COMICHUB

IPHONE APPLICATION USABILITY TESTING

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INST 702 Course Project

6 May 2016

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INTRODUCTION

In general, comic book retailers have limited access to systems and inventory management tools. Due to the narrow market, many point-of-sale (POS) systems do not cater to comic book stores and fail to fully integrate with customer subscription management systems. Stu Colson, owner of New Zealand's Heroes for Sale comic book store, suffered through these difficulties and decided to create his own system, ComicHub, which provides both a retailer POS system, with dozens of sales analysis features, and a mobile app used to manage customer subscriptions. Colson has been using ComicHub internally at his own store, and he has begun to reach out to other stores as early adopters and testers for ComicHub.

Fantom Comics, located in the Washington D.C. neighborhood Dupont Circle, hopes to be an early adopter of ComicHub. The owners of the store — Esther Kim, Matt Klokel and Dave Bishop — have been negotiating rates, service and enhancements with Colson before fully launching ComicHub for Fantom Comics. They aimed to launch the new system by early May 2016. However, because ComicHub is still under development, Fantom has some concerns about user accessibility and ease of use for transitioning from their current subscription management system, the industry giant Comixology.

The authors of this study conducted an evaluation of the ComicHub iPhone application using a test account. An iPhone with the app pre-installed was connected to a laptop using Lookback software to record each participant's face, comments and navigation choices. The authors rotated test administrator and observer responsibilities and were all present in the testing room. In addition, Fantom Comic's owner Esther Kim was a silent observer of the tests. The testing session captured participant demographics, questions and feedback in addition to the recorded video. The session concluded after a discussion with all participants led by the authors and Kim to gather additional feedback and general recommendations for the app.

EXECUTIVE SUMMARY

The ComicHub testing session was conducted on April 17, 2016, during a gathering of Fantom Comic employees and regular subscribers. The testing session took place in the Washington, D.C., home of one of the testing administrators. The purpose of the test was to evaluate the usability of the ComicHub iPhone app. The researchers tested four participants, with each test lasting about 20 minutes. The test scenarios only differed in minimal content choices, which is further explained in following sections of the report.

Participants were all in their late 20s and had been subscribing to comic books for anywhere from a year and a half to more than 10 years. The range of total series to which the participants subscribed ranged from 8 to 50. All participants were familiar with Comixology, the most popular comic book subscription management system and consistently one of the top grossing iPad apps over the past few years.[1]

Overall, each participant said he or she found ComicHub to be a positive experience, though each had recommendations for improving the app's functionality. Participants generally liked the overall look and feel of the app, calling it "sleek" and "built for 2016," and one test user positively compared its design to

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[1] "About Us - Comics by comiXology." 2013. 9 May. 2016 <https://www.comixology.com/about>

a dating app. Each participant was able to successfully complete the full list of tasks but with some initial errors that slowed down their process. The most frequent problems identified during the test include the following:

- Some terminology is confusing to users (example: the app uses the word "brand" to describe what participants would consider a "franchise")
- The app's filter doesn't reset when you move from one section to another
- The app lacks a search function
- There is no help section
- Loading time is slow
- Store map lacks a locator feature

This document contains information on participants' task completion rates, the time they spent on each task and their errors. It also includes their satisfaction ratings, general feedback and recommendations for improvements to the app. The Appendices section includes copies of the background questionnaire, post-task questionnaire, post-session overall subject questionnaire and task scenarios.

METHODOLOGY

Sessions

Participants were recruited from within the store-related social circle of one of the test administrators who had a vested personal interest in the subject matter and who knew a number of people with significant interest in comic books and comic book subscriptions. Given that the target demographic was such a niche interest area, this seemed to be an appropriate way of recruiting participants, despite potential bias of one of the test administrators. Since somewhat expert knowledge of comic books and comic book subscription was a necessary prerequisite of test participants, the team determined that the bias of this test administrator was an acceptable liability.

Each individual session took between 20 and 30 minutes and started with each participant answering a pre-questionnaire to gather basic demographic information about themselves and their experience with comics. A copy of the pre-test questionnaire can be found in Appendix A. After completing the initial pre-test questionnaire, participants sat in front of a laptop computer that was connected to a smartphone running the ComicHub app via Lookback, a software program that records the interactions of a test subject while using a mobile app. The task administrator gave each test user a few minutes to browse the ComicHub app freely before completing a series of tasks. Two observers watched the test and took notes, documenting the test subjects' interactions and progress with each task. The lists of tasks can be found in Appendix D.

