Usability Test Discussion

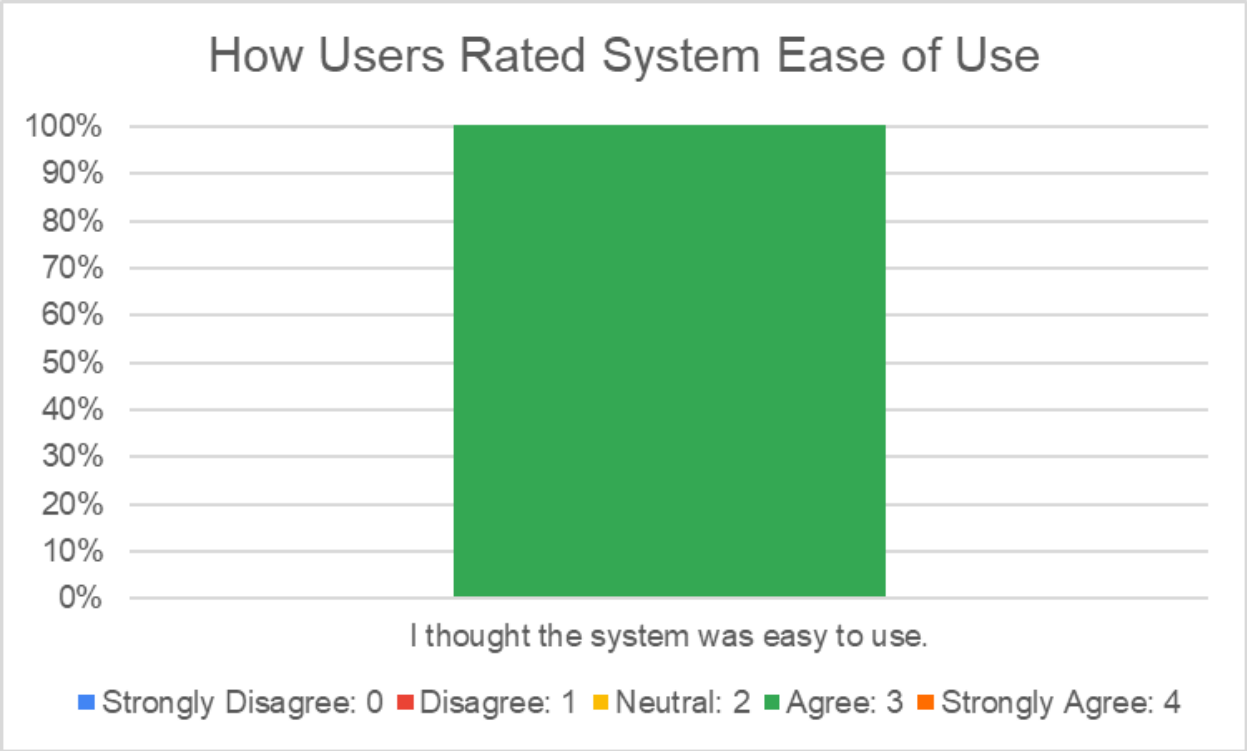
Note: While we attempted to use SUS results as a quantifiable measure to identify trends in our test results, we only conducted testing with 3 users. Overall scores were surprisingly high, with most questions receiving similar ratings from each participant, making it extremely difficult to analyze the results meaningfully through charts.

What were the most interesting things you found from user testing?

- **Some users rely on shape rather than color to identify application states, suggesting color alone may not be an effective visual indicator**

Tester ID-03 toggled between bus and train options and briefly paused to determine which toggles were active. They appeared to rely on the check icon within the toggle to assess the state, rather than using color as an indicator.

- **Users had no difficulty reading small text, likely due to the age demographic of our test group**



Despite initial concerns about text size, all participants rated the system as easy to use (see the Chart “How Users Rated System Ease of Use”), indicating that text readability did not negatively impact usability as anticipated.

- **Most users did not use the route button in the tab bar to start route searches, suggesting potential discoverability issues or that the search bar is simply more prominent and intuitive**

All users initiated route searches using the search bar. Only Tester ID-02 also used the Route button in the tab bar to start a route search.

