

Team Vendr: Heuristic Evaluation

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Client:

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Summary

Vendr is an app designed to create a platform where users are able to buy and sell new or used items. Our team of five conducted an initial heuristic evaluation on both the mobile and web prototype of Vendr. We attended Zoom and Discord meetings to identify our goals and deadlines before coming together as a group and finalizing the document. We define the heuristics investigated, explain how they may have been violated, and offer suggestions for improvement.

Product Description

Description

Vendr is a cross-platform web and mobile application designed to be a cross between a dating application, akin to Tinder, and an application for selling second hand items, akin to ebay. Users are able to see items for sale within an adjustable mile radius of their current location and swipe right on that item if they are interested, and left otherwise. If users are interested in an item they can message the seller and inquire further about such things as price, availability, or shipping. Besides buying, users are also able to quickly and easily set an account meant for selling items as well.

User Profiles

Vendr is designed to cater to both the deal-determined shoppers who are using the app to find specific items at a competitive price and for those who may just like to window shop on curiosity alone. Vendr is also designed for buyers and sellers of specific items such as trading cards, shoes, and anime memorabilia.

User Interface (UI)

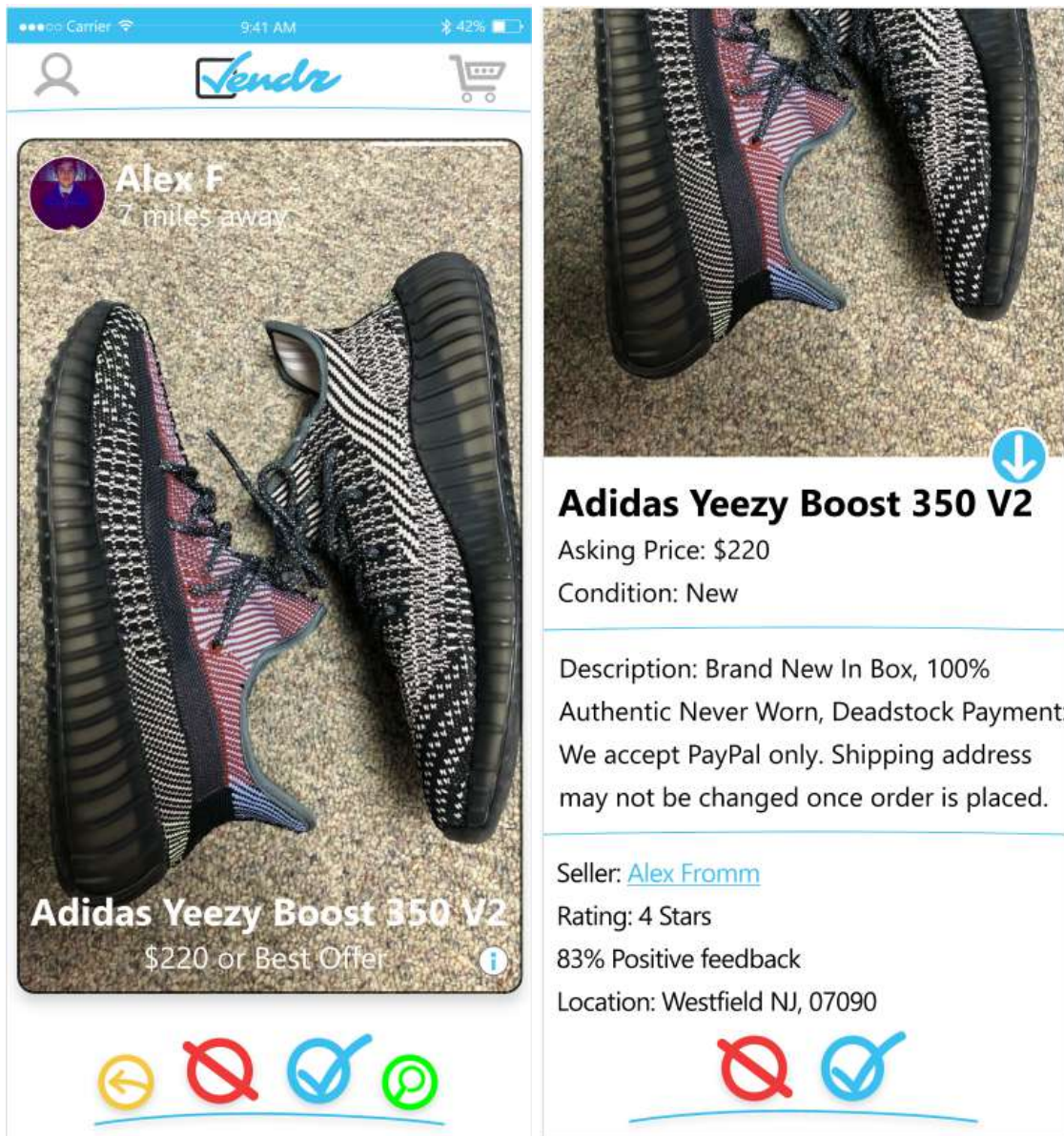


Figure 1. How a product would appear to a buyer on Vendr (left) and the information page of a product (right).

Users are presented with a home screen containing a list of items for sale in their selected mile radius. They would either swipe left or right on these items depending on their interest. They are also able to read a description about any item they are currently looking at. If they swipe right on the item, they are able to message the seller of that item and inquire further. The buttons on the bottom in order are: Go Back, Reject Item, Show Interest in Item, and Item Characteristics.

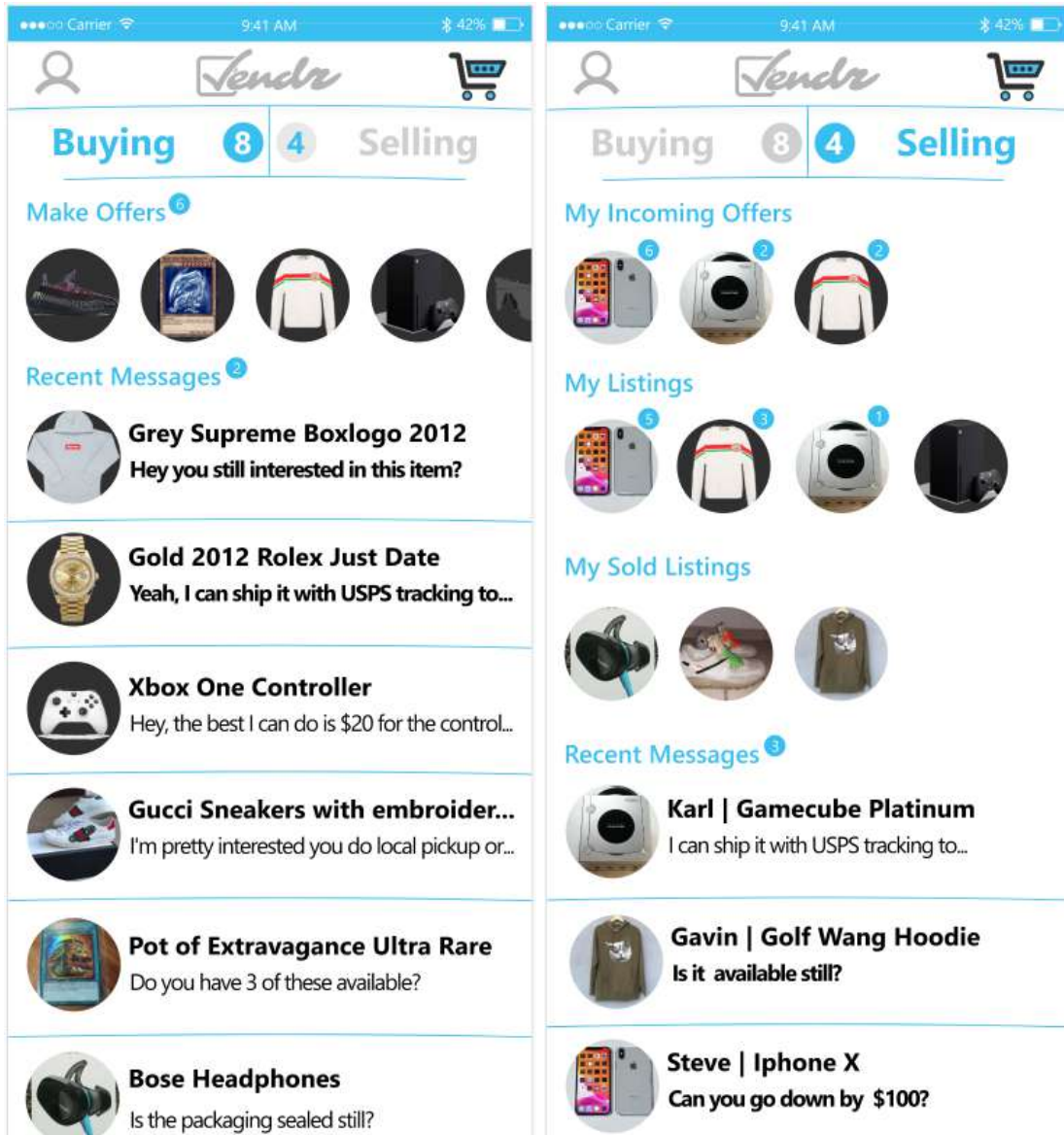


Figure 2. The menu options for a user based on if they are buying (left) or selling (right).

Buyers can see offers on items in which they have shown interest previously by swiping. They are also able to see message history on those items. Sellers are able to see all items they currently have for sale, along with messages about the items they are selling and a list of items that have previously been sold by that seller.

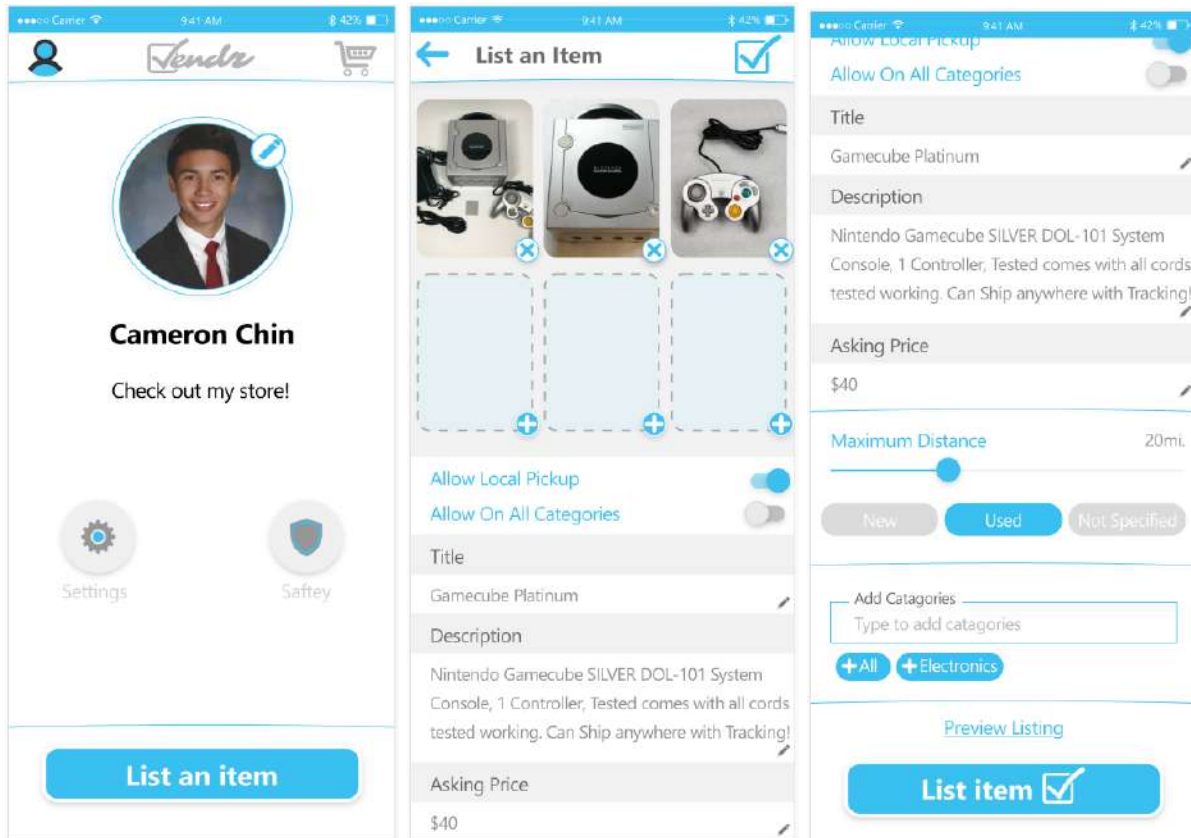


Figure 3. The profile page prompting the user to list an item (left) and the item listing page (center and right).

Sellers can create personalized profiles and list items as they wish. When listing an item, users are able to add a variety of options for the listing including local pickup, categories which function similarly to tags, and an adjustable mile range of the listing. Once the item is listed, it is displayed to buyers within the previously specified mile radius who can swipe and offer for that item.

Methodology

On March 5, 2021, the team held a short meeting on Discord to discuss deadlines, the product versions to be tested, and where this document should be located. We decided to test both the web prototype (shared in the Vendr channel on Feb 20th) as well as the mobile wireframes (shared in the Vendr channel on March 3rd). Individual heuristic evaluations were to be written in the team member's corresponding tab in a Google Sheet by March 12th. On March 13th, we conducted a Zoom meeting to share individual findings and begin combining data.

The heuristics used by all team members are listed below, followed by each member's qualifications.

Evaluation Criteria

1. External consistency

The system uses interactions and design patterns that are consistent with the platform and analogous systems. Design patterns are externally consistent with their standards.

2. Widgets and labels near targets

Place widgets (controls) adjacent to their respective targets of operation and labels on, or directly adjacent to, their associated controls.

3. Group like widgets/functions

Use the gestalt principles of proximity, similarity and closure to group widgets with similar functionality.

4. Frequently used functions optimized

The system minimizes the user's cognitive load by keeping only the most salient information and signifiers visible. Frequently used functions are highly visible while infrequently used functions do not pollute the interface. The workflow is optimized for the most common use-cases.

5. Perceptibility of Feedback

User interaction with the system must result in immediate, perceptible, and interpretable feedback.

6. Speak the User's Language

The system "speaks" to the user in their native language using signifiers that are contextually relevant (e.g. health care iconography in an application used by medical professionals). The system uses terminology familiar to the user rather than technical jargon.

7. Perceptibility of System State

The user must have the ability to perceive the state of the system at any given moment. The key question to ask yourself is, "If you were to walk up to the system, after having been away from it for an extended period of time, would you be able to properly interpret its current state?"

8. Internal consistency

Words, phrases, signifiers and design patterns are used in a consistent manner throughout the system.

9. Appropriate Selection of Design Patterns

Are the optimal design patterns used within the system? For example, is progressive disclosure used for long data entry forms? Is the application using design patterns appropriate for the platform (e.g. mobile vs desktop). Are wizards used where appropriate?

10. Minimize Knowledge In The Head

Does the system display the appropriate amount of information to the user? If the application uses a wizard design pattern, is the user forced to remember information from one or more previous steps in the wizard or is all of the information necessary to complete each step displayed concurrently with the step.

