

Platform Monetization and Unintended Consequences for Digital Cultural Markets: Evidence from a Two-sided Market for Book Promotions

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Abstract

How can a platform capture the value it creates without damaging the balance of its ecosystem? In this study, we leverage a natural experiment on a platform market to examine the consequences of monetizing a popular promotional program run by the platform. Participating in this promotional program (i.e. Giveaways) was free for authors and publishers till January 2018, after which Goodreads enacted a policy change and began to charge a fixed participation fee. We collect large-scale data to analyze both the supply side (i.e., authors and publishers) and demand side (i.e., consumers) response to this monetization policy. We document several novel insights about the unintended consequences of monetization that are above and beyond the traditional concern of network effects. Our findings highlight a more complex view of evaluating monetization strategy and suggest that platforms need to counterbalance these effects by offering more flexible incentive structures for different players in its ecosystem.

Keywords: Digital Platform, Platform Monetization, Two-sided Market, Cultural Products

1. Introduction

The information environment available to both consumers and creators has been dramatically improved via digitization: in addition to the information made accessible through recommendation algorithms and ratings systems, product success on digital platforms can inform creators and distributors about the appeal of new products before they reach a mass market (Peukert and Reimers, 2019).

All these features are exemplified by

Goodreads.com, an online social platform where users search for books, track readings, write reviews, and connect with other book lovers. In addition to these functions, Goodreads has been running ‘giveaway’ contests (henceforth referred to as Giveaway) as a tool for authors and publishers to promote their works for free. Both pre-release as well as published books can be listed for Giveaway and users can enter the draw for a chance to win a copy of the book. Arguably, this program helps boost the book’s exposure, build an audience for the title, and helps other readers discover and decide to read the book.

In January 2018, Goodreads monetized this program, for the first time charging authors and publishers to participate. Creating a revenue stream is important for the sustainable growth of the platform. However, monetization is one of the most difficult issues that any platform must address (Parker et al., 2016). How can a platform monetize the value it creates for its users without hurting the network effect as well as the health of its ecosystem? In particular, we ask (1) How does monetization affect the mix of authors and publishers that participate in the program? (2) How is book diversity affected by monetization? (3) How does monetization affect the effectiveness of Giveaway on the demand side (in terms of how readers rate and review participating books)? By utilizing this natural experiment, we hope to provide a picture of the impact of platform monetization overall, and identify conditions under which it may help or hurt participants.

The advantage of our study setting is that we observe the dynamics of both supply side (i.e., authors and publishers) and demand side (i.e., readers) of this two-sided market. This puts us in a unique position to understand how the governance choice of monetizing this major feature on Goodreads will impact

its ecosystem for product discovery and promotion.

2. Related Literature

The literature of platform governance is based on the notion that platform firms are in charge of a micro-economy and hence responsible for designing policies and mechanisms to achieve desirable outcomes for the ecosystem (Boudreau & Hagiu, 2009; Parker et al., 2017; Parker & Van Alstyne, 2018; Tiwana et al., 2010). Previous research have examined various governance decisions, including pricing mechanisms (Farronato, 2017; Hagiu, 2006; Parker & Van Alstyne, 2005), control and openness (Parker & Van Alstyne, 2018), platform awards and promotions (Foerderer et al., 2021; Rietveld et al., 2019), information exchange (Foerderer, 2020), and entry of platform owners (Foerderer et al., 2018; Zhu & Liu, 2018). In particular, regarding power and motivation of platform governance, Aguiar and Waldfogel (2021) show platforms have strong power over its ecosystems by examining Spotify's promotion decisions on the success of songs and artists. Rietveld et al. (2019) argue that platforms are strategic in choosing which complements to promote in order to manage value creation in the overall ecosystem.

Among the governance decisions that a platform need to make, monetization strategy is one of the most critical one (Parker et al., 2016). Creating a revenue stream is important for the sustainable operation of a platform company. Despite that monetization is a challenging and multi-dimensional problem, most of existing narratives around monetization for platform market only centered around avoiding harming network effect. Admittedly, network effect is important for growing two-sided markets, the overall health of platform ecosystems rely on multiple factors.

