

Methodological Module Design Brief

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Thesis Studio One

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Design Questions

Currently there exists no intuitive or user-friendly method of mapping media such as photos, sound and video from various sources such as a user's personal computer or accounts from websites and apps such as Dropbox, Flickr, Instagram, YouTube, Soundcloud, etc. Furthermore, many platforms that offer the capability of embedding images or video into an interactive web-map leave the user with an unpleasant experience and poorly designed interface. These problems resulted in identifying the following questions:

- How can a web application be designed to engage more users in mapping media?
- What would a non-traditional / non-normative approach to mapping media that is more user friendly than the traditional model look like?
- How could such a tool allow for collaboration among different users?
- What type of user would such a tool benefit?

Research

Domains

The domains of this methodological module prototype are web-mapping, counter-mapping, narratives and media on the web.

Precedents

UI precedents. See Appendix for screenshots.

Web-Map Applications

As precedents I identified a number of applications that use traditional web-map UI which allows the user to accomplish specific tasks or create visualtions:

- [MapBox](#)
- [CartoDB](#)
- OpenStreetMap's ID editor
- Google's My Maps
- Instagram's photo map
 - only available on the Instagram mobile application.
- Crowdmap.com
 - Is perhaps the most relevant platform I've discovered so far.
 - Made by the programmers at Ushahidi.
 - Currently in beta.
 - UI doesn't appear to let you set map zoom and center.
 - Does allow for adding data from instagram and twitter.
 - Appears to work on top of MapBox & Leaflet.
- Ushahidi: <http://www.ushahidi.com/>
- Gramfeed: <http://www.gramfeed.com/instagram/map#/37.7749,-122.4194/1000/>
- Openplans' Shareabouts: <http://openplans.org/shareabouts/>
- Tidepools <http://tidepools.co>
- Wikimapia: <http://wikimapia.org/about/>
- Wikimapping: <http://wikimapping.com/>
- Track Leaders: <http://trackleaders.com/>

Platforms for Creating Narrative Maps

The following platforms for creating narratives using web-maps were identified:

- [Google Earth Tour Builder](#)
- [MapStory.org](#)

- [StoryMapJS](#)
- [Storytelling With Maps \(ESRI, proprietary\)](#)
- [Neatline \(University of VA\)](#)
- [Odyssey](#) by CartoDB.

Successful Combinations of Web Maps and Media

The New York Times has published several pieces that successfully combine media with maps:

- [The Russia Left Behind](#)
- [Riding the New Silk Road](#)

Pro Publica has a successful piece on the disappearance of the Louisiana coastline:

- [Losing Ground](#)

Analysis of Precedents

In the precedents identified above the majority of the user interfaces follow a similar pattern. The user must navigate a web-map by panning and zooming to place markers and/or edit other features. In some cases the user may enter a place name or address into search box to zoom and pan the map to a specific location. These forms of interaction make up the traditional web-map user experience as first created by Google and refined since its original release in 2004.

Currently there are two primary design and UI trends for imbedding media into a map. The first is by inserting the media into a pop-up for a map feature such as a marker. The second is displaying the media in a side bar next to the map and linking the media to a position on the web-map portion of the UI. Both of these methods are somewhat clunky and typically do not allow for visual media to be viewed at a large size. This typically makes for a poor user experience of viewing media with maps.

Project Concept

The first step was to diagram a workflow for possible methods for a user to add media to a

map on the web (see appendix for diagrams). Following the most simplistic scenario the steps needed for a user to add a single piece of media to a map were defined in a separate workflow. A paper prototype was then created that mimics an approach taken by traditional web-mapping applications in order to identify shortcomings and design to improve after user testing.

Methodology

The Methodology is as follows:

- Define a typical / normative user workflow
- Create a paper prototype that mimics this workflow
- User test the paper prototype
- Refine prototype based on user tests

Findings and Next Steps

User testing revealed that a persona and use case for the application need to be refined. The questions of who would use such a tool and why in the context of counter-mapping are critical and will be answered with further investigation stemming from interviews and additional user testing. Thus, following the first user tests the next steps are as follows:

- Narrow the user persona: who will this application benefit? why would they want to use it?
- Iterate on paper prototype: create a second paper prototype that uses a non-normative approach to adding locations to a map.
- Design a paper prototype for how the user's map will appear when shared publicly on the web.
- Perform further user testing.

Appendix

Cartographer vs. Counter Mapper Workflow

Workflow comparison identified after the methodological module workout session.