11. User Control and Freedom

The system should be configurable by the user and not force users to alter behavior in order to adapt to the system. The system should provide accelerators for more experienced users (e.g. keyboard shortcuts and context menus)

12. Error Prevention

Where appropriate, the system should prevent the user from making an error via the appropriate implementation of constraints. Note: Sometimes, error recovery is preferred over error prevention and vice versa.

13. Error Recovery

Where error prevention is not feasible or desired, the system should provide graceful mechanisms to help the user recover from either system or user errors. It should provide: undo and redo capability; error messages that are written using terminology understandable to the user that describe both the problem and remedial action.

14. Novel interactions easily learned and recalled

Novel interactions are easily learned and remembered because they take advantage of natural mappings and external consistency.

15. Help & Documentation

Help should be easily accessible. Help may take the form of printed or electronic documentation, a knowledge base, a wiki or a live chat system.

Team Qualifications

1. Rezylle Milallos

Rez is a 2nd year master's in Human-Computer Interaction student at Rochester Institute of Technology (RIT). Prior to that, she worked as a software developer for 5 years. She then worked as a Quality Assurance Lead for a board game called Lost and Found: New Harvest, hosted by the RIT Interactive Games and Media department. She also has experience in both buying and selling products on eBay, Facebook Marketplace, and Etsy.

2. Brandon Palonis

Brandon is a 2nd year master's in Software Engineering student at Rochester Institute of Technology. Prior to that he was an undergraduate Computer Science student at the University of Pittsburgh. He has had 3 years of experience working as an intern for both Automated Health Systems, a Pittsburgh-based healthcare technology contractor, and at Capital One, in software engineering roles. He is currently working in accessibility-related software development at RIT.

3. Pranav Shinde

Pranav is a 2nd Year Master in Visual Communication Design student at RIT. Previously he has worked at ZS Associates as a Visual Designer for clients such as Pfizer, Aetna, AstraZeneca, Merck to develop visual design solutions for the healthcare industry. Pranav has worked on UX Student Projects like Frima which is a Food Wastage Management application to reduce consumer's food wastage and is currently working on expanding his UX knowledge base with courses such as Usability Evaluation and UX Design Strategies.

4. Shubhankar Singh

Shubhankar is a 1st Year Master in Human Computer Interaction student at RIT. Previously he has worked at Paytm as a Product Designer where he worked with the Education and Insurance domains of the FinTech company. Shubhankar has worked on a myriad of UX Student Projects like Frima, CryptoTech and Local. He also fostered and led several design teams while he was working as a Principal Designer at his college's incubation center. He is currently working on expanding his UX knowledge base with courses such as Current Topics in HCI and Research Methods.

5. Effie Wang

Effie is a 2nd year master's in Visual Communication Design student at Rochester Institute Technology (RIT). She worked as a visual designer for 2 years before. She also has the experience of working as a freelancer to do the usability testing for Ponycody's web app and iQIYI's mobile app. Moreover, she has also designed a mobile application named Floop for buying/selling used products to enhance users' experiences.

Findings

In this section, we present our findings for each of the heuristics evaluated. We also mention any additional heuristic violations as part of the explanation. Screenshots and captions are provided for further understanding of the findings. We also offer some suggestions that may help improve the usability of the page and eliminate any heuristic violations.

External Consistency

The login page in Vendr shows the email address and password on different screens as shown in Figure 4 below. This is not externally consistent with other applications where users can type both their email and password on the same screen.

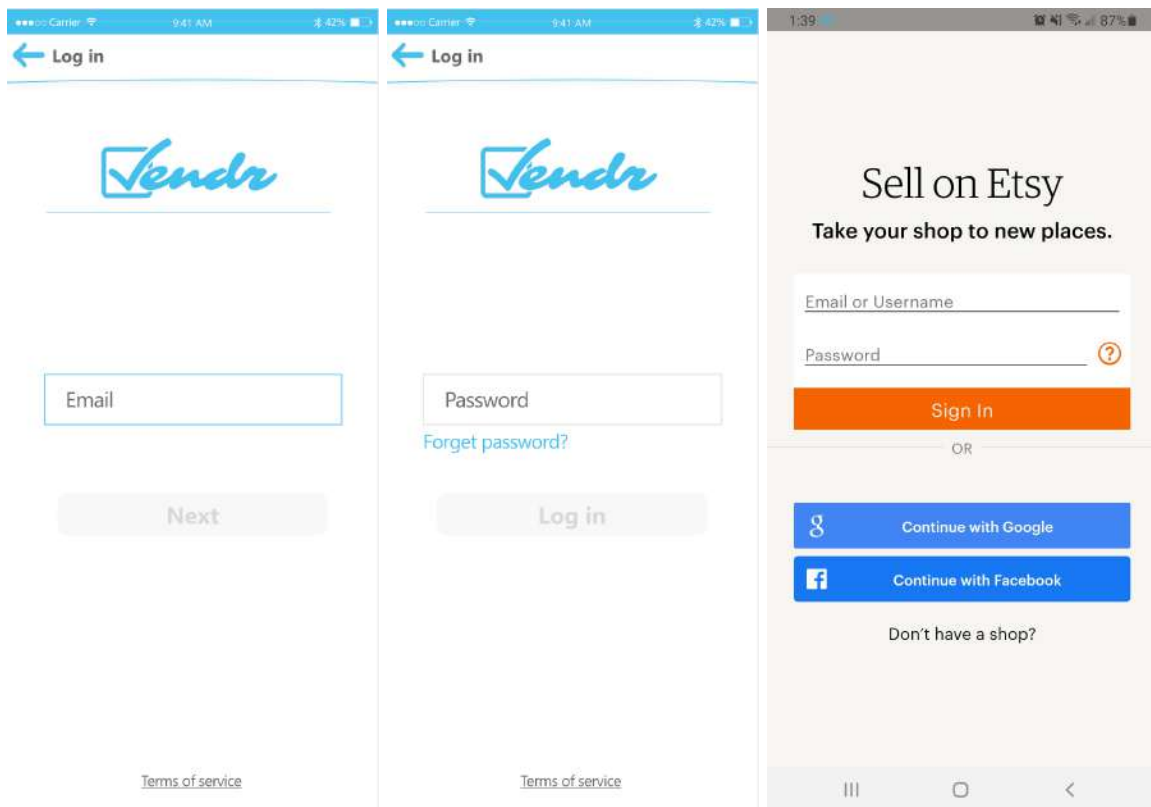


Figure 4. Vendr has two login screens, each for the email and password section. To the right, we present a sample screenshot which shows that there is typically only one login screen for apps.

On the web version of Vendr, the "Email" part of the login field can be changed to "Phone" by clicking on a button inside the text box as shown in Figure 5 below. This is not externally consistent with applications such as Facebook or Instagram where an email OR a phone number can be automatically typed into the same bar without having to change the context of the bar. Additionally, the user may not realize that they are able to login using an alternative method because it is atypical to have a button inside the email field.

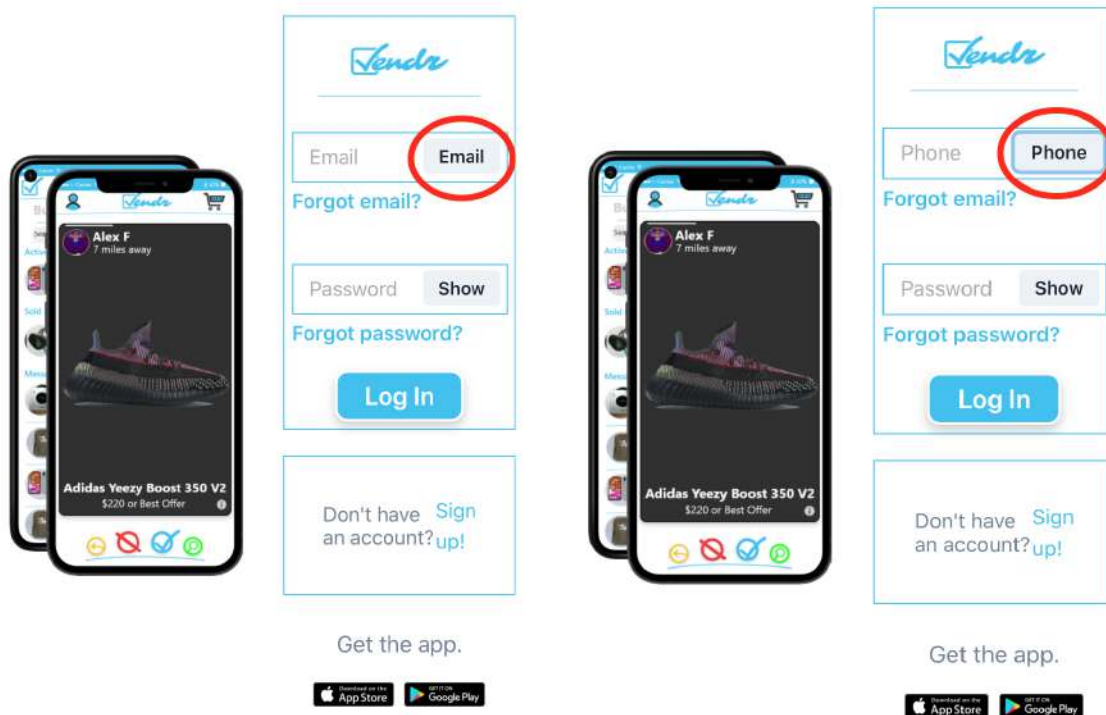


Figure 5. The web version of Vendr allows users to login using their email address or phone number. However, the user has to click on the button inside the textbox (as highlighted in red) in order to access the different options.

Logos on the taskbar or near menus typically allow users to go back to the main page. However, the logo on the top right corner of the screen shown in Figure 6.1 does not do anything. This is not externally consistent with other applications where logos are used to bring the user back to the main screen. Additionally, Figure 6.2 and 6.3 show that there are cases in the app where a logo leads back to the main screen which makes logo functionalities *internally inconsistent*. It may benefit the user to either remove the logo, in order to make the top bar look simpler, or link the logo to the main screen for easier navigation, greater user control, and internal consistency.

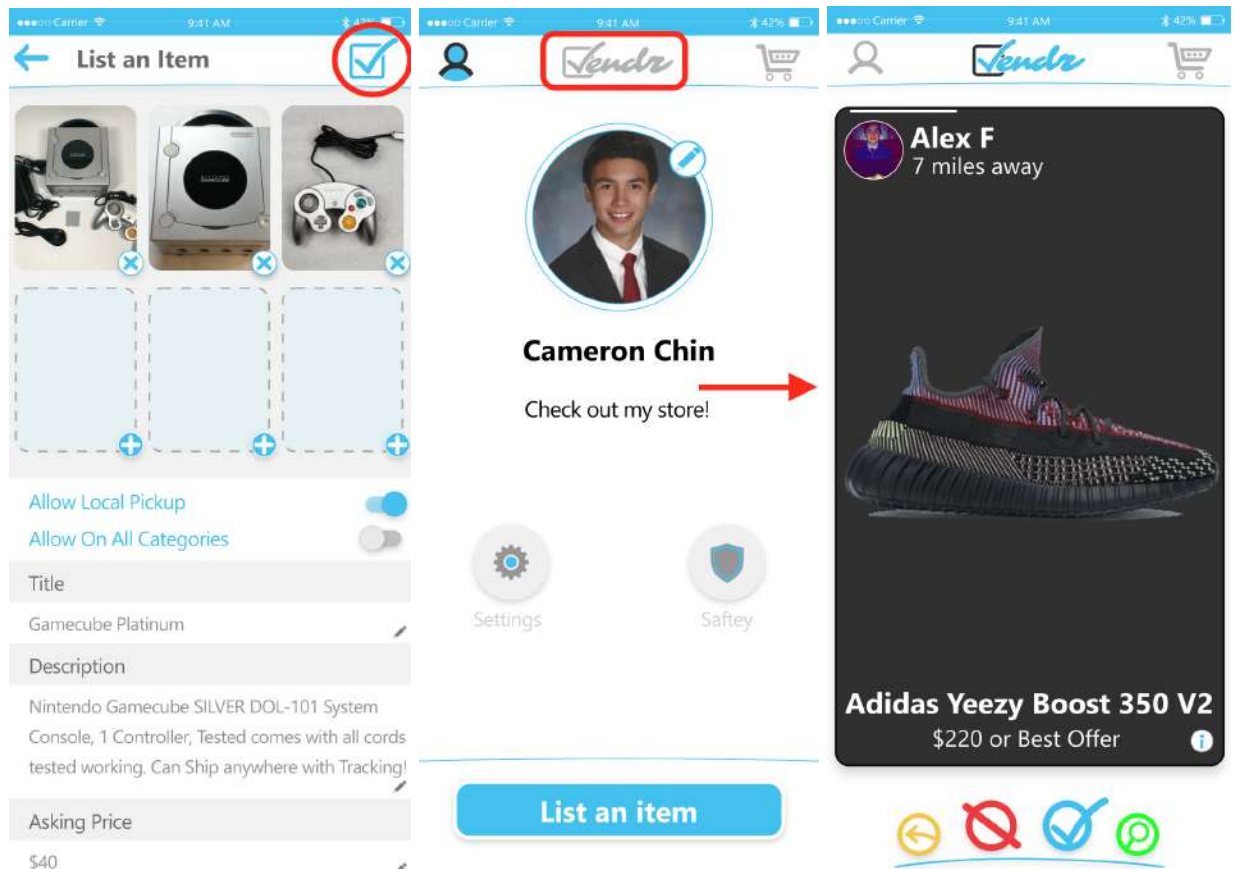


Figure 6. (from left to right): 1.) The logo circled in this screenshot serves only as a decorative element to the page and does not lead the user back to the main screen. 2.) The logo on the taskbar allows the user to go to 3.) the main screen.

Widgets and labels near targets

The edit/pencil icon shown along the white textbox is too far from the related text and too close to the next text below it (Figure 7.1). For example, the icon to edit the title of the text is too close to the gray box for "Description". At first glance, this may lead the user to assume that s/he is clicking the edit option for the description. It may be better to move these controls closer to the associated text and within that group, similar to the one in Figure 7.2. For example, the icon could be placed right beside "Title" or before the title text itself.

