

## Problem:

Currently, there is no joint application that allows members of Northeastern University community that allows the members to swap, buy, and sell items within the community. There exists a Facebook Group (Northeastern Marketplace), that deals with selling and buying items. But, so far, there isn't a system in place to swap items apart from external websites or attending meet-ups. Some of the sites and meet-ups that support swapping are: Boston Craigslist, Swap Madness, and Revere Swap N Shop.

Though there are existing systems in place, our system will address the following issues:

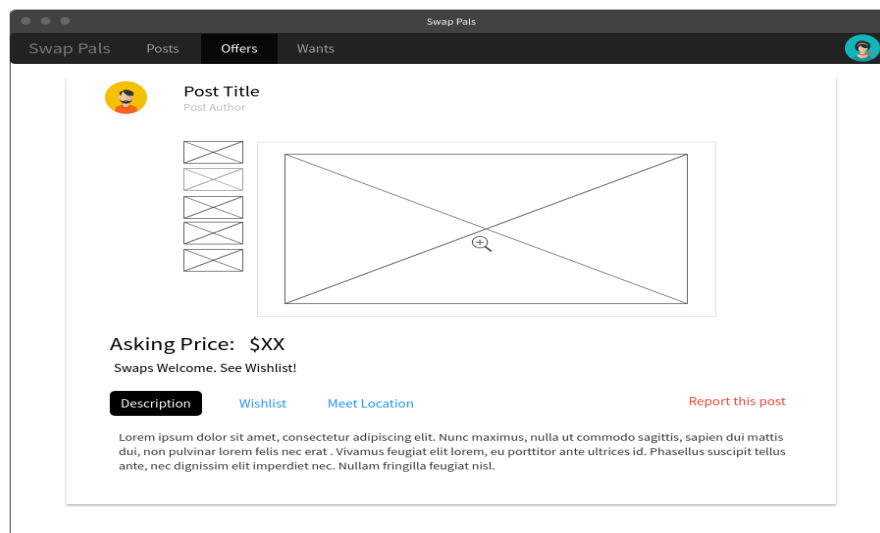
- **Single application that combines swapping, buying, and selling.**  
The main idea of our web app is to have swap, buy and sell options in one place.
- **Trust**  
Since the target users are members of our university, it facilitates trust as it is a small knit community. Also the swaps can take place on-campus as the members are familiar with the location. Furthermore, it is futile to post fake items as the swaps and purchases are done in person.
- **In the case of meet-ups, the user does not have prior knowledge of all the items available.**  
Before deciding on swapping or buying an item, the user can browse through all the available items on the web app based on his/her needs. In the case of swap, the user is aware of what item to bring in order to make a deal.
- **The past behavior and identity of the users is unknown in Facebook groups.**  
In our web app, each user is given a profile which contains a trust score that is based on the ratings given by other users on the basis of past transactions.
- **No clear set rules governing the equivalence of the swap.**  
In our web app, if there is a post where the suggested price or swap is higher than the value of the item in the current state, other users can flag that post. After a certain number of flags, the post is hidden and the seller is notified to reduce their price in order to make their post visible again.
- **Old posts are not taken down**  
In our web app, each post has a lifespan of 10 days. Just a day before the post expires, the poster is notified that their post will be expiring and if they would like to keep it active for additional 10 days. This option to renew can be used 2 times for each post. After the post expires, it is removed and will not be visible to anyone.

## Target users

Members of the Northeastern University community (students, staff, alumni, professors)

## Solution

Our solution to the existing systems is to build a web app that will combine second-hand sale and swap for the student community. This app will be restricted to only people with valid Northeastern .edu accounts. In our app, the seller can put up an item for sale and at the same time give a list of items that he/she would like to trade their item for (see the wireframe below). The users are also allowed to report fake listings or unfair prices.



## Literature review:

We reviewed a paper called “Facebook in Venezuela: Understanding Solidarity Economies in Low-Trust Environments”<sup>[5]</sup>. In this paper, the researchers discuss about the principles for designing online bartering communities in low-trust environment, and a Facebook group is used as an example here. The researchers introduce suggestions like “Prominent Rule Placement”, “Tools for Tracking Offenses”, "Buyer/Seller Reviews" and “Equitable Marketplace” that try to solve overpriced goods, scams, and other forms of economic abuse in Venezuela.

For example, the researchers recommend introducing "Buyer/Seller Reviews" such as Amazon<sup>[1]</sup> or eBay<sup>[2]</sup>, which can enhance trade safety and increase the speed of trades. Though this as an efficient way to evaluate one's honesty, it still not a perfect solution. First, in reality not all users prefer to write their review of their orders. Second, reviews on Amazon or eBay are only for sellers, for swapping, we would like to know the truth scores from both people. So for our system, we are going to use mandatory two-way rating system like Uber<sup>[3]</sup>, where we request both users to give rating score after trading, and system will provide the reputation score according to users' past transaction.

## Review of the existing systems

In order to understand the online bartering system, we visited a few websites such as, Swap Madness, Boston Craigslist, letgo, thredUp, OfferUp, and freecycle. We also visited Facebook groups such as Northeastern Marketplace, and Free & For Sale. In most of these websites, we observed that there were communication problems, regarding the value of the product and/or the transaction location. The websites also did not offer any moderation of fake posts, which enabled scammers to create multiple fake profiles and post fake items for sale/barter. The posts aren't marked as sold or expired, which makes it difficult for users to ascertain the validity of a post. These factors contributed to the trust issues within the members of these sites.

## References:

1. Amazon. 2017. Amazon.com Help: Prohibited seller activities and actions. (2017). <https://www.amazon.com/gp/help/customer/display.html?nodeId=200414320>
2. eBay. 2017. eBay Detailed Seller Ratings. (2017). <http://pages.ebay.com/help/feedback/detailed-seller-ratings.html>
3. Uber. 2018. Uber How Ratings work. (2018). <https://www.uber.com/drive/resources/how-ratings-work/>
4. Leonardo Lima, Janduí Silva, Bárbara França, Victor Souto, Felipe Ferraz CESAR, *Trade of Goods in Digital Communities*, Recife, Brazil, 2015.
5. Hayley I. Evans, Marisol Wong-Villacres, Daniel Castro, Eric Gilbert, Rosa I. Arriaga, Michaelanne Dye, and Amy Bruckman, *Facebook in Venezuela: Understanding Solidarity Economies in Low-Trust Environments*, Montréal, QC, Canada, 2018.