The Daily Deals Marketplace: Empirical Observations and Managerial Implications

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The emergence of the daily deals online marketplace has been an e-commerce phenomenon that has engendered remarkable stories of rapid growth, exemplified by firms such as Groupon and Living Social. At the same time, critics have accumulated considerable evidence, largely anecdotal in nature, of incipient failure of this marketplace. Our recent empirical work has attempted to reconcile these divergent viewpoints through quantitative evaluation, in an effort to understand the sustainability and long-term outlook of the daily deals business model. Our methods draw from a rich tradition in marketing and econometrics to study the interplay between promotional offers, word-of-mouth engagement, and consumer satisfaction. Leveraging datasets we collected encompassing tens of thousands of daily deals offers and millions of Yelp reviews, we have quantified the significant extent to which daily deals users express dissatisfaction with today's offers, and elaborated the root causes underlying this behavior. We discuss the broader implications of our methodology and the managerial implications that follow from our root cause analysis, both for daily deals merchants and daily deals services, that could lead to a viable marketplace and improved consumer satisfaction.

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1. INTRODUCTION

Over the past two years, we have been studying Groupon as the predominant example of the daily deal business model. Initially, our motivation was to understand this novel business model that was experiencing phenomenal growth, with an eye towards understanding the features that might make it sustainable or unsustainable over the long term. In particular, we were motivated to understand whether Groupon was succeeding in its stated goal to match businesses with new, loyal customers through its offered discounts, a question that lies at the heart of advertising. We specifically turned our attention toward the question of how Groupon affects the reputation of the businesses that use it, where reputation holistically represents consumer satisfaction and the word-of-mouth effects associated with the business.
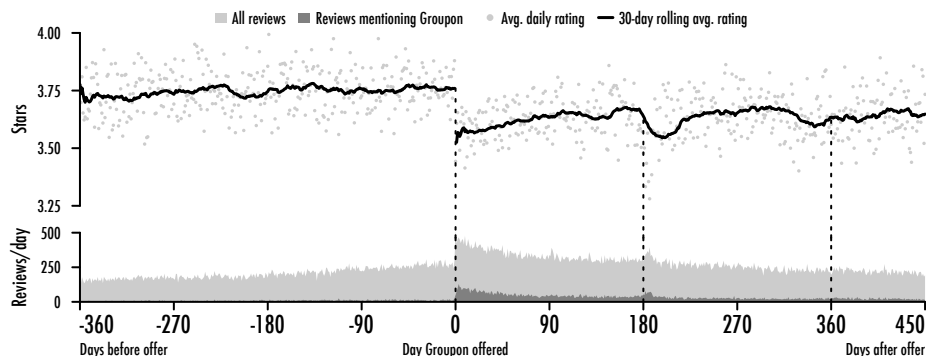

Fig. 1. Yelp ratings and review volumes for Groupon merchants, centered on Groupon offer day.

Here, we utilized Yelp, the most popular online business review site, to provide a concrete measure of reputation.

Besides discovering interesting aspects of how Groupon affects reputation, we argue that our methodoloogical approach is interesting in its own right. We make use of large-scale publicly available observational data. The key is that this data comes not from Groupon itself, but from online consumer reviews found on Yelp. Although the acquisition and analysis of information spanning multiple related Internet markets provides non-trivial technical challenges, it yields a deeper understanding of consumer satisfaction, and provides an effective and complementary approach to traditional marketing methods.

Data collection and analysis

Our analysis to date has primarily focused on two large datasets. The first dataset we collected comprised detailed information on the set of 16,692 Groupons offered from January 3rd to July 3rd, 2011 in 20 large US cities, including Groupon sales data. The second dataset we collected comprised an extensive collection of reviews from Yelp that ultimately spanned 7 million reviews for 1 million merchants. For each Groupon business, we attempted to link it to a corresponding merchant page on Yelp. We then collected a complete review history for each of the 5,472 businesses we linked successfully, as well as the complete review history for every user that reviewed at least one linked business.

An updated depiction of a key finding from our prior work is depicted in Figure 1. Across the bottom of the figure we plot the daily review volume of all Groupon businesses for each day relative to the Groupon offer date. We highlight the subset of those reviews mentioning the keyword "Groupon" with darker shading. These plots confirm the discontinuous surge of customer traffic associated with Groupon offers, as expected. At the top, the scatterplot and trend line capture the relationship between the average Yelp rating of Groupon businesses over time, and their offset relative to the Groupon offer date. Using a 30-day moving average (and resetting the average at Groupon offer date), we observe a striking discontinuity as ratings drop dramatically on average, concurrent with the offer date. Interestingly, and tellingly, we see subsequent downside movements at lags of 180 days and 360

days, the two most common Groupon expiry dates. For additional analysis and commentary, see [Byers et al. 2012].

While this finding has been interpreted as damning evidence for the daily deals business model, an understanding of the root causes for this phenomenon is needed before passing judgment. Surprisingly, we find that Groupon users are not simply more critical reviewers than the population at large – in fact, they are more moderate in the ratings they provide! Instead, an alternative hypothesis with considerable explanatory power is that users are often experimenting when they use Groupons, visiting businesses that are atypical (as identified by their category and ZIP code) from the other businesses they have reviewed. At the same time, these Groupon-using reviewers wield more clout on average than their peers: their Yelp social networks are more well-established, and their reviews receive more critical acclaim. Businesses cognizant of this reviewer demographic, and able to exploit the opportunity that these reviewers present, should indeed be able to profit from the opportunity that a daily deals offer presents. Interestingly, even after accounting for all these potential idiosyncracies of Groupon users, a considerable fraction of the Groupon effect remains unexplained, suggesting that other, unobserved mechanisms are at work. Uncovering these mechanisms is ongoing work that may lead to a better understanding not just of Groupon, but the effects of promotional and discounted offers more broadly.

Conclusion

Given our analysis of Groupon users, what are the implications to businesses that wish to offer daily deals, and to daily deal distributors like Groupon? Businesses should be cognizant that Groupon users are vocal (but not necessarily critical) reviewers about their experiences and can potentially produce large-scale word-of-mouth engagement. Engagement tends to be highest close to the offer date and offer expiry, suggesting the need for increased preparedness to handle large customer volumes during these periods. Since our study indicates that consumers often use Groupons to offset some of the risk associated with trying something unfamiliar, awareness of this possibility, and taking steps to mitigate the potential for damage to online reputation, is warranted. We recommend ongoing quantitative assessment of strategies to achieve consumer satisfaction, to attract and retain long-term customers, and to maintain reputation.

For daily deal distributors like Groupon, long-term success depends on keeping both users and businesses happy, implying the need to mitigate factors that lead to negative experiences. Better targeting of consumers to offers, e.g., by utilizing demographic information, is one obvious suggestion. More complex tradeoffs involve appropriate incentives for salespeople. Existing volume-based incentives increase deal load by including more lower-ranked businesses and diluting quality; such practices may yield short-term gains but inhibit longer-term sustainability.

REFERENCES

Byers, J., Mitzenmacher, M., and Zervas, G. 2012. The Groupon Effect on Yelp Ratings: A Root Cause Analysis. In *Proceedings of the 13th ACM Conference on Electronic Commerce*. ACM, 248–265.