Track-My-Waste

Design Critique



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CPSC 6140: Human-Computer Interaction

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Description

In this document, we document the process of critiquing the design of our app. The process entailed prototyping our app, creating tests for usability testers, running think-aloud tests to gauge the usability of our app, and making final changes to our app prototype. Along with documenting this process, we describe the problems that users encountered and reflect on the design critique process as a whole.

Executive Summary

After conducting usability tests, we were able to find a variety of issues. We were able to find four main categories of issues: navigation issues, icon issues, missing/redundant button issues, and visible information issues. We were able to come up with a variety of solutions for the problems, some of the more notable ones being broken back buttons, difficulty finding certain features, and screens that prevent the user from navigating the interface further.

As for reflections, we think that our critique was thorough. The assignment did not take as long as expected to complete, but we found a myriad of issues and were able to come up with solutions to them. Our main critique of the process was that it was difficult to manage with social distancing measures, and we would improve the process by building a larger set of usability testers.

Introduction

Our app can be thought of as MyFitnessPal but for sustainable living. It provides tools for users to be sustainable in their own life and be sustainable on a community level. Some of the tools include a smart notification system that suggests sustainable activities that the user may enjoy, a waste logging system so that users can keep up with their carbon footprint, a community events board where users can sign up for and create community events, a social wall (can be thought of as a facebook wall but for sustainability) where users can post their daily doings as it relates to sustainability, a forum where users can ask questions about sustainability, a points system that rewards users for sustainable activity, a leaderboard that ranks users by how sustainable they are, and a rewards shop where users can spend their earned points or money to buy sustainable products.

We had a variety of tasks, each centered around the storyboards from previous assignments. The tasks included hosting a protest, creating a profile and getting recommendations, accessing the reward store, donation page and logging your waste and spreading awareness. These tasks covered the entirety of our app and helped to reveal usability issues within the app.

The user that was assigned the "hosting a protest" task was a 17-year-old high school student. He is fluent with computers, having used computers since he was a kid and now considering himself a computer enthusiast. He is also planning on pursuing a career in environmental engineering, considering himself deeply concerned about the environment.

The user that was assigned the "creating a profile and getting recommendations" task was a graduate student at Clemson. He is fluent in operating computers, having used computers since he was a kid and now pursuing his Masters of Science in Computer Science, can conclude that he is quite hands on with computers. Also he is a very novice related to sustainability and is not bothered about it as well. He is also more concerned about his budget.

The user that was assigned the "Community Waste Bin" task was a 23-year-old Computer Science graduate student from George Mason University. He is well-informed about computers and softwares. He wants to pursue a career in Data Science, being proficient in Python and Machine Learning principles. He is a moderately sustainable individual and tries to incorporate changes in his routine according to his time and current lifestyle.

The user that was assigned the task of "sharing the post on social wall" was a 25-year old Data Analytics graduate student at Northeastern University. He is well-informed about computers and softwares and was always inclined towards learning about it since he was a kid. He is a moderately sustainable person who takes steps on an individual level to reduce his carbon footprints. He tries to learn new sustainable ways and incorporate in his daily lifestyle.

The user that was assigned to the "logging your waste and spreading awareness" task was a 24-year-old Master's student pursuing his education in the field of Construction Science Management. He is well-versed with sustainability and is a disciplined person who is aware about waste management and is good enough to pass on the knowledge he has to others. He is savvy about technology and loves trying different applications too. Apart from his main goal of getting a job his secondary goal is to make more people aware about sustainability and waste management.

Problem 1: Navigation Issues

Introduction

This chapter outlines some navigation issues that our usability testers came across—that is, issues related to the sequence of pages that the user came across. For example, back buttons that take users to seemingly random pages and screens that prevent the user from navigating further.

UARs

No. JB - 02, PP - 01	Problem
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Name: Broken back buttons

Evidence

When the user pressed the back button on either of the chats, they expected to go back to the event attendees page. However, pressing the back button took them to the leaderboard page.

Criterion

- User uses a very suboptimal method to accomplish task
- User expresses distressed surprise
- User has a negative reaction/says something is a problem
- User makes a design suggestion

Explanation

I think that the problem resulted from multiple pages using a chat with a back button. I think we forgot to make duplicate chats to handle the different cases where someone might use the back-button, and ended up with the back button linking to the leaderboard page always.

Severity

Rating: 4

Justification

Frequency: This is a very common problem which is faced on multiple pages. The back button takes you to some random page instead of the intended one. Every type of user is going to experience this problem. So, we gave it a high frequency rating.

Impact: This problem has a high impact as it is a problem where the user is redirected to a random page. If the user is facing it for the first time then he might be stuck on the same page preventing him from using the application).

Persistence: No matter how many times users perform the action of clicking the back button, it will always take them to the wrong page. Therefore, it is a high-persistence problem.

Weighting: This is a problem which is faced by all types of users and has a high impact. Additionally it is a problem which will bother the user repeatedly.

Possible Solution and Tradeoffs

It can be easily fixed by creating duplicate chat pages for the different pages that provide access to the chat. That way, the back button will actually take users back to the appropriate pages. That would come with the detriment of there being even more duplicate wireframes in our balsamiq project, but that's okay.

Relationships

N/A

Conclusions (and recommendations)

There were a myriad of navigation-related issues coming out of the think-aloud testing. Most navigation-related issues sprout up because of incorrect linking between pages, so the general fix is examining and correcting the pages that each page has links to. So, we may create duplicate screens so that we can have multiple of the same pages, but each with back buttons that lead to their correct screens.

Problem 2: Icon Issues

Introduction

This chapter outlines icon issues—that is, issues related to ununderstandable icons, inconsistent icons, and misleading icons. For example, share buttons that are different across screens and an icon that misleads the user into thinking that a community-oriented section only offers a chat feature.

