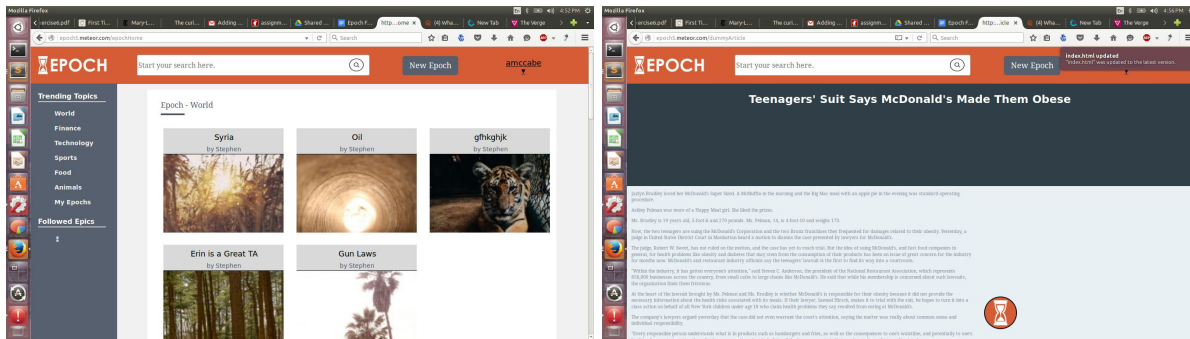


Epoch

Andrew McCabe, Stephen Aman, Peter Ballmer, and Nimit Parikh

Instant Context for Everything

In today's world, people face an overabundance of online content that is often scattered, uncurated, and isolated from relevant context. Epoch allows users to get content consolidated from experts across the world in a simple, intuitive timeline format, all with the push of a button from the comfort of their browser. We accomplish this by drawing from user created timelines (read: Epochs) made on our website where users can also search for and read Epochs by topic.

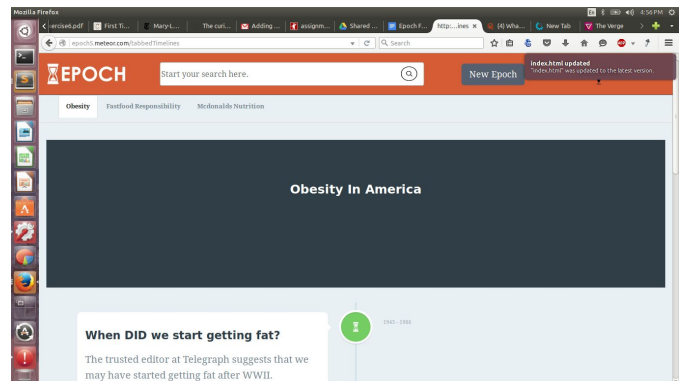
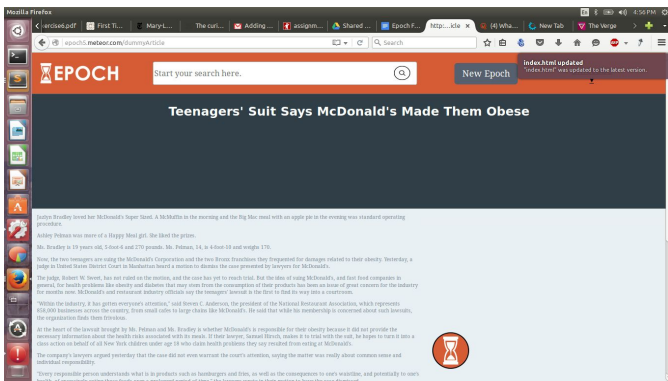


(design images here)

Tasks and Final Interface Scenarios

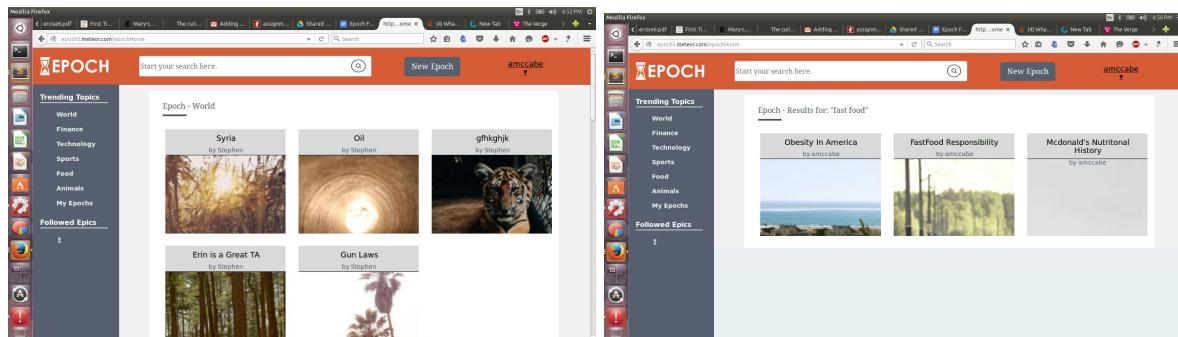
1. Clicking the timeline button to get to an Epoch from an article.

