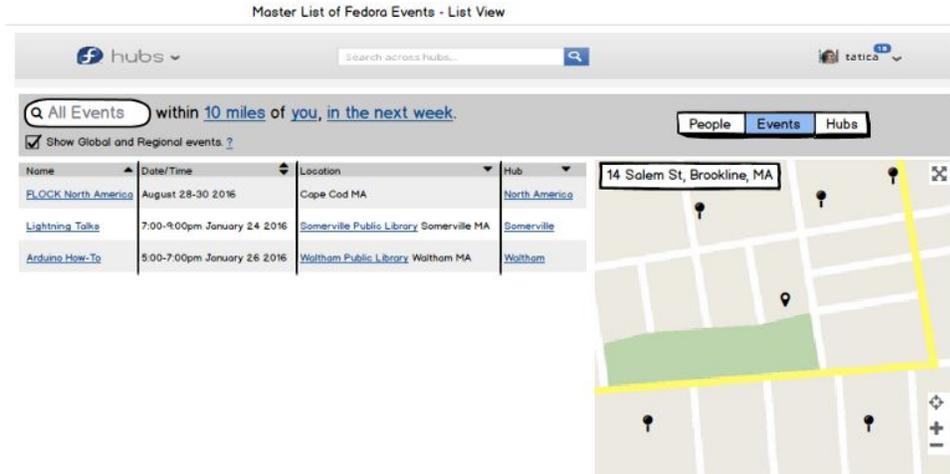


Paper mockup for master list of Fedora events

Much like Fedora people, Fedora events can be difficult to find. Events are complicated by having a location in both time and space, such that *when* something is going to happen is just as important as *where*.

Due to this additional dimension, this interface was necessarily more complex than that for people.

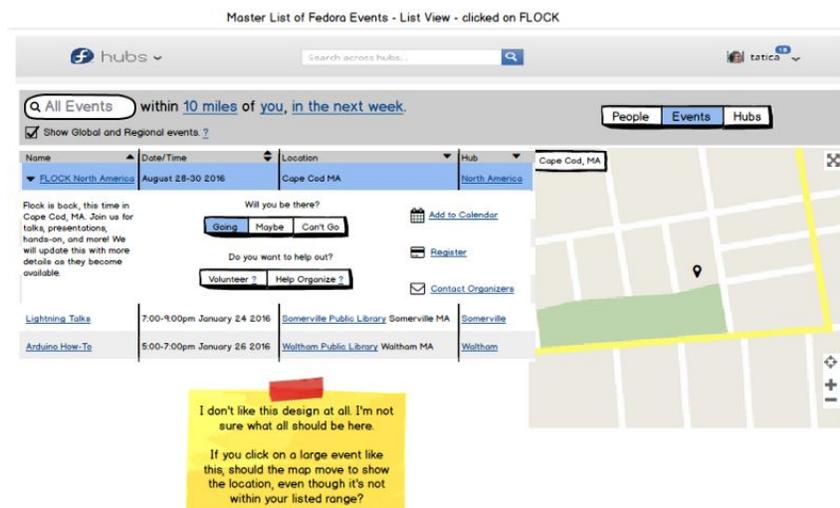
We thought that the initial state should show the 20 upcoming events that are nearest to you. This list could then be filtered by the number of events to show, the time range to search within, where to search from, and any specific event name. As with the people list, I needed to make the filtered status obvious at a quick glance.



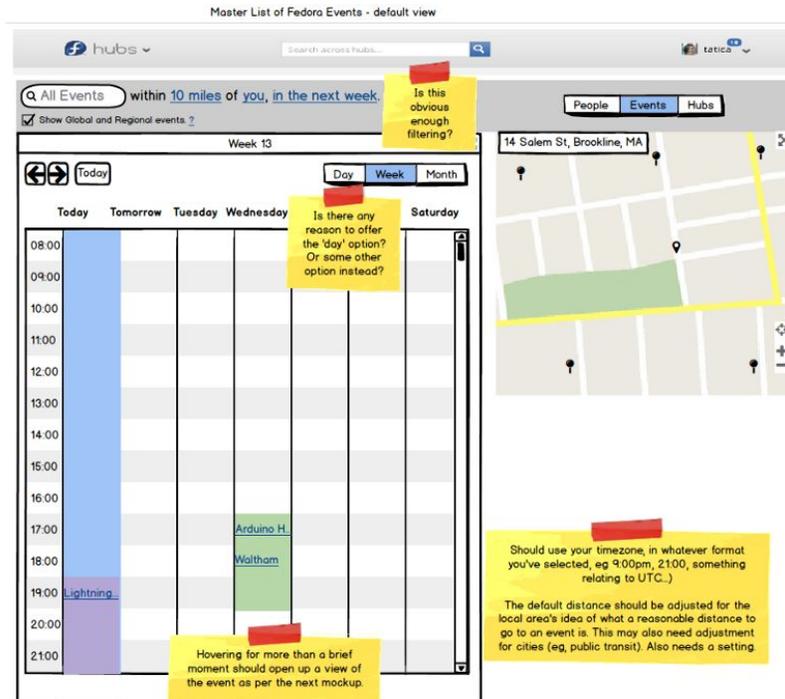
Master list of Fedora events

In addition to smaller, local events, there are large, region-wide events. For example, there will be a FLOCK in Cape Cod in the summer of 2017. This event is one that people often travel long distances for, so advance warning is important. To help people know about these events, I added a checkbox, which defaults to checked, to show regional and global events for one's region.

As I mentioned in contextual interviews, Fedora has four regions: North America (NA); Latin America (LATAM); Europe, the Middle East, and Africa (EMEA); and Asia - Pacific (APAC). Therefore, anyone in NA who does a search with regional and global events would see the FLOCK in Cape Cod.



Master list of Fedora events - event selected



Calendar view of master list of Fedora events

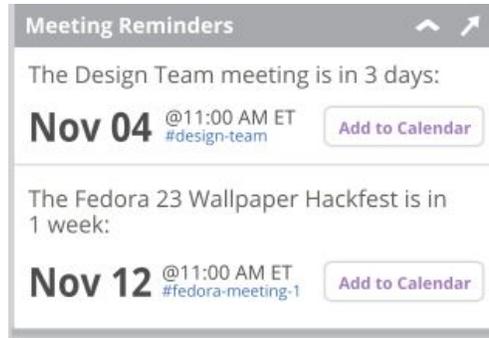
When one looks at a specific event, it should be possible in that view to say if one is planning to go, as well as if one is interested in volunteering for that event. This would make logistics for events easier to deal with.

Some people want to know about events that are close to them in time, whereas others want to know about events that are near them in space. To better handle this, we decided to try offering both a list and a calendar view for events.

