

Assignment M2

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Abstract—The investigated task involves viewing videos on the Instagram app available to smartphone/tablet users. Instagram does not have a function that allows users to fast-forward, rewind, or pause video content. However, there are many similar applications that do allow for this functionality. Evaluating existing interfaces and comparing them to Instagram was the first method of needfinding employed. Next, log data surrounding the activity of Instagram users were analyzed. Finally, a survey was conducted, which helped gain a better understanding of users. A second iteration of needfinding is planned to address unanswered data items and new questions that arose from the first iteration.

1 EVALUATION OF EXISTING INTERFACES

The first needfinding method employed involved evaluating existing interfaces, precisely the efficiency of each. YouTube, Facebook, Twitter, Snapchat, and Instagram were evaluated. Five trials were conducted for each application. Each trial was timed starting from the opening of the application, to when the selected video began playing. The phrase “recipes” was searched for in each app. The goal of each trial was to determine how long it took to search for and play a recipe video on each application. The results can be seen in Table 1 below.

Table 1 — The average amount of time it takes to search for and play a recipe video by using the keyword “recipe” on each app.

YouTube	Facebook	Instagram	Twitter	Snapchat
7.55 seconds	8.15 seconds	11.37 seconds	11.05 seconds	7.63 seconds

The key takeaways from this needfinding method are that these apps do not vary much efficiency-wise. It took roughly less than twelve seconds to search for a

recipe video and play it regardless of which app the participant used. However, the *content* varies amongst the five applications as well as the overall user experience. For example, YouTube shows ads before one can watch their selected video. Furthermore, YouTube displays sponsored videos at the top of their search results. This significantly impacts the user's experience and their goals. YouTube exposes its users to more distractions and search results that may detain the user from their goals. Furthermore, Twitter users need to tap on "Videos" when searching for "#recipes". This way, the user is only viewing tweets with videos attached. Similarly, more tasks are required to search for a video on Instagram. Users must tap on the search icon on the toolbar at the bottom of the interface, then tap the search bar, type in the account or hashtag they are searching for, and tap on Accounts, Audio, Tags, or Places depending on what they are searching for. In this case, hashtags were selected. In other words, Twitter and Instagram have more tasks and subtasks.

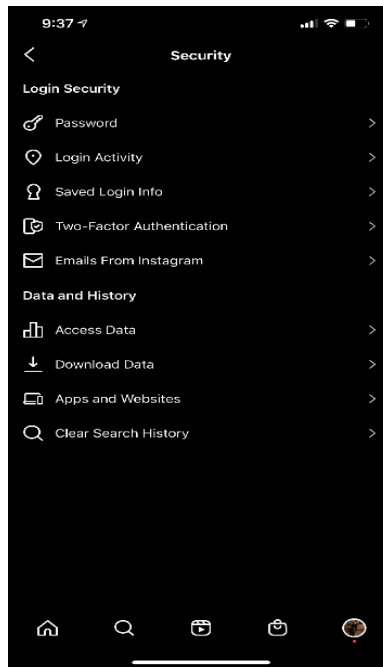
Concrete steps were taken to avoid biases while performing this needfinding method. A think-aloud approach was used while running each trial. This way, typos, and other notes were recorded right away. Without this approach, the typos made during the trials and the ads that appeared before certain YouTube videos might not have been noted. Moreover, confirmation bias was also avoided during the needfinding method. The lack of a pause button on Instagram videos (task problem) was not focused on whatsoever. The focus of this needfinding method was to determine how efficient each application is when it comes to searching for a genre and viewing associated content (user goal). Unfortunately, avoiding participant observation bias was not doable using this method. The averages in table 1 are skewed due to the participant being an "expert" user. Someone with larger fingers, poor eyesight, or less experience using smartphones may take longer to complete each trial. Trials should have been conducted with additional participants to avoid this type of bias.

2 ANALYZING LOG DATA

The second needfinding method employed was analyzing log data. Log data was retrieved for three different users, each with different habits and interests. See

figure 1 to see how data was retrieved through the Instagram app. Data lists such as “Your Topics”, “Your Reels”, and “Ad Interests” were downloaded and reviewed. The “Your Topics” list displayed an expansive collection of topics based on the content the individual consistently views. This collection of topics is used to curate recommendations for the user. Furthermore, the “Ad Interest” list encompasses a vast list of ad types for the individual user. This list is based on the content the user views and recommends ads that the user may be interested in. The key takeaway of this needfinding method is that Instagram captures much information about its users. This information says a lot about the individual user’s goals and interests.

Figure 1—Users can retrieve the data about their accounts by going into Settings, then Security, and tapping on Download data. Source: Instagram.



A substantial quantity of qualitative data was retrieved. To organize this data and restructure it to be visually represented would require much time and about seven more participants (to capture potential trends). While the data obtained helps understand user goals and interests, the data structure makes it difficult to

restructure it in a meaningful way. This needfinding method was not a failure. However, interviews are a cheaper alternative to identify user goals.

