

WONDERLUST

CONTEXTUAL INQUIRY TASK ANALYSIS SKETCHES

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CS147

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TITLE

The title Wonderlust fuses the impulse to explore evoked by the word ‘wanderlust’ with the desire for understanding encapsulated by the word ‘wonder.’

VALUE PROPOSITION

Harness your curiosity: Kill time, not the cat.

TEAM

Gabe Poon
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[Documentation]

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PROBLEM AND SOLUTION OVERVIEW

[The Problem]

We’ve all been there: waiting in line, on the bus, in the bathroom. You’re effectively stuck, and you have only your phone as a source of entertaining yourself. You’ve thumbed through your Facebook, Twitter, Instagram, and news feeds. You’ve checked your email. You’ve returned some texts. You’ve consumed every morsel of fresh data your phone is able to serve up. But you’re still stuck, and now, bored.

How many of these scrapped minutes could be used in a better way? Used in a way that expands your intellectual vitality and satisfies your craving for fresh information and requires no more effort than the moving of your corneas? Time is valuable, and you know there’s something better you could be doing with those spare moments.

[The Solution]

What if I told you that, next time you were stuck waiting in line at Starbucks or the ATM, you could learn two minutes’ worth of information about Samurais? Renaissance Fashion? Natural Selection? Escargot? What if there was an application that allowed you to pick the fields you’re interested in learning more about and would provide a newsfeed of blurbs on those topics? In just a few words, you could get basic familiarity with any number of ideas or areas - enough to cover the gist of the topic and enable you to follow a link to learn more. You could save information on things you found interesting, and maybe pass interesting blurbs on to your friends. You could recover those lost minutes in a way that was fun, interesting, productive, and painless.

CONTEXTUAL INQUIRY CUSTOMERS

[O.K.]



O.K. is a 26 year old Symbolic Systems Masters student. O.K. completed his undergraduate in Economics and Philosophy before spending two years working at a hedge fund in New York. He spent another two years working on his own projects and taking classes in New York before coming to Stanford. He was recruited based on his knowledge and interest in the tech industry. If there was an app that just getting popular, he would be the first to know.

[S.S.]

S.S. is a leading authority on democracy and conflict management. He is now, among other roles, a professor of political science. S.S. has two children and runs a residential education program for undergraduate students. He travels frequently and enjoys keeping up with sports in his spare time. S.S. was recruited because his work requires him to be up to date and informed about political events across the world. He demonstrates the kind of efficient, productive use of downtime we would like to enable for less driven individuals. Kat sat down with S.S. in a conference room and asked S.S. to walk her through what he does when waiting for someone at a café.



S.S. led Kat through the four news applications he uses to keep tabs on international politics.

[W.M.]

W.M. is a backend computer engineer, presumably early 30's. Recruited based on observations that she was entrenched in a situation similar to the one our application hopes to address and improve (sitting on a plane for a few hours with nothing but a device to entertain herself). W.M. was born, raised, and attended college in India, and moved to the U.S. to complete her master's degree. In her free time, she enjoys exercising, teaching herself new fields in computer programming, learning about real-estate markets and trends, doing DIY projects and spending time with her husband and dog.

[P.W.]

P.W. is a marketing professional in her mid 20's. Gabe's friend, recruited based on her wide interests and the fact that she commuted on public transportation for a significant period of time while working in China. There was an insufficient amount of space or time (due to switching lines) to do anything productive during these commutes, which meant P.W. had a significant amount of time to browse content everyday. This makes P.W. an experienced individual for our task.



