Usability Testing

Touch-Based Prototype Testing

On Friday May 23rd, Bixcreen members conducted a round of usability studies with a keynote prototype of our touch-based design. We solicited participants on and around the University of Washington campus and University Village.

We had participants answer a few pre-test questions before completing tasks for two scenarios. Afterwards, we gathered our participants' opinions about the experience and their recommendations. (See Appendix A)

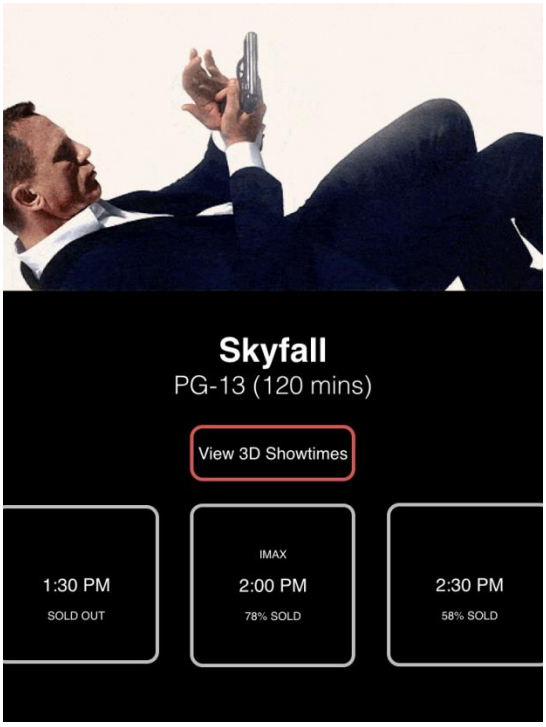
Results

We conducted 6 sessions with a total of 8 participants (2 groups of 2) using an iPad mini loaded with our prototype. Demographically, we had 4 males and 4 females with an approximate age range from young-20s to mid-50s.

Findings about the process

All participants were able to complete the scenarios, but several problem areas arose. During 3 sessions, participants struggled to select a 3D showtime since the button to show 3D times does not grab attention and does not meet user expectations. We also learned that there exists confusion between IMAX and 3D, where some participants assumed one meant the other.

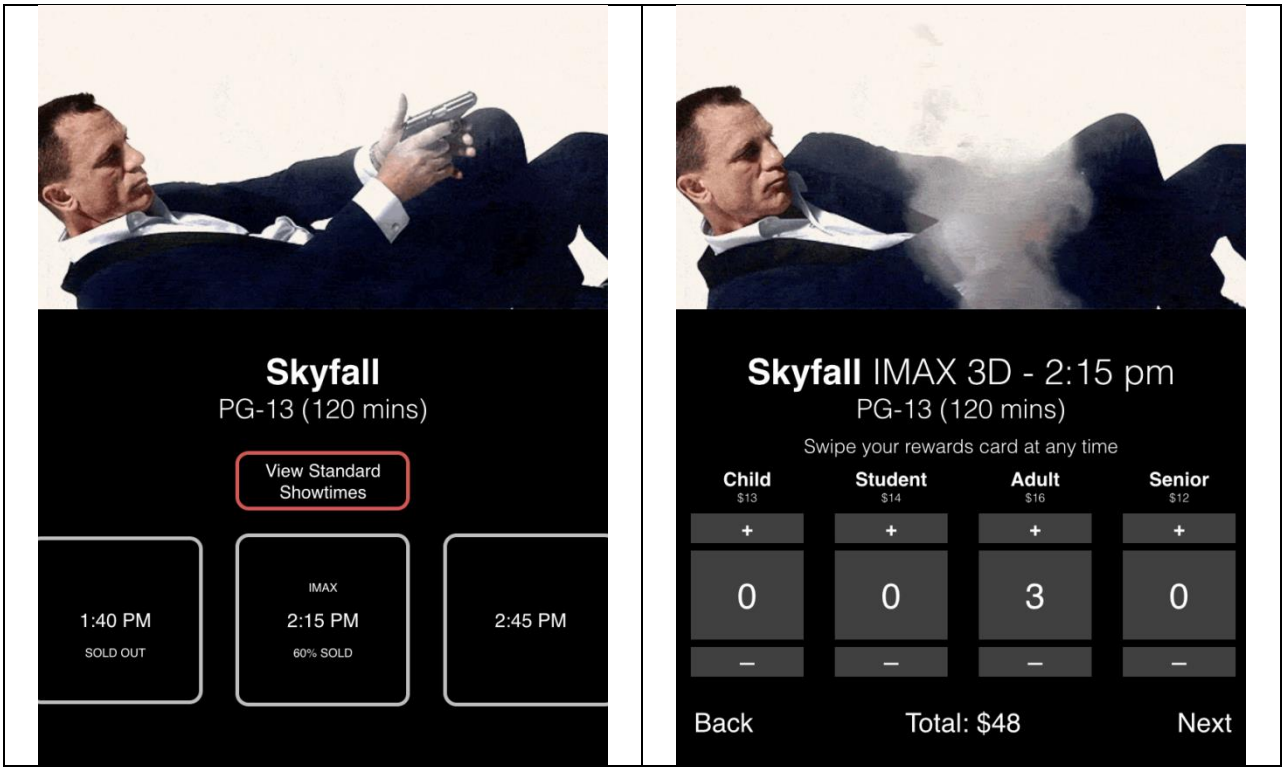
Participants also struggled to understand the meaning of the tabs when customizing tickets. The movement of the tabs provides the only feedback as to which poster is to be printed on the tickets, but this was overlooked by several participants. After discovering that the tabs represent the purchased tickets participants appreciated the freedom to customize each ticket. However, they were unsure if they would need that flexibility.