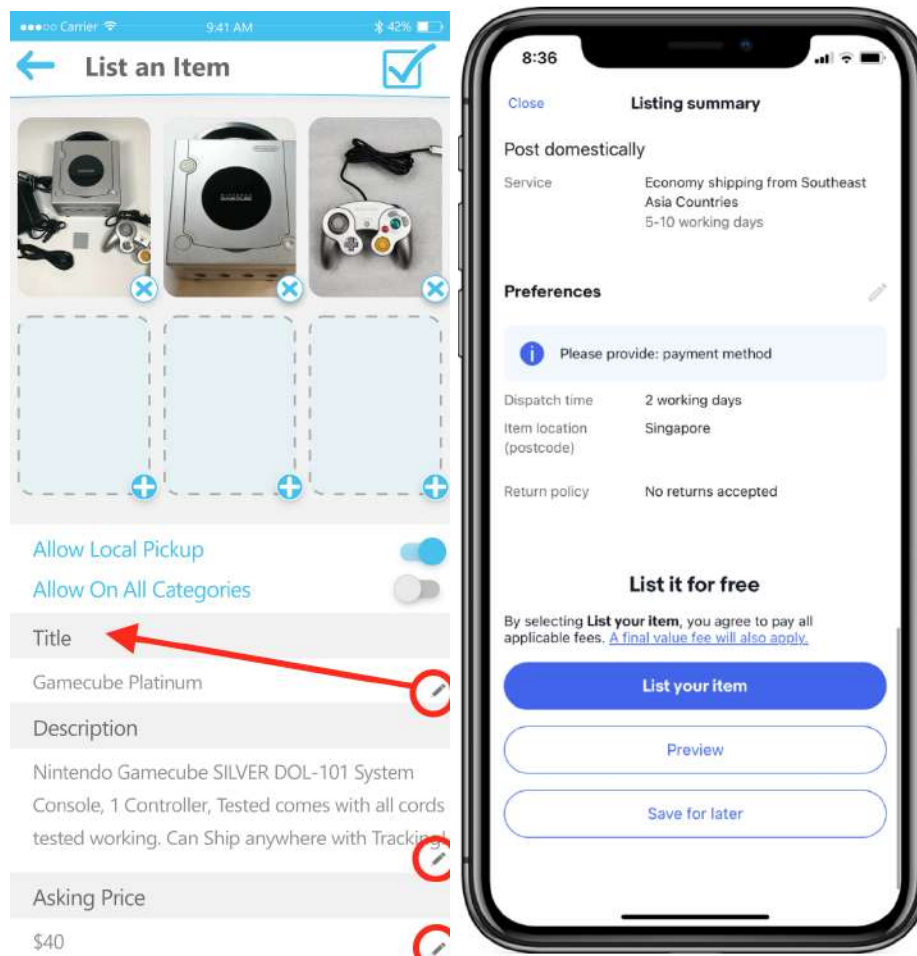


Figure 7. (from left to right): 1.) The pencil icon is far from the related text or heading. Instead, it is much closer to the next item which can raise confusion from the user. 2.) This is a screenshot of eBay's listing screen showing how the pencil icon is near the section that it is referring to.

In the web version, the “X” button used to close out the pop ups from Incoming Offers, Active Listings, and Sold Listings is in the corner of the screen which is nowhere near the actual box it is meant to cancel. This may make it hard for the user to close out of the pop-up and may give them the impression that this is something they can’t do. We recommend placing the “X” button on the top-right corner of the pop-up itself for better grouping and visibility.

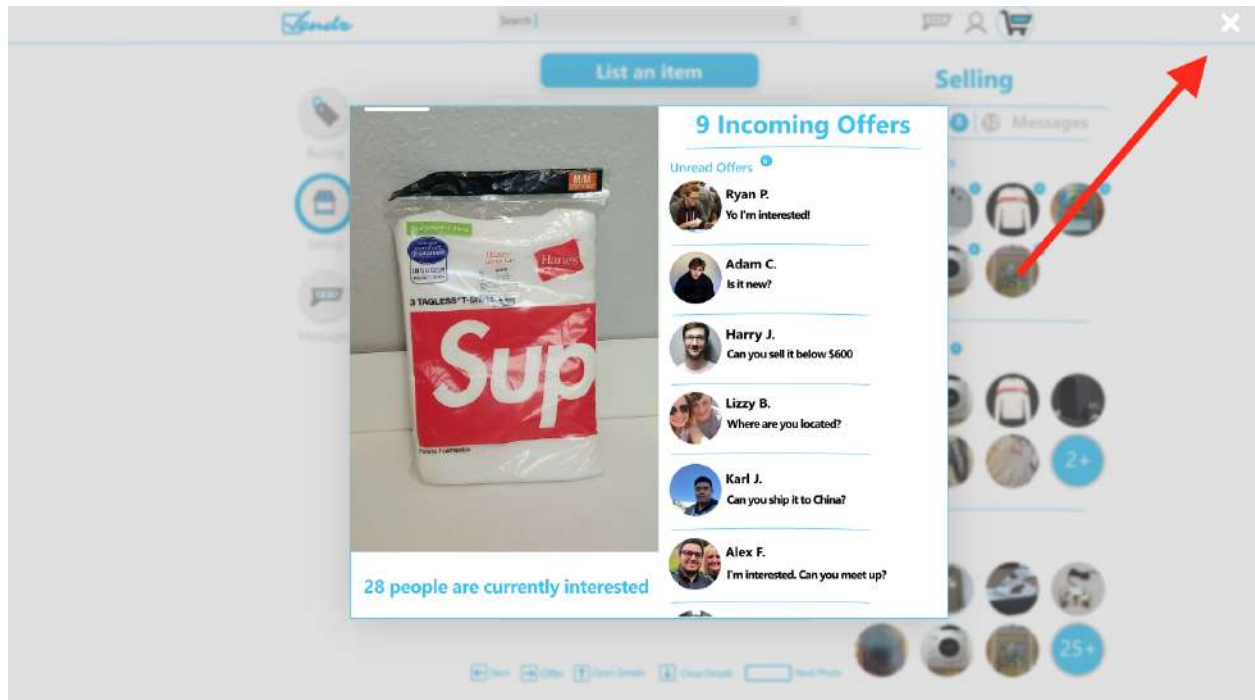


Figure 8. The “X” button is located on the top right corner of the entire screen instead of close to the pop-up it is used for.

Group like widgets/functions

This textbox is shown underneath other choices for messages. It is not clear whether or not the prewritten message will automatically be sent or if it will just populate the textbox below it (Figure 9.1). Additionally, the prewritten text and the text inside the textbook have different font sizes, making it seem like they could be in a different group, or have different functions. In order to promote grouping of related functions, perhaps it would be good to put all of the options for messaging the seller inside one box like in Figure 9.2 and distance them from other, unrelated text like "Back to Vendr", in this case.

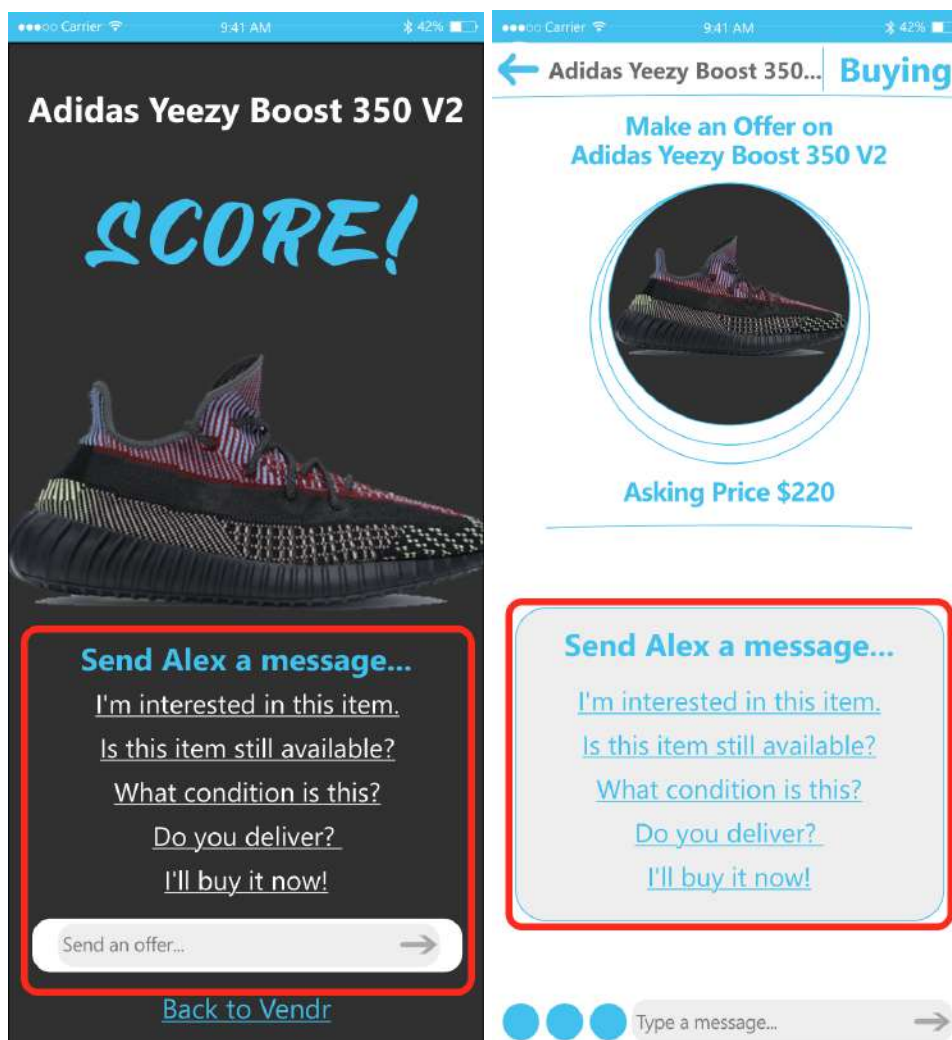


Figure 9. (from left to right): 1.) Screen shown when you click check on the product. There are options for pre-filled messages and a textbox for a custom message. 2.) Screen when you open a chosen product and have not yet sent a message to the seller. The messages are grouped here compared to (1).

While the Buying and Selling tabs are separated with a line, it is too thin to accurately show the border. The numbers that are added to represent each category are too close to one another which may lead to some user confusion. Because they are placed in the middle of the view, all the attention goes to the numbers and so at first look, users may see "84" instead. Perhaps it would be better to move the number closer to its corresponding label (ex. Buying). Additionally, all the other items in the page show the numbers to the right of the text. The number being to the left of "Selling" is *not internally consistent* with the placement of other related items.



Figure 10. This screen shows the list of items and messages that buyers are interested in. The highlighted area is supposed to work as a tabbing mechanism between the Buying and Selling point of view.

The pencil or edit icon located on the top right corner of the profile picture typically signifies that the **picture** can be edited as shown in Figure 11.3. In this case, however, clicking the edit icon allows the user to edit the rest of the profile (Figure 11.1 and 11.2). This is *not externally consistent* with other applications. If the pencil button serves as a general edit option, perhaps grouping all the profile-related information in one box and attaching the pencil icon to the corner of that box would be better. This way, the user knows that all of the information within the box can be edited after clicking the icon.

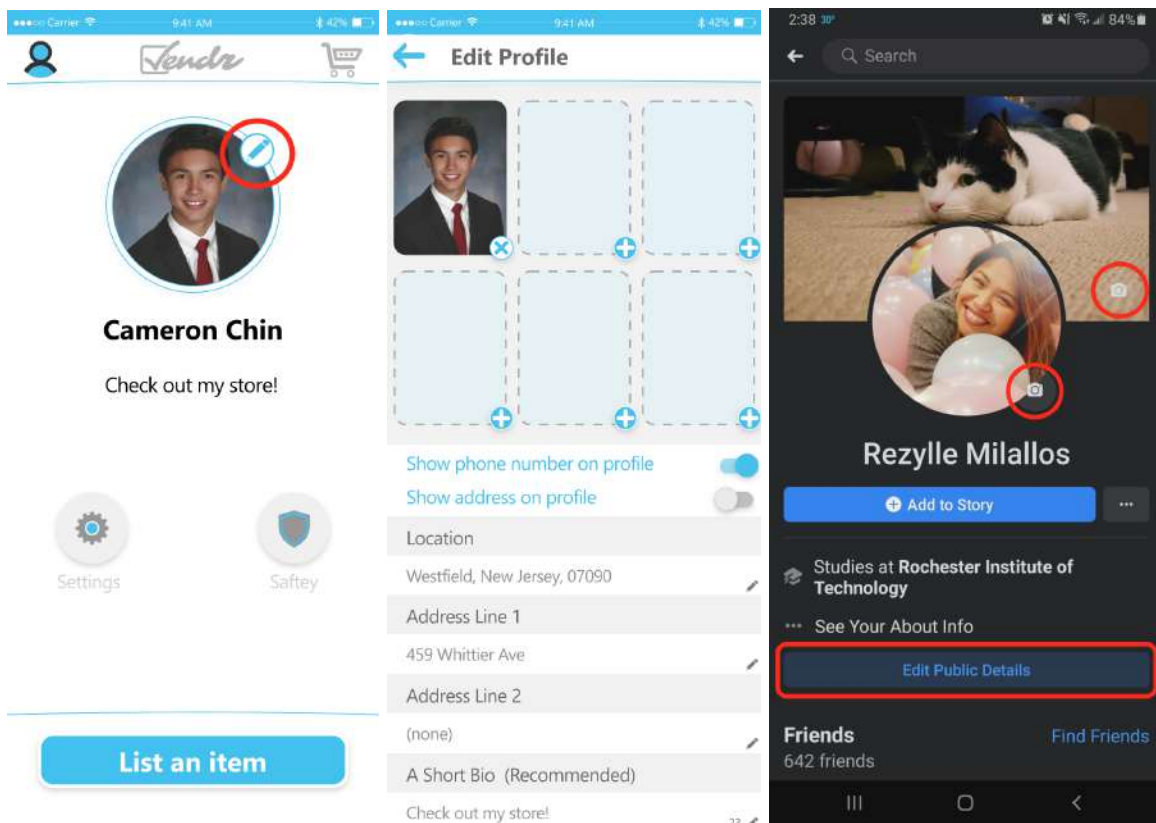


Figure 11. (from left to right): 1.) This screenshot shows the profile page of the user. When the highlighted “pencil” button is clicked, 2.) all of the information regarding the profile is shown. 3.) This is an example of a profile page on Facebook where users are able to individually edit sections of their profile so there is no confusion.

Distance and item condition (new, used, not specified) seem to be in the same group because there is no line or obvious distinction between them. New sellers may be confused about this and in turn, provide the wrong information in their listings. In comparison, we show a screenshot of eBay's listing summary in Figure 12.2 where groupings are clearly defined with ample space between the items as well as distinct headings. To enhance grouping of like items and *internal consistency*, headings could be added before the Distance, Item condition, and Categories sections similar to how the Title, Description, and Asking Price are formatted as shown in Figure 12.1.

