

# **Prototype design project for Foster Grant - Final Report**

## **1. Group Member Names**

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**Website Name** Foster Grant  
**Website URL** <https://www.fostergrant.com/>  
**Prototype URL** <https://4od8pf.axshare.com/>

## **2. Executive Summary**

The website we chose for our final project is “Foster Grant” – an e-commerce website that sells sunglasses. We have utilized Between-groups (Between subjects) design to test the usability and interface of the redesigned website prototype.

A total of 12 users tested the user experience of the website, with 6 participants (control group) going through a set of predefined tasks on the original website, while the other 6 participants (experimental group) went through the same set of tasks in the redesigned prototype. We ensured random assignment of the 12 participants to one of the two groups without revealing which website they are testing in order to maintain the impartiality of the case study results.

Following metric were used to measure the improvement of the prototype over the original website -

1. Time spent on each task.
2. Task success rate.
3. System usability score (SUS).

The results from the study show that users performing the tasks on the original website took more time to complete the tasks when compared to the remodeled prototype. A trend of lostness was also seen when the users performed actions on the original website. This made them unenthusiastic to stay and buy spectacles on the website. On

the other hand, the six users who performed the given tasks on the redesigned prototype of the website reported that the website was easy to use, and certain fully remodeled features like seeking help were easily accessible. Therefore, using the metric evaluation, we have concluded that the redesigned prototype provides a better user experience.

### 3. Method

#### 3.1 Who we tested

12 participants, having the following demographic, evaluated the website. 6 participants evaluated the original website, and the other 6 evaluated our redesigned prototype.

<b>Persona 1</b>	<b>Undergraduate College Student</b>
Fictional Name	James Fulton
Job title/Major Responsibilities	College Student, CS Major
Demographics	Single, 19 years old
Goals and Tasks	James is a college student who works on assignments and likes to go for travel and hiking. He loves glasses and cares for his eyes too. He has blue screen protector glasses and different shades of sunglasses for every trip. He is looking for good quality glasses online that serve his need.
Environment	He goes to college and enjoys wearing comfortable glasses. He prefers something which is trendy, usable and easy to buy.
Quote	"Is there any way I can order items online, also find different ranges and get it delivered to Arizona State University?"

<b>Persona 2</b>	<b>Marketing Officer</b>
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Fictional Name	Thomas Anderson
Job title/ Major Responsibilities	Marketing Officer
Demographics	Married, 32 years old
Goals and Tasks	Has bifocal lens power. Wants to find something which looks good and trendy in today's age.
Environment	Thomas is a working professional in his early 30's who meets clients on a daily basis and spends time both indoors and outdoors extensively.
Quote	"Looking for a website that would have a collection of indoor as well as outdoor glasses that can be customized for my face. Confidence is the key when you work in marketing."

<b>Persona 3</b>	<b>Software industry professional</b>
Fictional Name	Harsh Radadiya
Job title/ Major Responsibilities	Software Developer
Demographics	Single, 28 years old
Goals and Tasks	Has power in both eyes. Loves to wear contact lens and glasses. Loves to have a different set of glasses and lens for different occasions.
Environment	Has to code all day long, drives from office to work and loves traveling during weekends.
Quote	" I am looking for a constant website which can provide trendy glasses with power at reasonable price."

Audience Type	
Graduate Students	5
Undergraduate Students	3
Working people	4
<b>Total (participants)</b>	<b>12</b>

Computer Usage(in hours/week)	
0 to 10	3
11 to 25	3
25+	6
<b>Total</b>	<b>12</b>

Age	
18-20	4
21-26	3
27-30	2
30-35	3
<b>Total (participants)</b>	<b>12</b>

Gender	
Women	4
Men	8
<b>Total (participants)</b>	<b>12</b>

### 3.2 What participants did

Each participant met with a study facilitator (us) for at least 20 minutes, gaining knowledge about the number of tasks they are required to complete and then working on them on the original website or the redesigned website prototype. The number of tasks given to each participant was six and we observed the total time taken by each user to go through the task list.

At the end of the study, we had users fill a questionnaire where the users described their experience working on the original website and/ or the prototype.

### 3.3 List of tasks performed

The following tasks were assigned to the participants, in both the groups 1 and 2.

#### 1. **Sign up for a new user account**

You are interested in creating a user account on the Foster Grant website. So, you click on “Sign-in” in the Home Page and fill up the **Register** form to create the account.

#### 2. **Frame Finder test**

You want to find a suitable frame depending on factors such as what type of glasses you are looking for, your face shape, and so on. You take the Frame Finder test and browse the results obtained. You select “*Raynor e.reader*” glasses.

#### 3. **View the product details page**

You want to view the description and reviews for the product. You also want to use the “*Use the strength guide*” link below the product name to figure out your eye power and then select any power. Go to the Reviews section to check out the ratings

for the product. You wish to know more about the product you want to buy.

#### **4. Getting help**

You need some help with shopping. Where is the help section located?

#### **5. Add the product to Favorites and edit Favorites**

You wish to add “*Raynor e.readers*” to your *Favorites* list so that you can shortlist items in your wishlist when you check out. Once you wishlist the product, you remain on the same page to go to *Recommended Products* at the bottom of the page. Inside the wishlist, you multi-select the items in the wishlist and remove all from the list.

#### **6. Search for specific products**

You wish to search for “*readers*” through the Search box at the top of the page. You filter and find the product (*Raynor e.readers*) in the search results and go to the Product Details page.

### **4. What metrics we collected**

#### Operationalization of metrics

The participants were made to perform their given tasks in a stress-free indoor environment without any external influential factors. The devices on which the tasks were completed had stable internet connection, and the screen size was big enough so that users were comfortable working on them. Screen capture software was used to record the users’ workflow through the website. The below metrics were considered, and data was collected from the twelve participants:

#### **1. Time spent on each task**

The amount of time a user spent on the predetermined tasks was noted down so that the study facilitators could compare the length of time a user spends on the original website and the length of time another user spends on the redesigned prototype. This metric is used to calculate the time-based efficiency of the redesigned website.

#### **2. Task Success Rate**

Success rate was quantified into 4 categories. A score of 3 was given to participants who completed the task with ease. A score of 2 was given to those who were able to do the task but faced some difficulties. A score of 1 was given to participants who partially completed the tasks. A 0 was given to the participants who were unable to do the task entirely.

#### **3. System Usability Score [\(find report here\)](#)**

System usability scores have been calculated by asking the participants to fill a questionnaire at the end of their test session. The questions have been referenced from usability.gov, and the t test calculator from the following website has been used. <https://www.socscistatistics.com/tests/studentttest/default2.aspx> .

## 5. What improvements were made to site

Following changes were made to the website.

### 1. Show All Major Options on the Homepage

According to the principle, all the major options should be shown and made clickable on the homepage. The user should not have to spend too much time looking for a frequently used option, such as the **Sign in** or **Logout** buttons.

There is no Logout button visible on the homepage of the Foster Grant website. The user is required to go to the *My Account* page and then click the *Logout* button in the bottom left corner, as shown in the figure below. This is a tedious task and takes up unnecessary time for the user.

