

# **Captiva: Low-fi Prototyping Written Report**

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## **Mission Statement**

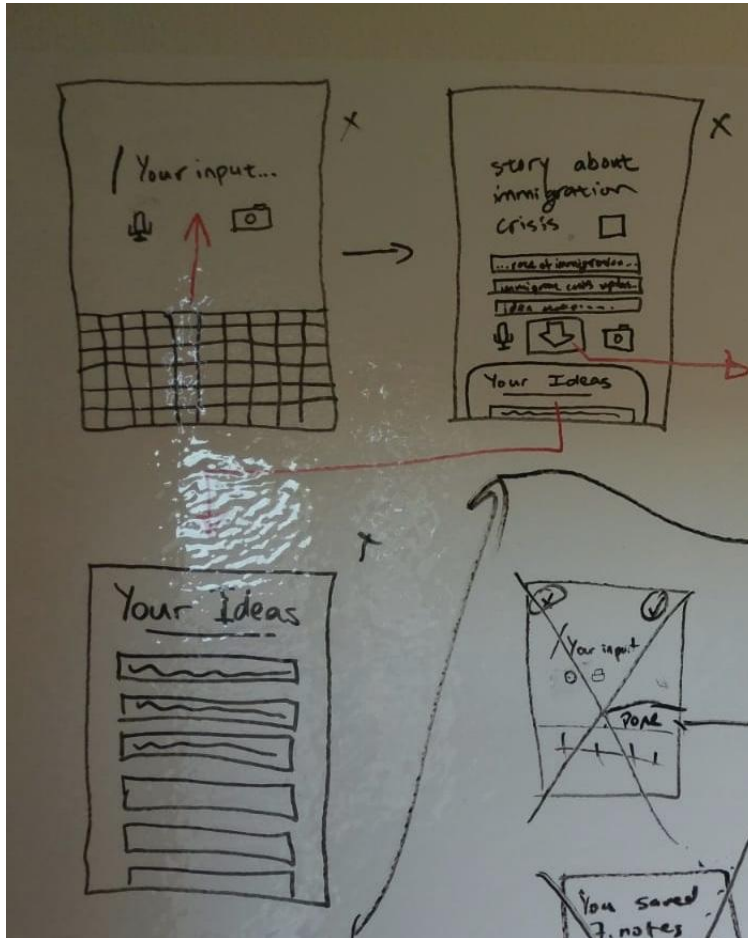
Making Journalism Easier: from Pitch to Publication

## **Introduction**

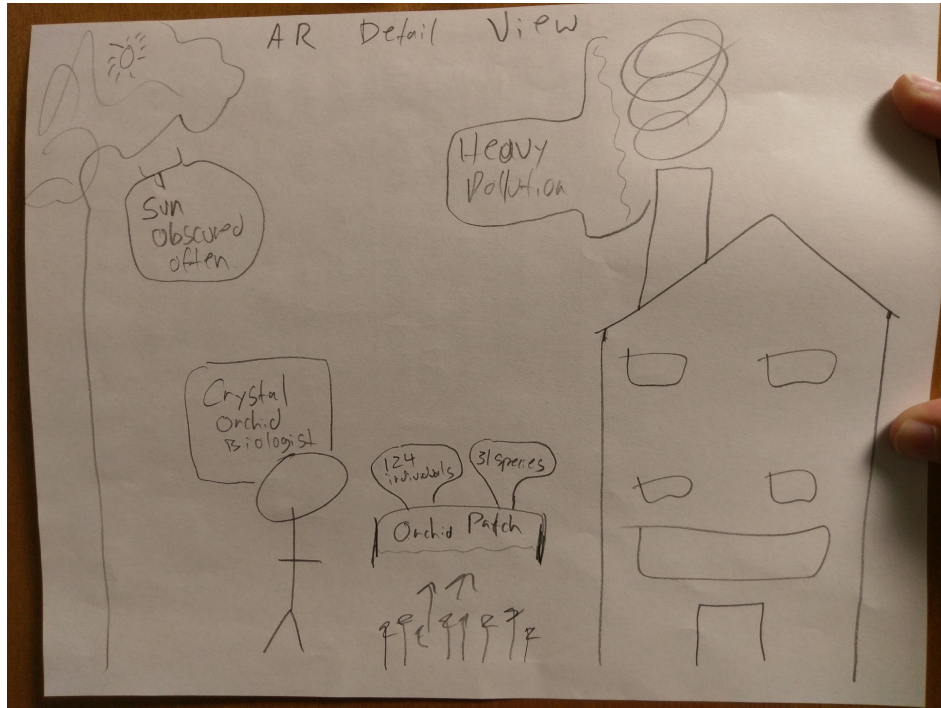
Journalists face a daunting task. In speaking with journalists, we identified a number of key processes that lack an effective solution. Specifically, many journalists suggested room for improvement in organizing facts and quotes, as well as knowing what to do next. Captiva streamlines the journalism process, allowing journalists to quickly jot down ideas, record interviews, get suggestions for next steps, and even organize their thoughts in the format of a story.

## **Concept sketches**

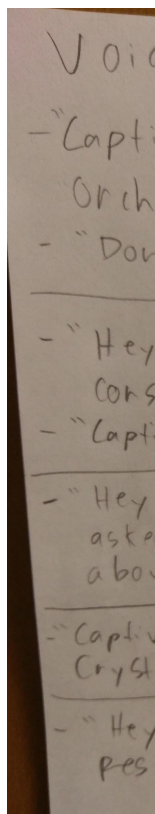
We explored 5 different mediums: phone (figures 1 and 6), AR (figure 2), voice command (figure 3), wearable technology (figure 4), and gesture-based (figure 5).



