Milestone 1

Digital Communication Overload

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Project Overview

Many people participate in some form of digital communication every day. It can be a great way to keep in touch with friends and family. Social media communication platforms allows news to spread faster than ever. It can even help you network to acquire a jobs. The benefits of digital communication are very prominent and plentiful. However, as digital communication has grown, it has become more and more apparent that certain benefits of interpersonal communication do not carry over to its digital counterpart. It can be easy to have an online conversation with a friend on a platform like Facebook Messenger and eventually forget which messaging platform that the conversation took place on. Quick snippets of conversation might be the only way you communicate with people in your life, these sips and taste of words or expressions do not equate into a full conversation [4]. People even have different names or aliases across social media platforms. Our survey found that 77% of participants reported knowing someone who used different aliases on different platforms. This issue does not only exist amongst friends, but in professional settings as well. As upperclassmen students, we have many semester-long group projects with many different peers. Many of our different groups prefer different digital communication platforms to communicate. This can lead to the feeling of our project groups seemingly "running together". This problem has sometimes been referred to as information overload [1]. This can be a downside of asynchronous communication, which is communication such as texts and emails have a delay that interpersonal interactions and phone calls do not have.

Our team will be researching the benefits of interpersonal communication that are lost when we use digital communication to message each other. We are focusing on the theme "Technology to help you become a better you". We will be conducting a survey on users of digital communication to help us narrow down the problem to something specific that we might be able to improve upon. We think that current technology could potentially be used to tackle problems in this area and reduce the disconnect between digital and interpersonal communication.

Potential Stakeholders

The primary stakeholders are people who use forms of digital communication to send messages to each other. This includes users of social media platforms such as Facebook, Instagram, and Twitter. However, it also includes users of other communication platforms that are less associated with social media such as Gmail, SMS, GroupMe, and Snapchat. This demographic was the main focus of our surveys. Our team understands that this is a very broad selection of people and we could not possibly gather information from the seemingly endless categories of social media users. One of the subcategories we can consider are the "everyday" users. This includes people who message each other either only occasionally as well as people who use digital messaging a moderate amount. Another subcategory is heavy social media users. We consider a heavy user to be someone who spends a significant amount of time above the average level of social media use. Another subcategory could be businesses with social

media presence. Many businesses use digital messaging to help with their customer relations as well as to spread their brand. Finally, a subcategory could be public figures. Public figures are people such as politicians and celebrities. Like businesses, they often use digital messaging to increase their name recognition. Though they often have large followings on digital platforms, they are not necessarily heavy users of digital messaging. We surveyed 157 social media users to gauge their experiences with social media. The majority of our respondents reported sending and receiving messages on social media for at least an hour every day. The secondary stakeholders include the companies who own the communication platforms. Another category of secondary stakeholders is non-social media users. Even people who do not use social media are ultimately affected by the people around them who do use it. Electronics companies could also be viewed as secondary stakeholders, as digital messaging takes place on their products. Companies like Samsung and Apple would want to have more users on their devices because it means more revenue coming in for them. Some tertiary stakeholders include the parents or older family members that want their children to be using their mobile devices less and become more engaged with the real world. More and more children are growing up not knowing how to have a proper conversation or even wanting to learn how to converse with real people [4]. Any system that would limit or reduce their time spent on messaging apps and social media would be greatly appreciated by them. Another example of a tertiary stakeholder would be any government entities that are sponsoring programs to teach youths about how to manage their time effectively with technology.

Existing Solutions

Voice Messenger App:
      Example: Push to Talk, Walkie-Talkie
      People can digitally communicate using voice recordings rather than text.

- Pros:
    - The ability to hear someone else's voice along with its tones can create a better context in conversation.
    - Creates a closer compromise between interpersonal and digital communication than texting does.
    - Could reduce texting while driving.
- Cons:
    - In order to proofread a voice message, you have to take the time to replay the entire message as opposed to just reading a text.
    - Receiver of message may not be in an environment where they can play an audio message, such as a loud stadium or a quiet doctor's office.