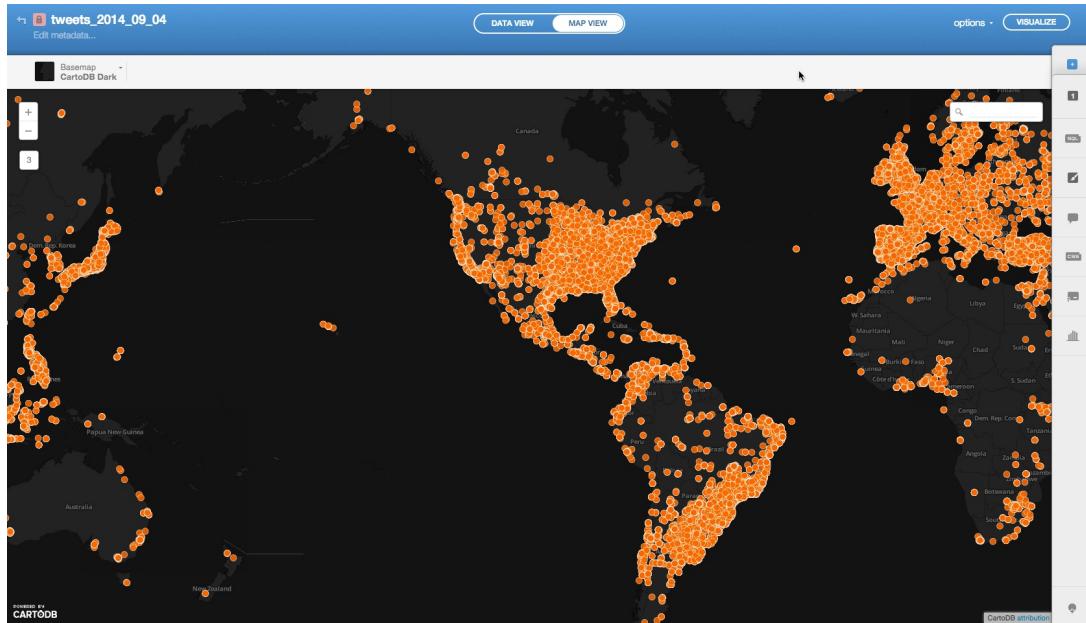
Step	Cartographer	Counter Mapper
Planing Stage	Determine the Objective and who the audience is. Usually this is determined by a RFP or Design Brief.	Decide what is "mappable." The audience is likely the general public / non-experts
Medium	Will the map be printed, online, interactive, part of an application?	Will the map be published in a book, online article, part of an organization's website, gallery or museum, as street art, etc.
Methods	Choose what technology will be implemented: proprietary or open-source GIS and cartographic software, or a combination of them.	Choose what technology will be implemented: proprietary or open-source software, GIS, illustrator, hand-drawn techniques or a combination of them.
Layers	Establish what features will be represented and their order on the map as layers.	What are the non-normative feature(s) the map will represent?
Data	Source data for each of the features from government agencies, open street map, or create custom data (eg: digitizing paper maps). Process and analyze data as needed.	Do research to acquire data as it's probably not easy to find. Could be primary research, qualitative research, participatory mapping or digging through city records in analog format.
	Begin Constructing map from data (following typical cartographic	Deciding how to make the map design non-normative

Design	conventions and aesthetics: precision of data, generalization of data, choice of features to include, use of color for emphasizing important part(s), using typographic hierarchy in labeling, etc.)	(could be a use of one or more of the following: aesthetics, form of map (eg: a non-euclidean map), functionality, experimentation, etc.)
Interaction (optional)	If interactive, determine interactivity and functionality (is it an App or just a map with pop-ups and mouseover events?)	If interactive, determine interactivity and functionality (is it an App or just a map with pop-ups and mouseover events?)
Critique	Print Out & Critique the map (if it's not just a typical GIS department and the experts have cartographic design skill) AND/OR user test an interactive version (the latter doesn't always happen).	Augmentation of the map, could be through writing, art-work, including other media such as video, sound, photography, etc
Iterate	Iterate (refine: data, aesthetic, interactivity)	Iterate (refine: data, aesthetic, interactivity)
Publish	Printed or digital version, is it confidential or open to the public, or for internal purposes (such as City Planning).	Releasing the map to the public: (this could be an article online or in a magazine or zine, printed in a book, displayed in an art gallery or museum, wheat-pasted on a wall)