UARs

No. JB - 04 Problem

Name Share event button not easy to understand

Evidence When given the task of sharing an event that the user just created, they found it difficult to distinguish where the share button was.



Criterion

- User takes too long to finish a certain step
- User has a negative reaction/says something is a problem

Explanation

I think that the problem came as a result of the function of the share button not being explicit. The user may have interpreted it as a back button, per previous UARs that suggested it was a design problem.

Severity Rating: 2

Justification

Frequency: This is a pretty rare problem. Not only is signing up and sharing an event a rather rare occurrence amongst our user base, but it's only likely to affect users new to the system. Impact: The problem is fairly easy to overcome. One just has to look around a little and play around with the interface to understand what the button does, though some users may overlook it and fail to share their event on social media. Therefore, it's a medium-impact issue.

Persistence: This problem should only occur once. Once a user presses the button and learns to associate the share icon with the share function, they'll remember it. So, it has a very low persistence. Weighting: I gave it a 2 because being able to share an event is an important aspect of community organizing—the function that the screen is supposed to help with. If someone overlooks the share button, then they've overlooked an important part of the process as a whole. Thankfully, it's an easy issue to address.

Possible Solution and Tradeoffs

The obvious solution would be to have a small button title labeled "share." It would clear up any ambiguities, but also throws into question the point of using a share icon for the button. If it's not clear what the icon represents, what's the point in using the icon?

Relationships

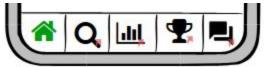
JB-01, Parth-4 all related to events. Dhananjay - 1 Parth-0, Dhananjay - 3, all related to the share button.

No. JB - 01 Problem

Name: Difficulty finding events page

Evidence

The user had to scroll through the entire navigation bar multiple times to find the events page.



Criterion

- User takes too long to finish a certain step
- User tries several times before they find the right action

Explanation

I think that the problem came as a result of the Community section of the navigation bar being represented by a messaging icon. So, when the user was assigned the task "navigate to the events section," they didn't know that there was a community section—they assumed that the messaging icon represented some sort of messaging feature, not a community section.

Severity Rating: 3

Justification

Frequency: This is a problem with a low/moderate frequency as most users probably aren't going to create or join events prior to being familiar with the app. Though, for the select few that are in that circumstance, it is a major issue.

Impact: The impact of this issue is rather high. A user may give up on finding the events page before they actually find it. If someone goes in with the intent of finding the events page, there's no place where one would expect to find it on the nav bar. That renders the feature useless in those cases.

Persistence: Luckily, this is a low-persistence issue. Once a user finds the event page on the last tab in the nav bar, they'll understand that that tab is where you find all of the community-related features, and thus the events section.

Weighting: I gave high weighting to the impact but also kept in mind that it's a low/moderate frequency issue with low persistence. It's app-ruining for a select few, but once the user is familiar with the app they can overcome the problem with ease.

Possible Solution and Tradeoffs

Instead of using a message icon for the community section, use an icon of a group of people. Such would indicate the broader function of the tab as a community-oriented tab. Though, it might not convey the info required to deduce that the section in the nav bar also houses messaging and the social wall.

Relationships

JB-04, Parth-4 all related to events.

No. **Dhananjay - 1 Parth-03**

Problem/Good Aspect: Problem

Name: Inconsistent "share" button

Evidence: There are two different types of share buttons on different screens





Criterion:

User takes too long to complete a step.

Explanation:

Initially the user saw the log my waste page where the share button was like the screenshot provided and when navigating through recommendations the user was confused on whether what is the purpose of the button left to the + button. He had to try clicking on multiple buttons to see what they both meant.

Severity or Benefit:

Rating: 3 – major problem (a problem that should definitely be solved with high priority)

Justification (Frequency, Impact, Persistence):

Frequency: This is a common problem. Every user will be facing this issue while navigating through different features and will be confused with the two different share buttons.

Impact: The problem is easy to overcome. The user can easily overcome this with trying to click on the buttons and see their functionality.

Persistence:Once the users go through this problem they will be used to it and will know which button is for share.

How I weighted the factors: The problem is high frequency and will be faced by every type of user. Even though the problem can be overcome by the user after a few tries the user is stuck not knowing which button is for sharing, hence the severity rating of 3.

Possible solution(s) and/or trade-offs:

Make the buttons consistent. Select a design which is more appropriate. There are no probable downsides to this solution.

Relationships:

JB-04, Dhananjay - 3, Parth-4 related to share button useability.

No. Dhananjay - 3 **Problem/Good Aspect:** Problem

Name: Stuck at the sharing screen while sharing the recommendation.

Evidence:



Criterion:

User has a negative reaction / says something is a problem

Explanation:

The user was thinking of sharing a particular article, that is when he clicked on the share button and then could see a pop up of options where he can share the article. But now the user thinks of not sharing that article or he clicked on it by mistake. There is no back button or the user is not able to click on the background to go back to the page.

Severity or Benefit:

Rating: 3 – major problem (a problem that should definitely be solved with high priority)

Justification (Frequency, Impact, Persistence):

Frequency: This is a common problem. Every type of user will come across this issue when they try to share any recommendation. Specially the casual type of user they are just exploring they want to go back from here.

Impact: The problem is of medium impact. This problem does not stop the user from performing his actions. The user can share the article and even click on the nav bar menu to navigate away from here but the intended action of not sharing and going back is not possible.

Persistence: This problem is persistent and everytime the user wants to not share an article after clicking on the share button he will have to navigate back to another screen. The user can overcome this problem but it will still be persistent as there is no way around it.

How I weighted the factors: The problem is a common problem and is persistent but is not stopping the user from performing the intended action the user just has to take a different approach to go back hence the severity of 3.

Possible solution(s) and/or trade-offs:

Make the entire screen other than the share functions touchable and add a function to navigate the user to the previous page. The user will be able to click at other places and go back. No possible trade-offs

Relationships: JB-04, Dhananjay-1 Parth-03, Parth-04 all related to the share button.

