disruptor beam

Mobile Models: Looking Closer at LTV, CPI & ROI

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Paid Installs Suck

- Cost of acquiring players keeps going up
- Facebook acquisition costs are a bit lower than mobile, but not by much
- Other estimates (AppLift/NewZoo) put costs at $2.55 per install.

Average cost of acquiring loyal app users in 2013 (Source: Fiksu)

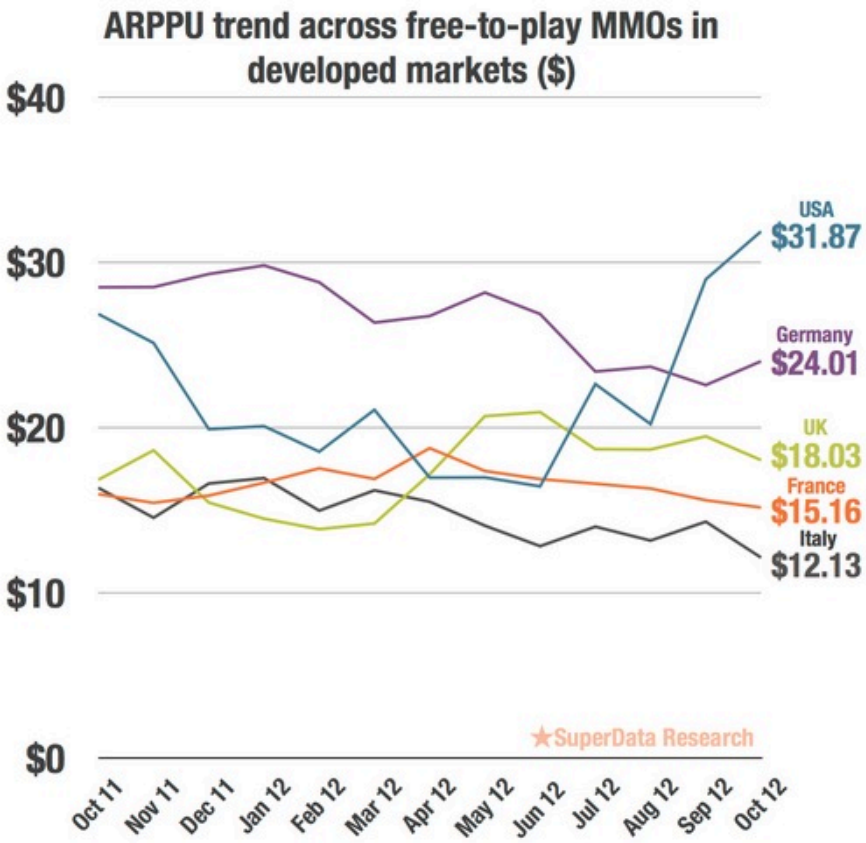
Widening Gulf between CPI and ARPU

For most of 2013, the average game developer either lost money or made no money on all their installs.

Notes: The month-to-month changes in cost per install (CPI, indexed) for mobile gamers in iOS, and average revenue per user for mobile game category (ARPU, indexed) in the United States. Numbers subject to change. Copyright © 2013 **SuperData Research.** All rights reserved.

Avoid Averaging Fallacies

- The average game might earn $31.87 per paying customer, but lots of games make almost $0 and a few make a lot more than that.
- The average game might spend $1.90 to acquire a customer, but a few are willing to spend a lot more, and some spend $0



The Disruptor Beam Difference

Disruptor Beam

2 Million+ Installs
$0.20 or less
Variable cost, paid after revenue

4.1 sessions/day per daily active
32 minutes per day

ARPPU around 2x industry average

Competitors

Competitors pay an average of $1.90 each to acquire customers *before* any revenue yield

Competitors earn half as much per player

Rethinking Life Time Value (LTV)

- LTV is not ARPU or ARPPU (most people know this)
- LTV is not simply *Total Revenue-Customer Acquisition Costs* (this is what most people think it is)

Rethinking Life Time Value (LTV)

$$LTV = \sum_{x=1}^{n} \frac{ARPU_x - Costs_x}{(1+WACC)^x} - CAC$$

h/t to Bill Gurley of Benchmark Capital for a similar version of this formula.