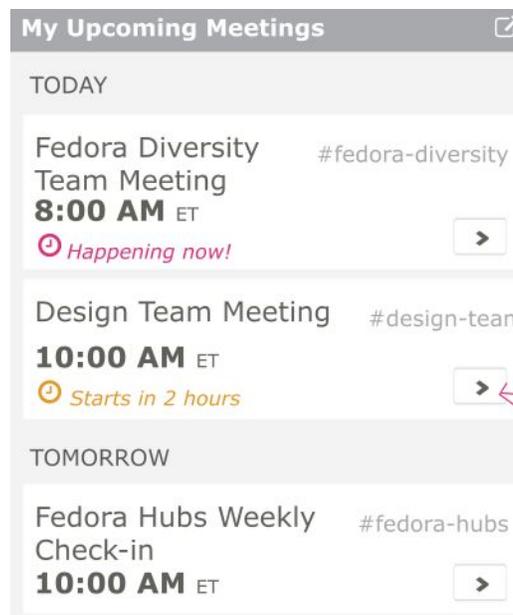
For more details and additional early mockups, see [ticket #281](#).

Notifications

A major problem in Fedora now is finding out about things, whether they be events, groups, or people. The interfaces above make it easier to find things when you know that they exist, but they do nothing for cases where one doesn't know to search for them.



Widget telling you about meetings in a hub



Widget to keep track of one's own meetings

This is where notifications come in. Notifications can show up in a number of places and guises, but in general they offer potentially relevant information when people probably want it. The simplest form of a notification in Hubs is simply that: a **notification** that shows up in a list of other notifications. These generally show up in someone's stream.

In addition to these, there are **widgets**. Widgets are objects which provide specific, constrained information. For example, some widgets tell you when the next meeting in a group is, and the same widget on someone's stream will tell

that person when their next meeting will happen. The general idea is that these are targeted bits of information which are helpful to have in an always visible format on a personal or hub page.

Stream Notifications

My Stream

My Stream | My Actions | My Mentions | Saved Notifications

New event coming up in your area
The Greater Boston Hub has just created an event called [How Do I...?](#), to be held at the Brookline Public Library from 6:00-8:00pm on February 2nd, 2017. [More details](#)

Buttons: [Add to Calendar](#)

Do you want to help?

New Regional event
The Cape Cod Flock bid was just accepted! [This year's North American FLOCK](#) will be taking place on Cape Cod, on the weekend of August 26th, 2017. [More details](#)

Buttons:

You and your friends, in the same place
It looks like you and some of your friends will be at [foobar](#) in Washington, USA. Would you like to suggest a meetup? [More details](#)

Buttons:

Welcome Back Students has been updated
Did you go to [Welcome Back Students](#) with the Greater Boston Hub? Leave us some [feedback](#), post some [photos](#), or take a look at what's already up there. [More details](#)

Buttons:

Your event How Do I...? has been cancelled
[Jeff Johnson](#) has cancelled [How Do I...?](#) in the Greater Boston Hub because of a [blizzard](#). [More details](#)

Buttons:

Callouts:

- If someone gets a lot of a particular kind of notification, we should collapse them together. Perhaps based on when you last logged in/interacted with your stream? I'm not completely clear on how this might work, but I do worry that time-sensitive information will get lost otherwise.
- Only make this notification if they have not already responded to it. It should be possible to opt out of these notifications, as well.
- What should we do with a 'Maybe' answer? A 'no' answer might slowly fade out from the list - after a few moments to make sure it wasn't a mis-click? Also, we need a place to go to change your answer for events, even if you said you weren't going. Should the events list have a 'you've interacted with this' tab?
- Only show if it's more than a week out for a local event.
- You'd get this notification if you are in North America, you're in a North American regional hub, or you've specifically elected to get notified when North American FLOCKS are scheduled. You can opt-out of these notifications in notification contextual filters. Should we not notify people who were involved in the event creation? Or would that be useful information to receive? Not sure what the default here should be. The 'going' selection should look much like the local event's mockup above. How specific should the 'title' section of the events be? Is 'new event' too general? Should it say the title of the event in the title section of the notification? And maybe a date, for easier scanning?
- Ok, this one isn't quite right. For one thing, I'm not sure what kinds of events one might happen to be at the same place as non-co-located friends that aren't a FLOCK or FUDcon. And we don't want to spam people for those. I expect that in most cases, if you're in the same place at the same time as non-co-located friends, it's because of whatever you're all going to and you planned it that way (see Fedora Activity Days). Need more research; this may not actually be a needed thing.
- This is about an event that has happened, to which you'd RSVP'd Going or Maybe. I'm trying out colors to indicate if something has already happened: green means it's in the future, orange in the past. Do we need a 'happening right now' color?
- If we can point to reasons (eg weather reports), that would be excellent.

Some notifications related to regional hubs

A major goal of Regional hubs is to more easily find local community and become more connected to Fedora. One aspect of this was to suggest regional hubs to those who are not yet part of a regional hub, while still allowing them to say they don't want notifications about regional hubs.

Another part of this was to suggest new, nearby events that people have not responded to. As with regional hubs, one can always say they don't want to know about them. Having this notification would mean instead of having to remember to look for events, one could simply respond to the stream notifications.

Event updates notifications for events that have happened would be displayed to people who said they were or might go to those events. This would help keep them connected with others who went to the event, and encourage discussion.

Similarly, we wanted to let people know if an event they said they would or might go to was cancelled.

If you and your distant friends are all going to an event, we'd suggest that you set up time to meet up at the event. This would help make it easier to connect with people you might otherwise not get to see very often.

We agreed that we would show notifications for local, global, and regional events to people based on whatever location information we have for them. In addition, regional hub members would find out about meetups local to that hub, regardless of their location information.

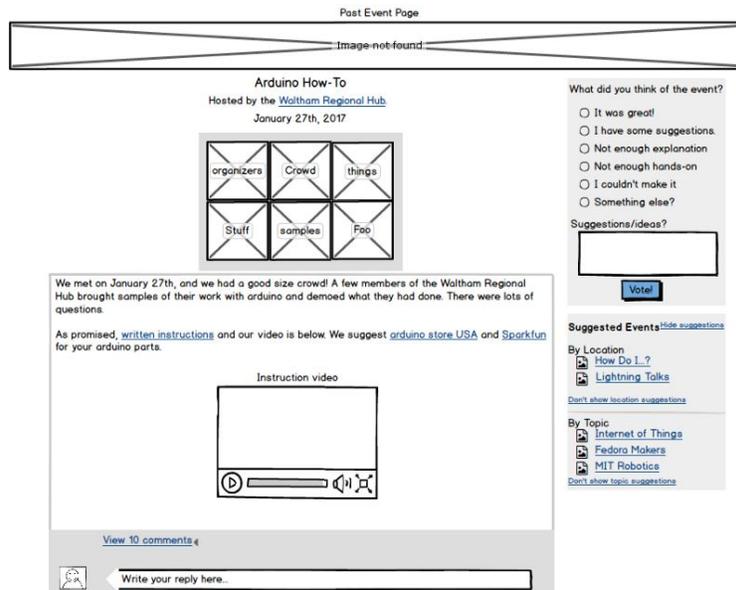
For more about stream notifications, see [ticket #282](#).

Social Media and Photo Sharing Platforms

My contextual interview results suggested that preferred platforms for social media and chat vary around the world. At the moment, real-time communication within Fedora in North America (NA) and Europe, the Middle East, and Africa (EMEA) mostly happens using Internet Relay Chat (IRC). IRC is long-lived and reliable, but it does poorly on phones, and isn't the most user-friendly of software. In Latin America (LATAM) and Asia - Pacific (APAC), the more recent Telegram is preferred over IRC, in part because it works well on mobile phones.