Confirmation bias was avoided during the method by focusing on the content of the data instead of searching for specific data that supported the task problem (lack of pause function). Furthermore, recruiting participants with different interests, goals, and habits eliminated bias. Each data set was different for each user, introducing a wide variety of user interests. The goal of this needfinding method was to identify user's tasks (what users are physically, cognitively, and socially doing). This method was unsuccessful in helping identify this data item because the data was more content-focused than activity-focused. Instead, user goals were highlighted. Analyzing interface reviews might have been a better alternative to identify user tasks.

3 SOCIAL MEDIA SURVEY

Fifty responses were obtained from survey participants. Each survey question addressed one or more data items. Survey questions can be viewed in *Appendix 7.1 Survey Questions*. The raw data was used to create three graphs that visually correspond with different data items.

Figure 2 in *Appendix 7.2 - Survey data* displays the amount of time male and female participants spend using social media applications. The key takeaway of this graph is that most survey respondents are at the very least *familiar* with social media apps, which means they are not novice users.

Figure 3 in *Appendix 7.2 - Survey data* displays the number of survey participants per age range. This data is skewed since individuals under 18 are not enrolled in Human-Computer Interaction. This may also skew other aspects of the survey data since younger individuals might have different interests and goals. The key takeaway from this graph is a higher trend of use amongst students within the 18-29 age range.

Figure 4 in *Appendix 7.2 - Survey data* displays what percentage of survey participants reported using YouTube, Facebook, Instagram, Twitter, and Snapchat. Most respondents reportedly use two or more applications. One survey

participant responded that they do not use any social media apps. Several users entered additional apps that were not listed to answer question 4 (see *Appendix 7.1 Survey Questions*). Reddit and LinkedIn were mentioned more than once. The key takeaway of this graph is that most survey respondents use more than one social media app (perform different tasks).

A few respondents also listed the different *genres* of content they like to view on each app in response to question 8. The key takeaway here is that some users feel different apps cater to different kinds of content.

One bias that is common amongst surveys is the social desirability bias. Users may feel obliged to answer a certain way if they believe their true answer is socially undesirable. For example, a user that spends 9+ hours using social media apps may not want to admit that in a survey. The survey was extended to fifty users instead of twenty-five to combat social desirability bias. This way, the data is a more accurate representation of all social media users since it uses a larger sample population. The survey also lacks questions and answers that may identify participants. This allows responders to supply honest answers since nothing is tying their answers to their identity. Another bias avoided is voluntary response bias. The survey title and description were broad (see *Appendix 7.1 Survey Questions*). Responders with strong opinions surrounding social media might have been attracted. However, responders with strong opinions surrounding a *specific* app had no idea if the app they feel strongly about was captured in the survey. In other words, the survey content was limited to responders before them taking the survey.

4 DATA INVENTORY

4.1 Who are the users?

The survey respondents range from ages 18 to 49. Most of them fall within the 18-29 age range. Based on the survey responses, it seems like most users are proficient in social media apps.

4.2 Where are the users?

Most surveyed users reside in the United States. A few live in Europe and India. Furthermore, many respondents claim to use social media apps while lounging at home, at work, while commuting, while waiting for food at a restaurant, hanging out with friends, everywhere.

4.3 What is the context of the task?

A few survey respondents admitted to using social media apps while commuting. Their impending arrival may divert their attention from the content they are viewing. Some respondents admitted to using social media apps while waiting for their food at a restaurant. Users are viewing and listening to content while simultaneously listening for their order to be called. Some respondents admitted to using social media while hanging out with friends; this implies their attention is divided between the content on their phones and the people near them. Many respondents responded that they use social media while lounging at home, which implies their attention is not as divided as in public settings. The problem space focuses on users whose attention is divided. This set of users could benefit from a pause button, so they do not have to miss content while out and about.

4.4 What are the users' goals?

According to the survey responses, users use social media apps with various goals in mind. Some use social media to watch tutorials, catch up on social and political news, find recipes, watch sports-related content, watch comedy skits, watch product reviews, and view memes. These goals apply to content *viewers*; however, none of the needfinding methods employed returned user goals that apply to people who actively *post* content. A better understanding of user goals may be obtained through interviews or a second survey. It would be good to know if content creators try to compensate for the lack of a pause button on Instagram videos or switched platforms instead.

4.5 What do the users need?

None of the needfinding methods employed provided insight into what users need. An additional question could have been added to the survey asking participants if they had any feedback regarding specific social media apps. If

another survey is created and sent out to users, it will incorporate a question of this nature to shed light on this data item. Some survey participants responded to question 8, describing the *types* of content they prefer to view on different apps. It would be nice to know *why* those preferences exist. An additional optional question could have been added to the survey asking users *why* they have such preferences (if any). This question was not added to avoid asking a leading question.