This task takes place when a user is viewing an article or some other web content and clicks the timeline button at the bottom of the page and is taken to the Epoch that article is contained within. We chose this task because as we discovered in our needfinding, people are very set in their ways of how they seek out information and don't naturally take to seeking out new methods of getting information. By having the button present on the page, users can quickly cut to a temporally contextualized view of the subject matter they are reading about without having to go through a new site or service.



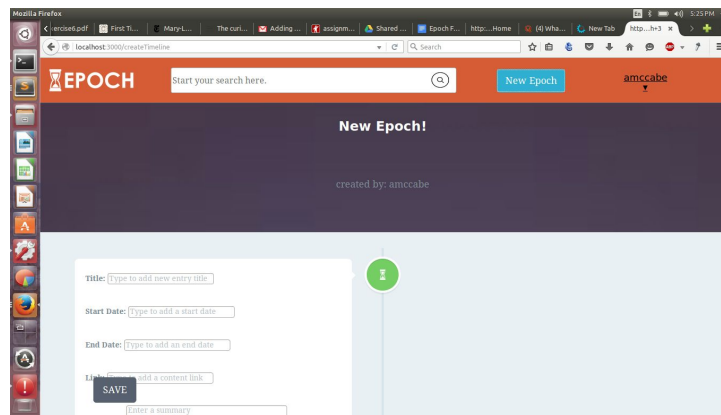
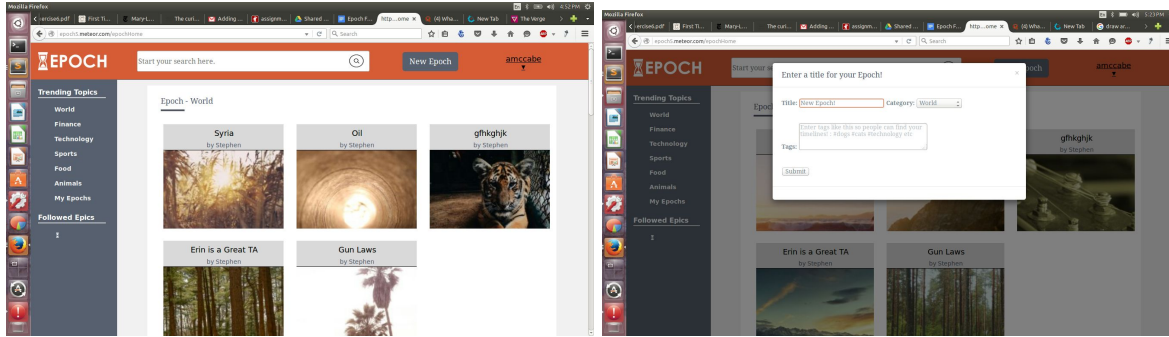
2. Searching for Epochs on the Epoch website.

When a user visits the Epoch website, in addition to being able to browse the suggested Epochs displayed on the home screen, users are able to use the ever present search bar at the top of the screen to search for Epochs of interest to them. We included this task because we found in our need finding that all types of users use Google as their primary source of information, and by emulating the Google search experience as applied to Epochs, we give users the ability to discover whatever content they may be looking for while remaining comfortable in an interface similar to what they are familiar with.



3. Creating an Epoch.

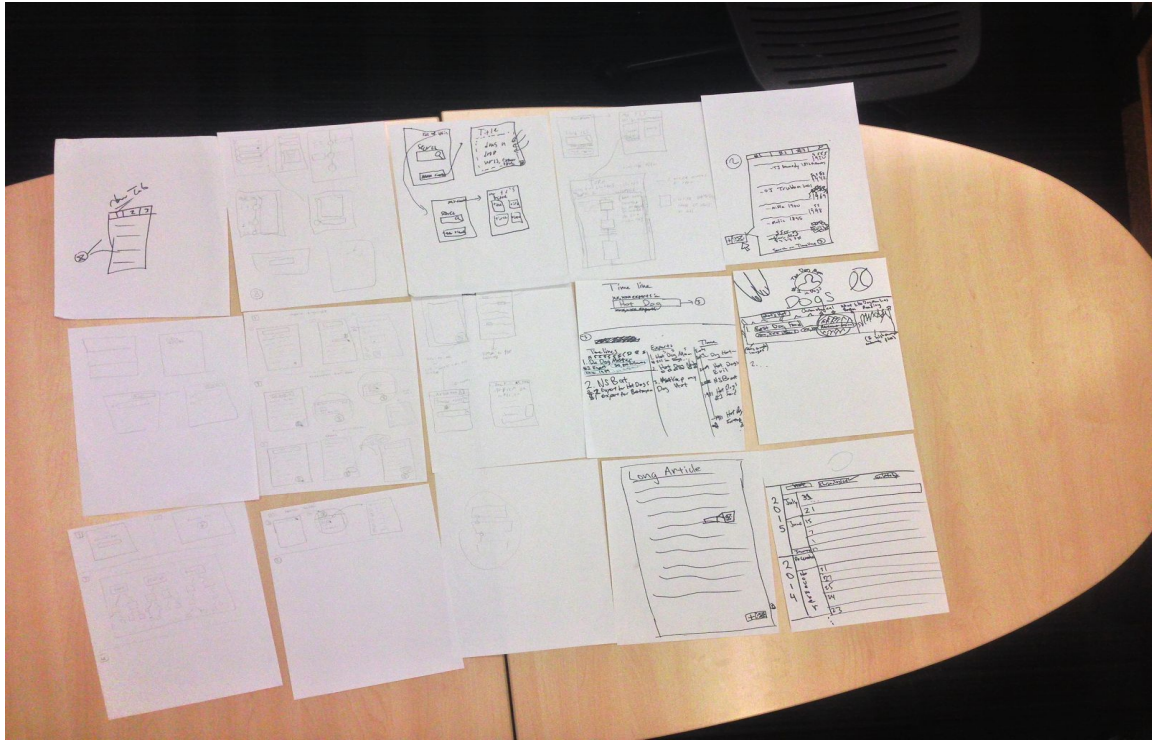
In order for a database of crowd powered epochs to exist, obviously users must be able to create Epochs themselves. Users can click the ever present plus button at any stage of the website and from there enter in the url the article/video in question, as well as start date and end date that the article's content is relevant to.