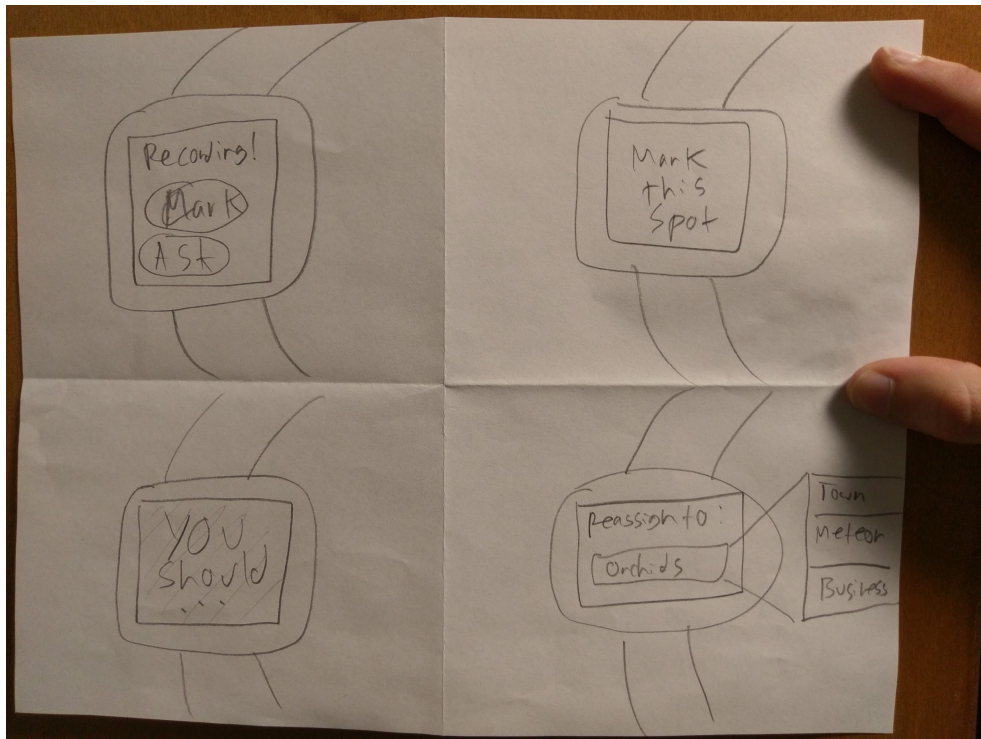
**Figure 1.** Mobile Phone App. Allows for easy input of items and offers an easy way to store them and review them. Within each story, the user can see what they should do next, and publish the story.



**Figure 2.** AR view sketch. Bubbles pop up over items of relevance to stories you are working on; some include suggestions for next steps. In this scenario, you would be able to “click” on the bubbles with your finger in order to add them to a story.