No. **KP-04** Problem

Name:

Doesn't understand "Recommendation" and icon associated with it

Evidence:



Criterion: User has a negative reaction / says something is a problem

Explanation:

The user couldn't associate the name "Recommendation" with it's icon on the navigation bar.

Severity or Benefit:

Rating:

2 – minor problem (would be nice to solve, but not a high priority)

Justification (Frequency, Impact, Persistence):

Frequency: Common; new and casual users are more likely to experience this problem because when they are assigned a task associated with recommendation it might be difficult for them to find this feature in the nav bar.

Impact: Easy to overcome with a low impact; Even though it does not prevent users from achieving the goal, it might waste their time to figure out what coincides with 'Recommendation' on the navigation bar.

Persistence: Low Persistence; The user will get around this problem once they use the feature and understand it's location on the navigation bar even if they cannot associate the icon with the name.

How I weighted the factors: It is common, easy to overcome with a low impact and low persistence this justifies as a minor usability problem.

Possible solution(s) and/or trade-offs:

A possible solution can be either change the name of the feature along with the icon, or change the icon.

Tradeoff:

It can still pose as a difficulty for the users to understand the usability of the feature even with a different name and icon.

Relationships: NA

Conclusions (and recommendations)

Similar to the navigation-related issues, we were able to find quite a few icon-related issues. Our interface had icons that were ununderstandable, inconsistent, and misleading. As one would expect, all of the solutions revolved around changing the icons our interface uses. So, to make our share icons more consistent, we changed the icons on each page so that they were consistent in design. And, to make the community section navigation bar icon more consistent with the tab purpose, we changed the icon to a group of people instead of a messaging icon.

Problem 3: Missing or Redundant Button Issues

Introduction

This chapter outlines missing or redundant button issues—that is, instances where the inclusions of certain buttons confuses the user and instances where the lack of a button prevents the user from accessing a feature. For example, a redundant zoom button on a waste-logging feature or button not existing to reach the donation page.

UARs

No. **CM - 4 Problem/Good Aspect:** Problem

Name:

No need of zoom-in features on the interfaces.

Evidence: On this page the "zoom-in" button is an irrelevant clutter which violates "Aesthetics and Minimalist Design" heuristic.



Criterion:

User makes a design suggestion.

Explanation:

The user would not want a specific zooming the screen feature inside the application as either the user should be able to view all the content easily or can directly zoom using finger gestures in the application to search for a particular feature.

Severity or Benefit:

Rating: 1 – cosmetic problem

Justification (Frequency, Impact, Persistence):

Frequency: This problem is relatively rare and would generally occur only to the novice users and hence it would have a lesser frequency.

Impact: This problem is easy to overcome and does not come in between the user's path to achieve their goals as the users can just pinch zoom the screen if some content is not visible directly and hence has a lower impact.

Persistence: Due to the above mentioned problem, the users won't be repeatedly bothered as the problem is not related to the main task which the user is going to perform.

How I weighted the factors As, this is a relatively rare problem, easy to overcome and low persistence could justify rating as a cosmetic problem. Also, this problem has a lower frequency and hence this would not serve to be a critical factor which hinders the user goals.

Possible solution(s) and/or trade-offs:

A simple solution here would be to remove the irrelevant "zoom-in" symbol as the user can directly zoom the screen on their mobiles using their fingers and need not specifically use the zoom-in button without any specific trade-off.

Relationships:

Relation with UAR of KP-02

No. KP-02 Problem

`Name:

Link to the Donation Page is misleading

Evidence:





Criterion:

- User tries several times before they find the right action

Explanation:

Users had to search for the right action to access the Donation Page. They had to go through a lot of trial and error before finding the appropriate navigation flow even if there were options present. Basically, there were no clear options present on the wireframes to access the page.

Severity or Benefit:

Rating:

3 – major problem (a problem that should definitely be solved with high priority)

Justification (Frequency, Impact, Persistence):

Frequency: Common; New and Casual users are likely to experience this problem as they might not understand which button navigates to which feature.

Impact: Easy to overcome with a high impact, Users are most likely to waste their time by searching for this feature, they can complete their goals though.

Persistence: Moderately Persistent; Once the user understands the navigation to access the page the process after that can be smooth, but that depends from user to user.

How I weighted the factors: A common problem, easy to overcome with a high impact and moderate persistence justifies it as a major problem because it becomes critical in some cases.

Possible solution(s) and/or trade-offs:

Making the button visible in the profile, users are more likely to open their profile often.

Tradeoff: It can be difficult for them to associate it with their points, they would need to understand that they can use the points for buying or donating.

Relationships:

Parth-5, related to donation page.

Conclusions (and recommendations)

There were many button-related issues--at times there were redundant ones, at times there were missing ones. As one would expect, the solutions to these issues revolve around deleting and adding buttons to the interface. So, we deleted the redundant zoom button on the waste logging page, and we added a button so that users could reach the donation page.

Problem 4: Visible Information Issues

Introduction

This chapter outlines visible information issues--that is, instances where a user wants certain information but can't find it. For example, an instance where a user found it difficult to find things on the social wall, and a user profile page that seemed primitive to the user.

UARs

No. **CM - 2, KP-05 Problem/Good Aspect:** Problem

Name: Acknowledgement after payment missing.

Evidence: On this screen after donating, the user does not get any payment status confirmation and hence it violates "Visibility of System Status" heuristic.



Criterion:

User expresses distressed surprise.

Explanation:

Whenever the user donates any amount to any of the NGO or any other institution then he/she expects feedback that the amount has been sent successfully. However, this feedback is missing in the above given interface

Severity or Benefit:

Rating: 3 – major problem

Justification (Frequency, Impact, Persistence):

Frequency: The above mentioned issue would be a common one as the user would always wait to see if the payment he did was successfully done or was there any error but won't get any notification regarding it hence this issue has a high frequency.