Screenshots of Precedents

Traditional Web-Map App UIs

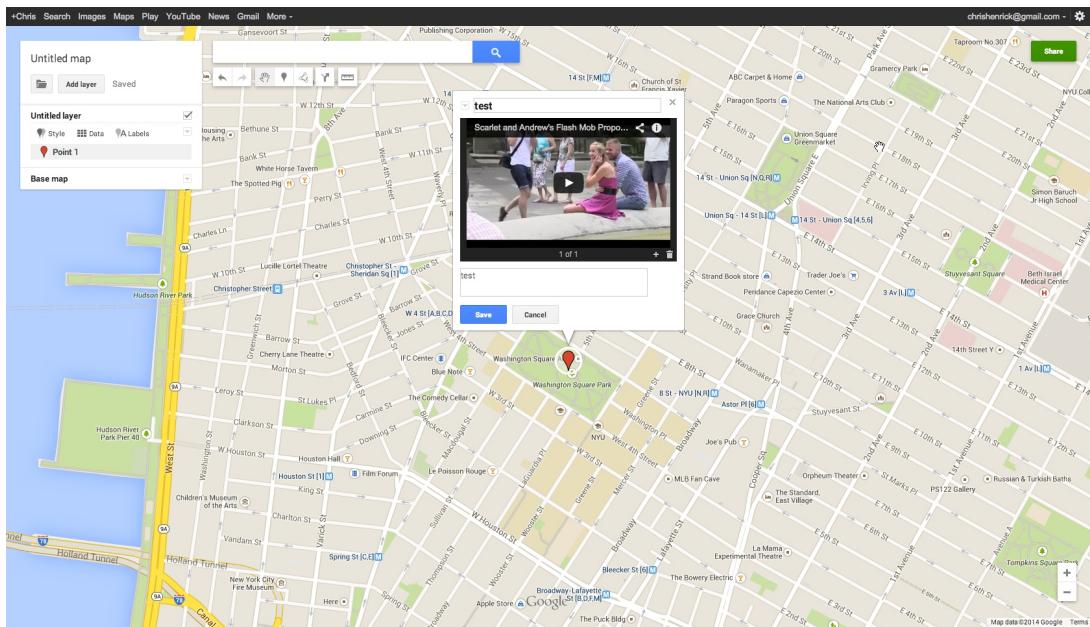
CartoDB



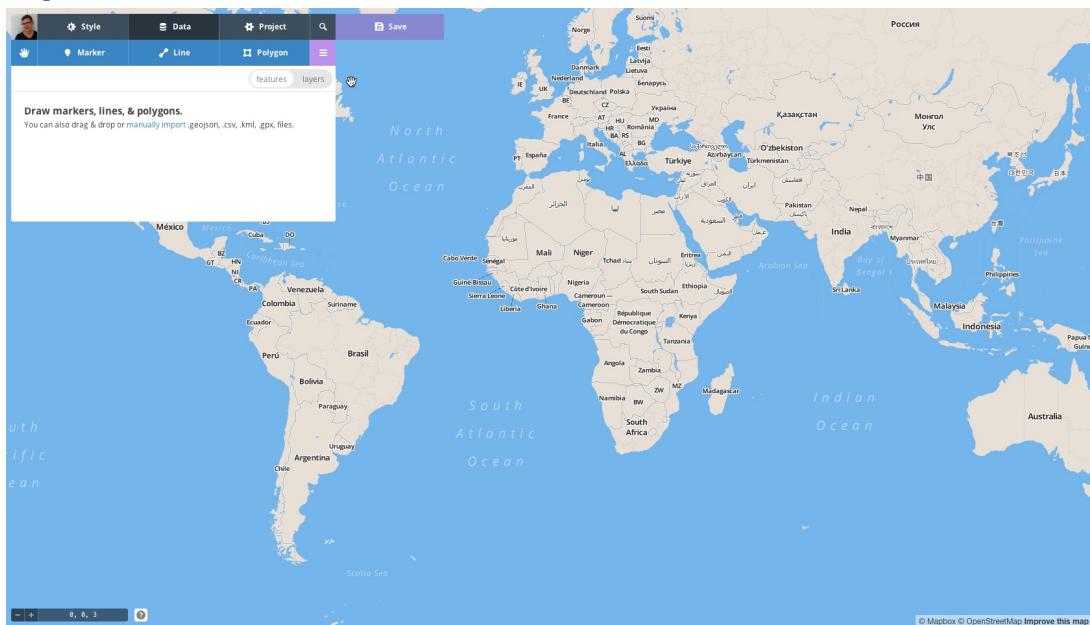
CrowdMap



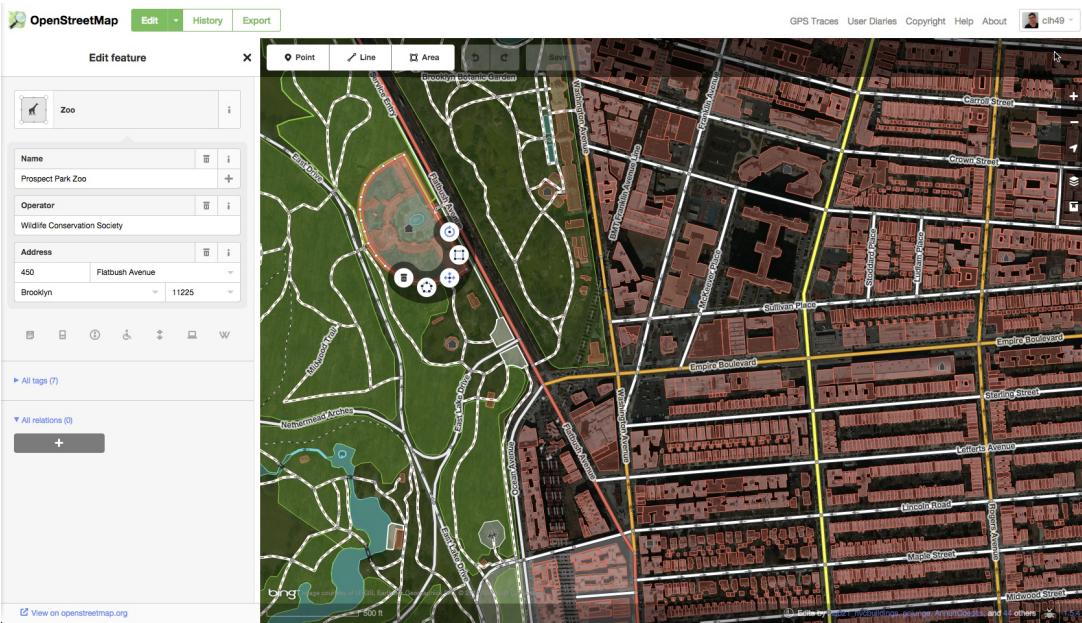
Google's My Maps



MapBox



OSM ID Editor



Narrative UIs

ESRI's Story Telling with Maps

Global Crossroads: The World's 25 Busiest Airports
More than 1.4 billion airline passengers departed, landed, or connected through these massive facilities in 2012. Viewing them from above gives a sense of their gargantuan scale and global significance.

A story map [View story map](#) [Share](#) [Print](#) [esri](#)

1. Hartsfield-Jackson Atlanta International Airport
Atlanta, United States
95.46 million passengers, 2012
[Tap image for larger version](#)

