

Price discrimination of customers has limited profit impact in online industries

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Compared to an optimal uniform price, charging different customers different prices in online markets has limited effects on profits, finds new research from ESMT Berlin (<https://esmt.berlin/>).

Price discrimination – charging different customers different prices for the same goods – is common in offline markets as it allows companies to increase profits. Despite its promises, price discrimination has however not been implemented on a large scale in the monetisation of digital products, where examples remain limited. This is surprising because price discrimination could be implemented at comparably lower costs in the digital realm where consumer data that is prerequisite for individualised pricing is routinely collected.

To analyse how much profits digital companies forego by not charging individualised prices for different users, Stefan Wagner, associate professor of strategy and innovation at ESMT Berlin, and colleagues analysed different pricing strategies in the online video gaming industry. Specifically, they studied pricing strategies employed in a highly popular mobile game similar to Candy Crush Saga.

For their study, they have obtained detailed data tracking how around 300,000 players interact with the video game over a 15-day period. The data not only contains player characteristics but, more importantly, in-game purchase decisions of the players. Exploiting this data, the research team was able to identify a structural model of player decision making factoring in player characteristics, progress in the game, and different pricing mechanisms employed by the gaming company. Such a decision model allows simulating consumer choices under different pricing regimes and thus allows to link alternative pricing strategies to firm profits.

At the time of data collection, the gaming developer charged the same (uniform) price from all players and was not engaging in any form of price discrimination. Simulating different pricing strategies, the authors found that the price initially set by the game developer was not optimal. Setting a uniform price at a higher and optimal level can boost profits by 340%. Professor Wagner suspects that the gaming company overestimated the price responsiveness of players and thus shied away from charging higher prices. Interestingly, and contrasting conventional wisdom, the results also showed that first-degree price discrimination, i.e., charging individualised prizes, would have only very limited effects on profitability. Compared to an optimal uniform prize for all players, discriminatory pricing strategies would lead to slightly larger profit (+3%).

Professor Wagner says, “Our results indicate that the game developer can substantially increase profit by using basic information readily available on player characteristics and in-game behaviour. However, a simple uniform pricing strategy may already guarantee most of the profit implied by elaborate forms of price discrimination, which might explain why price discrimination has been used sparsely in online markets.”

Keep in mind that price discrimination has been met with animosity in the past; Amazon’s early attempt to price discriminate buyers of DVDs based on purchase history was met with resistance and negative

publicity. The minimal gains made through price discrimination when compared with uniform pricing might not be considered worth the potential backlash, explaining the lack of price discrimination online.

The original paper can be found here (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3952016).

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