Impact: This problem would be relatively difficult to overcome because the user's goal would be to verify their payment status but this would not be achieved and hence the impact would be pretty high.

Persistence: This issue would repeatedly bother the users as they would always have to wait for the payment confirmation but this feature to let them know their payment status is absent and hence the persistence would be moderate to high.

How I weighed the factors: The above mentioned problem Also, this problem has a high frequency and hence this would serve to be a critical factor which hinders the user goals.

Possible solution(s) and/or trade-offs:

A solution here would be to display a period on the top of achievements container in which the users would be able to see the period during which they completed their achievements i.e. achievements either for a week or for a day or month.

Relationships:	
N/A	

No. **Dhananjay - 2**

Problem/Good Aspect: Problem

Name:

No indication of "yyyy" in the Date of Birth

Evidence:



Criterion:

User thinks they did it right, but actually got it wrong

Explanation:

The user was thinking of inputting their date of birth. From the text in the box the user assumed it is mm/dd only whereas the system expected the date to be mm/dd/yyyy. The user thought he had added the correct date whereas the system was not able to handle this and since the signifier was incomplete the user was not able to understand what was required of them.

Severity or Benefit:

Rating: 4 – usability catastrophe (a problem that renders the Web site / app useless)

Justification (Frequency, Impact, Persistence):

Frequency: This problem is common and every type of user will be facing this when trying to sign up to the application.

Impact: The problem is high impact. It stops the user from signing up to the application. The user might be highly demotivated to signup.

Persistence: This problem occurs only once for each user, it can be overcome by multiple tries but there is a high risk to it if the users are not motivated enough to try.

How I weighted the factors: The problem is common and the impact is high. It completely disables the user from signing up to the application if they do not try again with adding the yyyy to their date of birth. Hence the severity rating of 4.

Possible solution(s) and/or trade-offs:

Make the input box a bit bigger and add the "yyyy" in the signifier.

Relationships:

N/A

No. **CM - 1**

Problem/Good Aspect: Problem

Name:

Display of points is not necessary in statistics

Evidence:



Criterion:

User makes a design suggestion.

Explanation:

On the screen displayed above, we can see that, above the two statistical graphs there is an indication of user points. However, whenever a user clicks on the "star" he is redirected to view his/her reward points and there is no use of displaying these points on this specific page and hence could be counted as an irrelevant information here.

Severity or Benefit:

Rating: 2 - minor problem

Justification (Frequency, Impact, Persistence):

Frequency: This problem would be relatively a rare problem and would definitely have a low frequency because the users would be able view the points if they click on the "star" icon and hence they would not need a specific display of these points again on this screen.

Impact: This problem would be easier to overcome as it is a minor problem and would not hinder the users of achieving their goal to view their statistics. Hence, having a low impact.

Persistence: This issue would not bother users repeatedly as it also has a lower frequency to occur and hence the user won't pay much of an attention to it which results in having lower persistence.

How I weighed the factors: This problem as we can see would have a low frequency, impact and persistence and hence would not be considered to be solved at priority.

Possible solution(s) and/or trade-offs:

A simple solution here would be just discard the "reward points" indication from the screen without any particular trade-off. Another solution would be to remove the link to the reward points page.

Relationships: This is related to UAR of Dhananjay -1. Also related to JB-03.

No. CM - 3

Problem/Good Aspect: Problem

Name: Not clear about achievements period.

Evidence: On this screen, the achievements according to a day or a week or month is not clear which violates "Visibility of System Status" heuristics.



Criterion:

User makes a design suggestion.

Explanation:

The user here is unclear about the duration in which these achievements are accomplished i.e. were the achievements was for a week to be completed or for the amount of time the user took to complete the achievements.

Severity or Benefit:

Rating:

3 – major problem (a problem that should definitely be solved with high priority)

Justification (Frequency, Impact, Persistence):

Frequency: This would be a common problem and will have a higher frequency as the user would not be able to view and verify his achievement status with respect to a particular day or week or month.

Impact: This problem would be relatively difficult to overcome as the user would always be obstructed from achieving his/her's goal of knowing the information about the time-frame of his achievements and hence it would be a high impact situation.

Persistence: This problem would always bother the users repetitively as the reason mentioned above suggests that the users won't be able to view the time or period in which they completed or have to complete their achievements and hence would have a higher persistence

How I weighted the factors As, this is counted as a common problem and relatively difficult to overcome and high persistence could justify rating as a major problem which needs to be solved. Also, this problem has a high frequency and hence this would serve to be a critical factor which hinders the user goals.

Possible solution(s) and/or trade-offs:A solution here would be to display a period on the top of achievements container in which the users would be able to see the period during which they completed their achievements i.e. achievements either for a week or for a day or month.

Relationships:

No relation with other UARs.

No. JB - 03 Problem

Name: Couldn't find the amount of stars they had as easily as desired

Evidence

When given the task to find the amount of stars the user had, they couldn't easily find it on the leaderboard or stats section, so they went to the profile page.





Criterion

- User takes too long to finish a certain step
- User tries several times before they find the right action

Explanation

I think that the problem came from the expectation of there to be an explicit star count on both the leaderboard and the stats section, but it is not being presented explicitly.

Severity

Rating: 2

Justification

Frequency: As the reward points/stars system is a central part of the app--that is, it's supposed to incentivize sustainable behavior, this is a high-frequency app. The points system is something we encourage all users to take part in, so not being able to find the amount of points the user has easily is a high frequency issue.

Impact: The impact of this issue is moderate. While it's mildly annoying to skip through a few tabs to find the amount of points one has, most users eventually go to the profile tab and find the amount of points they have from there. It can be overcome rather easily.

Persistence: Luckily, this is a low-persistence issue. Once a user finds a preferred method of checking on the amount of stars they have, they'll be able to find their total stars quickly and easily.

