

DISSERTATION DEFENSE

ESSAYS ON CHANNELS AND PRODUCT LINE DESIGN

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In the first chapter I talk about the estimation of the degree of substitution and complementarity in DVD/Blu-ray and theatrical channels. Movies are distributed through multiple, carefully segmented channels. Movies are first released in theaters, and then released in home entertainment products. In recent years, movie studios have been pushing to expedite the release of DVD/Blu-ray discs and home videos at the expense of theaters. However, sacrificing the theatrical channel might backfire if additional theatrical viewership would have exerted a strong promotional influence on subsequently released home entertainment products. To estimate the causal effect of additional theatrical viewership on home entertainment product demand, we leverage snowstorms' adverse impact on consumers' propensities to watch a movie in theaters. Exploiting this source of exogenous variations in theatrical viewership with a nonparametric simultaneous equations model, we find that additional theatrical viewership has a positive and economically substantive impact on the sales of home entertainment products. This finding indicates that the promotional effect outweighs cannibalization. In other words, the theatrical channel is a complement to the home entertainment channel. We also find that the degree of complementarity is weaker for horror movies and stronger for family-oriented movies, suggesting that a movie's suitability for gifting and appeal for repeated consumption are important moderating factors. Our finding that theaters complement home entertainment products challenges the conventional wisdom in the movie industry and cautions against a drastic quickening of DVD/Blu-ray disc and home video releases.

In the second chapter I discuss the estimation of the effect of piracy on worldwide theatrical demands and the implication on international release scheduling. International markets grew to be significant contributor of revenue for Hollywood movies in recent years. Widespread adoption of new projection technology has enabled movie studios to be flexible in setting their international movie release schedules. However, the decision of international release timing is complicated by piracy. For example, releasing a movie earlier in Russia, on one hand may boost the box office revenue from Russia, on the other hand may quicken the timing of a pirated copy originated from Russia due to pirates taping the released movie in theaters. As pirated videos can be distributed online and consumed worldwide, the potential increase in piracy due to early release in Russia may cannibalize the box office demands in other countries. In order to properly account for the global cannibalization across geographic markets from piracy in the decision making of global release schedules, I estimate both the timing and prevalence of piracy supply by countries, and the varying degrees of substitution from theatrical demand to piracy videos in different languages for seven major countries.

In the third chapter I discuss product and product line design in the context of product colors. When choosing which colors to offer in their product lines, firms often rely upon consumer preference models that do not account for the heterogeneity of their target market and do not consider the trade-offs consumers are willing to make for different color options. For this research we used visual conjoint analysis to assess preference for backpack color and then modeled respondent utilities with a Bayesian hierarchical multinomial logit model. This provided counter intuitive results in which product line color options are not additive but each color changes depending on the number of options the firm is willing to offer and that colors which seem to dominate secondary preferences within a target market may not be the best colors to choose for product line expansion.