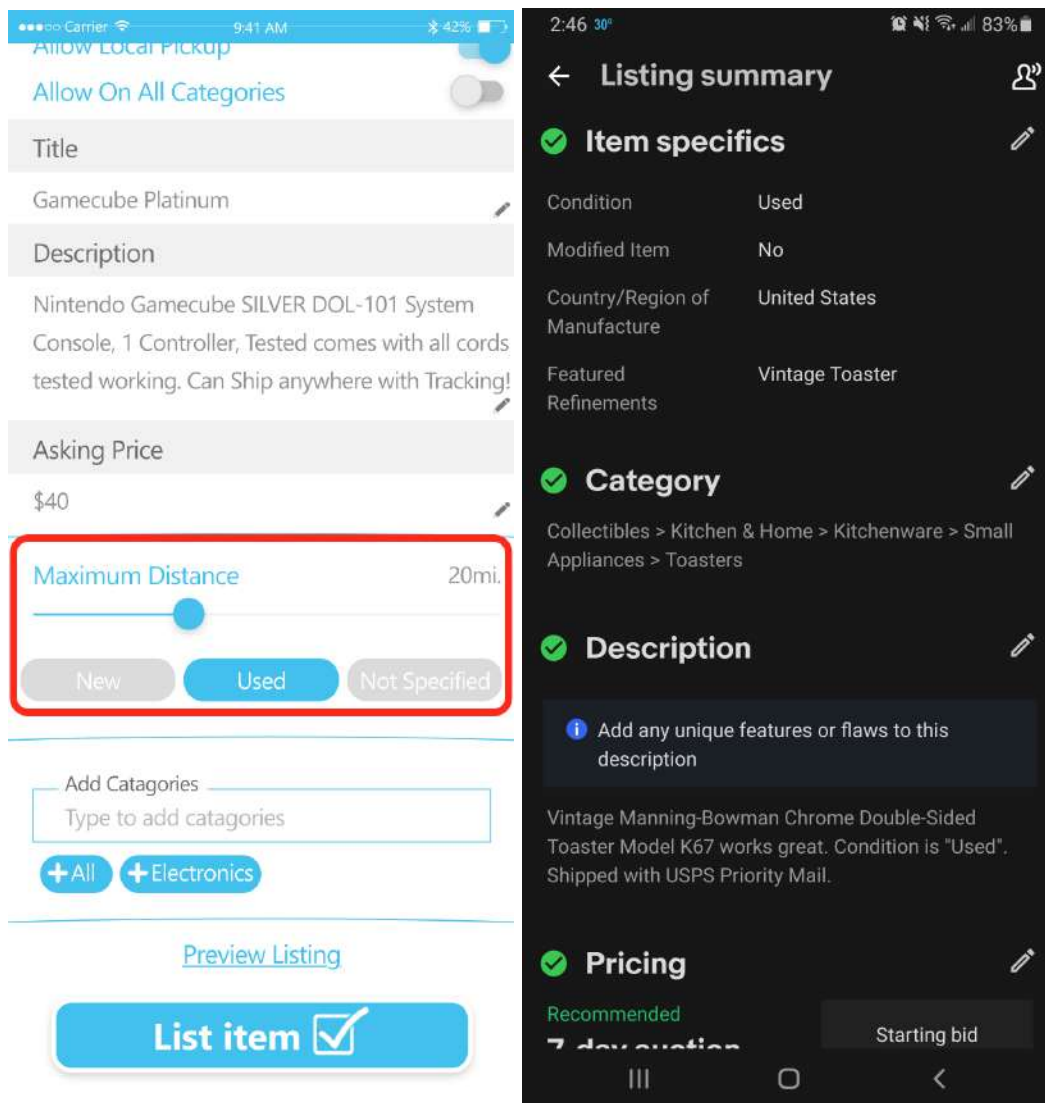


Figure 12. (from left to right): 1.) There are two highlighted sections inside the box: distance and item condition. They are, however, not separated by any line and may be confusing to the user. 2.) This is an example of a listing summary on eBay where item details are grouped together per category.

Frequently used functions optimized

Because the app is designed for use by both buyer and seller, sellers may need to have an option to list an item on the main screen. While the main screen of the app shown in Figure 13.1 is clean and optimized, it may benefit to add an additional button between the accept and reject options in the bottom bar for sellers to easily list an item.

We noticed that this option is actually made available on the web version (Figure 13.1) which is a good use of the main, center space. It may benefit Vendr to have the “List an Item” option on the main page for both web and mobile versions to encourage *internal consistency* between the two platforms.

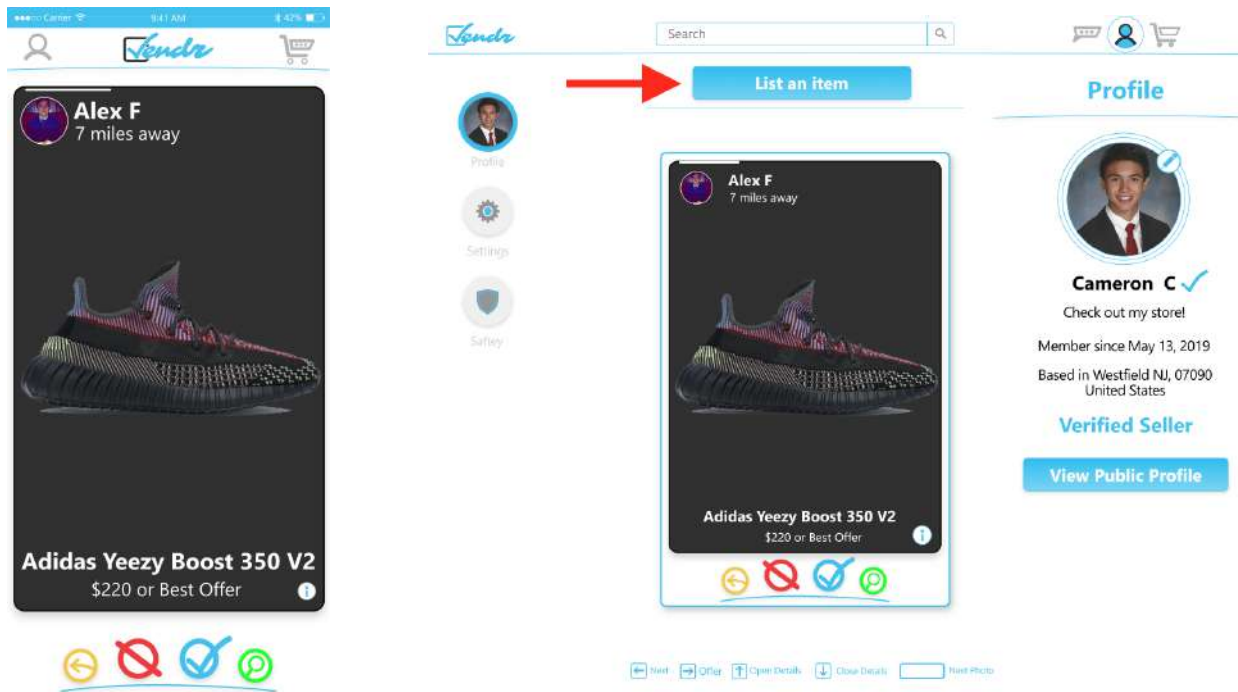


Figure 13. (from left to right): 1.) Screenshot of the main screen on the app where List an Item is not present. 2.) Screenshot of the main screen on the web version, showing an option to List an Item above the product picture.

The application currently caters to two types of users: buyers and sellers. Priorities may differ based on these user types. Currently, Vendr’s main screen offers more efficiency for the buyer. For example, sellers may want to have their listings as the main screen. Providing two options for different users may help increase flexibility and efficiency of the application. For example, both eBay has a “Selling” tab on the main screen which leads to a “main screen” more catered to a seller (Figure 14).

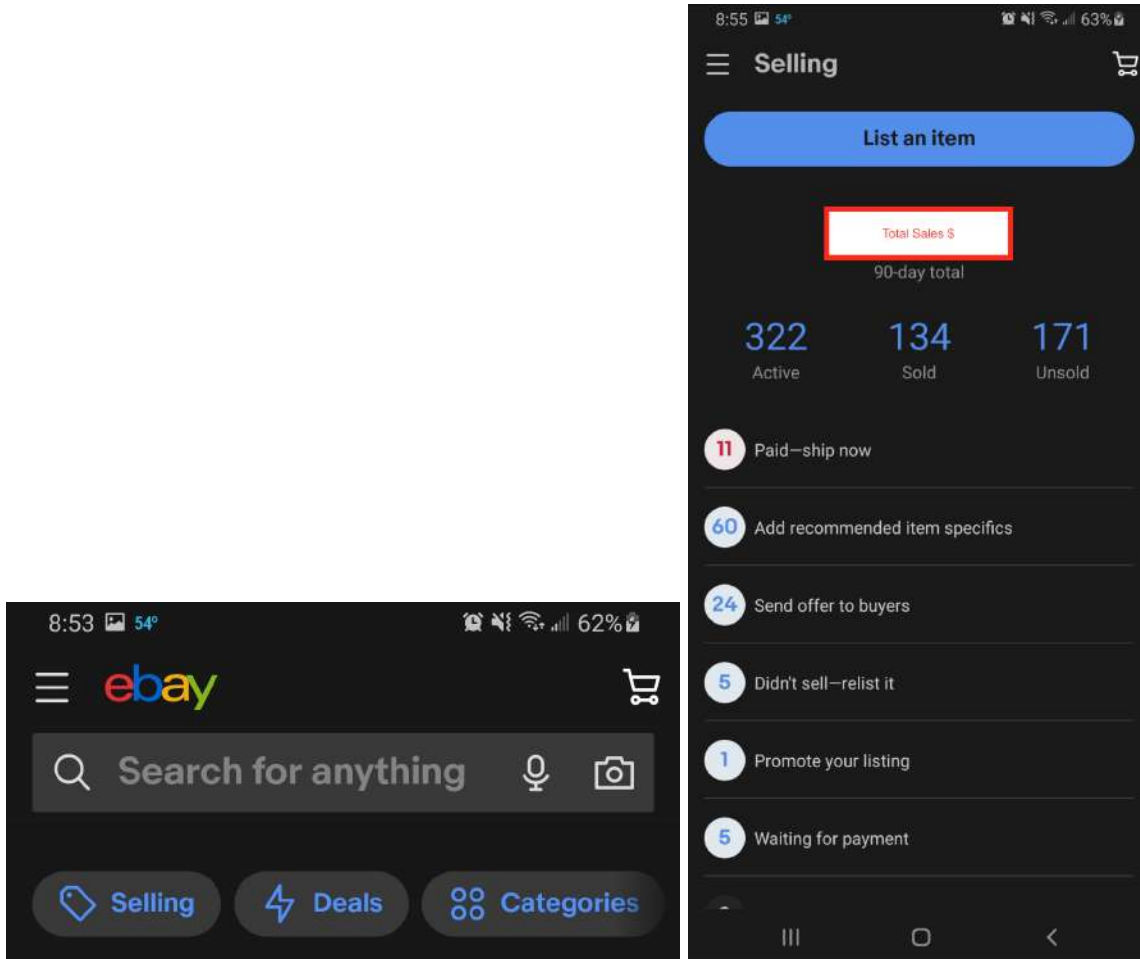


Figure 14. Screenshots showing eBay's dedicated Selling page and Selling button for better flexibility.

The profile button, the profile settings button, and the profile safety button are located on the opposite end of a page away from the other profile options shown on the right (Figure 15). These options appear after clicking the profile icon. Normally, most users would expect these to be part of a drop down under the top right profile button, but instead they are on the left side of the page and are entirely separate from the account button. Because of that, this screen is *not externally consistent* with other websites. Grouping all profile-related information may help the users focus on one area of interest and not get distracted by everything else on the page. We also suggest putting the profile information on the middle of the screen to promote *visibility*.

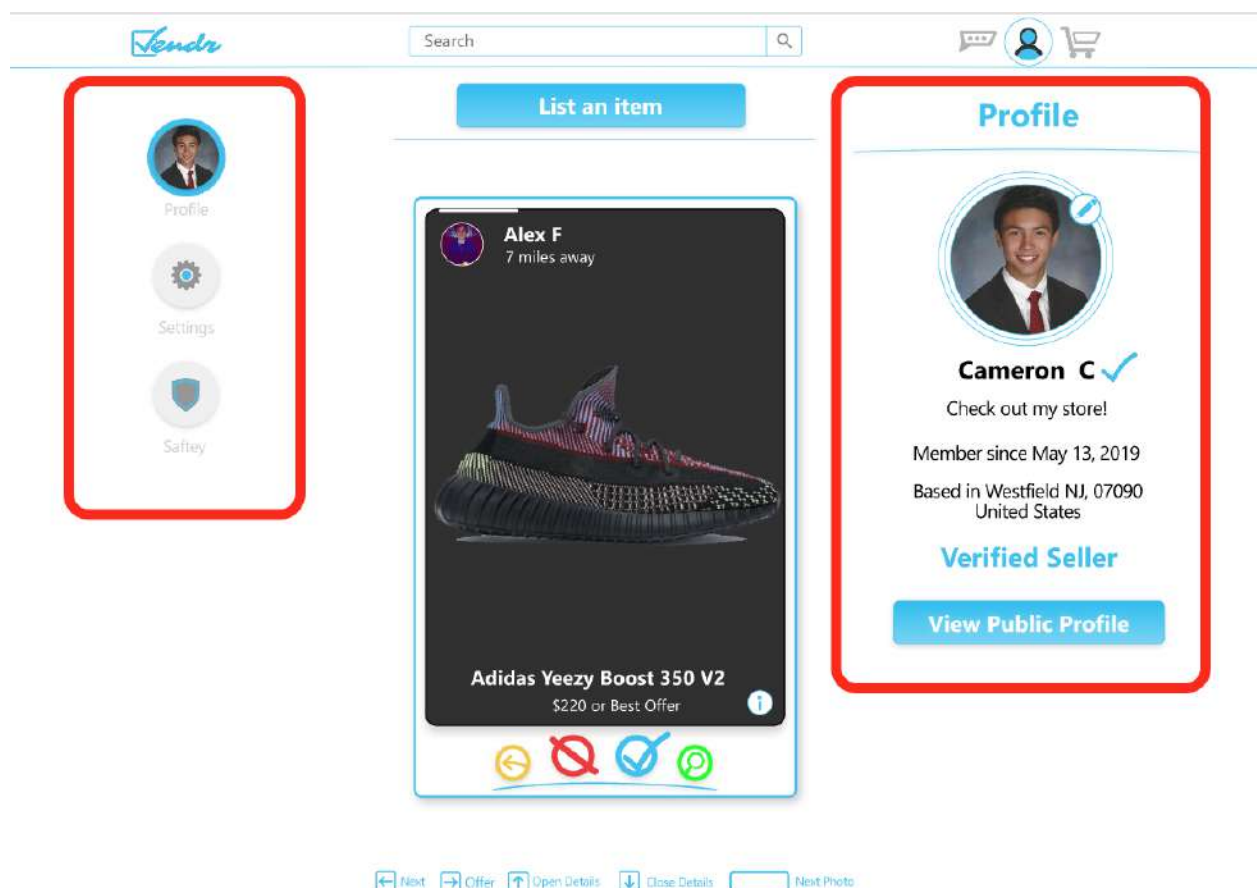


Figure 15. After the user clicks on the profile icon located on the top right hand of the screen, the information highlighted in red pops up. Additionally, information on the right changes upon clicking the settings and safety button on the left side

Speak the User's Language

The language used in this page, "Score!", conveys the idea of the buyer obtaining the item for him/herself. That is not the case in the screen shown in Figure 16, at least not yet. This may give a false impression to the buyer and may make them think that the item has already been acquired. Upon further discussion between the group, other members pointed out that they did not understand this expression at all. Perhaps it would be better to use a more universal expression similar to "Nice find!" that is more relatable and also provides *better feedback on the current state*.