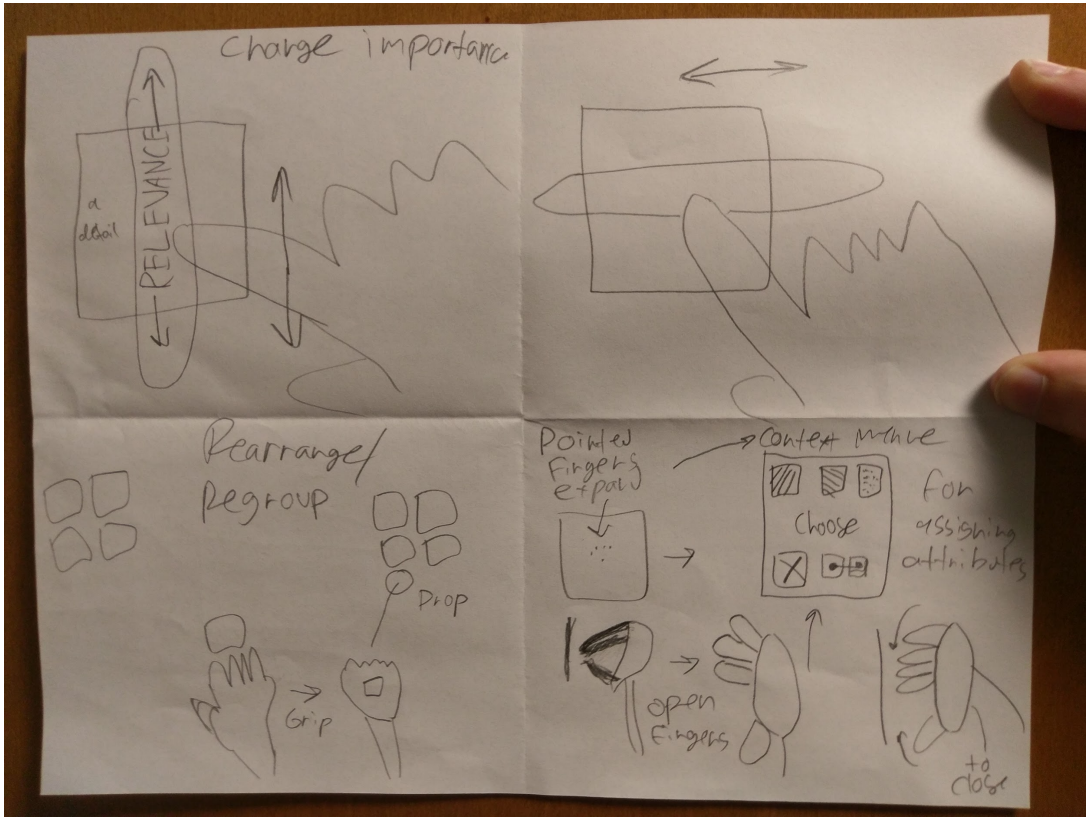


**Figure 3.** Voice Commands. The user talks to Captiva, and it talks back at various times during the day.

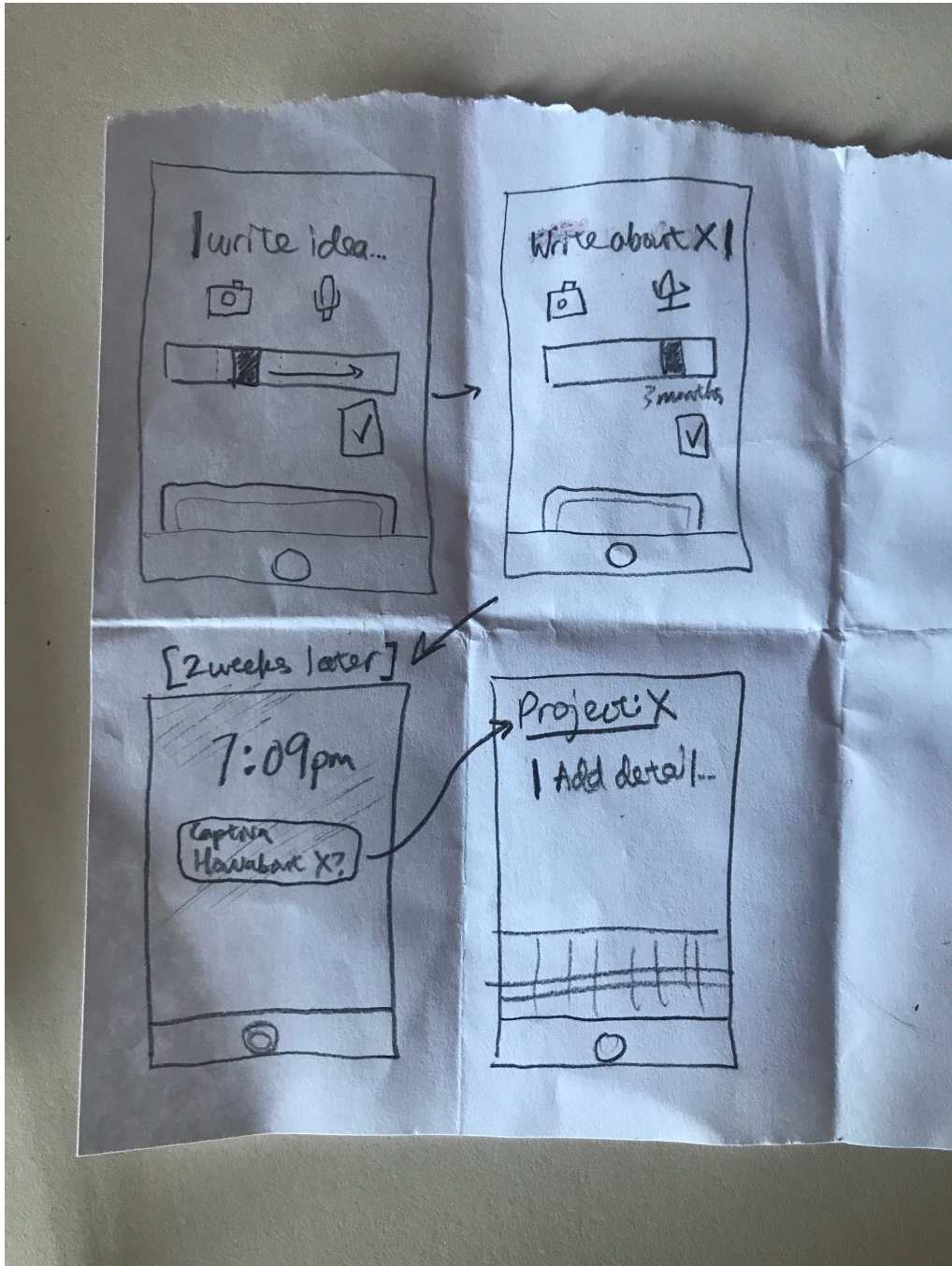


**Figure 4.** Smartwatch. A smartwatch can implement geo-tagging, recording, and basic story organization functions.





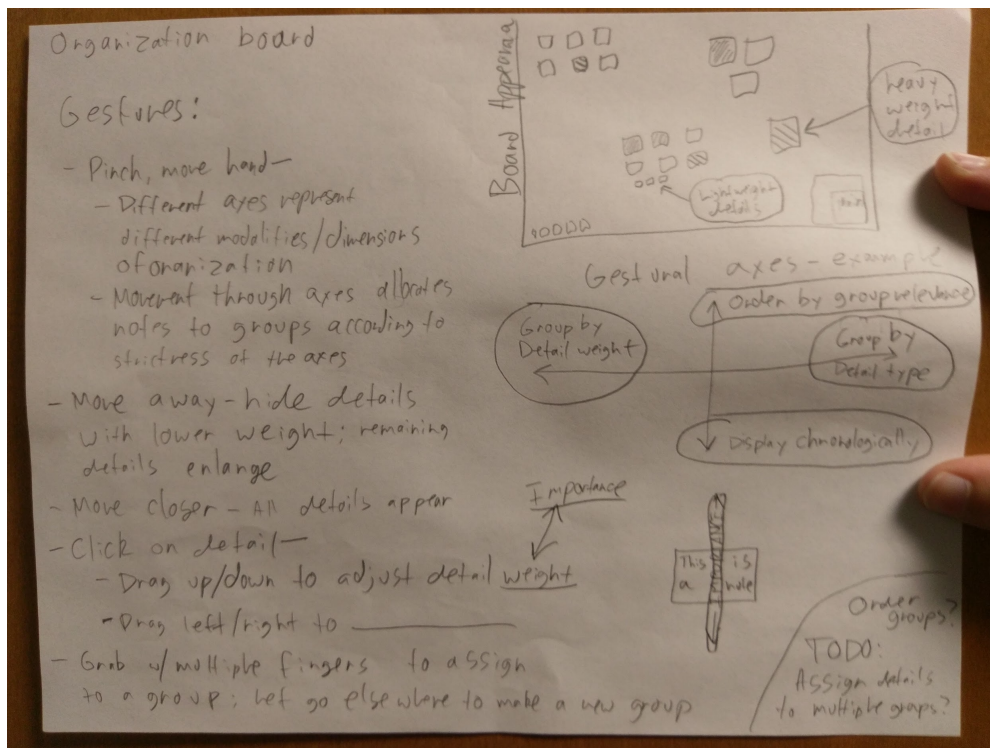
**Figure 5.** Gesture exploration. Details would be represented as virtual “sticky notes” that you could manipulate. These include adjusting parameters, grabbing/releasing notes, and blowing them up.



**Figure 6.** Smart reminders. Based on the saliency and relevance of a potential future action, it is brought up to the journalist at the appropriate time.

