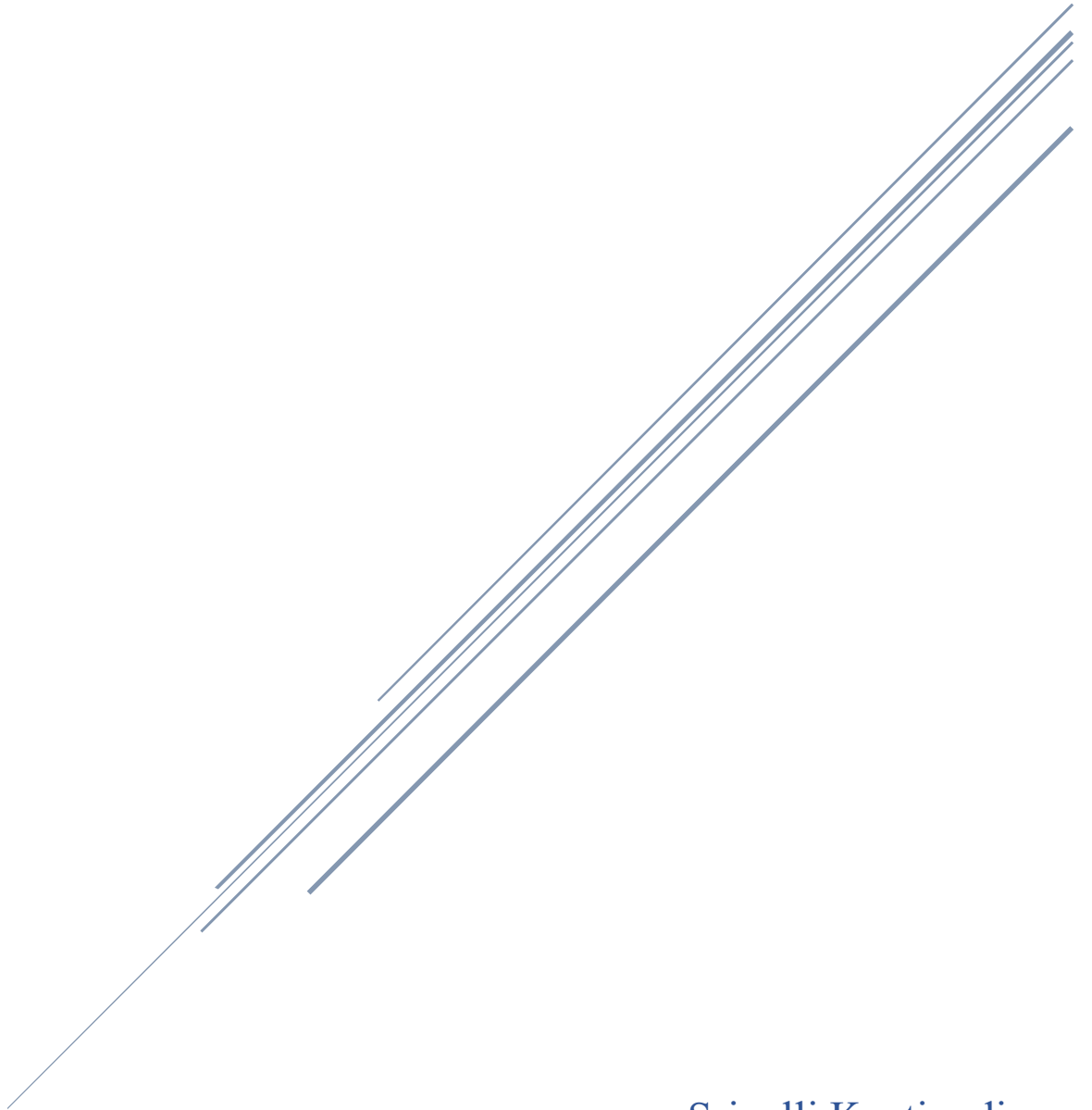# COSTCO.COM

Final Report

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Introduction:

Costco.com, established to cater to the burgeoning demand for online shopping, offers a comprehensive array of products ranging from groceries to electronics, accessible in bulk quantities. As a critical component of Costco's digital strategy, the website bridges the retailer with its extensive consumer base, enhancing the convenience of bulk shopping from home.

Despite its functional simplicity, which focuses on product listings and promotions over intricate designs, feedback indicates that the website's aesthetic and navigational structure may not meet modern e-commerce standards. Users find the website's multiple menus and categories overwhelming, making product discovery tedious and reducing the overall shopping pleasure.

Historically, Costco.com has undergone several redesigns aimed at improving user experience and addressing emerging challenges. These redesigns reflect Costco's commitment to adapt and improve its digital presence continually. However, with the evolving landscape of online retail, it becomes evident that a more significant overhaul could better address interface simplicity, feedback mechanisms, and visibility, thus enhancing the overall user experience and maintaining Costco's competitive edge.

The reason for improving Costco.com depends from its key position in an increasingly digital commerce environment. The website's present shortcomings, such as its old-fashioned design and mediocre user interaction features, limit its usefulness and have a negative influence on user happiness. Addressing these issues with a thorough redesign may not only enhance usability but also open up new avenues for development and customer engagement.

Revamping Costco.com would have various advantages, including simplifying the shopping experience to boost customer satisfaction and loyalty, strengthening feedback systems to better leverage consumer insights for decision-making, and increasing product exposure to optimize sales prospects. The revamp intends to appeal to a varied user base, including time-pressed working parents and cost-conscious college students, ensuring that the platform is flexible and responsive to all users' demands.

In summary, the redesign of Costco.com represents a strategic imperative and a significant opportunity to reinforce the brand's online presence, making it a leader in the digital retail space. By focusing on user-centric improvements and leveraging new technologies, Costco can ensure its platform remains relevant and preferred among its vast customer bases.

Know Problems:

The redesign of Costco.com revealed several usability and functionality issues identified through heuristic evaluations, user analysis reports (UARs), and user interviews. These issues impact user experience significantly, highlighting discrepancies between user expectations and the website's current functionalities.

1. Inconsistency and Navigation Complexity: The Heuristic Evaluation identified a major inconsistency in the navigation structure, particularly evident in the Costco Travel section, where the navigation bar behaves differently compared to other parts of the website. This inconsistency disrupts the user's navigation experience, as they expect a uniform navigation experience across the site. Additionally, users found the website cluttered with multiple menus and categories, making it difficult to find specific products quickly.

2. Recognition Rather Than Recall: Users reported and tests confirmed the absence of a "Recently Viewed" feature, which complicates the shopping process by forcing users to rely on memory for products they previously considered. This feature's absence was surprising, as it is a common functionality in e-commerce platforms aimed at enhancing user convenience and encouraging repeat purchases.

3. Error Prevention: The error messages displayed during processes such as password recovery were misleading or unhelpful, particularly when users entered non-existent email addresses. This was an unexpected finding as it suggests a lack of clear communication during error handling, which could easily frustrate users and deter them from completing their tasks.

4. Flexibility and Efficiency of Use: The checkout process lacked features like personalized recommendations, lightning deals, and a view of wish-listed items, reducing the flexibility and efficiency of the shopping experience. This was a significant deviation from expected functionalities that assist in upselling and improving user satisfaction during the final purchase stages.

5. Match Between System and the Real World: A notable issue was the misalignment between user expectations and the actual categorization of products, particularly in the grocery section. Users expected to find staple groceries like eggs in the expected sections, but they were located elsewhere due to the integration with Instacart services. This misplacement led to user confusion and dissatisfaction, highlighting a gap in the system's logical arrangement of products.

The interview insights from Costco.com users highlight critical areas for improvement aimed at enhancing the overall user experience and functionality of the website. Key issues identified include the need for faster and more efficient checkout processes, better personalized recommendations, and improvements in website responsiveness, especially during peak usage times. Users also suggested enhancements to the website's visual and interactive elements, such as larger product images, the inclusion of user reviews, and interactive product demos, to make shopping more engaging and informative.

Both users expressed a general satisfaction with the site's current navigability and product range but emphasized the necessity for continuous refinement to adapt to evolving consumer expectations and technological advancements. These suggestions and feedback are crucial for guiding future upgrades and ensuring that Costco.com remains competitive and responsive to its users' needs.

Many of the identified problems were more severe than initially expected, particularly those related to basic usability principles like consistency, error prevention, and system match with the real world. The lack of standard features such as a "Recently Viewed" section, which are typically anticipated in modern e-commerce sites, indicated a significant oversight in the original site design. These findings suggest that the site's development had underestimated the importance of intuitive, user-friendly design principles that align closely with user habits and expectations in e-commerce.

Design & prototyping activities:
The design of three sets of low-fidelity prototypes for Costco.com was driven by the need to address specific usability issues identified through heuristic evaluations and user feedback. The prototypes focused on enhancing the user experience in areas where current functionalities were either lacking or underperforming.

Recently Viewed Items:
Task: Recently viewed items.
Find the items which recently viewed on Homepage.

This prototype was designed to address the absence of a "Recently Viewed" feature, which users expected for easier navigation and revisitation of products. Inspired by similar functionalities seen on Amazon, this addition aims to enhance user convenience by allowing them to quickly access previously viewed items from the homepage.
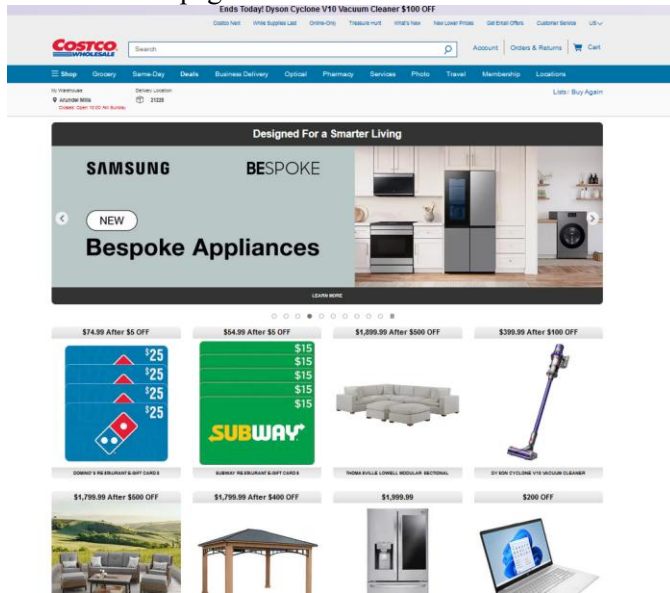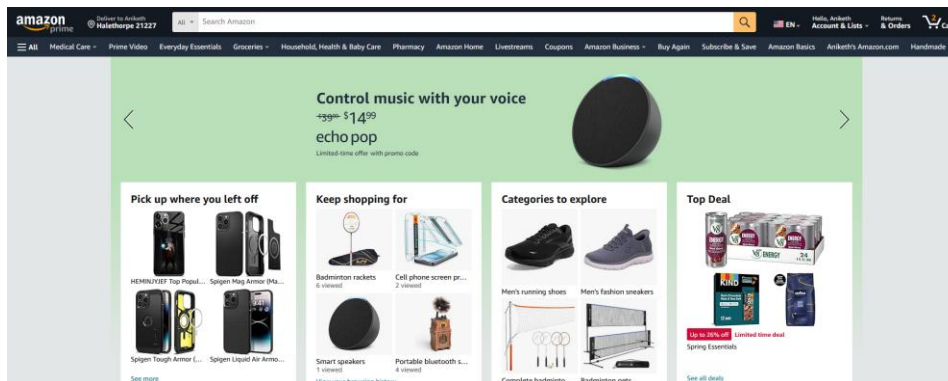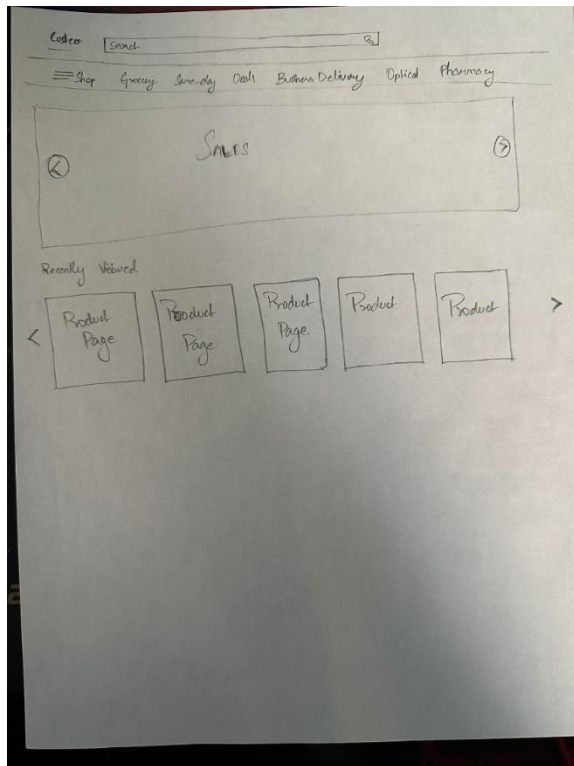

Figure 1: Costco homepage.

Figure 2: Amazon Webpage

Figure 3: Redesign of the Costco Homepage

Costco Travel Navigation:

Task: User uses the Costco travel page and returns to the grocery page.

The redesign of the Costco Travel section addressed inconsistencies in the navigation bar that previously disappeared, causing confusion among users. The new design maintains a consistent navigation experience across the site, modeled after Walmart's homepage for better user orientation.
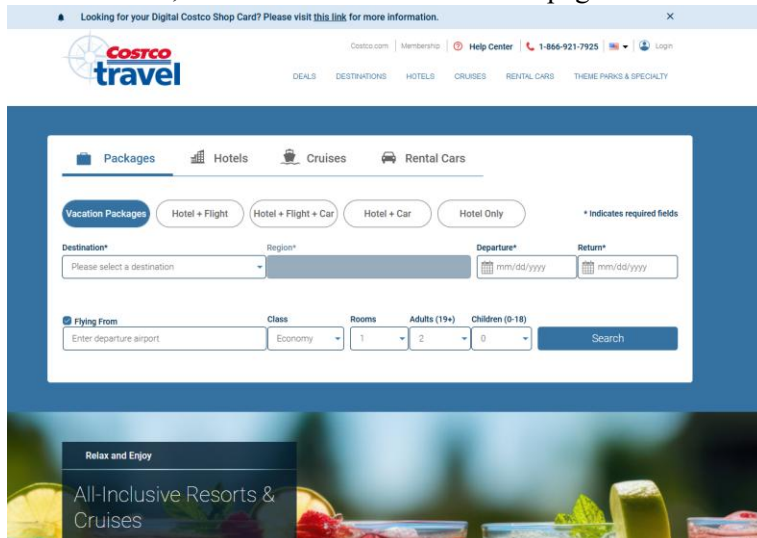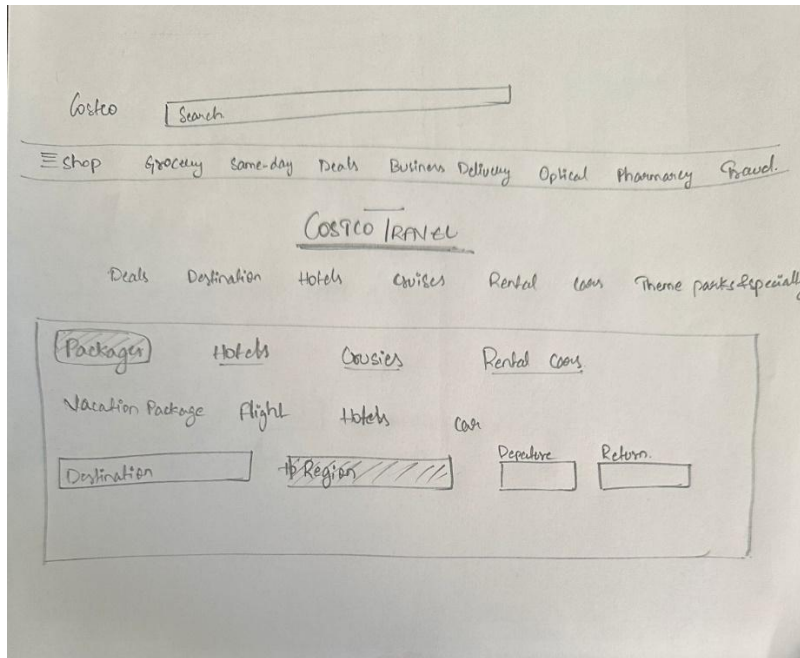

Figure 4: Costco Travel Page

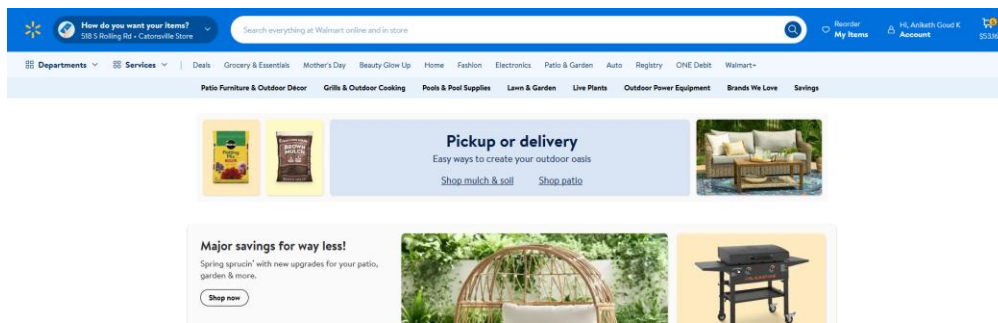*Figure 5: Redesign of the Costco Travel Homepage (lo-fi wireframe)*
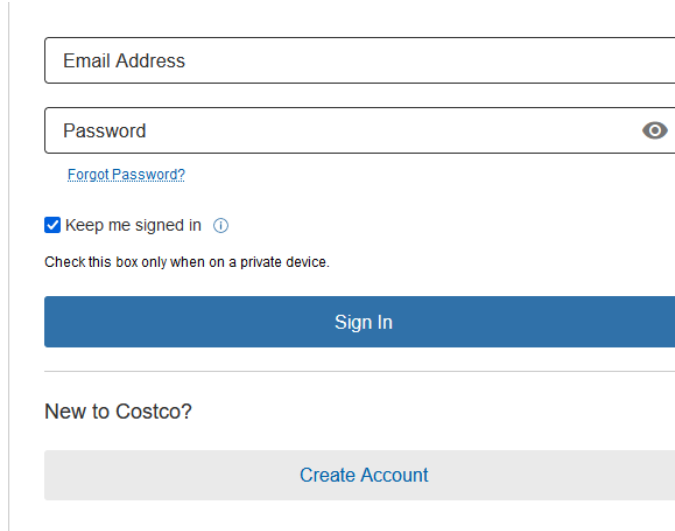

Figure 6: Walmart Homepage

Password Reset Feedback:

Task: User tries to login with a new password after he reset the password first.
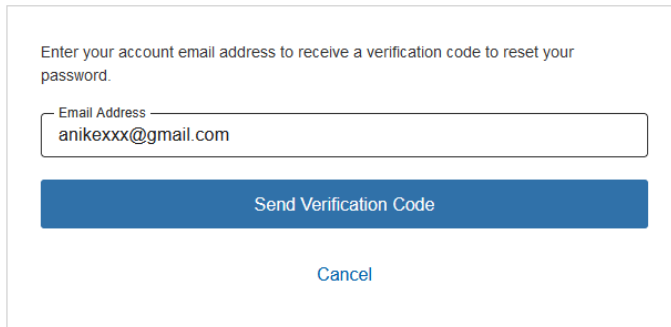
This prototype focused on improving the feedback provided during the password reset process. The new design includes clearer messages and verification steps to ensure users are confident that they have entered the correct email and understand that a verification code has been sent.

Figure 7: login page

Figure 8: Password Reset page

Figure 9: Verification code page
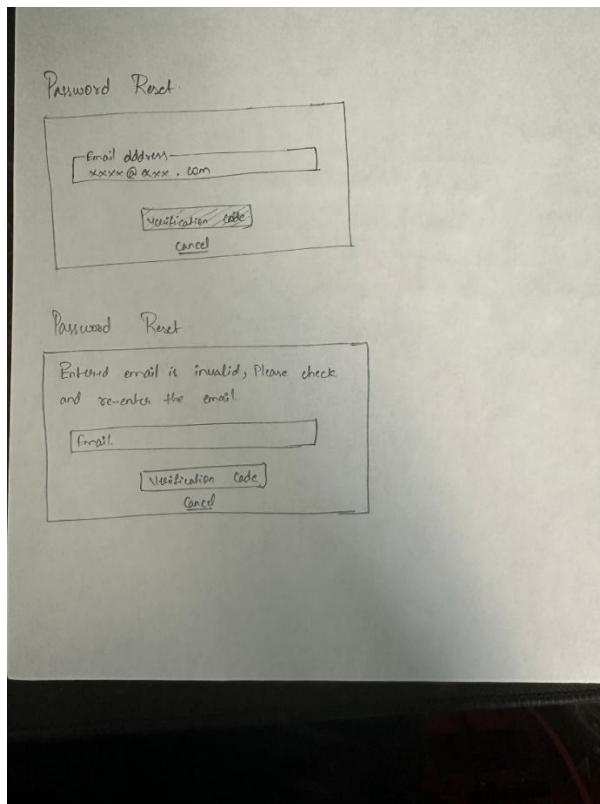
Figure 10
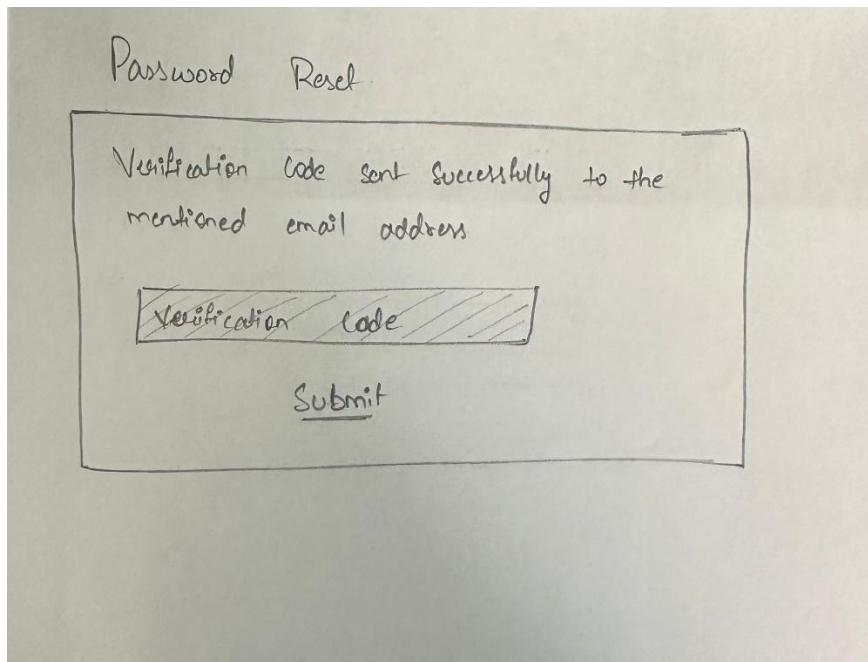
Figure 11

These prototypes were designed for desktop interface. For the mobile interface, the designs considered the need for simplified content presentation and restructured menus to accommodate smaller screen sizes. This involved collapsible menus and larger touch targets for ease of use on mobile devices. We redesigned the low fidelity prototypes for the same three tasks.

Task 1: Recently viewed items.
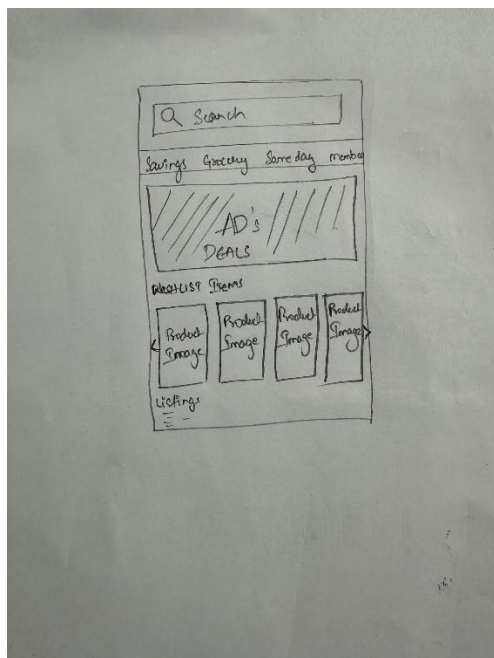
Figure 12

Task 2: User uses the Costco travel page and returns to the grocery page.
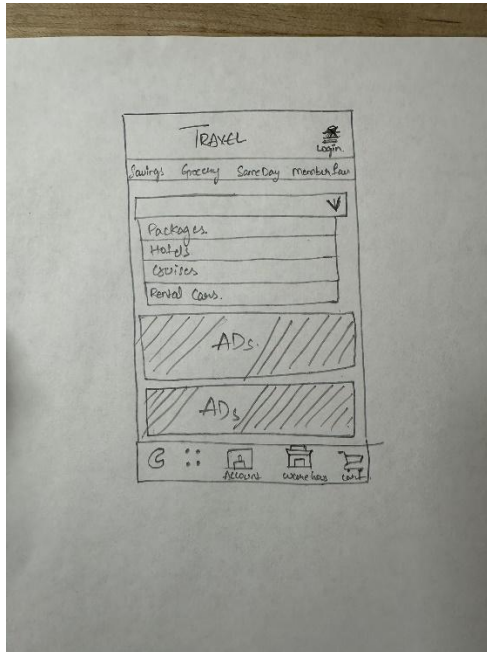
Figure 13

Here, the travel page has drop down to accommodate smaller screen size and added the navigation bar like the homepage in the app.

Task 3: User tries to login with a new password after he reset the password first.
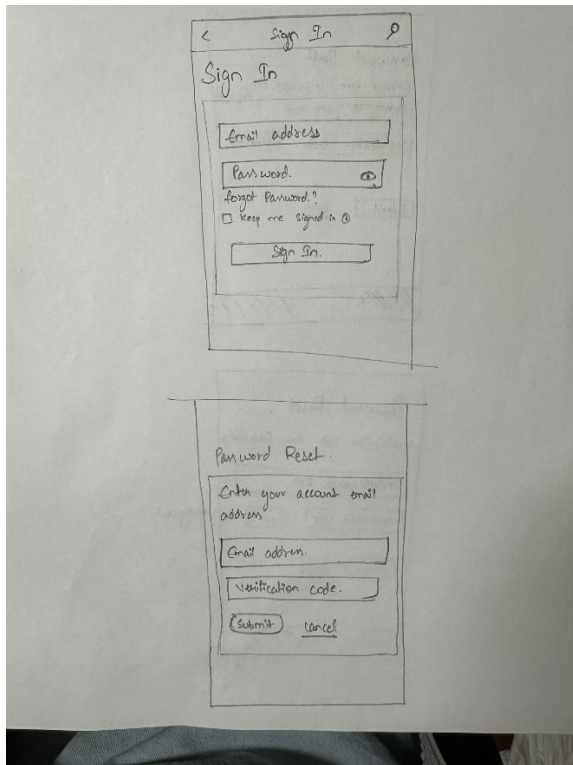
Figure 14
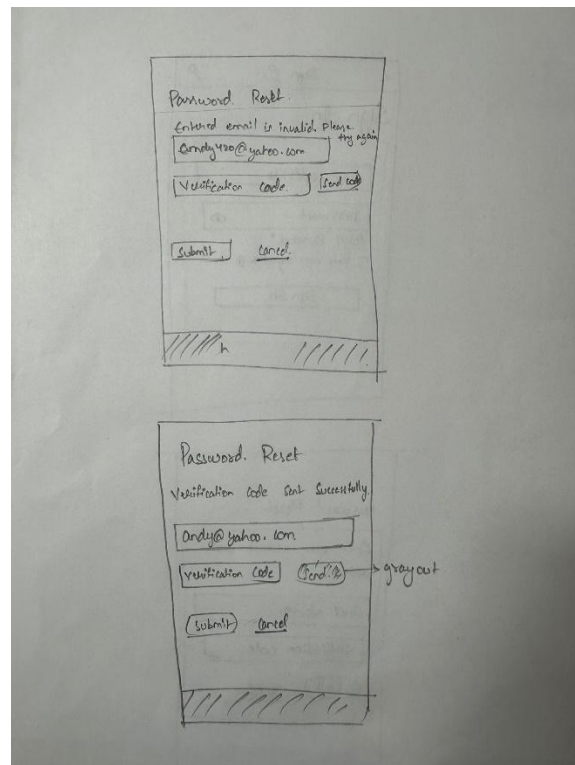
Figure 15
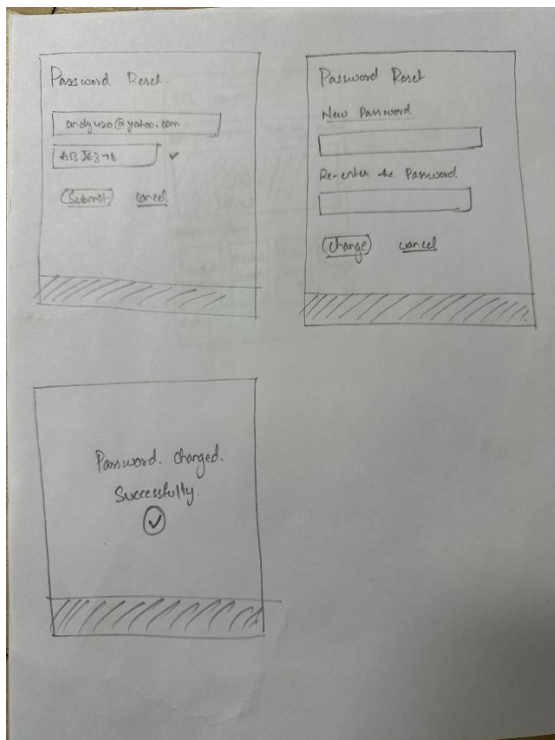
Figure 16

We then tested our low-fidelity prototypes with four distinct users. We used the think carefully approach again, asking people to express their thoughts while completing tasks with our prototypes. Based on the comments we received, we iterated on our concepts and created medium-fidelity prototypes.

Task1: Wishlist Items

Here is the [Prototype Link](#) for the prototype.

1. **Product Sorting (Newest to Oldest)**:
   o **Purpose**: Sorting Wishlist items from the newest added to the oldest ensures that users can quickly find their most recent interests or additions. This sorting method aligns with common user expectations where newer items hold more immediate relevance.
   o **Impact**: This feature likely improves user satisfaction by reducing the time and effort needed to locate recent products, thereby streamlining the shopping experience.
2. **Image Enlargement on Hover**:
   o **Purpose**: Enlarging a product image on hover allows users to see product details without having to navigate away from the Wishlist page. This can be particularly beneficial for users who are comparing items or need a closer look to make a purchasing decision.
   o **Impact**: This functionality enhances the navigational efficiency by reducing the number of clicks required to view product specifics. It can lead to a quicker and more informed purchasing process, which is especially valuable during busy shopping periods or for users browsing multiple items.

The redesigned Wishlist function in the medium-fidelity prototype tackles key usability issues by making the UI more intuitive and efficient. It represents a thorough assessment of customer feedback from earlier testing rounds, with the goal of improving overall user happiness. Continued testing, particularly in real-world settings across several devices, will be critical in improving these capabilities and ensuring they satisfy the unique demands of Costco's customers.
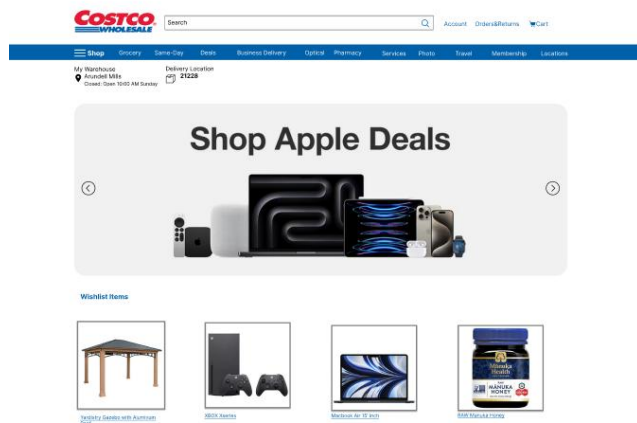
Figure 17: Medium fidelity prototype
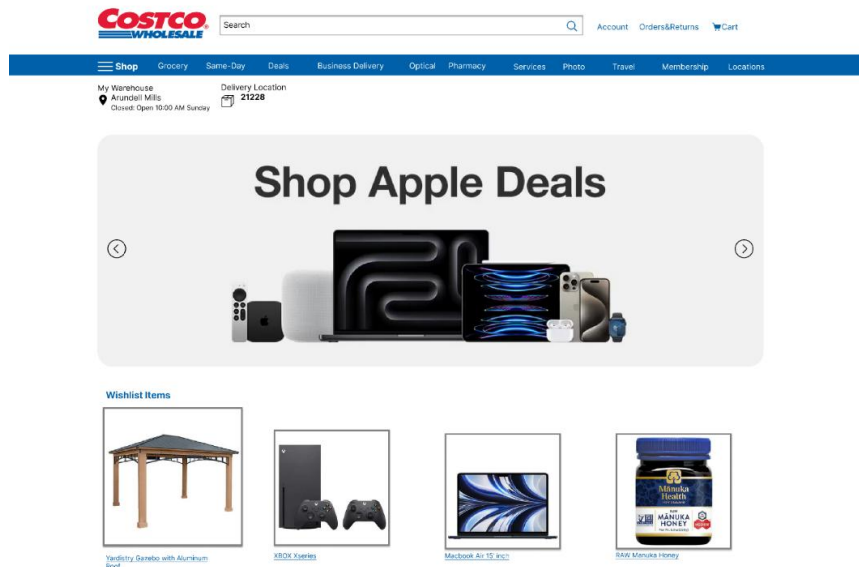
Figure 18: Showing selection feature option on the prototype

Task 2: User uses the Costco travel page and returns to the grocery page.

Feedback showed users were pleased with the navigation bar on the Costco travel page, noting that it greatly enhanced the user experience by facilitating smooth transitions between different categories. Our analysis confirmed that making the active category more prominent on the navigation bar could improve usability even further. By distinctly marking which page the user is currently on, we aim to create a more intuitive navigation experience. Consequently, we've chosen to emphasize the active category tab to enhance this feature.
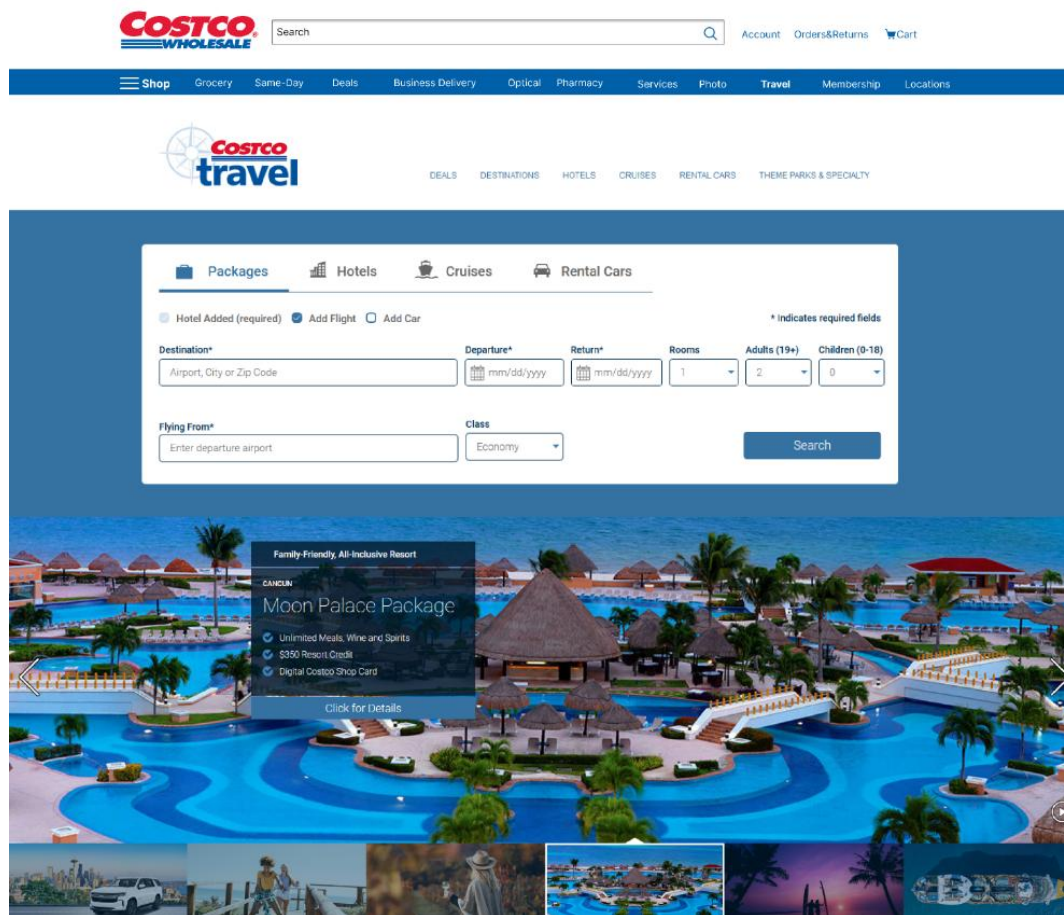
Figure19: Adding navigation bar to the Costco Travel page.

Task 3: User tries to login with a new password after he reset the password first.

Users indicated that they were largely satisfied with the existing password reset process on the website. However, they provided feedback suggesting a specific enhancement to improve user convenience. The recommendation was to include the verification code directly within the reset password email itself. This adjustment would streamline the process by removing the need to switch between different interfaces to retrieve the code, thereby simplifying the steps involved and enhancing the user's ability to quickly complete the process. Additionally, this update is aimed at reducing the cognitive load on users by minimizing the need to remember or re-enter data during the password reset process. This change, as detailed from figures 20 to 26 in the documentation, also addresses scenarios where users might enter an incorrect email, ensuring that the process is robust and clear under various circumstances.

Figure 20

Figure 21

Password Reset

Entered email is invalid. Please check and try again.

anndy420@yahoo.com

Verification code   Sent code

Submit   Cancel

Figure 22

Password Reset

Verification Code sent Successfully!

andy420@yahoo.com

Verification code   Sent code

Submit   Cancel

Figure 23
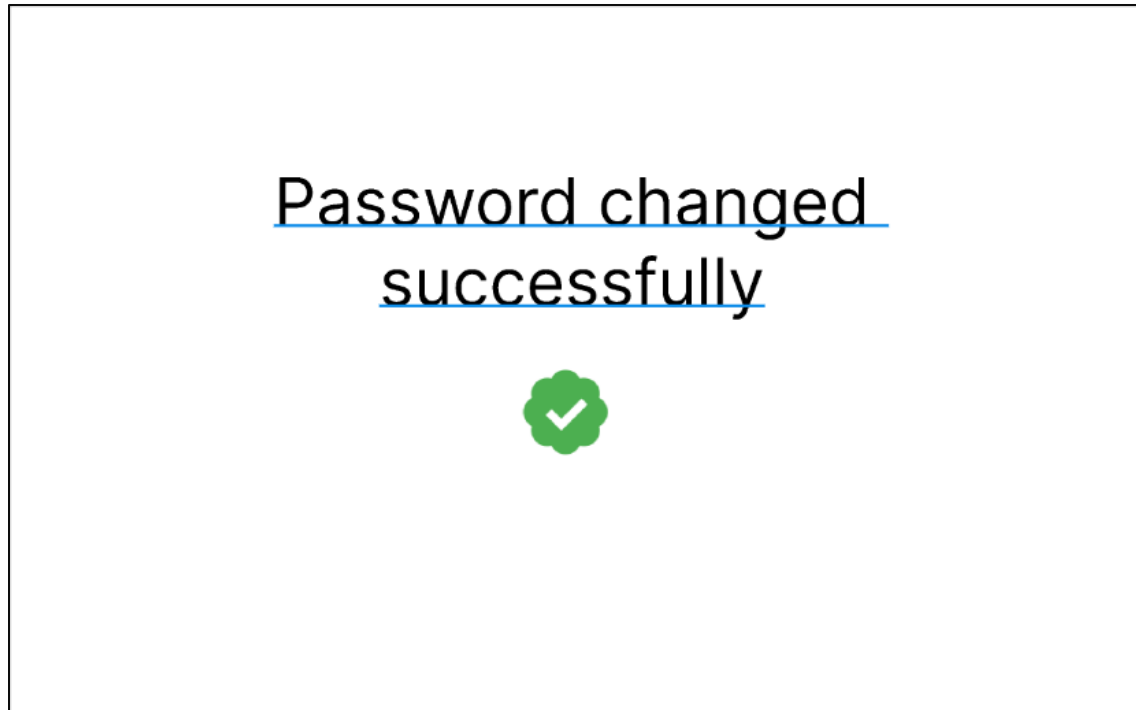
Figure 24

Figure 25

Figure 26

Evaluation:

To evaluate the medium fidelity prototypes, we conducted cognitive walkthroughs with selected participants. These participants were chosen based on their familiarity with online shopping platforms to ensure a diverse range of feedback. The evaluations were carried out in lab-based environments to account for different user scenarios.

Participant Selection: Participants were chosen using a screening procedure that attempted to include both experienced and inexperienced consumers of e-commerce platforms. This diversified group helped to ensure that input was thorough and representative of a wide range of user experiences.

Evaluation Environment: The cognitive walkthroughs were conducted in controlled lab environments for consistency and in field settings to observe real-world interactions.

Task Performance: Participants tested new features and enhancements in prototypes, including identifying categories, signing in, and searching for Wishlist items.

Feedback from Participants

☐ **Usability and Intuitiveness:**

- **Ease of Navigation**: Participants frequently commented on the ease or difficulty of navigating through the redesigned interfaces. Feedback was generally positive about the clear labeling and logical flow between pages, especially with the navigation improvements on the Costco Travel page.
- **Task Completion**: Feedback on how easy it was to complete given tasks, such as adding items from the wishlist to the cart or transitioning between the travel and grocery sections, varied. Some users found the processes straightforward, while others suggested further simplification.

☐ **Design and Aesthetics**:

- **Visual Design**: Participants provided feedback on the visual appeal of the prototypes, including the color schemes, font sizes, and layout. While many appreciated the clean and modern aesthetic, a few suggested increasing contrast or font size for better readability, especially on mobile devices.
- **Interactive Elements**: Feedback on interactive elements like hover effects for image enlargement on the wishlist page highlighted a mix of appreciation for the functionality and concerns about its responsiveness on touch devices.

☐ **Functionality and Features**:

- **Feature Effectiveness**: Participants evaluated how well specific features met their needs, such as the embedded verification code in the password reset emails. While most found this feature innovative and helpful, some expressed a desire for even more automation or integration, like direct application of the code from the email.
- **Feedback Mechanisms**: The clarity and timeliness of feedback messages after performing actions (like resetting a password or navigating back to the homepage) were noted, with suggestions for more dynamic feedback, such as visual cues or animations to confirm successful actions.

Further Interviews: Additional interviews were conducted with new participants who were not involved in the initial design classes. These participants were shown both the original Costco site and competitors' sites for context. Through these interviews, we sought detailed insights into usability, layout, content, and functionality:

- **Usability**: Participants found our prototypes generally more user-friendly than the original site, particularly praising the streamlined processes like the embedded verification code in password reset emails.
- **Layout and Content**: Feedback suggested that while the layout was intuitive, there could be improvements in content density and informational hierarchy to better accommodate mobile users.
- **Functionality**: Comparisons with competitor sites revealed that our prototypes offered competitive or superior functionality, especially in terms of navigation and user feedback.

Interview Findings: The interviews revealed some limitations in the prototypes:

- Some users felt that while the navigation improvements were significant, there could be more dynamic visual feedback (like animations) to make transitions feel smoother.
- The need for better content scaling on mobile devices was noted, with suggestions for adjustable text sizes and image resolutions to improve readability and interaction on smaller screens.

The evaluation through cognitive walkthroughs and further interviews provided critical feedback that affirmed the strengths and highlighted areas for improvement in our medium fidelity prototypes. This feedback is instrumental in refining the prototypes further, ensuring they meet user expectations effectively and provide an enjoyable and efficient user experience across all devices.

Recommendations:

Yes, several constant themes emerged from the evaluations of the medium fidelity prototypes, pointing to specific areas where users consistently recommended improvements.

Clearer Navigation Cues:

- Implementing breadcrumb trails for deeper navigation paths to enhance user orientation.

- Consistent placement and design of navigation elements across all pages to reduce cognitive load.

Dynamic Feedback Mechanisms:

- More descriptive error messages and guidance for correction, particularly in form inputs like email or password fields.
- Real-time validation feedback during data entry to prevent errors before submission.

Simplification and Streamlining of Processes:

- Reducing the number of steps in the checkout or account modification processes.

Personal reflection:

The design process for the medium fidelity prototypes was effective in gathering valuable insights and improving the user experience, the challenges encountered suggest that there are opportunities to refine the approach.

Challenges Faced:

- **User Feedback Integration**: Integrating user feedback into the design effectively and efficiently proved challenging, especially when feedback was contradictory or when it required significant deviations from the original design philosophy.

- **Testing and Data Collection**: Obtaining a broad and diverse range of user data was challenging. Gathering feedback from a sufficiently diverse user group to cover all potential use cases and ensuring that testing environments accurately reflected real-world use conditions were more resource-intensive than planned.

Data Adequacy:

While we did gather a substantial amount of useful data, the diversity and depth of the feedback could be improved. More targeted data collection focusing on underrepresented user demographics or more varied usage contexts could enhance the prototypes further.

If redoing the process following measures will be taken care of:

Structured Feedback Collection:

- **Continuous Feedback Loops**: Implement continuous and structured feedback loops throughout the design process. This could involve regular check-ins with users at each stage of the prototype's development to gather ongoing feedback and make iterative adjustments.

- **Quantitative and Qualitative Data**: Balance the collection of both quantitative data (like task completion rates and time on task) and qualitative feedback (user opinions and feelings) to gain a more comprehensive understanding of the prototype's performance.

Iterative Design and Prototyping:

- **Rapid Prototyping Cycles**: Shorten the cycles between design, testing, and feedback to allow for quicker iterations and adjustments based on user input.

- **Prototype Variants**: Create multiple versions of each prototype to test different approaches to solving the same user problem. This would provide comparative data that could inform more effective design solutions.

This perspective highlights the iterative nature of design and the need of user-centered input in creating interfaces that are not just functional but also engaging and intuitive.

References:
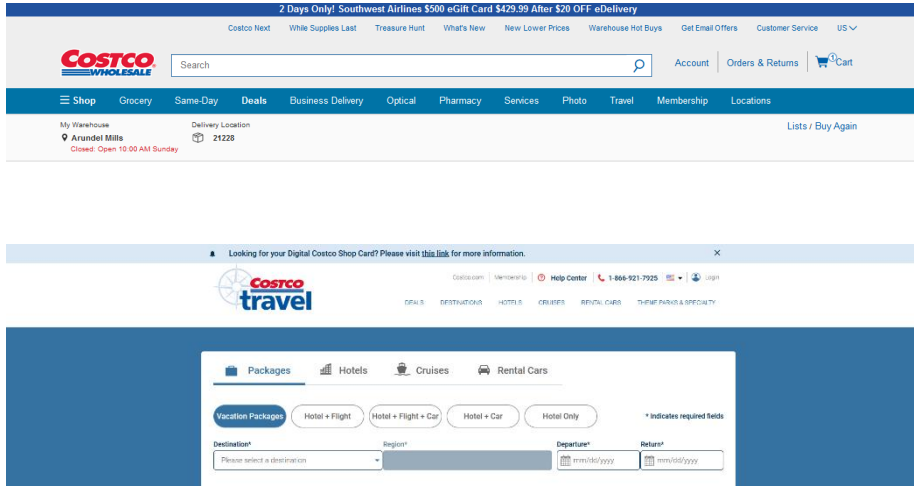
1. https://www.costco.com/
2. Interaction Design: Beyond Human-Computer Interaction, 6th edition, Wiley.
3. Ravi Kuber week 5 lecture notes.
4. Ravi Kuber week 7 lecture notes.
5. Ravi Kuber week 9 lecture notes.

Appendix

UAR transcripts

Weekly deliverable 6 – HCC729

No. 1 HE	Problem
Name: Consistency and Standards	

Evidence:

Explanation:

Costco Travel operates differently from the other categories on Costco.com, which all retain a uniform navigation bar behavior. The site takes customers to a different page and the navigation bar vanishes when they navigate to Costco Travel. The user's ability to navigate between website areas is made more difficult by this difference. To return to the previous window, users must also press the backspace key, which adds another step and complicates navigation even more

Severity or Benefit:

Rating: 3 (Major usability problem)

Justification (Frequency, Impact, Persistence, Weights):

- **Frequency:** Common, as people move among the website's various parts on a regular basis.
- **Impact:** Because of the confused navigational expectations, visitors may find it moderately challenging to navigate and may become frustrated or leave the website altogether.
- **Persistence:** Persistent, as customers see the inconsistent navigational behavior every time they visit the Costco Travel area.
- **Weighted Factors:** Considered a big issue because of its frequent occurrence, significant impact on the user experience, and continuous character, outweighing any possible advantages of the existing navigation system.

Possible solution and/or Trade-offs:

Make sure that every area of the website, including Costco Travel, has consistent navigation. This could require maintaining the user interface design and interaction patterns consistent or rebuilding the navigation system such that it is visible and usable on all pages.

No. 2 HE	Problem
Name: Consistency and standards	

Evidence:

Explanation:

Web design standards and consistency make it possible for people to navigate a site predictably and comprehend it without needless confusion. Modifying the website layout only for "furniture deals" could interfere with the user's efficiency and learning curve, which could result in mistakes or irritation.
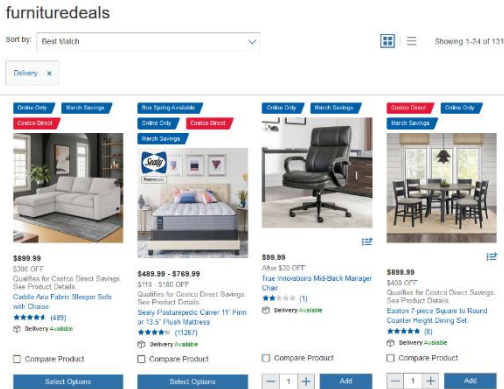
Severity or Benefit:

Rating: 3 (Major usability problem)

Justification (Frequency, Impact, Persistence, Weights):

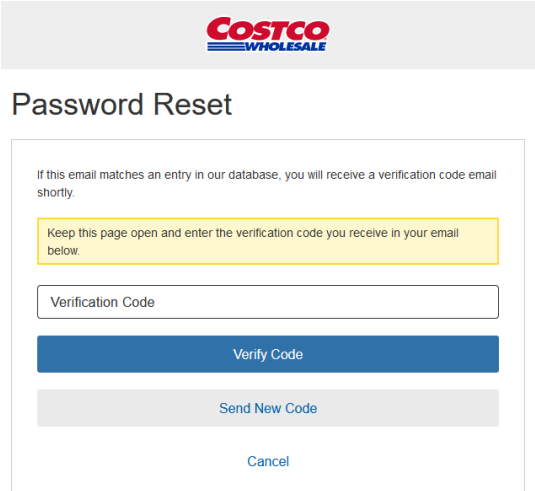- **Frequency:** Common, since a large number of visitors (new, casual, and experienced) check the "furniture deals" area.
- **Impact**: Because expectations and navigation efficiency are disturbed, users may find it moderately difficult to adjust, which might cause irritation.
- **Persistence:** Problems persist between visits to the "furniture deals" area, which negatively impacts the site's entire purchasing experience.
- **Weighted Factors**: Considered a big issue because of its frequent recurrence, significant impact on the user experience, and lasting character; the advantages of any distinctive design aspects in the "furniture deals" area are outweighed by this.

Possible solution and/or Trade-offs:

To increase consistency, make the layout of the "furniture deals" page consistent with the rest of the website. Losing distinctive engagement-focused design elements may be the primary trade-off, but improving usability and predictability will probably improve the user experience more than anything else.

No. 3	Problem

Name: Recognition Rather Than Recall

Evidence:

The absence of a "Recently Viewed" feature is directly observable on the website interface. Users and usability testing can reveal that there's no dedicated section or functionality allowing them to easily revisit items they have looked at previously.

Explanation:

By lowering the effort required to locate these products again, a "Recently Viewed" feature makes it easier for consumers to go back to things they have previously explored, improving the purchasing experience.

Severity or Benefit:

Rating: 2 (Minor usability problem)

Justification (Frequency, Impact, Persistence, Weights):

- **Frequency:** Common, as most users would like to go back and review content they've already seen, but its absence impacts all user types.
- **Impact:** Although it is rather simple for consumers to get around by utilizing browser history or making a manual list, it messes up the shopping process and may cause frustration or missed sales.
- **Persistence:** Users may be able to bookmark pages as a solution, so it's a one-time issue per session, but subsequent sessions may see the discomfort again.
- **Weighted Factors:** The choice to classify this as a minor issue was made in considering its frequent occurrence and minimal influence on the effectiveness of shopping. Nevertheless, it doesn't receive a better rating because users can utilize other strategies to get around this problem.

Possible solution and/or Trade-offs:

Provide a feature called "Recently Viewed" that keeps track of and shows the items a user has viewed while browsing. This might be a dedicated area that can be accessed from the main menu, a sidebar, or a footer.

No. 4	Problem

Name: Error prevention

Evidence: display of the error message

Explanation:

The alert that appears after choosing "forgot password" and entering an e-mail address that doesn't exist ("abc@123.com") falls under the definition as "Error Prevention". Designing systems to proactively avoid problems or steer users away from errors is known as error prevention. When this happens, the system's answer suggests that it is trying to validate the email entered. If the email isn't in the system's database, this might prevent the user from continuing with the password reset procedure.

Severity or Benefit:

Rating: 2 (Minor usability problem)
Justification (Frequency, Impact, Persistence, Weights):

- **Frequency**: often as people may input incorrectly or enter invalid email addresses while attempting to reset their password.
- **Impact**: Users should have little trouble overcoming this, since they will probably recognize their error and either fix the email or find a new way to recover.
- **Persistence**: Resetting the password only solves the problem once, but if people keep entering the wrong email address, it might come back.
- **Weighted Factors:** Because it frequently occurs and has a modest effect on the user experience, it is rated as a mild issue. Although there is room for improvement in terms of clarity to stop users from inputting non-existent emails, they may readily fix their error or utilize other recovery techniques.

Possible solution and/or Trade-offs:

Give users a more helpful prompt that says, "The email you entered does not exist in the system's database." It also suggests that they check their email or try an other recovery option.

No. 5	Problem

Name: Flexibility and Efficiency of Use

Evidence:

The absence of personalized recommendations, lightning deals, similar items, view history, and wish-listed items on the "cart to checkout" page is directly observable during the checkout process on the website interface.

Explanation: The "cart to checkout" page's lack of wish-listed goods, lightning offers, related items, view history, and personalized suggestions limits the speed and flexibility of the shopping experience. These capabilities could speed up the checkout process and may increase the possibility of subsequent purchases by enabling consumers to rapidly find more products of interest or things they have previously seen or wish-listed.

Severity or Benefit:

Rating: 3 (Major usability problem)

Justification (Frequency, Impact, Persistence, Weights):

- **Frequency:** Often, as customers usually anticipate receiving tailored suggestions and having access to their browsing history and wish list while checking out.
- **Impact:** Users may find it slightly difficult to overcome, as they might have to manually search for more goods or go back to earlier pages in order to locate the right products.
- **Persistence**: Frequently annoying, as customers could run across this problem every time they check out, which could aggravate them or make them unhappy with their buying experience.
- **Weighted Factors:** Because of its frequent occurrence and substantial effect on user experience, this issue is rated as a major one. The lack of these functionalities not only makes the checkout process less effective, but it also makes the website less flexible and user-friendly overall.

Possible solution and/or Trade-offs:

Implement personalized recommendations, lightning deals, similar items, view history, and wish-listed items on the "cart to checkout" page to enhance the shopping experience and provide users with relevant product suggestions.

No. 6	Problem
Name: Match Between System and the Real World	
Evidence: The search results for "eggs" with the groceries filter	
Explanation: The issue comes from the difference between the user's mental map of the grocery section—where eggs are found—and the real location—where they are sold—under the Instacart-powered "same day delivery" option. Consumers usually anticipate that the foods area of a retail website will include frequently purchased grocery goods, such as eggs. But in this instance, customer expectations aren't met because the eggs could only be accessed through a separate website section.	

Severity or Benefit:

Rating: 3 (Major usability problem)

Justification (Frequency, Impact, Persistence, Weights):

- **Frequency:** Common, as consumers usually anticipate seeing consumables on the website, such as eggs.
- **Impact:** Users may find it rather challenging to navigate, as they could become perplexed and frustrated when objects are not where they should be.
- **Persistence:** Frequently annoying, as customers could run into this problem every time they try to locate groceries on the internet, which could make them unhappy with their buying experience.
- **Weighted Factors:** Because of its frequent occurrence and significant impact on user experience, this issue is rated as a major one. The website's usability and user-friendliness are compromised by the difference between user expectations and the actual locations of elements.

Possible solution and/or Trade-offs:

Ensure that the website's groceries section prominently features and provides easy access to often purchased food goods such as eggs. To aid consumers in finding the products they're searching for fast, include search or straightforward navigation.

No. 7	Good Aspect

Name: Match Between System and the Real World

Evidence:

Direct observation of the website interface reveals the existence of a header menu with a drop-down menu that opens up to three hierarchical levels. The menu allows users to engage with the website, allowing them to travel through various sections and access deeper levels of material as needed. The usability and user-friendliness of the website's navigation system are further highlighted by comparison with industry standards or rival websites that also make use of hierarchical menus.

Explanation:

Users' mental models and expectations of how information is arranged in the actual world are in line with the header menu, which features a drop-down menu that opens to three hierarchical levels. Hierarchical menus are a familiar sight to users in a variety of settings, including webpages and software programs. Because the menu layout reflects their prior knowledge and expectations, visitors find it simpler to comprehend and navigate the website as a result of their familiarity.

Severity or Benefit:

Rating:

Justification (Frequency, Impact, Persistence, Weights):

- **Frequency**: Frequently, as many websites and software programs utilize hierarchical menus as a standard navigation style.
- **Impact:** The website's hierarchical menu layout is easy for users to grasp and engage with, allowing for efficient online navigation.
- **Persistence:** The website is persistent, since customers may take advantage of the simplified navigation offered by the hierarchical menu structure every time they visit

Possible solution and/or Trade-offs:

Keep an eye out for any possible usability problems or areas that need adjustment with regard to the top menu and its hierarchical structure by regularly monitoring user input and behavior. For further information about the navigational preferences and pain points of users, think about performing usability testing or user interviews. Make adjustments to the header menu's design based on the results to make it more user-friendly and to make sure that it accurately reflects users' expectations and mental models.

