Consumers have long relied on ratings measures to help them make choices among goods of heterogeneous quality. With the growth of the New Economy over the last 10 years, it is becoming increasingly possible to aggregate information and create ratings for many industries. My research focuses on the effect of quality ratings on consumer choice, the social benefit of the quality signals, and how well firms who develop ratings signals can capture a share of the social benefit. I examine these issues using data from Netflix, the on-line DVD rental service with mail delivery, which also provides a rating system that aggregates the preferences of the people who use their service. In the first chapter I use a reduced-form specification to analyze the Netflix’s ratings database and estimate the aggregate demand for movies. The second chapter develops a structural Bayesian learning model and assesses the effect of ratings on DVD rental behavior. The last chapter is dedicated to the analysis of the consumers’ and producers welfare as a function of the information created by the ratings system.

**Are Ratings Informative Signals? The Analysis of The Netflix Data.** In my job market paper I analyze ratings as informative signals about the quality of movies. A structural Bayesian learning model links the revealed experience utilities of raters, who are prior consumers, to the product choice of the future consumers of the same good. I postulate that movies are chosen based on the consumers prior belief and the precision of the signals provided by the ratings. Consumers use the ratings signals more when more consumers have revealed their preferences in the ratings. I specify and estimate a simulated maximum likelihood model using the Netflix data on rental choices and ratings. The very rich data set allows me to identify the effect of ratings on demand while controlling for the integral popularity of each specific DVD using fixed effects. The results demonstrate that the ratings provide signals of quality to consumers. If the signal is based on only one rating, it is very noisy, and the consumer might ignore it. As more consumers rate the DVD, the signal becomes more informative, and the results show that the consumers surplus increases. The estimation shows that the ratings system has economically significant value. As 100 more people rate a DVD, the quantity demanded for the newly released DVD can rise by as much as 35 percent. If Netflix were to offer DVDs without providing the rating service, 88 percent more consumers would choose movies elsewhere would not to watch a movie at all (an outside good). Finally, the absence of the Netflix system with a high volume of ratings for each DVD would cause consumers to rent a much narrower selection of DVDs than what they currently rent from Netflix. Specifically, the share of newly released DVDs would go up from 5 to 8 percent.
The Welfare Effects of Information: A Study of the Netflix Rating System. In this paper (currently in process) I use the value of quality signals in the previous chapter to analyze their effect on the welfare of consumers and producers. In the process I formulate and estimate a model that combines the demand and supply sides of the market for the online DVD subscription plans. The Berry–style logit demand model shows how Netflix can use the value consumers derive from information to create brand loyalty. Meanwhile, the data on pricing allows me to set a monetary value on quality signals and hence evaluate the private dollar value of the ratings voluntarily submitted by prior consumers. The supply-side analysis allows me to better control for endogeneity in the demand side of the analysis. Further, it allows me to examine how the ratings system improves profitability for Netflix. Netflix shares revenues on new DVD releases with the studios but not on older DVDs. To the extent that the ratings system causes people to shift toward renting older DVDs, Netflix retains a higher share of the revenues from its subscription plans. I simulate counterfactual profit under the assumption that consumers do not use ratings as quality signals. The simulations from the estimation show how the information generated by the ratings system influences Netflix’s profit as well as the pricing and strategic decisions made by its competitors in the DVD rental market. Overall, this research demonstrates how firms can provide information that generates value to consumers while also gaining a competitive advantage in the market.

The Impact of Ratings and Word–Of–Mouth on DVD Rentals: The Analysis of Netflix Data. I use a discrete choice utility model to study the influence of the word–of–mouth and ratings on the demand for movies within the Netflix system. Replicating some of the previous results from the industry studies I demonstrate that feedback ratings could be used to estimate demand models at the aggregate level. The results show that consumers do not differentiate much between movies of the same age and genre. Seasonal fluctuations in demand are present in the DVD–by–mail system but are not as extreme as the fluctuations for in–store rentals. Ratings are quality signals and the word–of–mouth serves as a channel for these signals. The generally positive effect of high ratings on DVD rental demand depends on a number of factors. Some DVDs–TV series or music videos–have distinct quality signals that make ratings unimportant. The demand for Comedies or Science-Fiction movies depends on ratings because they have vertically differentiated attributes and consumers agree about quality, while dramas are horizontally differentiated and consumers disagree about quality. The impact of ratings is mitigated to some degree by two factors. Ratings become an important quality signal only after the ratings system reaches a threshold feedback volume. Finally, as consumers learn about movies from other sources, the importance of ratings decreases.