After completing the list of tasks, the task administrator and observers debriefed the users and asked them to describe what they liked and did not like about the system and name any suggestions they had for improving the system. Following the individual testing sessions, the research team gathered all of the participants for a group discussion, during which they could share their overall thoughts and suggestions for improvements. Participants also completed the System Usability Scale (SUS), a 10-item questionnaire with five possible responses ranging from "strongly agree" to "strongly disagree." Results of the SUS can be found in Appendix B.

Participants

All participants were active members in the comic book community and were regular customers at Fantom Comics. The four participants took part in the test on Sunday, April 17, 2016. The results of the participants' pre-questionnaire are as follows:

	Participant 1	Participant 2	Participant 3	Participant 4
What is your age?	27	28	27	29
What is your sex?	Female	Male	Female	Female
Years subscribed to comics?	1.5 years	10 years	3 years	2.5 years
Number of series subscribed to?	~8	~50	~15	~20
How often subscribe to new comic series?	2-3 times per year	Several times per month	Once a month	Once a month
How have you subscribed to comics in the past?	Comixology	Comixology	Comixology, "the only way!"	Fantom's webpage
Have you used an electronic subscription app in the past?	Comixology	Comixology, Marvel Unlimited	Comixology app	Comixology

Evaluation Tasks/Scenarios

The task scenarios were created by Michael Brescia, Jenny Hottle and Aubrey Scarborough. Scarborough has in-depth knowledge of comic book subscriptions and therefore was already well-versed in possible scenarios and tasks that users of the ComicHub app might try to accomplish. Test participants attempted to complete each of the below tasks. A detailed description of each task scenario can be found in Appendix D.

1. Subscribe to a comic drawn by Phil Noto.
2. Favorite a comic by Annie Wu.
3. Purchase a variant cover by Fiona Staples.
4. Check to see if you already own Steven Universe Vol. 2.
5. Check to see if you're still subscribed to Dark Horse Star Wars comics.

6. Find some Marvel Star Wars comics and subscribe to them.
7. See if any stores in Manhattan use ComicHub.
8. Add your birthday to your profile.

As previously mentioned, these test scenarios were minimally changed in order to fully test the app. Without store support, the test account did not have the ability to cancel subscriptions or clear some of the choices made during the user tests. In response, the team replaced some of the specific creator names. For example, in Task 1, one user was asked to subscribe to a comic written by Chip Zdarsky instead of drawn by Phil Noto. This change still tested the filtering capabilities of the app.

RESULTS

Task Completion Success Rate

The research team took turns acting as the test administrator and observers. The administrator read each task out loud, then asked participants to use the "think-aloud" method as they attempted to complete the tasks. The observers, meanwhile, wrote detailed notes about the session, including the user's actions and what he or she was saying out loud. Participants occasionally asked questions while taking the test, and the observer reminded them that he or she would answer questions at the end of the session.

All participants successfully completed all of the tasks, except for task 5. Three out of four participants (75 percent) successfully completed task 5, which asked participants to confirm whether or not their user profile was still subscribed to Dark Horse Star Wars comics.

TASK COMPLETION RATES

Participant	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Task 8
1	√	√	√	√	-	√	√	√
2	√	√	√	√	√	√	√	√
3	√	√	√	√	√	√	√	√
4	√	√	√	√	√	√	√	√
Success	4	4	4	4	3	4	4	4
Completion Rates	100%	100%	100%	100%	75%	100%	100%	100%

Time on Task

The testing software recorded the time on task for each participant. Some tasks were inherently more difficult to complete than others and is reflected by the average time on task. The participants all made note of the loading times for finding and filtering items, and loading the library of items. While most

recognized that the longer wait time may be associated with using a test account, the test facilitators were unable to confirm their hypothesis. Even if the loading times persist in future use of the app, two of the participants liked the atom loading screen animation and none of the participants showed frustration during their wait. Due to the loading screens, the following time of task results may include up to 5 seconds of loading time.