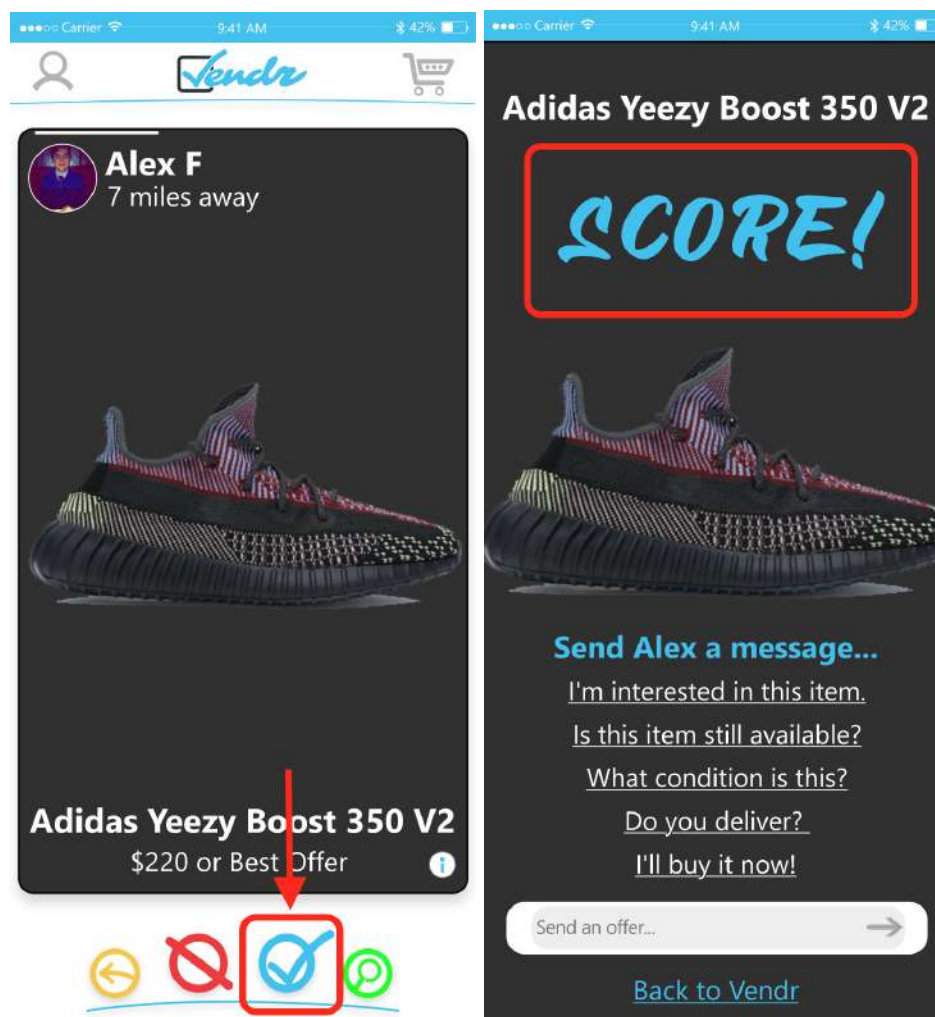


Figure 16. (from left to right): 1.) Clicking the “like” or check button shown here moves the user to 2.) where they are able to send a message to the buyer or go back to the main screen. The language highlighted, “Score”, may be confusing to users.

"Make an Offer on <insert product name>" instills the expectation of a bidding-like environment when it is simply supposed to be a label to encourage chatting with the seller. Figures 17.2 and 17.3 show similar language on eBay for a much different function, which suggests that the label is also *externally inconsistent* with other platforms.

eBay allows the buyer to make up to a certain number of offers to the seller so that the price can be negotiated between both parties. Those who are familiar with this interface, as well as other users who have a similar understanding of the "Make an Offer" label, may be confused by what is shown in Figure 17.1. We suggest removing this text so that the interface speaks more to the buyer's language and/or experience.

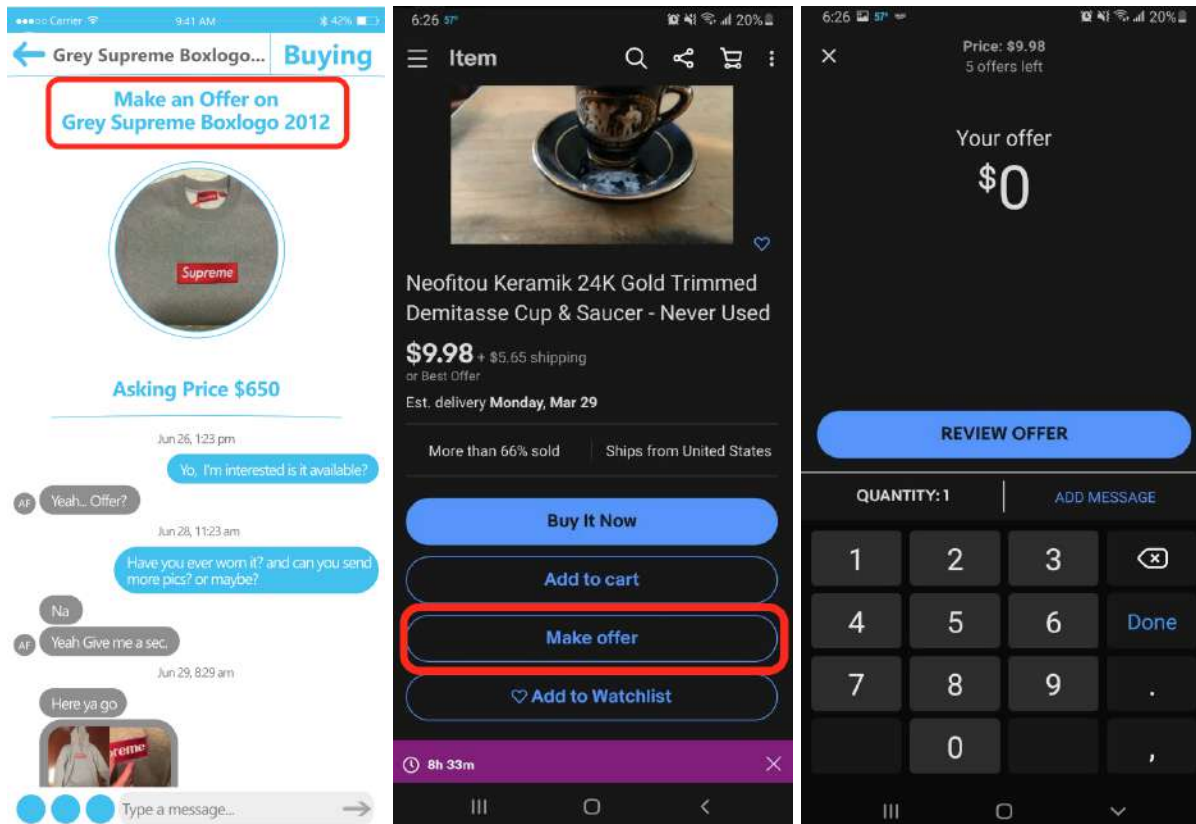


Figure 17. (from left to right): 1.) This screen shows the buyer's view when speaking to the seller. The text label highlighted in red may be confusing. 2.) This is a screenshot of an eBay listing where the buyer has the option to make an offer to the seller for a different price than what is listed. 3.) Upon clicking the Make offer button in (2), buyers are able to type in a price that will automatically be sent to the seller for review.

Perceptibility of Feedback

While the white text may be easy to read in certain kinds of pictures, it does not reflect well on other backgrounds such as the example shown in Figure 18. It is imperative that the text is visible to the user so they know exactly what the product is and how much it is. Perhaps it would be better to add an opaque box behind the text to ensure that it is visible, no matter the picture used in the background.



Figure 18. The white text highlighted does not show clearly on top of certain pictures.

It is not clear if the message (Figure 19.1) "You accepted to start a conversation with Ryan" is a system state or is a text message shown to the buyer. The current screen indicates it is being sent as a message to the buyer which may confuse them because they are unaware of the exact thought or purpose behind the message. Classifying messages as system states and differentiating from a chat perspective would reduce ambiguity. We recommend formatting this message similar to the example shown in Figure 19.2 to clearly show that the feedback is only visible from the seller's point of view.

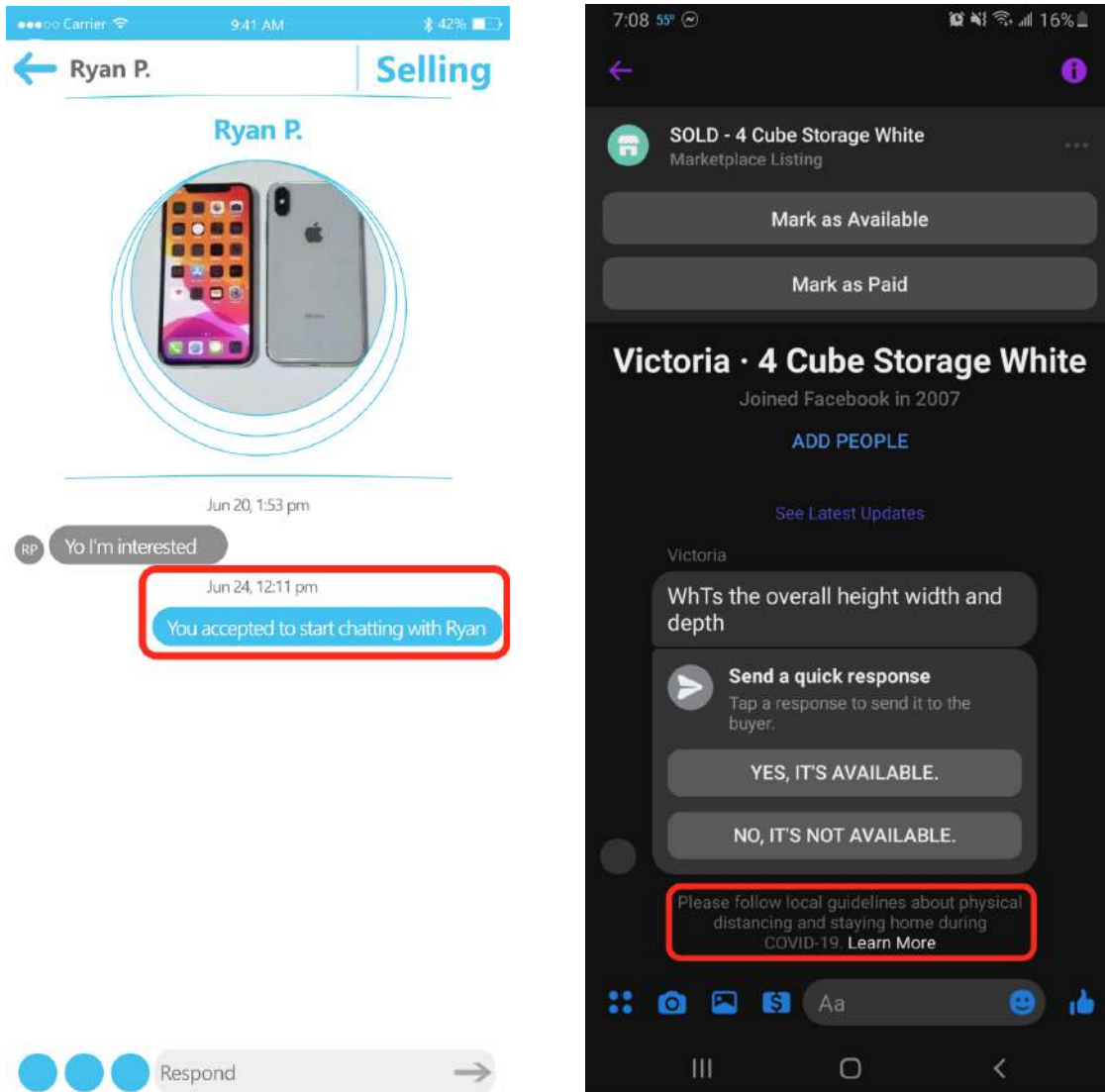


Figure 19. (from left to right): 1.) The message highlighted looks like a normal text message which may not be the original intent and may cause confusion from the buyer's end. 2.) This message interaction is taken from Facebook Marketplace where feedback information is formatted differently from a chat message.

The arrow highlighted in Figure 20.2 brings the user back to the page in Figure 20.1. This is surprising because the arrow is pointing downwards, which may lead the user to think that it should scroll down. Additionally, this is *externally inconsistent* with arrows in other systems that means "skip to bottom" or "scroll down". This may be confusing for some users who expect the details to show up when clicking the arrow. We recommend either providing additional feedback beside the arrow to indicate its use or to change its functionality for *external consistency*.

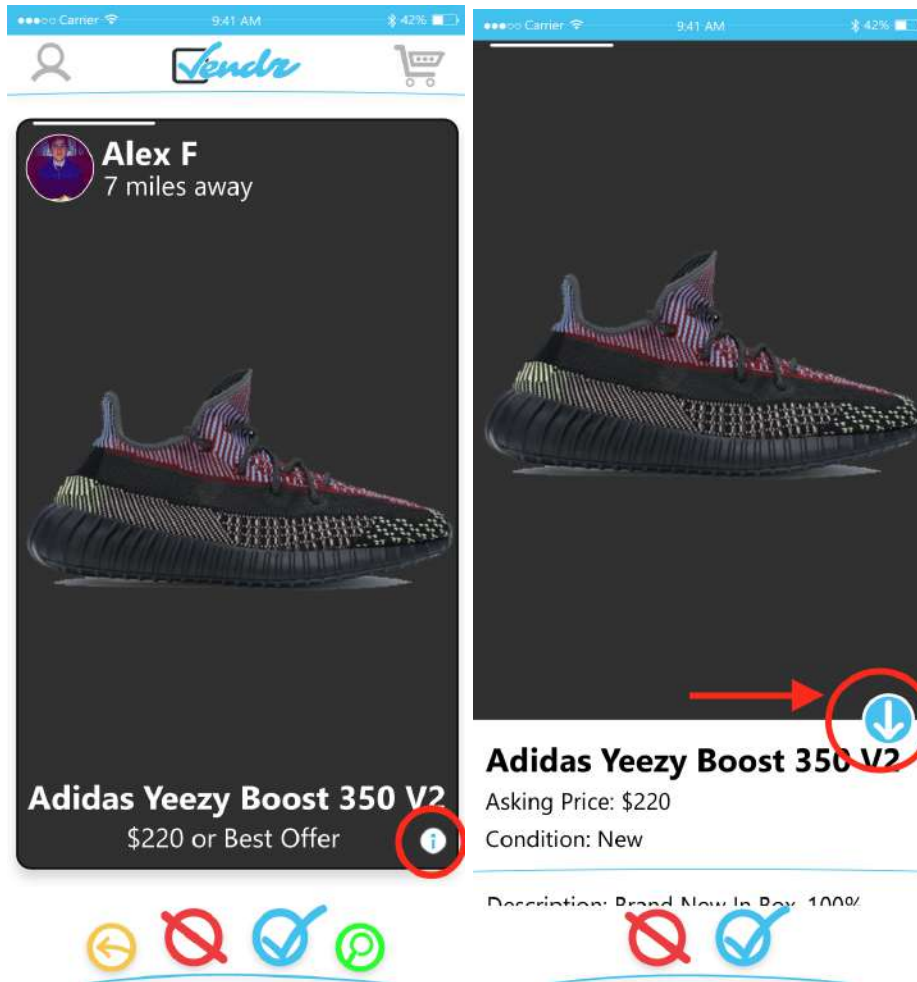


Figure 20. (from left to right): 1.) Clicking the "i" icon opens the details page of the listing. 2.) When the user clicks on the arrow highlighted, it goes back to (1) instead of scrolling to the bottom of the details section which is what is perceived by the arrow pointing down.

