

CS2212B Group 4: Project Proposal

Prepared January 17, 2017

Team: Nicole Barucha, Luna Cao, Mark Cook, Nick Elder, Philip Kolman, Abdulla Ouda, Zhengyang Pan, Pierce Saly, Jeremy Wong

User Demand:

On a university campus, students frequently buy course textbooks that are used for a few months, only to be left on a shelf for the remainder of their useful life. The process of selling a textbook requires taking a hit of maybe 50% of the value when the book may have a useful life of 3-4 years. The only alternative is a loosely organized Facebook group which only allows crude posts of selling prices or lists of asks. This group has 26,468 Members at Western alone.

Product Information:

Our project aims to allow users to bid on the textbooks of other users, determining fair market values and maximizing the value received by sellers who often do not know how to price their books. Books will be posted with 5 photos which represent the best - worst pages in the book which will allow users to assess the quality of the book. Sellers will be rated on a long term basis on the honesty of their quality assessments. As a stretch goal, machine learning could be used suggest minimum bids to people posting books. A course name could also be predicted based on the title of the book. The trade will take place in the UCC between 9-5PM. For now, the platform will be restricted to Western University. This project will be a web-based system.

CORE 60% Mark

Core Feature Overview:

1. User Signup / Login to System
 - a. Social Media Logins to require legitimate users who are personally identifiable.
 - b. Potential for email based login system as a backup. (No Password, just login link in email.)
2. User profiles based on Facebook information pulled.
3. Add Textbooks to system (Name, Description, Publisher, Version, Year Published, ISBN, 3-5 Photos, Grade (A-F) rating of quality, Original Sale Price, Sell-By Date, Purchased Date, Course Using Book, Contact Info, Author)
 - a. Photo is a major bit of work here.
 - b. Grouping like books into one record.
4. Search Functionality.
 - a. Search by books (multiple criteria for book searching, author search perhaps, author)
5. Place Bid Functionality.
 - a. Minimum bid set by seller.
 - b. Minimum increments. (\$5)
6. Winner selected based on closing time functionality which then sets up seller - buyer dialogue.

Optional Stretch Feature Overview:

1. Photos uploaded from mobile APP, and OCR processing to auto-populate book information. Replaces upload from desktop. Maybe not even from app.
 - a. Amazon Rekognition: <https://aws.amazon.com/rekognition/?hp=title&so-exp=below>
2. Sellers receive post-sale rating from buyers through follow-up email with star rating links.
3. Auto-query market prices for book from Amazon API.
4. Offer Amazon of book if it is not in the system, pull referral revenue of like 2% finder's fee from this.
5. Import exhaustive list of textbooks from some source.
6. Suggest similar books to users.
7. "Buy Now" option for user to purchase the book immediately without waiting for bids to close (like ebay buy now feature).
8. Email remarketing to tell users to sell their books at the end of the semester, or beginning of a new one.
9. Anonymized email system, through Postmark-backed intermediary with an artificial email address for both users, which avoids anyone knowing anyone else's email address.

Advanced Features:

1. Social media crawler to recruit people to site from facebook group.
2. Default photo pulled from Google based on title of textbook.
3. Import from campus textbook list, perhaps download HTML page and upload to site.
4. NLP to suggest course book is in. Word2Vec C code.
5. Multivariate logistic regression or neural network to predict sale price of textbook based on predicted life from available data of book publishing frequency. Tensor Flow.
 - a. One Group member has an extensive statistics background while another has some experience with word embedding and neural networks in research.
6. Option to trade books instead of money exchange, even maybe 3 way trades?
7. Payment on our platform using Stripe as opposed to in person in cash.