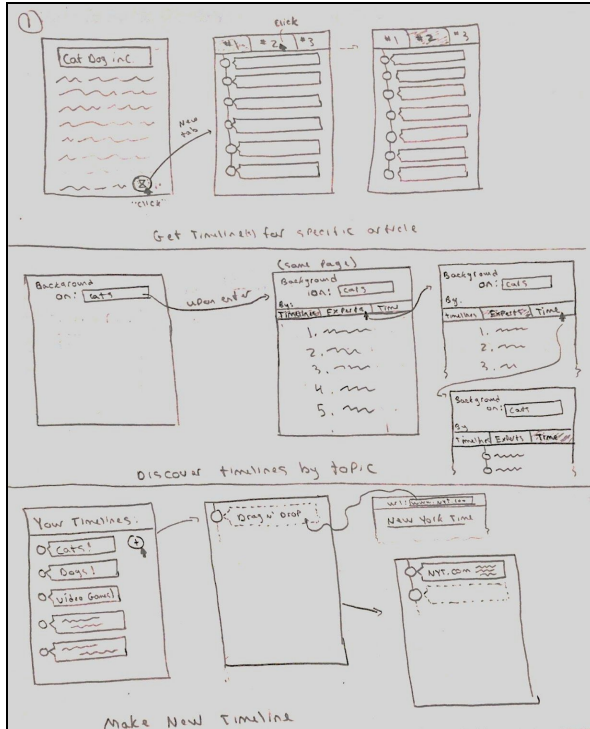
Design Evolution

Sketches

After completing our initial needfinding and user interviews, we set out to sketch our respective visions of what we wanted Epoch (Timeline at the time) to look like in reality. After sorting through the following sketches we all individually completed:

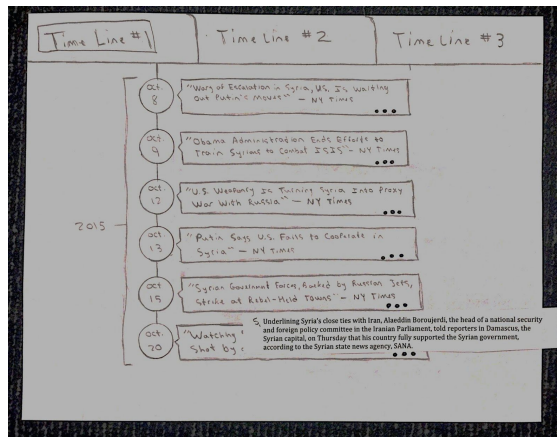
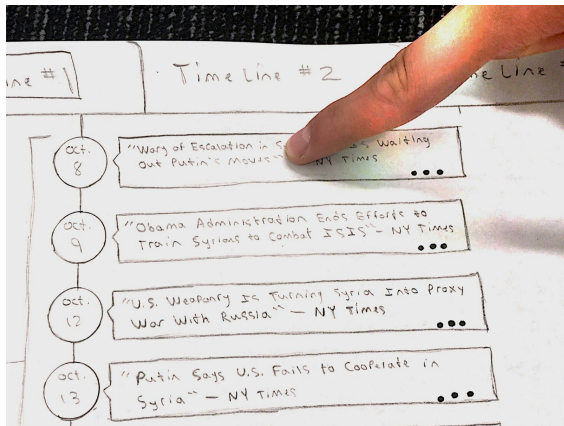
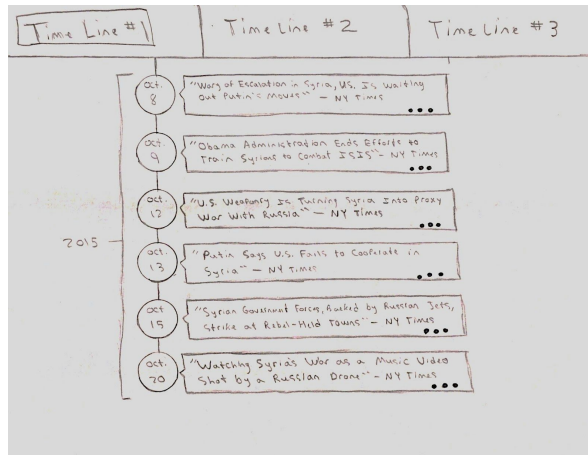
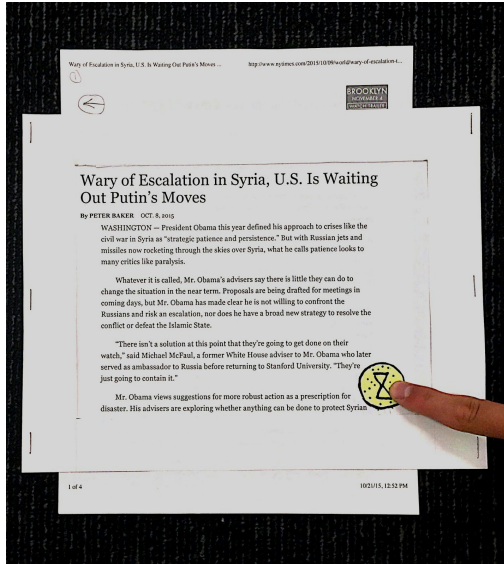