Most conversation around Fedora and Fedora events happens through social media and chat platforms. Given the desire for Regional Hubs to help Fedora contributors connect with each other and prospective users, having a way to communicate with and incorporate social media into Hubs would be very helpful.

In addition to the direct communication channels that chat programs and social media provide, they make it very easy to share information far and wide. They also often offer space for discussions, photos, and other media. It would be fantastic if all of this media were easily (or even automatically) incorporated into an event's page after it happened:



Past Events Page

In addition to being able to add content to event pages, we could make things easier for ambassadors and others who need to report on an event they attended.

Any event or sponsorship which is paid for out of an ambassador's budget needs an event report ([example here](#)). Event reports help those providing Fedora's budget know that the money they spent was worthwhile: they describe what the event was about, what the purpose of Fedora's involvement was, and what sort of impact it had on getting more people interested in Fedora. Event reports often include various forms of media, including photos and slide decks. In addition, many event attendees post photos or comments to Twitter, Facebook, and others.

If Hubs were able to pull in information from various social media or photo sharing sites, it could make writing up event reports easier for Fedora ambassadors.

Fedora Hubs already has a ticket for a [feed widget](#) to support blog posts and mailing lists, so it seemed reasonable to expand it to social media. We just needed to figure out which ones to support.

What do we support?

We knew that we needed Hubs to talk to social media, chat, and photo sharing platforms. However, we were not sure of which platforms. We were also not sure of the priority order.

My first step toward figuring this out was to ask my original interviewees. Some had mentioned specific platforms, like Telegram, and some had not. At this point, I simply wanted a general idea of what my interviewees and their community typically used.

	A	B	C	D	E	G	H	I	J	K	L	M	N	O
Social Media by location			(people don't always use hashtags...)											
	Facebook	Twitter	IRC	Reddit	Whatsapp	Wechat	Whisper	Instagram	Telegram	Eventbrite (:	Meetup (not really social media?)			
US	x	x	x	x				x		x	x			
Venezuela			x					x	x					
Germany	x	x												
India	x								x	x				
Cambodia (mostly over mobile)	x				x		x		x	x				
China							x							
Australia	x											x		

Social media by location

I sent email to everyone involved, and got back a great deal of information. The spreadsheet above shows what I found with that initial step. However, 7 people is not a lot of people. After discussing the problem with Mo, I started work on a survey.

Surveys are complicated!

Making a good survey is not an easy task. It's easy enough to make a survey, but without a great deal of consideration and discussion, the information you get back from it isn't going to be worth much.

Demographics, what do you ask?

First, what kind of demographics information is actually necessary? It's easy to ask about demographics information. Unfortunately, the more questions you ask, the faster your survey takers will get fatigued, potentially resulting in you not getting the information you need. Not only that, some seemingly innocuous questions actually aren't innocuous at all.

Always give people the option to not answer a demographics survey question: you might want to know the answer, but you probably want the rest of the information more. On top of that, it's difficult to know when you've missed a way in which a question could be [difficult or impossible to answer](#), or offensive, or otherwise problematic.

In this case, the only demographics questions that I asked were the ones that identified my respondent's locations. That was really the only information that I

needed. Age, [sex and gender](#), and [race and ethnicity](#) - all potentially complicated questions - weren't relevant.

Even the location question was somewhat complicated, because it required that I find a free survey platform that supported logic. There is no reason to tax people's resources by asking them questions that don't relate to the region they selected. In this instance, I selected google forms, even though it does not support the ability to alter the text of the 'other' response to something less, well, ['othering'](#).

Unfortunately, I was not able to find a free platform which allowed me to incorporate someone's answers to a previous question into a followup question. That would have greatly reduced the work the survey takers had to do, likely increasing the numbers of responses I got.

Don't Forget the Tickets

I found a number of additional problems which needed addressing, but for which I was not going to have the time to work on them. For these situations, I created tickets with as much information as I had available so that others could take them on at a later date.

Some of problems these had very little information available, and have been described in earlier sections of this portfolio, including [interacting with regional hubs](#), [bringing people back to hubs](#), and the [regional hubs master list](#).

Others, based on my original contextual interviews, required further processing of those interviews. I go into detail about those two tickets - event creation and planning, and ambassadors as resources - below.

Event Planning and Creation

A significant portion of the Regional Fedora Hubs project revolves around events. Whether attending, finding out about, or organizing them, events are an important piece of the Hubs puzzle.

Events are the major way for potential new Fedora contributors to learn about Fedora, as well as a fantastic way for Fedorans to develop and foster connections with each other. Events also offer teams whose members are spread across the globe the opportunity to work together in the same place.

Event Planning

While clearly important, events are complicated things. At minimum, they require a name, a place, and a time, which can themselves be complex. Between identifying a place and time to hold an event, complications around travel and lodging and meals, and juggling the needs and schedules of potential attendees, event planning is rarely a simple thing.

For smaller, local events - especially ones held at a local college - the complication is minimized. In that case, one rarely has to worry about lodging or travel, although food is often an important draw to college students. In addition,

colleges tend to have existing structure around reserving a room, knowing when rooms are available, and knowing when attendees are likely to be available.

Planning for [Fedora Activity Days](#) (FADs) is a step up in complexity. These can involve multiple far-flung team members, some of whom can afford to attend and some of whom can't. There is funding for FADs, but this is meant to cover the entire event, and travel costs can be prohibitive. In this instance, at minimum the planner likely has to figure out where to hold the event, where to lodge people, food requirements, remote access for those team members who could not attend in-person, and travel logistics and costs. FADs also require a [proposal](#) with which to get the budget request approved.

For large events like [FLOCK](#) and [FUDCON](#), many of the same things apply as for FADs, but writ large. Whereas a FAD may have 10 people, FLOCK has approximately 250 attendees. This greatly increases the complexity of finding a venue and lodging, and figuring out food needs and travel logistics. In addition, these larger events tend to have speakers, workshops, and similar, which means that the planners will need to make sure that the venue has enough of the right types of meeting rooms for these. These also tend to include swag - free gifts for attendees - and the planners need to decide what to bring, where to get it, and what the constraints around it are. Similar to FADs, these need [proposal wiki pages](#) so the budgeting folks can select from the location options. There are typically no more than one FLOCK or FUDCON a year for each of the four regions, which can make the selection process somewhat competitive.

Event Creation

Event creation needs the same basic information as event planning does: a name, a time, and a location. In addition, a description and contact person are needed, as these will help others decide if they wish to attend or volunteer at an event.

Much of the information from the planning state is relevant to a publicized event, and for events which were planned within Hubs this would be readily available. At the same time, we don't need to include all of the planning information: this would be too much information for an attendee to process, and isn't necessary.

We would certainly want to include information about expected costs, any volunteer needs, remote access, travel instructions, and other attendees. These would help potential attendees decide if they want to go, and make the process of doing so easier.

For more details on this aspect of Fedora Hubs, see [ticket #299](#) and the attached [event creation and planning document](#).