4.6 What are the users' tasks?

User tasks involve typing and searching for a hashtag, account, or video (depending on which app they are using) and physically swiping through the search results to view the content they are looking for (goal). These user tasks were identified during the first needfinding method employed. Some users physically type messages to send to their friends or comments under specific posts. This task was identified while analyzing survey responses.

4.7 What are the users' subtasks?

The users' subtasks are opening the social media app they wish to use. This task was identified in the first needfinding method. Based on survey feedback, another subtask is choosing which social media app to open based on the content the user wishes to view. Several respondents seem to use different apps based on the content they are looking for.

5 DEFINING REQUIREMENTS

Requirements drawn out of the data inventory include efficiency and learnability. Functionality is another concern, specifically the ability to pause and fast-forward a video on Instagram. This functionality should be available to Instagram users; moreover, it should be an easily discoverable function. Users should be able to *learn* how to pause videos quickly, thus allowing the function to become invisible. The functionality should also be efficient, meaning it should not take long to pause a video; ideally, it should be a tap on the screen.

The first metric to evaluate the efficiency of the scrub bar on Instagram videos is time (in seconds). How long does it take a user to pause a video on Instagram using this new function? How long does it take a user to fast-forward or rewind a video? How many errors are made in the process? Additionally, how long will it take users to identify this new functionality? How long will it take for this feature to become invisible to the user?

6 CONTINUED NEEDFINDING

Based on the outcome of the needfinding methods conducted, another iteration of needfinding will be administered to address new questions that arose during the first round of needfinding. Furthermore, there are a couple of data items that were not answered. While the goals of *viewers* were identified, the goals of *creators* were not. Their goals are just as valuable since they are the ones posting content. Moreover, users were not asked to provide feedback on the social media apps they use. Asking users for feedback may help identify user needs, a data item that is currently unanswered. For the next iteration of needfinding, five social media users will be interviewed. Participants will be asked what types of content they like to view, which apps they use, and what feedback they have, if any, for each app. In addition, product reviews will be analyzed to identify user needs.

7 APPENDICES

7.1 Survey Questions

Survey Title: Social Media Survey

Survey Description: The purpose of this survey is to gather general data surrounding users of social media.

Question 1. Please state your gender

Answers: Male, Female, Prefer not to answer

Question 2. What is your age?

Answers: Under 12, 12 - 17, 18 - 24, 25 - 34, 35 - 44, 45+

Question 3. Where are you located?

Answer: Open-ended

Question 4. Which apps (if any) do you use during a typical week? Select all that apply:

Answers: YouTube, Facebook, Instagram, Twitter, Snapchat, Other: Please specify

Question 5. In what settings do you typically use social media apps?

Answer: Open-ended

Question 6: How much time do you spend per week on social media apps?

Answers: 1 - 2 hours, 3 -5 hours, 6 - 8 hours, 9+ hours

Question 7. What types of content do you like to view on the apps chosen in question 4?

Answer: Open-ended

Question 8. If you checked more than one app in question 4, which app or apps are better suited to watch the content you enjoy?

Answer: Open-ended

7.2 Survey Data

Figure 2 — Social media usage amongst males and females (within Human-Computer Interaction course).

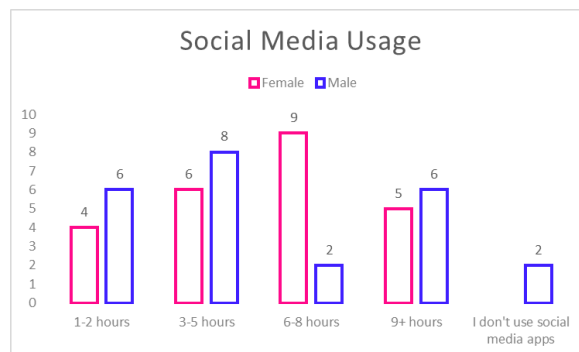


Figure 3—Social media usage amongst different age groups (within Human-Computer Interaction course).

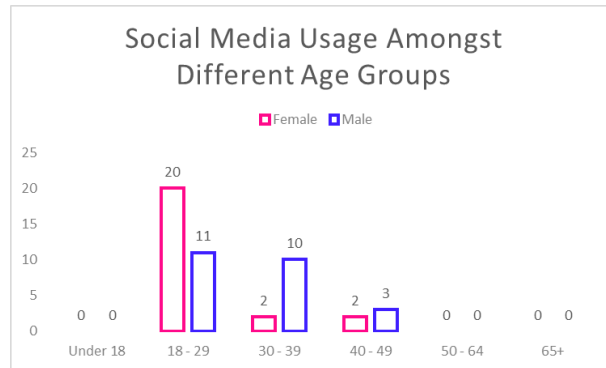


Figure 4—App usage amongst survey participants.