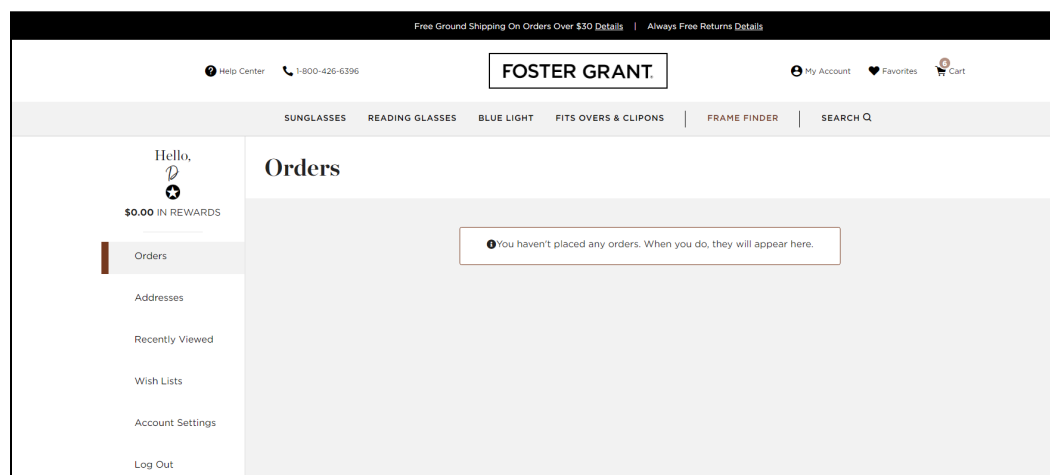


Figure 5.1

In our redesigned prototype, we have included the *Logout* button on the header so that the user can sign out of their account from any page on the website. This reduces the number of clicks made by a user on the website and speeds up the process of signing out.

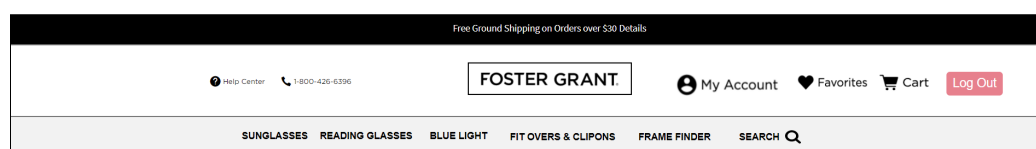


Figure 5.2

In accordance with Jakob's Law, we have placed the *Log out* button on the far right so that users can easily identify the option. This placement of Logout/ Login buttons on the right corner is adopted by many popular websites such as Amazon. This will make the users feel more comfortable using Foster Grant website since it follows the concept used in popular e-commerce websites.

## 2. Reduce the number of questions while creating a user account

In any e-commerce website, the user should be able to register for a new account with ease and in less time. For instance, in *Shein* website, when a user creates a new account, the number of questions asked is very few including the name and email address of the user. This will ensure that the customer does not spend too much time on creating an account and that he/ she can start browsing for products sooner.

In the Foster Grant website, there are a lot of unnecessary questions asked to the customer when they are creating a new user account, as shown in the below figure.

**New Account**

Email Address Required  
diyav504@gmail.com

Password Required  
\*\*\*\*\*

Confirm Password Required

First Name Required

Last Name Required

Address Line 1 Required

Address Line 2

Suburb/City Required


Country Required  
United States ▼

State/Province Required  
Indiana ▼

Zip/Postcode Required

Phone Number Required

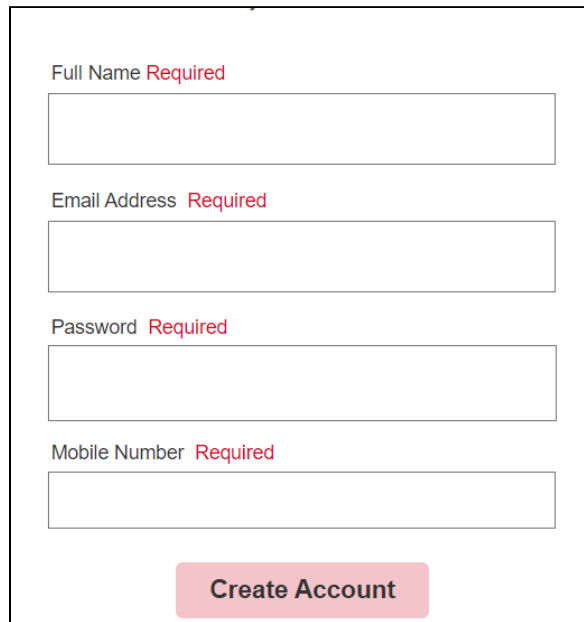
Exclusive Offers ☐ I would like to receive updates and offers.

☐ I'm not a robot 

Create Account

Figure 5.3

We have reduced the number of questions by removing the fields asking for address details. Users can update this during checkout, and this should not be made mandatory.



Full Name **Required**

Email Address **Required**

Password **Required**

Mobile Number **Required**

**Create Account**

Figure 5.4

The above changes ensure the *ease of use* while creating a new user account.

### 3. Ensure usable Search Results

According to the principle, any website's search results should return relevant and accurate results in a format that is comfortable and usable by the customer. In the Foster Grant website, when a user searches for any item, a list of articles is displayed first and on scroll the list of products are shown. This is annoying to the user since he/ she does not need the articles to be on top of the page.





Figure 5.5

We redesigned the search results so that the products with good filtering options are displayed first. This enables the user to quickly identify the product he/ she desires. The redesigned page is shown below.

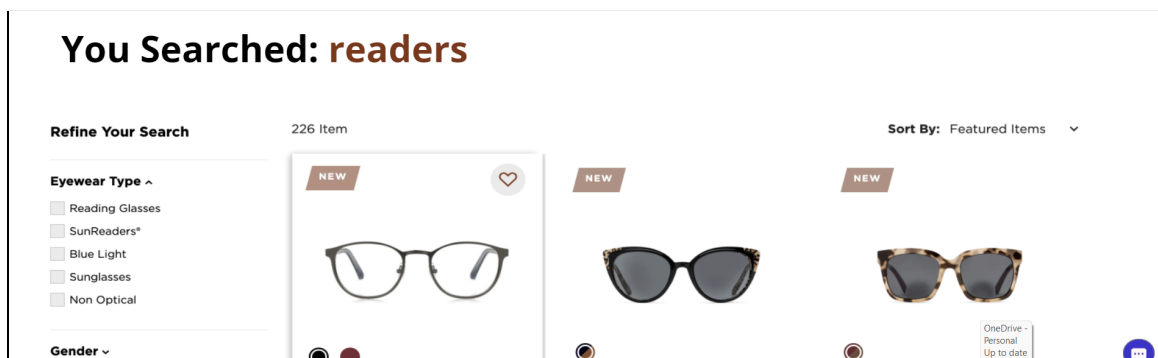


Figure 5.6

This change will make a positive impact on the customer user experience.

#### 4. Reduce the number of clicks

To make the user experience faster and better, there should be less clicks wherever possible. In the original website, when a user takes the Frame Finder test, each question is on each page, and the user must click on *Next* each time he/ she wants to go to the next question. This is time consuming since the number of clicks the user needs to make is unnecessarily more, as shown below.

SUNGLASSES
READING GLASSES
BLUE LIGHT
FITS OVERS & CLIPONS
FRAME FINDER
SEARCH Q

QUESTION 1

## What type of eyewear are you shopping for?

Select one.

**Sunglasses**

Styles include fashion, driving, SunReaders® and more.

**Reading Glasses**

Lens types include full magnification and multifocal.

**Blue Light**

Includes blue light glasses, reading glasses and gaming styles.

**Fits Overs and ClipOns**

Fits Over, ClipOns and FlipUp styles for use with prescription eyewear.

NEXT

Figure 5.7

In our redesign, we have collated all the questions in a single page so that the user can just answer each question and click *Submit* once at the end of the questionnaire to get the results. This reduces the number of clicks a user has to make on the screen and reduces time spent on this task.

### Frame Finder

Ready to find your perfect pair of Foster Grant eyewear?

Answer a few questions so we know what you're looking for

Question 1 of 6

#### What type of eyewear are you shopping for?

**Sunglasses**

Lens types include full magnification and multifocal.

**Reading Glasses**

Lens types include full magnification and multifocal.

**Blue Light**

Includes blue light glasses, reading glasses and gaming styles.

**Fit Overs & Clip-ons**

Fits Over, ClipOns and FlipUp styles for use with prescription eyewear.