Ambassadors as Resources

Mo and I began discussing offloading some of the work from ambassadors during our [brainstorming session](#) (see note #3), but quickly found that this was a larger problem than it initially seemed.

Ambassadors often offer aid to their community members, whether by training them in the use of [wiki pages](#), providing access to a variety of different documents, or helping them create events. This aid can be quite time-consuming, especially for ambassadors for an entire region (such as Latin America) rather than, say, for a college campus. While those who decide to become ambassadors are happy to help, offloading some of that work opens them up to other ways of helping.

Mo and I considered centralizing information, whether about frequently asked questions or commonly requested resources. We also thought that it might be useful to offer an interface in Hubs to create events, and work with [Fedora commops](#) (community operations, which supports the infrastructure of Fedora, including new user onboarding) to develop general best practices and training by region.

For additional details, see [ticket #320](#) and the [attached Ambassadors document](#).

Locations Are Complicated!

While reviewing Mo's feedback on the [location information](#) mockup, I realized that I had been incorrectly assuming that locations were an already solved problem.

Specifically, I'd assumed that I could tie into existing functionality - perhaps a database - that knew how to handle locations, and that my job was to figure out how to make it easier on people who were filling it out.

In fact, FAS - the existing fedora account system - hadn't tried to handle it. FAS asks users for their longitude and latitude rather than street address.

With further research and discussion with Mo, I realized that locations are a very complicated issue, with major variation in the information between 'city' and 'country'. Some places have nothing between city and country; some have states, provinces, and regions. There are also often abbreviations for each of these, as well as for countries. For example:

Figure 4—A sampling of city line variations

City Line Variations	
Format	Examples
town, province postalcode	China, India
town province postalcode	USA, Canada, Australia
postalcode town-province	Brazil
postalcode town, province	México
postalcode town (provincia)	Italy
postalcode town	Most other European countries
town postalcode	New Zealand, Thailand, Japan
town, county	Ireland (except Dublin)

* Adapted from Frank da Cruz, Columbia University

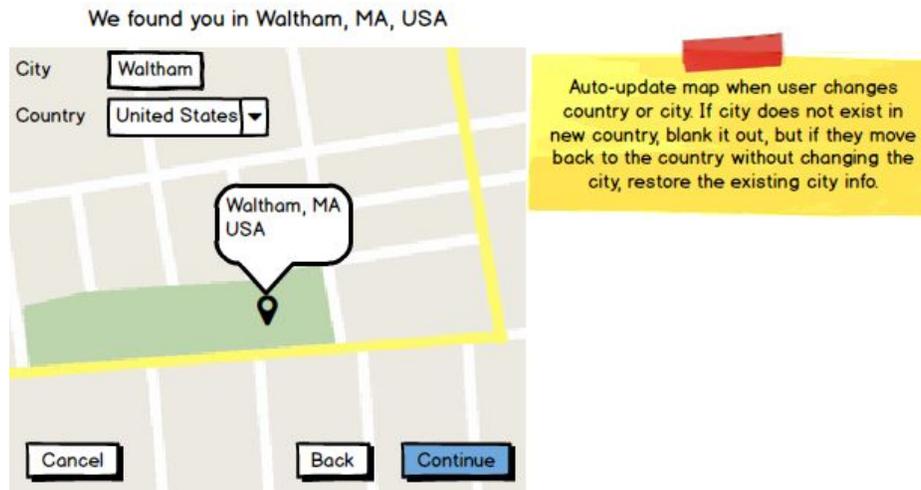
Sample variations for the 'city' line of an address

<http://www.uxmatters.com/mt/archives/2008/06/international-address-fields-in-web-forms.php>

During the discussion about this, Mo posited that we might not need to know street addresses. With further consideration, given that we want only to know who is near to other people or events, we agreed that the precision of street address wasn't necessary. Not only that, it's one fewer piece of private information to ask for and store.

Similarly, Mo and I thought we might be able to skip the state/province/region information by showing people's locations on a map. I will illustrate our conversations with mockups in the next two sections.

Detecting locations using IP or GPS information



Mockup of the location interface with a detected location

If we can use IP addresses or GPS information, our job is pretty easy: just show where we detected someone's location on a map like the one above.

Of course, there are also instances where we might have detected an incorrect location, they refused to allow us to auto-detect, or we couldn't tell where someone is.

When we are wrong

In the case where we detect an inaccurate location (such as for a VPN connection), people can change their location information in the fields over the map above. Once they have set the country, if needed, they can start typing a city and it'll suggest ones nearby. The interface would include state/region/province information as necessary to be sure that people can select their location accurately.

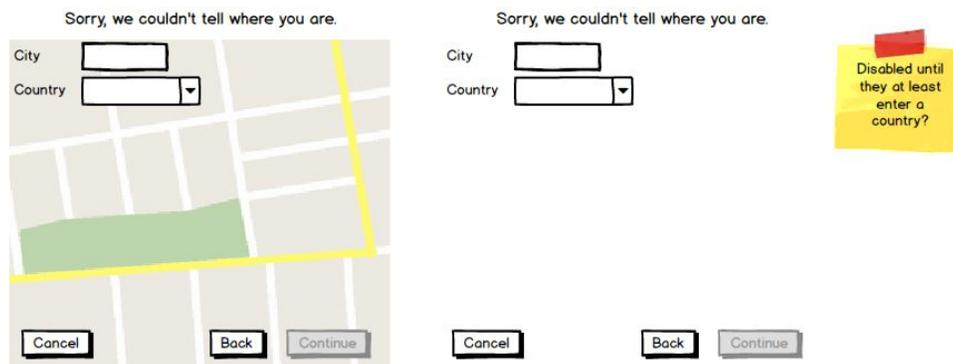
For example, if someone is living in Boston, MA and they VPN to somewhere in Buffalo, NY, the autodetect using the IP address will guess Buffalo, NY. When they start typing in Boston, [type-ahead](#) will show Boston, NY before Boston, MA.

However, even with a very common city name, it shouldn't take long to find what you want. And you can always continue typing the state/region/province information to get there faster.

When we can't guess someone's location

In this case, we'd show a zoomed out map with empty fields on a computer, or no map at all on mobile to reduce unnecessary bandwidth usage.

Similarly to when we guessed wrong, typing in a country will allow type-ahead to suggest cities within that country. In this case, there is no location to sort the suggestions by proximity, and it would be alphabetical instead.



(Detected a computer)

(Detected mobile or aren't sure)

Mockup of the location interface with no detected location

Doesn't type-ahead need a location database?

While the previous exploration solves the problem of street address, we still need a location database for type-ahead. This is still an open problem to be solved. Mo and I found a few possibilities, but nothing definite.

For further details, see the [IRC discussion](#) or my [blog post on the topic](#).

Developer Feasibility Evaluation

The lead developer for the Fedora Hubs project, Sayan Chowdhury, and I [met on IRC](#) to discuss the feasibility of my mockups. Before the meeting, I sent him links to tickets for all the mockups that I wanted to discuss, in order of my best guess at priority. This allowed him to review the mockups at his leisure.