Findings about the design

A majority of participants did not seem to notice the indication of percentage of seats filled for given showtimes. One participant even misunderstood the word ‘SOLD’ next to 60% as an indication the showtime was sold out entirely. This may be because the font size is too small and the word ‘SOLD’ should either be changed to another word or should not be in all capital letters. We are looking for ways to make this indication more prominent as all participants claimed this information would benefit their experiences.

During testing, we also confirmed several of our assumptions about how users would proceed. Although the prototype does not support the gesture yet, participants tried to swipe through the carousels naturally. We also found that the slight animations of posters were in fact appreciated by participants. They do not feel the animations are distracting. Some even asked for a few seconds of the movie trailer on the customization screen. One participant commented about the size of the ‘+’ and ‘-' buttons being too small, but suggested on a large screen this may not be an issue.



Findings about user opinion

After the testing, we asked users for their opinions on the experience and features. We also had users rate the ease of use and their satisfaction on a 1 to 7 Likert scale (1 most favorable, 7 least favorable).

Participants on average rated the ease of use of our prototype as a 1.7, and rated their satisfaction with our prototype as a 1.5. While we cannot generalize these numbers, it does

show that we are meeting our design requirements of simplicity and appeal.

Compared to current kiosk experiences, participants preferred the highly visual nature of our design. One participant commented that current kiosks are more like cash machines and feel clunky. “They are not sexy technology. That’s why we go to the box office.” – Participant 6.

We also learned from the post-test survey that participants felt the length of the interaction and flow was appropriate. Some even claimed that even with the customization option, the interaction feels quicker (to accomplish tasks) than current kiosks. One participant even suggested adding an extra screen to reduce information required on the screen when selecting a showtime. This is consistent with our efficiency design requirement.

The feature that participants most warmly received was the ability to customize their tickets by adding a movie poster picture. Every participant claimed that if this feature were available today they would make use of it. Participants kept referring to the “first date” example where movie-goers may want to keep a memento from a special occasion.

Conclusions

Overall, participants claimed they would use our device to purchase tickets if it were available. Even the two participants who indicated they only buy tickets from the box office and had never used a kiosk before felt they would use our product. Hearing this feedback is a wonderful indication that Bixcreen is on the correct path.