Question 2 of 6

#### When will you primarily use your reading glasses?

**While Indoors**

**Digital Reading**

**While Outdoors**

**While On-the-Go**

Question 3 of 6

#### What lens type do you need for your reading glasses?

Select all that apply.

Figure 5.7

## 5. Use a Clickable 'List of Contents' on Long Pages

This principle assumes that there should be *anchor links* present on pages that contain a lot of text so that users can easily navigate to the section of the page that they want to view. This ensures that the user need not scroll to the bottom of the page to view the text they want. For instance, in the Foster Grant website, the customer must scroll down to view the *Reviews* section. There are a lot of information present above the *Reviews* section that the customer might not require.

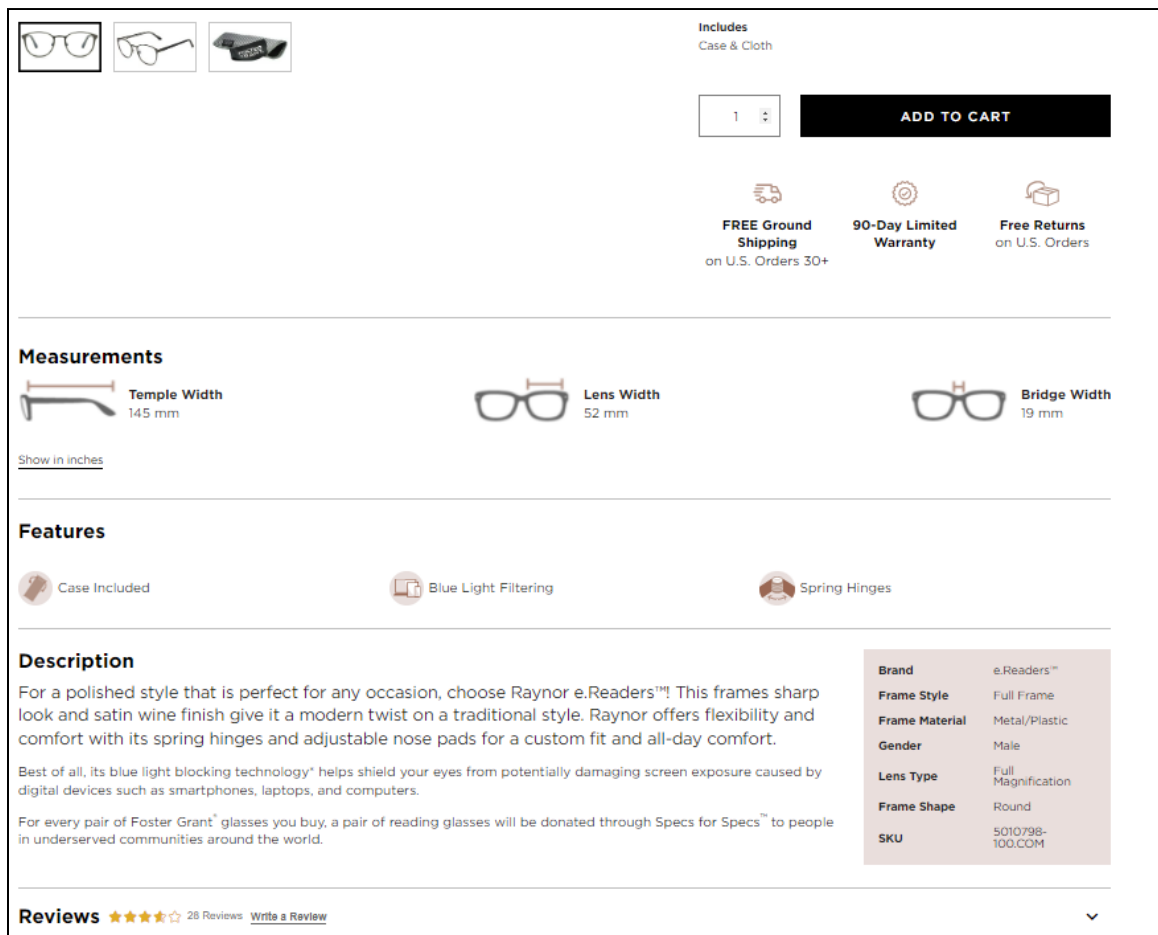


Figure 5.8

In our developed prototype, we have included a *list of contents* with clickable links to each of the following sections – *Measurements*, *Features*, *Description*, *Reviews*. The customer can just click on any of the links to automatically scroll to that section.

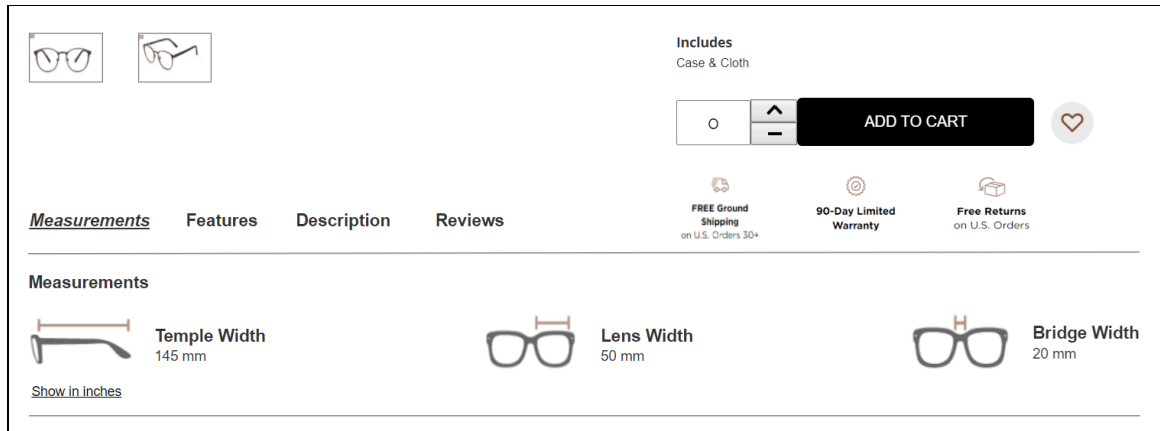


Figure 5.9

## 6. Wishlist Process

When a user clicks on Wishlist for any product, the website navigates to the *Favorites* list immediately instead of staying on the *Product Details* page. This will impede the shopping experience of the customer since they must go back to the previous page and browse any recommended products. In our redesign, the customer stays on the *Product Details* page after wishlisting an item.

When the user goes to the *Favorites* page to view and edit the items in the *Favorites list*, there is no option to select multiple items at once and remove them from the list. This is time consuming and annoying to the customer.

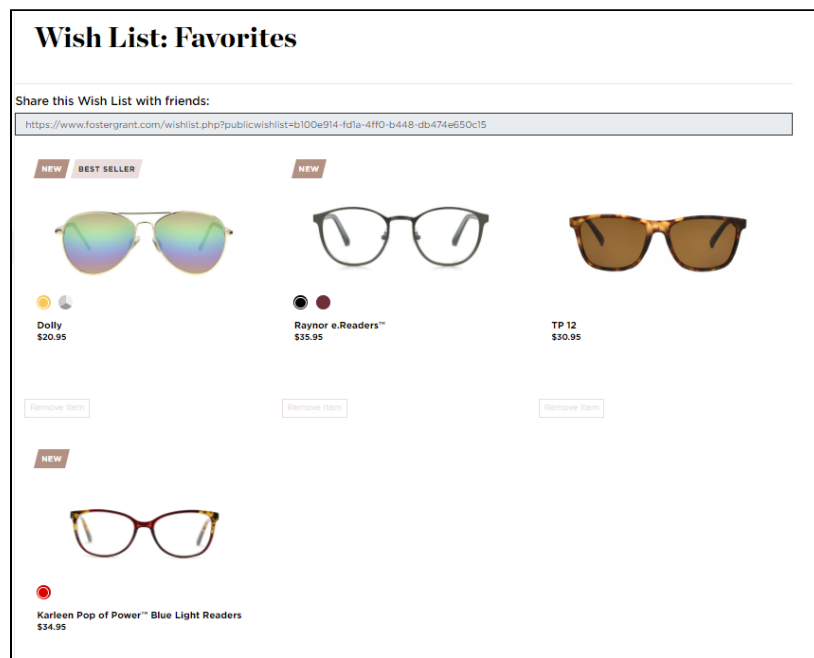


Figure 5.10

We have redesigned the page so that users can select multiple items and remove them with a single click.