We discussed the mockups of the [master list of events](#), the [master list of people](#), [getting location information for people](#), [event notifications](#), and [joining a regional hub](#).

For the most part, he thought the mockups were feasible. However, a few needed additional discussion or research. Online status and people and events within x miles of a location required additional research. The location information mockup needed more discussion at a later date, so I created a ticket about [suggesting the creation of new regional hubs](#).

Who is online?

Name	nickname	last online	Distance (Miles)
Jen Smith	jsmith	✓ Online	1
John Holsberg	jholsberg	✓ Online	1
Jorge Caver Ambassador	jcaver	✓ Online	1
Saanvi Nethala Ambassador	snethala	✓ Online	1
Aadi Jaynes Ambassador	ajaynes	✓ Online	5
George Jaynes	gjaynes	✓ Online	5
Heather Jaynes Ambassador	hjaynes	✓ Online	5
Jen Jaynes	jjaynes	✓ Online	5
Jane Jones	jjones	1 Day	0.5
Francisca Jones Ambassador	fjones	2 Days	0.5
Fred Jones	frjones	3 Days	0.5
Sadeepan Alluri Ambassador	salluri	7 Days	0.5
Maria J. Ambassador	mariaj	? 6 months ago	2
Faaha J	faaha	? 9 months ago	2

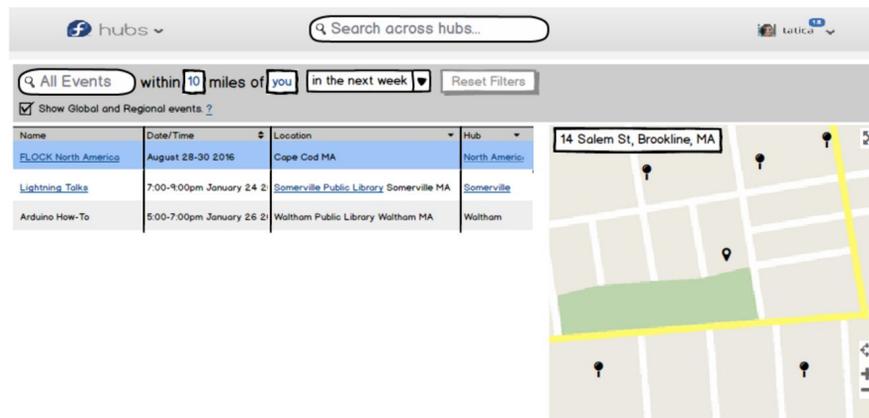
Master list of people, showing mostly online people

Both the map and search results for the list of people is dynamically updated as one adjusts the distance and source location. Sayan had concerns about making

sure that dynamically detecting the **online status** of each person was quick and lightweight enough to be usable.

He expected this to be do-able, but needed to research the problem to be certain.

Who is within x miles of me?



Master list of events

For this mockup, Sayan needed to figure out how to do dynamic searches to list people (or events) **within x miles** of a person or location.

He similarly expected this to be feasible, but needed to check to be certain.

Locations, again

The locations mockup discussion again turned out to be a bigger conversation than I expected. As with my earlier discussion with Mo about locations, I had not realized how complicated location-related tasks are.

In this case, the major concern was around how Hubs would suggest new regional hubs. Mo, Matt, and I had originally posited that Hubs would suggest new regional hubs to people who had sufficient numbers of people in a particular

area that a regional hub might be useful to them. For a new hub to be created, one of those people would take ownership of it. They would name it, it would be created, and the original nearby people would be invited (or added automatically).

Sayan was very hesitant about this feature, and it became clear that additional discussion was necessary. As a result, I created a [new ticket](#) containing all of the information that I'd collected at that point.

Usability Preparation

Having gotten feedback from Mo and Sayan about my mockups, it was time to get feedback from potential users. Before I could do that, I needed to plan some usability sessions, including tasks, a script, and a way to test the prototypes remotely. I also needed to find appropriate participants.

Creating Tasks

The best way to get feedback on low fidelity mockups is to ask participants to attempt specific tasks appropriate to the prototypes in question. Selecting these tasks was initially challenging. To deal with that challenge, I channeled my inner Quality Engineer and listed out general ideas of what was possible to do with each of the prototypes. This gave me a good place to start, although I did have trouble not getting too detailed for our needs.

With that list, I created a small number of possible tasks, and sent those to Mo for feedback. She pointed out that most of them were not concrete enough for a participant to successfully perform them, and made suggestions for how to solve this problem. For example, I sent her:

Task: You are moving to a new place. You wonder if there is any Fedora community near there. Use the prototype to find out who is near a particular place.

And she suggested instead:

Task: You're going to be traveling to Berlin, Germany on a business trip and have a couple of extra days on the tail end of your trip to explore. You wonder if there is a Fedora community of locals there that you could meet up with during the trip. Use the prototype to find Fedora folks near Berlin.

These examples gave me an idea of what I should be aiming for, and made it possible to create the remaining tasks.

Deciding on a reasonable number of tasks was another complication. I didn't want to try to do too many tasks in too short an amount of time, and also wanted to be sure there were enough for people to not run out of tasks. Mo suggested making around 10 tasks, then splitting them among our participants so that we had even split amongst them. She also mentioned that I would probably find that most people did between 3 and 5 tasks. I hadn't yet learned how long usability tasks typically take, so this information was very useful.

Prioritizing Tasks

I next needed to prioritize and select which tasks to use. With a reminder from Mo of the four box method we had used with the affinity mapping results, I prioritized the prototypes and the tasks within those prototypes.

	Lots of people	Few People
High Frequency	Notifications/widgets – but each one will have different frequency/numbers	Find events Find people
Low Frequency	Sign up for new account Join a hub	

First, I prioritized by prototype

Prioritizing by prototype helped me realize that notifications were especially important, even though there were a lot of different kinds of notifications. In all probability, everyone would be seeing some subset of those.

	Lots of people	Few People
High Frequency		Recent event attendance Find new regional event About to travel somewhere - people
Low Frequency	Join hub Need online help now Sign up for account	Moved to new location – events, people

Then, I tried sorting by task

When prioritizing by task, I found no tasks that were both 'high frequency' and 'lots of people'. This made deciding which were most important difficult, perhaps because most of the tasks were important for different reasons. However, I did identify some tasks to leave for later: those relating to moving to a new location.

I now knew that I needed to focus on notifications, finding people during travel or to get help, finding events near you to attend or that you attended, joining a hub without already being logged in, and signing up for Hubs.

The final tasks are in the section on running the usability sessions, along with their respective prototypes.

Script

As with the interviews, having a script to refer to was invaluable to keep myself and my participants on track, and to be sure to not forget anything. [This script](#) was created largely from the usability script from Steve Krug's [Rocket Surgery Made Easy site](#).

Balsamiq Prototypes

One of the complications with a remote project was the need to do all participant interaction remotely. This worked fine for the interviews, but I needed to figure out how to do this with Balsamiq prototypes.

Mo found an online version of Balsamiq, called MyBalsamiq. I looked into it, and it did support remote prototyping if participants share their screen while looking at the prototype. This meant that I could use the remote testing method that I had used in the contextual interviews: google on air and private youtube channel, with Mo's Bluejeans session as a backup.