Task 1 required participants to find comics by the artist or writer and subscribe to one. It took an average of 133 seconds (more than 2 minutes) to complete — the longest average completion time of all the tasks. Completion times ranged from 67 seconds to 206 seconds.

Task 2 asked participants to favorite a comic by artist and took 108 seconds on average to complete. Times ranged from 68 seconds to 137 seconds.

Task 3 required participants to purchase a variant cover by artist. It took an average of 98 seconds (about a minute and a half) to complete this task, although completion times ranged from 28 seconds to 136 seconds.

For task 4, participants were asked to check their account and see if they already owned a particular trade paperback. For this task, participants took an average of 82 seconds to finish. This task had the largest range of completion times: 19 seconds to 226 seconds.

Task 5 asked participants to check their subscriptions and see if they were still subscribed to a series of comics. This task, the second shortest, took an average of 38 seconds to complete, with completion times ranging from 26 seconds to 54 seconds.

For task 6, participants were asked to find a certain series by publisher and brand, and subscribe to them. Task 6 took an average of 122 seconds, and completion times ranged from 35 seconds to 187 seconds.

Task 7 asked participants if they could find out if any stores located in Manhattan use ComicHub. Participants took an average of 117 seconds, with times ranging from 52 seconds to 159 seconds.

Task 8 required participants to add their birthday to the user profile, which took an average of 33 seconds to complete. This was the shortest average time spent on task. Completion rates ranged from 29 seconds to 41 seconds.

	Expert*	P1	P2	P3	P4	Avg TOT**
Task 1	22	124	67	206	136	**133**
Task 2	10	137	106	68	121	**108**
Task 3	36	108	28	119	136	**98**
Task 4	10	19	48	226	35	**82**
Task 5	29	54	31	26	39	**38**
Task 6	55	107	35	187	160	**122**
Task 7	27	159	52	159	98	**117**
Task 8	23	29	33	41	27	**33**

* The expert TOT is based on test facilitator Scarborough performing the tasks without practicing a talk out loud method of recording the scenario steps. These times would ideally reflect the actual amount of time that a user would spend in managing their subscriptions.
** Average TOT for test participants only and do not include expert TOT.

Errors

The research team captured participants' actions using Lookback, which they later reviewed to determine the number of errors participants made while trying to complete the task scenarios. Two observers also took handwritten notes during the usability tests.

Only one task had a critical failure. Participant 1 was unable to complete Task 5, which required users to check their subscriptions and see if they are still subscribed to Star Wars comics published by Dark Horse. The test required the participants to look into the "inactive" subscriptions tab to find the Dark Horse published comics. However, the participant only looked at the "current" subscriptions tab and determined that the account was not subscribed to any Dark Horse comics.

The rest of the errors that occurred during the usability test were deemed noncritical errors, meaning the errors didn't prevent successful completion of the task scenario. The tasks with the most errors were Tasks 1 and 4, both of which had four total noncritical errors.

For Task 1, which had users subscribe to a comic drawn by a specific artist, participants 3 and 4 both committed two errors. Participant 3 checked the app's subscription history first, then tried to filter by publisher before correctly deciding to filter by artist. Participant 4 first tried to look at the subscription history and then tried the non-subscription history section before correctly using the app's filter to find the artist name.

The task with the next highest number of errors was Task 7, with three total errors. Task 7 asked users to find out what stores in Manhattan, if any, use ComicHub. Participant 1 committed two errors in this task. First, the participant checked the user profile, and then she closed the app before trying again. It seemed closing the app was her attempt at "resetting" the app. Participant 3 changed her location in

the app's user profile before correctly clicking "add store" and moving the map to the New York City area.

Tasks 2, 3 and 6 had two total errors each.

In Task 2, Participant 1 went one step beyond the correct screen where users can favorite a comic book series. She ended up at the purchasing screen, but she corrected her mistake by taking a step back and favoriting the selected series by clicking on the heart at the top corner of the item. Participant 4 followed the same path as Participant 1 and corrected the error in the same manner, by returning to a previous screen and noticing the small heart.

Task 3 asked participants to purchase a variant cover by comic book artist Fiona Staples. Participants 1 and 4 used the wrong filters to try to find a variant cover. Participant 1 did not notice that the filter had not reset itself after a previous search, so the search initially did not return any results until the participant manually reset the filter criteria. Participant 4 did not select "variant cover" on the filter criteria, which led to an overwhelming number of results to sort through.