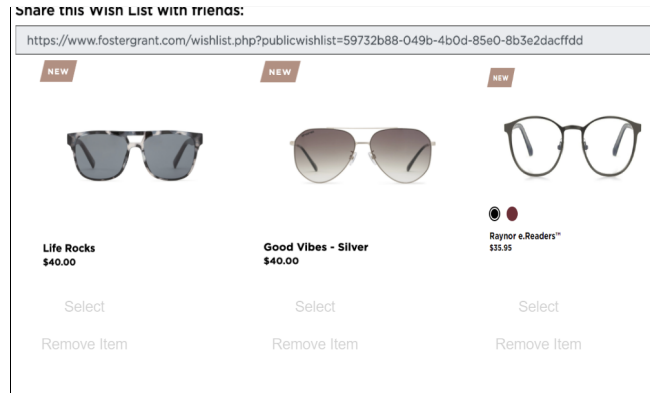


Figure 5.11

## 7. Chatbot to interact with users

The user needs to scroll down to the footer to see the button *“Chat with an expert”*. However, clicking on the button does nothing and the user has no option to interact with a chatbot or customer service.

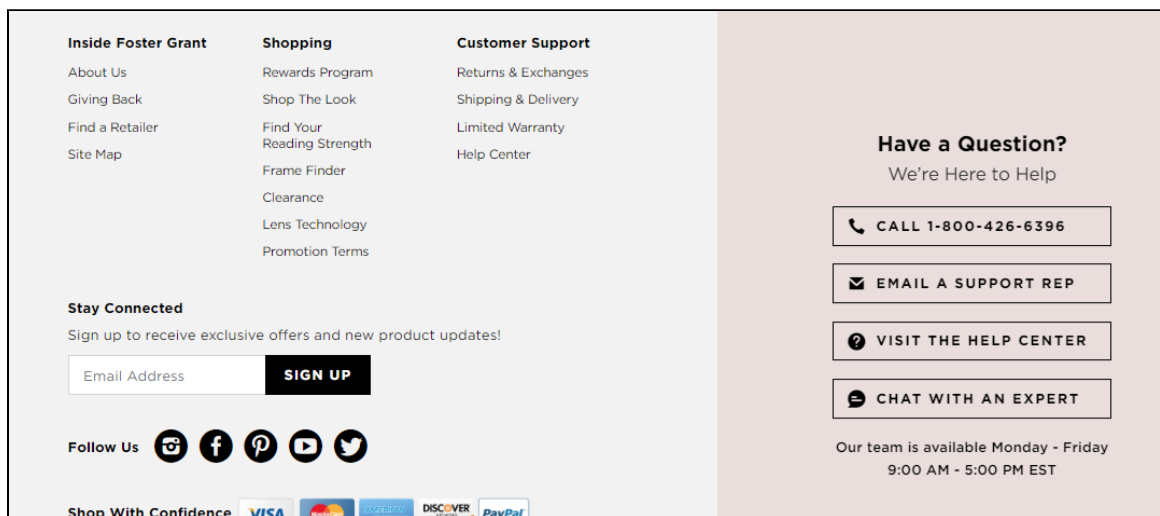


Figure 5.12

We have included a *Chat* icon at the bottom right corner of the page so that the user can easily access the interactive chat feature.

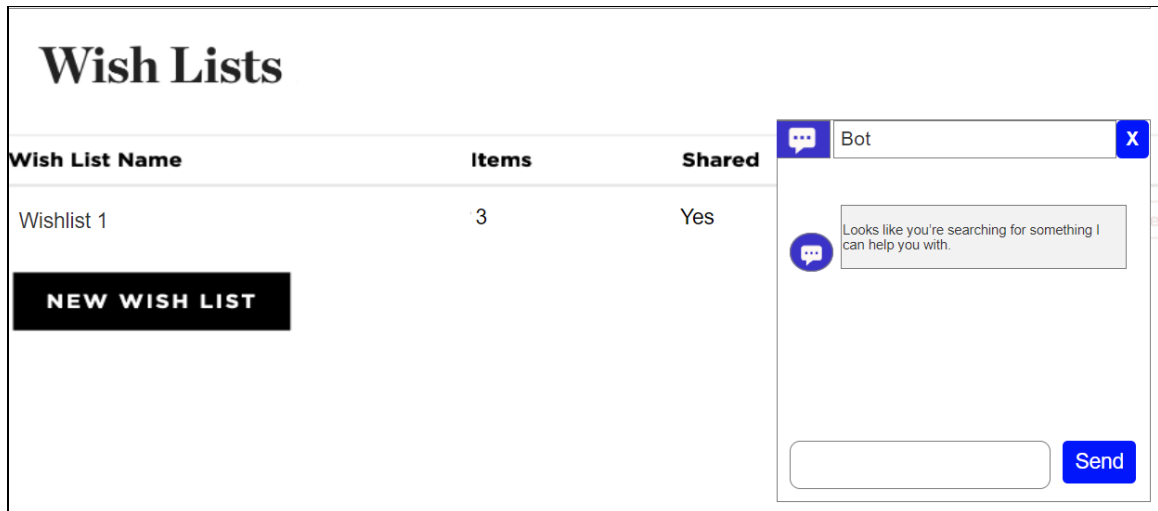


Figure 5.13

## 6. Overall Findings & Recommendations

The report studies overall findings and provides recommendations based on the 6 tasks that were performed by the users. Two of the metrics, time taken on each task and success rate of the task, are mentioned under respective tasks. The SUS report metric is mentioned separately after the tasks.

### 6.1 Task 1 - New user signup

The first task asks the participants to sign up on the Foster Grant website. A signup form requires users to fill in details to create an account on the website.

#### 6.1.1 Usability findings

The user is required to enter the details which are at times not important for the users just taking a glance at the products and not intending to buy goods. The information can be asked to be filled out at the end of the purchase during the checkout phase. Just the essential information needed to start off with the product browsing and saving is required to sign up on the website.

#### 6.1.2 Screenshots to support the findings

Foster Grant - Create Account

fostergrant.com/login.php?action=create\_account

Help Center 1-800-426-6396 FOSTER GRANT My Account Favorites Cart

SUNGLASSES READING GLASSES BLUE LIGHT FITS OVERS & CLIPONS FRAME FINDER SEARCH Q

Email Address *Required*

Password *Required*

Confirm Password *Required*

First Name *Required*

Last Name *Required*

Address Line 1 *Required*

Address Line 2

Suburb/City *Required*

Country *Required*

Too many questions are given to the user when user is creating a new account. This increases time taken by the user to sign up by answering unnecessary questions

Image 6.1 - User signup on original website

**Sign In**

Email Address:

Password:

**Sign In** Forgot Password?

**New Customer?**

Create an account with us and you'll be able to:

- Check out faster.
- Save multiple shipping addresses
- Access your order history
- Track new orders
- Save items to your Wish List

Email Address *Required*

Password *Required*

Confirm Password *Required*

Mobile Number *Required*

**Create Account**

We have reduced the number of questions that need to be answered by a user when signing up.

Image 6.2 - User signup on prototype website

### 6.1.3 Table of scores

Metrics	Time taken	Task Success
Mean for original site	263.33	2.5
Mean for the remodeled site	223.67	3
Variance for the original site	626.67	0.3
Variance for the remodeled site	281.47	0
T Test Value	3.22	-2.24
Results from the T tests	The t-value is 3.22423. The p-value is .00911. The result is significant at $p < .05$ .	The t-value is -2.23607. The p-value is .049332. The result is significant at $p < .05$ .