We extracted what we thought was the best implementation of each of the three tasks from all of our drawings, and sketched out what the tasks may look like in practice:

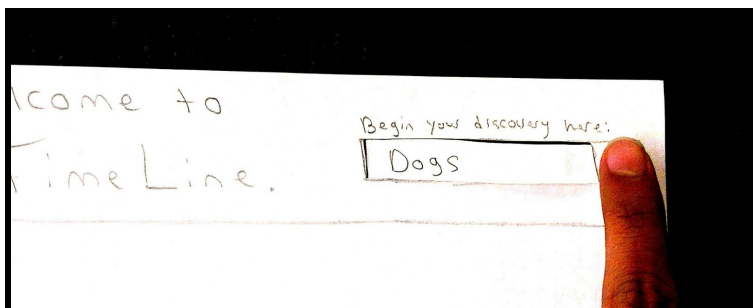


Low Fi Prototype

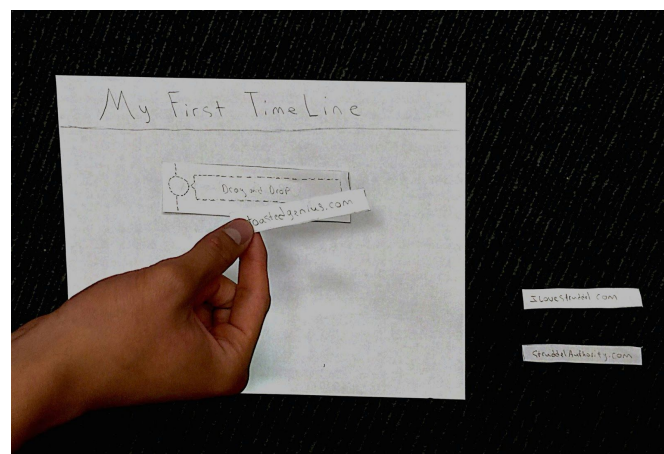
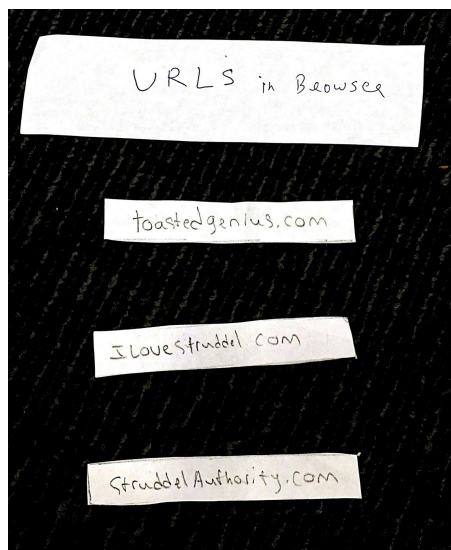
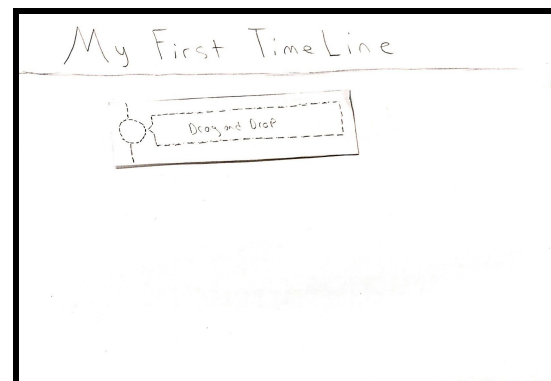
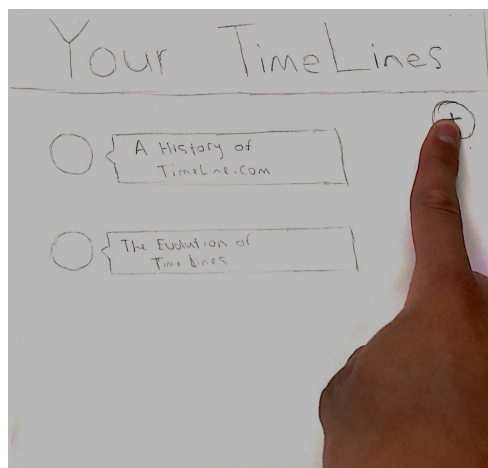
Once we had this idea of how we wanted our task flows to work, we created a paper prototype closely resembling our final sketches to test out with real users. For task 1, we gave users a dummy article with a timeline button as well as an interactive 3 tabbed timeline display.