Weighting: We gave this issue a severity rating of 2. Sure, the rewards points are a major feature of the app and the user should be able to check on their total multiple ways, the impact and persistence are such that it's not a major issue. It can be overcome and fixed rather easily.

Possible Solution and Tradeoffs

The obvious solution would be to provide a star count near the top of the page on both the stats section and the leaderboard. Such would allow the user to quickly find the amount of stars they have. The tradeoff is that we have to find a suitable spot include the star count on screens that already have quite a bit of info on them.

Relationships

CM-1

No. J	B - 05	. KP-	01
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Good

Name: Plenty of useful info on the events home page

Evidence

When asked about things the tester liked, he mentioned that the amount of event-related info on the event page was something that he found useful. He said that he didn't have to dig around to find out information about the various events going on.



Criterion

- User has a positive reaction/says something is really easy
- User is able to accomplish something that was a problem with other tools

Explanation

The user was tasked with finding any events that already align with the goals of the event he was supposed to create, and was able to do so easily thanks to succinct event descriptions. He had the goal of learning about the events going on around him and was able to do so without having to dig through multiple pages.

Benefit

Rating: N/A

Justification

Frequency: As with other events-page related issues, this one is low/moderate frequency. Not every user is going to be using the events page, as that's a feature tailored to more routine users of the app who are sustainability enthusiasts.

Impact: The impact is high. It prevents the user from having to sift through multiple event pages to find out what's going on around them.

Persistence: This is a high-persistence benefit. It's a benefit that'll always be there. Weighting: The large benefit of having a large amount of info on the screen comes from the fact that it prevents the user from having to go through a ton of pages to find interesting events or events that they were thinking of creating but already exist.

Possible Solution and Tradeoffs

We provide a lot of information on the event home page, and that comes with tradeoffs. You're able to see what's going on in terms of local events rather easily, but the amount of information on the page may get overwhelming.

Relationships

JB-01, JB-04, Parth-4 both related to events

No. **Dhananjay - 4**

Problem/Good Aspect: Problem

Name: Primitive user profile screen.

Evidence:



Criterion:

User makes a design suggestion

Explanation:

The user was thinking of viewing his profile and seeing multiple features or options there, but the systems only had a few options. The user was expecting to see his profile and his posts on the wall and be able to make edits to his profile, not just a few options. Meanwhile the system was just showing the necessary concise information and not the complete profile.

Severity or Benefit:

Rating: 2 – minor problem (would be nice to solve, but not a high priority)

Justification (Frequency, Impact, Persistence):

Frequency: Not a common problem. Only the active users will face this problem more. They would want to see this feature more often rather than a casual user.

Impact: This problem has a low impact. The problem does not stop the user from seeing the profile the user can just navigate through the forum tab to check their wall and posts.

Persistence: this problem is not persistent. Once the user knows the User Profile does not provide all the details of the posts and wall the user will be able to overcome this problem and navigate their way through the forum tab in the navbar

How I weighted the factors: The problem is not very frequent and the impact is low and the user can overcome it easily. Since the problem does not stop the user from achieving their goals and hinders their task it gets a severity rating of 2.

Possible solution(s) and/or trade-offs:

Add the user's personal wall and gallery views on this page. The possible trade off would be the redundancy introduced and the minimalist design will be interrupted.

Relationships:

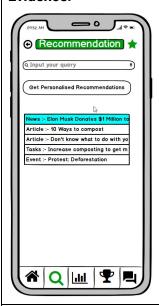
N/A

No. **Dhananjay - 5**

Problem/Good Aspect: Good Aspect

Name: Can do the tasks on their own and understand the recommendation's features.

Evidence:



Criterion:

User has a positive reaction / says something is really easy

Explanation:

The user opens the recommendation tab and views all the features available. He says all the features are pretty self explanatory and easily understandable. Each feature's function can be interpreted easily.

Severity or Benefit:

Rating: NA – good aspect

Justification (Frequency, Impact, Persistence):

Frequency: This is a good feature and every user that navigates to the recommendation tab will be able to understand what its functions are and navigate easily through it.

Impact: The feature has a high impact as the user understands each function well and will be more motivated to use these functions.

Persistence: This feature is persistent.

How I weighted the factors: The user will be able to understand all the functions in the recommendations feature. The user will be more comfortable using these and will be able to navigate to each feature easily and complete the intended actions

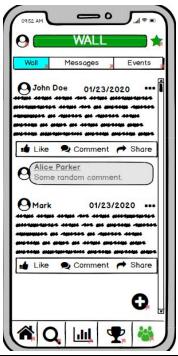
Possible solution(s) and/or trade-offs: N/A

Relationships: N/A

No. KP-03 Problem

Name: Social Wall is crowded with too many features

Evidence:



Criterion:

User makes a design suggestion

Explanation:

The user expressed that the social wall is clouded with features it became unclear to them which feature contains other sub-features. The user has too many options and that can lead to confusion.

Severity or Benefit:

Rating:

2 – minor problem (would be nice to solve, but not a high priority)

Justification (Frequency, Impact, Persistence):

Frequency: Common; New users are likely to experience this problem because they might not know the subfeatures that exist under each tab.

Impact: Easy to overcome; this has a relatively low impact because users tend to waste only a little bit of time behind searching for the features that they need to help perform the task. It does not prevent users from achieving their goals.

Persistence: Low persistence; This problem is overcome once the understands the location of all the features under the Social Wall tab.

How I weighed the factors: A relatively common problem which is easy to overcome with a low impact. It has low persistence, hence this can justify it as a minor usability problem.

Possible solution(s) and/or trade-offs:

The wall can use another design type which can have nested tabs of features.

Tradeoff:

This might make things unclear for the user, they might understand what feature entails what action. This can also waste their time while searching for the right feature.