*Table 6.1 - Statistical values for task 1*

### 6.1.4 Supporting evidence of improvement

Based on the table above, we can conclude that the form takes less time to fill on average on the prototype website when compared on the original website. The task success rates are comparable, with the prototype scoring slightly better than the original website. This is backed by the respective t value scores of time taken and task success rates.

### 6.1.5 Recommendation

We recommend making sign up process faster and easier by removing unnecessary fields from it and moving them to check out page later on.

## 6.2 Task 2 - Frame finder

Task 2 asks participants to find a frame customized to their preferences.

### 6.2.1 Usability findings



The frame finder had multiple pages with single question on each one of those. This leads to user frustration as after answering each question in the questionnaire, the user has to scroll down to click for a new page which is repeated for 6-7 times. Along with that is the page loading time which does not satisfy the user experience.

### 6.2.2 Screenshots to support the findings

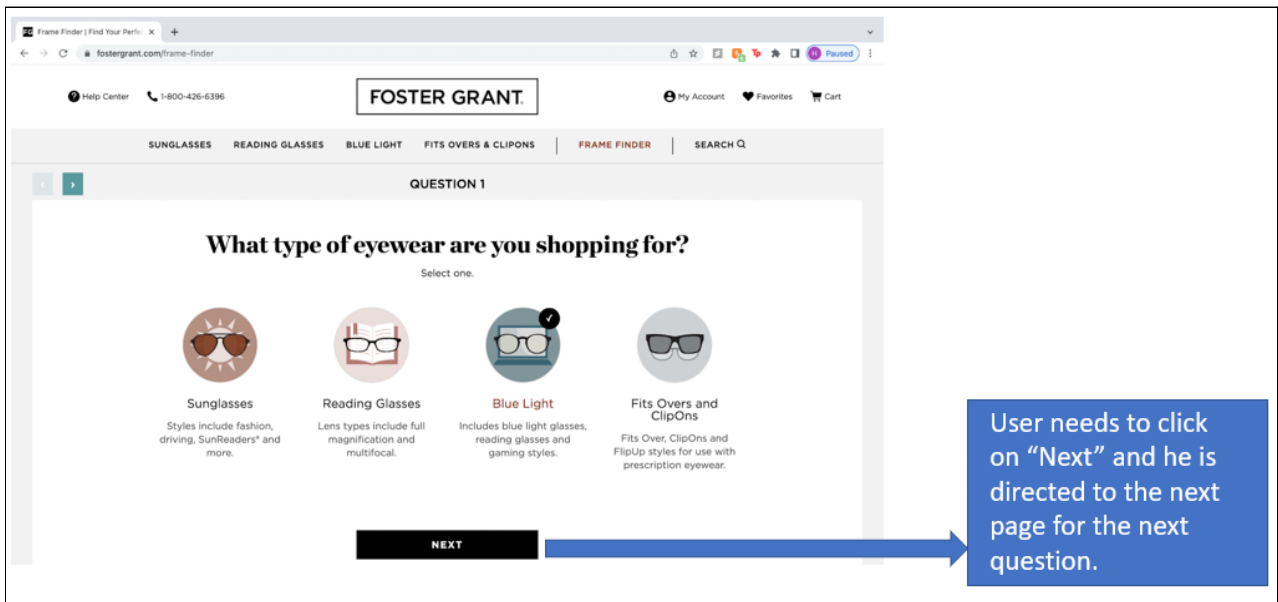


Figure 6.3 - Finding frame of the original website

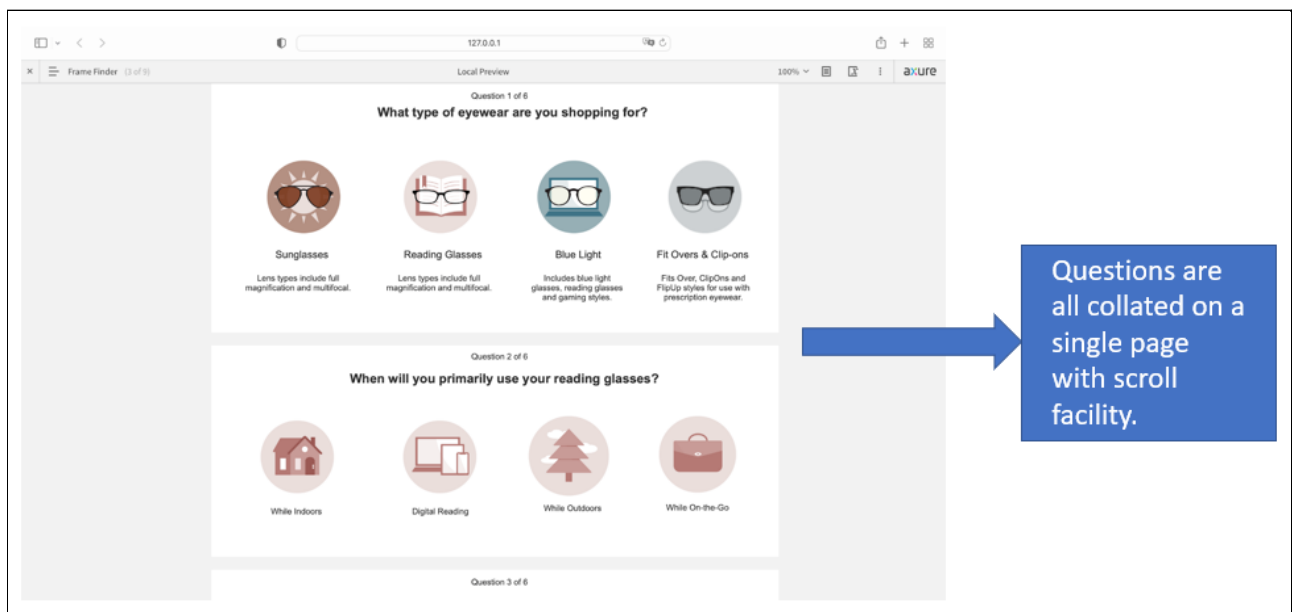


Figure 6.4 - Finding frame of the prototype website

### 6.2.3 Table of scores

Metrics	Time taken	Task Success
Mean for original site	309.83	2.17
Mean for the remodeled site	251.67	2.83
Variance for the original site	152.17	0.17
Variance for the remodeled site	233.87	0.17
T Test Value	7.25	-2.83
Results from the T tests	The t-value is 7.25166. The p-value is .000028. The result is significant at $p < .05$ .	The t-value is -2.82843. The p-value is .0179. The result is significant at $p < .05$ .

*Table 6.2 - Statistical results for task 2*

### 6.2.4 Supporting evidence of improvement

The mean time for finding correct frame reduces to 251.67 from 309.83. The ease of finding frame is also increased, as supported by an increased mean of success rate to 2.83 from 2.17. This justifies the significant increase in the T test value.

### 6.2.5 Recommendation

We recommend the website to make changes to the frame finder functionality to help users find frames faster and with a better success rate by keeping the filter questionnaire on the same page, as backed by the results above.

## 6.3 Task 3 - Finding product details and reviews

Task 3 requires participants to browse the details of a particular product.

### 6.3.1 Usability findings

For browsing the product details, the user has to scroll down to view the Reviews and Product Description. This can be frustrating as the user has to scroll a long time to get to

the below sections, and sometimes they end up scrolling past the section they want to view.