Perceptibility of System State

The numbers highlighted in Figure 20 seem to function as an alert for something. The confusion comes when it is listed in both “Incoming Offers” and “My Listings”. The numbers are different and the reason as to why is not apparent. It may be direct offers for buying or unread messages. For example, the numbers on the iPhone listing under “My Incoming Offers” and “My Listings” have two different values. Perhaps it would be better to pick only one group or to be more transparent on what these numbers mean. This notification, whether it is for unread messages or something else, must be understandable to project the correct system state.

These dots may also be difficult to read, especially for low vision users. The color choice of white text on a light blue backdrop contributes to this difficulty to read the numbers. We suggest making the numbers more readable or having just the dot present without a number.

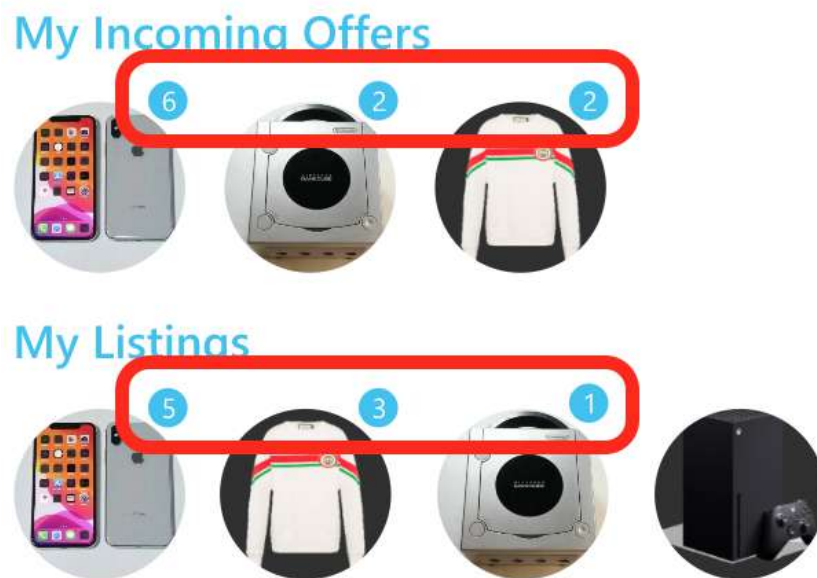


Figure 21. The representation of these dots cannot be easily understood and may be confusing to users.

The sign up screens shown in Figures 22.1 and 22.2 do not provide clear information on how many steps the user has finished and how many are left to complete. Required and optional information are also not clearly labeled (Figure 22.2), which may be confusing for users who are not familiar with two address lines. The design of the “Next” button signals that it is active and that the user can continue on with the sign up process. This may be confusing especially for those who look away from the app during the sign up process and are immediately drawn to the “Next” button upon review.

We recommend adding additional information on the progress and text requirements similar to the sample shown in Figure 22.3. Additionally, it would be helpful if the “Next” button is inactive until after all required information has been filled out.

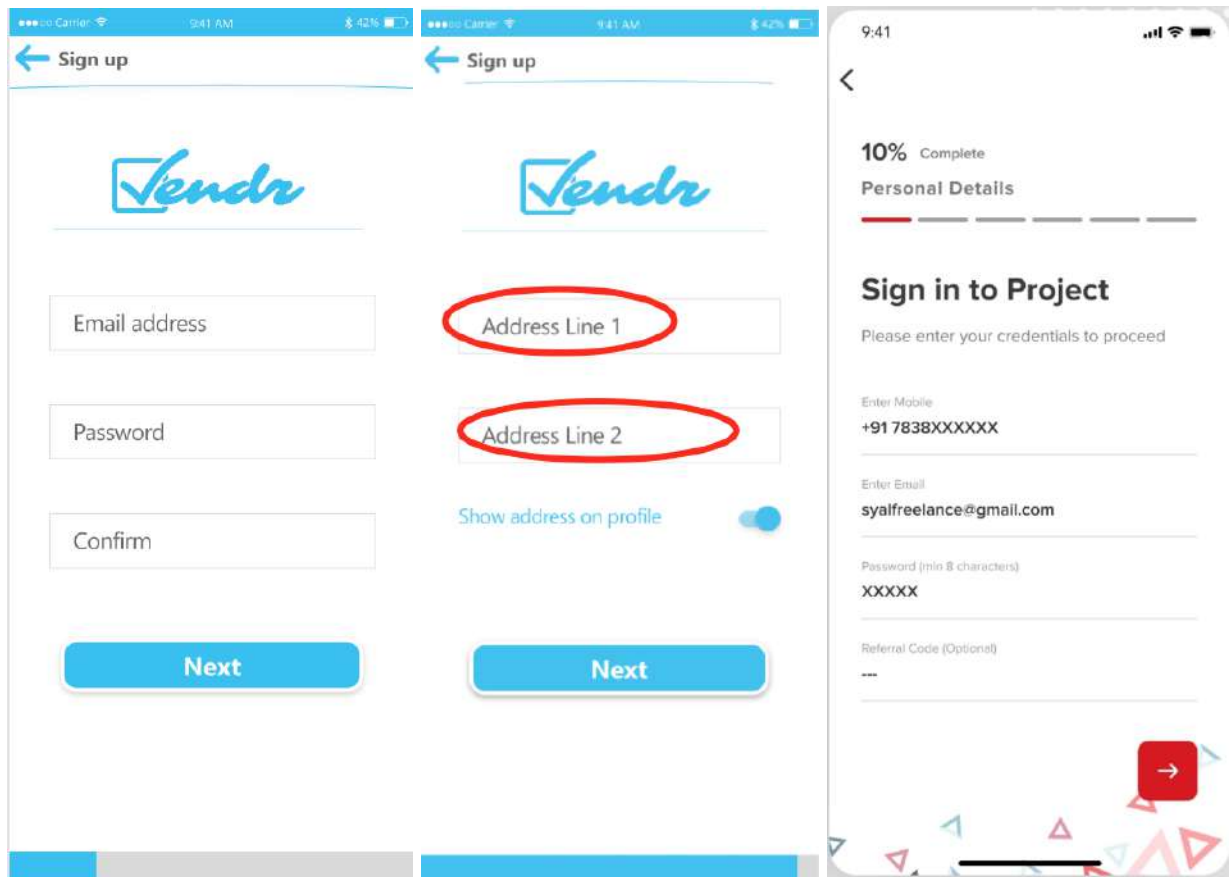


Figure 22. (from left to right): 1.) Vendr’s sign up page with the progress bar on the bottom. 2.) A sample application with a more informative progress bar as well as labels on the fields (e.g. “min 8 characters” beside “Password”)

If there are "n" numbers of users interested in buying a particular item and the item was sold to one of the people, the system does not notify the interested buyers of this change. Figure 23.1 shows the buyer's perspective of all items they have sent a message on. To make it more user-friendly for the buyers, we recommend giving interested ones notification of sold items similar to the sample shown in Figure 23.2 which was taken from Facebook Marketplace.

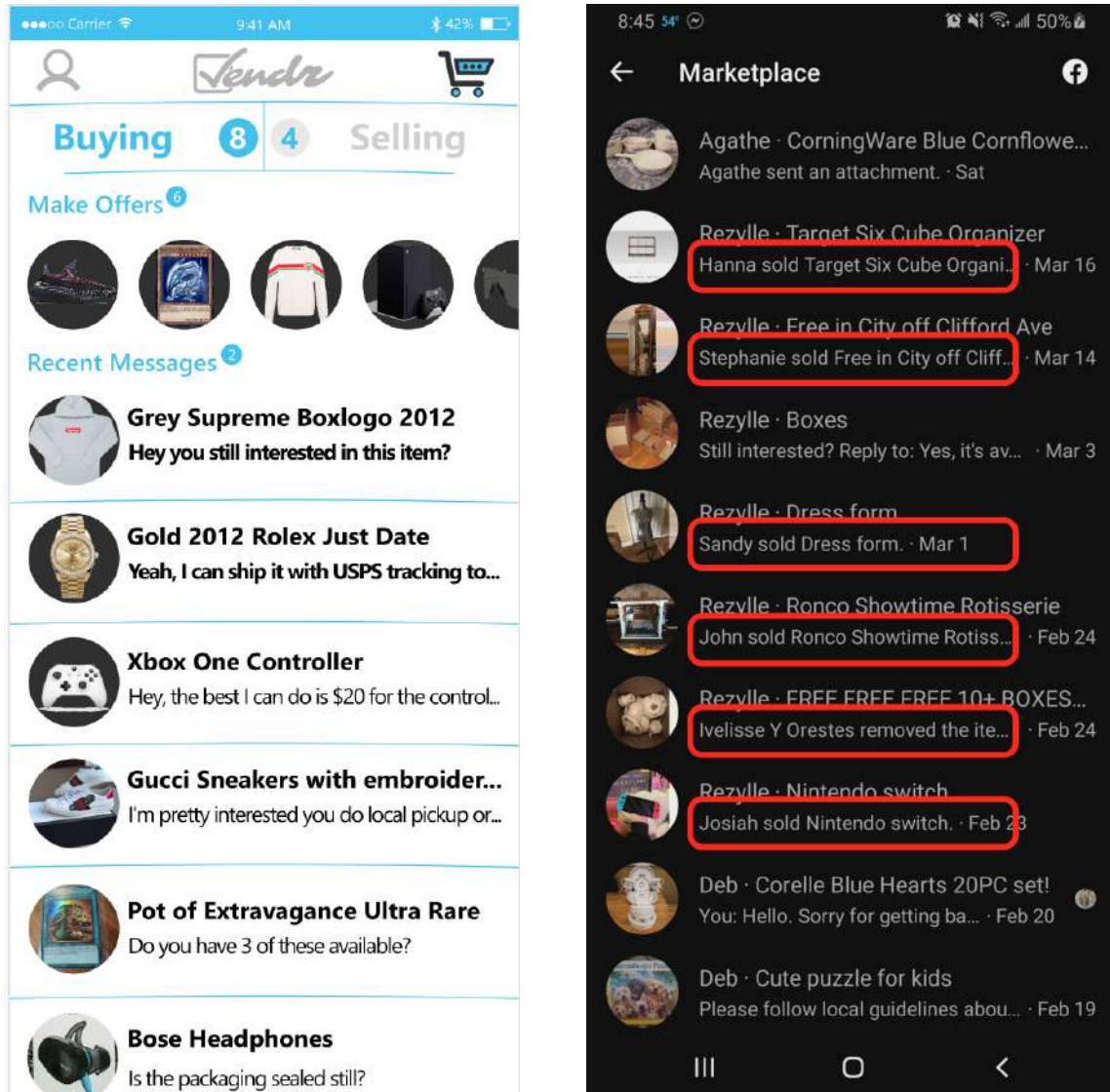


Figure 23. (from left to right): 1.) Messages from the buyer's point of view on Vendr do not show any indication of the item being sold or removed. 2.) Facebook Marketplace notifies the buyers of the item's current status as shown in the highlighted boxes.

Internal Consistency

When the picture icon is clicked in other pages in the app, it brings the user to the page where there are more details about the item (Figure 24). However, in the screen shown in Figure 25, clicking the picture of the item instead shows the picture of the buyer which is not internally consistent with the rest of the pages.

We suggest improving the links such that it has the same functionality throughout the application. The activity in Figure 24 may be more ideal since seeing the profile picture of the buyer may not contribute to the actual transaction.

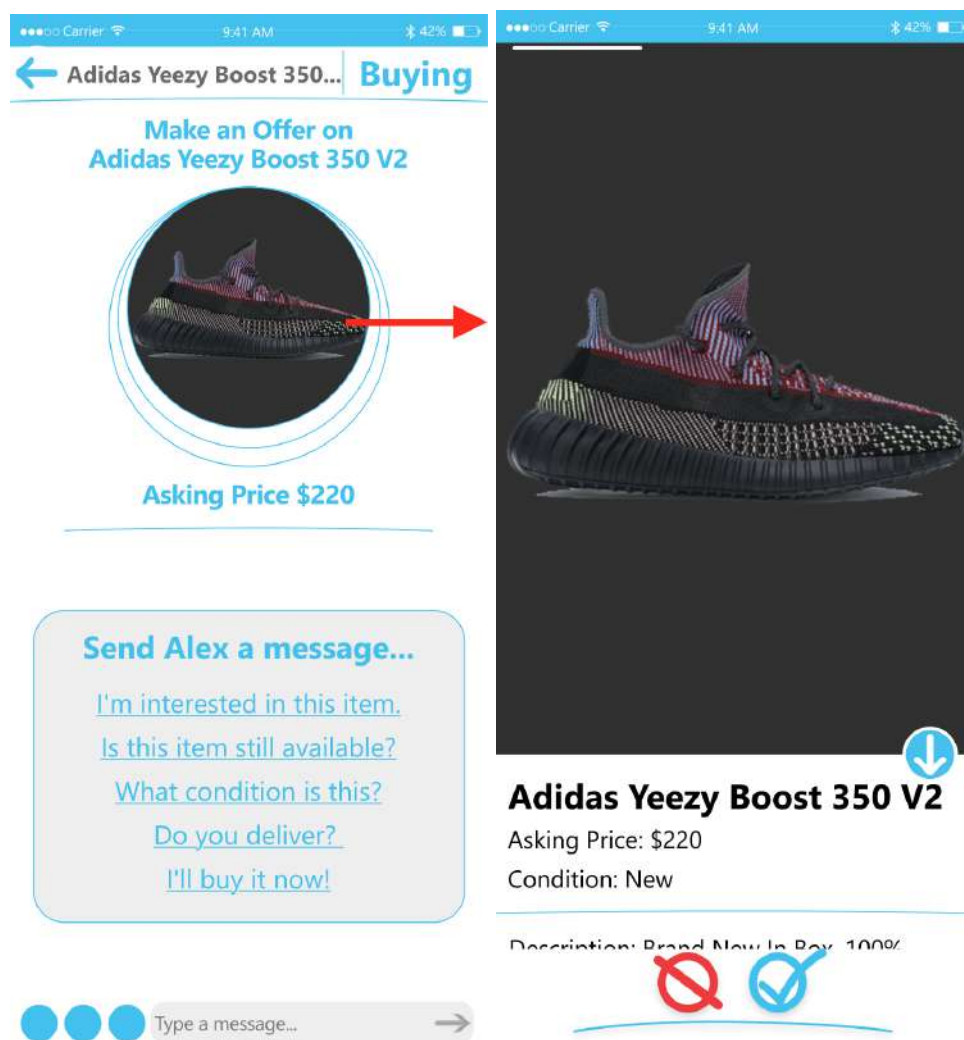


Figure 24. Clicking the shoes icon brings the user to the detail page of that product.