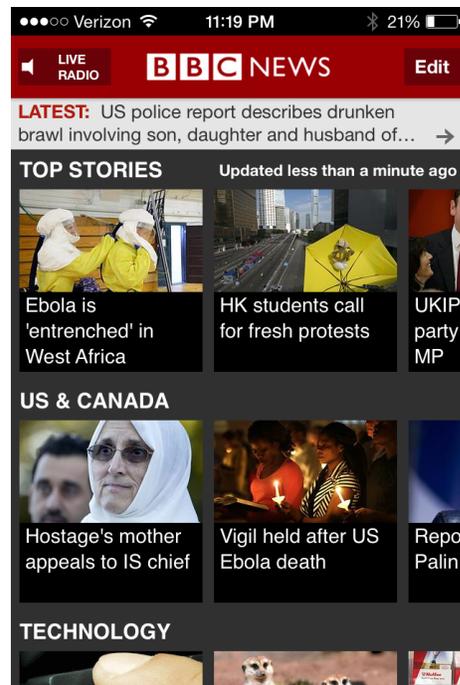
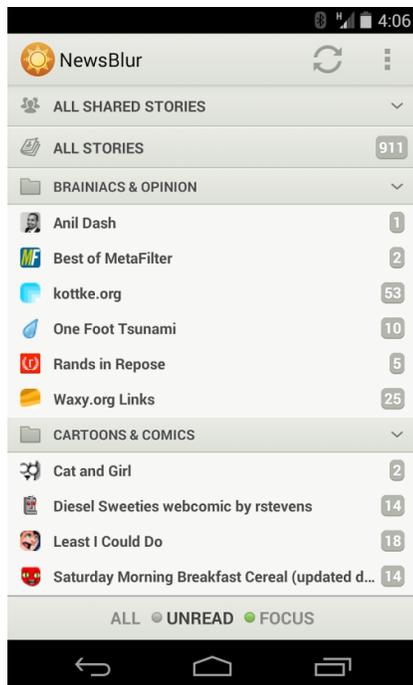
[A.S.]

A.S. is a sophomore in college. A biology major, he plans to attend Medical School when he graduates. He is Kat's friend, recruited based on his familiarity with a broad range of knowledge and random facts. A.S. was interviewed at a weekend brunch. He described commuting on public transport to and from high school, where he learned how to entertain himself in unproductive situations.

CONTEXTUAL INQUIRY RESULTS

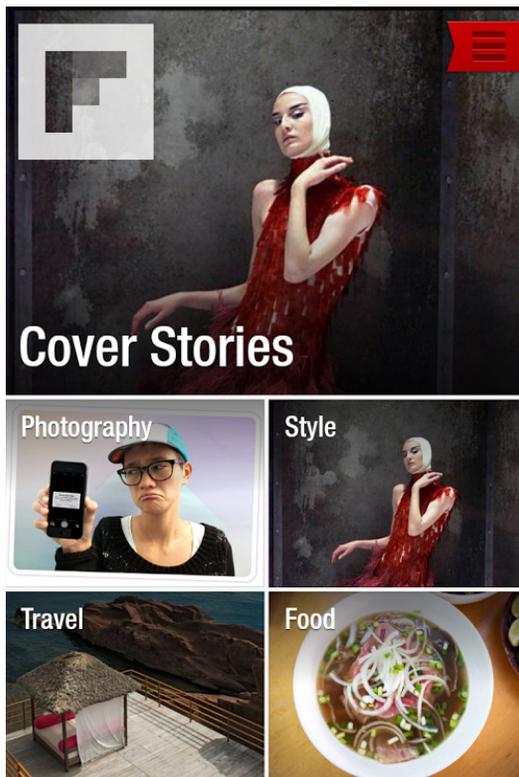
[Individual Solutions]

O.K. fills his time by reading blog posts from a large number of blogs using an app called *NewsBlur* (shown below). He signs up for RSS feeds of different blogs, and goes through the list of blogs he finds interesting with unread posts when he has time. O.K.'s app is the most personalized out of all the other interviewees, but the setup process took the longest since he had to add blogs one at a time.



S.S. has the most methodological approach to utilizing his downtime. First, he scans for emails that do not require a long or thoughtful response. He then proceeds to peruse four different news sites - *BBC News* (shown above), *NPR*, the *Washington Post*, and the *New York Times* - using their apps.

W.M. occupies herself by using WhatsApp (to keep in touch with relatives and friends in India), scanning news headlines and stories, or browsing RueLaLa, an online shopping platform. She finds herself with spare time about two to three times a day, and enjoys learning new information. W.M. also plays games like '2048' when she has no internet access. Fun fact: Leigh observed W.M. actually trying to kill time on the plane, instead of just a simulation.



Flipboard home screen



Article preview in Flipboard

P.W. browses Instagram posts, but rarely generates her own content. Often times she uses *Flipboard*, advertised as a personal magazine that helps users “discover, collect and share news” they care about. P.W. selects the category of news she wants to read about from a series of tiles organized by her preferences. The app grabs all the information from the source (advertisements and all) when you load a specific article, instead of just images and text from the article.