### 6.3.2 Screenshots to support the findings

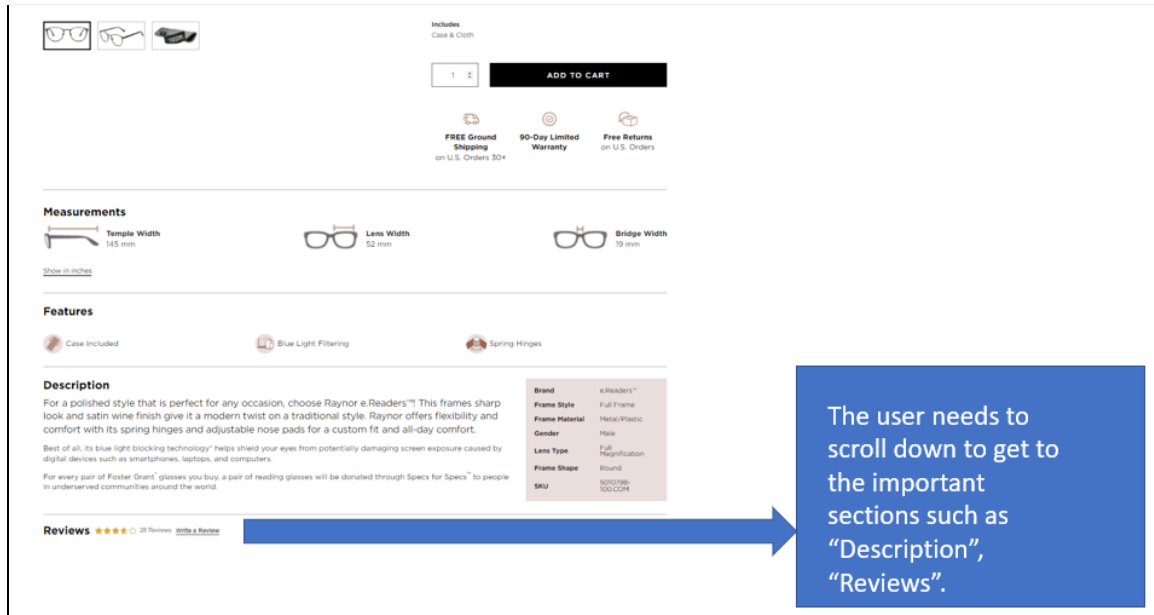


Image 6.5 - Product details and reviews on the original website

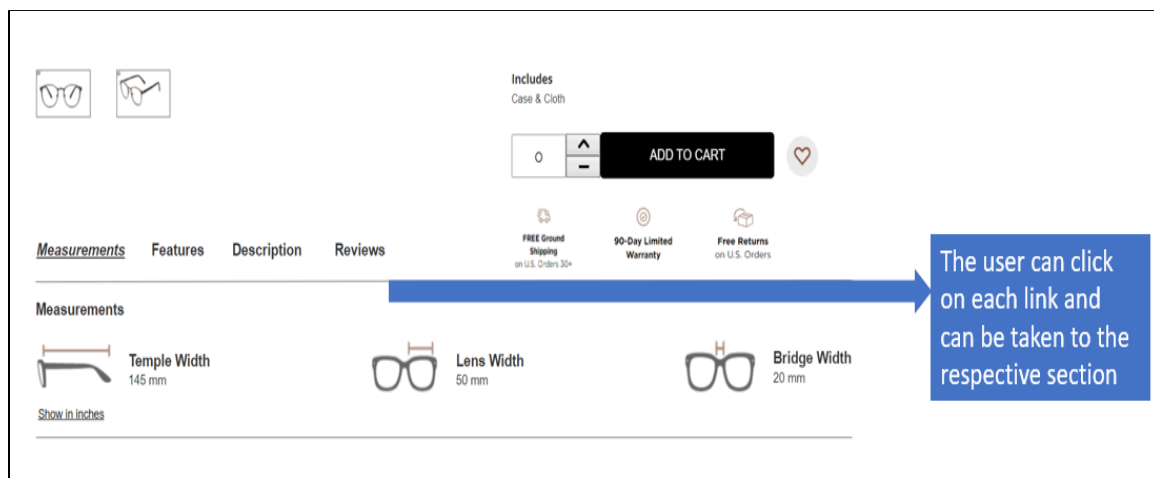


Image 6.6 - Product details and reviews on the prototype website

### 6.3.3 Table of scores

Metrics	Time taken	Task Success
Mean for original site	54.17	3
Mean for the remodeled site	37.67	3
Variance for the original site	104.17	0
Variance for the remodeled site	23.47	0
T Test Value	3.58	0
Results from the T tests	The t-value is 3.57748. The p-value is .005033. The result is significant at $p < .05$ .	The t-value is 0. The p-value is 1. The result is not significant at $p < .05$ .

*Table 6.3 - Statistical results for task 3*

### 6.3.4 Supporting evidence of improvement

Browsing for product details and checking out reviews is faster on the remodeled website by almost 20 seconds. This shows that moving product details up on the webpage and giving clickable scroll links by the product image for reviews makes it faster to access details and reviews. The ease of performing the task remains same.

### 6.3.5 Recommendation

We recommend changes to the website product details page by moving the details up on the page, and making clickable links for review accessibility by the product image.

## 6.4 Task 4 - Locating help

Task 4 is based on getting help on the website. The participants are required to locate the help section.

### 6.4.1 Usability findings

When the user tries to seek help regarding any issue faced on the website, there is no specific area to reach on the website for the help section. It has the contact information

for the user to reach out to the team but that too is not easily accessible. The “chat” links are not clickable, moreover user needs to scroll to the footer every time he/ she needs to access help.