2. John F. Kennedy International Airport
New York, United States

3. O'Hare International Airport
Chicago, United States

4. Los Angeles International Airport
Los Angeles, United States

5. Atlanta, Georgia, United States

6. Newark Liberty International Airport
Newark, New Jersey, United States

7. Chicago, Illinois, United States

8. Detroit, Michigan, United States

9. Dallas/Fort Worth International Airport
Dallas, Texas, United States

10. Houston, Texas, United States

11. San Francisco International Airport
San Francisco, California, United States

12. Philadelphia, Pennsylvania, United States

13. New York, United States

14. Seattle-Tacoma International Airport
Seattle, Washington, United States

15. Boston Logan International Airport
Boston, Massachusetts, United States

16. Minneapolis-Saint Paul International Airport
Minneapolis, Minnesota, United States

17. Charlotte Douglas International Airport
Charlotte, North Carolina, United States

18. Atlanta, Georgia, United States

19. Chicago, Illinois, United States

20. Los Angeles International Airport
Los Angeles, California, United States

21. Newark Liberty International Airport
Newark, New Jersey, United States

22. Detroit, Michigan, United States

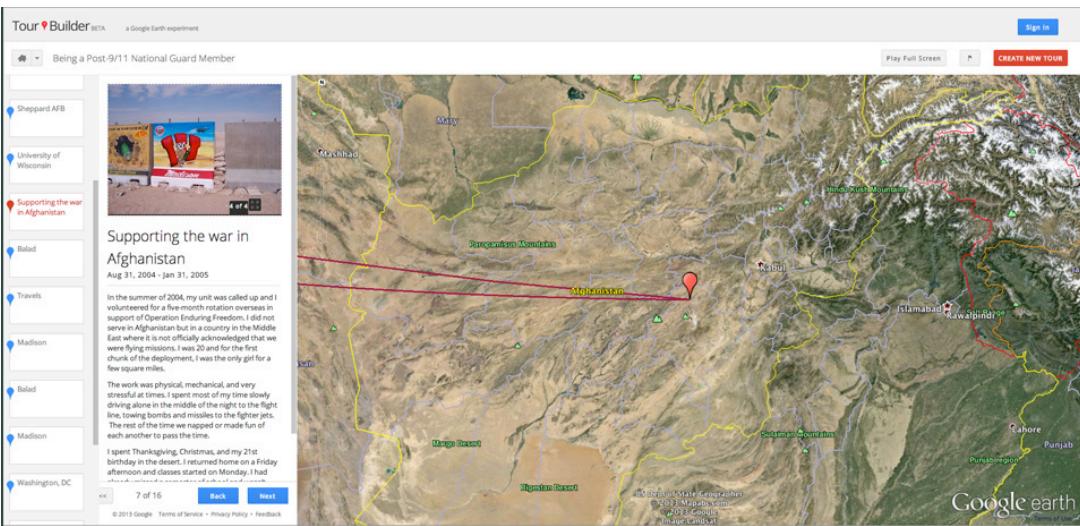
23. Atlanta, Georgia, United States

24. Dallas/Fort Worth International Airport
Dallas, Texas, United States

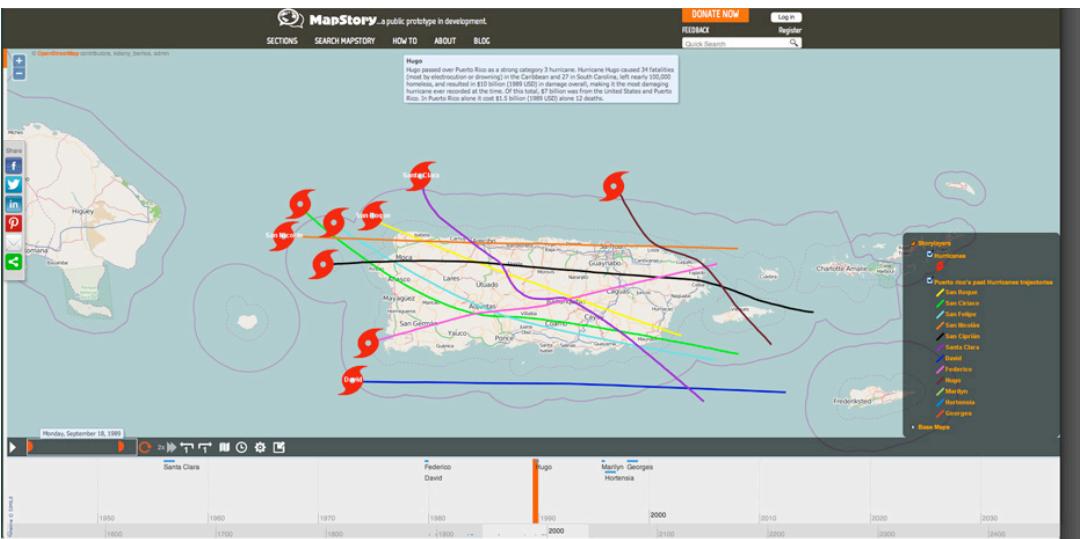
25. Houston, Texas, United States

esri

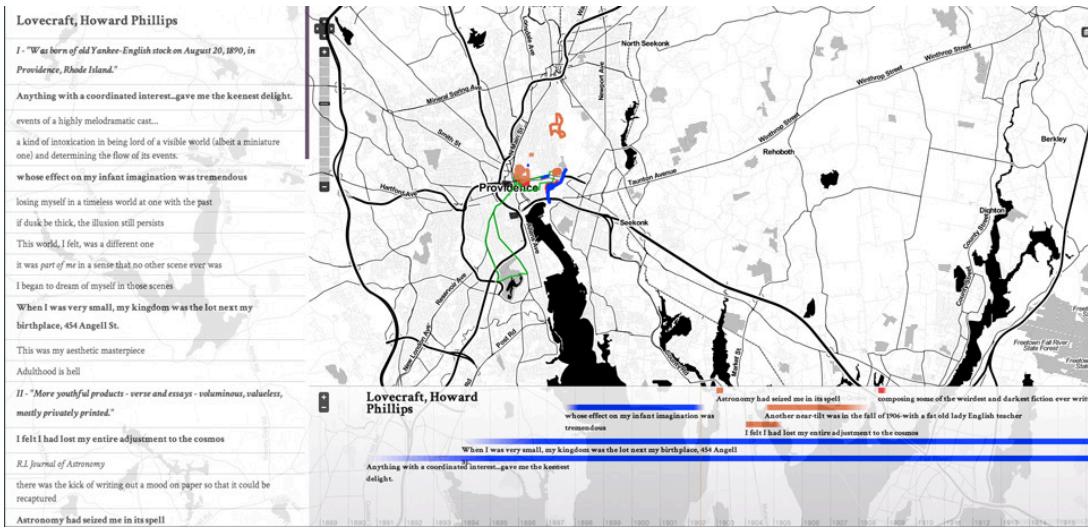
Google Earth Tour Builder



MapStory



Neatline



Odyssey

Your first odyssey.js story

Move the map around and save the position by clicking on 'ADD > Move map to the current position'. As you can see, now we are highlighting San Francisco.