A.S.’ response to a delay less than 10 or 15 minutes depends on his mood at the time. If he is stressed, he will simply think or daydream. Otherwise, he will look for entertainment if he is in a good mood and for educational material if he is calm. His first response is to listen to music, but he will also check facebook or read the news (specifically the *Guardian* and *Al-jazeera News*.) Facebook is, according to A.S., a “gateway drug” because although it is not rewarding in and of itself, it is addicting because there is always the chance it

may lead to something entertaining. When he is sitting at a computer or has more time, he actively pursues what he calls “real knowledge” through forums and scientific journals.

[Common Themes]

There were several common themes from the interviews that can be divided into two categories: content-related, and interface-related. Starting with content-related themes, we found that all participants browsed some form of continually updated information. O.K. reads new posts from various blogs, S.S. checks his email as well as various news apps, W.M. also checks the news as well as RueLaLa, P.W. looks at Instagram posts and Flipboard, and A.S. checks facebook, forums, and news. While the specific content these users check are different, fundamentally they are simply browsing fresh, ephemeral content. If they find an item particularly interesting, they would select it from a list and access additional information. Although their curiosity is typically satiated after reading the additional information (typically no more than 2-3 page on the phone), sometimes they would like to learn more about the topic that is not included within the app environment. For example, O.K. wants to learn more about an interesting company on a TechCrunch post, and would need to switch to his web browser to do so. A.S. is very likely to want to dig deeper into a topic, but often has to switch gears in order to do so.

This brings us to the first theme regarding interface: simplicity. Participants are time constrained when they engage in this task, and have no time to learn complex functions. S.S. uses several news apps instead of a news aggregator partially because the cost of learning how to use one is too high compared to using four different ones. A lot of users also find the native saving system on these apps not very helpful or non-existent. O.K. and S.S. would email the articles they found interesting to themselves, and accessing it at a later time from a laptop/desktop environment. P.W. has no method of recovering viewed or liked items from Flipboard, and while there is a pin function on Pinterest, W.M. is hesitant to use it because she does not want her pins to be broadcasted to the public.

TASK ANALYSIS QUESTIONS AND ANSWERS

[Who is going to use the system?]

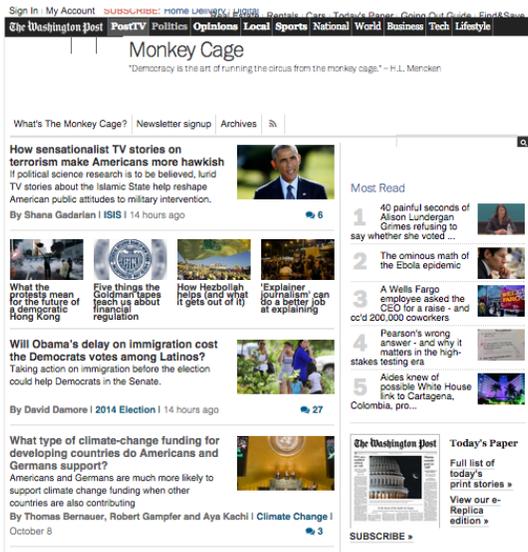
Based on the results from our contextual inquiry (CI), we believe our system will be used by smartphone owners who are interested in or have some stake in intellectual vitality. The small chunks of time during which our app will be used seem, based on our CIs, to be ubiquitous across different kinds of lifestyles. The limiting factor of our appeal will be interest in new information, because while our app will help an individual who checks Facebook or plays 2048 because they lack an easy alternative, an individual who values the social aspect or the game itself will not be motivated by our content. In the future, it might also be used by those who wish to submit new content - representatives from news companies or other users.

[What tasks do they now perform?]

When confronted with an unexpected delay, our target customers already pull out their smartphone. S.S., W.M., and A.S. noted that they choose to browse for information over responding to anything but superficial emails. A.S. will often listen to music or check facebook. Our CI revealed that most are interested in content that is spread across multiple applications. Some, like S.S., check each application serially, while others, like W.M., browse between apps depending on their interest in the moment. In S.S.’s case, these apps cover very similar material but contain occasional inconsistencies that render it necessary to check each separately. Some

use services to aggregate content - S.S. receives a daily recap of current events from *UN Wire* and S.O. uses an app to track the many blogs he follows.

[What tasks are desired?]