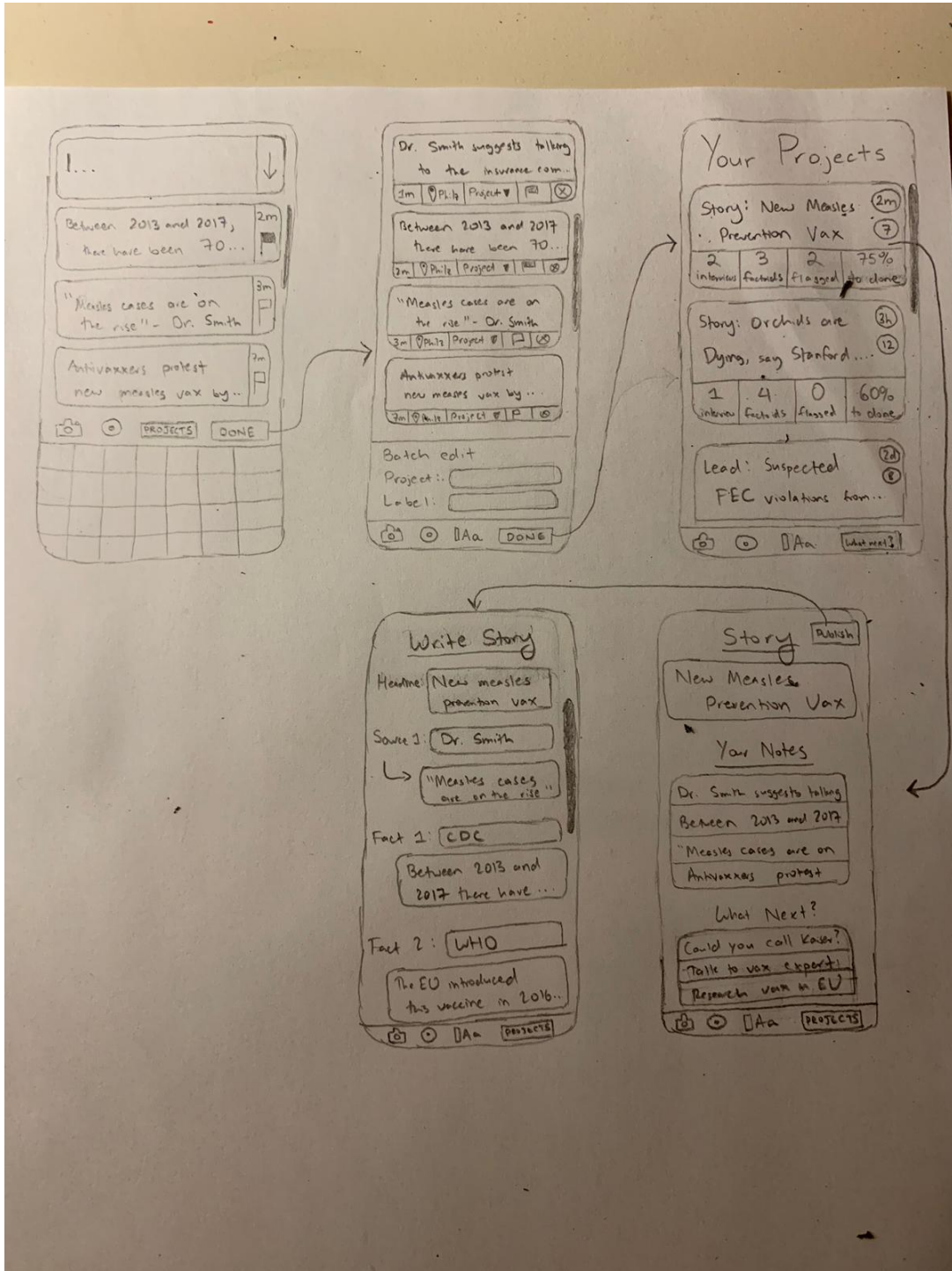
## Storyboard Sketching

We were intrigued by a gestural system, such as a drone that followed the user around that could display projections and detect motions. We believed it had potential to offer some things that other mediums didn't, such as organization on a visual level. On the other hand, we believed that a mobile phone app was something that journalists would be most likely to use on a daily basis. We decided to continue forward with the ideas of a gestural based medium and a mobile phone application (figures 7 and 8).



**Figure 7.** Gesture storyboarding. This second round of sketching included additional gestures that applied to the board as a whole, and gestures that involved how far away from the board you were standing.





**Figure 8.** Mobile sketching: Detail capture. The app is optimized for immediate jotting & capture.

## Pros and Cons

### Idea 1: Gestures

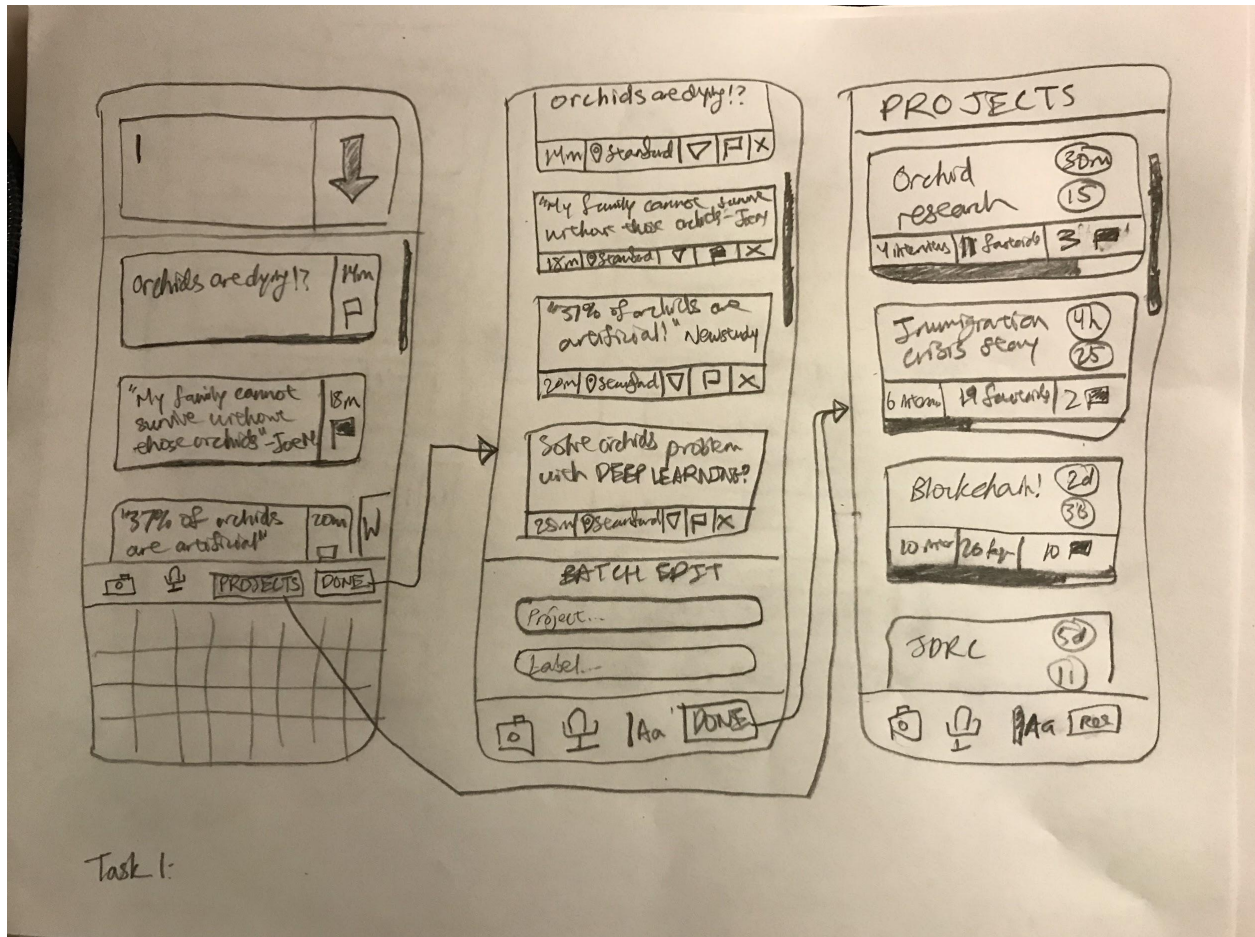
PROS	CONS
<ul style="list-style-type: none"><li>● Would be fun and unique</li><li>● Offers spatial organization</li><li>● Could be completely hands free</li><li>● Could be combined with another medium (such as AR/VR)</li><li>● The increased visual and spatial features would definitely be beneficial to functionality</li></ul>	<ul style="list-style-type: none"><li>● Extremely challenging to prototype</li><li>● Might be infeasible to build</li><li>● Would look weird using in real life</li><li>● Might be difficult to convince anyone that this is a product for the “average” journalist.</li></ul>