For task 2, we allowed users to drag and drop pre-determined search terms into the search bar and in turn click on timelines relevant to the search term, then either simply view the preview or click the preview to open a complete timeline view.



For the create your own timeline feature of our prototype we provided the user with 3 fake urls that they could place on a timeline template equipped with a dotted line version of a timeline entry that says “drag and drop.” Upon the user doing this the computer pushed the drag and drop box down and put in it’s place a new timeline entry for the provided url.



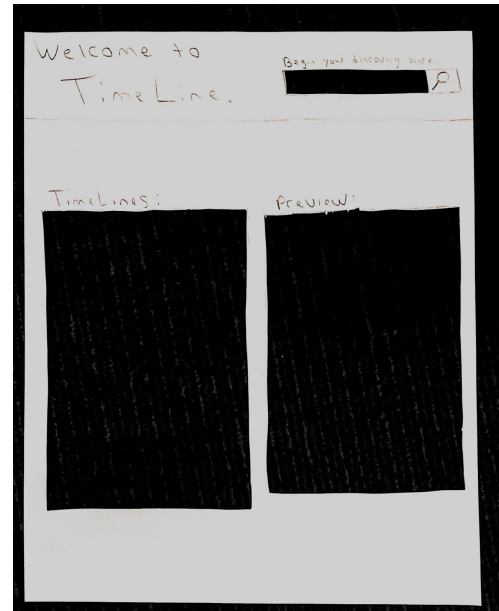
Medium Fi Prototype

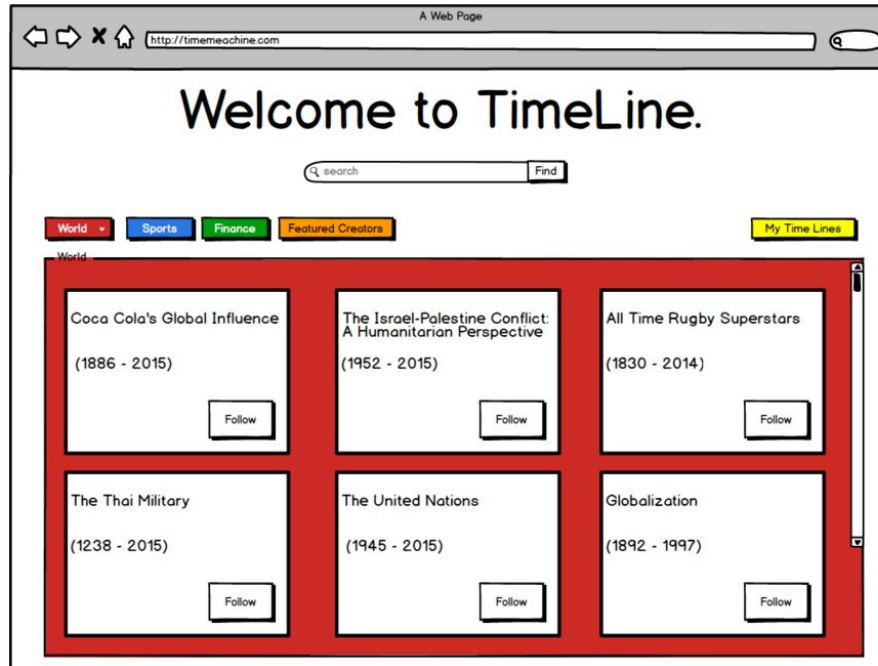
After testing out our low-fi prototype on 3 different test users in our target demographic

(student, student, and academic), we discovered several flaws in our UI that we corrected in our medium fi prototype. The main changes we made were:

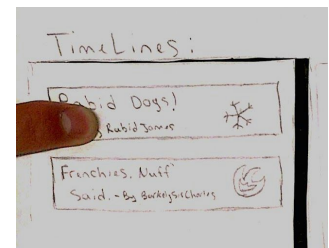
- Added a home page.
 - After watching each of our candidates carry out task 2 (search for timelines) and interviewing them after the fact about their experience, we found that our initial search page (right) had way too much unused white space that could be much better utilized by displaying either popular or suggested content. This addition of a home page populated with content was a movement away from our vision of Epoch as a Google-esque service, and movement towards our final vision of Epoch as a Wikipedia or Youtube type service. These two sites

