Research Reflection Paper

Research Question

The project's scope from the beginning was to explore tools that can be time-saving solutions to help users with their busy schedules. The project narrowed down into exploring tools and methodologies to support users' content consumption to reduce decision fatigue. There are studies in the psychology field that warn users about the "paradox of choice" and how it increases dissatisfaction. The initial research question was: How to improve productivity and avoid decision fatigue while choosing various types of content across different platforms? With this question, the areas to research were still broad, from news to streaming services. The project decided to focus on email because it is an area where the functionality has not changed tremendously since its inception. The question evolved into studying: How do users experience decision fatigue when interacting with their inboxes?. Later, the research expanded from focusing only on participants' experience interacting with their inboxes and their organization system to understanding how they incorporate email management into their daily routine. The photojournal was a powerful tool that showed the need for automated features to help users manage their inboxes and not be overwhelmed by a large number of irrelevant emails. Lastly, the research focused on understanding how to redesign inboxes to improve email priority and organization to decrease decision fatigue.

User Research

The three primary methodologies used were: user interviews, photojournals, and secondary research. The participants were college students from the University of Colorado at Boulder. The pool of participants was diverse, including students from the undergraduate and graduate programs, as well as recent graduates. The initial interviews were forty-five minutes. The participants also recorded two daily screenshots of their inbox summary for the photojournal in the morning and the afternoon.

The user interviews were the first method that clearly displayed the inefficiency of the current email platforms. For instance, they lack automated features to help users

filter their email quickly based on their needs. Users expressed their discontent with receiving numerous marketing emails and how tedious of a task finding a relevant email from a specific sender was. Also, users mentioned that several of the emails they receive are often sent to the entire team rather than them individually; as a result, the content is often irrelevant to their work and does not require any action from them. A participant said, “out of the over 600 unread emails, only 10 percent required an action from me”.

Additionally, the majority of users were unhappy with the amount of time they needed to invest in email management. Typically, they only focused on maintaining an organized and up-to-date schedule for work or school because it was crucial for their performance. On the other hand, their personal emails would not receive the same amount of attention and organization because users refuse to invest additional time in email management. A common trend among users was to separate their email by platforms, for instance, using the Apple Mail App for work and the Gmail App for their personal email. The most popular request from the users was that they wished to receive fewer emails per day. They prefer instant messaging tools, such as Teams or Slack, for faster communication and shorter response time. They agree that email communication tends to be slower when compared to instant-messaging tools.

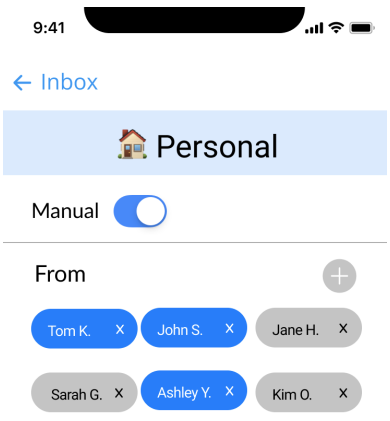
The user interviews and photojournal deeply influenced the direction of the project. The photojournal showed a large number of emails users received per day, which matched the user interviews’ trend. Also, the photojournals did not reflect the use of automated filtering tools. Half of the users’ inboxes showed minimal automatic filtering, having less than two folders or labels per day automated. A participant mentioned, “I only have a rule [to move incoming emails into a specific folder automatically] for automatic alerts.” Park et al. (2019) had similar findings. During their interviews and survey, the majority of participants mentioned they were aware of the existence of automation tools but chose not to use them because of their complexity or inefficacy. Many users “manually processed emails, even repetitive ones, despite the fact that current features within email clients can automate some of this activity."