Participant 4 committed two errors while trying to complete Task 6 (find a Marvel Star Wars comic and subscribe to it). The user first closed the app, and the next mistake was not filtering by brand.

No participants committed any errors in task 8, which asked testers to update the user profile's birthday section. Participants noted that this task was easy to perform due to familiarity in changing profiling settings for most types of apps and websites.

ERRORS

	P1	P2	P3	P4	Total Errors
Task 1	-	-	2	2	4
Task 2	1	-	-	1	2
Task 3	1	-	-	1	2
Task 4	-	-	4	-	4
Task 5	1	-	-	-	1
Task 6	-	-	-	2	2
Task 7	2	-	1	-	3
Task 8	-	-	-	-	0

Summary of Data

The following table displays a summary of the test data. The lowest completion rate, highest errors and longest time spent on task are highlighted in red.

Task	Task Completion	Avg Time on Task	Errors
Task 1	100%	133	4
Task 2	100%	108	2
Task 3	100%	98	2
Task 4	100%	82	4
Task 5	75%	38	1
Task 6	100%	122	2
Task 7	100%	117	3
Task 8	100%	33	0

Overall Metrics

TASK RATINGS

After the conclusion of the task portion of the usability test, participants rated the app based on 10 items. These items, part of the System Usability Scale (SUS) Questionnaire, include:

- I think that I would like to use this system frequently.
- I found the system unnecessarily complex.
- I thought the system was easy to use.
- I think that I would need the support of a technical person to be able to use this system.
- I found the various functions in this system were well integrated.
- I thought there was too much inconsistency in this system.
- I would imagine that most people would learn to use this system very quickly.
- I found the system very cumbersome to use.
- I felt very confident using the system.
- I needed to learn a lot of things before I could get going with this system.

All participants agreed that they would use this system frequently, and they all agreed that they found the system easy to use. They all agreed that most users would find the system easy to use. They also said that they did not feel users would have to learn much before getting going with the system. Two participants had neutral feelings about the complexity of the app, but the other two participants disagreed with the statement that the app was unnecessarily complex. Two participants also felt neutral toward the statement, "I felt very confident using this system," but the other two participants agreed with this statement.

See table below for the full list of responses, where a response of 1 represents "strongly disagree" and a response of 5 indicates "strongly agree."

STATEMENT	P1	P2	P3	P4
1. I think that I would like to use this system frequently.	4	4	4	5
2. I found the system unnecessarily complex.	3	2	2	3
3. I thought the system was easy to use.	4	4	4	4
4. I think that I would need the support of a technical person to be able to use this system.	2	1	1	2
5. I found the various functions in this system were well integrated.	4	4	4	3
6. I thought there was too much inconsistency in this system.	1	1	2	3
7. I would imagine that most people would learn to use this system very quickly.	4	5	4	4
8. I found the system very cumbersome to use.	2	1	1	3
9. I felt very confident using the system.	3	4	4	3
10. I needed to learn a lot of things before I could get going with this system.	1	1	1	2
SUS Score	**75**	**87.5**	**82.5**	**65**

The average SUS score for the ComicHub app is 77.5, with 2 of the responses falling above average and 2 below. This average falls just shy of the industry standard of 80.3, indicating a high score and probability of users recommending the app to their friends. However, Participant 4 did respond with a 65, which is below the industry average of 68.[2] A score of 68 generally means that the site or app is doing fine, but there are a number of improvements that could be made. Seeing as the overall score is still shy of perfectly, with some obvious difficulty from one user, ComicHub may want to seriously consider some of the usability study findings and recommendations.

LIKES, DISLIKES, PARTICIPANT RECOMMENDATIONS
Upon completion of the tasks, participants provided feedback for what they liked most and least about the website, and recommendations for improving the website.

In general, participants expressed their enthusiasm for the app and desire for it to be used at their local comic book stores. Their opinions are reflected in the System Usability Scale. "I'd really like it if Fantom switched to this app," one participant said. "I easily see myself using this app during my commute to work."

