Spontiny

Project Report

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1. Summary

Spontiny, is an email client to help users manage their email overload. Being chronic email users ourselves, we found we could relate to the problem, especially in managing our filters as semesters changed and tried to reason why email clients could not develop new filters based on our incoming email patterns.

After some brainstorming, the storyboards we developed reflected the pain points of the users, in trying to unclutter their inbox and the ways they tried to tie in tasks with their important email. In our subsequent contextual interviews, it was interesting to note the mechanisms users employed in dealing with emails they had to follow up on. Surprisingly, even sophisticated power email users, felt handicapped at the lack of easy discoverability of features available on their email clients.

Observation during the contextual interviews suggested that, cognitively, users tried to bucket their emails into essentially three categories – messages, mailing lists, newsletters and notifications. We had initially added a category called discussions – to reflect emails where the user was cc’d thinking it was somewhat less important than ‘messages’ – where the user was directly addressed. However, based on our participant observation, we found that it confused users and hence we fixed the three high level categories. The closed card sort experiment with users asking them to sort some sample emails into those buckets validated our beliefs about the agreement shared by various users regarding email categorization. Granular filters, would arise out of the recent email patterns within those high level filters.

We also placed an emphasis on showing an intuitive UI, so that messages, appeared in a conversational flow for users to relate to the context and showed a couple of lines for each thread in a conversation, since most emails were short and terse. We also had a different view for the mailing list and newsletters, focusing on their subject lines in order for users to just browse through them in one-go and drill down only to the items that they found interesting.

After multiple iterations, and after constructive feedback from our users, we feel we are in a good place in taking this project forward into refining our email classifier and deliver on our core experience.
1.1 Contributions

The work for the final prototype/code, final report, and final presentation was a group effort, as always with team Spontiny. Each of us worked on a portion of all three final deliverables, and the work was evenly divided among us.

2. Design Process

Approaching the design of an email client, the quintessential tool in modern work–life, had to be done keeping in mind the needs and aspirations of the user.

Our storyboards indicated that users see a challenge in un–cluttering their inbox, owing to the ever–growing queue of emails. Also, managing this overload and tying them with tasks/reminders was a solution they were yearning for, which the existing clients provide a crude solution for.

While testing the idea of Spontiny, in order to get balanced feedback on the way email clients were being used; we conducted contextual interviews with different types of users to begin to define the functionality of our product.

2.1 Contextual Interviews & Work Models

We identified two segments of our users: power users and average users. This resulted in the following personas, along with specific user stories that we relied on throughout the semester.

2.1.1 Persona 1

Sarah Shooster: University Admissions Officer
Background : Aged 45, gets overloaded with email everyday, with queries regarding admissions and other administrative work. Email management is a major problem for her, as she has to juggle between multiple mailing lists and many recipients.

Findings from the interview:

1. Being able to scan through new messages quickly is very important. Urgency of email response depends on who the email is from

2. Tasks and email are intertwined, with the unread count serving as a reminder for pending tasks.

3. Ability to archive and keep records is important to her for administrative purposes.
4. Problem in managing redundant content, due to lot of forwarding of messages. Based on the interview we judged that Sarah employed a Flow Model in her daily work flows, that helped us understand the way email fit into her work life (The work model can be found in our previous deliverables).

2.1.2 Persona 2

**Alex Smith**: Student at UC, San Diego.
Background: Hailing from a Computer science background, Alex is technically savvy, and is an avid user of SMS, IM, social media, and email. He was an early adopter of the iphone and since then he has mainly been using email form his mobile. Alex receives at least 20 emails a day and mainly communicates with the same core groups of friends. He often uses email as a way to keep up with networking opportunities, and having the ability to lookup past conversations is extremely important.

Findings from the interview:

1. Emails priority hierarchy is terrible, and more or less flat. Finds it hard to disambiguate between content and notification of content

2. No easy way to identify, which emails you should respond to first. Not email from a trusted recipient is high priority

3. Email etiquette is confusing, since not all mail that you are cc’d on is just FYI. Some are actionable.

4. Alex prefers text message, and IM over email because there is only one inbox, therefore the message has a much higher rate of being read immediately. He is wary of too many filters and inboxes. Based on the interview we judged that Alex employed a Sequence Model in his daily work flows, in dealing with the emails he received (The work model can be found in our previous deliverables).

2.1.3 Other Work Models

Apart from the Flow model and sequence model, we also realized that email fit nicely into the Artifact model, as it was one of the most essential artifacts in almost all of our interviewees work life. Deconstructing the artifact model for email reveals:
**Structure:** The method of structuring and managing email by the use of filters is each user’s personal way to help him prioritize and take action on incoming emails.

**Information content:** Email sent to work colleagues had a more formal tone with brevity preferred, while understandably, the tone was more comfortable and informal with friends. Also, it was more probable that filters for most frequented contact had a higher spatial location as compared to other filters.

**Informal annotations:** The use of email clients to create a separate “to-do list” filter to keep track of actionable emails was a subjective/personal annotation that each user adds to his stack of incoming emails.

**Presentations:** The presentation of email in the form of a queueing model – giving a “subject–specific” glance over all incoming email, gave the users an idea of which of the uncategorized mail needed an immediate action. Also, Users tend to use less filters, if the search functionality on the email client is good and also if the categories of “actionable emails” are few.

**2.2 Prototyping**
The next step was to begin to transform our findings into tangible features that met the needs of our users. The first step was to create some lo–fi mockups. One of our early versions is listed below.
The next step was to get user feedback, continue to ideate, and then implement their feedback into new designs. We next implemented the feedback we received, by creating a clickable wireframe.
3. Final Prototype

Our next steps were to create a higher fidelity prototype in order to do some more in-depth user testing and continue to refine the feature set that we plan to offer in our final product. We implemented our prototype following the feedback we received from our users.