Restrict social media use:
      Example: Website blockers, Parental Controls

- Pros:
  - Can help increase interpersonal communication.
- Cons:
  - Essentially avoids the weaknesses of digital communication rather than attempting to solve them.
  - Limits many of the positive benefits of messaging with digital communication.

Large Group Communication:
    Example: Slack, Piazza, Discord
- Pros:
  - Drop-in, drop-out quickly.
  - Able to catch up on groups, and missed conversations.
  - Privacy can be as public or private as you want.
- Cons:
  - In-personal.
  - Messy and hard to make yourself heard.

Reduce Online Anonymity:
- Pros:
  - Limits the number of different aliases on different platforms.
  - Or organizes aliases together under one contact.
- Cons:
  - Privacy concerns.
  - Not a very realistic solution.

Messaging Platform that Periodically deletes older messages:
Example: Snapchat
- Pros:
  - Can help keep the context of digital communication centered on recently discussed topics.
  - Users might feel more inclined to take in the information they are receiving if they know that it will eventually be gone.
- Cons:
  - Could make you lose information that was important.
  - Has the negative aspects of synchronous communication while still being asynchronous.

All-in-one Messenger app:
An application that helps to manage your message notifications from many different platforms.
Example: Franz, Rambox, All-In-One Messenger
- Pros:

- ○ Could help keep context in a conversation.
- ○ Could reduce the amount of information overload that users feel.
- ○ Doesn't try to beat a specialized app at its own game.
- ○ Easier than switching between multiple apps all the time.
- Cons:
  - ○ These applications often try to overstep their bounds and attempt to accomplish too much.
  - ○ Most solutions are found on a desktop/laptop and neglect the mobile platform.
  - ○ Fall victim to being good at everything but a master of none.

Characteristics of Users
Users in this problem space can be very impatient. They are used to getting things done quickly and efficiently. They are also very used to being attached to their phones. Any notification can be picked up and answered almost immediately. Some of the older users in this problem space are very interested in simplicity. Any task needs to be able to be done in a very simple manner and any advanced techniques need to be able to be explained in an easy manner.

Task Analysis

Important characteristics of the task environment
The primary task environment of this problem is quite broad. It could be viewed as all the electronic devices that allow digital communication to exist. This includes desktop computers, laptops, smartphones, etc.

- People may be slow or unwilling to adopt changes to their daily forms of digital communication.
  - ○ Existing platforms have features besides the communication that make them useful.
- People choose where they spend their attention with digital communications, "Connected but Alone". [4]

Important characteristics of the tasks performed by users

For starters, the task should be simplistic and easily used. The task should have a very small learning curve. The user's task should also be well organized. The user should feel as though they are saving time by performing the task. It should be possible to perform the task in any environment. Tasks should make the user feel more connected to the people they are talking to.
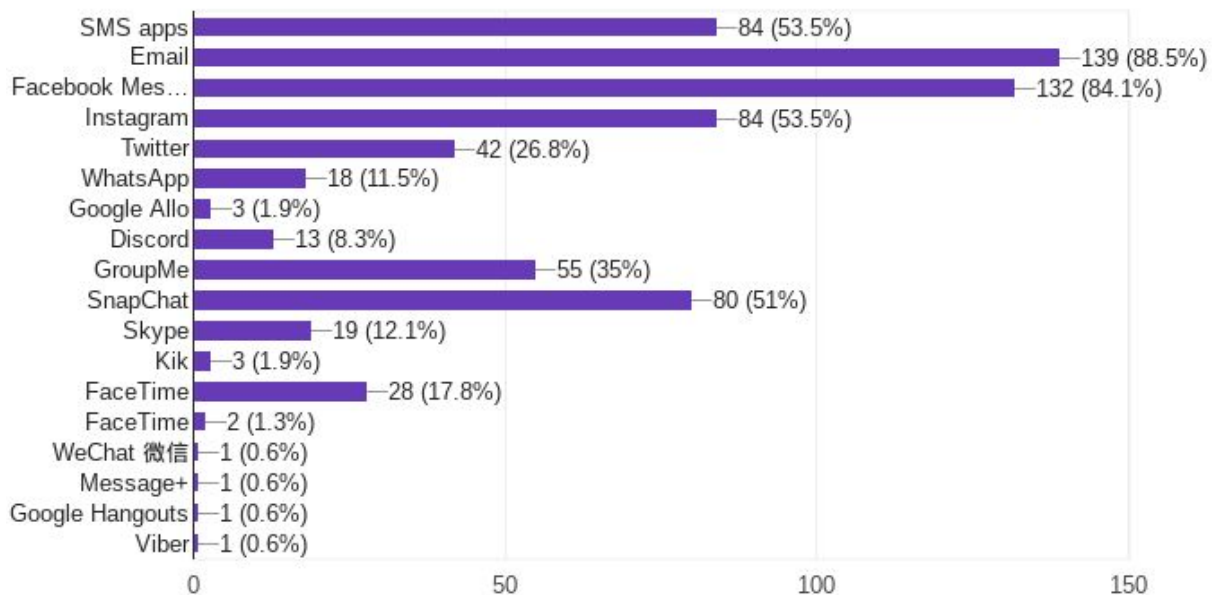
Response to Studio Session