Our interviewees are satisfied when they, to quote S.S., feel they “know what’s going on in the world,” and, to paraphrase O.K., feel like they can contribute to conversations of a wide variety of subjects. O.K. and S.S mentioned the importance of intuitive interfaces that make it easy to find information. W.M. prefers condensed content while on the go, and S.S. mentioned he would be interested in a feed of articles that were short on analysis and long on data like the *Washington Post’s Monkey Cage* (pictured). A.S. puts up with facebook because he likes the interesting articles or topics it sometimes leads to. The CI customers also mentioned areas where they desire improvement. A.S. brought up that he is frustrated when presented with overblown news stories about scientific studies and would rather have the choice to read the actual paper to get the full story. Switching between different sources of information impairs productivity and increases

repeated presentation of the same material. O.K. said that he is particularly annoyed when he has to leave *NewsBlur* to view content. S.S. pointed out that aggregators are often uninteresting to him because they cover such a broad spectrum of stories and O.K. dislikes that *NewsBlur* does not learn his preferences. In addition, they are generally restricted to one field. S.S. mentioned that he likes real time updates and is frustrated when apps like *BBC News* retain the same stories throughout the day. A few customers expressed frustration about keeping track of information that they like and resort to methods like emailing themselves URLs. A.S. voiced that he is very likely to want to learn related topics if he finds a subject he likes. He dislikes applications that send him many texts about a certain subject and would rather that the information just be aggregated in a central location.

[How are the tasks learned?]

Our CI customers described going through a trial and error process to find an array of sources that when used together cover the information they enjoy. S.S. has learned to supplement *BBC News’s* app with the *Washington Post’s* app because while he prefers content from the *BBC*, he dislikes that there are a limited number of stories that are not frequently updated. Some browse content out of necessity, like S.S., while others learn for the sake of boredom fueled interest, like O.K., W.M., and A.S..

[Where are the tasks performed?]

The five minute gaps that crop up as a result of unexpected delays occur in all situations. Our CI customers specifically mentioned, among others circumstances, waiting for someone at a café, walking between locations or walking the dog, waiting for talks that have run late, travelling, and standing in long lines. Our app would be useful in any context where the customer has a phone and a few minutes to kill.

[What's the relationship between customer and data?]

We live in an age of information where knowledge is produced and disseminated at an unprecedented level. There are nuggets of history, experiments, definitions, news, theories, and ideas out there that he or she would find incredibly cool, fresh, and useful to know for each person. However, it is rare for individuals to use their spare time to troll through Wikipedia or scan through dense historical analysis or peruse the dictionary to find these nuggets. Sifting through the constant bombardment of irrelevant new information is an arduous and often unengaging task that deters customers from pursuing fresh and stimulating content. O.K. mentioned that when he sees too many tedious blurbs on *NewsBlur*, he loses the incentive to continue to look for engaging ones. Even when customers do find interesting information, it is difficult to evaluate its credibility, to save it, and to easily pursue the topic. Ultimately, we would like to help our customers to browse existing data.

[What other tools does the customer have?]

The predominant tools CI customers use while killing time are other smartphone apps. Customers from younger generations sometimes look to blogs, social media sites and online games to satisfy their need for fast paced and interactive new information. A.S. listens to music on his phone and watches his facebook news feed for interesting topics. O.K. prefers a *NewsBlur* to keep track of his blogs and occasionally browses *Wikipedia*. Instagram, Flipboard and RueLaLa were also mentioned. Customers in the professional world tend to satisfy their desire for information by reading the news. S.S. check *BBC News*, *NPR*, the *Washington Post*, and the *New York Times*, while W.M. enjoys CNN, the Times, The Telegraph, and several Indian news websites, and A.S. prefers the *Guardian* and *Al-jazeera News*. When S.S. knows he will have to wait (at the airport, for example), he would rather read a physical book, and in the mornings, he prefers to go through physical newspapers before his kids wake up.

[How do users communicate with each other?]

Our CI customers tend to first check communication channels like email and WhatsApp and then browse for information. When O.K. and S.S. discover information they like, they often email it to themselves to keep a record of it but do not directly pass it on to others. Although many articles and apps do have a “Share” function, none of our CI customers mentioned it. Their responses indicate that this is generally an individual activity.

[How often are the tasks performed?]

Our CI customers report that situations in which customers seek to kill time crop up around three times throughout the day.

[What are the time constraints on the tasks?]

Customers must be able to scan enough information to make pulling out a phone and opening up an application worth the effort. On the other hand, as W.M. noted, an interval of over ten minutes is enough time to dedicate to productivity (like answering emails) as opposed to entertainment. We anticipate customers using the app for intervals of 3-10 minutes.

[What happens when things go wrong?]