- **One interesting trend that occurred from our form responses is that when asked "What did you like most about the system? Why?" All testers brought up the share link functionality for routes. This consistent preference for the share link functionality suggests that users place a high value on features that invoke social connectivity, indicating it may be a key strength to prioritize for future development.**

Tester ID-02:
I liked the share link, some of the icons where friendly, and the alert system

Tester ID-03:
I liked the share link, some of the icons where friendly, and the alert system

Tester ID-10:
I liked the sharing feature, which is unique and cool

What did you learn from conducting the user testing?

- **Running the test revealed that tasks need clear, focused objectives rather than open-ended instructions, which created confusion for both facilitators and users**

Issue 17: Usability Test Plan - Run through revealed those issues.

- **Each task should target specific, concrete aspects of the interface to enable clear verification and identification of issues**

Issue 17: Usability Test Plan - Run through revealed those issues.

- **From conducting tests we learned about the value of user feedback from outside of the development group. There were quite a few areas that were brought up by testers for improvements that the team had overlooked, highlighting the importance of both internal and external user testing.**

Tester ID-02:

Spotted icon inconsistency which overlooked by the team

Tester ID-10:

Navigation from route detail is tricky due to lack of navigation bar

- **Conducting tests also showed the importance of having multiple types of feedback input. Oftentimes there was verbal confusion that occurred during the testing that users did not write about in the feedback form. This also worked the other way round as well with testers mentioning in the form features that they liked that we did not here them express much interest in during the test.**

Section in the survey:

- What did you think of the system overall?
- What did you like most about the system? Why?
- What did you dislike the most about the system? Why?
- What would you change about the app?

Providing more detailed feedback.

- **Mock tests can be a very important contribution to improving testing. As a group we ran a mock test among ourselves. During the mock test, we had several moments where we had to stop to pause, and question the process for how things should be run. Because of this mock test we were able to improve the quality of the actual tests but also make testing more consistent as all members were present during the mock.**

Issue 17: Usability Test Plan - Run through revealed those issues.

What were the most significant results you found from user testing?

- **One user completely skipped the transport mode filter, either forgetting the requirement or not noticing the option, indicating a potential discoverability issue with essential filtering features**

Tester ID-10 skipped the transport mode filter step (buses and trains only) - unclear whether this was forgotten or the filter option wasn't noticed.

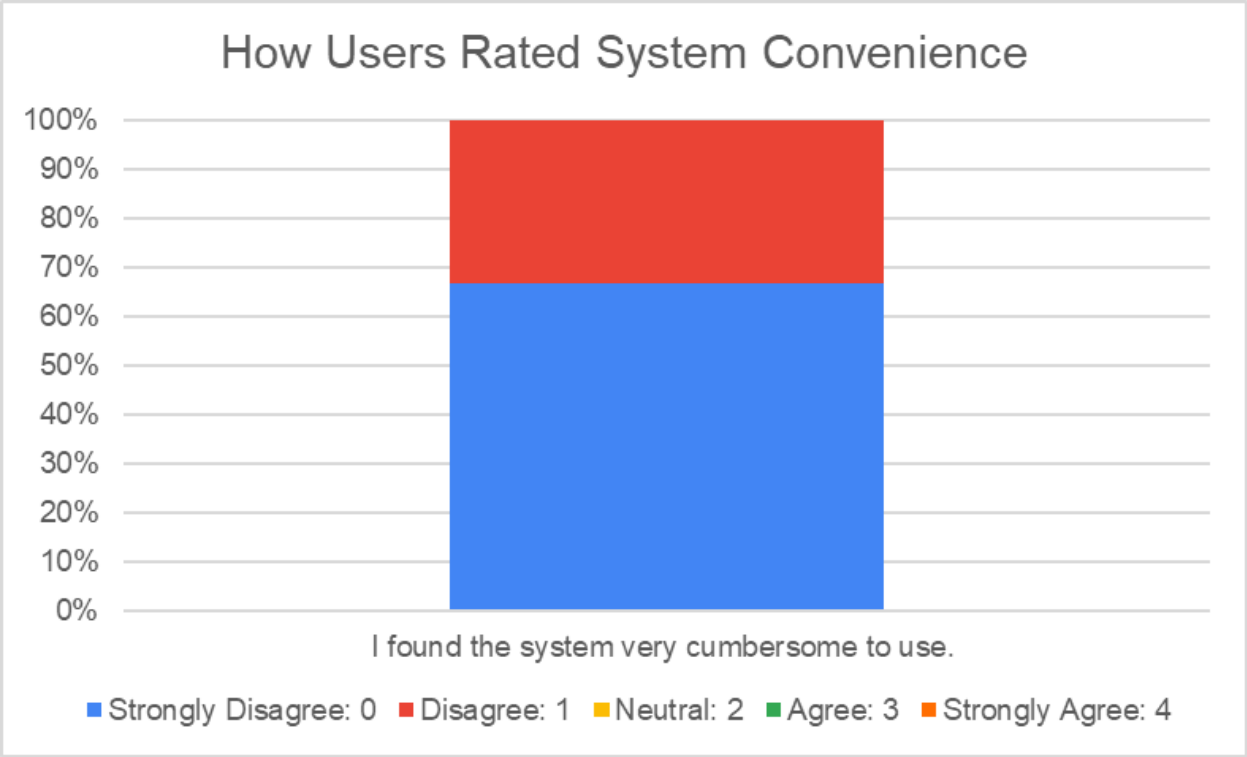
- **Users expected alerts to be route-specific when accessed from route information, but the system shows all alerts, reducing the relevance and usefulness of alert information**