One of the primary criticisms of our project that we heard in our studio session was that we our topic of mobile messaging was too narrow and was essentially a "solution looking for a problem". We decided to take a step back and rather than focusing specifically on mobile messaging, we decided to look at the benefits of interpersonal connection that are lost in digital communication. We also need to make sure we look into making sure we create a good peer to peer dynamic with communication. Among the positive things that we heard in our studio session, we were glad to hear that people are seeing that we have a good team dynamic going on and that we work very well together. It is also good that everyone knows about our passion for the project, we really do want to make an impact with this project and get everyone thinking about how we communicate in the digital realm.

Data Synthesis

From the survey that we distributed, we can see that most users have a plethora of messaging apps that they use, with the most popular being Email, Facebook Messenger, and SMS applications.

What messaging apps do you use?
157 responses

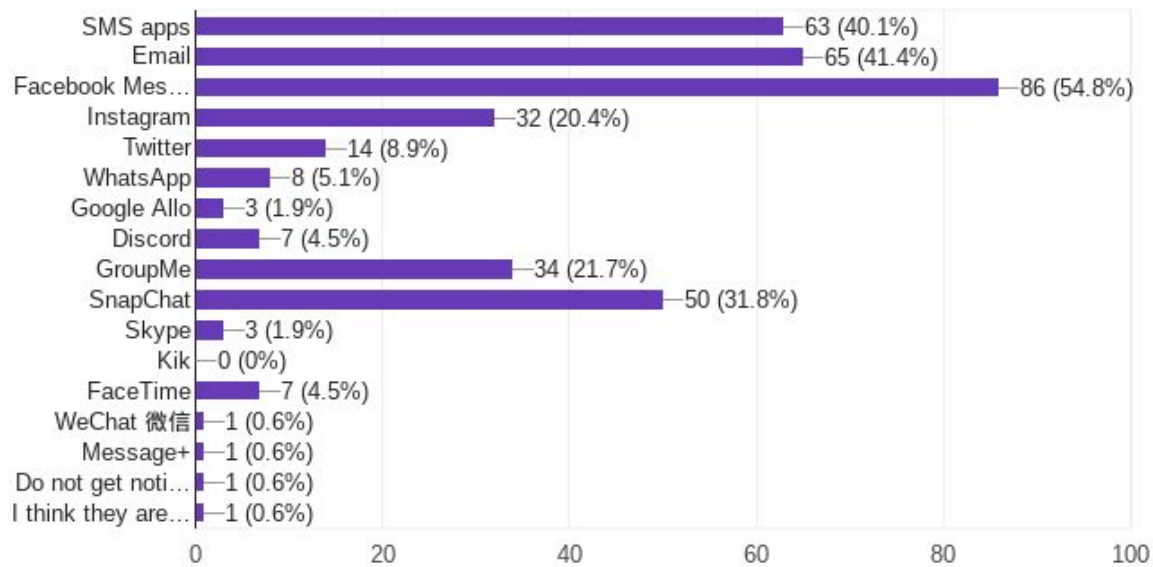| App	Responses
SMS apps	84 (53.5%)
Email	139 (88.5%)
Facebook Mes…	132 (84.1%)
Instagram	84 (53.5%)
Twitter	42 (26.8%)
WhatsApp	18 (11.5%)
Google Allo	3 (1.9%)
Discord	13 (8.3%)
GroupMe	55 (35%)
SnapChat	80 (51%)
Skype	19 (12.1%)
Kik	3 (1.9%)
FaceTime	28 (17.8%)
FaceTime	2 (1.3%)
WeChat 微信	1 (0.6%)
Message+	1 (0.6%)
Google Hangouts	1 (0.6%)
Viber	1 (0.6%)