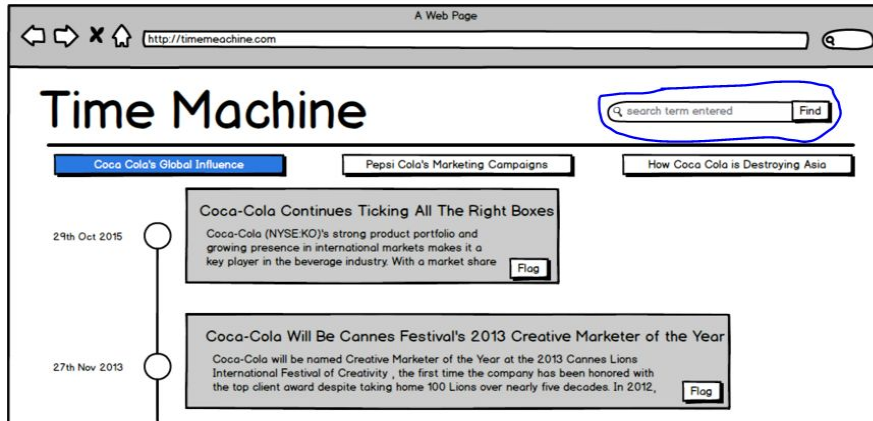
also provide a wealth of information, but unlike Google these sites offer a distinctive format for all content (encyclopedia articles, videos) that users seek out specifically for the format. Similarly, because those coming to our site would be seeking the timeline format specifically, it would be useful to provide sample content as Youtube and Wikipedia does, particularly to help new users integrate themselves into the site and gain a better understanding for what it is Epoch does. Using Balsamiq, we created the following home page:





- Removed hot/cold popularity affordances
 - In our low fi prototype, we had drawn snowflakes and flames next to timelines that showed up from a search to indicated less popular or more popular respectively (right). These affordances were not obvious to users at all, so we removed the icons and simply placed the best content at the top instead.
- Added search functionality from the timeline view page
 - In our low fi prototype, we saw that it would take users too many steps from looking at timelines to searching for more timelines, so we decided to make the search bar omnipresent across the entire experience (below).

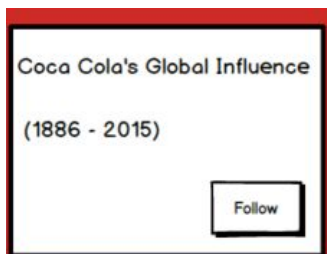




- Removed “...” buttons that allowed users to view a more detailed preview.
 - Initially we included a “...” button in the bottom right corner of each item in a timeline in order to let users view a more in depth preview of the article before visiting the site itself, but after testing we found that the usage of this button was not standard behavior, and in some cases we had to explicitly prompt users to tap the “...”. Instead, we simply expanded the preview of the article to show 3 lines of preview by default (below).



- Added follow functionality for timelines
 - After receiving negative feedback about the inability to save or bookmark timelines for future viewing, we added a “Follow” button on timelines to give users this functionality. We chose the word follow to communicate the possibility that the timeline was still to be added to in the future (below).

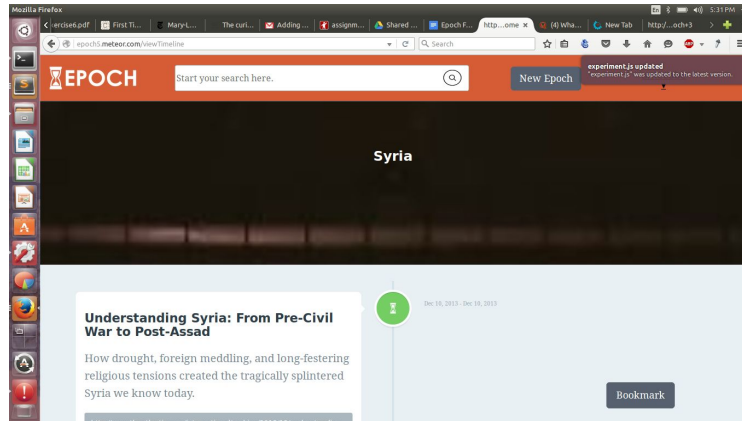


- Added flag button to articles
 - For our low fi prototype, we didn't have any content curation tools available to the users. After getting user feedback questioning the objectivity and reliability of timeline items, we added a flag button to individual timeline items to allow users to mark unreliable individual sources within a timeline in our medium fi prototype. We would allow users to flag these items on their own, and if the number of flags on an article reached a certain threshold (ie 15 flags from different users) it wouldn't be removed from the timeline but would appear on the timeline as flagged, communicating to users that for some reason or another the source may not be reliable.