When the information on a particular app becomes unengaging to him, O.K. simply closes it. Our customers might try a different app or put their phones away and wait it out, as they would do if their phone ran out of battery. An older Dutch couple visiting campus explained that they do not own cell phones but instead amuse themselves in lines by observing other people, which demonstrates that it is certainly possible for customers to entertain themselves.

TASKS

*[Filter Information to Match Individual Preferences]
Complex difficulty / High Importance / High Frequency*

The main obstacle to pursuing random knowledge is that finding a fact that is interesting to an individual involves sifting through a large number of ones that are not interesting to that individual. O.K. finds himself unengaged from *NewsBlur* and S.S. is hardly ever interested enough in his news aggregation emails to pursue them. Users need a way to filter the data stream so that they are selectively presented with content based on their interests. As O.K. noted, this is a complex task because humans have complex preferences that are incompletely captured by categories. While some tailoring to interests is possible through sites like *StumbleUpon* and through the different categories on news platforms, because these features are not used by our target customers this is ultimately a new task.

*[Present Information in Condensed, Engaging Manner]
Moderate difficulty / High Importance / High Frequency*

Even the right content for the right person can be useless if it is not presented in the right sized “chunk” of information. W.M. noted that when waiting, she likes sites that present condensed articles as opposed to long editorials, and S.S. commended *MonkeyCage* for focusing on the facts. Users need just enough information to decide whether or not to pursue the topic further without boring or overwhelming them. A.S. brought up the idea that different individual are looking for different levels of information - a casual browser, for example, might be satisfied with a layman’s summary of a scientific study while A.S. would want to see a more intellectual version. Ultimately, customers want to interact with information in a way that engages them.

*[Save and Compile Content]
Simple difficulty / High Importance / Low Frequency*

Once an individual has discovered a piece of information they like, there are few existing measures to record it. There is no convenient way to aggregate content within Wikipedia or the news. Several CI customers email themselves links, but this requires effort and does not solve the problem of aggregating information in an easily accessible way. Ideally, users would save compiled content grouped by subject for easy access, as is possible

with StumbleUpon's lists. They would also be able to tag a topic for further research as is possible, for example, with Safari's reading list. This task is important because it enables customers to connect more deeply with the information than is possible in a single interaction.

[Present Resources to Learn More]

Simple difficulty / Low Importance / Low Frequency

When a customer discovers a topic that interests and excites them, they often wish to learn more about the topic and to find related material. Likewise, they may wish to evaluate the credibility of the source. These tasks are not currently supported within the same application and usually require leaving the application to initiate a separate search on google or Wikipedia. The extra initiative this requires is often prohibitive to a casual customer, therefore facilitating it within the same application would give customers the resources to expand their knowledge.

APPLICATION IDEAS

[Infinite Feed]

This interface centers around vertically scrollable interface that features an infinite feed of blurbs to facilitate customers' favorite activity: browsing. Blurbs could be presented as bars (showing only the title), as tiles (title + image), or as Facebook timeline style cards (title + short description + image). The blurbs would display a limited amount of information initially but link to a full screen (new page) or pseudo-full screen (expand the blurb) view when selected. There would be an options menu at the bottom for users to view a 'favorites' tab where articles are saved when a star button is pressed, a 'preferences' tab, and a 'settings' tab.

[Tinder Pages]

Users can only view one topic at a time, similar to how Tinder users can only view one potential date at a time. The motivation is that some topics may be dismissed in a list-view, but users may be interested in the material if read a short description. Users will immediately be engaged with the material if they are shown topic pages straight away. The text will be embedded with links to other relevant topics, and users can scroll down on any topic page to read more. Users can still navigate to a new topic or previously viewed topics using swipes, but is still limited to one topic per page and there will not be a list view of different topics. Saving/bookmarking is a feature, and there will be a Bookmarks page where the user can view all the saved topics.

[Android Wear]

An application for Android Wear would take advantage of the recent rise in popularity of wearable technology. Bringing cool information directly to the customer's wrist minimizes the effort they must expend to view it on the fly, expanding the opportunity for use to even shorter time windows. Please refer to the flow diagram below. A user could summon the app with the command "OK google, I'm wondering about ____" to see a feed from a

particular stream, like Random Facts, History or News, or say “OK google, I’m wondering” to summon a mixture of blurbs. The app would push a card to the watch. Once the card is selected, each swipe to the left lets the customer see a new blurb. They can scroll down to read the whole summary if interested, and swipe up to access another page where they tap to save, view related, or open the source on the phone. Swiping right dismisses the card.