The survey also informed us that most users believed that Facebook Messenger had the best notification experience, followed closely by Email, SMS and even Snapchat. When creating a

solution, it would be best for us to try to identify what these apps did best and also see how the other apps could be improved.

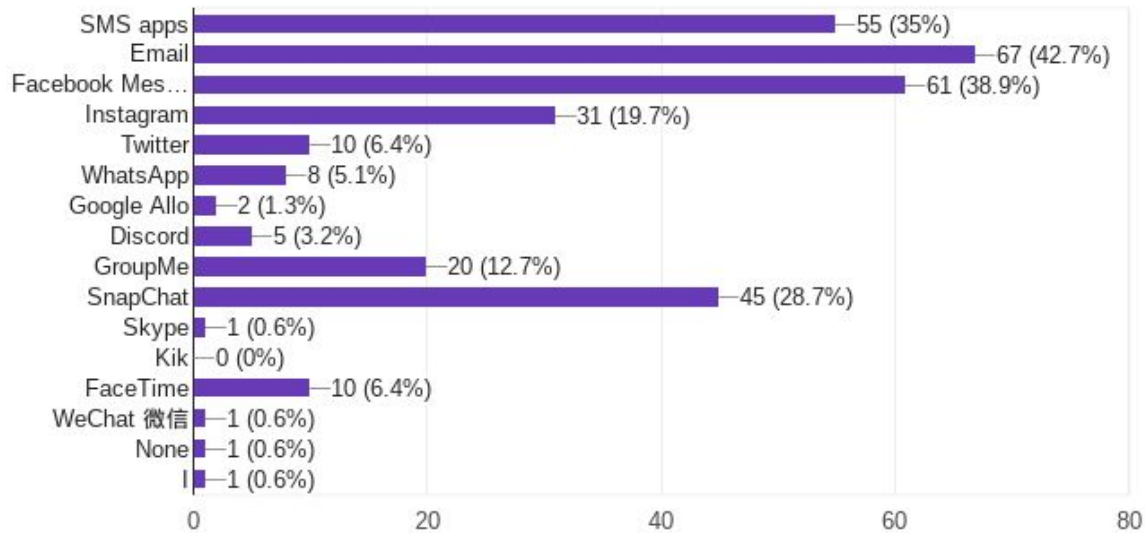## What Apps have the best notification experience?

157 responses

App	Value
SMS apps	63 (40.1%)
Email	65 (41.4%)
Facebook Mes...	86 (54.8%)
Instagram	32 (20.4%)
Twitter	14 (8.9%)
WhatsApp	8 (5.1%)
Google Allo	3 (1.9%)
Discord	7 (4.5%)
GroupMe	34 (21.7%)
SnapChat	50 (31.8%)
Skype	3 (1.9%)
Kik	0 (0%)
FaceTime	7 (4.5%)
WeChat 微信	1 (0.6%)
Message+	1 (0.6%)
Do not get noti...	1 (0.6%)
I think they are...	1 (0.6%)

Following a very similar trend, the data also displayed the four previously mentioned applications as utilizing the best user interface as well.

What Apps have the best user interface?