Tester ID-02:
User would have liked to see the time on alerts on the alert cards as well as in the in-depth alert information pop-ups.

Tester ID-03:
Alert information is not tailored for specific routes.

Tester ID-10:
I felt that the alerts was very generalized and it made it a bit tricky to determine which alerts affect a particular route.

- **The search bar positioning creates thumb reach issues on mobile devices, potentially impacting core functionality for the primary use case**



While we received feedback confirming accessibility issues with search bar positioning, and agreed that these thumb reach problems exist, the SUS scores suggest users did not perceive this as a serious usability barrier. However, all our testers were healthy young users, and results may differ significantly with a broader range of participants including users with different physical abilities or device usage patterns.

- **Users expected text size settings in general settings rather than accessibility, suggesting the information architecture doesn't match user mental models**

Tester ID-03 expected text setting to be in general settings separated from accessibility.

Proposed Possible Prototype Updates after User Testing

1. **Implement contextual button states.**

Disable/hide arrow button until route is selected, or add visual emphasis to route cards when selection is required.

+ This will allow users to understand when input is needed and what components may be clickable or further discoverable

2. **Make the filter button more prominent, possibly combine icon and text or increase button size.**

Combine the icon and button together to make the button more prominent on the screen and extend the button background to underlay both elements.

+ This makes the filter button more prominent and combines the filter button with its icon to prevent confusion (‘are these two different buttons or the same one?’)

3. **Enhance toggle visual design with stronger non-colour indicators (e.g., text labels “ON/OFF” or more prominent check states).**

Label the filtering options (transport, accessibility) with on or off on the button when selected. When selecting a Preference, add additional “Selected” text to the side of the selection.

+ This can make the clarity of what’s being selected more precise, especially for those that may have accessibility issues (such as color blindness, etc.)

4. **Implement visual route overlay on map during navigation mode.**

Display bold, coloured path during navigation with turn markers and stop highlights

+ This lets users track progress on the map and supports real-time decision making

5. **Add tab bar in route screen or provide quick home access from all major screens.**

Include a persistent tab bar which contains options like settings, home, favourites, profile etc.

+ Maintains consistency in the design, allows for quick core element navigation rather than step by step backtracking/navigating

6. **Consider moving text size to general settings or provide cross-references between settings sections.**

Include text size settings in the general setting (i.e tab bar mentioned above) and have accessibility options link to it

+ Increases routes to get to text-size settings without increasing clutter

7. **Make the Apply button more prominent or provide clearer visual hierarchy in settings screens.**

Make colour more contrasting/distinct, increase size

+ Increases discoverability

8. **Filter alerts to show only those affecting the currently selected route and its stops.**

Automatically filter and overlay alerts related to current selections on the route details

+ Reduces information overload by presenting the most relevant information

9. **Relocate search bar to bottom of screen or add floating search button within thumb reach zone.**

Floating action search button in the top right corner

+ Mobile ergonomics. Allows the function button to be more accessible for those with large phones and/or small hands.

These served as a guideline for the next stage where we attempted to get more specific and tackle each issue relevant to our test-users' feedback. The updated issues are shown on gitlab, including their priority and possible suggestions.