

A Touch Of Brilliance?



MacBook Pro Touch Bar Usability Testing

By: Alex, Di, Kanika and Stacy

Introduction

The Apple MacBook Pro Touch Bar made an appearance at the Apple Keynote Event during 2016. The Touch Bar is a “multi-Touch enabled strip of glass built into the keyboard for instant access to the tools you want, right when you want them” (Apple.com). It sits at the top of the keyboard at one centimeter tall. The touchscreen replaces the usual row of function keys found on the top of Apple laptop keyboards. The Touch Bar has been called “a revolutionary new way to use the Mac” (Apple.com). The Touch Bar will change automatically based on the program a user is in to show them relevant tools and system controls. Some of the things you can do with the Touch Bar is control volume and brightness, adjust or browse through content, use Touch ID, and use intelligent typing features like emoji and predictive text. Although early reviews by famous technology forums were good, many of the Mac power users elicited mixed emotion when this new Macbook was commercialized. In summary, most of these users thought the Touch Bar was interesting but not worth the extra money. After reviewing these mixed emotions our group decided to conduct a usability study to get a more in-depth understanding of motivations towards liking or disliking this new Apple functionality.

Executive Summary

At the University of Maryland, College Park six in-person usability tests were conducted at the Human Computer Interaction Master’s student lounge during a two-day period. Participants were recruited from within friend groups at the University and included a mix of males and females, all who are Masters and PhD students at the University of Maryland and ranged in age from 22 years to 32 years. All of the participants reside in Maryland within close proximity to the University as well as have experience using Apple products. For the purpose of this study every participant was required to also own a previous version of the Apple MacBook Pro.

When testing, every participant faced the same protocol each session. The session began with the user reading over and signing a consent form to participate and be recorded. This was then followed by a pre-test questionnaire given on Google Forms. After this the usability test was given to participants. This test had the users complete 6 tasks using the think aloud method to allow researchers to record participant’s thoughts on the tasks and as well as their progress. The average amount of time for users to complete this test was 12 minutes and 18 seconds with the longest task (Task 6) taking on average 3 minutes and 22 seconds to complete. Typically, usability tests are designed to take about an hour. Our research participants took significantly shorter to

complete our test which may be reflective of the amount of experience our users had with a similar interface. Following the usability test users were given a post-test questionnaire also on Google Forms. This data was then used in conjunction with the recorded data to triangulate our findings and form recommendations.

This test helped to identify some of the improvements that can be incorporated into the Touch Bar. These recommendations for improvements include:

- Making all buttons on the Touch Bar functional
- Adding unique shortcuts for the Touch Bar
- Increasing the size of the font on the Touch Bar
- Making buttons for common tasks more noticeable
- Adding feedback when editing the Touch Bar
- Adding labels to sub-menus

Participants

The participants we used in this study ranged in age from 22 – 32 years old. Our sample size was completely made up of Graduate and PHD students who owned a Macbook Pro. When asked how many years they have been using Apple products (including phones, tablets, televisions, and watches), the average answers for the participants was around 10 years. Then when asked how many years they have been using a Macbook specifically, the answer averaged out to about 4 years. Interestingly enough when participants were asked how often they used their Apple products every participant indicated “Very Frequently”. Most of the participants use their Macbook for the following applications: mail, internet browsing, Office software suite, Adobe software suite, iMessage, and sometimes photo editing. Most of these participants preferred using traditional keyboard shortcuts to using a mouse and/or trackpad. Also, the majority of the participants trended toward using touch screen devices rather than non-touchscreen devices. We recruited all of our participants from our immediate friend groups and asked them if they would help us out in our study.