From here, our group hopes to make updates to the touch-screen prototype to address the issues we discovered during user testing. We then hope to transcribe our developments to our gesture based model and create an interactive prototype.

Gesture-Based Prototype Testing

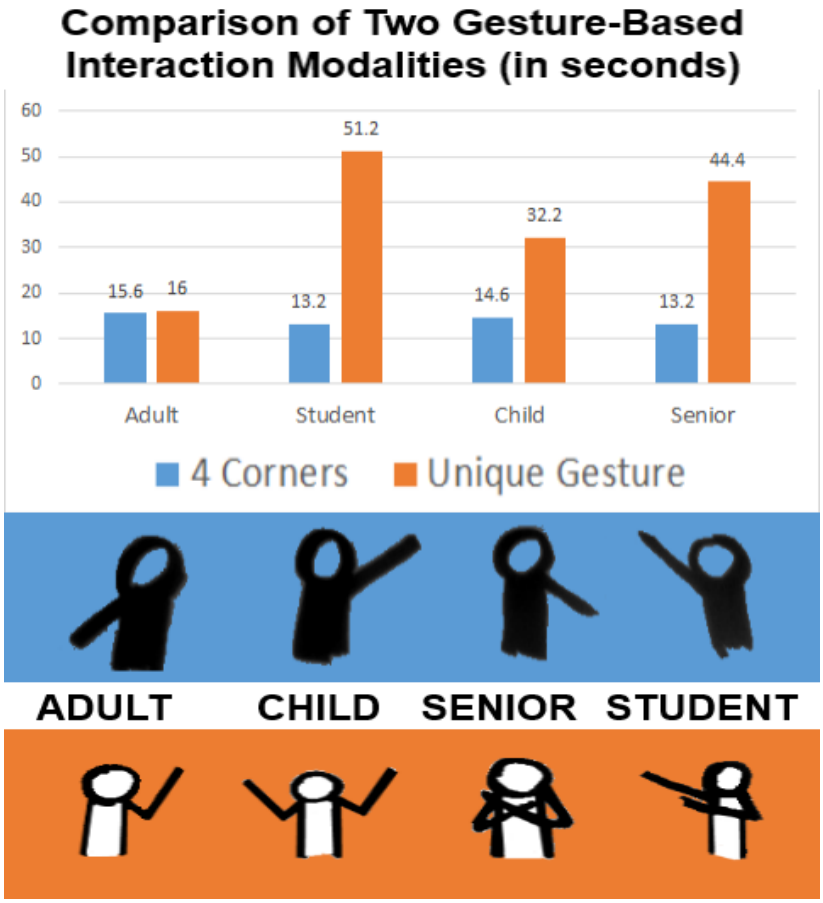
On Friday May 12th, Bixcreen members conducted a short and sweet usability study with our critical friends, Aware Square. The purpose of our study was to assess and compare the time to task metrics of two gesture-based designs; one we called the “4 - Corners” modality and the other we called the “Unique Gesture” modality.

A total of five participants (n=5) were shown representative icons of gestures from both modalities and asked to perform each 4 times. Their time to complete each task were recorded and compared.

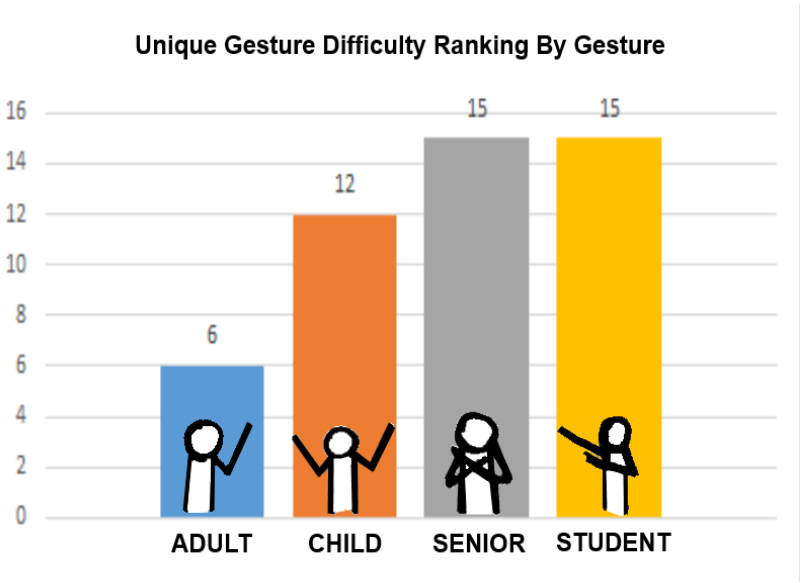
When administering the two treatment variations it was important that we randomly assigned the order in which participants were first shown one of the two treatments. We started with the Unique Gesture modality three (3) times and the 4 - Corners modality twice (2). This was done to prevent potential bias. If we had another participant we would’ve shown him or her the 4 - Corners modality first to balance our sample.