Then add here the description for your slide so it's shown on the left side box.

< >

ODYSSEY SANDBOX

```
...
"title: "Odyssey example FTW"
"author: "CartoDB"

```

Your first odyssey.js story

- center: [37.7620, -122.4385]
 - zoom: 9
 - lat: 37.7620, lon: -122.4385], actions.addKnoive(\$map)

Now drag the map around and save the position by clicking on "Add > Move map to the current position". As you can see, now we are highlighting San Francisco.

Then add here the description for your slide so it's shown on the left side box.

How to add more states

- center: [40.7348, -73.9970]
 - zoom: 9
 - lat: 40.7348, lon: -73.9970], actions.addKnoive(\$map)

By adding new [markdown](<http://daringfireball.net/projects/markdown/>) h1 elements (#) you add new states to your story.

Adding images to your story

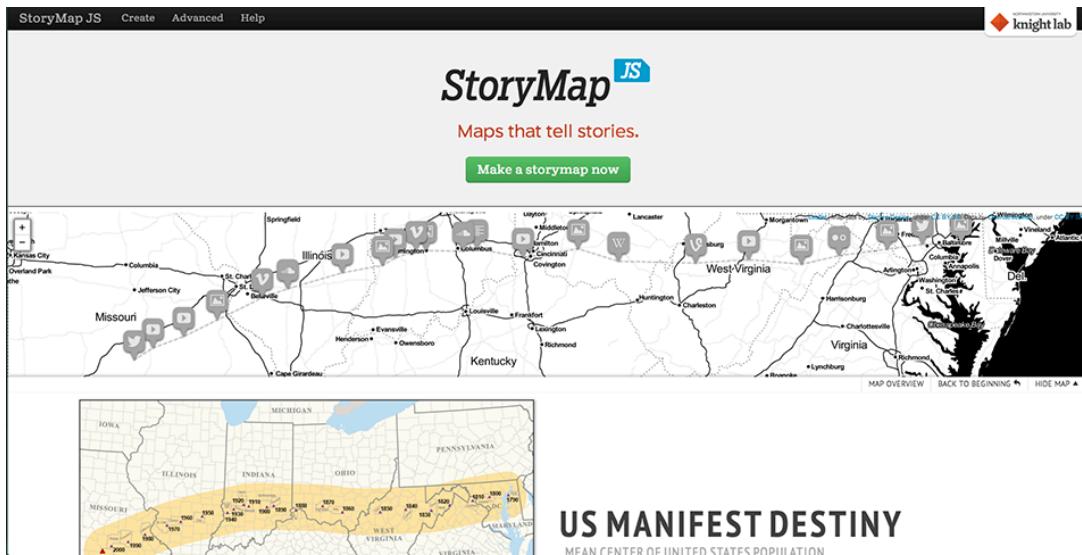
- center: [40.7365, -73.9982]
 - zoom: 13
 - lat: 40.7365, lon: -73.9982], actions.addImage(\$map)

By default, images are also supported.

[!New York|<https://www.boston-discovery-guide.com/image-files/new-york-1.jpg>]