Relationships: N/A

No. **Parth - 02**

Problem/Good Aspect: Problem

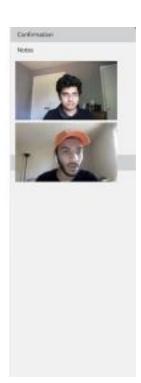
Name:

The option of logging the waste again is not visible

Evidence:

The user was unable to view the option of logging the waste again.





Criterion:

- User makes a design suggestion.
- User tries several times before they find the right action

Explanation:

When you log the waste into the system, it provides you an option of relogging your waste but the color of the text is light gray which makes it difficult for the users to see it.

Severity or Benefit:

Rating:

1 – cosmetic problem (does not matter too much)

Justification (Frequency, Impact, Persistence):

Frequency: High (This is a problem which is faced by the users every time the user logs his waste and this problem can be faced by new and casual users)

Impact: Low (It has a very low impact as the user can achieve their goals once they know about the text)

Persistence: Low (Once the user comes to know about it then he can avoid the problem as he already know the the option of logging the waste again exists)

How I weighted the factors: The problem has a high frequency but with a low impact and persistence. This is a problem which can be solved easily by the user.

Possible solution(s) and/or trade-offs:

The designer can change the color of the text to black or a darker color so that it is easy for the users to see the option.

Relationships:

NA

No. Parth - 04

Problem/Good Aspect: Problem

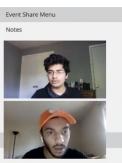
Name:

User is redirected to create an event page (event manager page) when he tries to share an event.

Evidence:

The user is redirected to the admin page of the event (event creator) if he tries to share the event.





Criterion:

- User tries several times before they find the right action
- User expresses distressed surprise
- User has a negative reaction / says something is a problem

Explanation:

If the user wants to spread the awareness of a particular event by sharing it on social media, after performing the action it will give the user admin privileges of that event (making him the event creator) which makes this functionality useless.

Severity or Benefit:

Rating:

3 – major problem (a problem that should definitely be solved with high priority)

Justification (Frequency, Impact, Persistence):

Frequency: High (This problem is faced every time the user wants to share an event and this can be faced by all types of users as there is no way around it if the user wants to share an event)

Impact: High (This is a difficult problem which cannot be overcomed unless the developer makes the change from their side).

Persistence: High (This is a problem which is faced by the user every time he tries to share an event)

How I weighted the factors: This problem can only be solved from the developer side as the user will be given admin privileges every time he tries to share the event which makes this feature useless. It has a high impact and high persistence making it a major problem.

Possible solution(s) and/or trade-offs:

The solution to this problem is to make sure that the user is able to share the event and comes back to the same page after performing the intended task. The tradeoff on the developer side where he has to make sure that the pages are linked properly and the unintended user is not given any admin privileges of that event.

Relationships:

JB-01, JB-04, all related to events. JB-04, Dhananjay-1 Parth-03, Dhananjay-3 all related to the share button.

No. **Parth - 05**

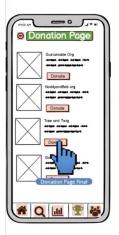
Problem/Good Aspect: Good Aspect

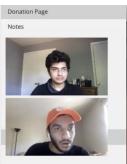
Name:

Option to directly donate money/points to an organization which is helping the society to fight against the environment changes.

Evidence:

The user can directly donate to an organization which is fighting against environmental changes and help them in their cause.





Criterion:

- User has a positive reaction / says something is really easy
- User expresses happy surprise

Explanation:

The user can earn points by completing the daily tasks and can choose to donate these points to an organization which is well known for its cause.

Severity or Benefit:

Rating:

NA – good aspect

Justification (Frequency, Impact, Persistence):

Frequency: High (Every type of user can use this feature of donation where they can donate the points earned or their own money to the organization)

Impact: High (We promote every user to use this feature of donation as much as they can so that they can put in their own contribution and help to fight against these environmental changes).

Persistence: High (The users can use this feature at a regular bases)

How I weighted the factors: Providing the option of donation help users to put in thier own contribution and help in this fight against environmental changes.

Possible solution(s) and/or trade-offs:

N/A

Relationships:

KP-02, related to donation page.

Conclusions (and recommendations)

Just like with missing or redundant buttons, there was plenty of missing or redundant information being displayed on each of the pages. As a matter of fact, it describes the largest category of usability issues we came across. As one would imagine, the solutions to these problems simply involve adding or removing certain information on each page. For example, we would create a confirmation pop-up to caution the user before making a donation, and we made the placement of the stars/points counter better.

Final Conclusion

So, our problems neatly fit into four categories: *navigation issues*, *icon issues*, *missing/redundant button issues*, and *visible information issues*. Navigation issues being issues related to sequencing/flow of screens; icon issues being issues with our icon design; missing/redundant button issues being issues with the available buttons on any given screens; and visible information issues being issues with the available information on any given page.

Respectively, the solutions to our problems revolved around re-examining and re-linking pages so that they would provide the correct navigation experience; changing our icon design; adding or removing buttons; and adding or removing information on different pages.

Reflection

We found 20 problems, 8 being duplicates. Though we found several problems, there are most definitely problems that still exist. For instance, there are various inconsistencies across the screens in the app. We could probably find several more problems if we tested more users, a more diverse set of testers at that.

We spent less time than was expected on each of the steps. The prototyping was probably the most time-intensive step, taking several days for each of the members to finish prototyping. The practice test was rather quick (roughly an hour long) since we were all familiar with the interface. Our think-aloud testing went by rather quickly. On average, we each spent roughly 30 minutes doing the think-aloud tests, then another hour or two writing up the UARs. UAR synthesis took about 1.5 hours, and UAR finalization took 1.5 hours. Lastly, writing the report took about three hours.

Our process was hindered by social distancing. We weren't able to meet up as a group like we wanted to, and conducting usability tests amidst social distancing was also a challenge. As for the process itself, we would improve it by testing more users. We would also add a portion of the assignment where users are required to update their app in accordance to the usability-testing UARs.