### Idea 2: Phone application

PROS	CONS
<ul style="list-style-type: none"><li>● Would be much more sellable to the “average journalist”</li><li>● Is readily available for most potential users (i.e. most people already have phones)</li><li>● It’s less weird to take something like a phone out in the middle of an interview, for example</li><li>● Microphone and camera are already built in</li></ul>	<ul style="list-style-type: none"><li>● Isn’t as fun or unique</li><li>● Space on phone screen is more limited</li></ul>

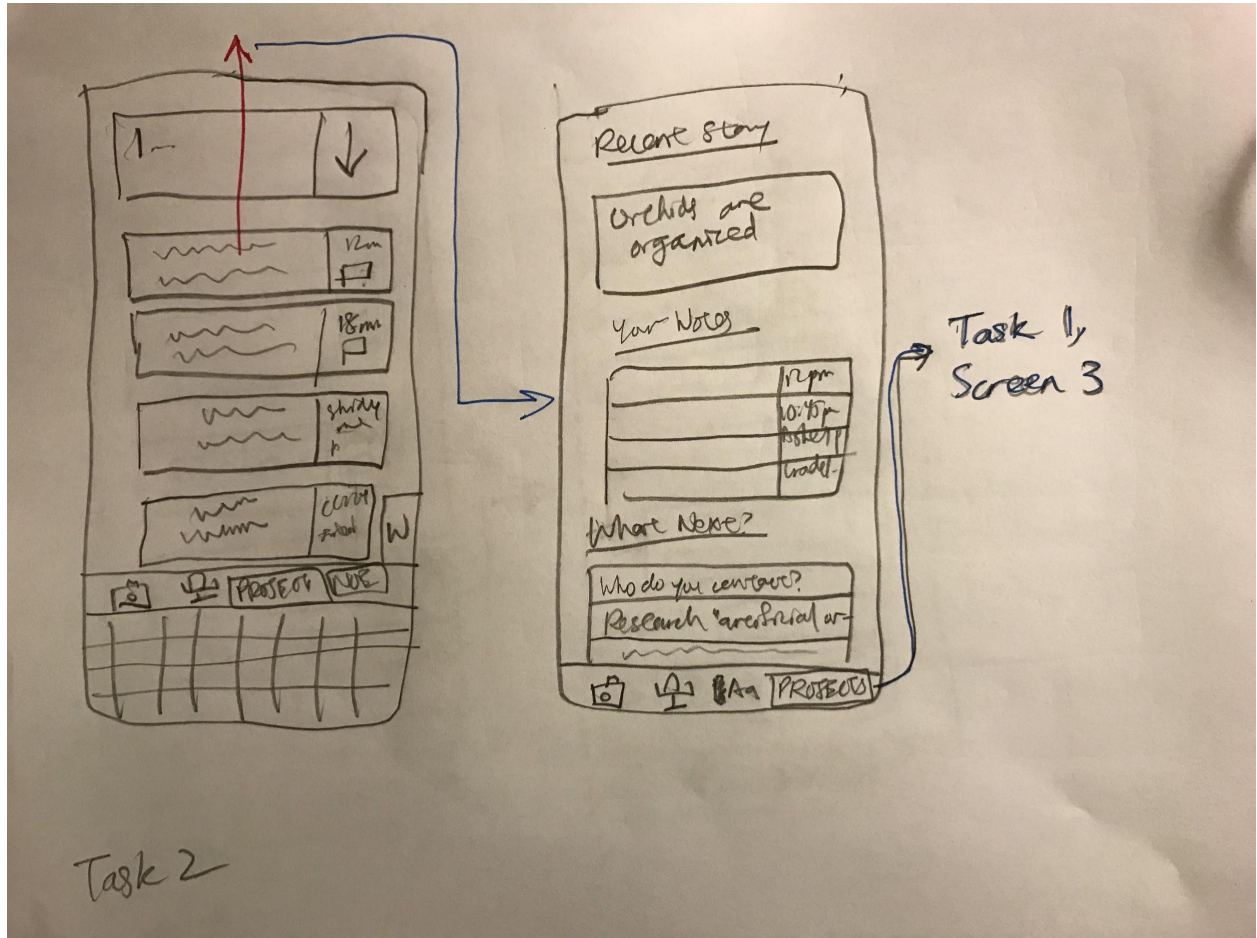
Ultimately, we decided that the difficulty of making a gestural-based product outweighed potential benefits (e.g. spatial organization, increased screen size, etc.). We also concluded that a phone application most effectively solved many problems mentioned in the needfinding interviews: an inability to quickly input and review their elements, determine what to explore next, and a way to organize and develop their story. We also chose to proceed with the process-heavy phone application (figure 1), as the notification-based application (figure 6) didn’t propose solutions to all the aforementioned tasks. We designed task flows for each of our three tasks (figures 9-11):

