INFO 620 – Information Systems Analysis and Design – Term Project Proposal

Jainil K. Shah | [jks325@drexel.edu](mailto:jks325@drexel.edu) | 14118945

Vishesh Thakur | [vt98@drexel.edu](mailto:vt98@drexel.edu) | 14055409

Sri Valluripalli | [srv37@drexel.edu](mailto:srv37@drexel.edu) | 14058610

January 20, 2016

Project Category: Analysis & Design

**1. Title**

Analysis and Design of a Drexel-centric eBay-like Online Market (Dbay)

**2. Problem Statement**

An online market would be constructed for the members of the Drexel community, these members include students, staff, and faculty. This market would allow these members to buy and sell things such as books, office supplies, electronics, etc.

1. Context and Importance of the system  
   Based on the limited usage of the product, the members can have an option to buy and sell things such as textbooks that would be useful for a particular student in one quarter might be beneficial to students taking the same course in the upcoming quarter. Hence, this market acts as win-win situation for the community. Members sometimes move to other places outside the Drexel community after acquiring better part-time/full-time opportunities, so this forces them to get rid of their used goods fast.
2. Overall goals of the system  
   The system aims at facilitating effortless selling and buying of the products between members of the Drexel community.
3. Scope of the project

**In-Scope:**

Dbay will include students, staff, and faculty belonging to Drexel community. Each member carries a unique Drexel ID and password. In addition, members must have unique credentials different from Drexel ID and password.

**Out-of-Scope:**

Dbay will not compare the things uploaded onto its market with any other websites. Will not consider any private conversations happening between the consumers. Moreover, the negotiation will not be within the scope of this system.

**3. Requirements**

**3.1 Functional Requirements (partial list)**

The system will be password-protected. Dbay will be a multi-user system. Dbay needs to perform the following functions:

1. Add new Drexel members with the help of Dbay ID and password (Only after authentication via Drexel ID)
2. Find a product with the help of a user-friendly search engine that allows potential buyers add a keyword which ultimately renders the closest possible results
3. Display the product catalog along with latest inventory quantities, if applicable
   * 1. Mark out of stock products as such
4. Instant messenger and mail system that allows buyer and seller communicate anonymously
5. Maintain a shopping cart to buy multiple items from different sellers in a single transaction
6. Generate invoices for the items being sold
7. Secured billing gateway synced with the system for processing transactions
8. Email invoices and payment confirmations to all parties involved in a transaction
9. Maintain a reputation (rating/review) system for sellers and buyers so that users can rate each based on their experiences of the transaction
10. Generate reports:
    1. Display order history of a buyer
    2. Display selling history of a seller
    3. Display complete transaction history of a user
    4. Display users with failed payments
    5. Display users with good/poor reputation
11. Secure log in and log out via SSL
12. Create/delete/update user accounts with user permission
13. Back up data; archive old data
14. Generate mailing labels
15. Change metadata for items

**3.2 Data Requirements (partial list)**

For all users, keep a record of their credentials such as ID, password, email, name, address, phone, debit/credit card information.

For all the items that are entered on the market, Dbay will keep a record of item number, date and time entered, description, price, inventory quantity (if applicable), availability status, item condition, authenticity.

For each invoice, Dbay will need to keep a record of invoice number, invoice date and time, total billing amount from all the billable items.

For each payment transaction, Dbay will keep a record of transaction number, payment date and time, description, amount, payment method, payment method information.

For each instance of communication, Dbay will keep a record of sender/recipient information, communication date and time, communication type, message text.

**3.3 Business Rules and Data Logic (partial list)**

1. All users must have a unique ID and password that are different from their Drexel ID and password.
2. When entering items for sale, sellers must submit latest pictures of the items with a timestamp for Dbay to authenticate the item and its condition.
3. Buyers and sellers must use the instant message and mail system within Dbay for all communications.
4. Payments can only be made using a debit/credit card or PayPal.
5. All payment transactions will be processed via Dbay and the authorized billing gateway.
6. Dbay will not store payment information unless opted-in by the user.
7. Sellers must ship their items within three business days after a successful purchase and payment confirmation.
8. Sellers that don’t comply with the three day stipulation will be barred from entering new items for sale, effectively being limited to only buying from the market.
9. While Dbay can be used by Drexel students, staff, and faculty, Dbay will not differentiate users as such. Anyone can be a seller or a buyer.
10. Dbay will maintain real-time availability status of items for sale by using a combination of sale information, inventory quantities, and shipping statuses of items.
11. Emails will be sent to all parties involved in a transaction along with keeping a record of all communication history that occurred regarding a particular transaction.

**3.4 Non-Functional Requirements (partial list)**

1. The system will be a browser-based application.
2. Menus should be organized in a hierarchical manner. (Usability)
3. The system will be password-protected. (Security)
4. Dbay will authenticate the items once every 24 hours. (Reliability)
5. The interface would be easily understandable as the items will be listed based on the item catalog. For instance, mobile phones, keyboards, game consoles, etc. will be listed under “Electronics & Accessories” and many such tabs (Interface)

**3.5 Other Assumptions (partial list)**

1. We will assume Dbay will be used by members of Drexel community.
2. Dbay runs on a peer-to-peer environment which involves communication between buyer and seller.
3. The database system will be cloud-based and a dedicated software that takes care of the user’s credentials including their on-sale goods will be constructed and synced with the database.
4. An instant messenger that lets seller and buyer chat/ negotiate the items cost will be built.
5. A customer service facility through a dedicated toll-free number would help to consider the complaints of the users.
6. A software that takes care of the online transactions that will be synced with the bank.
7. Positive reviews will increase the reputation of users on the market.

**4. Examples of system input/output, etc.**

Actions such as entering an item on to the market for sale, placing a buy order for an item are considered inputs. Actions such a generating invoices, payment confirmations, emails, and reports are considered outputs.

**5. Knowledge Acquisition**

The problem is an Analysis and Design project. First we will develop our requirements based on our ideas, common sense and existing knowledge. After that we will research eBay and other similar user-to-user online market systems.

**6. Software and/or hardware involved**

We will use MS Visio for developing all the UML diagrams. The application is Windows-based.

**7. Proposed Deliverables and work plans**

We intend to turn in a complete set of UML diagrams along with supporting documentation, including as a minimum:

* The problem statement
* The final use case diagram and its explanation
* Use case descriptions
* The final Class Diagram (Domain Model) and its explanation
* System Sequence Diagrams
* Sequence Diagrams
* Design Class Diagram and its explanation
* Relational database schema

We will also put together a report describing our experience with analyzing the current process, what we were able to learn from our study, known pitfalls, remaining questions after project, and any recommendations on how to improve the current system.

**8. Known References (so far)**

A preliminary, basic analysis of eBay, <http://www.ebay.com/>.