Appendix

Task 1: Holding a Protest

Introduction

You're an environmental enthusiast—that is, you do your best to look after your own carbon footprint and make an effort to stop environmental degradation through community efforts. You've got a history of community organizing under your belt.

So, when you heard on the news that a fracking request was approved by legislators in your locality, you were frustrated. You decided that you wanted to turn the anger towards overturning the approval, something a little more productive than letting your anger linger and getting the best of you. So, you figured you're going to start a protest.

You recently installed this new app, Track-My-Waste, which helps you lead a more sustainable life. Along with a myriad of tools to help someone be sustainable in their own life, there's a set of tools that allows people to be sustainable on a community level—providing a platform for starting and joining community events. You figured you were going to plan your protest using Track-My-Waste. It's the first time you've used the app to start an event.

You plan on doing the protest at the South Carolina State House on Friday, February 14th.

Sub-Task 1: Logging in

Before you do anything with the app, you need to log in. So, log in to your Track-My-Waste account.

Sub-Task 2: Check for pre-existing events

Now that you're logged in, navigate to the events page.

Before you go and create an event, you need to check if there's already an event made to protest the fracking approval. We don't want duplicate events!

Sub-Task 3: Create an event

Because nobody seems to have created an event to protest the approval, it looks like you get to be the one that sets it up.

Create an event with the following info:

• Event Name: Protest: Frick the Frackers

• Event Description:

Recently, state legislators approved a fracking request. That is unacceptable given the damage to the environment that fracking causes. I don't want my home being ravaged by the energy industry, so I want to protest. If you want to join me, just sign up!

We'll make signs at the event, but feel free to bring your own!

Bring your friends and family!

• Event Summary: We'll be protesting a recent fracking approval

When: 2/21/20, 9:00 AM - 8:00 PM.
 Where: South Carolina State House

Sub-Task 4: Double-check event details

Now that you've created an event, double check the info to make sure it looks correct.

Oops, looks like you scheduled it one week after you wanted to hold the protest. Edit the event and change the date to 2/14.

Sub-Task 5: Share the event

Now that you know your event information is correct, start sharing it with friends. See if you can get them on board.

Sub-Task 6: Check in with attendees

A few days have passed since you set up the event, and you've got 14 attendees so far. You should check in on them and make sure everything is going fine. Navigate to the event group chat and check in on everyone.

After chatting in the group chat for a little bit, it looks like Cierra V. wants to have a private chat with you to discuss some of her anxieties about protesting. She's never protested before, so she's a little anxious. Chat with Cierra. Tell her it'll be fun and that if she gets worried at all, she can talk to you. Reassure her that you know what you're doing because you've protested before.

Sub-Task 7: Conducting the event

It's event day!

You've already gotten ready for the day, and you've just arrived at the State House. Post a message in the group chat to let everyone know where you're at.

People are starting to check in to the event, so now it's your time to manage the event. Along with participating in the protest, you should chat with the event attendees to make sure everyone is staying safe and having a good time. You should also make sure to add pictures to the Gallery. You'll be doing these management duties until the event ends.

Sub-Task 8: Ending the event

It's nearing 8:00 and everyone has checked out. It's time for you to formally end the event. End today's protest.

Now that the event has ended, you take public transit back home.

Sub-Task 9: Reflecting on the event

Whilst on the bus, you want to reflect on the event. So, you browse through the event gallery.

You also want to see how many total reward stars you have since you've completed an event. Check the leaderboard or your profile and see!

After browsing the gallery and checking on your stars, you want to follow up with your attendees. So, go back to the event group chat and make sure everyone had a good time and make small conversation with them.

Once you get home, you shower and get ready for bed.

Conclusion

Looks like you had a fun time protesting.

A few days passed and you heard on the news that the fracking approval got vetoed thanks to intense pressure from the public (i.e., thanks to your protest). Good job!

Do you have any questions, comments, or concerns regarding your experience today?

Task 2 : Creating account and navigating through Recommendations

Introduction

You are a person who overlooks sustainability, you have never been bothered by your actions that are probably harming the environment. During your day-to-day life you are not concerned about the harms done to the environment by your actions, and are more bothered about your budget.

Recently you met a friend for lunch and he is a sustainability pro. He brought his own cutlery to a fast food restaurant and you two had a really good conversation about sustainability and you were impressed by his efforts. So as a start he introduced you to the application Track-My-Waste, where you can log in your daily waste and get points for doing so. The application even provides you with features to view your progress and get recommendations to be more sustainable.

You decide to go home and install the app and explore it, in the hopes of understanding sustainability better and doing your bits.

Sub-Task 1 : Creating Account

You have now downloaded the application, and on the first page you are asked to login or sign up. Since you are a new user you sign up, enter your details and create an account on the application.

Sub-Task 2 : Creating User Profile

The application now asks you to create a user profile where you have to answer a few questions regarding your daily lifestyles and usage of plastic and other habits. This creates your user profile and helps to get personalised recommendations.

Sub-Task 3 : Navigate to Recommendations Page

You are at the homepage of the application, it is the log my waste page, you want to need to get some recommendations on the waste that you have so you navigate to the Recommendations page.

Sub-Task 4: Get Personalised Recommendations

Navigate to the Personalised Recommendations see the personalised recommendations for you and try to view each of those and share or add those to your tasks.

Sub-Task 5 : Search for a query

Search for queries regarding sustainability, and try to share and add it to the tasks in the application.

Sub-Task: Log out of the application

Now since all your tasks are completed try to log out of the application.

Conclusion

Now that you have navigated yourself through the recommendations and the accessibility of the application and you have understood more about sustainability through the recommendations system, do you have any questions, comments, or concerns regarding your experience today?