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[2] "How To Use The System Usability Scale (SUS) To Evaluate The ..." 2015. 9 May. 2016
<http://usabilitygeek.com/how-to-use-the-system-usability-scale-sus-to-evaluate-the-usability-of-your-website/>

Liked Most

The following comments capture what the participants liked most:

- "I like the history feature and the ability to see what's been taken off of my list. Having an app, period, is great."
- "I liked filtering. It made the searches clear. Comixology is a lot more finicky with titles."
- "It's intuitive. It's a good user experience."
- "I like the scope of the artists included in the app. It's not just the heavy hitters or big names."

Liked Least

The following comments capture what the participants liked the least:

- **App navigation**
  - "Scrolling. There's so much scrolling" — noted after trying to find an artist whose name started with a P.
- **Filtering and Searching**
  - "I liked that you could select multiple artists, until I realized that you couldn't."
  - "You need to be careful to deselect filters."
  - "I really want a search function. Filters should clear after the search."
  - "I was expecting to see something like Variant Cover A, B or C. It tells you that you're looking at a variant cover but doesn't specify which one."
- **Other parts of app**
  - "I was confused about some of the terminology. I wonder if they use different terminology in New Zealand (where the app was developed) and that's why I didn't understand some of the sections."
  - "There's no locator button for the map. I'd like to see nearby stores."

Recommendations for Improvement

Participants recommended the following changes to improve the app:

- Search functionality — type a series, artist, publisher, etc. in a search bar instead of relying on the filters
- Add a social media component to the app so users can see what their friends are reading and recommending
- Reset the filter automatically; currently, users have to be careful to manually deselect the filters
- Clarify terminology or add an index of terms, and/or add a help section
- Add a notifications section where users can see upcoming content — what publishers are putting out, what they can expect to receive in the next few weeks
- Add a link to order items on the sidebar, not just on the homepage
- Offer more details on items like variant covers, or adjust variant search to only include single issues not trades or other items
- Add a view cart option to the menu
- Allow for favoriting creators, brands, publishers, etc. or create a preferences page

RECOMMENDATIONS

The recommendations section provides recommended changes and justifications driven by the participant success rate, behaviors and comments. Each recommendation includes a severity rating. The following recommendations will improve the overall ease of use and address the areas where participants experienced problems or found the interface/information architecture unclear.

Filtering

Several tasks (1, 2, 3 and 6) required participants to use the app's filtering search system to find comic books by artist, publisher, brand and more.

Change	Justification	Severity
Automatically reset filters after user completes a search. Add OR/AND search options. Save searches as preferences.	The filters help narrow down content, but if a user doesn't know that doesn't reset on new searches, he or she will end up with useless or null search results. This issue did not cause any critical errors; however, every participant commented that the filter's inability to automatically reset caused initial confusion and slowed down the search process. The participants also expressed interest in saving search options as preferences and being able to combine searches in order to yield more relevant results.	High

Terminology

In Task 6, participants had to find Star Wars comics published by Marvel.

Change	Justification	Severity
Adjust and/or define terminology throughout the app for audiences in different geographical areas.	In Task 6, one participant found confusion with the term "brand" and recommended the developers use the more commonly used word "franchise" to describe a comic book series and related merchandise. In the post-testing discussion, other participants noted similar confusion. Terminology that might be used in one geographical area, such as New Zealand (where the app was developed) might not match with the terminology used in other places.	High

Locator map

Task 7 asked users to search for ComicHub stores in Manhattan.

Change	Justification	Severity
Add "store locations" to sidebar so that it's not just hidden under preferences. Add a search feature to the map. Add a list of locations so users don't have to rely on the map. On map page open, locator point should be at user's current location or their specified city.	Users committed a total of three errors while trying to search for ComicHub stories in Manhattan. Participants said they weren't sure where to find a list or map of store locations. The link "add store" was unclear to two participants. When users did find the map, it automatically loaded a store in a random location, such as London or San Bernardino, California. Users had to zoom out of the map and drag the map view to New York, which would be a difficult task for people who do not have a strong sense of geography.	High

Variant covers

Task 3 asked participants to find a variant cover by the comic book artist Fiona Staples.