How Spontiny would help user achieve their goals:

1. Conversational view of messages to help them see the context.

2. Easily discoverable functionality to mark email for follow up as to-do items
3 Use of a generic hierarchy – messages, mailing lists and notification to help them sift thorough email quickly. Granular filters will arise based on email behavior.

4 Allowing the ability to easily add people to a conversation, and avoiding redundancy due to forwarding of attachments by having a single view to share and link attachments.
**Conversations**

- **Michael Hintze**: 5 days ago
  - Hi,
  - I see the attached file for a schedule of the shuttle bus. I will most likely take this down on my first day.
  - Michael Hintze
  - Sent with Spontiny

**View 1 more messages**

- **Michael Hintze**: 5 days ago
  - I know! Corporate housing is looking better as.

**View 6 more messages**

- **Michael Hintze**: 1 month ago
  - Hello Tyler,
  - I wanted to thank you, Steve, and Chris for this amazing opportunity. I am happy to let you know that I will accept the internship offer. I have signed all the required forms, along with the other intern, and they are currently in transit.

- **Michael Hintze**: 5 days ago
  - Thanks for the quick response. I look forward to starting in May.
3.1 Tools Used

We built the prototype using HTML/CSS and the backend was powered by Tornado framework. We incorporated most of the feedback.

- We collapsed previously read messages
- Used Elastic search as our database to power our email search
- We provided a green bar next to the unread messages to allow the user to quickly recognize the unread message
- We only show first few thousand characters so that messages which are long do not occupy the entire screen.

Filling coding our prototype was obviously a bigger effort than creating a simple clickable prototype. Integrating the backend data services in order to pull in users current messages from Gmail was a major effort. However, we feel that this was the only way to provide an environment where users would be able to experience answering their daily emails in our new paradigm.

4. Experiment Design

A natural next step was to test the prototype on our ideal user base. One particular area that we wanted to focus on was the labels and organization of the auto-filters that we set up for users to make reading their emails a seamless experience.
5.

4.1 Card Sorting

We ran a closed card sort with over 20 participants and the results are displayed above. One thing we noticed immediately is that there are definitely discrepancies in the auto-filters that we have established. However, three natural categories emerge: Conversations/Messages, Mailing Lists/Newsletters, and Notifications. We are still continuing to test filter names that are natural to users.

4.2 User Testing

In addition to the card sort exercise we also had users experience checking their daily emails on both the existing Gmail client and on the Spontiny interface. We had two groups of users. Group 1 will go through tasks related to checking unread emails and replying to emails in Spontiny and Gmail. Group 2 will go through a card sort exercise in order to better understand the relevance of our predefined filters.

The results of this testing was quite useful. Users were naturally accustomed to using the Gmail interface and had no trouble going through their normal routine. Their was usually a big learning curve for most users when they started using the Spontiny interface. Some of the filters were unclear to users and they worried about missing
crucial information, similar to the card sort exercise. Users were also extremely distracted by the lack of some basic email features like the lack of support for attachments, these are features that we intend to implement, but simply lacked the time to develop them. After users completed their session we asked them to complete a brief survey and we found that most users would delete some of the filters, but they found certain ones extremely useful, and felt it was easier not to have that information among their other messages. We captured all the clicks and tasks that users completed, and we noticed that while tasks in Spontiny generally took look times to complete, they involved far fewer clicks. We believe this is due to the fact that users are simply accustomed to the Gmail in fact and that after some experience time to completion in Spontiny would be far superior.

5. Current Status

Our current focus continues to be on making auto-categorization as accurate as possible to make foundation of our product strong. As now we know that, these core categories apply to all kinds of users and covers all ‘types’ of email communication people receive, we now want to go a step further and provide sub-filters under each of these categories to make it easier for people to go through their email queue especially who receive a huge number of emails.
These sub-filters will be personalized depending on one’s incoming email pattern and grouped on various criteria such as by frequent or popular sender, kind of newsletter (shopping, finance, etc.), priority of notification and so on.

6. Future Plans

Helping users to go through their email queue was just one facet our goal. Making each email item actionable and tractable is our next goal. Email is already is great collaboration platform but it lacks a support from client side to exploit that power and our goal is to multiply capabilities of email as collaboration tool. With Spontiny users will be able to convert emails into shared tasks, i.e. assign it to other users, track the status and have discussion around them.

Making notifications actionable

One very important type of emails we receive is one where we get tasks through emails assigned someone else. In our user interviews the one complain we constantly heard was that they face difficulties in tracking tasks arrived in their inbox or track emails they need to take action on. To streamline that process
Spontiny will make it super easy for users to convert them into ‘Todo’ tasks. They can also put them into various categories depending on email’s context. This will make it super easy for them to track these tasks and we will make technically possible to assign these tasks to other person even though they are not on Spontiny.

**Turning emails into shared tasks**

![‘To Do’ Grid View](image)

‘To Do’ Grid View
Other important observation we made in our user interviews that they use email for group collaboration a lot. One of the most important advantage with the email is it allows them to create group discussions with any number of people; moreover it allows them to create these groups on fly and share any kind of items. But the problem with email is that it’s hard to track these emails over the time period and repeated communication with these people gets tedious as they need to repeat the process again and again. Through Spontiny, we plan to provide a group view where they create these groups on fly and also ‘pin’ them on the left sidebar. The group view will provide constant stream of messages exchanged between the group, with overall activity, tasks shared between them and also documents exchanged making it super easy for them to do team management.

Project Groups