The main findings from the user research can be summarized in the following themes: users have different behavior for specific accounts, the majority of emails are about marketing promotionsor notifications, constant emails affect users' stress levels, and unsubscribing is considered a laborious task. First, all participants prioritized having an organized inbox for their work or school email accounts. For instance, a participant mentioned, "at the end of my day, I make sure all of my school emails have been read, and I have archived or deleted my emails." They are concerned about missing important information; on the other hand, they often do not consider the information they receive in their personal email accounts of equal importance. Hsiao and Bentley (2021) explain, "today, interpersonal communication has moved to instant messengers, and personal email boxes are filled by commercial mails. Ninety-five percent of messages in personal email accounts are from businesses, including coupons, bills, or subscribed notifications". All participants expressed frustration with the number of marketing emails they received. They consider the task very time-consuming. The current solutions still are considered inefficient by everyone interviewed; a participant mentioned, "I like Gmail prompts to unsubscribe, but it is by email [by email individually]. I wish I could do it for several emails at once." Mark et al. (2012) found that limiting individuals' access to email had positive effects reducing anxiety and improving focus with work-related tasks throughout the day. The goal of the email platform proposal is to help users with decision fatigue and stress caused by the current user experience offered by the major email platforms.

Prototype

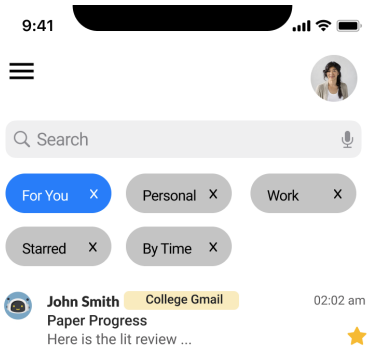
The prototype, through its development, focused on email filtering, automation, and customization.

In the beginning, the prototype mainly focused on creating different spaces where users could customize the types of emails they received in each space, from specific work teams to friend groups. However, its similarity to folders presented similar downsides to the current filtering

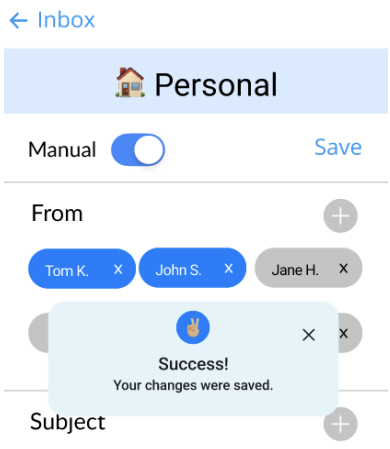


features. The users needed to set up the preference for each space manually. Also, the “paradox of choice” would still apply because the users could create as many spaces as possible.

The prototype later evolved to ‘Modes’ where users could not only filter their emails by metadata such as contacts or subject lines; but also created specific rules for when to receive email notifications for each mode. The participants still expressed their dislike for having to customize each mode manually.



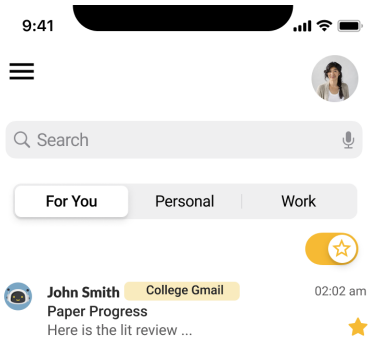
The following prototype included smart features to automatically sort the user’s emails based on their preference history. Users expressed their concern that having the algorithm reinforce a behavior solely based on attention and clicks could prioritize meaningless emails rather than important ones. The prototype included different profiles to mitigate this issue. The two profiles are work and personal. The algorithm learns independently for each profile to mitigate giving excessive importance to low-importance emails. The prototype also included two modes: automatic and manual for the email filtering preferences. As a result, users who want control over their profile customization can edit their preferences individually; on the other hand; users can save time when choosing the automatic filtering mode.