Table 1. Participants

Questions	P1	P2	P3	P4	P5	P6
Age	24	28	25	24	23	32
How many years have you been using apple products?	9 years	8 years	10 years	< 1 year	1 year	12 years
How many years have you been using a MacBook?	5 years	8 years	4 years	< 1 year	1 year	10 years
How often do you use apple products?	Very Frequently	Very Frequently	Very Frequently	Very Frequently	Very Frequently	Very Frequently
What applications do you use on your MacBook?	Mail, Internet browsing, Office Software Suite, Adobe Software Suite, iMessage	Mail, Internet browsing, Office Software Suite, Adobe Software Suite, iMessage, Photos Editing	Internet browsing, Office Software Suite, Adobe Software Suite, iMessage, Photos Editing	Mail, Internet browsing, Office Software Suite, Photos Editing	Internet browsing, Office Software Suite, Adobe Software Suite,	Mail, Internet browsing, Adobe Software Suite, iMessage, Photos Editing
I prefer using keyboard shortcuts to using a mouse or trackpad?	Fairly Agree	Fairly Disagree	Fairly Agree	Agree	Fairly Agree	Agree
I feel that using touch screen devices is easier than using non-touch screen devices. (i.e. keyboards & mice)	Neutral	Agree	Agree	Neutral	Fairly Disagree	Neutral

Methodology

- **Pilot Testing**

We carried out two rounds of pilot test with two participants in each round. After each of the pilot test round, we made appropriate revisions to our task lists as well as the pre and post test questionnaires. After the pilot rounds, we started with the final testing.

- **Final Testing**

We tested with a total of six participants. These tests were carried out in the new HCIM lounge across the HCIL in Hornbake South Wing at UMD. Tests with each participant followed the following steps:

- a. Consent Forms

We asked each participant to read and the sign the consent form since we were video recording their hands and voice while they were performing the tasks.

- b. Pre-Test Questionnaire

Next we asked them to fill up a pre-test questionnaire. The aim of this questionnaire was to collect data about participant's demographics and their experience with using Apple products, especially MacBook Pro.

- c. Tasks

We started with introducing the participants to the Touch Bar. Then we told them, "Each of the tasks could be completed using the Touch Bar. When testing please try and utilize the Touch Bar as often as possible. If you feel that you cannot continue using the touch bar to complete the task please do not hesitate to switch and use the touchpad." We followed the 'Think Aloud Protocol' for our testing by asking our users to keep talking about what they are thinking while doing the tasks.

Next, the participants were asked to perform the following 6 tasks.

1. You notice that your display is too dark to see properly and you want to adjust the brightness.
2. You notice that your display is too dark to see properly and you want to adjust the brightness.

3. You just finished editing an assignment in the Pages application and now you want to switch to the Safari application to submit the assignment online. You are having a bad day and decide to watch a funny video. Go to YouTube and search for “blueberry blueberry.” Select the first video, and fast forward to the one minute spot to see your favorite part.
4. You are hosting a party this on Saturday evening and you want to invite your friends. Go to Gmail and compose a new email saying “Party Saturday night at my place! 🙄👯🍷 Looking forward to seeing you! 😊🥰” and send it to mkanika@umd.edu.
5. You are trying to upload a profile picture to your social media account. Unfortunately the image you are trying to upload is too large and must be cropped. Open the photo.jpg image on your desktop then edit the image so only your face is visible.
6. You are starting a new research project, which will require you to search for a lot of publications on Safari. You want to keep track of the important readings by bookmarking them but you do not have a shortcut on the touch bar to do so. Please find a way to add this shortcut option to your touch bar.

d. Post-Test Questionnaire

Lastly, the participants were asked to fill out a post-test questionnaire. The aim of this questionnaire was to get feedback about their experience with using the touch bar, things they particularly liked or disliked and if they would want to upgrade to the new MacBook Pro with the touch bar.

- **Task Revisions**

After each iteration, the task revisions were made such that they are not too leading to the participants, but so that they are also not confusing.

Task 1

Version 1: You are using your laptop outside on a bright, sunny day. You notice that your display is too dark to see properly and you want to adjust your display. Make the display on the MacBook brighter using the Touch Bar.