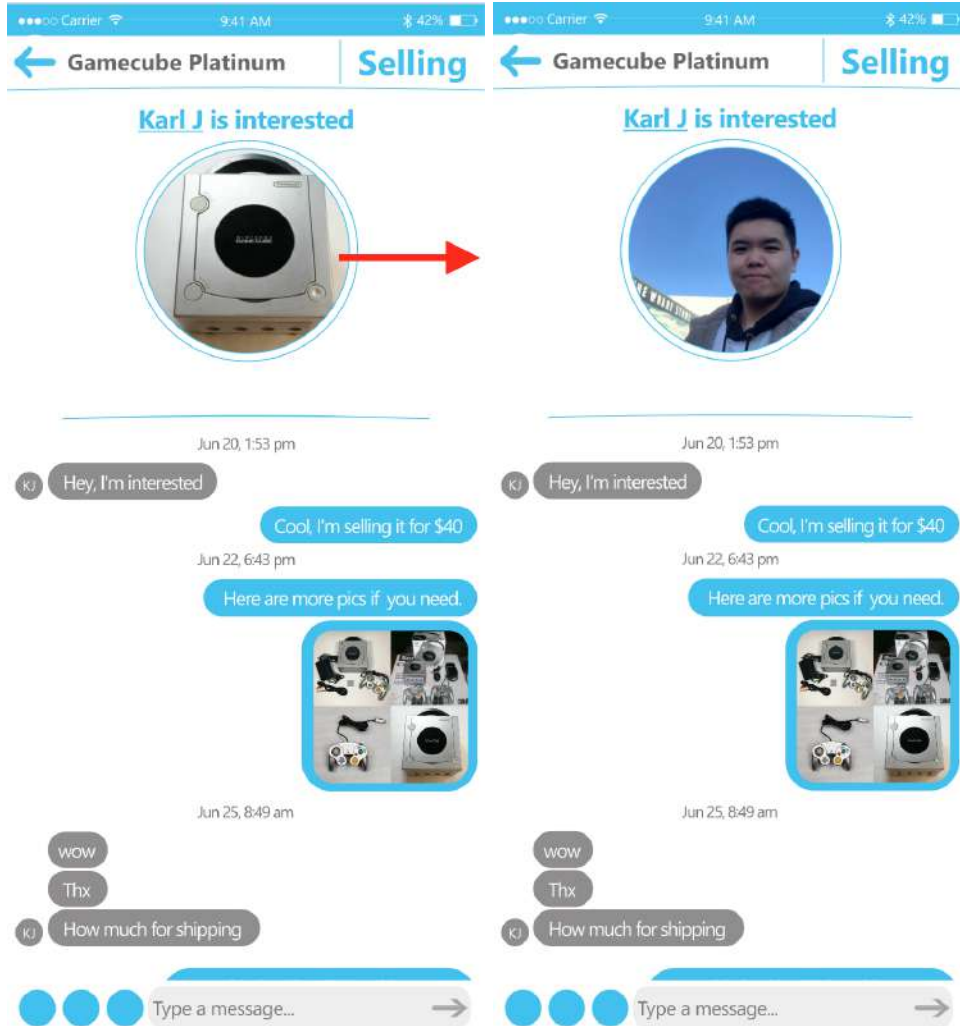


Figure 25. Clicking the shoes icon brings the user to the detail page of that product.

The pencil icon on the top right corner of the product picture (Figure 26) suggests that the photo can be edited. While the function of this icon has not yet been added in the wireframes, it must be noted that a similar icon is presented in the profile page as shown in Figure 11. These like icons must follow the same functionality for internal consistency.

We recommend considering the following questions: Are there any more changes the user can do for the listing in this page? Is it only supposed to change current image or upload new/additional ones? If not, is there a way users can alter the description of the listing?

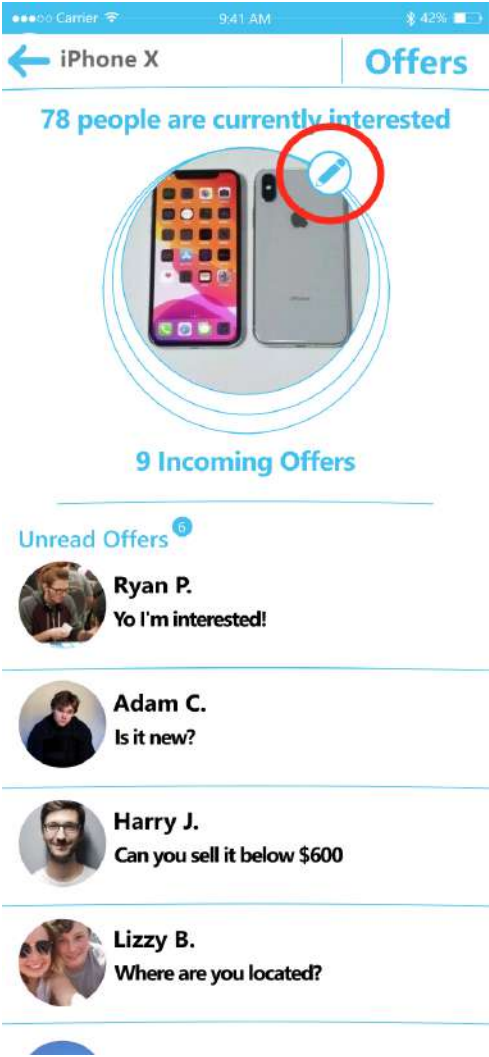


Figure 26. The pencil icon suggests an editing feature of some kind. The final functionality of this icon must be similar to the one in Figure 11 because they are formatted similarly. Users will expect internal consistency between the two icons.

Appropriate Selection of Design Patterns

Consider a step-by-step approach when listing a new item. A wizard design pattern may be especially helpful for new sellers and may also make each page simpler and less overwhelming (see Figure 27). Additionally, the sign up page shown in Figures 22.1 and 22.2 uses a multi-step wizard but the listings do not which suggests *internal inconsistency*.

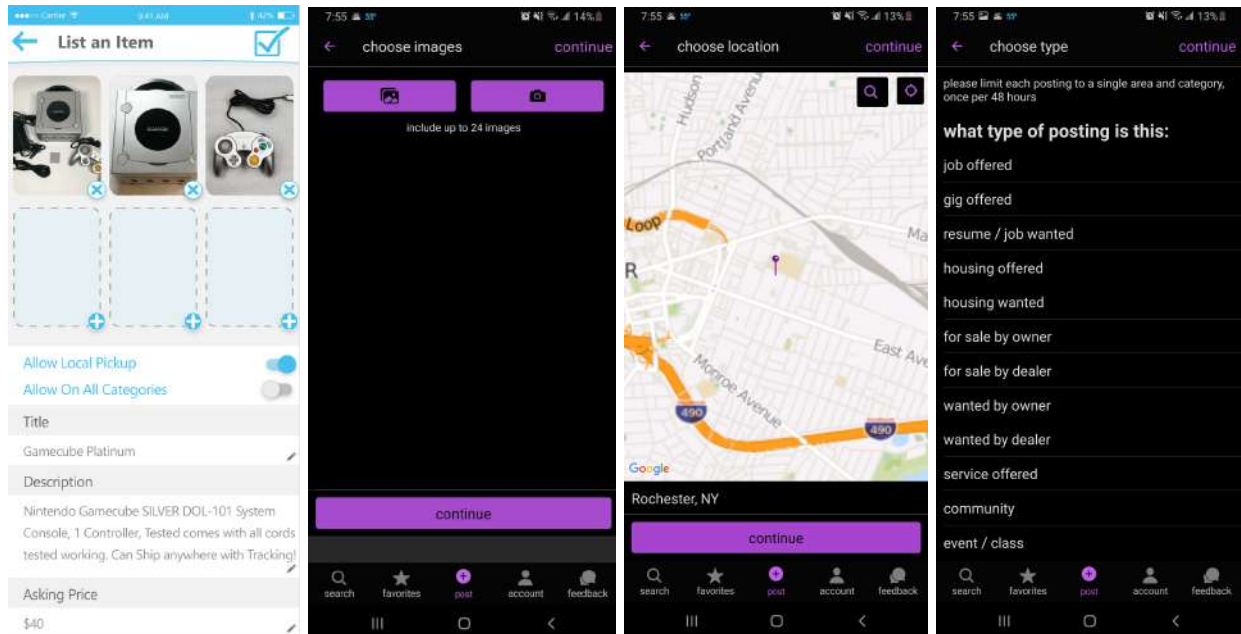


Figure 27. Vendr's "List an Item" page lets the user add all the information in one page. The images to the right shows Craigslist's wizard approach on posting new items.

On the web version, the "Sign Up" button is styled as a clickable link but actually functions as a drop down button which allows users to select whether an account is for business or for personal use only (Figure 28). There is no indication that the button is a drop down and so users may be thrown off by this action. We recommend either adding an arrow that clearly shows the button is a drop down for *feedback visibility* or giving the users the option to choose between the two accounts in the following page.

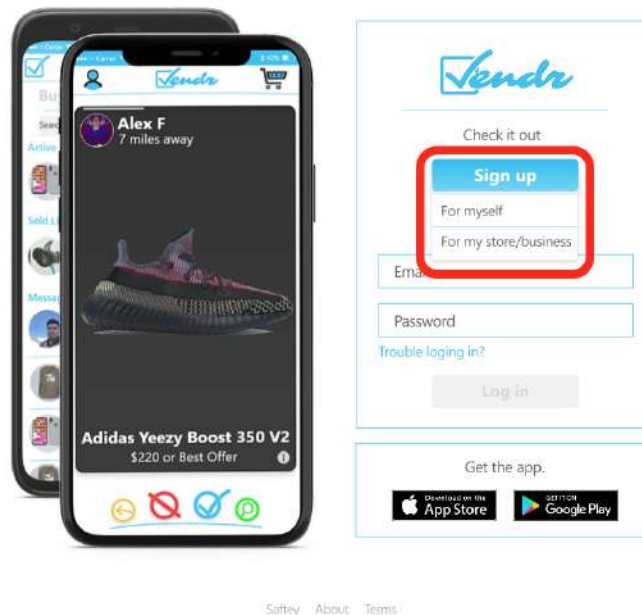


Figure 28. The highlighted sign up section works as a drop down but is not apparent based on its design.

Item conditions highlighted in Figure 29 are filter options where users can pick zero or multiple choices (e.g. “Used” and “New”, “New”). The buttons do not adequately indicate if the user can choose multiple items.

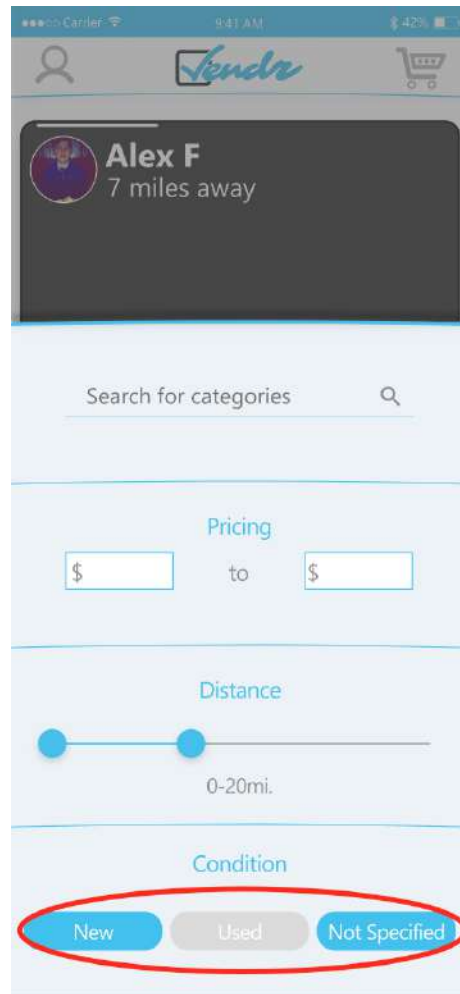


Figure 29. Used is selected here but the UI design seems to imply that “Used”, “New”, and “Not Specified” can all be selected simultaneously for an item.

Minimize Knowledge In The Head

While the list shown in Figure 30.1 provides easy access to the user's chosen or accepted items, it might be helpful to add the prices on these items below the picture so that users don't have to click on the item to recheck the prices, thereby removing an additional step and enhancing memory recall of important items. Figure 30.2 shows an example of this behavior in the Facebook Marketplace where prices of items are clearly displayed below their pictures for easy browsing and comparison.

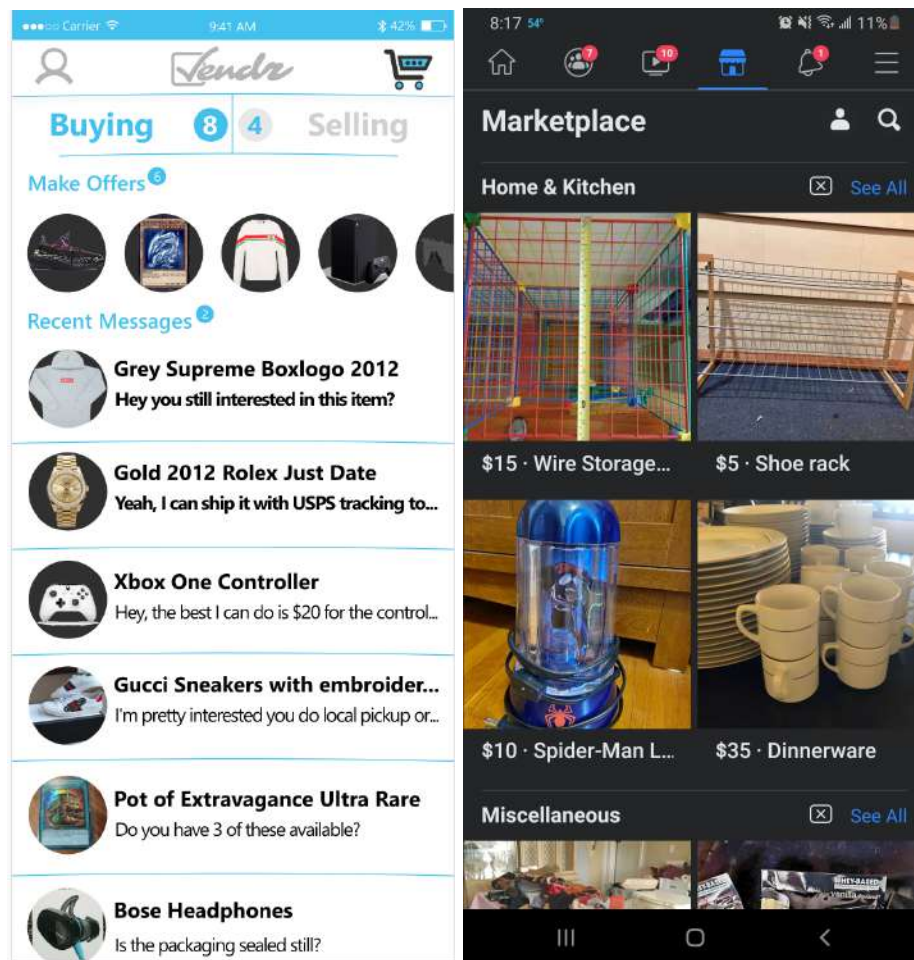


Figure 30. (from left to right) 1.) The items for sale are shown but their prices are not, making the user have to remember what the current offers/deals are at all times. 2.) Screenshot from Facebook Marketplace showing prices of the items clearly displayed below their pictures.

