Are Viral Apps Parasitic?

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1. THE VEXING VIRTUES OF VIRAL PLATFORMS

Facebook's ability to jump-start entire businesses is tremendous: billions of dollars have been raised to fund companies built atop Facebook's platform. Third-party developers and content producers no longer have to painstakingly acquire users across the web; instead, friend recommendations and news feeds enable an app to go viral - apps like Draw Something and Socialcam can become overnight successes. In theory, everybody wins from a viral platform: good content and great services have a better chance of getting noticed by consumers, and both Facebook and its third-party developers reap the benefits of a constantly improving product. In reality, viral ecosystems face enormous sustainability challenges - something the recent struggles of high-profile app developers like Zynga has finally brought into focus. In the pre-social era, user acquisition mattered. In the era of social, user acquisition often comes for free. User retention, however, does not. Eye-popping growth rates might appeal to a certain breed of investor, but if those users aren't retained (and they typically aren't in today's Facebook ecosystem) apps that can't keep the firehose of new users going quickly fall back to earth. Unfortunately, rather than focusing on how to improve retention, Facebook and partners like Zynga seem to be doubling down on user growth. Facebook has overhauled its platform to make new games easier to discover. Meanwhile, The Ville - Zynga's latest blockbuster game and its first major release since the App Center was introduced - is seeing even worse retention than its predecessors. While Zynga and Facebook executives have tried their best to put a positive spin on these developments, the reality is that driving even more aggressive viral growth will serve only to paper over the deeper challenges platforms like Facebook face: viral growth can be an efficient and powerful distribution channel - but in its current form, it resembles an uncurated broadcast channel that raises users' awareness, and not a curated recommendation channel that holds users' interest.

We have helped build some of the largest viral applications on the world's social networks and have "grown up" with these dynamics. Social games have been at the vanguard of the app economy, and they remain its primary killer app: Zynga, the world's largest app developer, single-handedly accounts for 10-15% of total time users spend on Facebook, not to mention 15% of Facebook's revenues, based on data in both companies' public filings. Yet this seemingly healthy ecosystem is ailing. (Our research paper describes our analyses in detail.) Production costs for the average social game have risen tremendously over the last few years. Castleville, one of Zynga's newer games, even features a real orchestra playing the soundtrack - part of why Zynga has seen R&D expense rise by a factor of 14 from 2009 to 2011. Despite this massive investment in game quality, user engagement has fallen: the top-450 Facebook games collectively have fewer users relative to Facebook's total population today than they did two years ago. Even the biggest hits are suffering: we estimate that the lifetime value of a new user entering a top-15 game today is likely less than half of that of a new user entering a top-15 game in 2009. And the issue here is not that games attract fewer new users to them than a while back - the issue is that they retain users even worse.

2. USER-GUZZLING APPS

What is causing such a disconnect between game quality and profitability? To some degree, simply increased competition, unsurprising in a hyped-up industry. But across the entire app ecosystem, user retention has become the Achilles heel. And the viral model inherent in Facebook's platform is part of the reason why. Retention is probably the most misunderstood piece of the social gaming ecosystem. Across most social games, usage patterns are fairly similar. Industry watchers and Wall Street analysts typically look at the ratio of users who are active in the game each day to those active over an entire month - this is sometimes called the DAU/MAU ratio, and is one of the few publicly available metrics about Facebook app usage. The average top-15 Facebook game in 2012 had a daily to monthly active user ratio of about 24%. Yet every game we ever operated attracted an active user back to the game on 70-80% of the days in any rolling time period. This makes intuitive sense: a player who only returned to a social game once every four days (as the 24% ratio would seem to suggest) would find his crops withered or his game characters unhappy.

So where does the 24% figure come from? It comes from the extreme speed with which new users churn out of the game after entering it. A good social game today loses 3/4 of newly registered users within only 5 days, and 90-95% in the first month. To put this churn into perspective: Zynga's Draw Something actually boasts one of the best retention patterns currently on Facebook. But even this game would require 250 million new users per year just to maintain its current traffic. In fact, the game's widely highlighted recent traffic decline has been misunderstood by nearly all observers: it is not that more users are finally getting bored, it is the simple fact that the game is struggling to add new users as rapidly as it once did. Users are likely staying in the game as long (or short) as they ever did. The picture gets exponentially worse for apps with poor retention: a struggling game like Zynga's Mafia Wars 2 would need to see more than one billion users sign up over the course of a year to have any hope of maintaining the same level of daily activity as Draw Something. These extreme levels of churn make it impossible (almost by definition) to build a sustainable business. But it is possible to get fooled for a while.