Between Mo and I, we got the the Fedora Design Team a [MyBalsamiq account](#). I moved my Balsamiq mockups to MyBalsamiq, which was fairly smooth, with only small adjustments needing to be made.

With my mockups now in MyBalsamiq, I modified them to function as prototypes by adding linkages between the different steps of the prototype, and creating intermediary pages as necessary. I drew many flowcharts to keep track of which pages had appropriate links and intervening pages, and which remained to be done.

Participants

I was unfortunately unable to use any of my original 7 interviewees, due to time constraints on their part. Fortunately, I had not asked everyone in the original list of potential interviewees, and Mo had a couple of additional people to suggest.

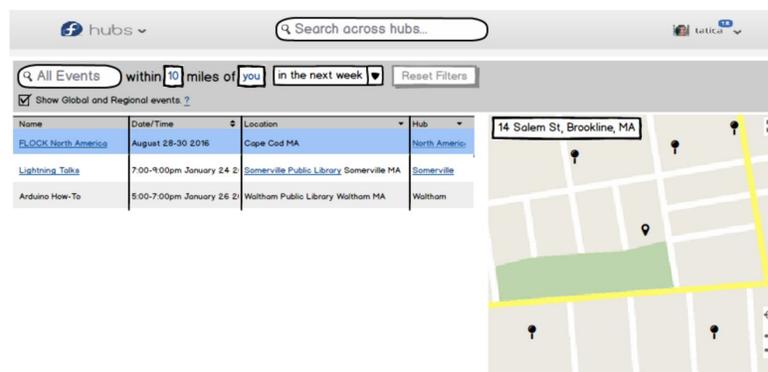
The original plan was to have some of the usability tests be in person at Mo's office, but the weather and illness made that not possible. Regardless, I tested the prototypes with 5 people remotely, and got a great deal of useful information. The next section describes the usability sessions in greater detail.

Usability Session

As with the interviews, the usability sessions were run over a google hangouts on air session which was recorded to a private youtube channel.

Below you can see the first page of each prototype, followed by the tasks for that prototype. I have also included links to the full prototype, although many of the pages in there include notes from our analysis of the usability sessions.

Prototypes and Tasks



[Events prototype](#)

1. You heard that there were going to be events in your local region (Southern California) in the next few months. Using this interface, find one of those upcoming events and show me how you would interact with the interface to find out when the event is, where it's located, and who to contact about it, and tell me what you are thinking as you do it.
2. You recently attended an event, and are wondering if anyone has put anything interesting on the event page. Using the prototype, find a past event and visit the page, and tell me what you are thinking as you do it.

Master List of Fedora People

hubs

ratco

within 10 miles of You

Ambassadors only
 Online only

	Name	nickname	last online	Distance (Miles)
	Jen Smith	jsmith	✓ Online	1
	John Holsberg	jholsberg	✓ Online	1
	Jorge Caveras Ambassador	jcaveras	✓ Online	1
	Saanvi Nethala Ambassador	snethala	✓ Online	1
	Aadi Jaynes Ambassador	ajaynes	✓ Online	5
	George Jaynes	gjaynes	✓ Online	5
	Heather Jaynes Ambassador	hjaynes	✓ Online	5
	Jen Jaynes	jjaynes	✓ Online	5
	Jane Jones	jjones	1 Day	0.5
	Francisca Jones Ambassador	fjones	2 Days	0.5
	Fred Jones	frjones	3 Days	0.5
	Sadeepan Alluri Ambassador	salluri	7 Days	0.5
	Maria J. Ambassador	mariaj	? 6 months ago	2
	Eesha J.	eeshaj	? 9 months ago	2
	James Jaques	jjaques	? 1 year ago	2
	Vajra J.	viajraj	? 5 years ago	2
	George X	N/A	✗ Never logged in	8
	Gajrup	N/A	✗ Never logged in	8
	Jose Javeres Ambassador	N/A	✗ Never logged in	8
	Tikva X	N/A	✗ Never logged in	8

[People prototype](#)

1. You are going to be traveling to Berlin, Germany on a business trip and have a couple of extra days on the tail end of your journey to explore. You wonder if there is a Fedora community of locals that you could meet up with during the trip. Use the prototype to find Fedora folks near Berlin, and tell me what you are thinking as you do it.
2. FLOCK Los Angeles is tomorrow, but you cannot find the address of the venue or directions on how to get there. You need to figure it out before tomorrow so that you can arrange for a ride there. Find a Fedora community member in the Los Angeles area who is online right now to help, and tell me what you are thinking as you do it.

hubs ▾ You are not logged in [Login](#) [Sign Up](#)

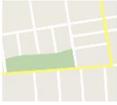
Some sort of banner image for the group so that we are more approachable

Greater Boston, MA, USA Fedora Group
 We are Fedora contributors in the Greater Boston Area, and we are happy to have new people join us.

Would you like to [Join Us!](#)

How about attending
Our next event

Lightning Talks
 Sommerville Public Library, 79 Highland Ave, Somerville, MA, 02143
 Wednesday, January 11th, 2016, at 7pm [Add to calendar](#)



Recent Events

What is Fedora?
 Wednesday, October 12th, 2016, at 6pm
 Cambridge Public Library, 449 Broadway, Cambridge, MA 02138

Welcome College Students
 Wednesday, September 14th, 2016, at 6pm
 Somerville Public Library, 79 Highland Ave, Somerville, MA

End of Summer Social Event
 Saturday, August 20th, 2016, at 3pm
 The Boston Common, 139 Tremont St, Boston, MA 02111
[More...](#)

[Chat with Jeff](#)

For more information, please contact
 Jeff Stone, jeffs@fedoraproject.org, 617-555-1212
 You can also chat with him to the right.

Make this be an email contact instead avoid spam.

[Related Fedora Groups](#)
[Boston College](#) [Boston University](#) [Tufts University](#) [Camberville, MA](#) [Brandeis University](#)
[Umass Boston](#) [Central Mass](#) [Western Mass](#)

[Join us or sign up](#)

1. You live near Boston, MA, USA, and someone sent you a link to the Greater Boston Hub. You've never used Fedora Hubs before. You want to join the group to keep up to date with what they are doing. Using this prototype, join the group and tell me what you are thinking as you do it.
2. Create a new account on Fedora Hubs using the prototype, and tell me what you are thinking as you do it.