Task 3: Sharing the post on social wall

Introduction

You are a moderately sustainable person who cares about the environment. Even though you are pursuing your doctorate degree, you like to be involved in eco friendly activities like segregating waste into two types (biodegradable and non-biodegradable), consuming less energy (power) and using public transport to commute to places that were time consuming.

After reading about the Australian fires that happened last year and its effect on the environment, you researched more on this topic and started taking steps on an individual level to reduce her carbon footprints. You believe that this is a very serious concern and it needs to be addressed by all of us.

One of the online forums recommended you to download the Track-my-waste application. This application would recommend you to complete various daily tasks like using a cycle, being vegetarian, reduce the use of plastics, plating a tree, using public transport or carpooling, reduce your water usage and many others. The app lets you earn points by completing the daily tasks and these points can further be redeemed for various eco-friendly products like cloth bags, bamboo sticks, reusable straw, etc.

Sub-Task 1: Look for recommended tasks

You look for tasks that have been recommended by the application which you can add in your daily routine and try your best to complete it.

Sub-Task 2: Check leaderboard

All the points that you have earned by completing the recommended daily tasks will help you to compete with your friends on leaderboard. This will act as a positive reinforcement for you and act as a friendly competition.

Sub-Task 3: Claim rewards

With the points that you have earned, you can exchange them for rewards (environment friendly products like reusable straw, cloth bag, etc) or you can donate it to an organization which is fighting against the environment change.

Sub-Task 4: Log your waste

You can keep a track of all the waste products that you have been using and log them. This will help you visualize your waste usage for every month and help in reducing the usage.

Sub-Task 5: Share your achievements with friends

You can share your achievements and posts on the social wall to spread the awareness so that more people can help you in this cause.

Sub-Task 6: Create and organize an event

You can create your own event and post it on social media so that people can join it. They can view the details of the event and provide their contribution towards the society.

Conclusion

As you have explored all the features of "track my waste" application, what do you think of the application? Did you experience any problems and do you have any recommendations from your side which will help us in improving the application.

Task 4: Community Waste Bin

Introduction

You are a zero waste pro who has been sustainable all their life, from having reusable cutlery to weekly recycling of waste you instilled the values of sustainability in your day-to-day routine. It is a normal saturday and you are about to go and recycle your waste.

You are to follow a normal "Dumping Day" routine which involves picking up your neighbour along with her waste and using the "Track my Waste" app to go about the day and making decisions. This application helps you to maintain your sustainable lifestyle and with luck meet like-minded people on the App's leaderboard who can help you implement newer or better techniques.

Sub-Task 1: Checking Recommendations

After picking up your neighbour you check the Recommendation System in the app to track down the nearest community bin.

Sub-Task 2: Using the Waste Tracker

After logging your waste while recycling it you help your neighbour but stumble upon a roadblock, you don't understand which recycling bin to use for an item with unknown composition.

Sub-Task 3: Check Leaderboard

Use the Leaderboard to track down the highest scorer to clarify your doubts about the new material.

Sub-Task 4: User Chat

Use the Chat option to send a text message to the highest scorer to ask for help.

Sub-Task 5: Social Wall

After acquiring information, create a new post on the social wall to help other users to further rectify their mistakes or solve their doubts.

Sub-Task 6: Donation Page

Use a donation page to donate to a charity who supports usage of sustainable materials.

Sub-Task 7: Event Creation Page

Use the Event Creation page to create an event which informs individuals about recycling difficult materials.

Conclusion

This "Dumping Day" was eventful and another success for you and your neighbour. Let's see what the next week brings.

Task 5: Logging your Waste and spreading awareness.

Introduction

You are an individually sustainable person and hence you are well-aware about the concepts of sustainability and pretty disciplined when it comes to the waste logging and management. Under the assumption that you could serve to be a vital user of this application, the task of spreading social awareness about all these concepts of logging waste, making your friends and family savvy through eclectic surveys, articles from the application should be your habit.

Uptil now you had a neat habit of keeping a small notebook for logging your own waste daily, you came to know about the "Track-my-waste" application and latterly you installed this application on your mobile device by assuming a motive to achieve your goal of logging waste to be more automated rather than jotting down everything in your notebook.

A secondary motive of yours which you personally would like to accomplish is to self-comprehend all the current information on sustainability and then keeping your known ones aware about it and this can be fleshed out using the application.

Sub-Task 1: Account Creation

After downloading the application, the initial step for any user is to create his/her account so that the user will be registered on the application. If it is an existing user then entering login credentials would be enough.

Sub-Task 2: Waste Logging

You will now perform the main task of this application that is to log your own waste. First you will select the list of items which you have to log and then after specifying the quantity you will submit it.

Sub-Task 3: View your statistics

Now, to view how much waste you have been logging, you will view your statistics which will give information in the form of a graph which will display your weekly statistics.

Sub-Task 4: Check for your reward points and Leaderboard

To keep yourself consistent in achieving your goal of logging your waste consistently, you can keep an eye on your reward points to keep yourself motivated and can also view the leaderboard section to get information about how others are performing.

Sub-Task 5: Maintain achievements completion

To earn more reward points you have to complete the achievements and on a regular basis and check for the upcoming achievements.

Sub-Task 6: Being updated and spreading latest posts and articles.

To keep yourself informed about the recent advancements and updates in sustainability and waste management you can always visit the event sections and if you have some nice information to post then, it can be done via the application's forum section.

Conclusion:

Finally as you have gone through the application and performed the necessary tasks by your opinion, it looks like you enjoyed the whole process and the application in general. Congratulations on doing such good work!

Now, do you have any other queries, feedback and concerns about your experience today?

Prototype Link

Click here for the Balsamiq prototype

Video Links

Dhananjay Interview Video

Click here to view the interview

Jeff Interview Video

Click here to view the interview

Parth Interview Video

Click here to view the interview

Karishma Interview Video
Click here to view the interview

Chaitanya Interview Video

Click here to view the interview