Version 2: You notice that your display is too dark to see properly and you want to adjust the brightness. Make the screen brighter.

Final: You notice that your display is too dark to see properly and you want to adjust the brightness.

Task 2

Version 1: You just finished editing an assignment to your professor and now you want to login to elms to upload your assignment. Shift from Pages to Safari.

Version 2: You just finished editing an assignment to your professor and now you want to login to ELMS to upload your assignment. Navigate from Pages to Safari.

Final: You notice that your display is too dark to see properly and you want to adjust the brightness.

Task 3

Version 1: You are having a bad day and decide to watch a funny video. You go to youtube.com and search for “blueberry blueberry.” After selecting the first video, fast forward to the 1 min spot to see your favorite part.

Version 2: You are having a bad day and decide to watch a funny video. You go to youtube.com and search for “blueberry blueberry.” After selecting the first video, fast forward to the one minute spot to see your favorite part.

Final: You just finished editing an assignment in the Pages application and now you want to switch to the Safari application to submit the assignment online. You are having a bad day and decide to watch a funny video. Go to YouTube and search for “blueberry blueberry.” Select the first video, and fast forward to the one minute spot to see your favorite part.

Task 4

Version 1: You are hosting a party this weekend on Saturday evening and you want to invite one of your friends. Go to gmail.com and compose a new email saying “Party saturday night at my place! 🍷🍻🍹 Looking forward to seeing you! 😊🥳” and send it to mkanika@umd.edu.

Version 2: You are hosting a party this weekend on Saturday evening and you want to invite one of your friends. Go to gmail.com and compose a new email saying “Party Saturday night at my place! 🍷🍻🍹 Looking forward to seeing you! 😊🥳” and send it to mkanika@umd.edu.

Final: You are hosting a party this on Saturday evening and you want to invite your friends. Go to Gmail and compose a new email saying “Party Saturday night at my place! 🍷🍻🍹 Looking forward to seeing you! 😊🥳” and send it to mkanika@umd.edu.

Task 5

Version 1: You are trying to upload a profile picture to your social media account. Unfortunately the image you are trying to upload is too large and must be cropped. Open the photo.jpg image on your desktop and edit it to have the image upright and only have your face visible.

Version 2: You are trying to upload a profile picture to your social media account. Unfortunately the image you are trying to upload is too large and must be cropped. Open the photo.jpg image on your desktop and rotate the image and crop it so only your face is visible.

Final: You are trying to upload a profile picture to your social media account. Unfortunately the image you are trying to upload is too large and must be cropped. Open the photo.jpg image on your desktop then edit the image so only your face is visible.

Task 6

Version 1: You are starting a new project, which requires a lot of readings. You want to keep track of the important readings by bookmarking them. Customize the Safari touch bar to include the bookmark option.

Version 2: You are starting a new research project, which requires a searching a lot of research papers on Safari. You want to keep a track of the important readings by bookmarking them. Use View in the navigation bar to customize your Safari Touch Bar to include the bookmarking option.

Final: You are starting a new research project, which will require you to search for a lot of publications on Safari. You want to keep track of the important readings by bookmarking them but you do not have a shortcut on the touch bar to do so. Please find a way to add this shortcut option to your touch bar.

Results

- **Final Testing Outcomes**

We only considered participants who used the Touch Bar to complete the task as a successful task completion. Tasks 1 and 4 have 100% success rate, but all six participants failed on task 2. In task 3 and 4 only one participant failed, and in task 6 two

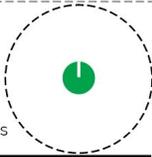
participants failed. The average time spent on each task can also be seen in Figure 1. The longest average time is 222.5s on task 6, 20 times longer than the average time of task 1. However, average time does not definitely determine the difficulty of the task. For example, task 4 took participants 157.7s because in that task, participants composed an email.