The screenshot shows a 'My Stream' notification page with a search bar at the top and a navigation menu with 'My Stream', 'My Actions', 'My Mentions', and 'Saved Notifications'. The stream contains six notifications:

- New event near you in a month!**: A Q&A session titled 'How Do I...?' hosted by the Greater Boston Hub on February 2nd from 1800-2000 at the Brookline Public Library. It includes buttons for 'Not Going', 'Maybe', 'Going', 'Add to Calendar', and 'More details'.
- North American Flock bid accepted for Cape Cod**: The Cape Cod bid for Flock North America was accepted for the weekend of August 26th, 2017. It includes buttons for 'Not Going', 'Maybe', 'Going', 'Add to Calendar', and 'More details'.
- Brookline Hub created near you.**: A new regional hub for Brookline was created by Jeff Jaynes. It includes buttons for 'Ignore Brookline Hub', 'Follow', 'Visit', and 'More details'.
- You and some of your friends are going to FLOCK**: A notification asking if the user would like to suggest a meetup in Washington, USA in 4 months. It includes buttons for 'No thank you', 'Maybe later', 'Yes please!', and 'More details'.
- Join a hub in your area!**: The Greater Boston Hub is the largest hub in the area with 52 followers and 15 members. It includes buttons for 'Ignore Regional Hubs', 'Follow Greater Boston Hub', 'Visit Greater Boston Hub', and 'More details'.
- The Welcome Back Students event has been updated**: The event through the Greater Boston Hub has a feedback poll. It includes buttons for 'I didn't make it', 'Maybe later', 'Cool let me see!', and 'More details'.

[Event and Hub notifications](#)

1. We have a few different notifications relating to regional hubs and events. These would appear in your stream of information called "My Stream". I would like you to take a look at these and tell me how you think of them. What do you think you can do here, what do you think they are for; Just look around and do a little narrative.
2. Now, please respond to the first event in the list, either 'going' or 'maybe'. Talk to me about what you expect to be happening here and what you are doing.
3. Please return to the first page using the back button, and select the other option from the first event.

Early adjustments

After the first two sessions, I realized that any individual should only be asked to do one of the two tasks in *people*, *events*, and *join us or sign up*. These tasks were too similar, and were confusing people when they were asked to do both in a single session.

In the initial prototypes, the top-most bar was too realistic-looking compared to the rest of the prototype. This made it difficult to determine if the reason that participants were using it over the other search options was because of that increased fidelity or because of an underlying confusion resulting from the design decisions in the prototype. As a result, I replaced the screenshot search bar with one from Balsamiq.

Transcription, summarizing, and organizing

I would have preferred to have someone present during the usability sessions to take notes, as there would have been another person's perspective to draw upon. Having notes also would have meant that the transcription step below was not necessary.

Since I had no note taker, my next step was to transcribe relevant actions and words from the usability sessions. To make later steps easier, I also highlighted especially notable aspects of the transcriptions.

Once I had completed the [transcriptions](#), I created a [spreadsheet](#) to more easily organize the information from them. I originally organized the information by prototype, and copied over highlighted information and other important data points that I had missed in the first pass. I also made note of who had similar things to say, or had similar aspects that they struggled with.

After filtering the information from the transcriptions into a spreadsheet, I created a new tab in which I organized the information by concepts rather than prototype. Having done this, the next step was to discuss and analyze my findings with Mo.

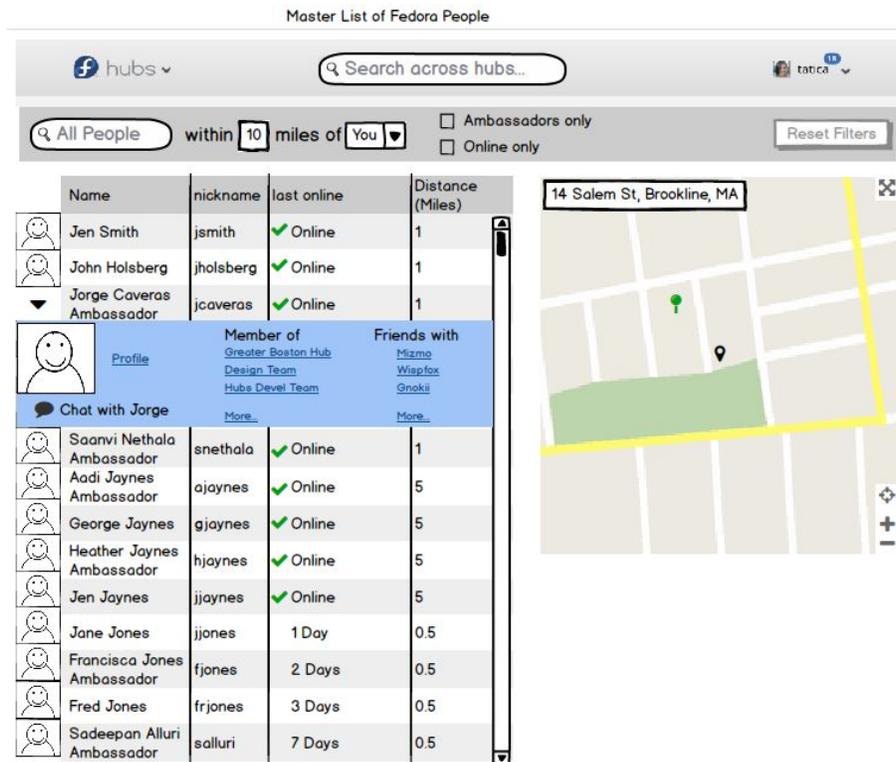
Usability Analysis & Results

I met with Mo to discuss and begin analysis of my findings. We were not able to discuss all of what I found, but made a point to review everything that multiple people struggled with.

Some of the problems were simple fixes. Some, on the other hand, required additional discussion. Below I go into more detail on the issues which required further discussion.

Who do I contact?

In the people prototype, participants faced with a list of names had trouble deciding who to contact. In addition, with someone selected, it wasn't clear that the teams and friends listed were ones you had in common with them.



Do I know Jen Smith better than John Holsberg? I can't tell!

In this prototype, every task was about finding someone to talk to. While only one person was clickable (Jorge), no one was sure that that person was a better or worse selection than any others.

Show me the relationships!

Some participants mentioned that they would have liked to be able to tell their relationships with the people in the list. Who did they already know, who they were in a team with, who did similar work to them, who had they been conversing with, or who did their friends know?

Which ones?

Mo pointed out that figuring out this kind of information can get very complicated, very quickly. For example:

- We could decide that people who are **following each other** are friends. Following someone in Hubs means that you see their Fedora activity in your stream. Sometimes you might decide against following someone who you think is fabulous because their work isn't relevant to yours, or you don't have the time to add yet another person's activity to your stream. Mutual following may not be the right axis to base friendship status on.
- Maybe you're **on a team** with someone. This likely means that you'd be interacting with them regularly, and suggests that team connection may be more relevant than one's following status. However, what if you're on a large or highly geographically distributed team? You might never have a reason to talk to some of the people on your team.
- There are probably people you **talk to regularly**, via IRC, email, or some other work-related communication. This probably means that you know them. However, this may not mean that you'd prefer to ask them for help or to meet up with them.

As of yet, the best types of relationships to signal between Fedora members is unclear. This is potentially useful information to have, and further investigation is required.

If we were able to identify useful relationship types, we would also need to figure out the priority order of those. Which type of relationship is most important when deciding who to contact?

How do we signal them?

Suppose we figured out which relationship types are the most useful, and the priority order of those relationships. Maybe we decided that team affiliation, who one is following, and conversational frequency are the best choices. How do we signal this information without being overwhelming?