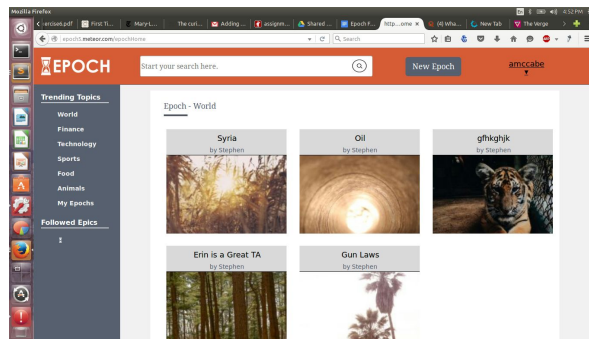


Major Usability Problems Addressed

- [H2-4. Consistency and standards] [Severity 3][Found by: D]: When I am in the Coca-Cola timeline page, there is no button, which allows me to follow that timeline. The button appears only when I am in the Timeline Main Page. It is not consistent across the entire platform. What if the user wants to follow the page right away? Not a great user flow experience as well.
 - This violation we found to be very helpful and easy to fix. Previously we had displayed the follow button only when users were viewing a timeline preview, but after this violation we added a scrolling button, as shown below:



- 33. [H2-7. Flexibility and efficiency of use] [Severity 3][Found by: D] It took me 7 clicks to finally come to the ‘create a timeline’ button. It should be made available on each tab to make the discovery process easier.
 - This violation was also very helpful feedback, and to address it we simply added the ‘create a timeline’ button to the omnibar at the top along with the Epoch logo and the search bar, as shown below.



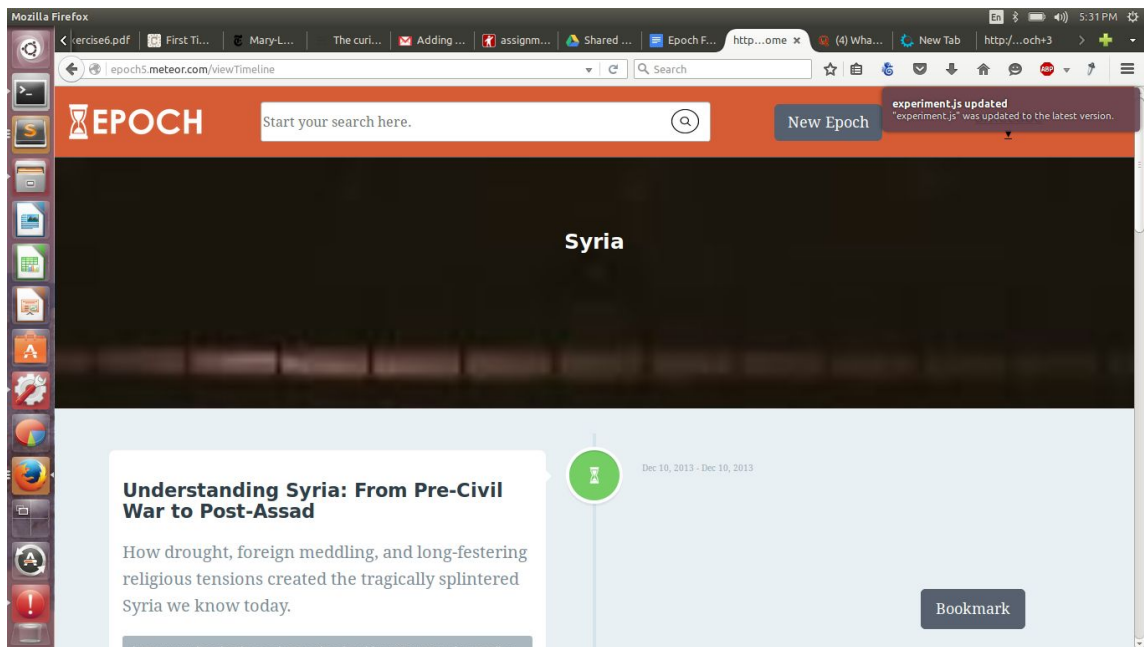
- 35. [H2-4. Consistency and standards] [Severity 3] [Found by: B, C] “Drag Drop Links/Images” is not very consistent for the user, since the user needs to use the same channel to add both a link and an image. That means the user could do something different using the same button every time the user makes a timeline. At least from user standpoint, it may be better for the two adding parts to be separated so that adding images and links are distinct processes.
- And: 36. [H2-5. Error prevention] [Severity 3] [Found by: B] What happens if the user only adds an image? What if the user only adds a link? What if the user adds both? Will it give the user an error message if no link is pasted? Either separate the add link and add image sections, or add clear error messages when user tries to post an article without a link.
 - The issue of incorporating images into our interface is one we had talked extensively about in building out our medium and hi fi prototypes. The

issue was tough because images would pretty definitively enhance the look and feel of our interface, but the issue of where the images would come from was more complicated. Would we algorithmically scrape images from articles? Would we require the user to upload images? After determining that the first option wasn't possible in the amount of time we had for the project, we decided that we would allow users to drag and drop images themselves into each item within the Epoch and collect feedback. Our feedback (above) revealed several flaws in allowing users to add images themselves to each item on the timeline. Additionally, we took issue with the amount of work created for the user by keeping this feature. We had already been worried about users incentives to create content, and encouraging users to upload/drag and drop/provide images would provide too much work for us to justify. So instead, we simply allow users to upload a single image for their entire Epoch, a simple task that creates very little work for the user, and isn't mandatory.