#### 6.4.2 Screenshots to support the findings

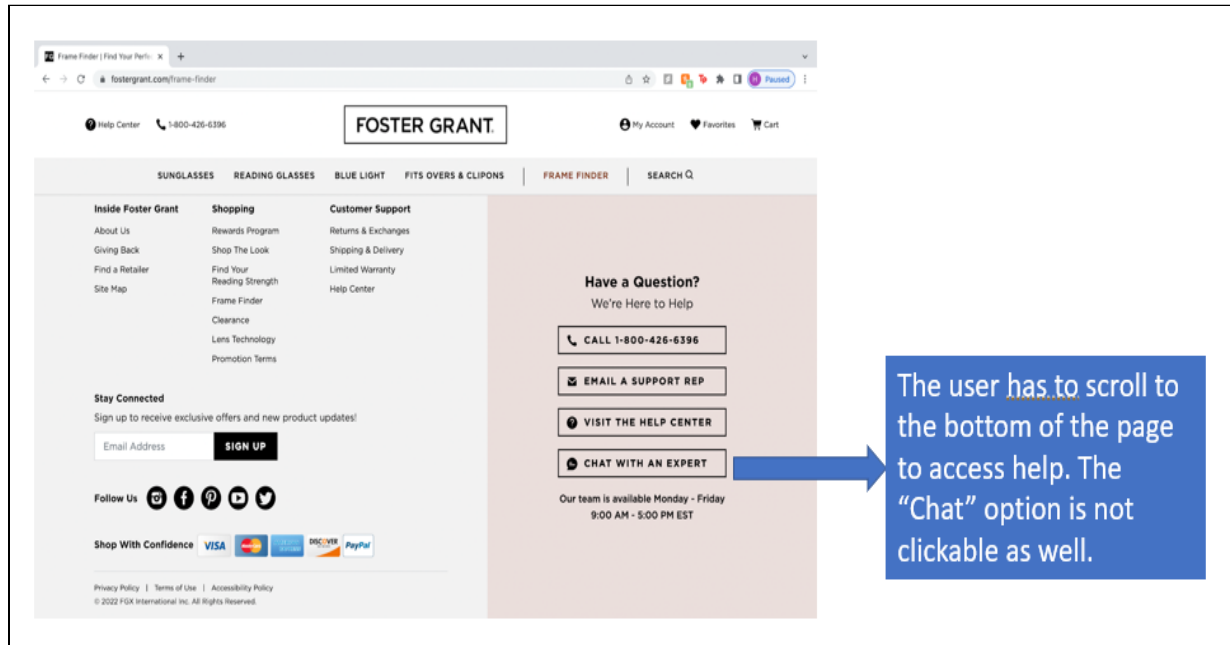


Image 6.7 - Finding help on the Foster Grant original website

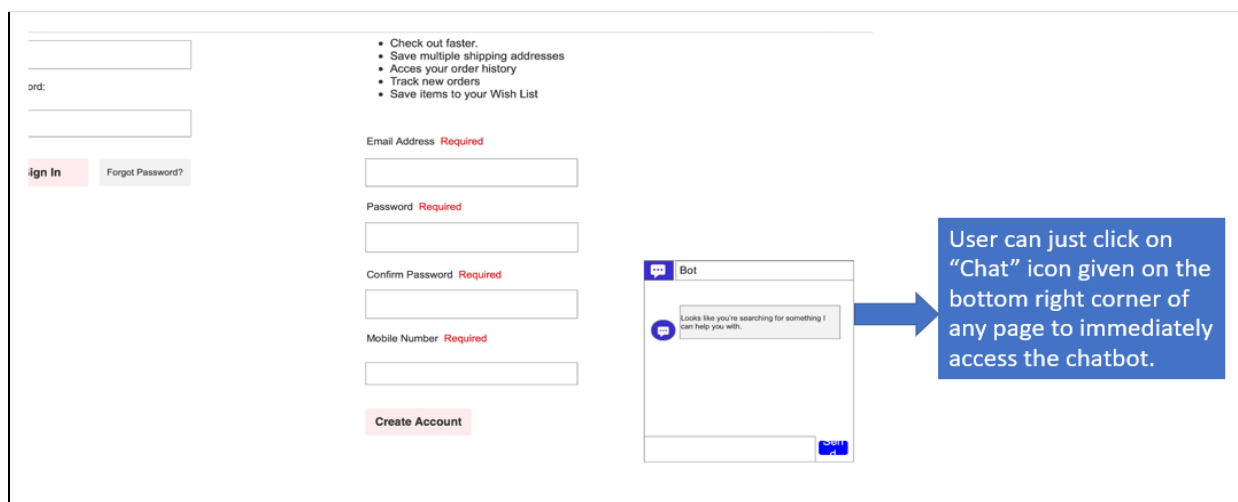


Image 6.8 - Finding help on the prototype Foster Grant website

#### 6.4.3 Table of scores

Metrics	Time taken	Task Success
Mean for original site	217.5	2.33
Mean for the remodeled site	196.67	2.5
Variance for the original site	277.5	0.27
Variance for the remodeled site	226.67	0.3
T Test Value	2.27	-0.54
Results from the T tests	The t-value is 2.27273. The p-value is .046355. The result is significant at $p < .05$ .	The t-value is -0.54233. The p-value is .59947. The result is not significant at $p < .05$ .

*Table 6.4 - Statistical results for task 4*

#### 6.4.4 Supporting evidence of improvement

Locating help takes lesser time on the remodeled website. The t score of 2.27 for time taken is justified by this. Also, a slight increase in the ease of locating help is found. This is backed by the mean going up to 2.5 from 2.33 for the ease of finding help.

#### 6.4.5 Recommendation

We recommend implementing a chatbot dialog instead of scattered help texts on the website. This would let the website users find help quickly.

### 6.5 Task 5 - Wishlisting products and deleting products from wishlist

Task 5 asks participants to add a particular product to the wishlist. Once the specified number of products have been added to the wishlist, the participants have to access the wishlist and delete all the products from the list.

#### 6.5.1 Usability findings

When the user tries to wishlist a product, they're redirected to a webpage with all the other products the user has wishlisted. The user has to select each product and

complete the action item of removing it. There are no options for the user to select more than 1 item and edit it.