Change	Justification	Severity
Add description to variant covers so users can be confident that they know which cover they are purchasing.	While test users ultimately were able to successfully choose a variant cover, one participant noted that the app did not specify which variant cover she was purchasing. Because comic books can have several different cover options, it helps users to know if they can see the variant covers and select one from the group. And if only one variant cover is available, the app should describe what that cover is.	Medium

Search bar

As noted earlier, four tasks (1, 2, 3 and 6) asked participants to use the filter to find comic books.

Change	Justification	Severity
Add a search bar. Add autocomplete to search.	During Task 1, one participant asked if there was a search bar. She clicked around the app's navigation areas but couldn't find one. During the post-testing group discussion, she mentioned her wish for a search bar. Other test users then commented that while they were able to successfully completed the tasks, they thought a search bar would have shortened their search time.	Medium

CONCLUSION

Overall, the participants who tested the ComicHub app said they enjoyed the experience and found it potentially very useful for managing their comic book subscriptions. Given the current market space with its lack of suitable options for electronically managing comic book subscriptions, the test subjects unanimously found it to be superior to Comixology, the only other currently available option electronically managing comic book subscriptions.

While nearly every test participant successfully all of the tasks, some improvements could be made to the app. The research team compiled a list of recommendations based on the actions of test users and these users' ideas. With several improvements — such as an increase in app speed to reduce lag, adding a store locator, having search filters reset by default and providing notifications for the user — ComicHub has the potential to significantly enhance the physical comic book industry's subscription system.

In addition to the immediate recommendations, the participants listed a number of enhancements they would like to see in future versions of the app. This included some previously mentioned items, such as social media capabilities, and a help section or index. The participants were also particularly interested in being able to export their full subscription or pull lists into csv or excel format. They also requested a recommended reading page, based on their own lists as well as their friends' suggestions or public lists. Even without these enhancements, the participants were overwhelmingly enthusiastic about using the app in the future.

In a rather niche market space with extremely limited existing options for consumers, ComicHub provides a solid platform that, with some refinement, is in a position to revolutionize the way consumers order and manage their comic book subscriptions.

APPENDICES

Appendix A — Pretest Questionnaire

1. What is your age?
2. What is your sex?
3. How many years have you subscribed to comics?
4. To how many comic series are you currently subscribed?
5. How often do you subscribe to a new comic series?
6. In the past, how have you subscribed to comic book series?
7. Have you ever before used an electronic subscription or app before to manage comic book subscriptions?

Appendix B — System Usability Scale

POST-TEST SYSTEM USABILITY SCALE (SUS) QUESTIONNAIRE

	P1	P2	P3	P4
1. I think that I would like to use this system frequently.	4	4	4	5
2. I found the system unnecessarily complex.	3	2	2	3
3. I thought the system was easy to use.	4	4	4	4
4. I think that I would need the support of a technical person to be able to use this system.	2	1	1	2
5. I found the various functions in this system were well integrated.	4	4	4	3
6. I thought there was too much inconsistency in this system.	1	1	2	3
7. I would imagine that most people would learn to use this system very quickly.	4	5	4	4
8. I found the system very cumbersome to use.	2	1	1	3
9. I felt very confident using the system.	3	4	4	3
10. I needed to learn a lot of things before I could get going with this system.	1	1	1	2
SUS Score	**75**	**87.5**	**82.5**	**65**

Appendix C — Individual and Group Discussion Comments

Context	Comments
Initial impression	**Participant 1:** + "I'm usually just focused on my own subscriptions, so I like that you can see non-subscriptions." ? Doesn't know how to find new or recently added content. - There's a lot of lag. "Usually if my phone does this, I just close out of the app." **Participant 3:** "I thought it was a dating profile." + "I like that I can see my inactive subscriptions." **Participant 4:** + The app is cleanly designed.
Task 1: Subscribe to a comic drawn by Phil Noto.	**Participant 1:** - There is no search function. + Likes the filtering and says the searches are clear. **Participant 2:** - There is no way to type in an artist name or comic book; you have to just rely on filters. + The search results are first-name driven, not last-name driven. ? Unsure whether or not clicking on a product actually subscribed him to that product. **Participant 3:** - There's no search function. - "I didn't realize that Star Wars was checked on the filter. That's why I wasn't getting any results. I see the right option now."
Task 2: Favorite a comic by Annie Wu.	**Participant 1:** - You can't favorite an artist, only a series. **Participant 2:** + I like that you can select multiple artists. **Participant 4:** - Didn't notice at first that filters hadn't been reset, so it wasn't showing her the results she expected.
Task 3: Purchase a variant cover by	**Participant 1:** - "All this scrolling makes me feel like I'm going through my old iPod." **Participant 2:** ? He clicked an item to add to his cart, then clicked single issue, but he