[Choosing the best idea]

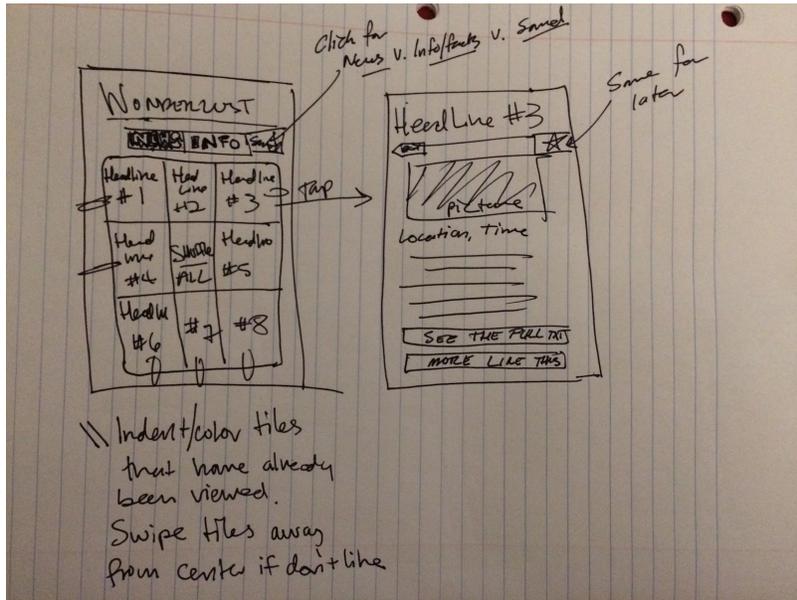
The following is a table that analyzes the significance, feasibility, and interest of each of the above ideas. Note that ‘significance’ here means something similar to ‘how impactful this app will be in solving global issues’, and ‘interest’ indicates how interesting users will find the task.

	<i>Significance</i>	<i>Feasibility</i>	<i>Interest</i>
<i>Infinite Feed</i>	Low	High	High
<i>‘Tinder’ Pages</i>	Low	High	Moderate
<i>Android Wear</i>	Low	Moderate	High

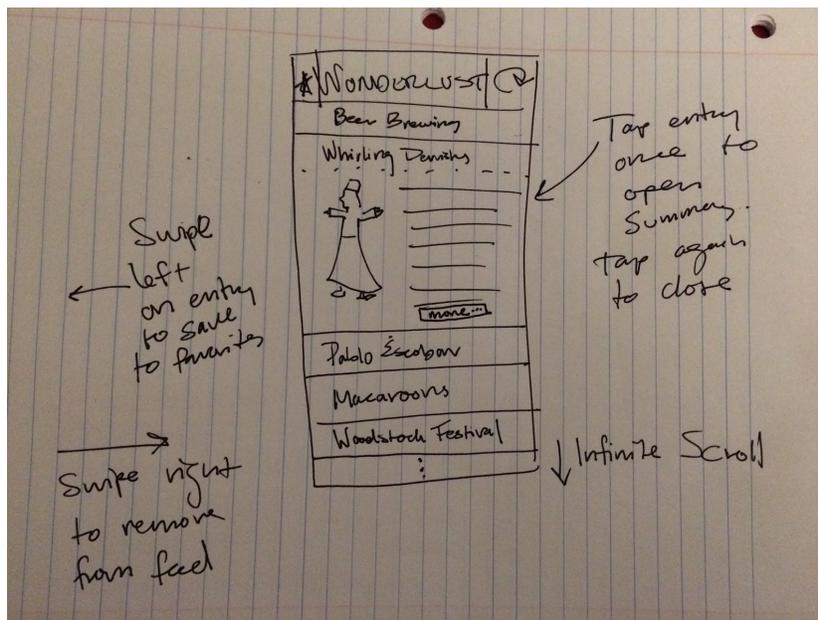
We chose to pursue the Infinite Feed idea through a process of elimination. The Android Wear idea has a lot of potential, but we decided it was not fit for the task and the project due to limited viewing space on the device, and limited access to Android Wear devices for testing and development purposes. We decided against the ‘Tinder’ Pages idea because CI results have indicated that people stop browsing when they feel the content is boring. If we fail to show users an interesting topic after a couple swipes, we do not think they will return to the environment, and the problem would not be solved. Lastly, the Infinite Feed idea scored the highest across all categories in the table above, which is sufficient reason for our selection.