Results

Our data shows that when comparing the mean scores of the time to task metrics for all four gestures, in both modalities, the 4 - Corners modality was much easier for users, averaging 14.15 seconds to successfully perform a single gesture 4 times. The Unique Gesture modality took participants almost three times as long, requiring on average 35.95 seconds to perform a single Unique Gesture 4 times. The time to task for to purchase an Adult ticket were nearly identical in both modality types; 15.6 seconds compared to 16.



When analyzing results collected in a post-task survey asking participants to rank, in order of difficulty (from easiest to most difficult) the Unique Gesture types participants reported that the Adult gesture, which in many ways is similar to the 4 - Corner gestures, was much easier to perform. The gesture to buy Child tickets was the next easiest to followed equally by the Senior and Student poses.

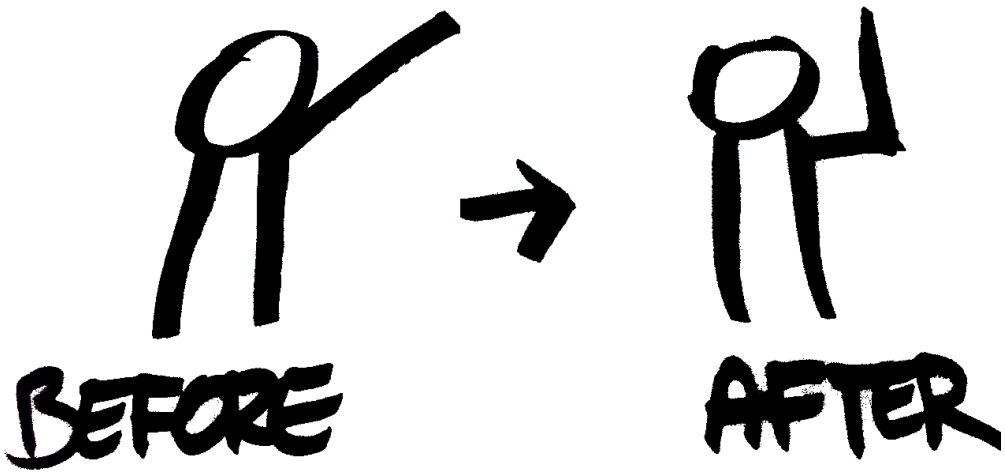


Findings about Gesture Interactions

Our participants shed some interesting light on our gestures that our team only considered; and, validated some assumptions about the gesture modalities we created. For example, we were told that holding arms out at the upper corners made participants feel vulnerable and exposed. We also validated our guess that the 4 – Corners method was easier to learn and perform repeatedly than the Unique Gesture approach.

Conclusions

In the end we learned that we should present users with a modified version of the 4 – Corners approach, changing the way people interact with upper corners. We modified the gesture with the intent of reducing the feeling of being vulnerable or exposed; even silly. The illustration below reflect the changes based on user feedback:



Appendices

Appendix A – Touch Based Test Packet

Pre-Test Survey

Hello and thank you for agreeing to help us out by testing our product. First, we'd like to ask you a few questions.