3. Empirical Setup and Data

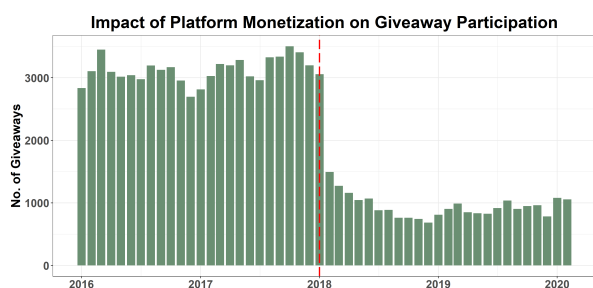


Figure 1. Number of Giveaway contests drop sharply after monetization of Giveaway program

Since Giveaway was launched in 2008, it has allowed authors and publishers to participate for free. However, in January 2018, Goodreads announced a policy change that started to charge a participation fee of \$119 to \$599 to launch giveaways. To understand the impact of Giveaway monetization on the platform ecosystem, we collected extensive information on books, authors, publishers, and giveaway contests. While one benefit of monetization could be to prevent authors from gaming the system and repeatedly exposing the same book, it also brings forth concerns of diversity and the representation of smaller, independent authors.¹In particular, we collected (1) the full set of giveaways hosted on the website from 2008 till 2020, (2) book, author and publisher level metadata and (3) star ratings and text reviews associated with each book.²This yields a total of 295,816 giveaway events for 201,573 books. To rule out trend effects, we restrict our main estimation sample between Jan 2016 to Feb 2020 (before COVID hits), approximately 2 years before and 2 years after the monetization. We then exclude the books that were published more than 5 years before they participated in Giveaway, and the books that didn't get published within one year after participating.

After January 2018, there is an immediate and large reduction in number of giveaway contests per month on Goodreads. In Figure 1, we see that the average number of giveaways per month drops from around 3,000 to only 1,000 almost immediately after the policy change. This popular book discovery and promotion mechanism on the platform is suddenly used much less. This provides initial evidence that the monetary cost constitutes a significant obstacle for certain authors and publishers, and may have consequences for supply.

4. Supply Concentration

While we observed an immediate drop in the total number of giveaways participated on Goodreads after Jan 2018, did the monetization affect the participation of different publishers in the same way? To understand this question, we first plot the monthly number and proportion of Giveaways of (i) the books published by the Big Five publishing houses and (ii) the self-publishing books in Figure 2. The Big Five publishing houses include five major

¹<https://www.theverge.com/2017/11/29/16714972/goodreads-giveaways-program-changing-standard-premium-tiers-authors>

²One drawback of our rating data is that Goodreads only allows for at most 3000 individual reviews and ratings per book to be scraped. However, we compare our collected sample to the raw numbers of 1-5 star ratings obtained via book-level metadata, and find very similar distributions (omitted due to space constraints), thus providing evidence that our sample is a valid characterisation of books' review distributions.