Task Success Ratio & Avg Time

● success ● failure

Task 1

Success ratio: 6/6
Avg time: 11.3s



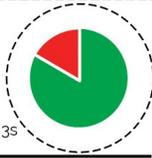
Task 2

Success ratio: 0/6
Avg time: 71.3s



Task 3

Success ratio: 5/6
Avg time: 112.3s



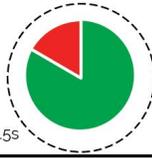
Task 4

Success ratio: 6/6
Avg time: 157.5s



Task 5

Success ratio: 5/6
Avg time: 125.5s



Task 6

Success ratio: 4/6
Avg time: 222.5s

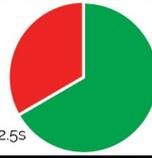


Figure 1. Task Success Ratio and Average Time

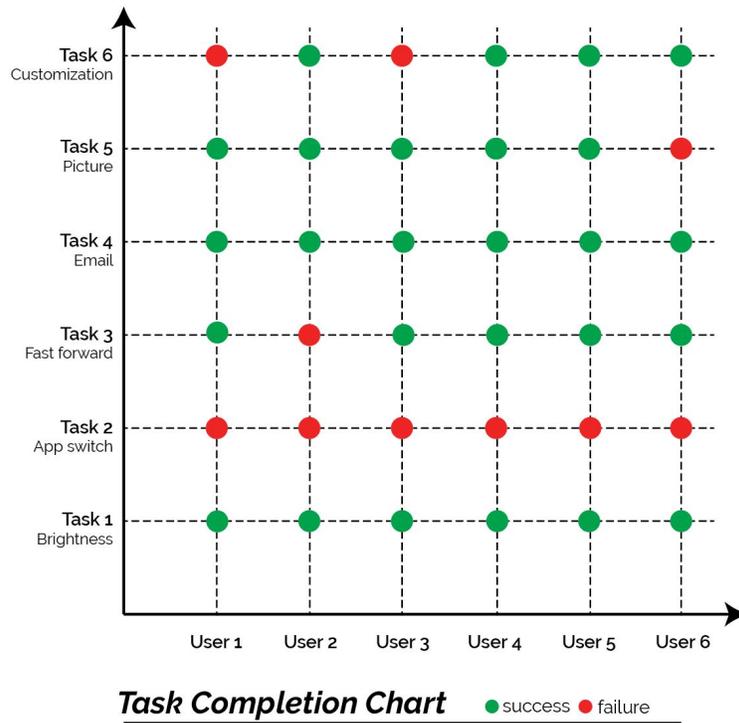


Figure 2: Task Completion Chart

Among the participants who failed on task 2, 1 person used Siri to open the Safari; 2 people clicked the touchpad and 2 people used the keyboard shortcut to open the Safari. The original intention of task 2 was that participants open the default touch bar and tap the app switch button. However, no one finished the task by using the touch bar. They all followed their customs or used their muscle memory. The participant who failed task 3 used the keyboard to fast forward the video. The reason for this behavior is that the participant did not close the default touch bar so that he could not see the video process bar which appeared only with videos playing on Safari. Participant who failed task 5 used Photoshop to finish because she could not find the crop button on the touch bar. Two people failed task 6 and ended up bookmarking a webpage rather than adding a bookmarking option onto the touch bar.

User behavior

Task 2: 0/6

1 person -- Used voice command to open Safari;
2 people -- Used the touchpad, clicked to open the applications;
2 people -- Used the keyboard shortcut.

Task 3: 5/6

1 person -- Failed to find the fast forward bar, used keyboard to finish.

Task 5: 5/6

1 person -- Failed to find the crop option, used Photoshop instead.

Task 6: 4/6

2 people -- User thought bookmarking pages was the end of the task.