Fiona Staples.	wasn't sure if that worked because there wasn't any feedback. **Participant 3:** - The letters on the right side of the search results list should be bigger. - "I'm unclear why there's no 'add to cart' option for the issue I selected.' **Participant 4:** - "I was expecting something like variant cover A, B or C. It would be good to see what variant I'm looking at."
Task 4: Check to see if you already own Steven Universe Vol. 2.	**Participant 2:** ? "The app shows that I have issue 1, but not 2. But it's on auto, so does that mean I will get it?" **Participant 3:** ? "I can't find this in my non-subscription history. But either I'm not doing it correctly, or it wasn't bought." - Had to close out of app to reset the filter because the app wouldn't let her deselect the publisher filter when she accidentally clicked it. **Participant 4:** + The app didn't show that Steven Universe Vol. 2 was bought, so she assumed she did not have Vol. 2.
Task 5: Check to see if you're still subscribed to Dark Horse Star Wars comics.	**Participant 1:** + Easy to see in subscription section what you're currently subscribed to. **Participant 2:** ? "This series is inactive. Does that mean I've unsubscribed." + Likes the history feature.
Task 6: Find some Marvel Star Wars comics and subscribe to them.	**Participant 1:** - You can't order items from the left-hand navigation menu. - App terminology is awkward. "Why 'brand' instead of franchise?" **Participant 2:** + Likes the umbrella of "brands" for higher-level options. **Participant 3:** - Terminology confused her
Task 7: See if any stores in Manhattan use ComicHub.	**Participant 1:** - She set her location to NYC, but the map loaded in Indonesia. **Participant 2:** - "I don't necessarily want to see the nearest store. I want to see all options." **Participant 3:** - Map is super zoomed into a location and she doesn't know where she is. - "There's no locator for the map." **Participant 4:**

	- Not sure where she ended up, didn't like scrolling around until she found NYC on the map.
Task 8: Add your birthday to your profile.	**Participant 1:** + Easy to find this profile setting. **Participant 3:** + This was easy to find and update.
Additional feedback	**Participant 1:** + History feature is useful to see what you've added or taken off your subscription list. + "Just having an app would be beneficial." - "It's hard to search. I want a search function really badly." - You have to remember to reset the filters after you search for something. + "It's fairly intuitive." **Participant 2:** + "I like how easy it was to find things." - "I'd like a way to be able to quickly clear the filters." "I'd like a week-by-week rundown of my subscriptions." + Says it's intuitive. **Participant 3:** Wants notifications to show her what her pulls for the week are. Wants the home-based store location to show upcoming events. + The homepage is simple. + "I'd like this if it was something Fantom switched to. I easily see myself using this app during my commute." **Participant 4:** A search bar would be useful, as would the ability to clear the filter. Would like a social media aspect.

Appendix D — Task Scenarios

Task 1: Subscribe	
Goal/Output	**Subscribe to a specific comic**. Output alert: "This product is successfully added in your cart." Additionally, order status says, "Added in cart."
Inputs	N/A
Steps	(if starting at home page) 1. Click "Order products," which takes you to a page of filters. 2. Click on the "artist" link on the menu. 3. Scroll until you find Phil Noto. 4. Select one of the items in the listing. 5. Select your desired quantity. 6. Click "add to cart." 7. Select "single." 8. Click "ok" when the alert pops up.
Time for expert	22 seconds
Instructions for user	Your friend mentioned Phil Noto is a fantastic artist. Subscribe to a comic drawn by him.
Notes	Testers may have issues finding the artist. If multiple filters are selected, then the search results may be limited or empty.

Task 2: Favorite	
Goal/Output	**Favorite a comic subscription**. Heart inside of a circle turns red.
Steps	1. Click "order products" from the home menu. 2. Filter by artist and select Annie Wu. 3. Click the heart inside of a circle at the top right corner of the item box. 4. Click the menu button at the top left of the app. 5. Click "favorites" on the menu. 6. Look for the comic you favorited.
Time for expert	10 seconds
Instructions for user	Your friend can't stop talking about Annie Wu and insists you give her work a try. Favorite one of her comics, and check to make sure it's been saved.