SKETCHES

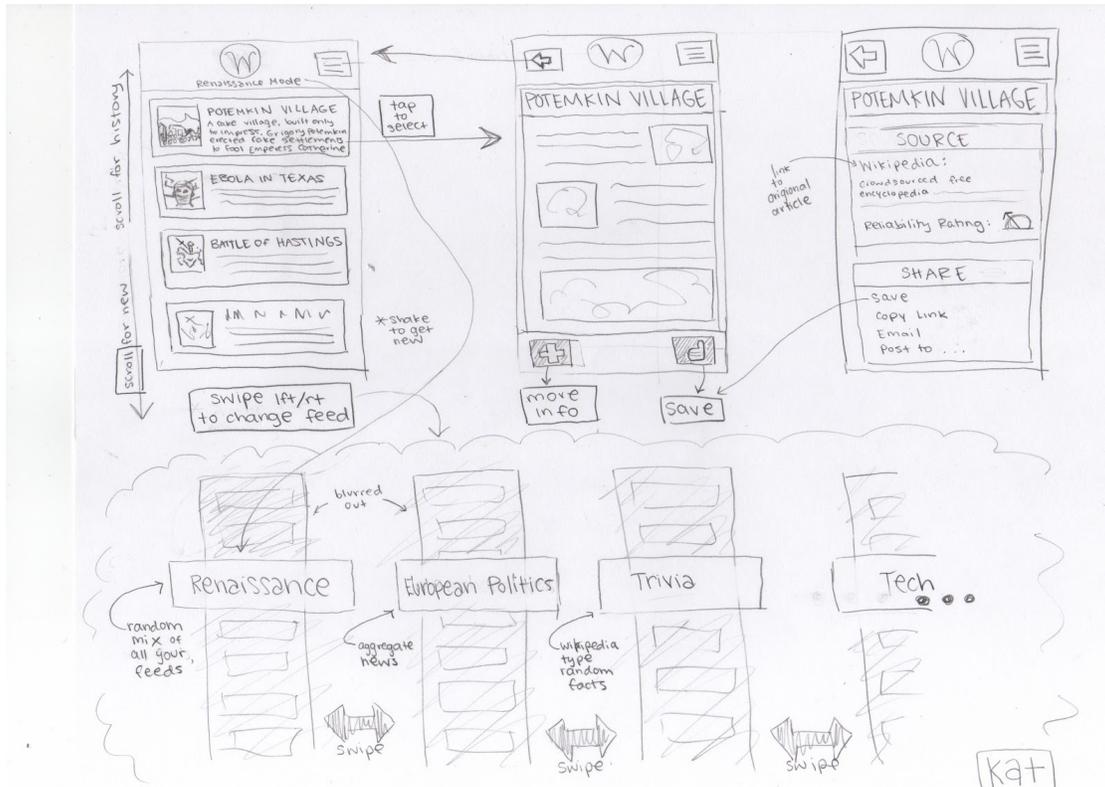
[Home Screen styles]