[Take note of gender and approx. age]

[Gender] _____

[Approx. Age] _____

1. How often do you see a movie at a theater? _____
2. When you go to the movies do you normally buy your tickets online, at the box office, or at a ticket machine? _____
3. Have you ever used an electronic ticket kiosk to pick up your movie tickets that you bought online? _____

Scenarios

Now, we would like you to use this iPad to perform a few tasks on a prototype we have developed for a new touch-screen movie ticket device. As this is a prototype, not all options will be available and the response time of the screen may be slower than normal.

We ask that you please try to perform the tasks as you would if you were using this device on a normal movie outing. We also ask that you think aloud as your walk through the process of completing each task.

[Make sure prototype is reset to home screen. Take notes while observing]

Purchase Tickets

1. You are spending an evening out at the movies with 2 of your friends. You are supposed to buy tickets for everyone and decide to use a new electronic ticketing device to do so.

   You would like 3 adult tickets to the 2:15pm showing of *Skyfall* in 3D IMAX. Find a way to place this order.

2. You realize that one of your friends is actually a student and can get a discount. See if you can remove 1 adult ticket and add 1 student ticket to your order.

3. You decide to customize your ticket. You really want the ticket with Silva (Javier Bardem) (the guy who isn't James Bond) on it. Find a way to do this and get your tickets.

[Reset prototype to home screen]

Pick-up Tickets

1. You are going to see the movie *Drive* tonight and have already purchased your ticket online.

   You arrive at the theater and decide to use our device to claim your ticket. See if you can find a way to do this.

2. You decide to customize your ticket. You think the poster where Driver's (Ryan Gosling) face is pink would make a good printed ticket. Find a way to do this and get your ticket.

Post-Test Survey

Now that you have gone through these tasks, we would like you to answer some questions about the experience.

On a scale from 1 to 7 with 1 being ‘Very Easy’ and 7 being ‘Very Difficult’, how would you rate your experience purchasing and picking up tickets with this device?

1 2 3 4 5 6 7

On a scale from 1 to 7 with 1 being ‘Very Satisfied’ and 7 being ‘Not Satisfied at All’, how would you rate your overall satisfaction using this device?

1 2 3 4 5 6 7

1. Would feel comfortable repeating this interaction on a poster-sized touch screen?
2. Overall, how does experience compare to the movie ticket kiosks you have used previously?
3. Does the length of the interaction meet your expectations?
4. You may have noticed the product informed you of how full a theater was for certain show times as a percentage. Did you find this beneficial? Would you prefer another way of showing this?
5. If it were an option available today, do you think you would customize your movie tickets?
6. If it were available today, do you think you would use this device to purchase movie tickets?
7. [Additional Questions]

Appendix B – Gesture Based Test Packet

First Name:		Comments: (Please use the back side top for more space)
Interaction	4 Corners Method	
Task	Time	
Adult		
Student		
Child		
Senior		
	One a scale of 1 to 7, 1 being easy and 7 being difficult, how easy was selecting your ticket type using this method?	
	One a scale of 1 to 7, 1 being easy and 7 being difficult, how easy was it to understand and learn this interaction modality?	
	One a scale of 1 to 7, 1 being not frustrating at all and 7 being very frustrating, How frustrating was it to select a ticket type? If it was not frustrating at all, mark your response with a 4.	
Please write, in the space below, the order in which these gestures (Adult, Child, Senior, Student) were easiest to most difficult to execute:		



Interaction	Unique Gesture Method	Comments: (Please use the back side bottom for more space)
Task	Time	
Adult		
Student		
Child		
Senior		
	One a scale of 1 to 7, 1 being easy and 7 being difficult, how easy was selecting your ticket type using this method?	
	One a scale of 1 to 7, 1 being easy and 7 being difficult, how easy was it to understand and learn this interaction modality?	
	One a scale of 1 to 7, 1 being not frustrating at all and 7 being very frustrating, How frustrating was it to select a ticket type? If it was not frustrating at all, mark your response with a 4.	
Please write, in the space below, the order in which these gestures (Adult, Child, Senior, Student) were easiest to most difficult to execute: