Project Assignment #5:

Heuristic Evaluation
&
Final Project
Report

INF 132: Project in HCI

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Executive Summary

The objective of this final report is to present a summary of our key findings as well as recommendations throughout our process of redesigning ASW's retailer website. It is important to note that these findings and recommendations are intended to improve user experience and fulfill users' satisfaction based off our researches and evaluations, following the general heuristic guidelines.

A competitive analysis was conducted to find direct and indirect stakeholders of the ASW. The analysis found that Jo-Ann and Michael's to be direct competitors offering similar services and products. It found that Amazon and Walmart to be indirect competitors again offering similar products but, less personalized service and lower prices by selling in larger volumes.

A target population was then determined by developing and disseminating surveys to individuals believed to be within the appropriate demographic for the ASW website and interviews were conducted. Completed surveys and interview notes were then evaluated assisting us in the creation of personas, or profiles for individuals that would best represent ASW's customer base for a more in depth description of the methods and analysis for this procedure, see the "User Research" section.

Usability testing was conducted followed by our team's cognitive walkthrough. The usability testing involved creating simple scenarios and tasks for our five participants to complete on the ASW website while they shared their process and thoughts out loud. Tasks were timed, clicks were counted and general usability problems were revealed. Similarly, the cognitive walkthrough involved a similar process where our team worked through a series of tasks together, while evaluating them from the perspectives of the users.

The initial usability testing revealed specific issues with the original design. They were ranked as either major or minor problems. Major problems included the website's general layout guideline and content violations, and poor placement of many of the website's features such as the Search Bar and its inadequate filtering system, and the List System. The minor problem was the website's lack of user feedback during the tasks and confirmation of action completion.

After analysis of all the data, we were able to determine four major redesign goals to improve the user experiences on ASW:

     1.   Reconstructing the visual hierarchy to meet general website guidelines and standards to eliminate information overload and enhance the visibility of most used features (Search Bar, Lists, etc.)

2.   Adding an Advanced Search filter option to narrow down search results and increase the flexibility of items that the users can search for;

3.   Adding more informative feedbacks to inform the user of the actions' statuses of whether it has been a success or a failure; and

4.   Develop a unique feature that strengthens ASW's standing in the e-marketplace and expand its consumer base.

Introduction
Art Supply Warehouse (ASW) is a store located in Westminster, California, that sells arts and crafts supplies. ASW also hosts access to a community of artists called Catalyst which offers everything from art classes to art related jobs. The ASW website is meant to be an online interface that their customers can use to buy supplies from anywhere.

ASW is not a large company and their website provides no indication that they have employed any type of research into usability. As such, this website became the perfect redesign project. There appears to be a limitless number of usability issues to work with.

Our usability testing and cognitive walkthroughs confirmed our suspicions, identifying multiple usability problems. We are proposing a redesign for the three top usability issues revealed to us through our testing: the List system, Search filter, and user feedback. We also propose a new feature called, "Pick-A-Pack" to give ASW a personal touch and distinguish them over other larger retailers. We believe the new feature will give ASW an extra business edge.

We have also made corrections to general design usability guidelines breaches that have also created problems for participants in our research such as decluttering the homepage, redesigning the Navigation Bar, and relocating the Search Bar and Login affordances.

Competitive Analysis
Jo-Ann (www.joann.com/) is an American retail chain that specializes in selling arts, crafts, and fabric materials. This makes Jo-Ann a direct competitor because their primary audience consist of people who are interested in buying arts and crafts supplies - artists and crafters of all kinds. They are able to create brand loyalty by delivering personalized marketing; the customers are engaged because they receive real-time, in-store promotional emails, and coupons on a daily basis via mobile app or the website. Jo-Ann's website allows consumers to shop online,

sign up and participate in local events, and browse through their inspirations link for project ideas. In addition, the site provides coupons and weekly ads, enticing the consumers to buy and save money on supplies. What sets Jo-Ann's website apart is that they prioritize displaying special deals and savings on their website using large images that take up the majority of the screen, making sure that customers are fully aware of what is being offered. Similarly, ASW has a unique program that allows customers to get bargained prices called the Featured Maximum Advantage Program (FMAP), but occasionally shows up on the homepage. It is a missed opportunity to present ASW as a unique store where it could potentially attract more customers to the site. Presentation is something we considered for our redesign.

Michael's (www.michaels.com/) is one of the more popular retail chains that also specializes in selling arts and crafts supplies, making it another direct competitor to ASW. Part of their success comes from their strong implementation of welcoming customers into their stores that allowed them to establish as a brand. Michael's was able to create a friendly environment by adding large prominent red signs of which attracted customers, and helped guide them to different departments of the store. In addition, employees wore easy-to-spot red cardigans vests so that customers can quickly find help while shopping. The color red is a signature theme for Michael's, and something that customers are able to familiarize themselves with. This theme is then incorporated well into their website. Like Jo-Ann's, Michael's website allows consumers, who are interested in art, to shop online, sign up for local events, and browse through projects for inspiration. The consistent red scheme gives it a minimalistic look while showing who they are as a brand. While ASW has unique features, such as the List & Registries system and FMAP -that makes them stand out from other art supplies stores - their website does not portray it well as Michael's.

Amazon (https://www.amazon.com) is the largest Internet retailer in the world as measured by revenue and market capitalization. Despite its tremendous presence in online shopping, Amazon also participates in other industries such as music streaming service, video streaming service, and cloud infrastructure service. Amazon is an indirect competitor of ASW because while they do sell arts and crafts supplies of all kind - including branded ones - their e-commerce extends beyond that realm and into many different departments. Amazon excels in various aspects such as content, credibility, value, recommendations, and more that just induce customers to keep on coming back; what stands out most is their execution in personalizing customers' shopping experiences. In some way, ASW allows for a more personalized experience through the List & Registries feature where they are able to create lists/registries or find other people's

lists/registries to reference to. The implementation is there, but its presence is lacking in presentation and clarity when using it.

Walmart (www.walmart.com/) is a large retail corporation that sells a variety of products that attracts a variety of users. It is one of the world's largest companies with a consolidated revenue that affords them room for improvement budget in various aspects of their company, including the UI/UX of their website. While Walmart does offer art supplies, they also offer broader variety of products; both Walmart and ASW websites sell products in-store and online, making them indirect competitors. The website is fairly simple and average with a great presentation in products that they have in stock, but Walmart included one feature that makes the retail stand out as a business. Since, they are now expanding their commerce into grocery, they have now implemented a online grocery section dedicated for those who want to come to Walmart to buy food; this feature attracts customers because it is specific to a task. Getting bargained prices, and making lists are only the few that makes ASW stand up, but for a "Ma and Pa", as stated in their Facebook About page, store, the team feels like they can do something unique by adding a new feature that would potentially attract customers as well as improve the business.

User Research

Target Population
Our target population mainly encompasses three types of online shoppers who vary in age but share a common interest: buying arts and crafts supplies (A&CS). The first type consists of regular (A&CS) consumers who continually return to ASW to purchase A&CS. This group refers to loyal customers of ASW who have established brand loyalty and prefer to shop online rather than in-store. The second type includes A&CS bargain shoppers who search for the best deal and will occasionally buy from ASW. Type three, consists of those who occasionally shop for A&CS. It is assumed that they all have consistent access to the Internet through more than one platform and have shopped online before. Some of the competitors of ASW would be indirect stakeholders, which include but are not limited to: Jo-Ann, Michael's, Amazon, and Walmart.

Methods
We employed two methods for gathering user information; personal interviews and surveys. In terms of personal interviews, the team experienced proximity limitations due to the tight schedules of our team members and in many cases, incompatible schedules. Therefore, interview participant selection mainly consisted of individuals we had established relationships with such as friends or family. These people are enough to satisfy our targets population due

to their experience of online shopping. Nowadays almost everyone has shop online at least, and those are the people we are trying to get information from.

There were a total of ten interviews conducted. Each interview was thirty minutes in length and consisted, in part, of personal questions regarding age, employment, place the participant grew up and education. The other part dealt more with attitudes and behaviors with respect to technology and online shopping habits (*see Appendix F*).

Surveys were created through Google Surveys and were either given to known individuals via hard copy or email or solicited through Facebook. The team received 24 responses. Those received via Facebook were anonymous and random. The questions consisted of a few specific demographics such as age, gender and frequency of online shopping. Most of the survey asked the participant to rate various online shopping behaviors and attitudes.

Findings
Our research findings were skewed in favor of a younger population which heavily influences our results. This aligns well with our intended goal, which is to test the usability of the ASW's website because it allows us to assume that our targeted population already has previous experiences in shopping online thanks to the advancement of modern technology.

We surveyed 24 individuals; 54.2% of those surveyed were male with females at 45.8%. Our findings indicate that most of our targeted population are between the ages of 19 to 24 years followed by a small margin of those age 51 years or older.

General
In our efforts to cover any important information during our usability testing, we journaled participant's comments and suggestions. We believed that comments especially, during moments of navigational frustration, could be very revealing in helping us to identify issues we may not have thought.

Overall, we have found that the majority of our participants prefer to shop online rather than in-store (*see Appendix C*). They will shop at least once a month and tend to buy things before they run out, suggesting that planning is done in advance - whatever it is, shopping around for the best prices, looking for what they need, or browsing for websites that have the products they need. When we asked our participants to explain their reasons why they prefer to shop online rather than in-store, many of them stated that,

"... it is more convenient and faster compared to in-store."

and

"... for the decreased level of stress I feel."

This demonstrates that most of the consumers nowadays prefer to shop online because it would be more efficient and less stressful in the process of searching and buying an item. As the result, ensuring that ASW's website is able to fulfill these standard expectations of online shopping will not only attract more in-store consumers, but it will also maximize the growth of its customer base.

Searching

We discovered that most of the participants think product presentation is important; whether it is looking for individual items, bundled items, or buying in bulk, users would like to view products in a clean and uncluttered format, making products easier to access. When we asked participants in the interviews about what would make online shopping a better experience, one participant responded by saying,

". . . [by] making it easier to purchase; less complicated."

Others suggested that, if a product is not easy to find, they will switch to another website just out of frustration (*see Appendix C*). Searching is a primary task for users when it comes to online shopping, and if a website makes it difficult to do so, then it has failed its users; this is further supported by the many times our interviewees stated that a Search Bar is very important on a website. By improving ASW's page layout of searchable items, it can satisfy their consumers in the long run and preserve brand loyalty.

Customer Review

Almost all survey takers and interviewees agreed that product reviews are extremely valuable to them such that they can directly affect their decision to buy products (*see Appendix C*). According to our interviews, a couple of people stated that,

". . . other customers' review can affect my decision . . . "

and

"I cannot do without customer comments feature when shopping online . . ."

This finding on customer feedback suggests that comments and reviews play an important role in driving the user's emotional consideration to proceed with the process of buying online. It allows consumers to ensure both the legitimacy and quality of the item being purchased. Thus, adding a customer feedback feature can assist ASW in providing transparency between the company and their consumers.

Features

We asked participants if features commonly seen on shopping websites, such as a purchase history and a wish list, are important. The majority agreed that being able to view your purchase history is important *(see Appendix C)* while ten of the twenty-two see wish lists as very important. This encourages the use of accounts and suggests that consumers want to keep track of their purchases for a more personalized shopping experience. If they are repeat customers, then having an account is highly preferred.

In our interviews, a majority said they like to have Search Bars and shopping carts because it makes their shopping experience better and more convenient. Other features mentioned include a filtering system, but only if they work. From these findings, as long as the users are confident in using the website with its various functions and buttons, then it should make their shopping experience more efficient.

Customer Service

Out of 24 individuals who took the survey, 20 of them agreed that customer service is important. This finding indicates that customer service is one of the essential key factors to a company's success because it directly correlates to both the experience of the consumers and to the brand image of the company. In addition, the participants indicated that they are loyal to online sellers that they trust. This trust is typically earned by the retailer through the quality of their customer service which can greatly influence whether a customer will return to their site to shop again.

In addition, we asked how often the products people buy online live up to their expectations. The majority of the people agree that they do, which shows that users are confident buying products online and they have good experiences with ecommerce services. However, 22 of the participants still strongly believe that the retailers should still offer free returns and exchanges as a form of insurance (*see Appendix C*). One participant reported,

"There is always limited information on items when buying. So, there's always a risk that it may not be what you want. He is more likely to take the risk if offered free returns."

Even though a majority of the time products live up to people's expectations, consumers feel like retailers should still take full responsibility when products fall short, and resolve any issues in a timely manner as part of customer service.

Advertisement

Participants stated that they do not mind seeing special deals when shopping online, as long as they are relevant, but they do not like seeing any pop-up ads. In fact, they are rather annoyed by them. For example, one interviewee said,

"I don't like pop-up anything (videos, banners, ads, etc.) . . . they're a turn off."

On the other hand, promotional items like coupons and special deals welcome users to shop around the website. If these advertisements are available for them to see without interrupting their shopping experience, users typically are not bothered by them. This suggests that users prefer special deals to be presented in a subtle way. Most people who visit retail websites know what they want to buy beforehand; the majority of interviewees stated that they will buy out of necessity as opposed to shopping around, further solidifying this idea.

Usability Testing Methods

We also conducted usability testing which is a method that is typically used in the development of software or other products to gauge a user's interaction and experiences. A selection of representative users are chosen to participate and interact with the system under specific conditions. This type of testing provides insight into actual use of a product and to identify areas that need to be addressed.

Methods

We took into consideration our initial survey results when determining who we would approach for participation in our usability testing. Since our original findings revealed that 75% of those surveyed were between the ages of 19 and 24, we felt it was appropriate to recruit UCI students.

We recruited five individuals. Three group members paired up to test three participants; one acting as moderator while the other took notes. Two group members acted both as mediator and note taker to test the other two recruits.

We began our testing with some baseline questions and the participants were asked to complete six tasks using the think aloud protocol. The participants responses and task comments were later broken down into categories; baseline questions were categorized by Suggestions and Overall Comments. Task categories were Advantages/Pros, Disadvantages/Cons, and General Comments/Suggestions.

We then scored the comments by how often our participants encountered them within each task. We used the scores to determine the problem areas for ASW's website.

Usability Testing Problems and Analysis

Below is our team's list of rankings from major to minor that demonstrates how much each issue affects the ASW website performance and the time it takes to complete certain task; as experienced by our usability testing participants.

Major: A problem that causes a task delay and creates frustration.
Minor: Has a measurably small effect on performing a task.

Poor Content Layout (Major)

During usability testing, the participants kept looking for the features relating to Account (Login or Register) at the top right corner of the webpage, but the text for these affordances were too small for them to notice.

All of the text has the same characteristics such as color, font size and font style making the website hard to read and affordances such as the Search Bar and the Login / Register clickable text, easily overlooked.

The List System features are also extremely difficult to find. They are represented by clickable images that; all look similar in style to the others images adjacent to them and, are inconsistent with the design of the rest of the website.

The usability test also revealed that there is a lack of visual hierarchy, leaving users with no focal point on the page; it is visually overwhelming. This creates a navigational problem. Users do not know where to go to find the desired feature that will help them reach their final goal.

Recommendation

Follow general guidelines for website design. Create a Navigation Bar at the top of the webpage, remove the, "Find what you're looking for," over the Search field, relocate both the Search Bar and Login/Register to the Navigation Bar, and redesign the List System feature to make the clickable image more noticeable or replace it altogether as a separate tab in the navigation bar.

Poor Search Filter (Major)

We found out this issue from our usability testing. All the participants complained about how their search results did not match their general expectations. More specifically, the range of the Search feature is too broad such that it returns numerous pages of products that are related to each word in the key terms that the users entered. For this reason, using one word in the product name ends up having a greater chance to find the desired item on the first page of results because it narrows down the range of the results. Another issue that our participants confronted during the usability test is the lack of filter for the duplicated items on the result page. Many of the displayed results were just different variations of an identical item in terms of color, size, etc (*Figure 3)*. Despite of having a poor automatic filter system for the search results, the system also does not provide enough filter options to allow the users to manually filter the results causing

Recommendation

Display the best results that match with the key terms of the search. To narrow the often voluminous pages of results, we suggest eliminating different versions of identical items from the search while allowing users the ability to look at variants of their item on the Product's description page. Also, it would be helpful to display the search results to a horizontal view so reduce unnecessary scrolling.

The location of the Search filter option should be moved to the top of the page where users would expect to find it and the sort option should be optimized to reduce the time spent for a user to find what their looking for.

Lack of Feedback / Confirmation of Actions (Minor)

Many of our testing participants pointed out that there were no indicators confirming their actions. The system does not provide any feedback or messages to inform that users have completed an action successfully.

Recommendation

We suggest adding a pop-up message box to offer informative feedback to the users based on their actions (e.g. confirmation of actions, failure due to error, etc.).

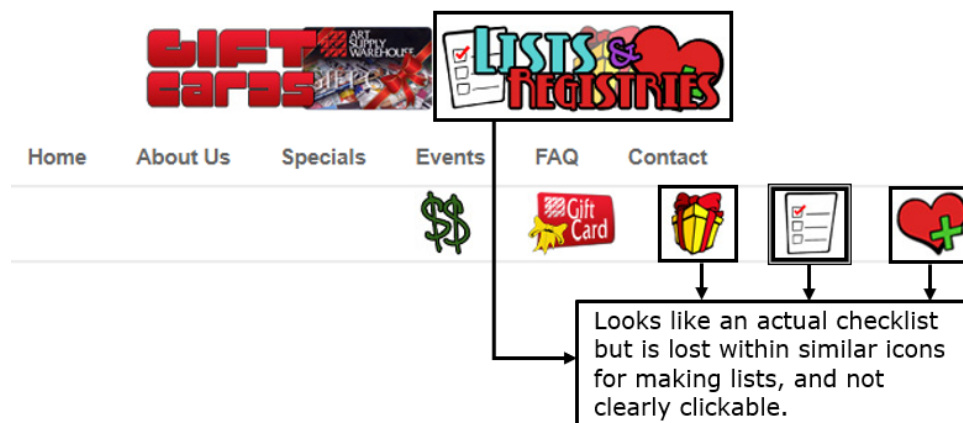**Targets and Redesign**

List System
The participants in our usability testing were required to complete a task where they had to locate a particular Class List, and perform other various tasks. They found locating ASW's List feature difficult, and spent more time looking for the feature then it did to accomplish the given task.

The current website List design allows access to Lists and the List System uses clickable, stylistic icons. The icons look similar in style to the others next to it, but as a group, they have a look and feel that is inconsistent with the design of the website as a whole. While the design of the List icons show some semblance of an actual List, they do not have any labels to indicate what they are, and hinder the navigational process. Even if users correctly guess which icon will bring them to List feature on their first try, the design ultimately does not represent itself well enough for users to look at the icon, and confidently know what they are selecting.

Recommendation
We propose eliminating the stylistic images all together and instead to represent the List feature as a tab on the Navigation Bar labeled as "Lists." This will streamline the website, leaving more whitespace for organization and reduce unnecessary distractions. This feature has great use potential for art instructors and their students. So, placing it on the Navigation Bar, where it is easy to discover, will improve its accessibility.

Current List System

Looks like an actual checklist but is lost within similar icons for making lists, and not clearly clickable.

List System Redesign

Lists is now easy to find and clearly clickable. When the user hovers over the word Lists, it will pop out and turn red.
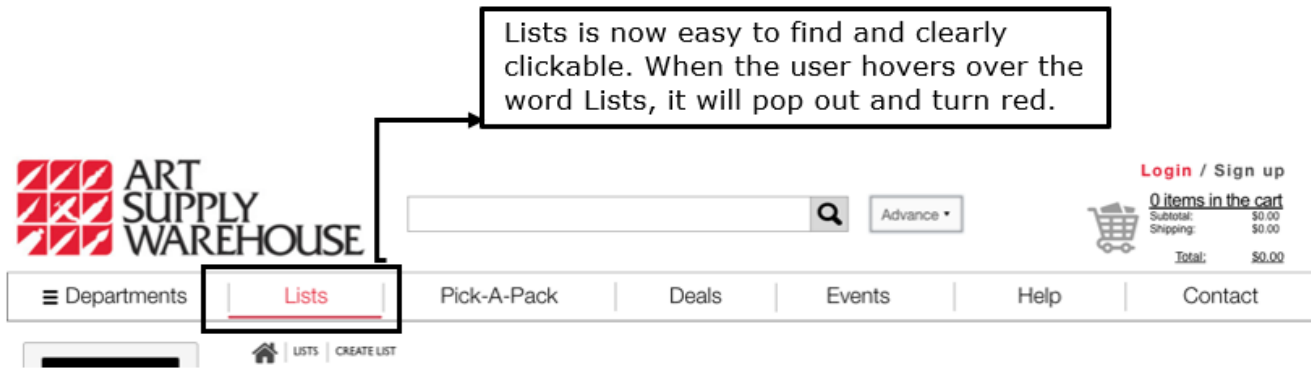
Search

Participants also complained about the location of the website's Search Bar, and what their search query results produced - both in terms of presentation and in content. The results did not match their general expectations. Four major issues that stood out:

1. Search queries using a detailed word-by-word product name resulted in numerous pages of products and product lines that were both related and unrelated to the original search phrase;

2. Search queries using only one word of the product name or the color of the product, provided more successful results;

3. Search query results were displayed as a long, vertical list of items that included identical items that are slightly different from each other (e.g same product but in a multitude of different colors, sizes, etc.); and

4. The search filter does not provide enough filtering options.

Recommendation

We propose a relocation of the Search Bar that follows a more standard layout with an organized presentation of search results, and a filter system that shows relevant item results.

The Search Bar will be placed at the top center of the screen above the Navigation Bar where most Search Bars are located, utilizing the effectiveness of the F-shaped flow pattern that is typically how the user's eyes move over a webpage and making it is easy to find.

The presentation of products could be reorganized in terms of information hierarchy, showing what the user needs to see when they are looking at

products. For the filter system, consider adding more options since color should not be the only attribute user's can search products by.

The issues presented regarding how the search query works, is an algorithm issue and we recommend that it should be addressed with the back-end architecture development team. Coding and algorithms is not within the scope of our redesign.

Current Search System
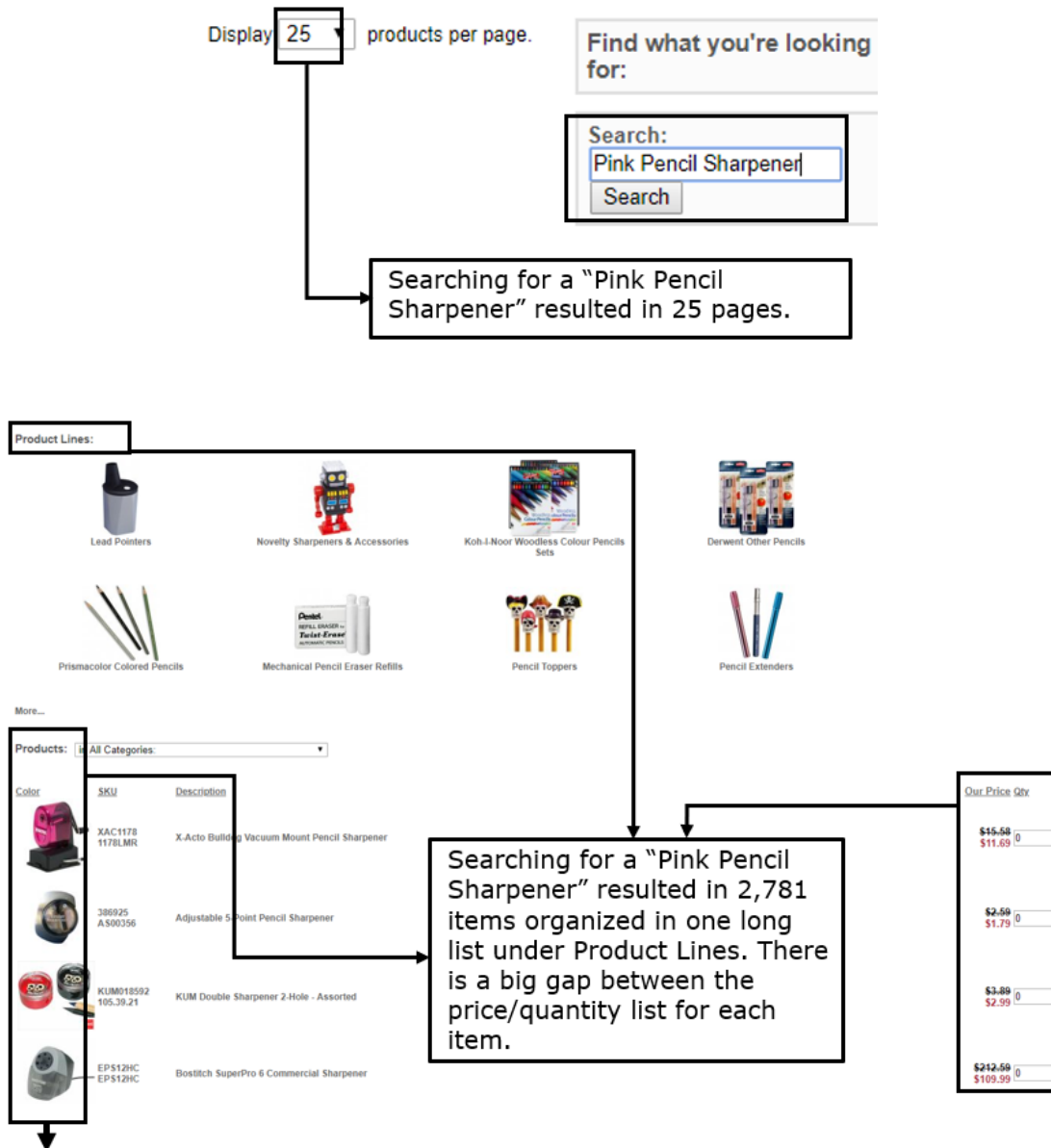
Search System Redesign

Search Bar is now located at the top center of the page with an advanced search feature that will help the user refine their search results.

Layout of search results are horizontal instead of vertical with price/quantity connected to the item.

User Feedback

The participants in our research complained about the websites lack of feedback on task completion. For example, in one of the testing tasks, the participants were asked to register as new users to the website. Once the form was completed, the only confirmation of success was the user's name, in small text, displayed at the top right-hand corner of the page amongst a collection of other features users complained about being hard to find.

The website neglects to inform users that their registration was successful which left our participants confused and wondering if they had actually registered successfully. The processing time for submission of the necessary registration information was so lengthy, participants felt they needed to refresh the page for fear that the website was experiencing problems. In one case, the participant filled out the form again and resubmitted it.

This task had the highest click rate of all our testing case scenarios and the participants also lingered for longer periods of time on the homepage searching for the registration/account affordance.

Recommendation

We suggest providing more feedback, like a welcome screen after the registration and login process. Response to making shopping cart additions and edits, and apply general heuristic guidelines to all of the issues we are addressing. Users should be informed of their actions to reassure that they have completed a task.

Current Feedback

Welcome Jane Doe!
- My Account | Logout -
0 items in cart.
Subtotal: $0.00
Shipping: $0.00
Total: **$0.00**

Confirmation of registration is packed in with other features and hard to see.

Feedback Redesign

A "Welcome" message will be displayed for both tasks as confirmation of success.

A "Hello" with the user's name will replace the clickable Login/Registration text both upon registering and after logging in as confirmation of success.

ART SUPPLY WAREHOUSE

Hello, Taylor ▾
0 items in the cart
Subtotal: $0.00
Shipping: $0.00
Total: $0.00

☰ Departments   Lists   Pick-A-Pack   Deals   Events   Help   Contact

Welcome back, Taylor

Pick-A-Pack

Some of the more difficult questions we asked ourselves were: what we could do to make the ASW website more appealing to art students and working artists alike, and how we could give customers more control over how they buy products.

The List system is a feature that is already unique, but it did not necessarily feel like this alone would increase the number of ASW customers. It seemed more like a gimmick. So, we considered a brand new feature that could

potentially set ASW apart from other art websites and potentially influence users to shop with ASW over larger retailers, like Amazon or Walmart.

What the team came up with is a proposed business strategy called, "Pick-A-Pack" that allows consumers to create their own custom sets of reusable art supplies such as pencils, pens, markers and paints. For example, there are more frequently used colors across all types of art mediums, such as black and white. Artists will sometimes use certain colors schemes in their works and, these are the colors they would most often run out of over other colors. So, instead of buying one item at a time, as needed, this new feature would allow customers to buy multiple items of the same type and color. ASW could reduce their already discounted price per unit for bulk buying which benefits the customer, while increasing the volume of their sales, which benefits ASW.

The type of medium (item category) would determine the size (quantity of items) that could be included in the Pick-A-Packs being offered (e.g. pencils are thin and tubes of paint are fat). The customers would choose from a selection of mediums available in the Pick-A-Pack program. Once a medium is selected, a list of brands for those mediums would be displayed. When the customer chooses the brand, the available colors for that medium and brand will be displayed. At that point, the customer will have an option to select colors and quantity for inclusion in their Pack until they have reached the collective quantity limit.
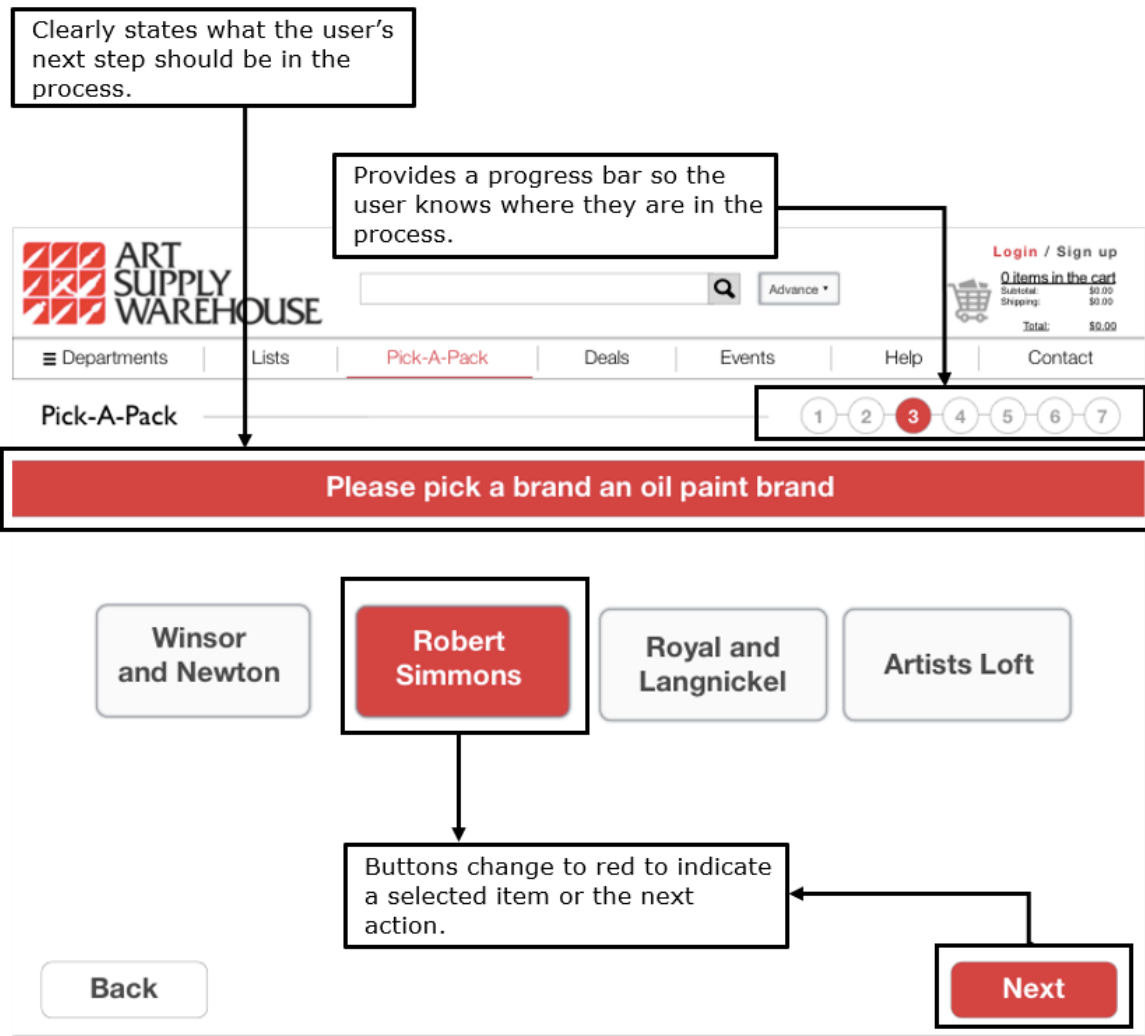
Heuristic Evaluation

To ensure that our redesign improves the usability of the website, the team performed a heuristic evaluation to determine if it follows the online standard for interface design. For the redesign to be considered a success, it is important that there is a noticeable improvement in regards to the website's feel. Heuristic evaluations allow the team to turn that "feel" into quantifiable data.

Approach and Methods

We used a sample form created by Xerox called, "Usability Analysis and Design," https://www.sampletemplates.com/business-templates/heuristic-evaluation-template.html. Essentially, this form uses the ten heuristics developed by Jakob Nielsen's Heuristics (below). We evaluated the three major issues found during our usability testing; the List System, Search and User Feedback. We also evaluated the Pick-A-Pack feature which was developed by our team during our redesign process. This feature was subject to a cognitive walkthrough but not usability testing.

Nielsen Heuristic Categories	
1	Visibility of System status
2	Match Between System and the Real World
3	User Control and Freedom
4	Consistency and Standards
5	Help Users Recognize, Diagnose and Recover From Errors
6	Error Prevention
7	Recognition Rather Than Recall
8	Flexibility and Efficiency of Use
9	Aesthetic and Minimalist Design
10	Help and Documentation

The heuristic evaluation form (*See Appendix B*) allowed us to answer questions categorically for each issue within the those ten heuristics. We checked off Yes, No, or N/A (not applicable) to each line item on the form. We also supplied comments where applicable.

To organize our completed individual evaluations, we created a form to tally our collective responses to each item on the heuristic evaluation (See Appendix B). Based on those final tallies, we were able to isolate the design issues for analysis.

Problem Prioritization Method
We created two categories for the organization of problem areas in our approach to evaluating our heuristic evaluations; High Severity or Low Severity. High Severity items are the items with over three tallies in the "No" category; these items are the high severity problems. Low Severity are areas with three or less tallies in the "No" category.

Items tallied under the N/A (Not Applicable) with a number greater than or equal to three were considered to be line items that did not apply to the redesign at its current stage.

Potential Problems
Although the redesign improves the intuitiveness of the website substantially, we have found some potential issues with our redesign. These issues have been categorized using the prioritization above. While it is not mandatory to fix these issues, it is important to know potential problems that could arise from the new design.

High Severity
Heuristic 3 - User Control and Freedom

3.1. The system provides a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue.

Not every page in the system has a way of immediately leaving an unwanted state, which means that there is a possibility that users will have to go through dialogue directives if they are in the middle of a process. For example, in the "Pick-A-Pack" page, if the user realizes that they chose the wrong second question and needs to restart, they will have to confirm that they want to leave the page and end the process to return to the homepage and then, start again.

3.2. The system support undo and redo.

There are no ways to undo or redo an action on the website. For example, on our redesign of the product page, there is no way to return to the search results page. Similar to Heuristic 3.1, all pages pages should contain a button to quickly undo the last action performed, but the only place with that functionality is the "Pick-A-Pack" page. This issue can cause users to become frustrated when they have to undo an action, as they would be forced to use their browser's undo and redo buttons. These buttons will not always perform the correct action, as not all data submitted into the website is caught as an action that is viable for your browser to undo or redo.

Low Severity
Heuristic 6 - Error Prevention
6.5.   Have dots or underscores been used to indicate field length?

The redesign may have included graphic representations which indicated the lengths of its text fields. For example, text fields are sized about the same as the expected input since it can be error-prone when users cannot see their full entry. Likewise, if a text field require long inputs, such as sentences or paragraphs, then a text area would be more appropriate. Thus, Heuristic 6.5 is a minor problem that can be solved by adding something like ellipses to the end of text, ones long enough to fit on the current page. In conjunction with a way to view the whole text, this would solve the issue.

Heuristic 7 - Recognition Rather than Recall
7.14 Is color coding consistent throughout the system?

The color unification of action buttons, text fields and the overall website should be approached holistically. Users need to understand what is expected as a consequence of their actions; consistency is key. Both the List System and Pick-A-Pack color schemes are inconsistent with the homepage. In terms of

action features like buttons, the home page does use a little red to indicate that text is clickable while both the List System and Pick-A-Pack feature pages are overloaded with red. Part of the task of redesigning the website was to relieve the user from cognitive overload. Using the old color scheme for the homepage and a different one for other featured pages defeats that purpose.

If red is the chosen color for action, it should be used sparingly so the user is able to know the difference between action features and the generally theme of the website. Conversely, if the general theme of the web pages is to be red, action buttons and fields should be another color.

Findings

List System Evaluation

We removed extraneous icons that represented all the Lists available to the user as part of the List System and packed them into a functional hierarchy of actions, accessible through one clickable text feature (Figure 1). This has successfully made the feature both easier to find and navigate.
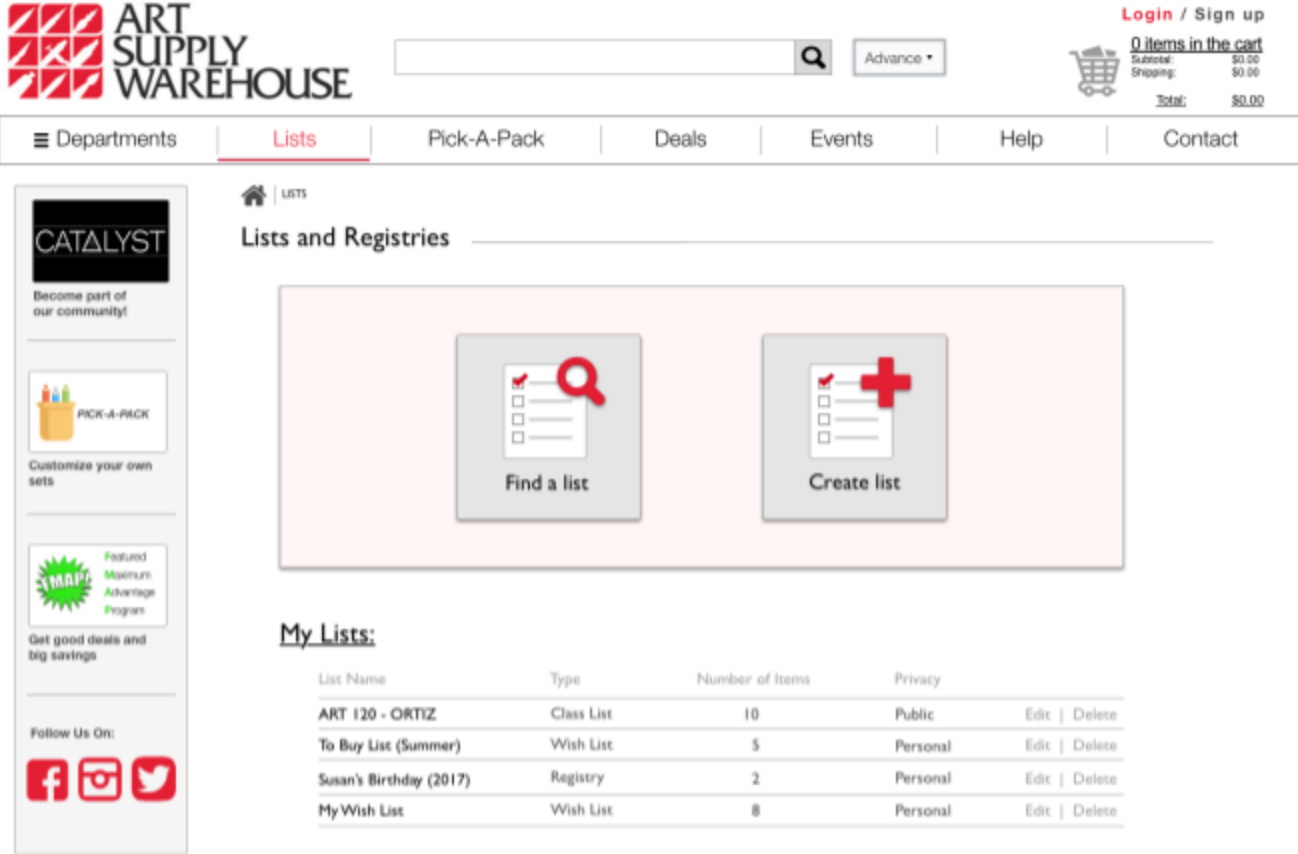
Figure 1 - General List Menu

Additionally, we also enlarged the icons in the Lists Menu to ensure that the users will be more aware of all the possible features provided by the system (Figure 2 & 3).

Figure 2 - Find a List Menu

Figure 3 - Results of Lists Search

Search Evaluation

The Search feature is now easier to find and the additional Advanced filter option will allow users to narrow down their search results based on their desired criterias (Figure 4 & 5). In keeping with recognition rather than recall, we used drop down menus in the Advanced filter option menu. The drop down menus provide cues for all possible options, which will reduce the need to recall brand names or categories. The additional color picker also requires little in the way of recall and provides more options when choosing a color. A search by color name, hexadecimal color code or clicking on a color within the color picker are all possible.

Figure 4 - Search Bar and Home Page

Figure 5 - Advanced Search

However, the Advanced Search feature still has some downfalls that our team was not aware of during the design process. One of them is the lack of user control and freedom due to the poor layout of the Search button. At its current position, it may seem misleading to the users that they are required to fill in the key terms/item number to conduct their search. Moreover, the filter options at the bottom are also optional for the users to fill out so there should be added a text next to them saying "Optional." Thus, this does not align well with our intended goal to allow the users to conduct more flexible searches, while narrowing down their search results based on their desired criterias. Additionally, the Advanced search is also missing a "Clear" button that can be used to clear all of fields originally selected. This can be an important mechanism that gives the users a way to reset their current search options without having to go to each field and delete their previous selection.

User Feedback Evaluation

The proposed redesign does not redirect the user to a page that notifies them when an item is added to the cart. The only way to know that the item has been added is to look in the top right hand corner at the bolded text and

remember what number was there before (Figure 6). We tried improving the visibility of the cart by adding white space and bolding the text, but it was not as helpful as originally anticipated.

Even though not all issues of user feedback have been resolved, the redesign has addressed a majority of the issues in the original design. The new Login provides a clear indication that the user is logged in, which was a major problem in our cognitive walkthrough (Figure 6). Another issue was the long list of items after a search was performed. We changed the results from a list of one item per row to more general descriptions that have four columns per row (Figure 7). This creates a minimalist design that provides necessary information without overloading the user.
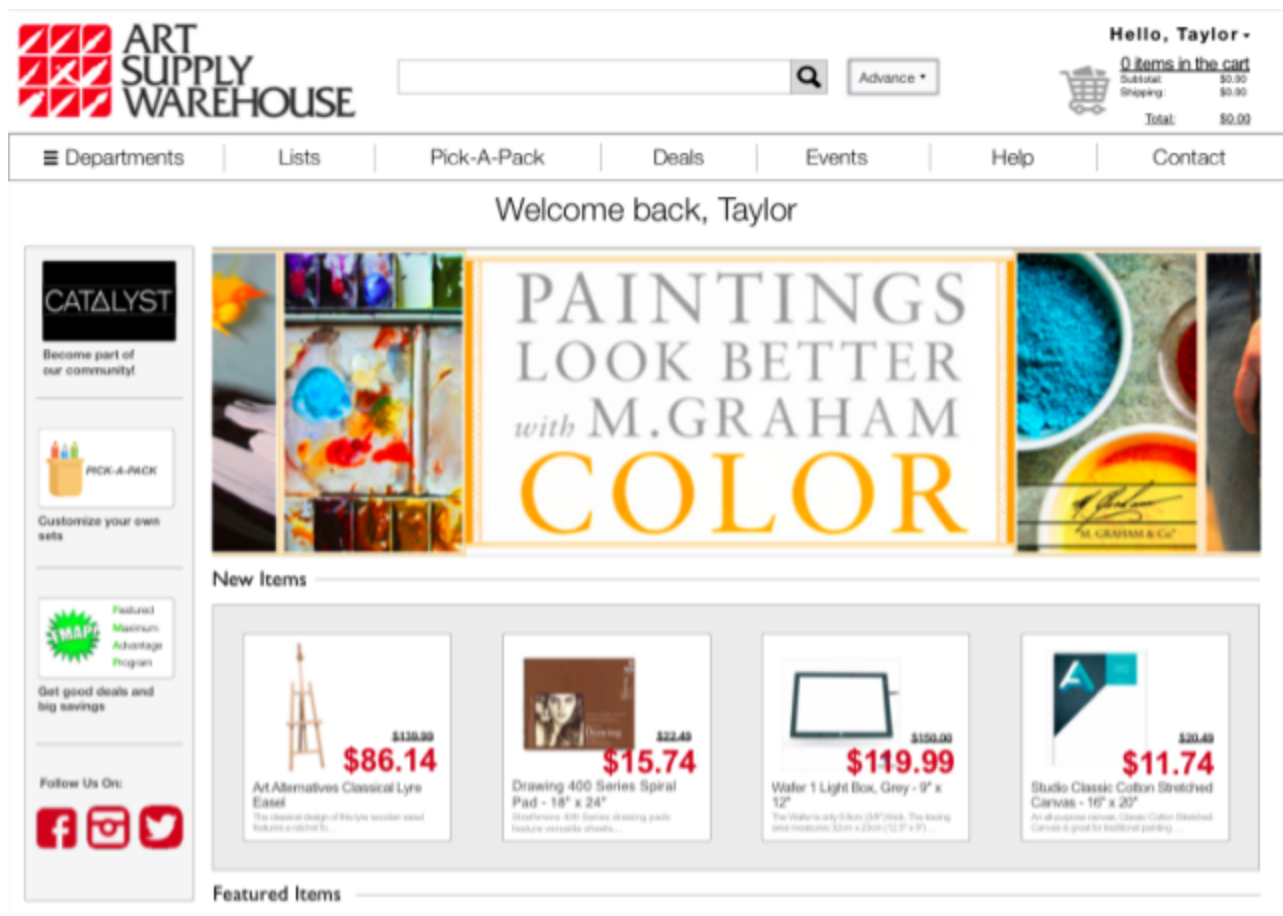
Figure 6 - "Welcome" Home Page
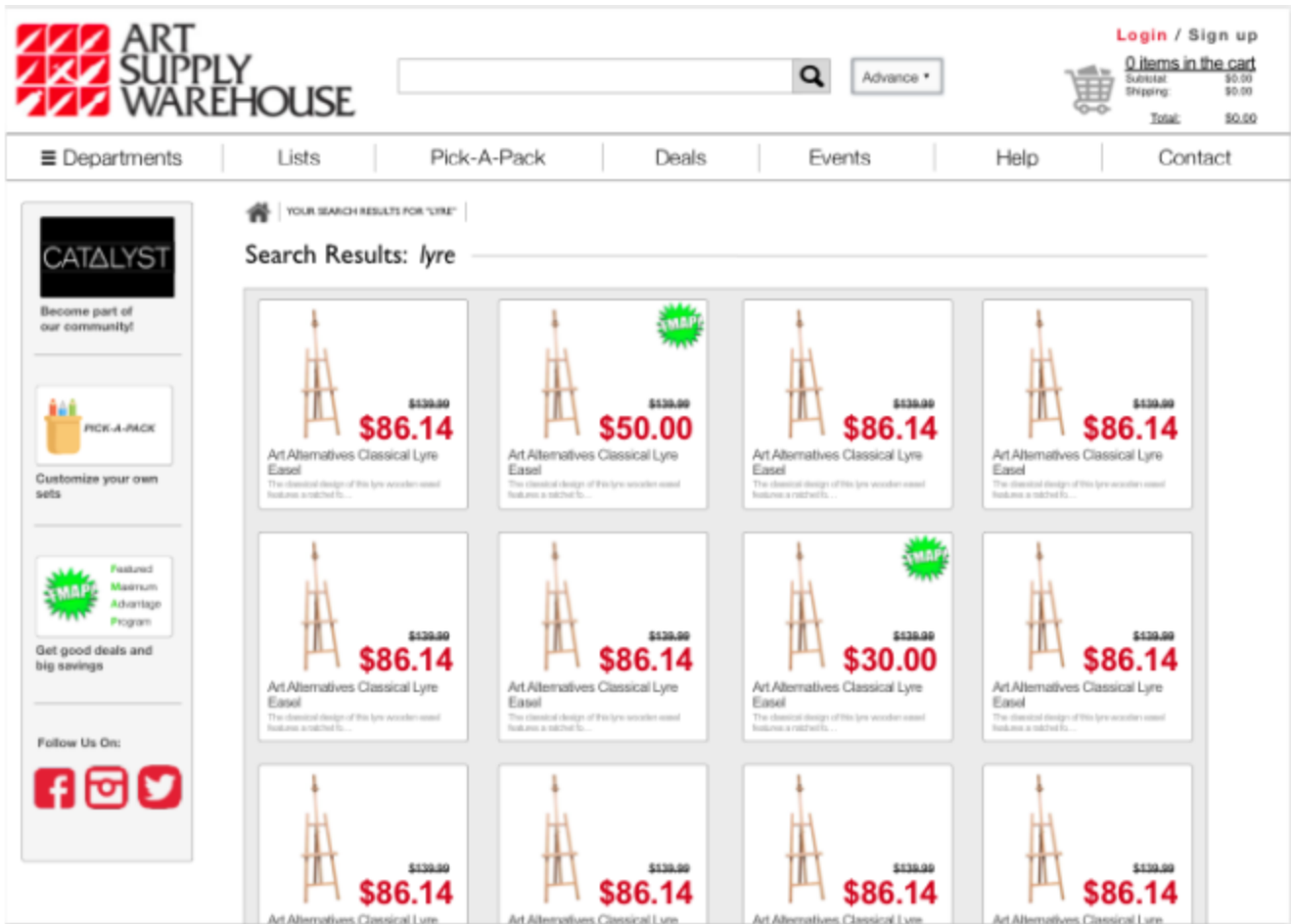
Figure 7 - Search Results

Pick-A-Pack Evaluation

In the Pick-A-Pack feature, there is some loss of control and freedom. When a user is on the next step, they do not have any way "out" or any way to start over. The only option they are given is the Back and Next Buttons, which only takes them to the previous or the following step. In order to start over, they will need to use the Back Button which will go through all the steps the user has already completed.

The system should have a "Restart" button or a "Start Over" button to quickly get out of the current state rather than going through a time-consuming process of pressing "Back" until they get to the start. On the other hand, we satisfied almost all the other checklist items that apply to this feature . The redesign also always informs a user about which step they are on and how many more steps it will take to complete the Pick-A-Pack process (Figure 9). While the user is selecting which color they want, there is a box-like figure that changes color to match the color selected, which matches the virtual item to the actual box the user will receive (Figure 8).
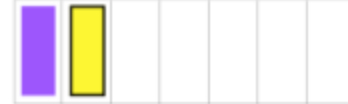
Figure 8 - Stage 6 of Pick-A-Pack

Figure 9 - Stage 7 of Pick-A-Pack

Conclusion

Although the redesign still falls short in some heuristic aspects, it has been demonstrated through evaluations that it offers significant improvements compared to the original design in terms of clarity and usability. Not only is the redesign more likely to fulfill user satisfaction and ensure a better user experience, it also has a great chance to expand ASW's customer base with the new Pick-A-Pack feature. We believe that this additional feature, is consistent with ASW's business model, "High quality art materials at the lowest price", and it will provide an exclusive shopping experience to their customers that they cannot get elsewhere. Overall, the redesign is a well-balanced synthesis of theories, research, and practices, following the basic heuristic guidelines of interface design.

Appendices

Appendix A: Heuristic Evaluations and Notes

Cheri's Heuristic Evaluation and Notes

1. Visibility of System

The system should always keep user informed about what is going on, through appropriate feedback within reasonable time.

#	Review Checklist	Yes	No	NA	Comments
1.1	Always keep users informed about what is going on.	✔			The system addresses and meets this issue to the extent it could given the system redesign did not include a functioning mock-up.
1.2	Is there some form of system feedback for every operator action?	✔			The system addresses and meets this issue to the extent it could given the system redesign did not include a functioning mock-up.
1.3	Does every display begin with a title or header that describes screen contents?	✔			There is general consistency across all issues addressed in the redesign.
1.4	Is a single, selected icon clearly visible when surrounded by unselected icons?	✔			There is general consistency across all issues addressed in the redesign.
1.5	After the user completes an action (or group of actions), does the feedback indicate that the next group of actions can be started?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
1.6	Is there visual feedback when objects are selected or moved?	✔			There are general inconsistencies with respect to this issue.
1.7	Does the system provide *visibility:* that is, by looking, can the user tell the state of the system and the alternatives for action?	✔			The system addresses and meets this issue to the extent it could given the system redesign did not include a functioning mock-up.
1.8	Do GUI menus make obvious whether deselection is possible?	✔			The intention is made clear that this is satisfied through the system mockups in lieu of a functioning mockup.

	Review Checklist	Yes	No	NA	Comments
1.9	Do GUI menus make obvious which item has been selected?	✔			The intention is made clear that this is satisfied through the system mock-ups in lieu of a functioning mock-up.
1.10	If users must navigate between multiple screens, does the system use context labels, menu maps, and place markers as navigational aids?		✔		There is general consistency across all issues addressed in the redesign.

2. Match Between System and the Real World

The system should speak the user's language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

	Review Checklist	Yes	No	NA	Comments
2.1	Are menu choices ordered in the most logical way, given the user, the item names, and the task variables?	✔			The redesigns appear to meet general guidelines for this item.
2.2	Do related and interdependent fields appear on the same screen?	✔			This item is satisfied across all redesigned windows.
2.3	Do the selected colors correspond to common expectations about color codes?		✔		Unclearly represented and not obvious.
2.4	When prompts imply a necessary action, are the words in the message consistent with that action?	✔			All actions clearly indicate when the user will need to respond (take action) across all addressed issues in the redesign.
2.5	On data entry screens, are tasks described in terminology familiar to users?	✔			The redesigns use minimalistic task/action descriptions and are presented in a familiar way with familiar terms the user will understand.
2.6	Are field-level prompts provided for data entry screens?	✔			All actions that require an action, provide field-level prompts for either text or clickable input by the user.
2.7	Do menu choices fit logically into categories that have readily understood meanings?	✔			The menu choices are clearly understood.
2.8	Follow real-world conventions, making information appear in a natural and logical order.	✔			The information appears in a logical order and is in line with general guidelines.
2.9	Speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms.	✔			Language used is clear and unambiguous and meets with general guideline standards.

3. User Control and Freedom

Users should be free to select and sequence tasks (when appropriate), rather than having the system do this for them. Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Users should make their own decisions (with clear information) regarding the costs of exiting current work. The system should support undo and redo.

#	Review Checklist	Yes	No	NA	Comments
3.1	The system provides a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue		✔		The system is inconsistent in satisfying this item. It provides back buttons in some specific issue categories and not in others.
3.2	The system support undo and redo.		✔		The system is inconsistent in satisfying this item. It provides back buttons in some specific issue categories and not in others.
3.3	Can users type-ahead in a system with many nested menus?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
3.4	Is there an "undo" function at the level of a single action, a data entry, and a complete group of actions?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
3.5	Can users cancel out of operations in progress?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
3.6	Can users reduce data entry time by copying and modifying existing data?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
3.7	If menu lists are long (more than seven items), can users select an item either by moving the cursor or by typing a mnemonic code?	✔			Lengthy menu lists apply only to the actual Menu Bar and Search results. The redesign clearly satisfies this items by allowing the user to click on either clickable text or icons, respectively.

	Review Checklist	Yes	No	NA	Comments
3.8	Are menus broad (many items on a menu) rather than deep (many menu levels)?			✔	The redesign did not fully address this issue and it did not extend to a functional system. Determination of this issue cannot be evaluated.
3.9	If the system has multiple menu levels, is there a mechanism that allows users to go back to previous menus?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
3.10	If users can go back to a previous menu, can they change their earlier menu choice?			✔	The intention of the redesign was to allow users to recover and redo their actions; some of which is expressed in the mock-ups. However, what was intended and what is represented in the high-fidelity mockups is unclear.
3.11	If the system uses a question and answer interface, can users go back to previous questions or skip forward to later questions?	✔			The List System and Pick-A-Pack pages meet this issue.
3.12	Can users easily reverse their actions?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
3.13	If the system allows users to reverse their actions, is there a retracing mechanism to allow for multiple undos?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
3.14	If the system has multipage data entry screens, can users move backward and forward among all the pages in the set?			✔	This is clearly available through Pick-A-Pack and the List System but, unclear with respect to the rest of the redesign.

4. Consistency and Standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

	Review Checklist	Yes	No	NA	Comments
4.1	Users should not have to wonder whether different words, situations, or actions mean the same thing.	✔			All words and actions are consistent across all redesigns.
4.2	The system follows platform conventions.	✔			In general, this issue is consistent across the redesign.

4.3	Have industry or company formatting standards been followed consistently in all screens within a system?	✔		In general, all redesigns follow the standard layout for web design with the exception of the Pick-A-Pack feature which follows the standard guidelines for mobile applications windows.
4.4	Has a heavy use of all uppercase letters on a screen been avoided?	✔		The redesign does not include any use of uppercase letters in any of the windows.
4.5	Are icons labeled?	✔		All icons are clearly labeled and meet general guidelines.
4.6	Are there no more than twelve to twenty icon types?	✔		All issues addressed in the redesign have less than twelve icon types per page. The homepage has the most (Catalyst, Pick-A-Pack, FMAP, Facebook, Twitter, Instagram, Cart, Hamburger Menu), but is less than twelve.
4.7	Does each window have a title?	✔		All windows have a title with the exception of the homepage which is clearly identifiable based on standard guidelines.
4.8	Are vertical and horizontal scrolling possible in each window?		✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
4.9	Does the menu structure match the task structure?	✔		All icons and tasks for the issues appear to have matching structure.
4.10	If "exit" is a menu choice, does it always appear at the bottom of the list?		✔	Exit is not a menu choice for any of the windows.
4.11	Do embedded field-level prompts appear to the right of the field label?		✔	Field-level prompts for the windows are inconsistent. Some appear at the top of the field while others appear to the right.
4.12	Are there no more than four to seven colors, and are they far apart along the visible spectrum?	✔		The Pick-A-Pack and List System windows are consistent and adhere to the rule. Feedback and Searches do not apply to

		Yes	No	NA	
					this measure independently.
4.13	Is the most important information placed at the beginning of the prompt?	✔			The important information appear before the prompts.
4.14	Are menu titles either centered or left-justified?	✔			All seem to be consistent.
4.15	For question and answer interfaces, are the valid inputs for a question listed?	✔			There is consistency and valid input fields/checkboxes for information requiring user input.
4.16	Are menu choice names consistent, both within each menu and across the system, in grammatical style and terminology?	✔			All seem to be consistent.
4.17	Does the command language have a consistent, natural, and mnemonic syntax?	✔			All language seems to be consistent with general guidelines for natural syntax. FMAP is an exception but is explained next to it's icon for familiarity.
4.18	Are menu choice lists presented vertically?		✔		Not all redesigns are consistent in their presentation or are vertical.

5. Help Users Recognize, Diagnose, and Recover From Errors

Error messages should be expressed in plain language (NO CODE).

	Review Checklist	Yes	No	NA	Comments
5.1	Is sound used to signal an error?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
5.2	Are prompts stated constructively, without overt or implied criticism of the user?	✔			The prompts are clear with little left to question or criticize.
5.3	Do prompts imply that the user is in control?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
5.4	Are prompts brief and unambiguous.	✔			The redesign seems to provide consistent, brief and unambiguous prompts.
5.5	Are error messages worded so that the system, not the user, takes the blame?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.

		Yes	No	NA	Comments
5.6	If humorous error messages are used, are they appropriate and inoffensive to the user population?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
5.7	If the system supports both novice and expert users, are multiple levels of error-message detail available?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.

6. Error Prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

	Review Checklist	Yes	No	NA	Comments
6.1	The system is carefully design which prevents a problem from occurring in the first place.			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
6.2	Have dots or underscores been used to indicate field length?		✔		The fields have been sized in the high-fidelity mockups for aesthetics but, there is no indication within each field of the actual input capacity.
6.3	Is the menu choice name on a higher-level menu used as the menu title of the lower-level menu?	✔			This item is met by all redesigns across all issues addressed.
6.4	Are menu choices logical, distinctive, and mutually exclusive?	✔			This item is met by all redesigns across all issues addressed.
6.5	Are data inputs case-blind whenever possible?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
6.6	If the system displays multiple windows, is navigation between windows simple and visible?	✔			To the extent the redesigns reflect this ability in high-fidelity mockups, this item has been met.
6.7	Does the system prevent users from making errors whenever possible?	✔			The redesigns provide clear, minimalistic directives for reducing selection errors.
6.8	Does the system warn users if they are about to make a potentially serious error?			✔	The redesign does not extend to a functional system. Determination of

				this issue cannot be evaluated.

7. Recognition Rather Than Recall

Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

	Review Checklist	Yes	No	NA	Comments
7.1	Make objects, actions, and options visible.	✔			Redesigns are minimalistic and appear to be visible to the user.
7.2	User should not have to remember information from one part of the dialogue to another.	✔			Redesigns appear to reduce cognitive overload.
7.3	Instructions for use of the system should be visible or easily retrievable whenever appropriate.		✔		Very little is offered in the way of instructions to the user. The user will need to make determinations as to what/how to use the system based on field headings.
7.4	For question and answer interfaces, are visual cues and white space used to distinguish questions, prompts, instructions, and user input?	✔			The redesigns are consistent and clear in meeting these guidelines.
7.5	Does the data display start in the upper-left corner of the screen?	✔			The redesigns are consistent and clear in meeting these guidelines.
7.6	Do text areas have "breathing space" around them?	✔			The redesigns are consistent and clear in meeting these guidelines.
7.7	Are zones no more than twelve to fourteen characters wide and six to seven lines high?	✔			The redesigns are consistent and clear in meeting these guidelines.
7.8	Have zones been separated by spaces, lines, color, letters, bold titles, rules lines, or shaded areas?	✔			The redesigns are consistent and clear in meeting these guidelines.
7.9	Are field labels close to fields, but separated by at least one space?	✔			The redesigns are consistent and clear in meeting these guidelines.
7.10	Are long columnar fields broken up into groups of five, separated by a blank line?	✔			The List System provides for this in the List search results.
7.11	Is white space used to create symmetry and lead the eye in the appropriate direction?	✔			The redesigns are consistent and clear in meeting these guidelines.
7.12	Have items been grouped into logical zones, and have headings been used to distinguish between zones?	✔			The redesigns are consistent and clear in meeting these guidelines.
7.13	Do GUI menus offer affordance: that is, make obvious where selection is possible?	✔			The redesigns are consistent and clear in meeting these guidelines.

		Yes	No	NA	Comments
7.14	Is color coding consistent throughout the system?		✔		There is inconsistency across the redesigns between the homepage and other addressed issues.
7.15	Does the system gray out or delete labels of currently inactive soft function keys?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.

8. Flexibility and Efficiency of Use

Accelerators-unseen by the novice user-may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions. Provide alternative means of access and operation for users who differ from the "average" user (e.g., physical or cognitive ability, culture, language, etc.)

	Review Checklist	Yes	No	NA	Comments
8.1	If the system supports both novice and expert users, are multiple levels of error message detail available?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
8.2	Does the system allow novices to use a keyword grammar and experts to use a positional grammar?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
8.3	Can users define their own synonyms for commands?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
8.4	Does the system allow novice users to enter the simplest, most common form of each command, and allow expert users to add parameters?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
8.5	Does the system offer "find next" and "find previous" shortcuts for database searches?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.

9. Aesthetic and Minimalist Design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

	Review Checklist	Yes	No	NA	Comments
9.1	System dialogues does not contain information which is irrelevant or rarely needed	✔			The redesigned issues meet this standard with minimal instruction and/or words used within general guidelines.

		Yes	No	NA	Comments
9.2	Does each icon stand out from its background?	✔			Icons are clearly marked and distinguishable against backgrounds across all addressed issues.
9.3	Are meaningful groups of items separated by whitespace?	✔			Whitespace is used consistently and meaningfully throughout all redesigned pages.
9.4	Does each data entry screen have a short, simple, clear, distinctive title?	✔			All redesigns provide distinctive titles allowing for simplicity and understandability.
9.5	Are field labels brief, familiar, and descriptive?	✔			All redesigns provide labels provide for descriptive simplicity, familiarity and understandability.
9.6	Is each lower-level menu choice associated with only one higher level menu?		✔		There is a lack of consistency with this issue across all designs. For example, the List System offers a couple of higher level menu choices within lower-level menus such as Searching and Viewing Lists within Creating a List.
9.7	Are menu titles brief, yet long enough to communicate?		✔		All men titles are consistently brief and clearly communicate what they provide.
9.8	Are there pop-up or pull-down menus within data entry fields that have many, but well-defined, entry options?			✔	The redesign do not address pop-ups and offer little in terms of pulldowns to make a clear determination on this issue such that it can be evaluated.

10. Help and Documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

	Review Checklist	Yes	No	NA	Comments
10.1	System provide help and documentation			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.

		Yes	No	NA	Comments
10.2	Help information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.
10.3	Are online instructions visually distinct?	✔			All ques for user input are distinct where users need to take action.
10.4	Do the instructions follow the sequence of user actions?	✔			The redesigned issues meet this standard with minimal instruction and/or words used within general guidelines.
10.5	Are there memory aids for commands, either through on-line quick reference or prompting?			✔	The redesign does not extend to a functional system. Determination of this issue cannot be evaluated.

Don's Heuristic Evaluation and Notes

1. Visibility of System

The system should always keep user informed about what is going on, through appropriate feedback within reasonable time.

#	Review Checklist	Yes	No	NA	Comments
1.1	Always keep users informed about what is going on.	✔			A title/header is provided to the users to indicate where they are on the website.
1.2	Is there some form of system feedback for every operator action?	✔			Not every operator action; there were only a selected few for this redesign
1.3	Does every display begin with a title or header that describes screen contents?	✔			Each page is provided with a title at the top so that users know which page they are on
1.4	Is a single, selected icon clearly visible when surrounded by unselected icons?	✔			
1.5	After the user completes an action (or group of actions), does the feedback indicate that the next group of actions can be started?			✔	
1.6	Is there visual feedback when objects are selected or moved?	✔			For this redesign, buttons change colors when selected.
1.7	Does the system provide *visibility:* that is, by looking, can the user tell the state of the system and the alternatives for action?	✔			Headers are provided at near top fo the page. Affordances of alternative actions are provided as well

		Yes	No	NA	
1.8	Do GUI menus make obvious whether deselection is possible?	✔			No indication from the cursor, but the colors of various buttons indicate deselection
1.9	Do GUI menus make obvious which item has been selected?	✔			Items like buttons change color when selected
1.10	If users must navigate between multiple screens, does the system use context labels, menu maps, and place markers as navigational aids?	✔			Yes, a navigation branch is provided for users to trace back their steps and return to any of the pages before the current one they are on at any given time.

2. Match Between System and the Real World

The system should speak the user's language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

	Review Checklist	Yes	No	NA	Comments
2.1	Are menu choices ordered in the most logical way, given the user, the item names, and the task variables?	✔			Starting with Departments is most suitable for users since the ASW website is an arts supply e-commerce.
2.2	Do related and interdependent fields appear on the same screen?	✔			Specifically in Lists and Registries section; related affordances are available to the user on the same page(s)
2.3	Do the selected colors correspond to common expectations about color codes?	✔			Besides being the main color of ASW's theme, red also encourages a call to action - either to buy an item or create/find a list
2.4	When prompts imply a necessary action, are the words in the message consistent with that action?	✔			Labels are present to indicate what kind of input the user needs to enter. Buttons call to the appropriate action as well
2.5	On data entry screens, are tasks described in terminology familiar to users?	✔			
2.6	Are field-level prompts provided for data entry screens?	✔			
2.7	Do menu choices fit logically into categories that have readily understood meanings?	✔			Having the label "Departments" rather than "Categories" follows a more standard naming convention when it comes to e-commerce.

		Yes	No	NA	
2.8	Follow real-world conventions, making information appear in a natural and logical order.	✔			Item components are organized in a way that prioritize prize. The order goes like this: ASW price, original price, item name, and item description
2.9	Speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms.	✔			Understandable phrases, but new users might not know exactly its functionality

3. User Control and Freedom

Users should be free to select and sequence tasks (when appropriate), rather than having the system do this for them. Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Users should make their own decisions (with clear information) regarding the costs of exiting current work. The system should support undo and redo.

#	Review Checklist	Yes	No	NA	Comments
3.1	The system provides a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue		✔		It is implied that the users click anywhere outside of, let's say, an unwanted window to close it (e.g. Advanced Search)
3.2	The system support undo and redo.		✔		
3.3	Can users type-ahead in a system with many nested menus?			✔	
3.4	Is there an "undo" function at the level of a single action, a data entry, and a complete group of actions?		✔		Missing in Advanced Search for multiple data entries
3.5	Can users cancel out of operations in progress?			✔	Executing operations are next to immediate.
3.6	Can users reduce data entry time by copying and modifying existing data?			✔	This more back-end development
3.7	If menu lists are long (more than seven items), can users select an item either by moving the cursor or by typing a mnemonic code?			✔	
3.8	Are menus broad (many items on a menu) rather than deep (many menu levels)?		✔		In the "Departments" tab, the system shows only the top level of the hierarchy. The redesign did not focus on information architecture, so it is implied the the sub-department will show up on a different page
3.9	If the system has multiple menu levels, is there a mechanism that allows users to go back to previous menus?		✔		There are NO multiple menu levels, but there's a navigation branch that lets users to trace back their steps within a progress such as searching for an item

		Yes	No	NA	
3.10	If users can go back to a previous menu, can they change their earlier menu choice?		✔		
3.11	If the system uses a question and answer interface, can users go back to previous questions or skip forward to later questions?		✔		User cannot go forward
3.12	Can users easily reverse their actions?			✔	Operations within our redesign is not necessarily involve a need for reversal of actions.
3.13	If the system allows users to reverse their actions, is there a retracing mechanism to allow for multiple undos?			✔	^
3.14	If the system has multi page data entry screens, can users move backward and forward among all the pages in the set?			✔	Prominent in Pick-a-Pack where each step provides a "Back" button

4. Consistency and Standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

	Review Checklist	Yes	No	NA	Comments
4.1	Users should not have to wonder whether different words, situations, or actions mean the same thing.	✔			Labels are consistent throughout and are distinguishable.
4.2	The system follows platform conventions.	✔			Most operations requires button clicking. So, there's not much of a big learning curve for users to perform specific tasks, besides allows instructions (e.g. Pick-a-Pack)
4.3	Have industry or company formatting standards been followed consistently in all screens within a system?	✔			The layout of the webpage is consistent; a left sidebar with AWS distinctive features that allows it to have an identity is anchored and always available for users to check out
4.4	Has a heavy use of all uppercase letters on a screen been avoided?	✔			With the exception of the Log, titles and headers, only the first letter of the word is uppercase.
4.5	Are icons labeled?	✔			With the exception of social media icons because they widely known to the user
4.6	Are there no more than twelve to twenty icon types?	✔			4 to be exactly: Shopping cart, Catalyst, Pick-a-Pack, FMAP
4.7	Does each window have a title?	✔			Windows like in Advanced Search

	Review Checklist	Yes	No	NA	Comments
4.8	Are vertical and horizontal scrolling possible in each window?			✔	It is implied in pages are able to be scrolled vertically if there is more content to show (eg. Search Results Page)
4.9	Does the menu structure match the task structure?	✔			
4.10	If "exit" is a menu choice, does it always appear at the bottom of the list?			✔	it is implied that users click outside of, let's say, a window to close it
4.11	Do embedded field-level prompts appear to the right of the field label?		✔		Field labels are above of its corresponding input bar
4.12	Are there no more than four to seven colors, and are they far apart along the visible spectrum?	✔			Red, white, gray, and occasionally pink
4.13	Is the most important information placed at the beginning of the prompt?	✔			Prominent in Login Page
4.14	Are menu titles either centered or left-justified?	✔			
4.15	For question and answer interfaces, are the valid inputs for a question listed?			✔	Especially in drop-down menus for data entries (e.g. specifying brand or type of list)
4.16	Are menu choice names consistent, both within each menu and across the system, in grammatical style and terminology?	✔			
4.17	Does the command language have a consistent, natural, and mnemonic syntax?	✔			
4.18	Are menu choice lists presented vertically?		✔		Horizontally in a bar near the top of the screen

5. Help Users Recognize, Diagnose, and Recover From Errors

Error messages should be expressed in plain language (NO CODE).

	Review Checklist	Yes	No	NA	Comments
5.1	Is sound used to signal an error?			✔	Our redesign did not focus on error handling
5.2	Are prompts stated constructively, without overt or implied criticism of the user?			✔	^
5.3	Do prompts imply that the user is in control?			✔	^
5.4	Are prompts brief and unambiguous.			✔	^
5.5	Are error messages worded so that the system, not the user, takes the blame?			✔	^
5.6	If humorous error messages are used, are they appropriate and inoffensive to the user population?			✔	^
5.7	If the system supports both novice and expert users, are multiple levels of error-message detail available?			✔	^

6. Error Prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

	Review Checklist	Yes	No	NA	Comments

		Yes	No	NA	Comments
6.1	The system is carefully design which prevents a problem from occurring in the first place.	✔			In the steps of Pick-a-Pack, users cannot proceed to with the next step until they have selected an item. In the final step, users are required to specify all individual items before adding the set to chart.
6.2	Have dots or underscores been used to indicate field length?		✔		
6.3	Is the menu choice name on a higher-level menu used as the menu title of the lower-level menu?			✔	Our redesign did not go deep within information architecture
6.4	Are menu choices logical, distinctive, and mutually exclusive?	✔			
6.5	Are data inputs case-blind whenever possible?	✔			Data entries like Privacy for lists are set to default type.
6.6	If the system displays multiple windows, is navigation between windows simple and visible?			✔	Our redesign does not include a window that shows the error message
6.7	Does the system prevent users from making errors whenever possible?	✔			In the form of greying specific buttons if a conditional is not met
6.8	Does the system warn users if they are about to make a potentially serious error?		✔		

7. Recognition Rather Than Recall

Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

	Review Checklist	Yes	No	NA	Comments
7.1	Make objects, actions, and options visible.	✔			
7.2	User should not have to remember information from one part of the dialogue to another.	✔			
7.3	Instructions for use of the system should be visible or easily retrievable whenever appropriate.		✔		There can be some kind of documentation in Pick-a-Pack and Creating/finding lists to let users know what these features are
7.4	For question and answer interfaces, are visual cues and white space used to distinguish questions, prompts, instructions, and user input?	✔			Prominent in Pick-a-Pack
7.5	Does the data display start in the upper-left corner of the screen?	✔			Partially, but in terms of white/negative space, then no.
7.6	Do text areas have "breathing space" around them?	✔			
7.7	Are zones no more than twelve to fourteen characters wide and six to seven lines high?	✔			
7.8	Have zones been separated by spaces, lines, color, letters, bold titles, rules lines, or shaded areas?	✔			

		Yes	No	NA	Comments
7.9	Are field labels close to fields, but separated by at least one space?	✔			Spaced enough for the user to read
7.10	Are long columnar fields broken up into groups of five, separated by a blank line?	✔			Prominent in left side bar with ASW unique features
7.11	Is white space used to create symmetry and lead the eye in the appropriate direction?	✔			
7.12	Have items been grouped into logical zones, and have headings been used to distinguish between zones?	✔			Common components are either encapsulated by rectangles or separated by lines. The lines are usually accompanied by headings
7.13	Do GUI menus offer affordance: that is, make obvious where selection is possible?	✔			Most prominent in the form of buttons
7.14	Is color coding consistent throughout the system?	✔			Red, white, grey, and occasionally pink are present as part of ASW theme
7.15	Does the system gray out or delete labels of currently inactive soft function keys?			✔	

8. Flexibility and Efficiency of Use

Accelerators-unseen by the novice user-may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions. Provide alternative means of access and operation for users who differ from the "average" user (e.g., physical or cognitive ability, culture, language, etc.)

	Review Checklist	Yes	No	NA	Comments
8.1	If the system supports both novice and expert users, are multiple levels of error message detail available?			✔	Our redesign did not focus on providing error messages
8.2	Does the system allow novices to use a keyword grammar and experts to use a positional grammar?			✔	
8.3	Can users define their own synonyms for commands?			✔	
8.4	Does the system allow novice users to enter the simplest, most common form of each command, and allow expert users to add parameters?	✔			Prominent in Advance Search. Filter system is beneficial to expert users
8.5	Does the system offer "find next" and "find previous" shortcuts for database searches?			✔	

9. Aesthetic and Minimalist Design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

	Review Checklist	Yes	No	NA	Comments
9.1	System dialogues does not contain information which is irrelevant or rarely needed	✔			
9.2	Does each icon stand out from its background?	✔			Background color for the redesigned website is white and light grey, so any other color than those will stand out and will be easy to find
9.3	Are meaningful groups of items separated by whitespace?	✔			Negative space, yes.

		Yes	No	NA	Comments
9.4	Does each data entry screen have a short, simple, clear, distinctive title?	✔			Titles are in larger and darker fonts that are located at the top
9.5	Are field labels brief, familiar, and descriptive?	✔			At its minimalistic
9.6	Is each lower-level menu choice associated with only one higher level menu?	✔			This only applies to "Departments"
9.7	Are menu titles brief, yet long enough to communicate?	✔			With the exception of "Pick-a-Pack" and "List and Registries." New users might not know exactly what these are. Documentation or a remind (?) would help users identify various features of the website
9.8	Are there pop-up or pull-down menus within data entry fields that have many, but well-defined, entry options?	✔			Prominent in Create/find list and login page

10. Help and Documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

	Review Checklist	Yes	No	NA	Comments
10.1	System provide help and documentation	✔			
10.2	Help information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.	✔			"Help" tab is located on the Navigation Bar
10.3	Are online instructions visually distinct?			✔	There are not instructions/tutorial when using the ASW website
10.4	Do the instructions follow the sequence of user actions?			✔	^
10.5	Are there memory aids for commands, either through on-line quick reference or prompting?			✔	This could be helpful for explaining Pick-a-Pack and the concept of Lists and Registries.

Edward's Heuristic Evaluation and Notes

1. Visibility of System

The system should always keep user informed about what is going on, through appropriate feedback within reasonable time.

#	Review Checklist	Yes	No	NA	Comments
1.1	Always keep users informed about what is going on.	✔			The system always tries to tell the user what its processing and what action the user did

1.2	Is there some form of system feedback for every operator action?	✔			for every action, either there will be a pop up box or will switch to a next page
1.3	Does every display begin with a title or header that describes screen contents?	✔			every page are label clearly what page the user is on with a clear title
1.4	Is a single, selected icon clearly visible when surrounded by unselected icons?	✔			When an icon is selected the icon will turn to red and being underline to indicate the icon has been selected
1.5	After the user completes an action (or group of actions), does the feedback indicate that the next group of actions can be started?	✔			In the pick-a-pack feature, after the user completed an action, the user will be prompt another set of question which indicate the next group of action
1.6	Is there visual feedback when objects are selected or moved?	✔			In advanced search, user can select "Pick-a-Pack" or "Sales item" by clicking on the check box, which a visual feedback will appear in the box that that item has been selected
1.7	Does the system provide *visibility:* that is, by looking, can the user tell the state of the system and the alternatives for action?		✔		The system does provide a bit of visibility on the state of the page. Ex: when the user logs in, the system will show a welcome screen with the name of the user. But there isn't any indication of visual feedback when the user creates a list
1.8	Do GUI menus make obvious whether deselection is possible?		✔		The GUI for deselection isn't really obvious. The user will have to try to undo their action after they select something to know if it is possible to deselect
1.9	Do GUI menus make obvious which item has been selected?	✔			The GUI in the advanced search will clearly show a blue box when something is being selected
1.10	If users must navigate between multiple screens, does the system use context labels, menu maps, and place markers as navigational aids?				On the middle left of the page, there is a navigation on on what page the user is on and how they get there

2. Match Between System and the Real World

The system should speak the user's language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

	Review Checklist	Yes	No	NA	Comments
2.1	Are menu choices ordered in the most logical way, given the user, the item names, and the task variables?	✔			For an item, the item name is already listened first, follow by the price and follow by the description
2.2	Do related and interdependent fields appear on the same screen?	✔			All the navigation bar and logo will be static on every screen
2.3	Do the selected colors correspond to common expectations about color codes?	✔			Regular text color are always black but if we wants something to pop out we will use red text to let the text more obvious
2.4	When prompts imply a necessary action, are the words in the message consistent with that action?	✔			
2.5	On data entry screens, are tasks described in terminology familiar to users?	✔			In advanced search, the data entry screens are described in a way the user is familiar with
2.6	Are field-level prompts provided for data entry screens?		✔		There isn't any field-level prompts provided for the data entry screens
2.7	Do menu choices fit logically into categories that have readily understood meanings?	✔			
2.8	Follow real-world conventions, making information appear in a natural and logical order.	✔			For advanced search and "Pick-A-Pack" the question are being ordered logically to shrink down the result of the item
2.9	Speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms.	✔			All the language in the system are in plain natural english language, with no special terminology

3. User Control and Freedom

Users should be free to select and sequence tasks (when appropriate), rather than having the system do this for them. Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Users should make their own decisions (with clear information) regarding the costs of exiting current work. The system should support undo and redo.

#	Review Checklist	Yes	No	NA	Comments
3.1	The system provides a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue		✔		In "Pick-a-pack" the user is able to move back a step but not able to start over

		Yes	No	NA	Comments
3.2	The system support undo and redo.		✔		The user does not have an option to undo their action
3.3	Can users type-ahead in a system with many nested menus?		✔		
3.4	Is there an "undo" function at the level of a single action, a data entry, and a complete group of actions?	✔			Users can always click on the logo on the top left to go back to the homepage
3.5	Can users cancel out of operations in progress?		✔		
3.6	Can users reduce data entry time by copying and modifying existing data?		✔		
3.7	If menu lists are long (more than seven items), can users select an item either by moving the cursor or by typing a mnemonic code?		✔		
3.8	Are menus broad (many items on a menu) rather than deep (many menu levels)?	✔			The menus are broad and does not contain many menu levels
3.9	If the system has multiple menu levels, is there a mechanism that allows users to go back to previous menus?	✔			User can always click the previous page in the browser to go back
3.10	If users can go back to a previous menu, can they change their earlier menu choice?		✔		
3.11	If the system uses a question and answer interface, can users go back to previous questions or skip forward to later questions?		✔		User is not allowed to skip forward or answer it later
3.12	Can users easily reverse their actions?	✔			There should always be a back and cancel button to reverse their actions
3.13	If the system allows users to reverse their actions, is there a retracing mechanism to allow for multiple undos?	✔			The user can keep using the previous button to get to an action they want
3.14	If the system has multipage data entry screens, can users move backward and forward among all the pages in the set?		✔		

4. Consistency and Standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

	Review Checklist	Yes	No	NA	Comments
4.1	Users should not have to wonder whether different words, situations, or actions mean the same thing.	✔			All words are use the same way, there isn't two different action that mean the same thing
4.2	The system follows platform conventions.	✔			The system lays out in sections like any other website
4.3	Have industry or company formatting standards been followed consistently in all screens within a system?	✔			The system lays out in sections like any other website. and all screens are consistent
4.4	Has a heavy use of all uppercase letters on a screen been avoided?	✔			None of our design used all uppercase letter

4.5	Are icons labeled?	✔			all the icons are clearly label with text under
4.6	Are there no more than twelve to twenty icon types?	✔			There isn't a lot of icon in this system
4.7	Does each window have a title?	✔			all windows have titles to indicates what page they are on
4.8	Are vertical and horizontal scrolling possible in each window?		✔		only vertical scrolling is possible in the window
4.9	Does the menu structure match the task structure?	✔			The advanced search menu matches the task structure to indicates the steps on filtering out an item
4.10	If "exit" is a menu choice, does it always appear at the bottom of the list?			✔	
4.11	Do embedded field-level prompts appear to the right of the field label?		✔		
4.12	Are there no more than four to seven colors, and are they far apart along the visible spectrum?	✔			There are no more than 4 main colors on a page
4.13	Is the most important information placed at the beginning of the prompt?	✔			The most important information are placed at the beginning which make it more visible
4.14	Are menu titles either centered or left-justified?	✔			All menu titles are left-justified
4.15	For question and answer interfaces, are the valid inputs for a question listed?	✔			There are a list of valid inputs for the question listed
4.16	Are menu choice names consistent, both within each menu and across the system, in grammatical style and terminology?	✔			All the menu choice names are consistent
4.17	Does the command language have a consistent, natural, and mnemonic syntax?	✔			All the command language are consistent and natural
4.18	Are menu choice lists presented vertically?	✔			The menu choice are listed in a top down format

5. Help Users Recognize, Diagnose, and Recover From Errors

Error messages should be expressed in plain language (NO CODE).

	Review Checklist	Yes	No	NA	Comments
5.1	Is sound used to signal an error?			✔	No sound is being use
5.2	Are prompts stated constructively, without overt or implied criticism of the user?			✔	
5.3	Do prompts imply that the user is in control?			✔	
5.4	Are prompts brief and unambiguous.			✔	
5.5	Are error messages worded so that the system, not the user, takes the blame?			✔	
5.6	If humorous error messages are used, are they appropriate and inoffensive to the user population?			✔	

		Yes	No	NA	
5.7	If the system supports both novice and expert users, are multiple levels of error-message detail available?			✔	

6. Error Prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

	Review Checklist	Yes	No	NA	Comments
6.1	The system is carefully design which prevents a problem from occurring in the first place.	✔			The system are design to minimize inputs to prevent human error
6.2	Have dots or underscores been used to indicate field length?		✔		no indication of the field length
6.3	Is the menu choice name on a higher-level menu used as the menu title of the lower-level menu?	✔			The title of higher level menu will appear on the lower level menu
6.4	Are menu choices logical, distinctive, and mutually exclusive?	✔			the menu choice will be static on the top of the website screen and is being separated from other content
6.5	Are data inputs case-blind whenever possible?		✔		
6.6	If the system displays multiple windows, is navigation between windows simple and visible?	✔			All the windows the user has navigate to will appear on the page, so the user can easily o between different windows
6.7	Does the system prevent users from making errors whenever possible?	✔			The system uses selection inputs whenever is possible to prevent input errors
6.8	Does the system warn users if they are about to make a potentially serious error?		✔		There are no warning if the user is about to make an error

7. Recognition Rather Than Recall

Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

	Review Checklist	Yes	No	NA	Comments
7.1	Make objects, actions, and options visible.	✔			All object, action and options are visible for the user to recognize
7.2	User should not have to remember information from one part of the dialogue to another.	✔			In pick-a-pack, all answer from the user will be repeated back to them in the next step
7.3	Instructions for use of the system should be visible or easily retrievable whenever appropriate.			✔	There are no instruction for the system

7.4	For question and answer interfaces, are visual cues and white space used to distinguish questions, prompts, instructions, and user input?	✔			User can easily distinguish the question and the answer by the format of them and the spaces between them
7.5	Does the data display start in the upper-left corner of the screen?	✔			The website is design to have a top-down, left right view
7.6	Do text areas have "breathing space" around them?	✔			All the texts are separated by enough breathing space to reduce overwhelming interface
7.7	Are zones no more than twelve to fourteen characters wide and six to seven lines high?		✔		
7.8	Have zones been separated by spaces, lines, color, letters, bold titles, rules lines, or shaded areas?	✔			All the different zones are separated by spaces and lines to indicate the differences
7.9	Are field labels close to fields, but separated by at least one space?	✔			All field labels are clearly separated by at least some spaces
7.10	Are long columnar fields broken up into groups of five, separated by a blank line?		✔		
7.11	Is white space used to create symmetry and lead the eye in the appropriate direction?	✔			white spaces are being used so the website can look symmetric can lead the user to the correct information they need
7.12	Have items been grouped into logical zones, and have headings been used to distinguish between zones?	✔			items are been grouped between zone and have headings. ex: new item, feature item
7.13	Do GUI menus offer affordance: that is, make obvious where selection is possible?	✔			GUI have a placeholder to let the user know it is an input field, or an arrow to indicates it is a drop down
7.14	Is color coding consistent throughout the system?		✔		There are not a consistent color coding in the website
7.15	Does the system gray out or delete labels of currently inactive soft function keys?		✔		

8. Flexibility and Efficiency of Use

Accelerators-unseen by the novice user-may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions. Provide alternative means of access and operation for users who differ from the "average" user (e.g., physical or cognitive ability, culture, language, etc.)

	Review Checklist	Yes	No	NA	Comments
8.1	If the system supports both novice and expert users, are multiple levels of error message detail available?			✔	No error message

8.2	Does the system allow novices to use a keyword grammar and experts to use a positional grammar?		✔		There are no difference on how a novice and an expert use the system
8.3	Can users define their own synonyms for commands?			✔	
8.4	Does the system allow novice users to enter the simplest, most common form of each command, and allow expert users to add parameters?		✔		There are no difference on how a novice and an expert use the system
8.5	Does the system offer "find next" and "find previous" shortcuts for database searches?			✔	

9. Aesthetic and Minimalist Design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

	Review Checklist	Yes	No	NA	Comments
9.1	System dialogues does not contain information which is irrelevant or rarely needed			✔	no system dialogues
9.2	Does each icon stand out from its background?	✔			All icons have different format and color from the background
9.3	Are meaningful groups of items separated by whitespace?	✔			Every groups of items are separated by whitespace in between
9.4	Does each data entry screen have a short, simple, clear, distinctive title?	✔			All the data entry screen have a placeholder text to let the user know what should be in them
9.5	Are field labels brief, familiar, and descriptive?	✔			All the fields are labeled with short and brief title of what it should be
9.6	Is each lower-level menu choice associated with only one higher level menu?	✔			All the lower-level are only associated with one higher level menu
9.7	Are menu titles brief, yet long enough to communicate?	✔			The menu titles are brief but is able to communicates its meaning
9.8	Are there pop-up or pull-down menus within data entry fields that have many, but well-defined, entry options?			✔	We do have pull-down menus but we did not create any data fields

10. Help and Documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

	Review Checklist	Yes	No	NA	Comments
10.1	System provide help and documentation	✔			The website has a help section in the static top bar

10.2	Help information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.		✔	we did not create the help information
10.3	Are online instructions visually distinct?		✔	
10.4	Do the instructions follow the sequence of user actions?		✔	
10.5	Are there memory aids for commands, either through on-line quick reference or prompting?		✔	

Minh's Heuristic Evaluation and Notes

1. Visibility of System

The system should always keep user informed about what is going on, through appropriate feedback within reasonable time.

#	Review Checklist	Yes	No	NA	Comments
1.1	Always keep users informed about what is going on.	✔			Users are able to keep track of what is going on through either system feedback or visual titles
1.2	Is there some form of system feedback for every operator action?		✔		Although there exists informative feedback from the system, not ALL of the actions display feedback
1.3	Does every display begin with a title or header that describes screen contents?	✔			Yes, there exists a title / header for all of the features to describe what are displaying
1.4	Is a single, selected icon clearly visible when surrounded by unselected icons?			✔	
1.5	After the user completes an action (or group of actions), does the feedback indicate that the next group of actions can be started?			✔	
1.6	Is there visual feedback when objects are selected or moved?			✔	
1.7	Does the system provide *visibility:* that is, by looking, can the user tell the state of the system and the alternatives for action?	✔			Yes, the GUI menus inform the users of the possible actions that can be taken and what page are they on through visual menus
1.8	Do GUI menus make obvious whether deselection is possible?		✔		Although the button status is represented by color, it is often hard to notice the difference when the user first uses it
1.9	Do GUI menus make obvious which item has been selected?		✔		The buttons that have not been chosen by the users will have a gray color as their text labels compared to the black ones for the chosen ones. This is somewhat hard for users to notice

		Yes	No	NA	
1.10	If users must navigate between multiple screens, does the system use context labels, menu maps, and place markers as navigational aids?	✔			The users often have some kinds of visual feedback on the screen to inform them where they can go next. For example, Pick-A-Pack system has the process status on the top to show what stage are the users currently in and they can always click on one of the stage to go to that stage to make changes

2. Match Between System and the Real World

The system should speak the user's language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

	Review Checklist	Yes	No	NA	Comments
2.1	Are menu choices ordered in the most logical way, given the user, the item names, and the task variables?	✔			
2.2	Do related and interdependent fields appear on the same screen?	✔			Yes, similar features are displayed near each other or on the same page of features section that they are in (create a list & find a list as example)
2.3	Do the selected colors correspond to common expectations about color codes?	✔			The main color red is often used to match with the theme of the website
2.4	When prompts imply a necessary action, are the words in the message consistent with that action?	✔			The prompts are often clear in what the system wants the users to do
2.5	On data entry screens, are tasks described in terminology familiar to users?	✔			The search feature has auto suggestions when the users type in the name of the items they want to buy. The registration page asks for really straightforward and simple information from the users
2.6	Are field-level prompts provided for data entry screens?	✔			
2.7	Do menu choices fit logically into categories that have readily understood meanings?	✔			Yes, similar features are grouped together in the same category
2.8	Follow real-world conventions, making information appear in a natural and logical order.	✔			
2.9	Speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms.	✔			Simple words and vocabulary terms are used instead of technical terms

3. User Control and Freedom

Users should be free to select and sequence tasks (when appropriate), rather than having the system do this for them. Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Users should make their own decisions (with clear information) regarding the costs of exiting current work. The system should support undo and redo.

#	Review Checklist	Yes	No	NA	Comments

		Yes	No	NA	Comments
3.1	The system provides a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue	✔			
3.2	The system support undo and redo.	✔			Although the system does not support this, the users can always use arrow keys from their browsers
3.3	Can users type-ahead in a system with many nested menus?		✔		
3.4	Is there an "undo" function at the level of a single action, a data entry, and a complete group of actions?		✔		
3.5	Can users cancel out of operations in progress?		✔		
3.6	Can users reduce data entry time by copying and modifying existing data?	✔			User can always copy and paste information from elsewhere into the system
3.7	If menu lists are long (more than seven items), can users select an item either by moving the cursor or by typing a mnemonic code?	✔			
3.8	Are menus broad (many items on a menu) rather than deep (many menu levels)?	✔			Yes, the menus are broad with several items being displayed in each of them
3.9	If the system has multiple menu levels, is there a mechanism that allows users to go back to previous menus?		✔		
3.10	If users can go back to a previous menu, can they change their earlier menu choice?	✔			
3.11	If the system uses a question and answer interface, can users go back to previous questions or skip forward to later questions?	✔			For the Pick-A-Pack feature, user can clicks on the previous stage at the top with the number in it to go back and make changes. However, users cannot go forward because they rely on previously entered information
3.12	Can users easily reverse their actions?		✔		
3.13	If the system allows users to reverse their actions, is there a retracing mechanism to allow for multiple undos?		✔		
3.14	If the system has multipage data entry screens, can users move backward and forward among all the pages in the set?		✔		

4. Consistency and Standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

	Review Checklist	Yes	No	NA	Comments
4.1	Users should not have to wonder whether different words, situations, or actions mean the same thing.	✔			No duplicated words were used to describe different things
4.2	The system follows platform conventions.	✔			Added visual hierarchy. Requires users to use cursor and clicks on items

		Yes	No	NA	Comments
4.3	Have industry or company formatting standards been followed consistently in all screens within a system?	✔			
4.4	Has a heavy use of all uppercase letters on a screen been avoided?	✔			Titles format were used where only 1st letter of each word is capitalized
4.5	Are icons labeled?	✔			
4.6	Are there no more than twelve to twenty icon types?	✔			
4.7	Does each window have a title?	✔			Yes, visual labels are there to describe what are showing on the current page
4.8	Are vertical and horizontal scrolling possible in each window?	✔			Yes, the page can be scrolled in either directions based on the resolution of the users' screen and size of their window
4.9	Does the menu structure match the task structure?	✔			
4.10	If "exit" is a menu choice, does it always appear at the bottom of the list?		✔		
4.11	Do embedded field-level prompts appear to the right of the field label?		✔		It's actually above / on the left
4.12	Are there no more than four to seven colors, and are they far apart along the visible spectrum?	✔			
4.13	Is the most important information placed at the beginning of the prompt?	✔			Crucial information are asked first
4.14	Are menu titles either centered or left-justified?	✔			Centered
4.15	For question and answer interfaces, are the valid inputs for a question listed?	✔			
4.16	Are menu choice names consistent, both within each menu and across the system, in grammatical style and terminology?	✔			
4.17	Does the command language have a consistent, natural, and mnemonic syntax?	✔			
4.18	Are menu choice lists presented vertically?	✔			Yes, the drop-down lists are presented vertically. There is also navigational bar at the top displaying the menu horizontally

5. Help Users Recognize, Diagnose, and Recover From Errors

Error messages should be expressed in plain language (NO CODE).

	Review Checklist	Yes	No	NA	Comments
5.1	Is sound used to signal an error?			✔	We did not focus our redesign on errors dialogue
5.2	Are prompts stated constructively, without overt or implied criticism of the user?			✔	
5.3	Do prompts imply that the user is in control?			✔	
5.4	Are prompts brief and unambiguous.			✔	
5.5	Are error messages worded so that the system, not the user, takes the blame?			✔	

	Review Checklist	Yes	No	NA	Comments
5.6	If humorous error messages are used, are they appropriate and inoffensive to the user population?			✔	
5.7	If the system supports both novice and expert users, are multiple levels of error-message detail available?			✔	

6. Error Prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

	Review Checklist	Yes	No	NA	Comments
6.1	The system is carefully design which prevents a problem from occurring in the first place.	✔			Many actions follow in a process of different stages where the users have to finish a stage before going to the next one (Pick-A-Pack with 7 stages, create a list before one can edit it)
6.2	Have dots or underscores been used to indicate field length?			✔	
6.3	Is the menu choice name on a higher-level menu used as the menu title of the lower-level menu?	✔			Each page has its own title
6.4	Are menu choices logical, distinctive, and mutually exclusive?	✔			
6.5	Are data inputs case-blind whenever possible?	✔			We did not care much about case-sensitive so only the key terms are considered rather than the case
6.6	If the system displays multiple windows, is navigation between windows simple and visible?			✔	
6.7	Does the system prevent users from making errors whenever possible?			✔	
6.8	Does the system warn users if they are about to make a potentially serious error?			✔	

7. Recognition Rather Than Recall

Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

	Review Checklist	Yes	No	NA	Comments
7.1	Make objects, actions, and options visible.	✔			Menus are always on the top of the page so the users can take a look at them no matter what page they are on
7.2	User should not have to remember information from one part of the dialogue to another.	✔			Most of the separated parts are in their own sections
7.3	Instructions for use of the system should be visible or easily retrievable whenever appropriate.	✔			Since the instruction is really simple as it requires the users to do a certain task immediately on that same page, the users are done with it once they finish to move on to the next task.

	Review Checklist	Yes	No	NA	Comments
7.4	For question and answer interfaces, are visual cues and white space used to distinguish questions, prompts, instructions, and user input?	✔			Yes, colors are different for buttons based on their status and questions are usually bolded with a bigger size
7.5	Does the data display start in the upper-left corner of the screen?	✔			
7.6	Do text areas have "breathing space" around them?	✔			Spaces are utilized quite well to make sure things are not crammed up together
7.7	Are zones no more than twelve to fourteen characters wide and six to seven lines high?	✔			
7.8	Have zones been separated by spaces, lines, color, letters, bold titles, rules lines, or shaded areas?	✔			
7.9	Are field labels close to fields, but separated by at least one space?	✔			
7.10	Are long columnar fields broken up into groups of five, separated by a blank line?	✔			
7.11	Is white space used to create symmetry and lead the eye in the appropriate direction?	✔			
7.12	Have items been grouped into logical zones, and have headings been used to distinguish between zones?	✔			
7.13	Do GUI menus offer affordance: that is, make obvious where selection is possible?	✔			
7.14	Is color coding consistent throughout the system?	✔			Yes, the colors are well-matched with the theme of the site
7.15	Does the system gray out or delete labels of currently inactive soft function keys?	✔			This applies for buttons that can be clicked on by the users to choose an option from the drop-down menu

8. Flexibility and Efficiency of Use

Accelerators-unseen by the novice user-may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions. Provide alternative means of access and operation for users who differ from the "average" user (e.g., physical or cognitive ability, culture, language, etc.)

	Review Checklist	Yes	No	NA	Comments
8.1	If the system supports both novice and expert users, are multiple levels of error message detail available?			✔	We did not cover this section in our redesign
8.2	Does the system allow novices to use a keyword grammar and experts to use a positional grammar?			✔	
8.3	Can users define their own synonyms for commands?			✔	
8.4	Does the system allow novice users to enter the simplest, most common form of each command, and allow expert users to add parameters?			✔	
8.5	Does the system offer "find next" and "find previous" shortcuts for database searches?			✔	

9. Aesthetic and Minimalist Design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

	Review Checklist	Yes	No	NA	Comments
9.1	System dialogues does not contain information which is irrelevant or rarely needed	✔			
9.2	Does each icon stand out from its background?	✔			White background with black text and hot-colored icons make them quite easy to see
9.3	Are meaningful groups of items separated by whitespace?	✔			Items are well-spaced from each other
9.4	Does each data entry screen have a short, simple, clear, distinctive title?	✔			Yes, each section of data entry has its own title
9.5	Are field labels brief, familiar, and descriptive?	✔			
9.6	Is each lower-level menu choice associated with only one higher level menu?		✔		Only applies for the "Department" tab as the other tabs are simply a big category of its own
9.7	Are menu titles brief, yet long enough to communicate?	✔			Yes, titles are concise enough to describe the sections / features
9.8	Are there pop-up or pull-down menus within data entry fields that have many, but well-defined, entry options?	✔			

10. Help and Documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

	Review Checklist	Yes	No	NA	Comments
10.1	System provide help and documentation			✔	Our redesign did not focus on this section
10.2	Help information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.			✔	
10.3	Are online instructions visually distinct?			✔	
10.4	Do the instructions follow the sequence of user actions?			✔	
10.5	Are there memory aids for commands, either through on-line quick reference or prompting?			✔	

Tayler's Heuristic Evaluation and Notes

#	Review Checklist	Yes	No	NA	Comments
1. Visibility of System					
1.1	Always keep users informed about what is going on.	✔			The user gets feedback from logging in, registering, and adding objects to cart

		Yes	No	NA	Comments
1.2	Is there some form of system feedback for every operator action?	✔			Buttons change color and redirect the user, and actions are reflected on the screen
1.3	Does every display begin with a title or header that describes screen contents?	✔			
1.4	Is a single, selected icon clearly visible when surrounded by unselected icons?	✔			The selected icons text is red and underlined
1.5	After the user completes an action (or group of actions), does the feedback indicate that the next group of actions can be started?	✔			Any actions that can be taken show up as either buttons, drop down lists, or text boxes
1.6	Is there visual feedback when objects are selected or moved?	✔			Pick-a-pack box fills in with the current color
1.7	Does the system provide *visibility:* that is, by looking, can the user tell the state of the system and the alternatives for action?	✔			Yes, the user can determine the different alternatives for an item and for finding/searching for lists
1.8	Do GUI menus make obvious whether deselection is possible?		✔		
1.9	Do GUI menus make obvious which item has been selected?	✔			Red text and underlined
1.10	If users must navigate between multiple screens, does the system use context labels, menu maps, and place markers as navigational aids?	✔			Pick-A-Pack is a good example, shows all 7 steps and highlights the current step

2. Match Between System and the Real World

The system should speak the user's language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

	Review Checklist	Yes	No	NA	Comments
2.1	Are menu choices ordered in the most logical way, given the user, the item names, and the task variables?	✔			
2.2	Do related and interdependent fields appear on the same screen?	✔			Everything for a particular menu choice is contained within
2.3	Do the selected colors correspond to common expectations about color codes?	✔			
2.4	When prompts imply a necessary action, are the words in the message consistent with that action?		✔		When the user is asked to sign up if they are a new user, it doesn't explain what information they need to fill out in order to create an account
2.5	On data entry screens, are tasks described in terminology familiar to users?	✔			Yes, all terminology is familiar to the user
2.6	Are field-level prompts provided for data entry screens?		✔		Typically there are no explanations on data entry screens.

#	Review Checklist	Yes	No	NA	Comments
2.7	Do menu choices fit logically into categories that have readily understood meanings?	✔			Almost all menu choices are self-explanatory, that being said the Pick-A-Pack menu item isn't readily understood
2.8	Follow real-world conventions, making information appear in a natural and logical order.	✔			The information is provided in a logical and natural order
2.9	Speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms.	✔			Yes, all terms are in the users' language

3. User Control and Freedom

Users should be free to select and sequence tasks (when appropriate), rather than having the system do this for them. Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Users should make their own decisions (with clear information) regarding the costs of exiting current work. The system should support undo and redo.

#	Review Checklist	Yes	No	NA	Comments
3.1	The system provides a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue		✔		Not all pages have a button that takes them out of their current state. For example, the pick-a-pack pages don't have any easy way to go back to the homescreen except clicking on the top right icon
3.2	The system support undo and redo.		✔		Redo is not supported.
3.3	Can users type-ahead in a system with many nested menus?			✔	There are not any nested menus
3.4	Is there an "undo" function at the level of a single action, a data entry, and a complete group of actions?		✔		There is no way to "deselect" a color in the advanced search section
3.5	Can users cancel out of operations in progress?	✔			Pick-A-Pack, you can click out of it and it will stop the process for you
3.6	Can users reduce data entry time by copying and modifying existing data?	✔			Copy-paste is supported
3.7	If menu lists are long (more than seven items), can users select an item either by moving the cursor or by typing a mnemonic code?	✔			The user can select an item by moving the cursor
3.8	Are menus broad (many items on a menu) rather than deep (many menu levels)?	✔			Yes, menus are typically only one level deep
3.9	If the system has multiple menu levels, is there a mechanism that allows users to go back to previous menus?			✔	
3.10	If users can go back to a previous menu, can they change their earlier menu choice?			✔	Not needed, but yes they would
3.11	If the system uses a question and answer interface, can users go back to previous questions or skip forward to later questions?	✔			It can go back, but you can't skip ahead by design

3.12	Can users easily reverse their actions?	✔			It is easy to reverse actions on the website
3.13	If the system allows users to reverse their actions, is there a retracing mechanism to allow for multiple undos?	✔			
3.14	If the system has multipage data entry screens, can users move backward and forward among all the pages in the set?			✔	Since the later pages rely on the earlier pages, the user has to complete them in order.

4. Consistency and Standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

	Review Checklist	Yes	No	NA	Comments
4.1	Users should not have to wonder whether different words, situations, or actions mean the same thing.	✔			The page is consistent with its verbiage
4.2	The system follows platform conventions.	✔			Not meant to be a mobile website
4.3	Have industry or company formatting standards been followed consistently in all screens within a system?	✔			
4.4	Has a heavy use of all uppercase letters on a screen been avoided?	✔			Only the starts of phrases or labels are uppercase
4.5	Are icons labeled?	✔			All icons have labels
4.6	Are there no more than twelve to twenty icon types?	✔			There are far fewer than 12 icon types
4.7	Does each window have a title?	✔			
4.8	Are vertical and horizontal scrolling possible in each window?			✔	Not a part of the design
4.9	Does the menu structure match the task structure?	✔			
4.10	If "exit" is a menu choice, does it always appear at the bottom of the list?			✔	
4.11	Do embedded field-level prompts appear to the right of the field label?		✔		They appear right below the field label
4.12	Are there no more than four to seven colors, and are they far apart along the visible spectrum?	✔			
4.13	Is the most important information placed at the beginning of the prompt?	✔			
4.14	Are menu titles either centered or left-justified?	✔			
4.15	For question and answer interfaces, are the valid inputs for a question listed?	✔			Pick a Pack is a good example
4.16	Are menu choice names consistent, both within each menu and across the system, in grammatical style and terminology?	✔			
4.17	Does the command language have a consistent, natural, and mnemonic syntax?	✔			
4.18	Are menu choice lists presented vertically?	✔			

5. Help Users Recognize, Diagnose, and Recover From Errors

Error messages should be expressed in plain language (NO CODE).

	Review Checklist	Yes	No	NA	Comments
5.1	Is sound used to signal an error?			✔	Not a part of the design

5.2	Are prompts stated constructively, without overt or implied criticism of the user?	✔			
5.3	Do prompts imply that the user is in control?		✔		
5.4	Are prompts brief and unambiguous.		✔		Not a part of the design
5.5	Are error messages worded so that the system, not the user, takes the blame?		✔		Not a part of the design
5.6	If humorous error messages are used, are they appropriate and inoffensive to the user population?		✔		Not a part of the design
5.7	If the system supports both novice and expert users, are multiple levels of error-message detail available?		✔		Not a part of the design

6. Error Prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

	Review Checklist	Yes	No	NA	Comments
6.1	The system is carefully design which prevents a problem from occurring in the first place.	✔			The later prompts of the pick a pack are generated based on previous answers, so they can't accidentally choose the wrong one
6.2	Have dots or underscores been used to indicate field length?		✔		Not a part of the design
6.3	Is the menu choice name on a higher-level menu used as the menu title of the lower-level menu?		✔		Not a part of the design
6.4	Are menu choices logical, distinctive, and mutually exclusive?	✔			
6.5	Are data inputs case-blind whenever possible?		✔		Not a part of the design
6.6	If the system displays multiple windows, is navigation between windows simple and visible?		✔		Not a part of the design
6.7	Does the system prevent users from making errors whenever possible?	✔			Yes, pick a pack doesn't allow users to add to cart unless full
6.8	Does the system warn users if they are about to make a potentially serious error?	✔			^

7. Recognition Rather Than Recall

Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

	Review Checklist	Yes	No	NA	Comments
7.1	Make objects, actions, and options visible.	✔			All options are listed in the navigation bar
7.2	User should not have to remember information from one part of the dialogue to another.	✔			Pick a pack does not require them to remember a selection after they choose it
7.3	Instructions for use of the system should be visible or easily retrievable whenever appropriate.	✔			There is a help section in the navigation bar
7.4	For question and answer interfaces, are visual cues and white space used to distinguish questions, prompts, instructions, and user input?	✔			

		Yes	No	NA	Comments
7.5	Does the data display start in the upper-left corner of the screen?	✔			
7.6	Do text areas have "breathing space" around them?	✔			Sufficient padding is used
7.7	Are zones no more than twelve to fourteen characters wide and six to seven lines high?		✔		In the lists page, the zones are more than 12-14 characters long
7.8	Have zones been separated by spaces, lines, color, letters, bold titles, rules lines, or shaded areas?	✔			
7.9	Are field labels close to fields, but separated by at least one space?		✔		Fields are below the labels
7.10	Are long columnar fields broken up into groups of five, separated by a blank line?		✔		They are in groups of 4
7.11	Is white space used to create symmetry and lead the eye in the appropriate direction?	✔			
7.12	Have items been grouped into logical zones, and have headings been used to distinguish between zones?	✔			Home screen, the items have been grouped and labeled
7.13	Do GUI menus offer affordance: that is, make obvious where selection is possible?	✔			It is clear to see what affordances there are on a particular page
7.14	Is color coding consistent throughout the system?		✔		Pick-A-Pack is different than other pages
7.15	Does the system gray out or delete labels of currently inactive soft function keys?	✔			Yes, the last pick-a-pack pages show the "add to cart" or the "add" functions grayed out since they shouldn't be used until ready.

8. Flexibility and Efficiency of Use

Accelerators-unseen by the novice user-may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions. Provide alternative means of access and operation for users who differ from the "average" user (e.g., physical or cognitive ability, culture, language, etc.)

	Review Checklist	Yes	No	NA	Comments
8.1	If the system supports both novice and expert users, are multiple levels of error message detail available?			✔	Not a part of the design
8.2	Does the system allow novices to use a keyword grammar and experts to use a positional grammar?			✔	Not a part of the design
8.3	Can users define their own synonyms for commands?			✔	Not a part of the design
8.4	Does the system allow novice users to enter the simplest, most common form of each command, and allow expert users to add parameters?			✔	Not a part of the design
8.5	Does the system offer "find next" and "find previous" shortcuts for database searches?			✔	Not a part of the design

9. Aesthetic and Minimalist Design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

	Review Checklist	Yes	No	NA	Comments

		Yes	No	NA	Comments
9.1	System dialogues does not contain information which is irrelevant or rarely needed	✔			
9.2	Does each icon stand out from its background?	✔			
9.3	Are meaningful groups of items separated by whitespace?	✔ ✔			There is empty space between items
9.4	Does each data entry screen have a short, simple, clear, distinctive title?				The name of the item
9.5	Are field labels brief, familiar, and descriptive?	✔			Price and label for each item
9.6	Is each lower-level menu choice associated with only one higher level menu?			✔	Not a part of the design
9.7	Are menu titles brief, yet long enough to communicate?	✔			
9.8	Are there pop-up or pull-down menus within data entry fields that have many, but well-defined, entry options?	✔			Advanced search is a good example, it allows users to input more search criteria into a popup

10. Help and Documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

	Review Checklist	Yes	No	NA	Comments
10.1	System provide help and documentation	✔			Help page
10.2	Help information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.			✔	Not a part of the design
10.3	Are online instructions visually distinct?			✔	Not a part of the design
10.4	Do the instructions follow the sequence of user actions?			✔	Not a part of the design
10.5	Are there memory aids for commands, either through on-line quick reference or prompting?			✔	Not a part of the design

Appendix B: Heuristic Tally Form

Problem severity rating: H=High (Yes score of >= 4), L=Low (Yes score of 3)

1. Visibility of System

The system should always keep user informed about what is going on, through appropriate feedback within reasonable time.

#	Review Checklist	Yes	No	NA	Severity
1.1	Always keep users informed about what is going on.	5			
1.2	Is there some form of system feedback for every operator action?	4	1		
1.3	Does every display begin with a title or header that describes screen contents?	5			
1.4	Is a single, selected icon clearly visible when surrounded by unselected icons?	4		1	
1.5	After the user completes an action (or group of actions), does the feedback indicate that the next group of actions can be started?	1	1	3	
1.6	Is there visual feedback when objects are selected or moved?	4		1	
1.7	Does the system provide *visibility:* that is, by looking, can the user tell the state of the system and the alternatives for action?	4	1		
1.8	Do GUI menus make obvious whether deselection is possible?	2	3		**L**
1.9	Do GUI menus make obvious which item has been selected?	4	1		
1.10	If users must navigate between multiple screens, does the system use context labels, menu maps, and place markers as navigational aids?	4	1		

2. Match Between System and the Real World

The system should speak the user's language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

	Review Checklist	Yes	No	NA	Severity
2.1	Are menu choices ordered in the most logical way, given the user, the item names, and the task variables?	5			
2.2	Do related and interdependent fields appear on the same screen?	5			
2.3	Do the selected colors correspond to common expectations about color codes?	4	1		
2.4	When prompts imply a necessary action, are the words in the message consistent with that action?	4	1		
2.5	On data entry screens, are tasks described in terminology familiar to users?	5			
2.6	Are field-level prompts provided for data entry screens?	3	2		
2.7	Do menu choices fit logically into categories that have readily understood meanings?	5			
2.8	Follow real-world conventions, making information appear in a natural and logical order.	5			
2.9	Speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms.	5			

3. User Control and Freedom

Users should be free to select and sequence tasks (when appropriate), rather than having the system do this for them. Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Users should make their own

decisions (with clear information) regarding the costs of exiting current work. The system should support undo and redo.

#	Review Checklist	Yes	No	NA	Severity
3.1	The system provides a clearly marked "out" to leave an unwanted state without having to go through an extended dialogue		5		**H**
3.2	The system support undo and redo.		5		**H**
3.3	Can users type-ahead in a system with many nested menus?			5	
3.4	Is there an "undo" function at the level of a single action, a data entry, and a complete group of actions?	1	2	2	
3.5	Can users cancel out of operations in progress?	1		4	
3.6	Can users reduce data entry time by copying and modifying existing data?	2		3	
3.7	If menu lists are long (more than seven items), can users select an item either by moving the cursor or by typing a mnemonic code?	3		2	
3.8	Are menus broad (many items on a menu) rather than deep (many menu levels)?	4		1	
3.9	If the system has multiple menu levels, is there a mechanism that allows users to go back to previous menus?	2		3	
3.10	If users can go back to a previous menu, can they change their earlier menu choice?	1	1	3	
3.11	If the system uses a question and answer interface, can users go back to previous questions or skip forward to later questions?	3	2		
3.12	Can users easily reverse their actions?	2		3	
3.13	If the system allows users to reverse their actions, is there a retracing mechanism to allow for multiple undos?	2		3	
3.14	If the system has multipage data entry screens, can users move backward and forward among all the pages in the set?		2	3	

4. Consistency and Standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

	Review Checklist	Yes	No	NA	Severity
4.1	Users should not have to wonder whether different words, situations, or actions mean the same thing.	5			
4.2	The system follows platform conventions.	5			
4.3	Have industry or company formatting standards been followed consistently in all screens within a system?	5			
4.4	Has a heavy use of all uppercase letters on a screen been avoided?	5			
4.5	Are icons labeled?	5			
4.6	Are there no more than twelve to twenty icon types?	5			
4.7	Does each window have a title?	5			
4.8	Are vertical and horizontal scrolling possible in each window?	1	1	3	
4.9	Does the menu structure match the task structure?	5			
4.10	If "exit" is a menu choice, does it always appear at the bottom of the list?			5	
4.11	Do embedded field-level prompts appear to the right of the field label?		5		**H**
4.12	Are there no more than four to seven colors, and are they far apart along the visible spectrum?	5			

		Yes	No	NA	Severity
4.13	Is the most important information placed at the beginning of the prompt?	5			
4.14	Are menu titles either centered or left-justified?	5			
4.15	For question and answer interfaces, are the valid inputs for a question listed?	5			
4.16	Are menu choice names consistent, both within each menu and across the system, in grammatical style and terminology?	5			
4.17	Does the command language have a consistent, natural, and mnemonic syntax?	5			
4.18	Are menu choice lists presented vertically?	3	2		

5. Help Users Recognize, Diagnose, and Recover From Errors

Error messages should be expressed in plain language (NO CODE).

	Review Checklist	Yes	No	NA	Severity
5.1	Is sound used to signal an error?			5	
5.2	Are prompts stated constructively, without overt or implied criticism of the user?	2		3	
5.3	Do prompts imply that the user is in control?			5	
5.4	Are prompts brief and unambiguous.	1		4	
5.5	Are error messages worded so that the system, not the user, takes the blame?			5	
5.6	If humorous error messages are used, are they appropriate and inoffensive to the user population?			5	
5.7	If the system supports both novice and expert users, are multiple levels of error-message detail available?			5	

6. Error Prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

	Review Checklist	Yes	No	NA	Severity
6.1	The system is carefully design which prevents a problem from occurring in the first place.	4		1	
6.2	Have dots or underscores been used to indicate field length?		3	2	L
6.3	Is the menu choice name on a higher-level menu used as the menu title of the lower-level menu?	3	1	1	
6.4	Are menu choices logical, distinctive, and mutually exclusive?	5			
6.5	Are data inputs case-blind whenever possible?	1		4	
6.6	If the system displays multiple windows, is navigation between windows simple and visible?	2		3	
6.7	Does the system prevent users from making errors whenever possible?	4		1	
6.8	Does the system warn users if they are about to make a potentially serious error?	1	1	3	

7. Recognition Rather Than Recall

Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

	Review Checklist	Yes	No	NA	Severity
7.1	Make objects, actions, and options visible.	5			

		Yes	No	NA	Severity
7.2	User should not have to remember information from one part of the dialogue to another.	4	1		
7.3	Instructions for use of the system should be visible or easily retrievable whenever appropriate.	3	1	1	
7.4	For question and answer interfaces, are visual cues and white space used to distinguish questions, prompts, instructions, and user input?	5			
7.5	Does the data display start in the upper-left corner of the screen?	5			
7.6	Do text areas have "breathing space" around them?	5			
7.7	Are zones no more than twelve to fourteen characters wide and six to seven lines high?	3	1	1	
7.8	Have zones been separated by spaces, lines, color, letters, bold titles, rules lines, or shaded areas?	5			
7.9	Are field labels close to fields, but separated by at least one space?	4		1	
7.10	Are long columnar fields broken up into groups of five, separated by a blank line?	3	1	1	
7.11	Is white space used to create symmetry and lead the eye in the appropriate direction?	5			
7.12	Have items been grouped into logical zones, and have headings been used to distinguish between zones?	5			
7.13	Do GUI menus offer affordance: that is, make obvious where selection is possible?	5			
7.14	Is color coding consistent throughout the system?	2	3		L
7.15	Does the system gray out or delete labels of currently inactive soft function keys?	2		3	

8. Flexibility and Efficiency of Use

Accelerators-unseen by the novice user-may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions. Provide alternative means of access and operation for users who differ from the "average" user (e.g., physical or cognitive ability, culture, language, etc.)

	Review Checklist	Yes	No	NA	Severity
8.1	If the system supports both novice and expert users, are multiple levels of error message detail available?			5	
8.2	Does the system allow novices to use a keyword grammar and experts to use a positional grammar?		1	4	
8.3	Can users define their own synonyms for commands?			5	
8.4	Does the system allow novice users to enter the simplest, most common form of each command, and allow expert users to add parameters?	1	1	3	
8.5	Does the system offer "find next" and "find previous" shortcuts for database searches?			5	

9. Aesthetic and Minimalist Design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

	Review Checklist	Yes	No	NA	Severity
9.1	System dialogues does not contain information which is irrelevant or rarely needed	4		1	

		Yes	No	NA	Severity
9.2	Does each icon stand out from its background?	5			
9.3	Are meaningful groups of items separated by whitespace?	5			
9.4	Does each data entry screen have a short, simple, clear, distinctive title?	5			
9.5	Are field labels brief, familiar, and descriptive?	5			
9.6	Is each lower-level menu choice associated with only one higher level menu?	2	2	1	
9.7	Are menu titles brief, yet long enough to communicate?	4	1		
9.8	Are there pop-up or pull-down menus within data entry fields that have many, but well-defined, entry options?	3		2	

10. Help and Documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

	Review Checklist	Yes	No	NA	Severity
10.1	System provide help and documentation	3		2	
10.2	Help information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.	1		4	
10.3	Are online instructions visually distinct?	1		4	
10.4	Do the instructions follow the sequence of user actions?	1		4	
10.5	Are there memory aids for commands, either through on-line quick reference or prompting?		1	4	

Survey Form

Online Shopping Survey

We are conducting a study on how people shop online. The purpose of this study is to inform the design of this kind of technology. It is not intended to test your individual performance in any way. This study is being conducted as part of a course at the University of California, Irvine, entitled, "Informatics 132: Project in Human Computer Interaction." As such, this is also a training opportunity for us as students.

* Required

1. How old are you? *

○ 18 or younger

○ 19 - 24

○ 25 - 34

○ 35 - 50

○ 51 +

2. Gender? *

○ Male

○ Female

○ Prefer not to say

○ Other: _____

How often do you shop online? *

○ Never

○ At least once a week

○ one or more times per month

○ 7 - 11 times per year

○ 4 - 6 times per year

○ 1 - 3 times per year

*

	Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
I prefer to shop online rather than go to a store.	○	○	○	○	○
I buy things before I run out.	○	○	○	○	○
I only buy products online that I need.	○	○	○	○	○
Viewing my online purchase history is important to me.	○	○	○	○	○
Relevant ads are important when shopping online.	○	○	○	○	○
I buy more than I need to meet the free shipping requirements.	○	○	○	○	○
Customer service is not important to me when shopping online.	○	○	○	○	○
It is important for online retailers to offer free returns and exchanges.	○	○	○	○	○
I find online shopping very risky.	○	○	○	○	○
I am easily influenced by pop-ups while shopping online.	○	○	○	○	○
I am a sales shopper.	○	○	○	○	○
Customer comments are not very important to me when choosing what I buy online.	○	○	○	○	○

I like when websites recommend products to me based on my browsing history.	○	○	○	○	○
I prefer PayPal over credit cards when making online purchases.	○	○	○	○	○
Online shopping is as secure as traditional shopping.	○	○	○	○	○
I am very active on social media.	○	○	○	○	○
I do not like frequent design changes to websites I shop on.	○	○	○	○	○
I would rather speak to a customer service representative than email them.	○	○	○	○	○
If I have to spend too much time searching for what I need on a website, I will switch and buy from a different website.	○	○	○	○	○
When shopping online, product presentation is not important to me.	○	○	○	○	○
Wish lists are not very important to me when shopping online.	○	○	○	○	○
I do not like to see special deals when shopping online.	○	○	○	○	○

Other customer reviews affect my purchase decisions.	○	○	○	○	○
I am loyal to online sellers that I trust.	○	○	○	○	○
Things I buy online often live up to my expectations.	○	○	○	○	○

SUBMIT   Page 1 of 1

Figure ____ Google Survey

User Demographics Summary

Age	Gender	Shopping Frequency

Findings

Count of [I prefer to shop online rather than go to a store.]

Count of [If I have to spend too much time searching for what I need on a website, I will switch and buy from a different websi...

Count of [Customer comments are not very important to me when choosing what I buy online.]

[Customer comments are not very important...

Disagree

Agree

Neitheror

Strongly Disagree

Neither Disagree or Agree

Strongly Agree

0   5   10   15

Appendix D: Usability Task List

Emails Left:
informatics1321@gmail.com (Taken by Tayler as a test)
informatics1322@gmail.com (Taken by Cheri)   USERNAME: inftest2
informatics1323@gmail.com (Taken by Tayler)   USERNAME: inftest3
informatics1324@gmail.com (Taken by Don)   USERNAME: inftest4
informatics1326@gmail.com (Taken by Ed)   USERNAME: inftest6
informatics1327@gmail.com (Taken by Minh)   USERNAME: inftest7

Scenario:
It is your first quarter as an art student at UCI, and your professor has given you a list of supplies to purchase for the course.

1. Specify the starting point of the system (what page will be on).
2. Actual wording of the task (write down a scenario). you are so and so and want to sign up on the website
3. Write down all possible paths that the user might use to reach the goal
4. What kind of help should you be able to give them?
5. What kind of measure will you be using.(time, number of clicks, think aloud protocol)

Usability Tests:
1. Homepage of Art supply warehouse (website).
2. It is your first quarter as an art student at UCI, and your professor has given you a list of supplies to purchase for the course.

Tasks:
1. Sign up for website.
2. Search, and add an item to cart.
3. Buy item.
4. Make a list.
5. Find a particular list, and find the item in the list (add it to cart).
6. Find out the shipping method and fee for an item.