Figure 3. User Behavior

Table 2. Participant Quotes

Task Number	Quote
T1. Brightness	NA
T2. App Switch	"I'm so sorry I'm used to [keyboard]"
T3. Fast Forward	"I figure there is an option here [on the Touch Bar]" "I don't know if I can use the Touch Bar to select specific items. I think I will use the touchpad. I can't fast forward the video on Touch Bar." " It is annoying. Doesn't show me where I am."
T4. Email	"Kind of difficult for me to read [emoji on the touch bar]."

T5. Picture	"What is the use of this, if I can just do this [add a boundary to crop], but not crop?" "Where is the desktop [button on the Touch Bar]?"
T6. Customization	"I don't know, I can't find it. What is [customization option]? Nothing [the customization icons on screen] is clickable?" "Oh, Oh! Is this done now?" "What do you mean by adding a shortcut? I have to use my touchpad."

- **Post-test questionnaire analysis**

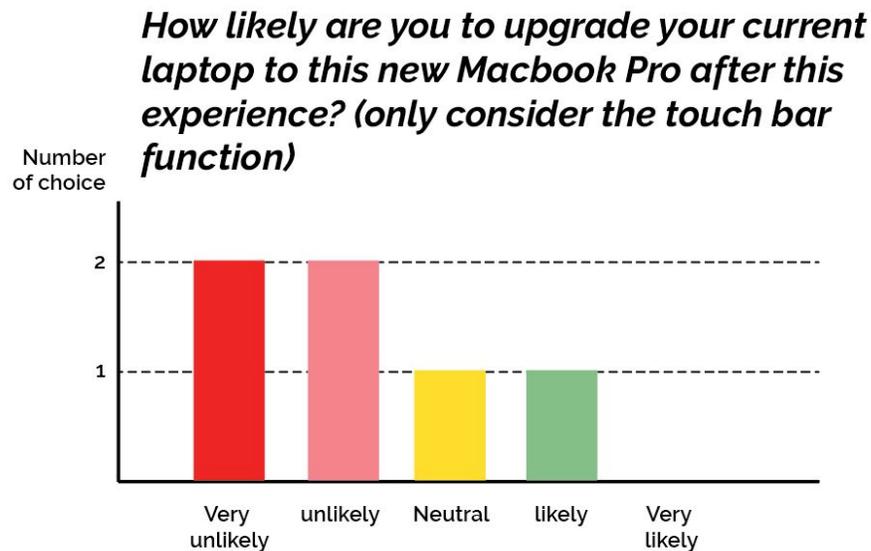
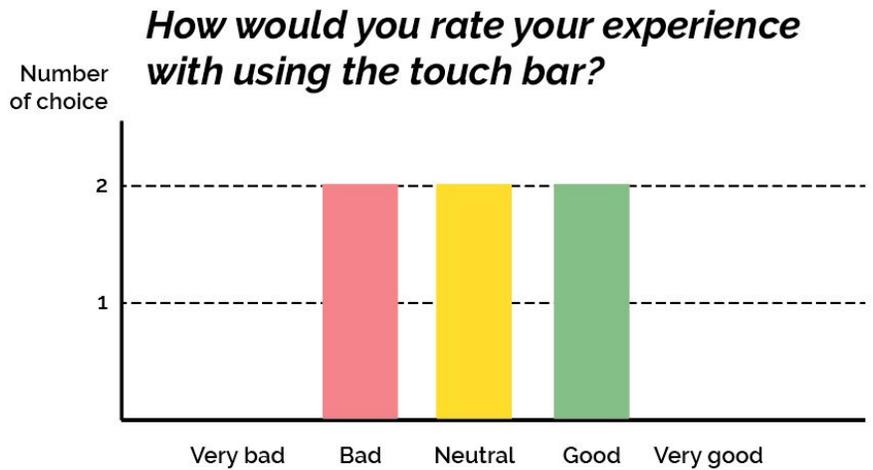