Multiplying these user retention patterns with publicly reported revenue data by Zynga and Facebook, one can estimate the total lifetime value of a user in one of these games: the median new entrant into Facebook's 50 largest games earns about $ 1.20 over the life of each new user, while the median top-10 emerging game earns about $ 0.50, even after accounting for viral growth affects (the propensity for one new user to bring in a second for "free"). Unfortunately, these average lifetime values roughly match what game developers pay for users on Facebook today (through ads), making game development in aggregate a dicey proposition - users simply do not stay long enough to create value, if developers do not have an audience yet. Moreover, the overwhelming impact of retention on these economics means that the occasional mega-hit receives non-linear and asymmetric payoffs. Draw Something is worth six or seven times more than even the average good game on Facebook, although retention is only about twice as good. Conversely, three-quarters of games in the top-10 fastest-growing games sport a retention that actually negates viral effects: users leave so quickly that any engineered boost to a game's viral growth by, say, 30% (e.g., by pushing users to invite more friends) would flow through significantly less than 30% to the game's top-line.

3. IMPLICATIONS FOR VIRAL INDUSTRIES

What are the implications of these problems? First, Facebook needs to make viral growth more relevant for users. Content needs to be better curated than the relatively dumb viral growth achieved by most social apps. Most hit-driven industries have aggregators and curators of content. Radio stations curate music, movie studios and distributors curate movies. Viral growth does not appear to curate much and ends up creating a lot of noise that can drown out good content. The apparent premise of the news feed - watching relatively unfiltered what your friends (briefly?) engage with - may simply not be a good curation channel for content. Facebook's new app store is a step towards curating more efficiently, but changes may be needed to the core model of friend-based recommendations and news feeds to really make a difference.

Second, operating in such an extreme environment requires a different structure for most players in the industry. If payoffs are highly asymmetric but in the vast majority of cases very low, content creators must stay either stay small and nimble or retain the ability to rapidly scale up and down. That is not actually big news - other hit-driven industries already operate like that. Movie studios do not have writers and actors on permanent payrolls, neither do music labels. The social games industry is taking small steps towards this reality already: Zynga and Electronic Arts both recently announced that they will start promoting third-party games alongside their own games. While this is a move in the right direction, more aggressive changes are needed.

Finally, investors must revisit how to value ”freemium” apps. We do not count free samples given out in stores as evidence of product usage in the offline world, yet companies and investors planning around eye-popping numbers of free users in the online world may be making this very mistake. The astounding rise and fall in user numbers of social video apps Viddy and Socialcam (even though Facebook actively promoted and then ”regulated” them) should be a cautionary tale. Viddy even closed a $ 30 million financing round during its brief moment in the sun - a $ 300 million valuation for an app that now boasts barely half a million daily active users.

4. MEANINGFUL GROWTH

Ultimately, getting this balance between quantity and quality right is of paramount importance to all aspiring platforms: every online service from Pinterest to LinkedIn to Tumblr is launching platforms for third-party developers. All of them focus on user awareness growth, because that is the flashy signal that will draw developers - rather than focusing on meaningful growth. To steer its economy into the right direction, Facebook could, for example, start taxing social interactions in applications. This would force developers to use them more strategically, and presumably meaningfully. Or it could introduce a cap-and-trade system which would allow smaller developers to max out or sell their ”viral allowances”, thus leveling the playing field and emphasizing retention overall. Ironically, Facebook's big contribution was to make connections between people on the internet meaningful - but most viral growth along these newly meaningful connections is simply creating awareness rather than followership. As the underlying messaging platform, Facebook has the power to trade off growth (awareness) vs. retention (meaning followership). For the benefit of the app ecosystem, Facebook needs to emphasize meaning.

5. THE AUTHORS

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