## Interface Design

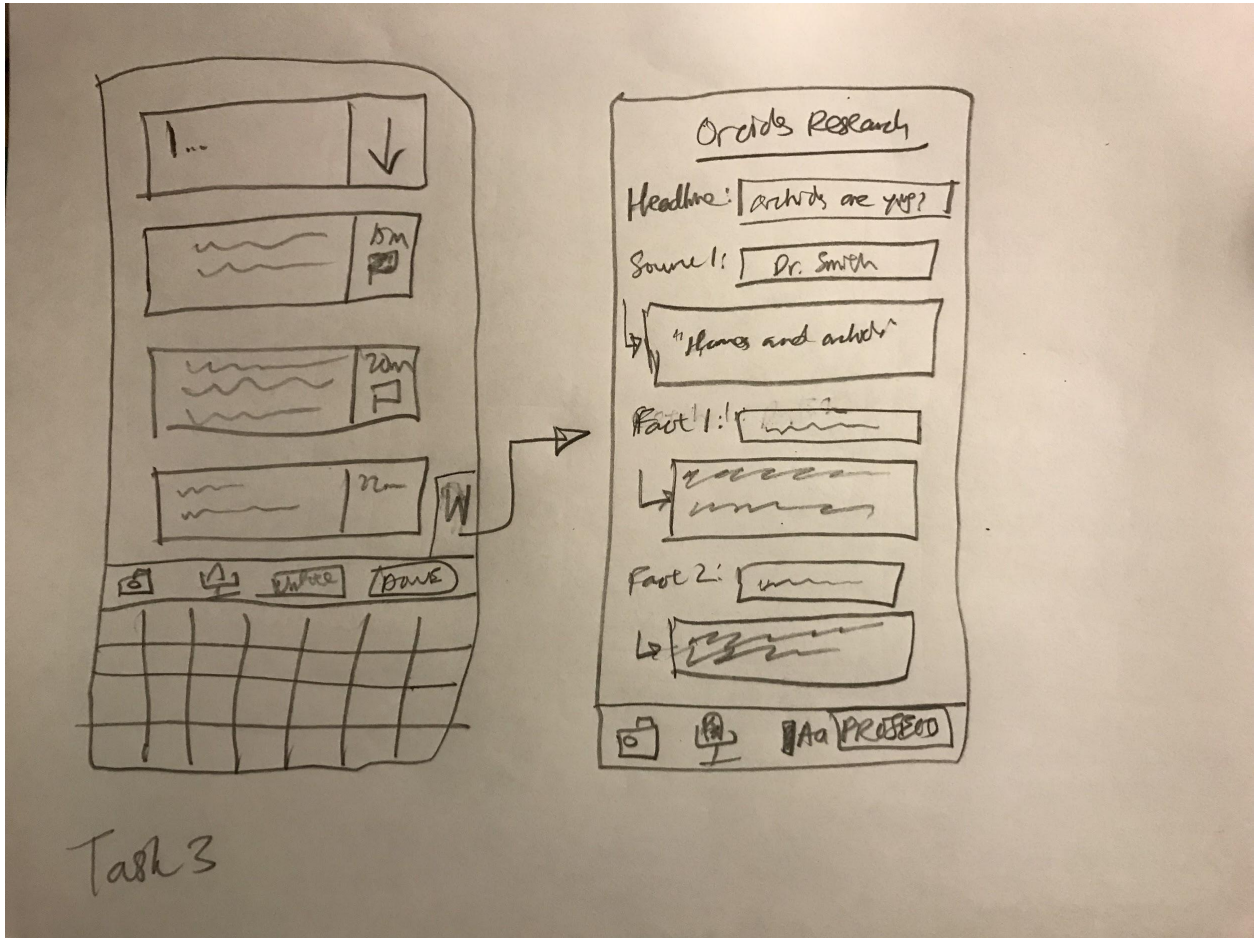


**Figure 9.** Inputting and reviewing information the user put into the app. They can input ideas and categorize them (seen on the first two screens) or simply jump straight to idea review, which is seen on the third screen.





**Figure 10.** Determining what to do next. This page is found by swiping up on the opening screen. If this isn't the project the user wishes to work on, they can click on the one they want on the projects page.



**Figure 11.** Write the story. From the opening screen, the user follows the same steps as they would in the second tasks to get to the story they wish to publish. From there, there is a “publish” button that brings up the rightmost screen in the image above.

Interface element	Functionality
Idea text box (with camera and audio buttons)	Always ready for user to capture ideas as they come to the journalist. Default starting screen.
List of ideas (immediately after entry of several ideas)	Allows user to classify the ideas most recently inputted into which story they belong (as a batch or individually).
Idea flags	Ideas can be flagged with different colors or symbols for organizational purposes.
“Project List” screen	User can review all the stories they’re currently developing, as well as some brief details about each.
“Project inspection” screen	User can examine a specific story in depth, seeing both their past notes on the topic and their suggested “what to do next.”
Story Organization Workspace	User can pick their favorite ideas from categories (“Headline,” “Quote,” “Fact” etc.) to get an outline of the story.

### Prototype Description

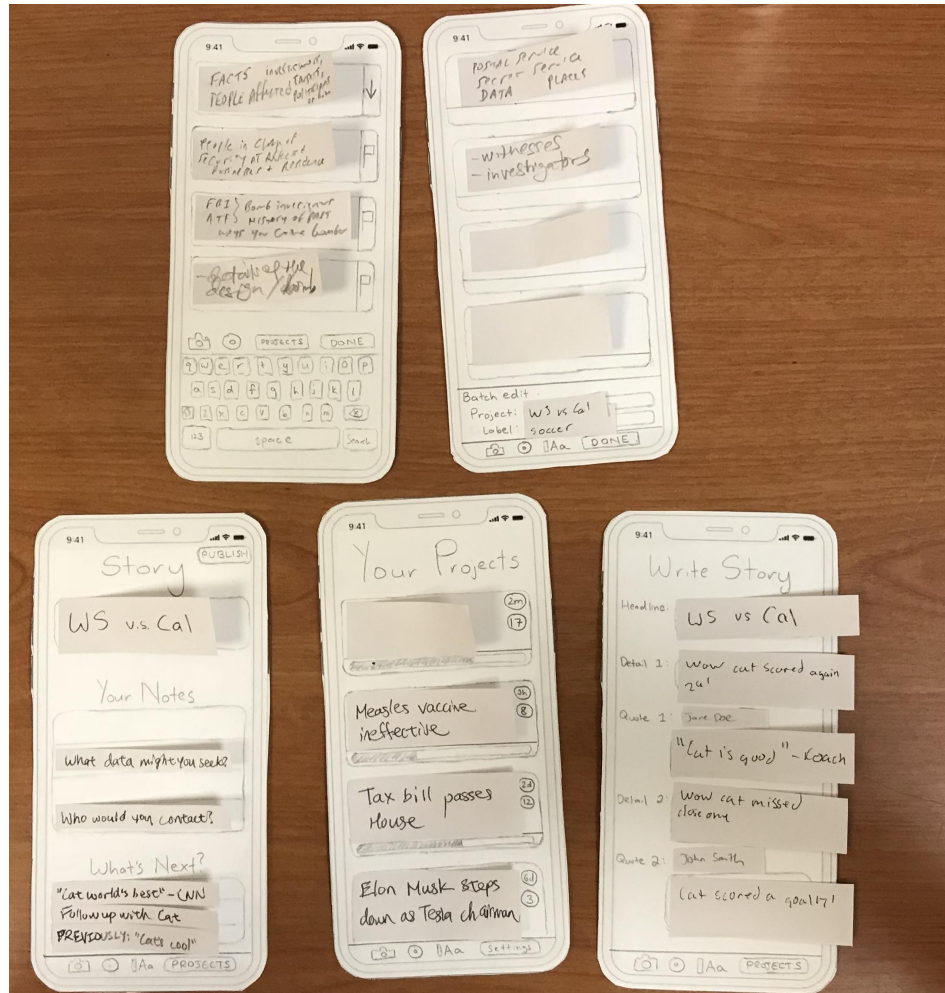
The user interacted with each screen by manipulating post-it notes. In the opening screen (figure 12: top left), the user “types” their notes in boxes. Then, the user hits the down button and the idea moves below the main text input box. Once the user finishes entering *all* their ideas, they hit “done.” This takes them to the next screen (top right), listing all the ideas they’ve put in and categorizing by affiliated story, as well as what type of input they are (quotes, leads, sources, etc.) After this page, they’re taken to the “Projects” page (bottom center), which has all their stories.