Exporting your story

Story Map

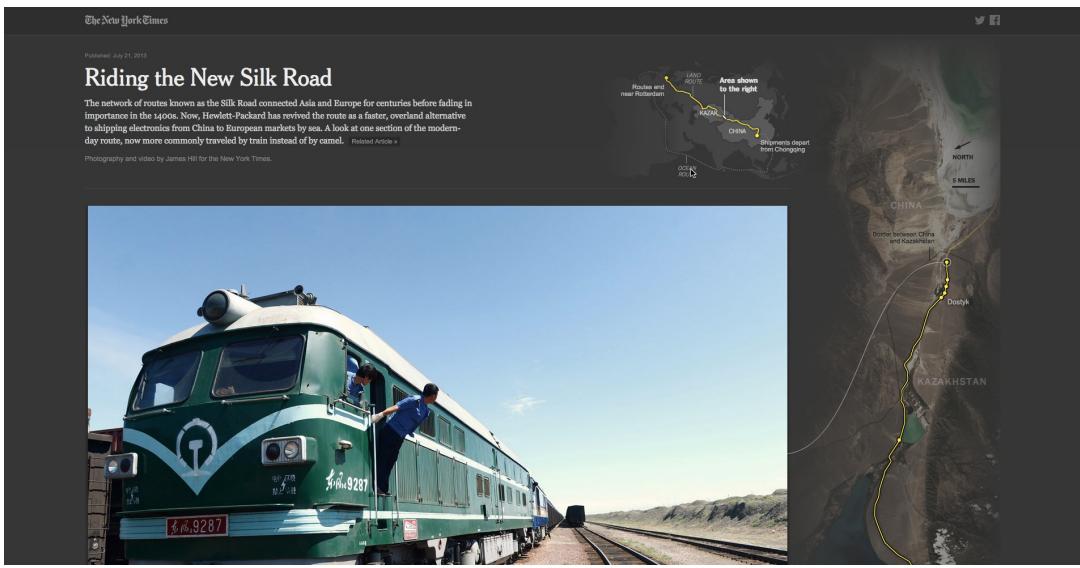


Successful Combinations of Maps and Media

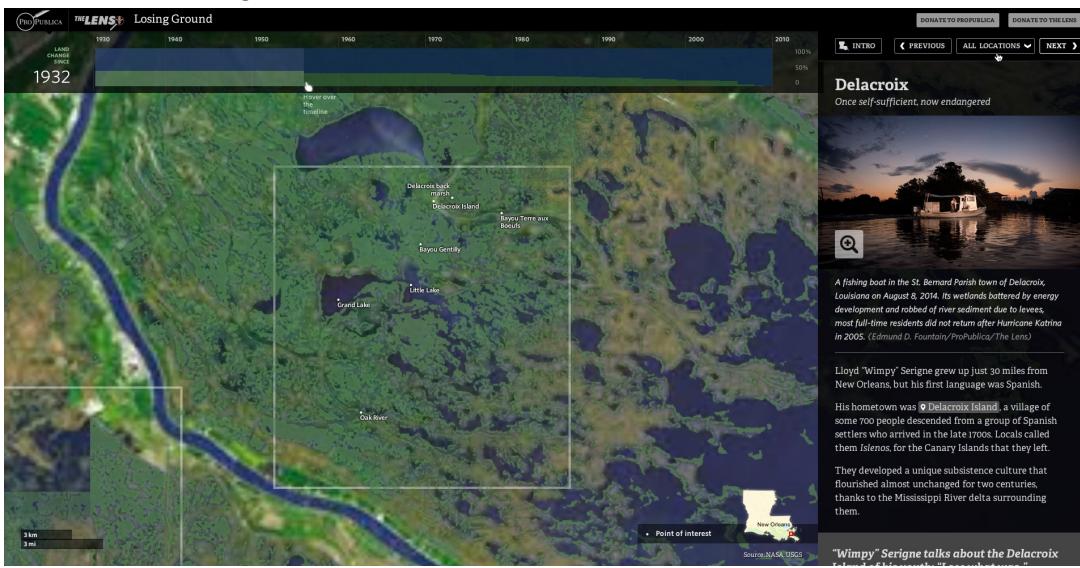
NY Times' *A Russia Left Behind*

This screenshot from The New York Times article 'A Russia Left Behind' illustrates how maps can be used to support a narrative. On the left, a map of the European part of Russia shows several locations: St. Petersburg, Lyuban, Chudovo, Viley Novgorod, Votor, Potochki, Totsk, Chernobyl, and Moscow. A yellow line connects St. Petersburg and Lyuban, leading to a video still on the right. The video still shows a young bride in a white wedding dress and a young groom in a white shirt and dark pants standing in a field of tall grass. The video player interface includes a play button and a timestamp 'VIDEO | 0:59'. Above the video, the text 'CHUDOVO A Wedding for a 14-Year-Old' is displayed. Below the video, a caption reads: 'A firmer had mounted off a side street in Chudovo, where the road was dirt and the houses were built of'.