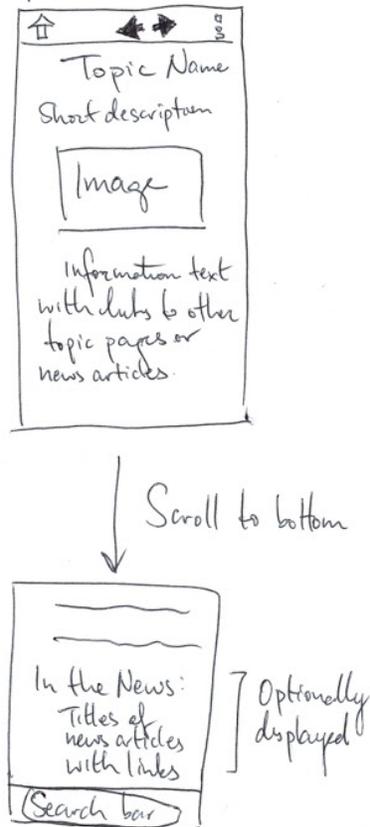
Tiles-based home screen



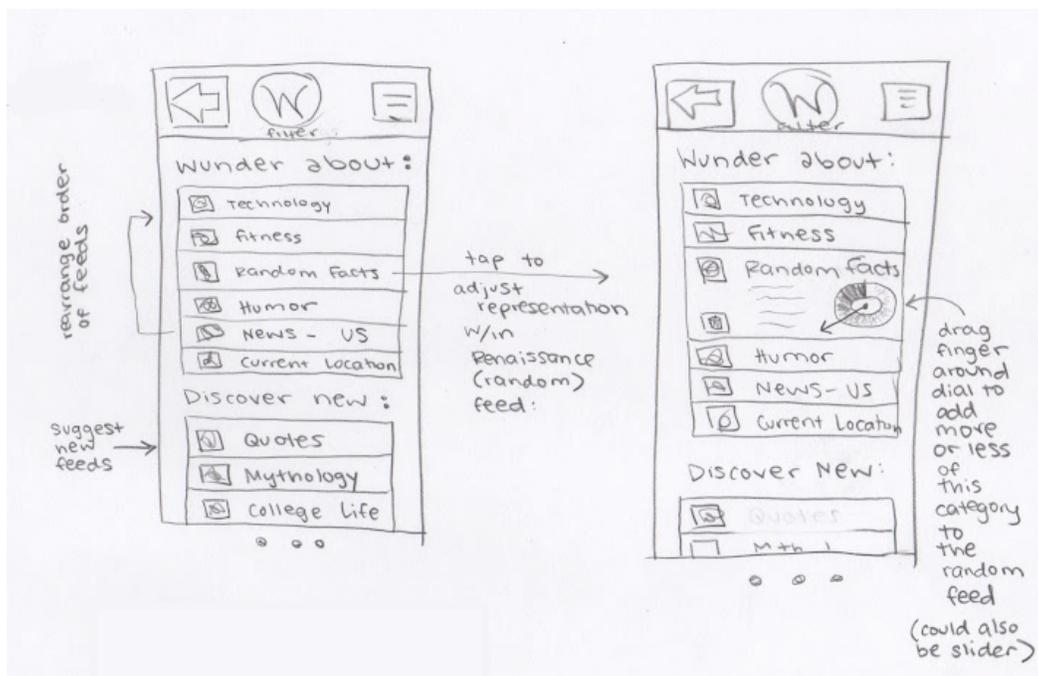
Bar-entries home screen



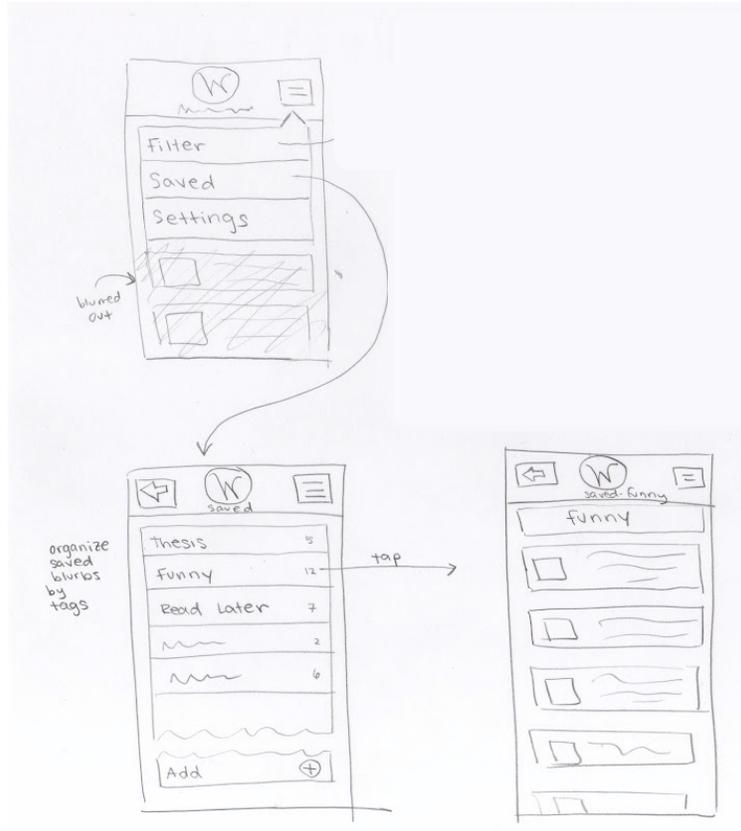
Facebook style home screen with flow chart to other categories and topic page



Full-page topic screen with embedded links and search bar



Settings to select topic preferences



Flow chart for saving