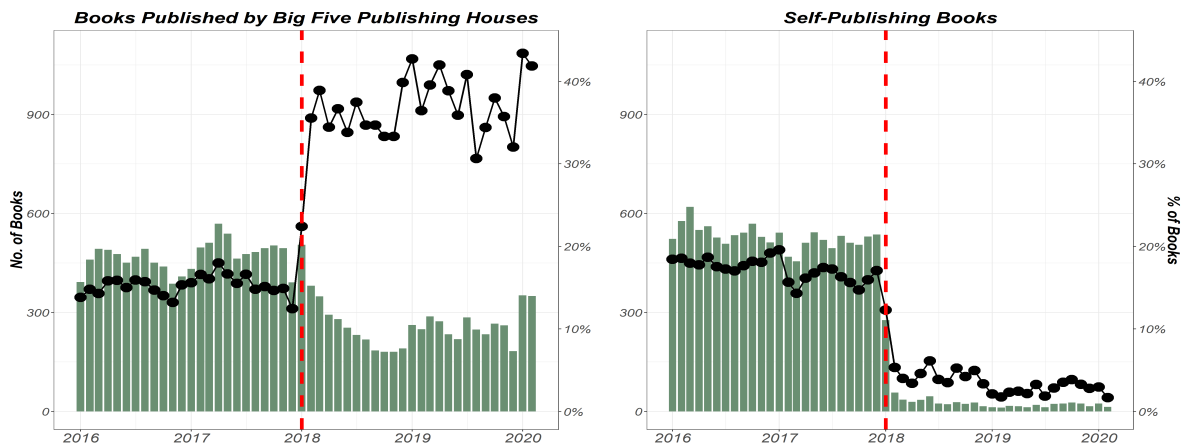


Figure 2. The Monthly Number and Proportion of Books Participated in Giveaway by Different Publishers. The bar chart represents the number of books participating in Giveaway every month, while the line chart indicates the proportion. The number of books published by the Big Five and the number of the self-publishing books decreased after monetization. However, the line chart shows the proportion of books by Big Five among all books in Giveaway almost double after Jan 2018.

publishers, Penguin Random House, Hachette, HarperCollins, Simon & Schuster, and MacMillan, and the self-publishing books are referred to the books that published by its authors. While the Big Five publishing houses produced more than half of English-language books³, self-publishing books often have a smaller market share.

The bar plot in the left panel in Figure 2 show that the participation on Giveaway of the books published by the Big Five dropped after monetization. Similarly, there were fewer self-publishing books participation after monetization. However, the comparison of the two bar charts in Figure 2 indicates a much larger impact the monetization had on the self-publishing books. Note that the proportion of books by the Big Five increased sharply from less than 20% to more than 30%, and the proportion of self-publishing books decreased immediately after monetization. This result suggests the changing in monetization may lead to supply concentration.

To have a holistic picture of the impact of monetization on the structure of the publishers participating on Giveaway, we calculated the Herfindahl-Hirschman Index every month $H = \sum_{i=1}^n s_i^2$ to measure the supply concentration, where s_i represents the market share of the publisher i . The larger the HHI is, the more concentrated the publishers are (Hirshman, 1964). Figure 3 shows the HHI indeed surged after monetization, which indicates a concentration of power in the hands of a few big

publishers. The monetization not only led to a reduction in the overall participation of books on Giveaway, but also impacted the mix of the types of participating publishers. Smaller publishers, who has fewer tools to market their books, may be impacted the most by the monetization given their limited resources.

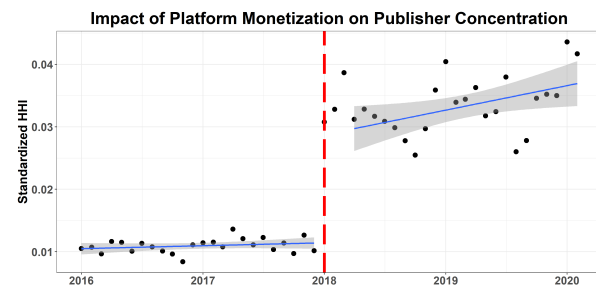


Figure 3. The effect of giveaway monetization on the publisher concentration. We can observe a sharp increase in HHI, indicating that the publisher concentration increase significantly after monetization.

5. Genre Diversity

What is the implication of supply concentration for products offered on the market? To examine this, we turn to individual books that were offered through Giveaway. A particular aspect of books we are interested in is genre diversity. A diverse selection of books attracts readers with different interests and satisfies possible variety-seeking behavior.

³https://en.wikipedia.org/wiki/Publishing#Book_publishing

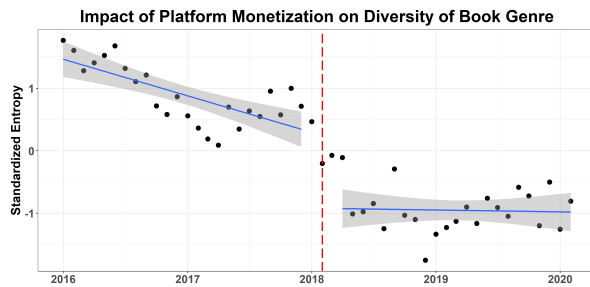


Figure 4. The effect of giveaway monetization on the genre diversity of participating books. We can observe a sharp and significant drop in standardized entropy after treatment, indicating that the genre diversity of books decreased significantly after monetization.