Figure 4. Answers of Two Likert Scale Questions from Post-Test Questionnaire

After the test, we asked participants to do a post-test questionnaire asking about their experience with the Touch Bar. For one Likert Scale question *“How would you rate your experience with the Touch Bar?”*, the overall response was neutral. For another Likert Scale question *“How likely are you to upgrade your current laptop to this new MacBook Pro after this experience?”*, although we asked participants to only consider the Touch Bar functionality rather than other factors like the price, our participants’ answers revealed their lack of willingness to upgrade. Followed by these two questions, we had two open questions. One is *“What do you like most about the Touch Bar?”*. Participants mentioned some pros of the Touch Bar, including the nice display, typing suggestions, the feeling of using new things, and the Touch Bar customization function. But some participants said nothing special at all. Another question we asked is *“What do you like least about the Touch Bar?”* Participants’ answers include the limited space, unclear structure of the icons, no feedback on the screen, the Touch Bar easily being overlooked, and the confusion it brings.

Insights

- **Confusion about Menu Hierarchy**

We observed that the participants were often confused about how deep into the touch bar menu they were. For example, when the participant is using Safari, the Touch Bar has shortcut for Safari and when the participant starts to compose an email while in Safari, the Touch Bar changes to show autosuggestions, emoticons and other shortcuts for typing. In such situations, we observed how the participant were confused as to why did the shortcuts change and how would they go back to accessing the Safari shortcuts.

- **Not Enough Context**

We observed how they was not enough context associated with some of the shortcuts in the Touch Bar, which led to confusion for the participants. For example, while working on Safari, there is a search shortcut on the Touch Bar to which acts as an overall Safari search bar. However, one of the participant, while trying to search a video on YouTube confused that search shortcut to be the search bar for YouTube. Later, when the participant realized, she expressed anger. Also, there are a few shortcuts on the Touch Bar which are deactivated and require some action to get activated. Lack of context makes it difficult for the participant to figure out what those deactivated icons do and how to activate them.

- **Difficulty in Viewing Options**

Another major issue that stood out with multiple participants during multiple tasks was that while trying to use the Touch Bar the participant's hand cover a major portion of the Touch Bar, making it difficult to view different information and options available on the Touch Bar. For example, while fast forwarding the video, participant's finger covered the time to which the video was being fast forwarded, defeating the purpose of using the fast-forward shortcut on the Touch Bar.

- **High Give Up Rates and Frustration**

We observed a high give up rate among a lot of participants. As seen in the results, some participants just did half the task and gave up thinking that the task is done, whereas for a few tasks the participants quickly moved to using other options instead of the Touch Bar - like the touchpad, keyboard shortcuts and Siri.

Recommendations

- **Recommendation One: Make buttons on the Touch Bar functional**

Based on our results, we have summarized recommendations on how Apple can improve its Touch Bar's usability. The first recommendation is to make the buttons on the Touch Bar functional. Not all buttons on the Touch Bar are functional, as discovered during testing. One of our participants tried to use the fast forward, pause, and play buttons for a task, but noticed that these buttons only changed colors and did not work. Having these buttons on the Touch Bar gives users the idea of functionality, but it was a source of frustration because the participant ended up using the slider to complete the task.

- **Recommendation Two: Add shortcuts for the Touch Bar**

The second recommendation is to add shortcuts for the Touch Bar that are similar to keyboard shortcuts. During our testing, keyboard shortcuts were used to complete the tasks. Users familiar with Macbook Pros would know these shortcuts, and adding shortcuts to the Touch Bar can make using it quicker and easier.

- **Recommendation Three: Increase Font Size of Touch Bar**

The third recommendation is to make the font size of Touch Bar larger so it is easier to read. One participant noted that the size of the timestamp on the slider was too small to

read. Increasing the font size will allow users to read without having to get up close to the Touch Bar.

