# Assignment 4: Lending Club

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**(a.)**

Lending Club is a marketplace for peer-to-peer lending that helps facilitate origination of smaller loans, often unsecured loans. The two sides are borrower and lender. An unsecured loan is one that is not backed by an asset like a house or car and is taken by individuals in smaller amounts, often $10,000. These loans are most often used in order to refinance higher interest rate loans like credit card balances and the primary borrowers are individuals near the subprime category or others who may have better ability to repay a loan than a traditional FICO score would suggest. Lenders consists of retail investors, banks, individuals an even pension plans. Borrowers are often individuals like students, patients and small businesses.
On Lending Club, individuals could potentially get better interest rates than they could otherwise get from traditional banks on specialty, unsecured loans due to Lending Club using their own risk assessment model. Lending Club, then would finance these loans by allowing banks, institutions, and private investors to invest in securitized notes that guaranteed monthly payments according to the interest rate of the base loan and what proportion of the original loan the note encompassed. These investors, many which were not banks, thus had an opportunity to purchase monthly securitized income, albeit one with the risk of default or delinquency, in the form of a note. Lending Club also tried to create value in the marketplace through their transparency and modeling techniques that they proposed would enhance investor profits.

**(b.)**

As a peer-to-peer (P2P) loans, Lending club offers the borrowers 36-month and 60-month, unsecured fixed interest rates loans in amount between $1,000 and $35,000.
1. An approved Member Loan was first funded and issued by WebBank.

2. WebBank would then sell the loan to Lending Club at par.
3. Lending Club's investor members purchase "Member Payment Dependent Note" ("Note"), a security issued by Lending Club that was registered with the U.S. Securities and Exchange Commission. Each Note was fully amortizing with monthly payments and had the same principal amount, fixed interest rate, and initial maturity as its corresponding Member Loan.
4. At closing, Lending Club would issue the series of Notes to investors and transfer the proceeds to WebBank to purchase that Member Loan.
5. After acquiring a Member Loan from WebBank, Lending Club charges a 1.0% on any principal, interest and late fees from the underlying Member Loan. Terms of a Note closely matched those of the underlying Member Loan.

**(c.)**

The investors should value Lending Club as a marketplace technology company instead of specialty finance company for the following reasons:
1. Lending Club grows much faster and trade more interestingly than specialty finance companies. It has issued over $15 trillion by the end of 2015.
2. Traditional specialty finance companies rely on the spread between what they borrow and what they lend out and are therefore their margins are quite prone to squeezed when interest rates rise. However, Lending Club charges fixed ratio of fee and are less sensitive to changes of interest rate.
3. Specialty finance companies must borrow more capital in order to grow. In order to borrow more capital, these firms must raise more equity capital, which means that they must grow via equity dilution. However, Lending Clue sells notes to the investors and doesn't need to grow via equity dilution and therefore is more preferred by investors.

**(d.)**

Lending Club should certainly be concerned with the number of competitors entering the market looking for a slice of their pie for a few different reasons. Though this is not a winner take all market, there are several reasons that we think Lending Club should be concerned with this. First, the network effect that Lending Club might be marketing to investors (of the stock) that many technology platforms enjoy does not seem to prevail in the peer-to-peer market up until now. While the technology behind Lending Club might create the network effect, their may be underlying issues in the industry that prevent any one company to dominate the industry. Second, private competitors, replete with cash, could aggressively focus on growing top line growth without the expectations that Lending Club promised to public investors. So, many worried that the user acquisition cost Lending Club published would surely increase as private companies entered the market, leading to deteriorating margins for Lending Club. Next, new companies could enter the market and afford to take massive risks that Lending Club could not because they have little to lose as a new venture and might not understand the complexities of the risk that Lending Club believed was inherent in the market. However, if a few of the new, risker companies avoided their risk, they could take a large share of the market, at least for a while.

**(e.)**

Lending Club would require a solid credit model to assess risks more accurately since some of these loans might be very risky. Risk would be assessed at three different stages -

i. Origination Model : This is the stage before granting loans. Using machine learning, a model will be built to predict the probability of default on loan applications. Use of credit bureau information (i.e. past credit history) will be critical in determining risk at the time of origination. Additionally, alternate data (including social media, geo-spatial coordinates, shopping behavior etc.) will be leveraged to improve the accuracy over traditional credit risk modeling methodologies that banks use. Based on risk, loans could be categorized in different categories and interest rates would be optimized accordingly.

ii. Behavior Model : This is the stage after granting the loan. A model will be built to estimate probability of default each month over the lifetime of the loan. The purpose is to trigger alarms when risk of default goes high so that action may be taken. This will primarily be based on payment behavior on the current loan and other features from alternate data that might be predictive of default. This will allow lenders to keep a check on their investments.

iii. Collections Model : This model is for existing loan accounts that have already missed payments and pose significant risk of default. Lending Club will have to decide on what the optimal collections strategy should be based on level of delinquency. For example, some accounts might need just a phone call for payment reminder, while some might require legal notice or personnel.