The usability testing sessions were valuable in improving the mobile app's user experience. The participants expressed how some of the terminologies were hard to understand. For example, implicit and explicit modes were changed to automatic and manual. Also, the prototype added tags that specify each email account per email because the participants mentioned they had trouble differentiating the email account of each email. Another major suggestion during user testing was the change of the component for the profile views. Several participants found the use of tags to be misleading for the profile views feature. Lastly, half of the participants assumed the

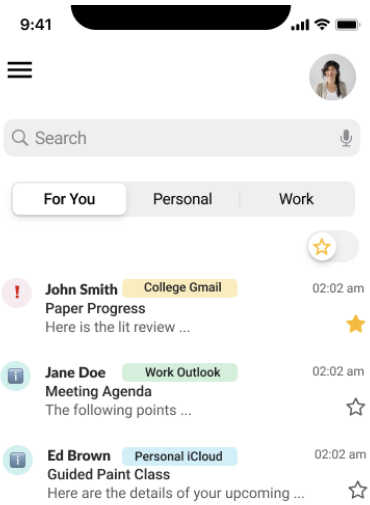
changes in the profile views preferences menu autosaved; and the other half mentioned they were looking for a save button or a message confirming their changes.

Next Steps



On the design side, the most critical feedback received was the confusion about using tags to show the different profile views. Participants suggested using a component that would not imply they could delete the profile views or select several profile views at once. The first goal would be to add functionality to the prototype using segmented controls for the profile views and a toggle for showing only starred emails.

The 'For You' view feature required an explanation at the beginning of each user test. Having a first-time user experience screen would be crucial for future iterations of the application. Also, the 'For You' feature could expand from ranking the emails by attention and clicks to adjusting the type of emails based on the time of the day, such as showing personal emails after a specific time.



Additionally, the application could use explicit input from users to determine which emails they prefer to see. Some users showed interest in having a like and dislike option for marketing emails. The application could prompt users to unsubscribe after they dislike specific marketing emails a set number of times (i.e. after three times). The prototype could also show a weekly summary of the top senders and categories, where the user could quickly change their preferences, such as unsubscribing from several senders at once.

For additional features, the prototype can address the lack of richer metadata. The concern was raised by several interviewees and secondary research. In the survey, Park (2019) found that users would like to have richer data at first glance. Rather than

only the sender and subject line, the participants requested a richer data model that included attributes such as the message's priority, deadline, and actions. The prototype would add three emojis tags: ℹ️ for information only, ⏳for waiting for a reply, ❗ for the action requested. Additionally, the use of emojis would automatically replace phrases such as “Action Requested” from subject lines, giving the user more space on their mobile screens to read the additional details of the subject line. Further user testing could also help determine if users would prefer to replace the profile photos on email inboxes for the the emoji tags.

If I had to do the project again, I would have created more paper and low-fidelity prototypes. For instance, changing the profile views from tags to segmented controls or tabs could have been done at an early stage, and would have required less time to implement. Also, I could have focused on recruiting more participants for user testing to gather additional user needs that could help develop the email recommendation algorithm further.

Reflection on Learning

The project was an excellent tool to improve my user research skills. The various user interview exercises helped me to become a more experienced researcher. It was important to set a balance between staying on track to reach the goal of the interview, but at the same time leaving room for exploring additional areas I did not consider before and were relevant to my research. For instance, some participants found the current subject line phrases such as “Action Required” heavily impact their mobile experience because they do not allow them to read important details in the subject line. Overall, having a semi-structured format was the most successful option for me because I wanted to make sure the participants were co-researchers in the process.

The weekly milestones successfully guided my research process and were valuable for accountability. I plan to integrate photojournals in future research when applicable; I was not familiar with photojournals before taking this course. They provided not only daily information on the number of emails and structure but also

helped me to add follow-up questions for the participants based on their daily behavior and organization.

The personas exercise helped me to deeply analyze my initial notes and interview the participants as well astry to categorize their behavior to develop specific personas. Each of the personas' profiles gave me a different perspective of the user needs and expectations for the platform.

For future classes, the course could focus on the user research project from the beginning of the semester. As a result, the students can have several iterations of the project in both stages (low and high fidelity). Also, each group could be paired with another group in the class, so they provide constant feedback throughout all the milestones.

References

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