- **Recommendation Four: Make Buttons for Common Tasks More Noticeable**

The fourth recommendation is to make buttons for common tasks more noticeable. When performing the image task, one participant could not find the crop button. The buttons for common tasks should be in a prominent location (for example, in the center) where the users can easily see.

- **Recommendation Five: Add Feedback When Editing the Touch Bar**

The fifth recommendation is to add feedback when editing the Touch Bar. Feedback allows users to know that the actions they attempted to do were successful. In the adding shortcuts task, one participant was not sure whether the task was completed or not because there was no feedback after adding a shortcut to the Touch Bar. To deal with this issue, the Touch Bar can show text saying “Shortcut added” as feedback so that users can know that the shortcuts were added.

- **Recommendation Six: Add Labels to Sub-Menus**

The sixth recommendation is to add labels to sub-menus so that users know what menu they are in. When users change applications, the menu (and the icons) displayed on the Touch Bar also changes. For example, when the participants did the email task, the Touch Bar icons changed. If users are not familiar with the different icons on the Touch Bar, they may be confused as to what menu they are currently in. A label showing the name of the sub-menu on the left or the right side of the Touch Bar can be added, so users can know the sub-menu they are in.

Further Steps

- **Testing with a different set of users**

Current testing was done with people who had extensive experience using different Apple products, especially the MacBook Pro. If we had more time and resources to carry out this study, we would have tested with different groups of participants. We would test with users who have never used the MacBook Pro before and see how they would perform the tasks and how would they describe their with the Touch Bar.

- **Testing how users adapt to the Touch Bar**

All the participants we tested with, were using the Touch Bar for the first time. We would also test how users adapt to the Touch Bar with time and how would they describe their experience after using it for a couple of weeks.

- **Better framing the tasks**

In spite of going through two rounds of pilot and task revisions, we overall found it difficult to frame the tasks such that they are not too leading but also not very vague. We would work on better framing the tasks and coming up with a balance such that they are not confusing to the participants and they also do not give away too much information.

Conclusion

The new MacBook Pro's appearance hit discussion on the functionality of the Touch Bar, so we conducted this usability test to evaluate it. After confirming our target users and personas, we did pilot tests and revised our tasks several times to archive the best testing outcomes. Although we tried to be neither too leading nor non-leading, we found some participants confused about the tasks. When doing the test, we used Think Aloud Method and recorded participants' behavior for further analysis. Pre and post-test questionnaires are also used in the usability test to obtain the participant background and feedback. Although participants did not hold strongly negative options on the Touch Bar, less of them would like to upgrade their current laptop to this new one. In their responses, disadvantages are more than advantages of the touch bar. Because these participants can be considered experienced Apple Mac users, their feedback and evaluation are valuable to reflect the Touch Bar functionality. At the end of our paper, we propose several recommendations to the touch bar.

Appendix A – Consent Form

Project Title	Usability Study on the new Macbook Pro
Purpose of the Study	Directed by Professor Vera Rhoads at the University of Maryland, College Park, the purpose of this research is to have adults test the new Macbook Pro. We are inviting you to participate in this research project by taking part in our usability study to test the new and improved functions.
Procedures	As a research participant you will work side-by-side with researchers— including graduate students, and other staff and faculty— who form this team. You will be asked to perform a series of tasks on the new machine. They are not meant to test you and there is no background knowledge necessary to complete. You will be recorded completing the various tasks and asked follow up questions as necessary.
Potential Risks and Discomforts	There are no known risks to participating in this research.
Potential Benefits	There are no direct benefits to you for participating in this research.
Confidentiality	<p>Data gathered during usability testing sessions (e.g., videos, photographs, audio clips) will be stored in password protected digital archives. Paper documents will be stored in a locked office belonging to the investigators of the study at the Human-Computer Interaction Laboratory at the University of Maryland. The only people with access to the materials will be the researchers involved in the study for coding and analysis purposes.</p> <p>When using these data (see Statement of Consent, below), you will never be identified by name. An alias will be provided as required. You will only be identified by common characteristics, such as age, gender, and ethnicity. Your information may be shared with representatives of the University of Maryland, College Park or governmental authorities if you or someone else is in danger or if we are required to do so by law.</p>
Compensation	There will be no compensation provided for this study.