NY Times' *The New Silk Road*



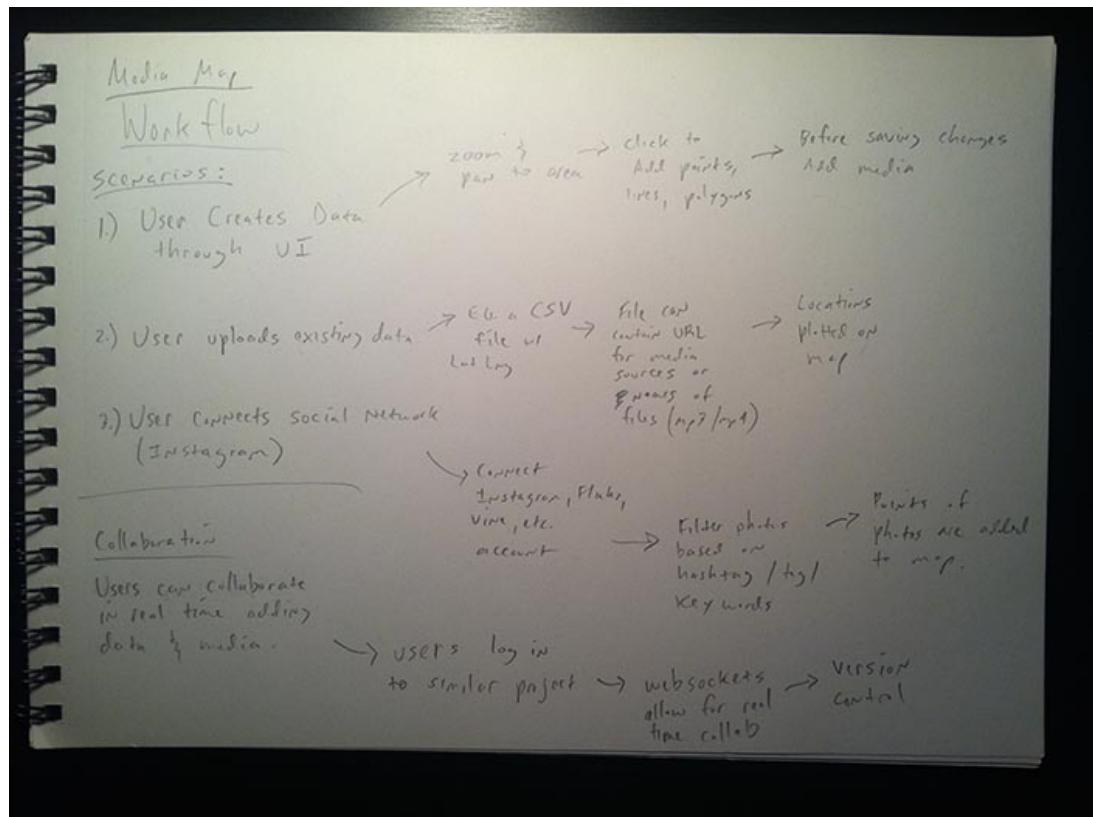
Pro Publica's Losing Ground



Paper Prototype Documentation

Workflow Sketches

Mapping Media Workflow

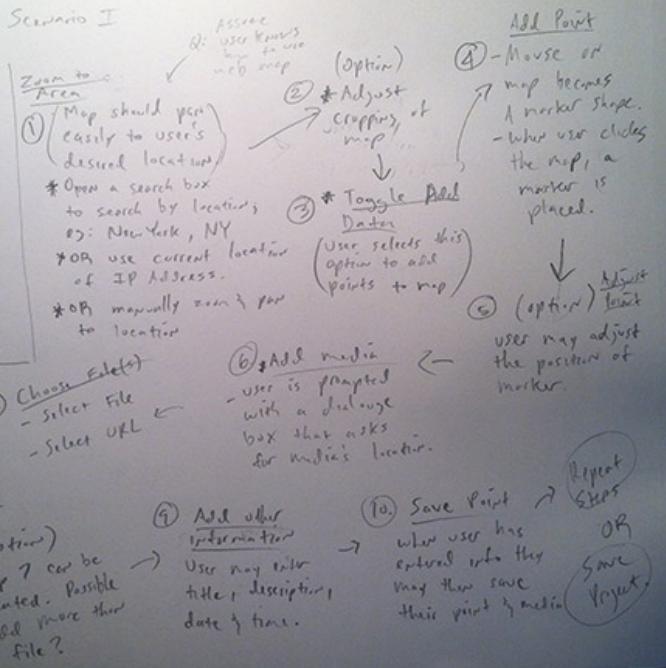


GUI design for scenario one

GUI Design : Scenario I

Functionality :

- Allow users to add points to a map and then associate media to those points.
- Allow users to draw lines & polygons on map and associate media to those points. (Advanced)



Paper Prototype

Sample interaction for the paper prototype



Revision to Paper Prototype

Beginning to sketch the app dashboard after the paper prototype