### 6.5.2 Screenshots to support the findings

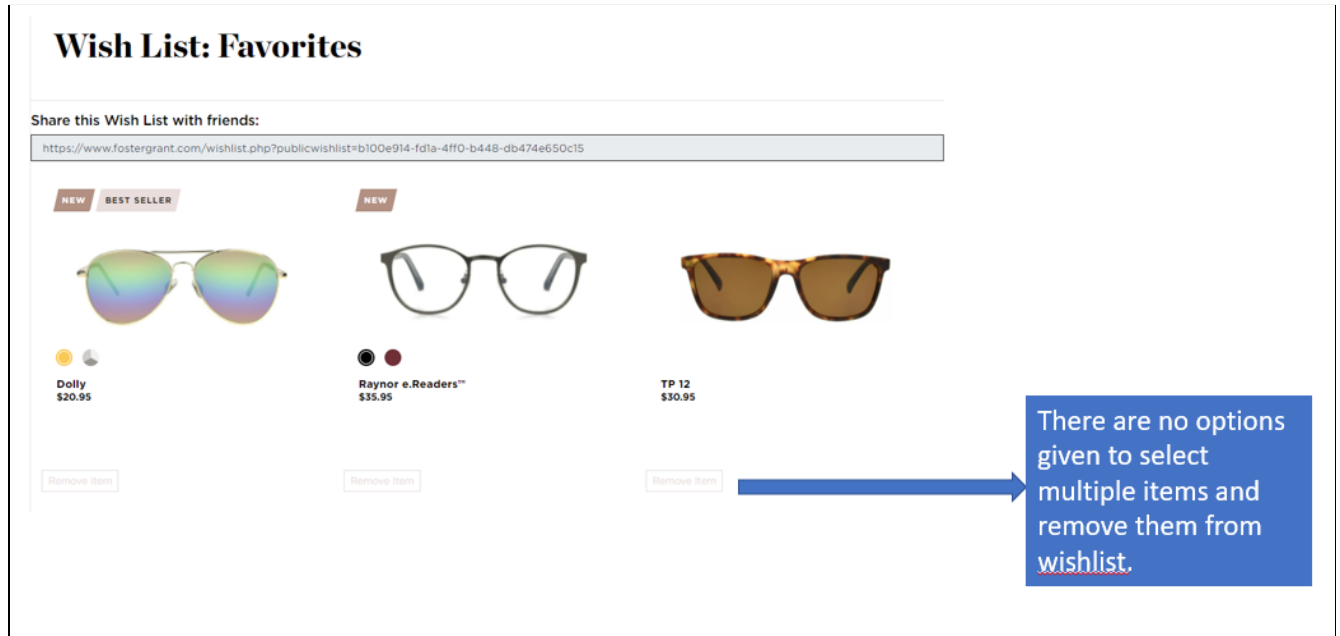


Image 6.9 - Removing multiple items from the wishlist on the original website

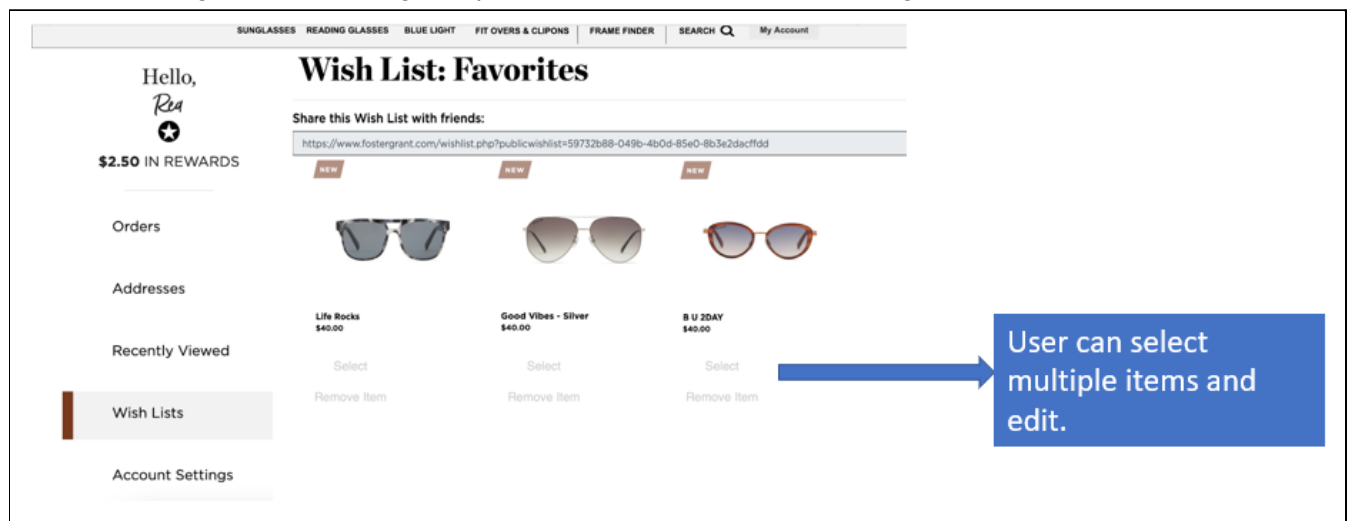


Image 6.10 - Removing multiple items on the prototype website

### 6.5.3 Table of scores

Metrics	Time taken	Task Success
Mean for original site	44.17	2.5
Mean for the remodeled site	42.5	3
Variance for the original site	24.17	0.3
Variance for the remodeled site	67.5	0
T Test Value	0.43	-2.24
Results from the T tests	The t-value is 0.4264. The p-value is .678849. The result is not significant at $p < .05$ .	The t-value is -2.23607. The p-value is .049332. The result is significant at $p < .05$ .

*Table 6.5 - Statistical data for task 5*

### 6.5.4 Supporting evidence of improvement

The time taken to wishlist a selection of items, go to the wishlist and delete all of them shows a decrease in time taken by ~2 seconds. The task success rate also increases by 0.5, meaning more users are able to complete the task without getting lost.

### 6.5.5 Recommendation

We recommend the website to provide 'delete multiple items' functionality on the wishlist menu. This would save the time and trouble of selecting individual items to delete them one by one as on the original website.

## 6.6 Task 6 - Searching for products

Task 6 is based on searching for a product on the website. A keyword is provided to the participants, who are required to search that specific product on the website.



### 6.6.1 Usability findings

The search results in the website are not presented in a formatted way which leads to the user getting confused and disturbed with multiple list of options being presented to them instead of the particular set of products the user has been searching for.

### 6.6.2 Screenshots to support the findings

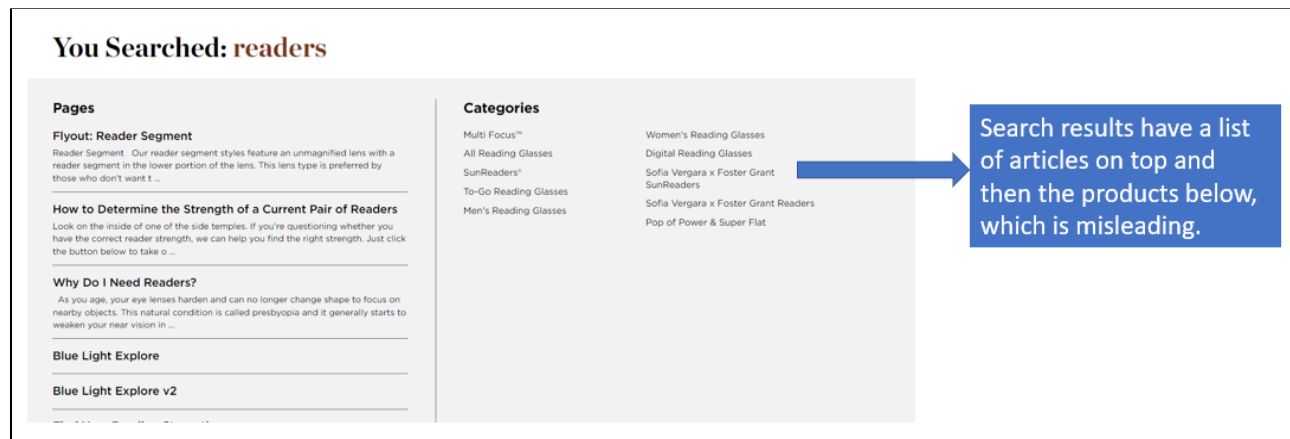


Image 6.11 - Searching for products on the original website

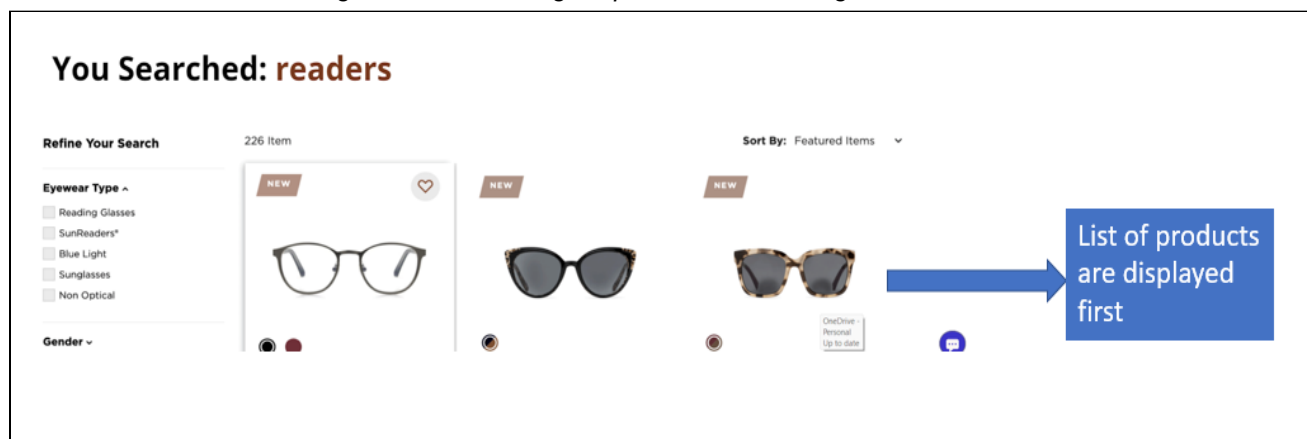


Image 6.12 - Searching for products on the prototype website

### 6.6.3 Table of scores

Metrics	Time taken	Task Success
Mean for original site	114.17	2.33
Mean for the remodeled site	101.5	2.5

Variance for the original site	124.17	0.27
Variance for the remodeled site	67.5	0.3
T Test Value	2.24	-0.54
Results from the T tests	The t-value is 2.24112. The p-value is .048911. The result is significant at $p < .05$ .	The t-value is -0.54233. The p-value is .59947. The result is not significant at $p < .05$ .

*Table 6.6 - Statistical data for the task 6*

#### **6.6.4 Supporting evidence of improvement**

Searching products is faster by ~15 seconds and shows a slight improvement in success rate when the participants use the remodeled website.

The T test value of 2.24 for time taken is justified by the data above.

#### **6.6.5 Recommendation**

We recommend creating a search result page that shows the products on the website at the top, rather than articles from around the web. Moving product results to the top can decrease the time taken by a user to perform search.

### **6.7 System usability report (SUS)**

Questionnaire was provided to all 12 participants with 10 questions in each. Below is the statistical data from the SUS report.

#### **6.7.1 Table of scores**

Metrics	SUS
Mean for original site	15.83
Mean for the remodeled site	21.83
Variance for the original site	8.57
Variance for the remodeled site	10.97

T Test Value	3.33
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*Table 6.7 - Statistical data for the SUS*

### **6.7.2 Supporting evidence of improvement**

Based on the SUS report above, we see an increase in SUS score to a mean value of 21.83 from 15.83. This means users rated the website to be better when working on the prototype, than when working on the original website. This supports the T test value of 3.33 above.

### **6.7.3 Recommendation**

Based on the SUS report, we can recommend the prototype changes, as it shows an improvement in user ratings.

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