157 responses

- SMS apps — 55 (35%)
- Email — 67 (42.7%)
- Facebook Mes… — 61 (38.9%)
- Instagram — 31 (19.7%)
- Twitter — 10 (6.4%)
- WhatsApp — 8 (5.1%)
- Google Allo — 2 (1.3%)
- Discord — 5 (3.2%)
- GroupMe — 20 (12.7%)
- SnapChat — 45 (28.7%)
- Skype — 1 (0.6%)
- Kik — 0 (0%)
- FaceTime — 10 (6.4%)
- WeChat 微信 — 1 (0.6%)
- None — 1 (0.6%)
- I — 1 (0.6%)

Our last major data point that we identified was that approximately a quarter of users surveyed use communication applications and over a third of users surveyed spend at least one to two hours.

About how much time do you spend on these apps per day?

157 responses

- 0 -1 hours
- 1-2 hours
- 2-4 hours
- 4+ hours

24.2%
38.9%
31.2%
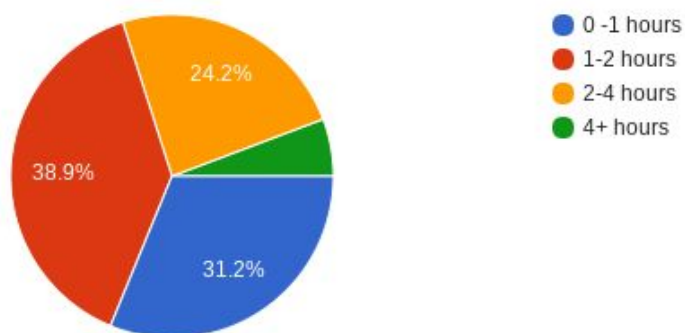
Observational Study

Through the multiple interviews that we have performed within the time given, we have come up with data that will be refined through further collection. Input that we received through in-person interviews, stated that from a gamer's perspective, Discord is utilized for many of their

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communications within games and social activities. The user stated that Discord is recommended because it is simple to use and allocates minimal resources to allow users to consistently interact with each other in real-time. Other interviewees stated that Snapchat and normal text messaging were the best apps for social interaction. Snapchat was identified as the most streamlined app for efficient communication. It employs a feature that leads people to focus on recent communication due to the fact that it deletes previous messages. The one thing that was stated, in which Snapchat did not prevail over, was the notification experience. Snapchat utilizes a feature where it notifies when a contact is currently typing. This degraded the notification experience for them because it gives off a misleading alert to the user that a message has been received. These data points have been the most insightful thus far and more in-person interviews will be conducted in order to fine-tune the data.

Moving forward

Through our research and the analysis of the data we have collected, we have considered a variety of solutions that could solve the problem at hand. Our data we've gathered has indicated that a potential solution on the mobile platform would definitely be a good idea. For our design, we believe success should be measured through a reduction in time usage with messaging apps. Another criteria for success could be making sure that context is retained throughout conversations and the balance between synchronous and asynchronous communication is maintained.

References

[1]   (Information Overload) Gomez-Rodriguez, Manuel, Krishna P. Gummadi, and Bernhard Schoelkopf. "Quantifying Information Overload in Social Media and Its Impact on Social Contagions." In ICWSM, pp. 170-179. 2014.

[2]   (Social media and depression) Sidani, Jaime E., Ariel Shensa, Ana Radovic, Elizabeth Miller, Jason B. Colditz, Beth L. Hoffman, Leila M. Giles, and Brian A. Primack. (2016) "Association between social media use and depression among US young adults." Depression and anxiety33, no. 4 : 323-331.

[3]   (Impact of social media on interpersonal communication) Vevere, Velga. (2015) "Impact of social media on interpersonal communication patterns." Socialiniu Mokslu Studijos 7, no. 1 .

[4]   TEDtalksDirector. 2012. Connected, but alone? | Sherry Turkle. (April 2012). Retrieved February 4, 2018 from https://www.youtube.com/watch?v=t7Xr3AsBEK4

[5]   Inc. Great Valley Publishing Company.Retrieved February 4, 2018 from http://www.socialworktoday.com/archive/051313p10.shtml