<p>Right to Withdraw and Questions</p>	<p>Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.</p> <p>If you decide to stop taking part in the study, if you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator:</p> <p>Professor Vera Rhoads</p> <p>2116 Hornbake Building, South Wing, College Park Maryland, 20742</p> <p>Phone: 301-405- 7406</p> <p>Email: vrhoads@umd.edu</p>	
<p>Participant Rights</p>	<p>If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:</p> <p>University of Maryland College Park Institutional Review Board Office 1204 Marie Mount Hall College Park, Maryland, 20742 E-mail: irb@umd.edu Telephone: 301-405-0678</p>	
<p>Statement of Consent</p>	<p>Your signature indicates that you are at least 18 years of age; you have read this consent form or have had it read to you; your questions have been answered to your satisfaction and you voluntarily agree to participate in this research study.</p> <p>If you agree to participate, please initial the following and sign below:</p> <p>_____ I understand that, for the purposes of the usability study, I may be interviewed, audio recorded, video recorded, and photographed, and that these data may be used by university researchers in the context of the research program for various purposes —including, but not limited to, academic publications, public-facing websites, promotional materials, and conference presentations.</p>	
<p>Signature and Date</p>	<p>Name of Research Participant (please print)</p>	
	<p>Research Participant Signature</p>	

	Date	
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Appendix B – Pre-test Questionnaire

1. What is your name?
2. What is your age?
3. How many years have you been using apple products? (including phones, tablets, watches, etc...)
4. How many years have you been using a MacBook?
5. How often do you use apple products?
 - Never
 - Rarely
 - Occasionally
 - Frequently
 - Very Frequently
6. What applications do you use on your MacBook?
 - Mail
 - Internet Browsing
 - Office Software
 - Adobe Software
 - iMessage
 - Photo Editing
 - Other
7. I prefer using keyboard shortcuts to using a mouse or trackpad?
Disagree.....1.....2.....3.....4.....5.....Agree
8. I feel that using a touch screen device is easier than using non-touch screen devices (i.e. keyboards & mice)
Disagree.....1.....2.....3.....4.....5.....Agree

Appendix C – Post-Test Questionnaire

1. How would rate your experience with using the touch bar?
Very Bad.....1.....2.....3.....4.....5.....Very Good
2. How likely are you to upgrade your current laptop to this new Macbook Pro after this experience? (only consider the touch bar function)
Unlikely.....1.....2.....3.....4.....5.....Likely
3. What do you like most about the touch bar?
4. What do you like least about the touch bar?
5. How long do you estimate it would take you to completely adapt to using the touch bar?
 - Never
 - Less than 30 minutes
 - About 1 Hour
 - A few days
 - Even Longer

Appendix D – Responses to Open Ended Questions

What do you like best about the Touch Bar?

- The only thing I kind of liked is viewing additional option that I would otherwise not notice. Like I never knew that you could edit photos in preview
- Customizing the control buttons
- Typing suggestions that provide the word that I was likely to use
- Nothing specific
- The feel of using it.
- The display is nice

What do you like least about the Touch Bar?

- It's unnecessary in my opinion. I could perform each task using keyboard shortcuts instead. In fact in a normal situation I would almost ignore the touch bar.
- The limited space
- Unclear structure of the icons
- To customize the touch bar, after drag and drop, the new feature added on the toucher directly. There was no feedback on the screen.
- Not responsive and not super straight forward what menu you are seeing (main, app/page, etc)
- Its confusing... I don't like that the options changed on me... I like having what I want at the top of my keyboard. Also it didn't really make anything faster for me.