From the opening page, they can also proceed directly to the story they were working most recently with. Clicking on the “projects” button from the first page accomplishes this.<sup>1</sup> Then, they see their most recent notes on the story and suggestions for next steps on the story.

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<sup>1</sup> This page is also accessed by clicking on a story from the last screen mentioned in the previous paragraph.

To achieve the final task, the user proceeds from this screen, hitting the “publish” button to bring up the final screen (bottom right), which is where they can see a list of quotes and other details generated by the app, represented by post-it notes.



**Figure 12.** All five screens used in prototype testing, with post-it notes created by subjects.

## Method

It was important to us that we find subjects that would actually use this product. Thus, we found three people with experience in journalism:

- Subject #1: editor and journalist at The Washington Post with three decades of experience, including a Pulitzer. We found him through online searching and a quick email. The test was conducted in his office.
- Subject #2 was an Emmy-winning producer, and is currently Executive Producer and Vice-President of Inclusion at CNN. She was introduced to us by Subject #1. We conducted our test with her in an open study space on campus.
- Subject #3 was a sophomore at Stanford with experience writing for the Stanford Daily. He was introduced to us by Julia, one of our needfinding interviewees. The test was conducted in the subject's dorm room.

We offered to buy each subject a meal for their time (though only subject #3 accepted). Each subject used our prototype to take a hypothetical story from idea to execution. For example, subject #1 wrote a story about the recent suspected terrorism aimed at officials including Obama and Clinton. Each subject was given three tasks, each of which they could achieve by following the steps described previously:

1. Input their thoughts about the story, such as people to interview, sources to examine, etc. and find the screen to review them.
2. Find the "story" page for the story they've been adding ideas about and use it to decide what they should do next in the story.
3. Find the "publish" page to see the information they put in (along with information we made up for the purposes of testing) in a neat fashion.

We measured each subject's ability to complete these tasks through their commentary and struggling. We also counted the number of incorrect "clicks" they made.

Peter, Nik, and Will attended all three tests. Nik acted as the computer, Will as facilitator/notetaker, and Peter as notetaker. We first tested the prototype on our fourth team member Jason.



## Results

Subject #1 had many more missed clicks than we hoped, with 10. However, many of these missed clicks were results of him not really following the tasks we gave him; he also began writing things that were irrelevant to what we needed for testing. He did, however, say that once he figured out what he was supposed to do, he found it fairly intuitive to use the app in general.

Subject #2 had 3 missed clicks. She followed the process much more closely than #1, and clearly understood how the app worked. However, she commented how she wished there were several key features that would make the app much more useful for her, several of which are discussed below.

Subject #3 had only 1 missed click. He clearly understood how the general task flow of the app worked.

The most commonly missed click was the very first one; when we had the subjects input ideas, they were supposed to click the down arrow on the home screen. However, every single test subject hit the done button instead.

## Discussion

Firstly, we found that our interface is intuitive. Users appreciated the labels and didn't complain about the general organizational structure. Going forward, we will prioritize keeping our interface clean and intuitive.

Next, and perhaps most importantly, users commented that our processes added little value. This was most apparent with subject #1. He was concerned that it didn't scale to collaborative efforts. While we designed this prototype for individuals, speaking with experienced journalists showed us that the app must work for a *team* of journalists. Needfinding interviews showed it would be beneficial for journalists if an entire newsroom could store and review data in one place. We plan to explore this further.

The final main point we took away from this project was that our third task was underpowered. All three subjects were slightly surprised to see that our fifth screen (organizing notes) was underwhelming. Some initial searching has shown us technology that actually turns basic data into news articles, and we hope to integrate similar technology into Captiva. Since this technology is far from perfect and often not even functional, we believe it would be best for our third task to be achieved by automatically generating a very rough draft.

**(Word Count: 1498)**



## Appendix

### Raw Data

Subject #1:

10 missed clicks:

- Didn't hit down button, instead hit "done"
- Got confused several times about following a single story instead of working with many at once
- Kept writing more notes on every page
- Didn't understand what the story organization tab was
- Wrote several unrelated notes on one line, rather than one per line
- Didn't understand swiping motion
- Thought the flags were something he wasn't supposed to press, like it would signify an error

Comments = quotes:

1. "[After input], I'd prioritize. I'd probably go to eight different people who have better sources than I do."
2. "I would drill down, going from category to specific, and also to prioritization."
3. "The reason this would be helpful would be far less if it were just me... it would be much more helpful if there were eight of us on this story and the app were interactive."
4. "This way, I'm seeing what you're doing, you're seeing what I'm doing, so we're not stepping on each other's toes."
5. "To stop and record it isn't that helpful, what is helpful is if it were on a team."

Other Observations that we made:

1. Subject #1 seems to find the entire idea of the app to be pointless if it were a solo experience. He suggests repeatedly that the app should definitely be collaborative.
2. Subject #1 fails to see the value in ease-of-input, stressing that there is nothing better than pen-and-paper in in-person interviews considering its lack of intrusion.

Subject #2:

3 missed clicks:

- Didn't hit down button, instead hit "done"
- Didn't understand swiping up at all
- Tried to click "write story" in fifth screen because she thought there should be more

Comments:

1. "If it's providing other stories relating to pipe bombs in the area, that's really helpful. If it's providing information regarding the investigation, anything that's already being released on the internet, that's really helpful to know so you're not missing any details."

If it's providing contacts already in the database of your newsroom, that's helpful to know since that just saves all of the time spent digging."

2. "If it's a shared contact database, that's way more helpful than just your own rolodex, but if it's giving me a history of stories we've done on pipe bombs, then I can start making connections... That kind of research is very helpful, especially if that information is internal and proprietary."
3. "People don't share their sources, [even] within an organization. I'm not gonna sit there entering my source material into the shared database."
4. "If it means entering data and it's taking time, if it's an extra step, [even] five minutes, they're not gonna do it."