As a result, more diversity is associated with larger cross-side network effects for readers as the supply side collectively becomes more appealing. Does the monetization of Giveaway have an impact on genre diversity, and if so, what is the directionality?

Using genre data, we calculate a diversity index: for each month, we compute the value of Shannon entropy (Shannon, 1948) for the collection of books that participate in Giveaway during that month. Plotting the standardized entropy of book genres, we observe a sharp and significant drop in standardized entropy in a few months after January 2018. This indicates that the genre diversity of books decreased significantly after the monetization of the giveaway program.

Why did genre diversity decrease after monetization? To investigate the mechanism behind this change, we further dive into the impact of monetization for each specific book genre. The key observation here is that a few popular genres become more dominant in genre proportion after monetization while the proportion of the niche genres further shrinks. We plot a few illustrative examples of genre proportion change before and after monetization. In the first row of the plot, we have *thriller*, *mystery*, and *historical fiction* - all of which have a relatively high proportion among giveaway books before monetization, and their proportions become even larger after. In the second row of the plot, we see that the baseline proportion of genres *science*, *psychology*, *poetry* was low before monetization, and becomes even lower after. In addition to this visual example, we also conducted regression modeling to examine the heterogeneous impact of monetization across genre types. The result is consistent with the visual examples and support the bipolar effect on book genres. We omit the results here for the sake of the space. Overall, these results

highlight that monetization leads to a rich-gets-richer and poor-gets-poorer phenomenon in genre diversity. This is potentially a consequence of only a selected set of publishers and authors who could still take advantage of the giveaway program. In addition, even for those publishers and authors who still use Giveaway after monetization, they might change their behavior and only put books that are more mainstream and of general interest. Both composition change and behavior change of the supply side may result in a decrease in genre diversity, and we hope to tease apart the relative mix of these factors in future work.

Table 1. The impact of giveaway and monetization on avg ratings, measured at the year-month level.

	Dependent variable:	
	Avg Rating	
	(1)	(2)
Post Giveaway	-0.215*** (0.003)	-0.192*** (0.004)
Post Giveaway × Post Monetization		-0.068*** (0.008)
Number of books	80,498	80,498
Overall mean rating	3.73	3.73
Book FEs	Yes	Yes
Year-month FEs	Yes	Yes
Observations	961,426	961,426
Adjusted R ²	0.512	0.512

Note: *p<0.1; **p<0.05; ***p<0.01

Table 2. The effect of giveaway and monetization on review volume, measured at the year-month level.

	Dependent variable:	
	Num. of Rating	
	(1)	(2)
Post Giveaway	6.841*** (0.176)	11.008*** (0.182)
Post Giveaway × Post Monetization		14.454*** (0.372)
Number of books	81,608	81,608
Mean rating count	9.37	9.37
Book FEs	Yes	Yes
Year-month FEs	Yes	Yes
Observations	2,036,383	2,036,383
Adjusted R ²	0.153	0.153

Note: *p<0.1; **p<0.05; ***p<0.01

6. Demand mismatch

Finally, we examine whether the above supply shifts induced by monetization have an effect of consumer demand (proxied by reviews and ratings). We estimate a regression of the form:

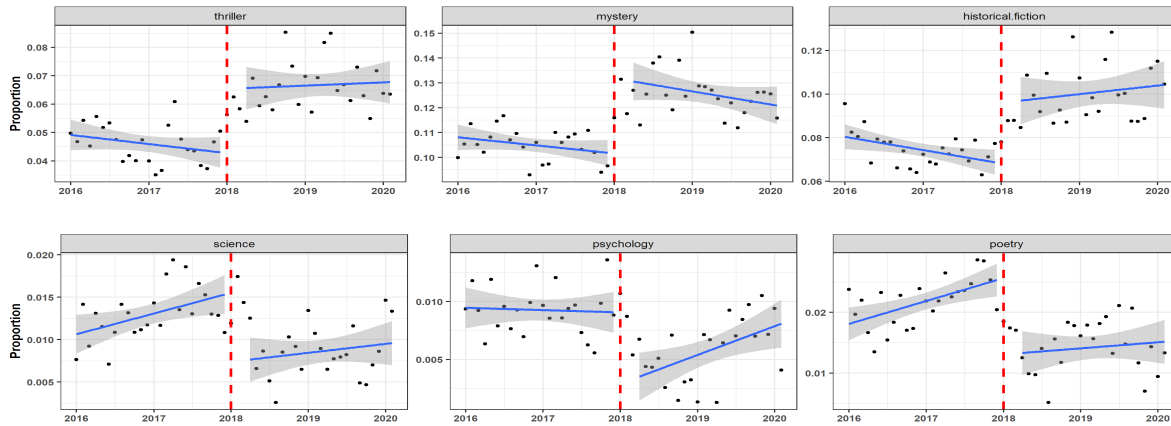


Figure 5. Heterogeneous impact on book genres: rich get richer and poor get poorer

Table 3. The impact of giveaway and monetization on review length, measured at the day level

	<i>Dependent variable:</i>			
	Review length			
	(1)	(2)	(3)	(4)
Post Giveaway	-141.621*** (1.826)	-153.277*** (1.987)	-123.453*** (1.996)	-137.915*** (2.260)
Time Since Release		0.108*** (0.006)		0.097*** (0.005)
Post Giveaway × Post Monetization			-49.970*** (2.849)	-38.870*** (2.918)
Number of books	77990	77990	77990	77990
Overall mean rating	743.14	743.14	743.14	743.14
Book FEs	Yes	Yes	Yes	Yes
Year-month FEs	Yes	Yes	Yes	Yes
Observations	9,343,382	9,343,374	9,343,382	9,343,374
Adjusted R ²	0.068	0.068	0.068	0.068

Note:

*p<0.1; **p<0.05; ***p<0.01

$$\begin{aligned}
r_{jt} = & \alpha_j + \gamma_t + \beta_1 \times \text{Post-Giveaway}_{jt} \\
& + \beta_2 \times \text{Post-Giveaway}_{jt} \times \text{Post-Monetization}_j \\
& + \epsilon_{jt}
\end{aligned}
\tag{1}$$

where r_{jt} denotes the average rating of book j in month t . We further include book fixed effects to account for time invariant changes, and year-month fixed effects to account for general fluctuations in demand. Standard errors are clustered at the book level. Post-Giveaway is an indicator variable set to 1 after the giveaway date, and Post-Monetization is an indicator variable set to 1 for books that participate in the giveaway program after monetization. The parameter of interest is β_2 , which can be interpreted as the effect of monetization on giveaway participation after January 2018. Overall, we find that Giveaway participation lowers average ratings and raises review volume, even in the absence of monetization (Table 1 and Table 2). These effects are consistent with the ‘‘Groupon effect’’ (Byers et al., 2012), wherein deals lead to greater uptake of the product at the cost of attracting lower ratings. One possible mechanism is a mismatch in preferences between reader and book when books are offered for free (a similar pattern of results has also found by Zegers (2017).) Additionally, we find that average ratings go down by about 0.21 stars post-monetization (Table 1 column 2), whereas the volume of reviews increases by 4.4 (Table 2 column 2). This demonstrates an exaggerated ‘‘Groupon effect’’ that comes about due to monetization.

These results point to the fact that in general, Giveaway does not facilitate the best preference match between consumers and books, and the supply side changes described above lead to even worse matches, although book adoption (and hence review volume) increases.

We further look at the text of posted reviews, and find that reviews tend to be shorter by about 38 characters after monetization (Table 3). This points to the fact that reviewers may be less engaged and invested with the content they are reviewing, and leave shorter reviews that are more negative in valence.

7. Conclusion

In summary, we try to understand the impact of platform monetization on its ecosystem from the perspective of both supply-side and demand-side of a two-sided market. We examine a natural experiment where Goodreads monetizes its main marketing and

promotion tool for product discovery, the Giveaway program. We find that the mix of authors and publishers is skewed in favour of more established entities after monetization. As a result, the diversity of book genres offered through the program also suffers: we find that more popular genres gain at the expense of less popular ones. Finally, on the demand side, we find that the promotional effects of Giveaway are amplified further post-monetization - books are adopted more and hence attract more ratings, but these ratings are more negative on average.

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