No. 8	Problem

Name: Visibility of System Status

Evidence:

The website's interface provides immediate observation of the evidence supporting this problem. When navigating from Costco's main website to the grocery page hosted by Instacart, users will see that they are not presently logged in and will see the option to "Sign In" accessible in the upper right corner. If a user started the session while already logged in, the display of the "Sign In" option goes against what they would anticipate, which might cause confusion or ambiguity over their authentication status.

Explanation:

Users may anticipate that the system will keep them locked in when they go between pages when they visit the Instacart-powered grocery page from Costco's main website. Despite starting the session while already logged in, users are not signed in, as shown by the "Sign In" option located in the top right of the page. Confusion or doubt regarding the state of the system is caused by this disparity between the "Sign In" option's appearance and the user's real authentication status.

Severity or Benefit:

Rating: 2 (Minor usability problem)

Justification (Frequency, Impact, Persistence, Weights):

- **Frequency:** Common, as visitors may anticipate a continuous login status and regularly switch between various page parts.
- **Impact:** Users may initially be perplexed or uncertain about their authentication status while visiting the new page, making it moderately difficult for them to overcome.
- **Persistence:** Frequently annoying, as consumers could run into this problem every time they visit the Instacart-powered grocery page, which might cause them to lose faith in the website's operation.

Possible solution:

Make sure that the user's authentication state is appropriately reflected in the display of the "Sign In" option. When a user visits the grocery page and is already logged in, the "Sign In" option need either be removed or show a visual cue that the user is already signed in.

No. 9	Good Aspect

Name: Help and Documentation

Evidence:

On the website interface, one can find the evidence of the "Customer Service" section's functionality. Users can browse this section to discover information that is simple and focused to particular activities or questions they may have. This comprises support choices, contact details, troubleshooting tips, and FAQs, all of which are clearly accessible and quickly available to users who are in need of help.

Explanation:

For users who need help with different activities or have questions about their interactions with the website, the "Customer Service" area is a great resource. Through the provision of concise and lucid information, including contact details, FAQs, troubleshooting manuals, and support choices, the website helps users effectively resolve problems or get the assistance they require.

Severity or Benefit:

Rating:

Justification (Frequency, Impact, Persistence, Weights):

Frequency: The frequency with which users visit the "Customer Service" area varies based on their unique demands and situations. But having this part available guarantees that visitors will always have access to resources for support and assistance if they run into issues or have inquiries about how to utilize the website.

Impact: The impact of the "Customer Service" section is significant, as it provides users with valuable assistance and guidance, enhancing their ability to accomplish tasks and resolve issues effectively. Users who encounter problems or have inquiries can rely on this section to find the information they need, contributing to a positive user experience.

Persistence: The persistence of the benefits provided by the "Customer Service" section is high, as it continues to serve as a valuable resource for users over time. As long as the website maintains this section and updates it with relevant and helpful information, users can consistently rely on it for assistance with their interactions on the website.

Weights: The "Customer Service" section's positive impact and efficiency are supported by the weighted criteria in the reasoning, which supports the section's recognition as a beneficial component of usability heuristics. The section gets credit for its good application of usability principles due to its major effect and continuous provision of important help to users, even in the face of probable changes in user frequency.

Trade-offs:
Introducing advanced features to the "Customer Service" area, such as enhanced search capabilities or more help channels, might make it more complicated and possibly confuse consumers at first. Furthermore, supporting frequent updates and servicing to guarantee the information's relevance and correctness may take funds away from other website development or maintenance projects. It takes careful thought to strike a balance between these trade-offs in order to efficiently prioritize upgrades without burdening users or the website.

Cognitive walkthrough

Task 1: Find the Wishlist products on Homepage

	What was the user's goal? (Do NOT use one word answers)	Is the action available? (Do NOT use one word answers)	Does the action or label match the goal? (Do NOT use one word answers)	Is there good feedback? (Do NOT use one word answers)
1	The user aims to locate the most recently added item in their Wishlist on the homepage.	The functionality for the user to find the latest wishlist item is indeed available; the items are presented on the homepage sorted from newest to oldest.	The provided action aligns with the user's goal, as it allows them to see their wishlist items in the desired order.	The system offers clear feedback, confirming that the user has successfully found the latest additions to their wishlist.
2	A user who is not familiar with navigating the Costco website wants to use the Wishlist feature.	The action for such a user to access the wishlist is available, with the wishlist section prominently highlighted to catch the attention of someone unfamiliar with the site.	The user, even without prior knowledge of the website, is able to take the time to find and recognize the wishlist in our prototype due to the prominent highlighting and intuitive design.	The feedback provided to users in this context is partial; it may require enhancement to ensure that even first-time users receive clear confirmation when interacting with the wishlist feature.

Reflective Paragraph from Observation:

During the cognitive walkthrough, we identified key areas for enhancement in our prototypes to improve user experience. While the functionality for locating the latest Wishlist items is effectively implemented, increasing visual cues could further aid users unfamiliar with the layout. Additionally, the feedback

mechanism for first-time users using the Wishlist feature needs strengthening. Enhanced tooltips or interactive guides could significantly boost usability and ensure a smoother, more engaging experience for all visitors.

Task 2: User uses the Costco travel page and returns to the grocery page.

	What was the user's goal? (Do NOT use one word answers)	**Is the action available? (Do NOT use one word answers)**	**Does the action or label match the goal? (Do NOT use one word answers)**	**Is there good feedback? (Do NOT use one word answers)**
1	The user intends to switch to the grocery category after browsing the Costco travel section.	Yes, the action to navigate from the Costco travel page to the grocery category is available. This is facilitated by a well-organized and prominently displayed navigation bar that includes the grocery category.	The labels and actions on the navigation bar are designed to match this goal. The grocery category is clearly labeled and positioned to be easily accessible, allowing for straightforward navigation following a visit to the travel section.	There is adequate feedback when the user selects the grocery category. The visual cues on the website, such as a change in the appearance of the navigation bar or highlighting of the active category, confirm to the user that they have navigated to the grocery section successfully.
2	The user wants to return to the homepage after viewing the Costco travel section to browse other news topics.	Yes, the action to return to the homepage is available. Typically, this can be accomplished through a visible home button on navigation bar that users can click, which will directly take them back to the homepage.	The available action matches the user's goal. The home button or logo is universally recognized as a way to return to the main page of a website, and it is usually prominently displayed for easy access.	The feedback is immediate and clear when the user clicks on the home button or logo. The transition back to the homepage is typically quick, visually indicating to the user that they have returned to the starting point where they can continue to explore other sections, including news topics.

Reflective Paragraph from Observation:

The cognitive walkthrough revealed that both prototypes for navigating within the Costco website are generally effective, aligning well with user goals and expectations. The navigation from the travel section to the grocery category and back to the homepage demonstrates a well-structured user interface that provides clear and straightforward paths. However, while the functionality meets basic usability standards, there are opportunities to enhance user engagement and clarity. For instance, adding more dynamic visual feedback, such as animations or color transitions when switching categories or returning to the homepage, could make the navigation experience more intuitive and visually appealing. Additionally, ensuring that these navigation elements are consistently visible across all device types, particularly on mobile, could further improve accessibility and ease of use. These refinements would not only polish the user journey but also reinforce the navigational efficiency and satisfaction for a broader audience.

Task 3: User tries to login with a new password after he reset the password first.

	What was the user's goal? (Do NOT use one word answers)	Is the action available? (Do NOT use one word answers)	Does the action or label match the goal? (Do NOT use one word answers)	Is there good feedback? (Do NOT use one word answers)
1	The user needs to be notified when they enter an incorrect email address.	Yes, the functionality is available; the user receives a prompt message when an incorrect email is entered.	The form effectively meets the user's requirement by checking the validity of the entered email address.	The feedback is clear and informative, explicitly notifying the user with a message that states "entered email is invalid."
2	The user has forgotten their password and attempts to change it on the login page.	Yes, the action is available; the user can initiate the password change process directly from the login page.	The process and forms implemented in the prototype successfully achieve the goal of allowing users to change their password, indicating a good match between the user's intent and the system's functionality.	The user receives clear feedback once the password has been successfully changed, ensuring that they are informed of the successful update.

Reflective Paragraph from Observation:

The cognitive walkthrough for the email validation and password reset functionalities highlights that both features are effectively implemented and aligned with user needs. Users receive prompt and clear feedback when errors are made or actions are successfully completed, such as entering an invalid email or changing a password. However, while the basic functional requirements are met, there could be room for enhancements to further optimize user experience. For the email validation, additional guidance could be

provided on what constitutes a valid email format to prevent errors before they occur. For the password reset feature, including an option to visually confirm the new password, or offering suggestions for creating a strong password could enhance security and user confidence. Implementing these suggestions would not only address potential usability issues but also enhance the overall effectiveness and user satisfaction with these critical functionalities.