Task 3: Variant cover

Goal/Output	**Order a variant cover**. Popup alert notifies user that item has been successfully added to the cart.
Steps	1. Click the filter icon in the top right corner of the app. 2. Click Fiona Staples under artist and "Variant?" → "yes." 3. Scroll to select the issue you want. 4. Click "add to cart." 5. Click "single." 6. Click "ok" on the popup menu.
Time for expert	36 seconds
Instructions for user	You're interested in purchasing a variant cover from Fiona Staples without subscribing to the whole series. Find a single issue and order it.

Task 4: Current subscriptions

Goal/Output	**Determine whether or not you already have a specific issue.** You'll be able to see the status of a subscription.
Steps	1. Click menu button in top left corner of the screen. 2. Click "subscriptions." 3. Scroll through "current" list until you get to "S." [alternatively, depending on number of items in list and user's knowledge, you could further filter the list by publisher or category.] 4. Find "Steven Universe TP" and click "view detail." 5. View items in the "subscription detail" list. 6. Find "Steven University Trade Paperback Volume 2.00."
Time for expert	10 seconds
Instructions for user	You're in the Fantom Comics store and can't remember if you already have Steven Universe Vol. 2. Check to see if you own it.

Task 5: Check subscription	
Goal/Output	**Determine whether or not you have already made a subscription inactive.** You can find inactive subscriptions under a tab that says "inactive."
Steps	1. From the main menu, click "subscriptions." 2. Search by publisher for "Dark Horse." 3. Look for Star Wars on the filtered list. 4. [Star Wars is not on the list.] 5. Click the "inactive" tab. 6. Find Star Wars (Dark Horse Comics) on the list.
Time for expert	29 seconds
Instructions for user	You learned that Dark Horse no longer publishes Star Wars. You should clean out your subscription list. Check to see if you're still subscribed to some Dark Horse Star Wars comics.

Task 6: Subscribe	
Goal/Output	**Find a comic by publisher.** Popup notification alerts user that an item has been successfully added to the cart.
Steps	1. Click "order products" on the main menu. 2. Click the "publisher" tab and scroll until you find "Marvel." 3. Click the "brand" tab and scroll until you find "Star Wars." 4. Click the checkmark at the top right corner of the screen to select the filter. 5. Click one, select quantity and "single," "run order" or "ongoing order." 6. Click "ok" ok the popup menu.
Time for expert	55 seconds
Instructions for user	Even though Dark Horse stopped publishing Star Wars comics, you still want to follow what's happening in a galaxy far, far away. Fortunately, Marvel publishes Star Wars comics now. Find some and subscribe to them.
Notes	Users may not know to add multiple filters to the search. This may lead to time lost in extra scrolling to find a Star Wars series.

Task 7: Store locations	
Goal/Output	**Find out if any stores near you use ComicHub.** You'll be able to see if there's a map icon in your city.
Assumptions	User can correctly read a map.
Steps	1. On the main menu, click "preferences." 2. Click "add store" in the top right corner of the app. 3. Zoom out of the map and find your geographic location (NYC). 4. See that the closest store is in Baltimore.
Time for expert	You're moving to New York City for a few months. Check to see what stores, if any, in Manhattan use ComicHub.
Instructions for user	27 seconds
Notes	There is no NYC location for ComicHub; the closest is in Baltimore. There is also no search, just a map to view locations.

Task 8: Birthday	
Goal/Output	**Add your birthday to your profile.** Text will appear under "Date of Birth."
Inputs	Date of birth (Month, day, year).
Steps	1. On the main menu, click "my profile." 2. Click on the pencil icon at the top right corner of the screen. 3. Click on the Date of Birth section (specifically, on the grayed out DOB text). 4. Select month, day and year. 5. Click "done." 6. Click "save changes."
Time for expert	23 seconds
Instructions for user	You've heard that some comic book stores give birthday discounts. Add your birthday to your profile.
Notes	Task administrator will have to delete the birthday info from the user information before each test.