- 41. [H2-4 Consistency and Standards] [Severity: 3][Found by: C] On most websites, "Follow" refers to following a user and getting updates on their new posts. However, I see that Timeline follows timelines instead on the "My Timelines" page. Additionally though, the user can still follow other featured users on the homepage. Decide whether you want "Follow" to refer to timelines or users, and only use it for one of them. I suggest users because that tends to be the norm for websites. You can still include saved timelines for the user to easily go back to by changing "Follow" to "Save" for the timelines.

- This HE hits on an issue we discussed extensively over the course of the project, and that is the issue of user presence. This quarter we frequently alternated between wanting to give users a lot of personal presence and encourage social interaction between users (similar to Youtube’s approach) and wanting to minimize visibility of content providers as individuals, and rather keep the focus of the user on the Epochs and content over the behavior of individual users/content providers (similar to Wikipedia’s approach). By the time we reached our hi fi prototype design step, we decided to take the user de-emphasized approach to maintain integrity for our content. By emphasizing content creators as individuals we open ourselves up to content creators that want to flaunt a specific web personality and potentially compromise the reliability of the information for the sake of outward appearance. What this means for this HE is that we intentionally chose to not allow users to follow other users to avoid the user emphasis and keep content less biased. That being said, we did find the word “Follow” to be somewhat misleading as applied to timelines, especially older ones that are less likely to be updated with new information in the future, so we changed the button to say “Bookmark” as seen below:



- 42. [H2-6 Recognition rather than Recall][Severity: 3][Found by: C,D] There are follow buttons on the homepage which shows the previews of the timelines, but not on the actual timelines. The user will probably not want to follow someone

until they have read one of their timelines. Include the follow button on the timeline page.

- A relatively simple fix that makes sense, it is now possible for users to follow (bookmark) a timeline from the timeline display page itself as seen above.

Prototype Implementation

Tools

For our High Fi prototype we used a JavaScript Platform called meteor to turn our project into a real website.

How it helped: Epoch relies on allowing users to create content and have it saved on our website so we chose Meteor because it offered very easy to use database functionality that could support this behavior. Not only that but, it also offers many additional libraries that can give you prebaked functionality like support for tabbed views and routing between multiple page applications that we used in our prototype. And lastly, for a group with limited web development experience Meteor offers an easy to learn environment with a great tutorial and really easy to understand syntax for injecting your HTML with often times database sensitive JavaScript functions that allowed our website to display and keep track of user's content. While it still wasn't the easiest task, using Meteor was definitely easier than it would have been if we had built the site from scratch with pure HTML, CSS, and JavaScript.

How it did not help: Although using Meteor was generally a pretty great development experience, there were a two area's in which it could have been better. One of them was testing and managing our project's database. When it came time to deploy our application we were able to use Meteors temporary hosting which you can launch from the convenience of your terminal. However, one feature missing from this functionality is the ability to manage the contents of your database like you can with your locally hosted applications. For example, we couldn't launch our prototype with any of the data we had used to test it and vice versa we couldn't access the the user data from a launched prototype and use it a later version. So if we wanted to host a new version of the prototype we had to start from scratch and recreate our user data each time. The other drawback to using Meteor is that, while they offer very convenient hosting for your prototypes, it can not only be unreliable in communicating with your database and displaying data sensitive content but, your hosted application is also put to sleep by Meteor fairly quickly after it's stopped being used. This means that if no one uses the

service for a day or two then the next time you visit the hosted address you'll probably have to wait while Meteor makes it active again. This makes long term accessibility of our prototype a little more difficult.

Wizard of oz techniques

In our prototype we used two Wizard of Oz techniques. One was populating our timelines with random images pulled from an online image provider instead of allowing users to add their own images (which is a feature that would surely be available if Epoch were to be a real service). The other, rather major, Wizard of Oz technique was providing readers with preset Epochs when they use our timeline button. In the real product an algorithm would be used to figure out what the user is reading about and then pull from our user database accordingly.

Hard Coded data

Technically, we don't want to say we hand coded any data because we see ourselves as users of the service as well but, we did make our own user accounts and make timelines that would be available to show the service off during our demo.

What is missing?

From the current prototype there are a few big things missing on top of what was already mentioned in our Wizard of Oz overview. We did our best to implement a bookmark functionality for users to save Epochs that they enjoy but for this implementation it is only half baked and not fully functional. Due to time constraints we were also not able to implement our planned user feedback system that would allow readers to flag individual Epoch entries that they find biased and say how they feel about an Epoch. Lastly, if Epoch were to become a real service we most likely also add a user profile page where users could learn a little about the creators of the content they're reading.

Summary

In summary, we had a great time making Epoch! It was the first design experience for 3 out of 4 members of our team and we learned a lot! Like how to brainstorm, do user research, make important design decisions, rapidly prototype, and actually turn our ideas into a real (or close to real) product. We started with a desire to make it easier for people to consume information and came away with Epoch. Special thanks goes out to

everyone who helped us with our user research and our teachers that helped guide us through important design decisions.

Thunder Lizards signing out,

Peter, Stephen, Andrew, and Nimit.