Things to buy:
1. **Daniel Smith Extra Fine Watercolor 15ml - Venetian Red**

Scenario 1	It is your first quarter as an art student at UCI, and your professor has given you a list of supplies to purchase for the course. But first, your professor would like you to create an account for individual use on the website. Please use the following: Email: xxxxxxxxxx@xxxx Billing/Shipping info: University of California, Irvine A311 Student Center Irvine, CA 92697-2050 Login: Inftest1 Password:testing123
Starting point	Homepage

Tasks	Sign up for website
Possible path	1. Register (top left) -> individual/business 2. Login (top left) -> register
Help	If the login is taken
Measure	Time (second)

Scenario 2	Your professor has given you a list of art supplies he wants you to buy, please add these exact items to your cart. ● Marabu Easy Marble 15ml - Amethyst (MAR75705 13059039081)
Starting point	Homepage
Tasks	Search, and add an item to cart

Possible path	1. Use the Search Bar (name)
	    a. Typing in the name
	    b. Typing in the SKU
	2. Use the color palette (color)
	3. Browse with departments

Help	Let them know they can search by color.
Measure	Time (second), usability problem (back button, misclicks, mistakes)

Scenario 3	Your professor has given you a list of art supplies he wants you to buy, please add these exact items to your cart. ● A Rose Carmine Color Pencil ● Nova Watercolor brush between $5 and $10
Starting point	Homepage
Tasks	Search, and add an item to cart
Possible path	1. Use the Search Bar (name) a. Typing in the name 2. Use the color palette (color) 3. Browse with departments
Help	Let them know they can search by color.
Measure	Time (second), usability problem (back button, misclicks, mistakes)

Scenario 4	The cart is full of items you do not need anymore, so you want to remove all the items from the cart.
Starting point	Homepage
Tasks	Remove item from the cart.
Possible path	Click on Marabu Easy Marble 15ml - Amethyst (MAR75705 13059039081 in the shopping cart -> remove the item

	-> update cart.
	Click on Rose Dore Color Pencil in the shopping cart ->
	    remove the item -> update cart.
	Click on Nova Watercolor brush in the shopping cart ->
	    change the quantity to 0 -> update cart.

Help	If they ask for help the test is a fail.
Measure	How long they take to empty the cart

Scenario 5	You have a sister who is an artist and has a birthday coming up in 7 days. She has hinted on more than one occasion that she really wants an Alvin, Premo Leather Ergonomic Chair with Footring. You would love to buy it for her but, she lives in Charleston, Virginia and you live in Irvine, California. You think you might be able to get it shipped to her on time but, before you place the order, you would like to find out general shipping fees.
Starting point	Homepage
Tasks	Find out the shipping fees.
Possible path	Go to the FAQ page -> look for shipping information. Go to the item -> add to cart ->
Help	After searching for some time without success, show them where the FAQ icon is located.
Measure	How many clicks does it take to accomplish the task. Think aloud protocol.

Scenario 6	Now your professor (Stephanie Ortiz) wants you to buy a specific eraser from her list (Art 120) that she created on the website. Please find the list "ART120 - ortizs (test)" find the item within the list, and add it to the cart.
Starting point	Homepage
Tasks	Find a particular list, and find the item in the list (add it to cart)
Possible path	Make a list of stuff -> type in both first and last name Make a list of stuff -> type in the list name
Help	If they ask for help the test is a fail
Measure	Time

Appendix E: Cognitive Walkthrough Task List

Criteria: To check and evaluate how well the website's interface suits the user's needs, a cognitive walkthrough will be executed analyzing each step the user takes in completing their tasks. Criteria that will be considered during the walkthrough will be an evaluation of whether the ASW website provides a clear and responsive layout; is the site providing the user with appropriate feedback upon their actions. Further criteria will be the user's cognitive load with respect to icon placement and recognition.

Questions for each Task:
1. What is the user trying to achieve at this point? (What is their goal? Why is it their goal?)
2. Are the necessary actions obviously available in the interface?
3. Once users see the control, will they recognize that it does what they want? In other words, does the label for the correct action match the user's goal?
4. If the user performs the correct action, will they get good feedback and not try to undo or redo the action?

TASK 1: ADD ITEMS TO CART

Description of input

- **Task**: Buy the items at the designated price range that the student can find for the project.
- **Interface:** Chrome browser with artsupplywarehouse.com website on a laptop computer.
- **User:** An Art student with the need to buy materials for his project.
- **Assumption:** The user does not know about ASW prior to the test and has never used the website.
- **Occasion:** To gather all items that the user wants to buy before making the purchase.

Task Description: Your professor has given you a list of art supplies he wants you to buy, please add these exact items to your cart.
- Polychromos Artists' Color Pencil - Rose Carmine
- Nova Watercolor brush you can find between $5-$10.

Anticipated Users: Need based users.

User's Initial Goals: Able to search and add the correct item in the cart in the shortest amount of time as possible.

Action Sequence:

Step 1: Locate and click on the Search Bar.
Step 2: Type in the name of the desired item and click on the "Search" button.

Step 3: Scroll down and find the item in the result list.
Step 4: Click on the item to learn more about it.
Step 5: Click on the text box right next to the "Add To Cart" button and
type in the number representing the quantity of the item.
Step 6: Click on "Add To Cart" button.

TASK 2: CREATE A WISH LIST

Description of input.

- **Task**: Create a wish List at artsupplywarehouse.com.
- **Interface:** Chrome browser with artsupplywarehouse.com website on a laptop computer.
- **User:** A user who wants to make a Wish List.
- **Assumption:** The user already has an ASW account, and is unfamiliar with creating a Wish List on ASW.
- **Occasion:** To create a space so that the user can add items to the Wish List.
- **Task Description:** Register as a user first using the following information below, and then create a new list.

  - Login: Inftest3
  - Password:testing123

Anticipated Users: Users who want to save items for later or allow other people to buy items for them.

User's Initial Goals: Create a Wish List to allow them to save items for later or provide an easy way for others to buy products for them.

Action Sequence:

Step 1: Locate and click on "Login."
Step 2: Type in the account and password and click Login.
Step 3: Click on List navigation button.
Step 4: Click on "Create a new List."
Step 5: Type in information.
Step 6: Click on "Create it."
Step 7: Close the dialog box.

TASK 3: ADD ITEM TO A LIST

Description of input.

- **Task**: Add an item to the List.
- **Interface:** Chrome browser with artsupplywarehouse.com website on a laptop computer.

- **User:** A user who is looking for items to buy in the future.
- **Assumption:** User has already logged in and the List has already been created.
- **Occasion:** Saving items to a List for future reference.
- **Task Description:** Add the item "MAR75705" to the List.

Anticipated Users: Users who want to save items for later or allow other people to buy items for them.

User's Initial Goals: Looking for items that they want to buy in the future and save it in the List.

Action Sequence:

Step 1: Locate and click on Search Bar.
Step 2: Search for "MAR75705."
Step 3: Click on item.
Step 4: Specify how many of that item to add to the List.
Step 5: Click on the "Add to List" icon.
Step 6: Click on the "Add to List" button.

Appendix F: Interview Protocol

Our Goal: To understand the needs, preferences, behaviors, culture, and characteristics of people who might inform your design process.

✓	*Questions*	Purpose:
	How are you doing today?	Know the mood of the participant.
	Where did you grow up? What was that like?	Demographics and values.
	If you don't mind me asking, how old are you?	Demographics.
	How do you feel about technology? Why?	Demographics and values.
	What do you think about online privacy? Does this have any effect on what websites you visit?	Values and how they think.
	What is your earliest memory of using technology? What device did you use? How did that feel to you?	Demographics, behavior and how they think.
	Did you ever find yourself up against any challenges in your community? What were they? Why do you think that is?	Demographics, behavior and how they think.
	Are you a student? If yes, what major	Demographics.
	What's your major? *(-> If their major is Art, be more specific when asking about online websites they use for art supply purchases. See if they've used our site.)*	Demographics.
	Have you ever considered a different major (ex: art, business)? Why?	Values and how they think.
	Are you employed? Full or part-time?	Demographics.
	Can you tell me about what you do?	Behavior and how they think.
	Do you enjoy your work? Why?	Behavior and how they think.
	Does this afford you any free time? Why?	Behavior and how they think.
	Can you tell me what that work is like? Do you like it? Why?	Values.
	Do you have any hobbies? What are they?	Behavior and how they think.
	Are you interested in any forms of arts or crafts?	Find out the participant's interest.
	Can you tell me more about what you like to create?	Give the participant a chance to talk about him/herself.
	How often do you shop online? What types of websites to you buy from?	Understand the participant's shopping preference.
	Is your preference to shop in-store or online? Why?	See the reason they prefer in-store or online.
	What sites do you use most often? Why?	Learn which websites they like and why.
	Do you ever shop online for art supplies? Can you tell me anything you find interesting about this website?	Know if they have any art supply shopping experience.
	What do you like about this website? Why?	Understand their thoughts about the website.

What do you not like about this website? Why?	Understand their thought about the website.
How do you feel about pop-ups ads and specials when you are browsing a website?	Understand how pop-up ads affect them.
Is there anything about shopping on websites you find particularly frustrating or wish was easier? Why is that?	Their viewpoint on shopping website
What features do you think would be difficult for you to live without on the websites you use most often? Why?	Understand what features are important to them.
Are there any features that you would like to see on any of these websites that you think might be useful? Why?	Get their input on how to improve the website.
Are there any features on websites you absolutely cannot do without? Why?	Know their essential website feature needs.
Is there anything that you wish these websites allowed you to do that they don't allow now? How does this help you?	Give the participant an option to express themselves.
What are the most frequent tasks you perform on these websites?	Understand what features they use the most.
Can you tell me one of the best online shopping experiences you've ever had? What made it so great?	Try to see if we can get any hidden information from their story.
Do you like to plan ahead on your purchases? That is, do you buy things before you run out or when you run out?	Understand their shopping habits.
What presentation of supplies or products are most attractive to you, individual items, bundled items or in bulk?	Understand what attracts them.
Are you more interested in what's on sale or what you need? Why?	Understand what attracts them.
How do you feel about paying shipping costs? Why?	Understand what might change their mind to buy.
How important is it to you whether or not the retailer offers free returns? Why?	Understand what might change their mind to buy.
Wrap up	
Is there anything you wanted to add?	See if they have any other things to share.
Is there anything we did not ask, that you feel we would want to know?	See if they have any other things to share.

Appendix G: Personas

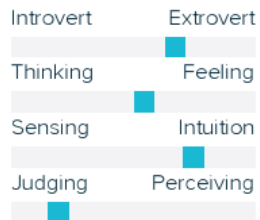## Mi Jin the Bargain Shopper

Xtensio

"Why waste the time driving to the store when it can be shipped to you?"

Age: 25
Work: UX Designer
Family: Single, only child
Location: Irvine, CA

Personality

Introvert — Extrovert
Thinking — Feeling
Sensing — Intuition
Judging — Perceiving

Goals

- Save time and money
-

Frustrations

- Receiving a broken item
- Not having enough time to herself

Bio

Mi has just received a masters in informatics, and is currently working as a UX designer. For her job, Mi frequently has to buy white-board markers, tape, paper, and colored pencils. She is extremely busy in her work and needs to optimize her free time, which is why she enjoys online shopping. Mi also loves to bargain buy, and will buy an unfamiliar brand if that means she can save a few bucks. If the product doesn't work out, then she won't buy that brand again. She finds online shopping very risky, which is why she will only shop from well-known websites. Mi loves to design, and likes to draw buildings in the very small amount of free time that she has. She thinks ahead she can buy everything she needs while it's on sale.
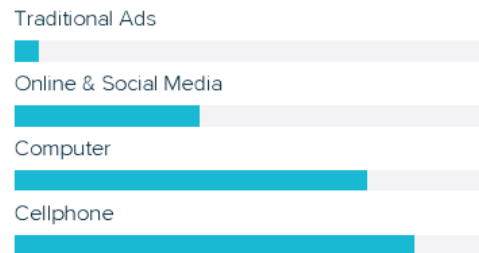
Motivation

Price
Quality
Quantity
Comfort

Brands & Influencers

EXPO   PRISMACOLOR

Preferred Channels

Traditional Ads
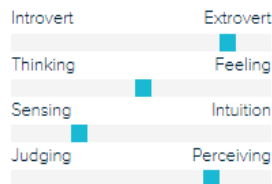Online & Social Media
Computer
Cellphone

Susan the teacher
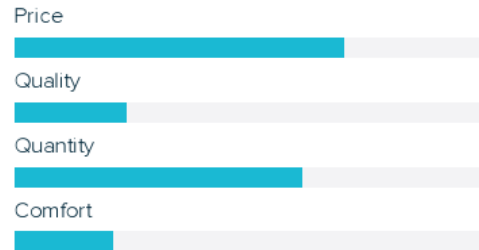
"*Being a kindergarten teacher isn't easy, but as long as you think ahead, nothing will take you by surprise.*"

Age: 56
Work: Kindergarten teacher
Family: Married, two kids
Location: Cerritos, CA

Personality

Introvert — Extrovert
Thinking — Feeling
Sensing — Intuition
Judging — Perceiving

Goals

- Plans ahead to save time and money.
- Buys items in bulk and bundles.
- Look for the special deal

Frustrations

- Not everything she needs comes in bulk and bundles.
- Finding out about special sales when they're over.

Bio

Susan is a kindergarten teacher whose been teaching kids for over 20 years. She thinks children are absolutely, delightful. Although working with kids can be challenging at times, Susan does enjoy working with them and finds her work very fulfilling. Every semester, Susan is responsible for buying all the art materials for her students. Since she usually has 25 students in a class, Susan finds that buying in bulk is easy on her wallet and much more convenient. She likes to go shopping at her local Costco, but there are times when she's been known to stock up on items in advance if another store offers special deals for the same items. Susan is very organized and keeps an inventory record of her art materials. This gives Susan time to plan ahead and buy when art materials are on sale.
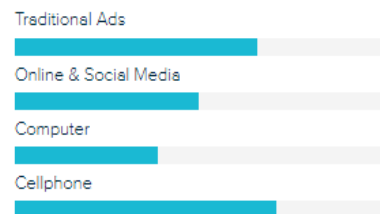
Motivation

Price
Quality
Quantity
Comfort

Brands & Influencers

Crayola   EXPO.

Technology

Traditional Ads
Online & Social Media
Computer
Cellphone

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Nick the Art student

Xtensio
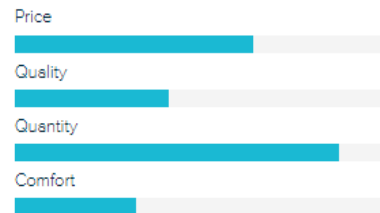
"Price is not always synonymous with value. It pays to research what you buy."

Age: 22
Work: Student
Family: Single
Location: San Diego, CA

Personality

Introvert	Extrovert
Thinking	Feeling
Sensing	Intuition
Judging	Perceiving
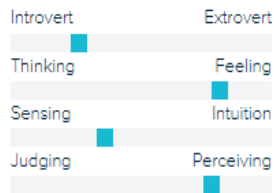
Goals

- Find the best quality while staying within budget.
- Buy from trusted companies; be brand loyal.

Frustrations

- Art tools and supplies are incredibly expensive!
- I never find customer reviews that tell me what I really need to know.

Bio

Nick is a senior at the University of California, San Diego. He is majoring in art and on a full scholarship. Although Nick feels honored to be receiving funds each quarter to aid in his education, the funds do not pay for everything. Nick's major requires him to have all kinds of art tools and supplies on hand which can become very expensive on his limited budget. Over the course of his education he has become a quick study in being thrifty when it comes to making his art tool and supply purchases. Nick knows that price is not always synonymous with value nor quality. It makes him anger to pay for art tools that wear out quickly or break. So, when he finds a company or product that meets all of his needs, he becomes very brand loyal. Nick will also take the time to write careful reviews about the products he buys to help others avoid some of the same mistakes he made as a Freshman.
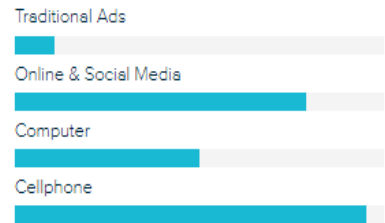
Motivation

Price

Quality

Quantity

Comfort

Brands & Influencers

PRISMACOLOR

STAEDTLER

Technology

Traditional Ads

Online & Social Media

Computer

Cellphone
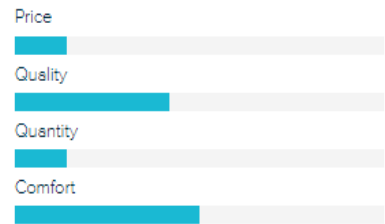
Appendix H: Other High-fidelity Mockups

ART SUPPLY WAREHOUSE

0 items in the cart
Subtotal: $0.00
Shipping: $0.00
Total: $0.00

≡ Departments | Lists | Pick-A-Pack | Deals | Events | Help | Contact

Pick-A-Pack ———————————————— ① ② ❸ ④ ⑤ ⑥ ⑦

Please pick a brand an oil paint brand

| winsor and newton | Robert Simmons | royal and langnickel | Artists Loft |

Back | Next

Pick-A-Pack ———————————————— ① ② ③ ❹ ⑤ ⑥ ⑦

Pick an amount for your pick-a-pack

| 5 | 7 | 10 | 15 |

Back | Next

ART SUPPLY WAREHOUSE

0 items in the cart
Subtotal: $0.00
Shipping: $0.00
Total: $0.00

≡ Departments | Lists | Pick-A-Pack | Deals | Events | Help | Contact

Pick-A-Pack

① ② ③ ④ **⑤** ⑥ ⑦

Please select an item

41 Colors 2 Sizes

Winsor & Newton® Winton® Oil Color

$6.99 - $19.99

115 Colors 2 Sizes

Online Only

Winsor & Newton® Artists' Oil Colour™

$36.79
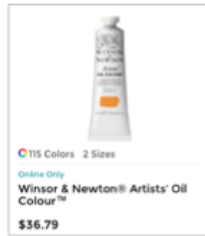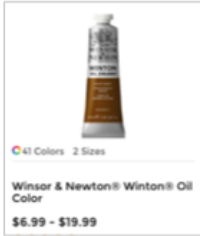
Back

Next

⌂ | LISTS | CREATE LIST

Lists and Registries

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Become part of our community!

PICK-A-PACK

Customize your own sets

Featured Maximum Advantage Program

Get good deals and big savings

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Create a List:

Type ▾   Public ▾

Name of your list:

Description (limit 255 characters):

Create list

Find a list

My Lists

ART SUPPLY WAREHOUSE

Advance ▾

0 items in the cart
Subtotal: $0.00
Shipping: $0.00
Total: $0.00

≡ Departments | Lists | Pick-A-Pack | Deals | Events | Help | Contact

Already have an account

Email address

Password

Login

New user?

First name

Last name

Email address

Choose a password

Re-enter password

Creat an account