Other Observations:

1. Newsrooms currently don't organize their information in a shared, searchable database of this sort.

Subject #3:

1 missed click:

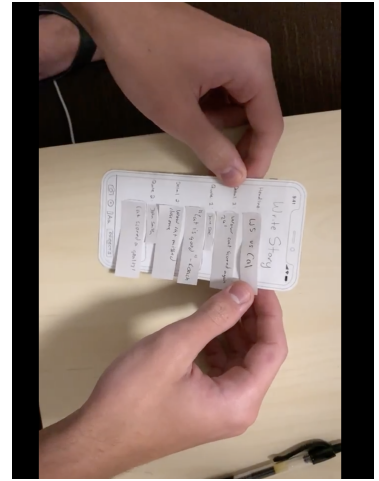
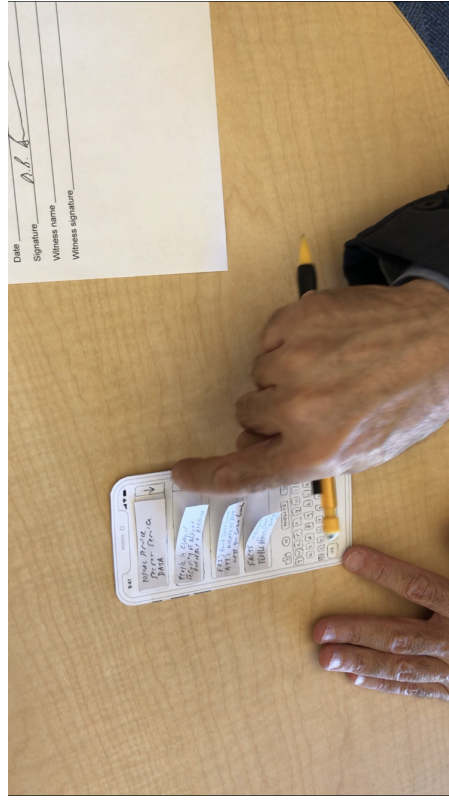
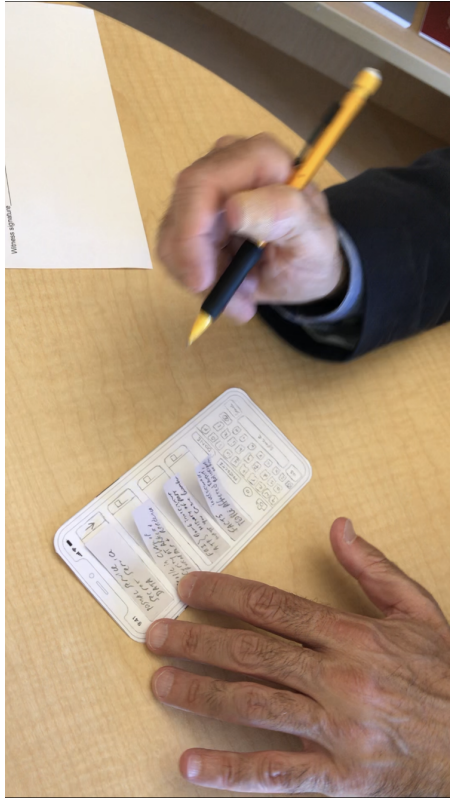
- Didn't hit down button, instead hit "done"

Comments:

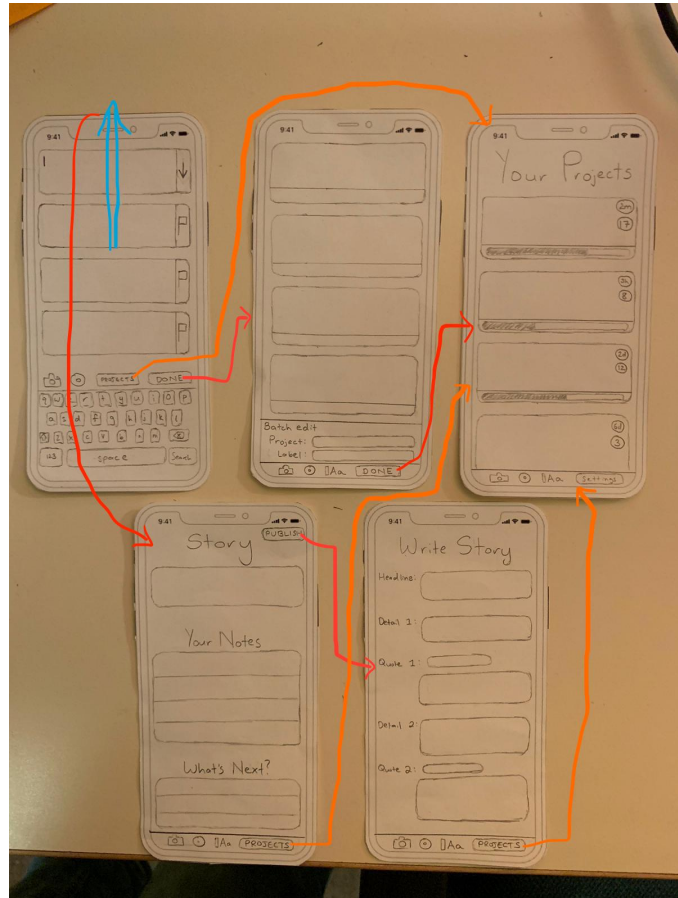
1. Immediately commented that it wouldn't make sense for this to be an individual process
2. "I would have the quote in voice memos, [not in this app]."
3. Regarding 'What's Next': "Chances are, I already know all this stuff."
4. "I would never write an article like this."

Other Observations:

1. Was very good at getting from one screen to the next
2. Perceived the "What's Next" prompts as pointless; asserted that in writing an article, he would already know all of the relevant information and where to go next.
3. Reflected on a lot of the sports journalism he does to be a very straightforward process (i.e. convert sequential events and scores into a story). As such, a lot of Captiva's features were not relevant.



**Additional Photos  
of testing and  
prototype**



## Consent Form

The Captiva application is being produced as part of the coursework for Computer Science course CS 147 at Stanford University. Participants in experimental evaluation of the application provide data that is used to evaluate and modify the interface of Captiva. Data will be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers (Nik Marda, Peter Hansel, Jason Prince, and William Yin) or with Professor James Landay, the instructor of CS 147:

James A. Landay  
CS Department  
Stanford University  
650-498-8215  
landay at cs.stanford.edu

Participant anonymity will be provided by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the experiment and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to the Captiva experiment. I also give permission for images/video of me using the application to be used in presentations or publications as long as I am not personally identifiable in the images/video. I understand I may withdraw my permission at any time.

Name \_\_\_\_\_

Participant Number \_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

Witness name \_\_\_\_\_

Witness signature \_\_\_\_\_