We could use icons, because they can be quick to glance at and understand. Maybe we could use a pen or a quill for people doing creative or design work. On the other hand, that could easily mean someone who does doc writing. The problem here is that [icons can be confusing](#), even for frequent users of them. Text is often better for understandability, but it takes up more space, can be difficult to phrase well, and isn't as easy to understand at a glance. This is a [very common problem](#), and would require more research and usability testing to get right.

Last online is too specific!

Knowing that someone is currently online makes it easy to tell who is likely to be available to chat. However, showing the specific amount of time since someone were last online in a long list of people is not useful. It takes up space that could be used for something else, and we could put that level of detail in the dropdown instead.

Having the icons that indicated status - the 'online' checkmark, 'not online in a while' question mark, and the 'never online' x mark - taking up an entire column seemed excessive.

However, we'd still want to show who is online right now to make synchronous communication easier. We'd also want to show who hasn't logged in recently, so that no one sends them a message expecting a quick answer. As Hubs will be pulling information about Fedora members from FAS (Fedora Account System), there will be people in the list who have never logged into Hubs. We need to

show that, and perhaps offer a way to send messages that do not require logging onto Hubs for those people.

One alternative to the column of status information might be to have these icons next to people's names or photos. Many applications currently have a dot that goes from grey to blue to indicate that people are online. However, we have additional information to provide than 'on/off', and [color alone is not sufficient to distinguish between states](#).

As with any change moving from icon plus text to only icon, we would need to test with users to find out the best way to provide this information.

Do they want to meet or help strangers?

Many of my participants were not comfortable with contacting strangers. Some commented that knowing who was interested in meeting or helping unknown Fedorans would make contacting strangers a lot more comfortable. Others noted that the ability to filter for ambassadors was close to this idea, but not quite the same. In theory, ambassadors would be interested in talking to unfamiliar Fedora members. However, what if an ambassador needs a break or is otherwise not available to talk to?

An alternative might be to replace the ambassador status filter with a filter indicating someone's interest in meeting or helping strangers. This could help people looking for help or company know who welcomes such requests, thereby reducing the barrier to initiating contact.

How to best implement this concept isn't really clear. We could use an open/closed sign, but that may not provide granular enough information. We want this to be easy to use for people who want to specify what kind of availability they have, and easily understandable for those who want to know who to contact.

How do the search boxes work?

It is unclear what inputs are valid for the search boxes and filter options for people and events.



People search and filter



Events search and filter

What can I search on?

Some of the participants searching for people in Berlin tried to use the ‘all people’ search box to find Berlin. Similarly, those searching for events in Los Angeles tried to use the ‘all events’ search box.

Those search boxes were meant for searching by names, nicknames, IRC nicks, and email addresses in the case of people; and for specific event names in the case of events. Instead, the ‘you’ dropdowns were intended to allow you to specify a location other than one’s current location.

This was clearly not obvious, at least in a static mockup. So the question becomes: how does one make this clearer?

Mo and I had a few thoughts on how to best handle this one.

First, Mo pointed out the common pattern of searches along the top and filters along the left side. With this thought in mind, there wasn’t really a reason to disallow searching by location in the search box. However, that did lose the ‘obviously filtered’ state.

Second, being able to type into those fields might clarify what they were for. In other words, once you start typing, type-ahead would demonstrate the sorts of things the search box was expecting. However, type-ahead is not easily done with a static prototype like those in Balsamiq. I talk more about this prototype fidelity problem at the end of the next section.

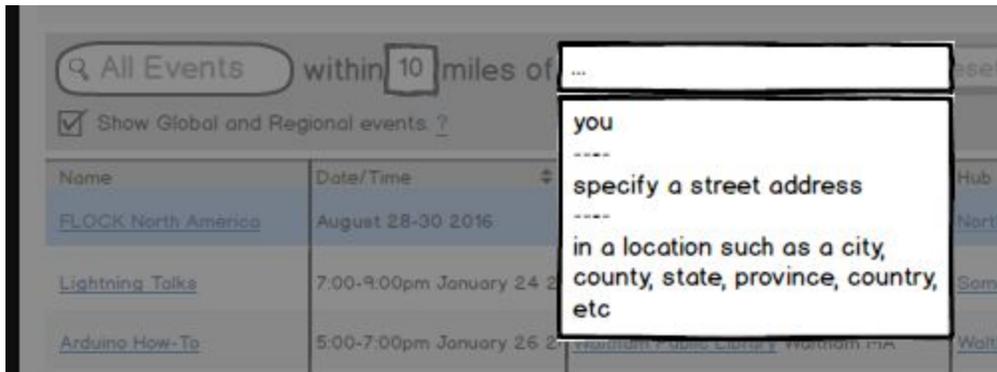
I was hoping that the current structure would allow people to easily understand what their results were telling them: in the default state, that they were looking for everyone within 10 miles of them. Perhaps something as simple as changing 'All people' to 'Everyone' would help with that part. It is not yet clear if the confusion was due to the static, low-fidelity nature of the prototypes, or if the structure I used was not a good choice for the task at hand.

What does 'you' mean?

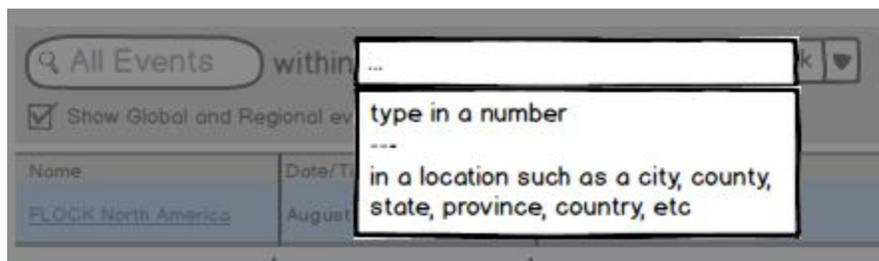
The expected inputs for '10' (miles) and 'you' were unclear.

This was not a surprise, given that I had been struggling with how to handle the options when creating these mockups. I eventually decided to use dropdowns, to show that one could type in those boxes and select from some basic choices.

Unfortunately, no one realized that they could start typing, rather than only selecting from the dropdown options. This was likely due to the fact that these were static mockups, much like a paper prototype.



Events near or in [place]



Events or people within [distance from somewhere] or [a place]

What were my original goals?

For both people and events, I wanted to support the ability to enter in a location as specific as a street address, or as general as a country or region. I also wanted to have the interface default to the your location saved in Hubs. To complicate things, locations less specific than a street address don't make sense with distance: one generally wants to look within a city, not within a certain amount of distance from a city center. At the same time, perhaps someone does want to know what's within a certain amount of distance from a specific city.

For people, I also wanted to offer the ability to search anywhere in the world: this would allow someone to search for a name and not need to know where they live.

Possible solutions

It is unclear to me how much of the trouble my participants had was due to the low fidelity of the prototype, and how much was because my interface is too confusing. My suspicion is that it was a combination of both.

To combat the fidelity problem in the future, Mo offered ideas that she had used in paper prototypes: replace 'you' with something like "please enter a location (default: your saved location)", a cursor symbol, or their closest city. We neither need nor use street addresses for people's locations, and using the nearest city instead of 'you' may help clarify the field as a location.