User Control and Freedom

On the same screen shown in Figure 27 above, there is no option to remove items from that list of items that the users are interested in. Similarly, there is no option to easily remove items from the seller's point of view (Figure 31). This limits options for users who may be interested in and click multiple options of the same items (hoping to track the price, for example). It may benefit the application to provide a way to remove an item from the saved list or from the store (seller's side). It may also help declutter the messages if an option to delete or archive is made available.

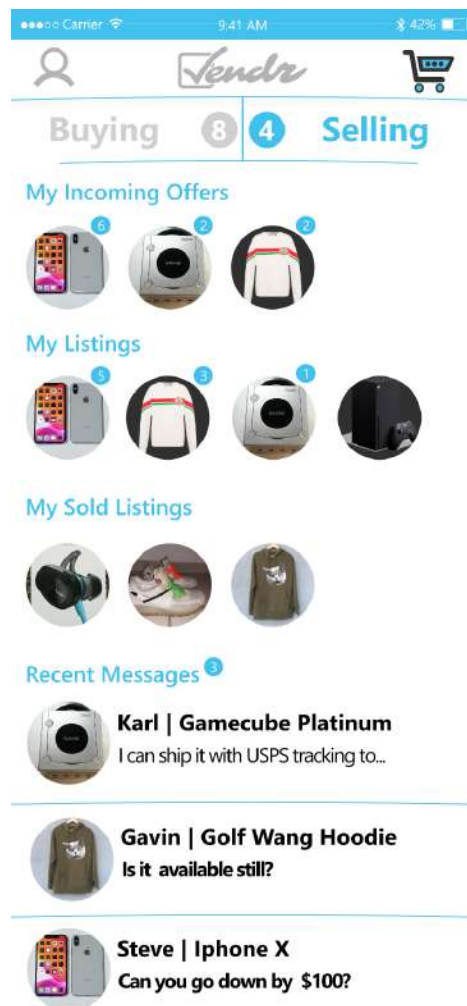


Figure 31. No indication of an option to easily remove an item from the seller's point of view.

Error Recovery and Error Prevention

There is no other alternative to get out of the screens in Figure 32.1 and 32.2 besides the back button. However, if the user clicks on the back button, will it automatically save the listing as a draft or delete everything? It is not clear based on the prototype at this point.

We suggest allowing the user to cancel the action by either adding a cancel button in the bottom or a prompt to confirm discarding the listing/saving as a draft, like Facebook does (Figure 32.4) for **error prevention**. As well, adding a function to automatically save the listing in case the user accidentally goes back to the previous page like eBay (Figure 32.3) will help with **error recovery**.

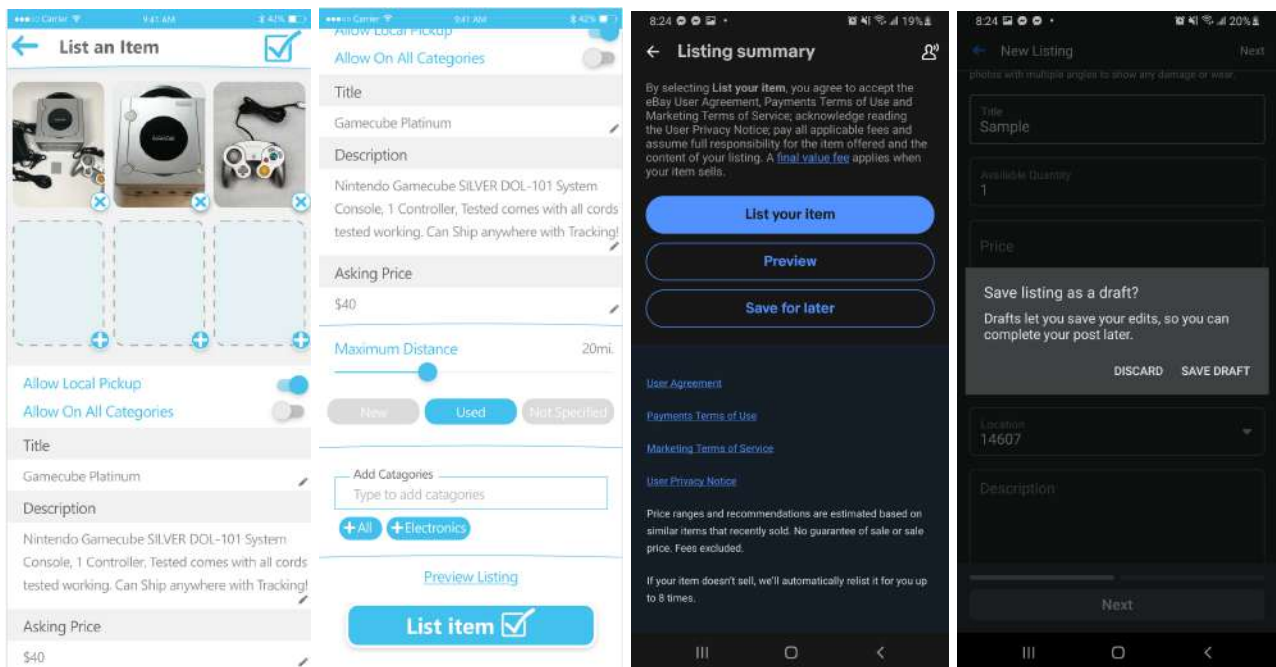


Figure 32. (from left to right) 1.) The back button in the upper left is the only way to leave, but nothing on this page would suggest that the listing would be saved if this were the case. 2.) Screenshot of the bottom of the screen for the same page as (1). 3.) Bottom of the screen on eBay allowing users to save for later. 4.) Facebook asks the user to confirm the back action when on the listing page.

Novel interactions easily learned and recalled

The search option is currently restricted to categories (Figure 33). This type of search is new to the user and as such, they may need some guidance on what categories are available and what to search for. Those who may not pay attention to or notice the label, "Search for categories", may not realize this restriction and become frustrated. Perhaps it would be better to show/add categories below the search box to encourage learning of this atypical functionality.

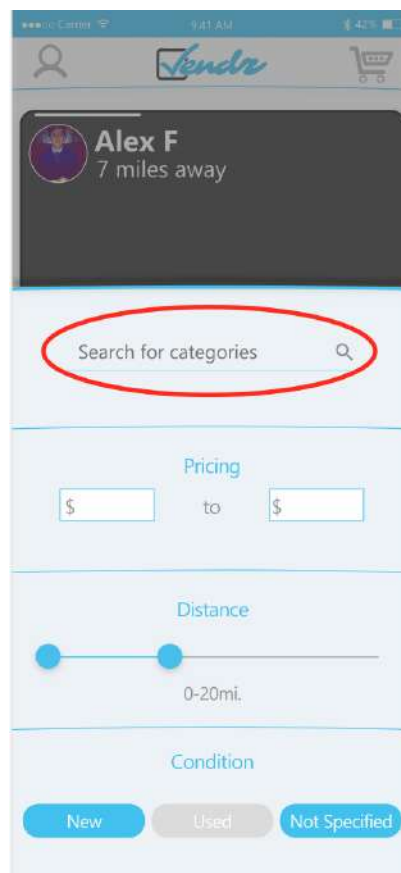


Figure 33. The search bar prompts the user to search for categories without guidelines on what categories are available in the app.

Help & Documentation

There is currently no screen that focuses on help and documentation. This could be added to the Profile page (Figure 34) and may contain information on app navigation, customizations, etc.

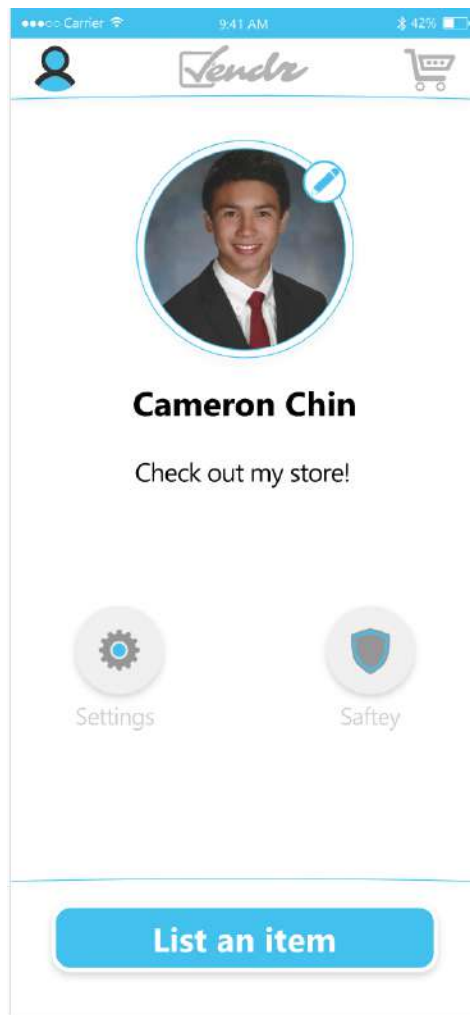


Figure 34. The profile page only contains profile settings and security information. This is prime real estate to put help and documentation services for users.

Defect Listing

The table below lists the usability issues that were identified during the heuristic evaluation. The sorting process was guided by determining the impact on the user's experience (e.g. Can they not continue because of this problem? Or is it just an annoyance?), familiarity of context (e.g. Is it something you've seen already or is it new? How easy is it to start using the product?), and overall accessibility for different users (e.g. from beginners to experienced buyers and sellers). The group worked together on the defect listing and unanimously agreed on the ratings.

Heuristic Category	Total Violations
External Consistency	3 Violations
Widgets and Labels near Targets	6 Violations
Group like widgets/functions	2 Violations
Frequently Used functions optimized	1 Violation
Perceptibility of Feedback	2 Violations
Speak the Users Language	2 Violations
Perceptibility of System State	2 Violations
Internal Consistency	3 Violations
Appropriate selection of design patterns	2 Violations
Minimize Knowledge in the head	1 Violation
User Control & Freedom	1 Violation
Error Recovery & Error Prevention	1 Violation
Novel Interaction easily learned and recalled	1 Violation
Help and Documentation	1 Violation

The following scale was used to rate the severity of the violations with 5 being the least severe and 1 being the most severe:

1. Critical
2. Needs Addressed
3. Problematic
4. Slightly Problematic
5. Not critical

Title	Heuristic Violation	Rating
Because the app is designed for use by both buyer and seller, sellers may need to have an option to list an item on the main screen.	Frequent Functions Optimized	1
While the white text may be easy to read in certain kinds of pictures, it does not reflect well on other backgrounds such as the example shown in Figure 17.	Perceptibility of Feedback	1
Distance and item condition (new, used, not specified) seem to be in the same group because there is no line or obvious distinction between them.	Group like widgets/functions	1
If there are "n" numbers of users interested in buying a particular item and the item was sold to one of the people, the system does not	Perceptibility of System State	1

notify the interested buyers of this change.		
The search option is currently restricted to categories. This type of search is new to the user and as such, they may need some guidance on what categories are available and what to search for.	Novel Interactions easily learned and recalled	1
There is currently no screen that focuses on help and documentation. This could be added to the Profile page	Help and Documentation	1
The pencil or edit icon located on the top right corner of the profile picture typically signifies that the picture can be edited	Group like widgets/functions	2
It is not clear if the message (Figure 18.1) "You accepted to start a conversation with Ryan" is a system state or is a text message shown to the buyer.	Perceptibility of Feedback	2
When the picture icon is clicked in other pages in the app, it brings the user to the page where there are more details about the item	Internal Consistency	2
"Used" and "New" are options from which the user can choose either or both,	Match between system and real world	2

the system state does not adequately indicate if the user can locate their functionality appropriately.		
The edit/pencil icon shown along the white textbox is too far from the related text and too close to the next text below it	Widgets and labels near targets	2
This textbox is shown underneath other choices for messages. It is not clear whether or not the prewritten message will automatically be sent or if it will just populate the textbox below it	Group like widgets/functions	2
There is no other alternative to get out of the screens in Figure 27.1 and 27.2 besides the back button.	Error Recovery & Error Prevention	2
"Make an Offer on <insert product name>" instills the expectation of a bidding-like environment when it is simply supposed to be a label to encourage chatting	Speak the Users Language	2
The sign up screens shown in Figures 20.1 and 20.2 do not provide clear information on how many steps the user has finished	Perceptibility of System State	2

and how many are left to complete.		
On the web version, the "Sign Up" button is styled as a clickable link but actually functions as a drop down button which allows users to select whether an account is for business or for personal use only	Appropriate Selection of Design Patterns	2
The language used in this page, "Score!", conveys the idea of the buyer obtaining the item for him/herself.	Speak the Users Language	3
In the web version, the "X" button used to close out the pop ups from Incoming Offers, Active Listings, and Sold Listings is in the corner of the screen which is nowhere near the actual box it is meant to cancel.	Widgets and labels near targets	3
The numbers highlighted in Figure 19 seem to function as an alert for something. The confusion comes when it is listed in both "Incoming Offers" and "My Listings"	Perceptibility of System State	3
While the list shown in Figure 26.1 provides easy access to the user's chosen or accepted items, it might be helpful to add the prices	Minimize Knowledge in the Head	3

on these items below the picture so that users don't have to click on the item to recheck the prices		
The pencil icon on the top right corner of the product picture (Figure 23) suggests that the photo can be edited.	Internal Consistency	3
The application currently caters to two types of users: buyers and sellers. Priorities may differ based on these user types. Currently, Vendr's main screen offers more efficiency for the buyer.	Flexibility and Efficiency of Use	4
Consider a step-by-step approach when listing a new item. A wizard design pattern may be especially helpful for new sellers and may also make each page simpler and less overwhelming	Appropriate Selection of Design Patterns	4
The login page in Vendr shows the email address and password on different screens	External Consistency	4
On the web version of Vendr, the "Email" part of the login field can be changed to "Phone" by	External Consistency	4

clicking on a button inside the text box		
The profile button, the profile settings button, and the profile safety button are located on the opposite end of a page away from the other profile options shown on the right	Frequent Functions Optimized	4
While the Buying and Selling tabs are separated with a line, it is too thin to accurately show the border.	Group like widgets/function	4
Logos on the taskbar or near menus typically allow users to go back to the main page. However, the logo on the top right corner of the screen shown in Figure 6.1 does not do anything	External Consistency	5

Conclusion

Overall, the product is well-designed for the use case of being a Tinder-based and Ebay-styled e-commerce platform. Users are able to simply swipe and accrue potential items or offers and can quickly list and/or show interest in listed items. Buyer and seller interaction seem straightforward for intermediate to experienced users, but may be confusing for beginners. We noticed the most room for improvement within the navigation between both buying and selling options is important

During the usability testing, we will be seeing how users of different priorities (buyers vs sellers) and skill levels will interact with the application. As such, we will be looking at the overall app navigation as well as the details between the buyer and seller point of view, the intuitiveness of the application for new users, and adaptability of novel and/or unique interactions (like the search for categories option).