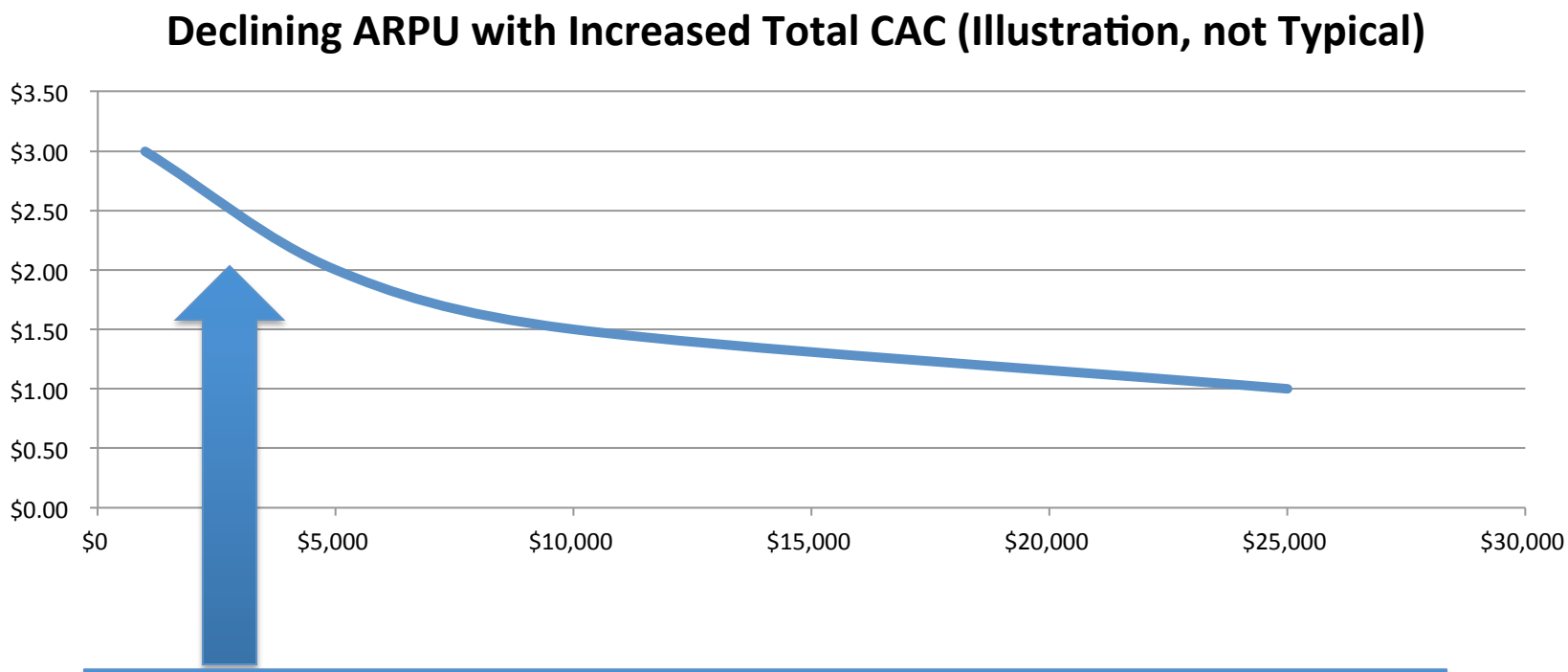
LTV in Plain English

- CAC: Customer Acquisition Costs
- Costs: all the marginal costs you'll incur in supporting the customer: servers, hosting, customer service, etc.
- WACC: your cost of capital. *Remember the time value of money!*

Elements of LTV are *Interdependent!*

- As you increase CAC, your ARPU will decline
  - Purchased customers are almost invariably less value than organic customers
- As you increase CAC, you'll also increasingly pay for some customers that you would have acquired organically.
- As you modify pricing formulas, you'll affect churn and/or bias towards different customers segments with different support cost profiles.

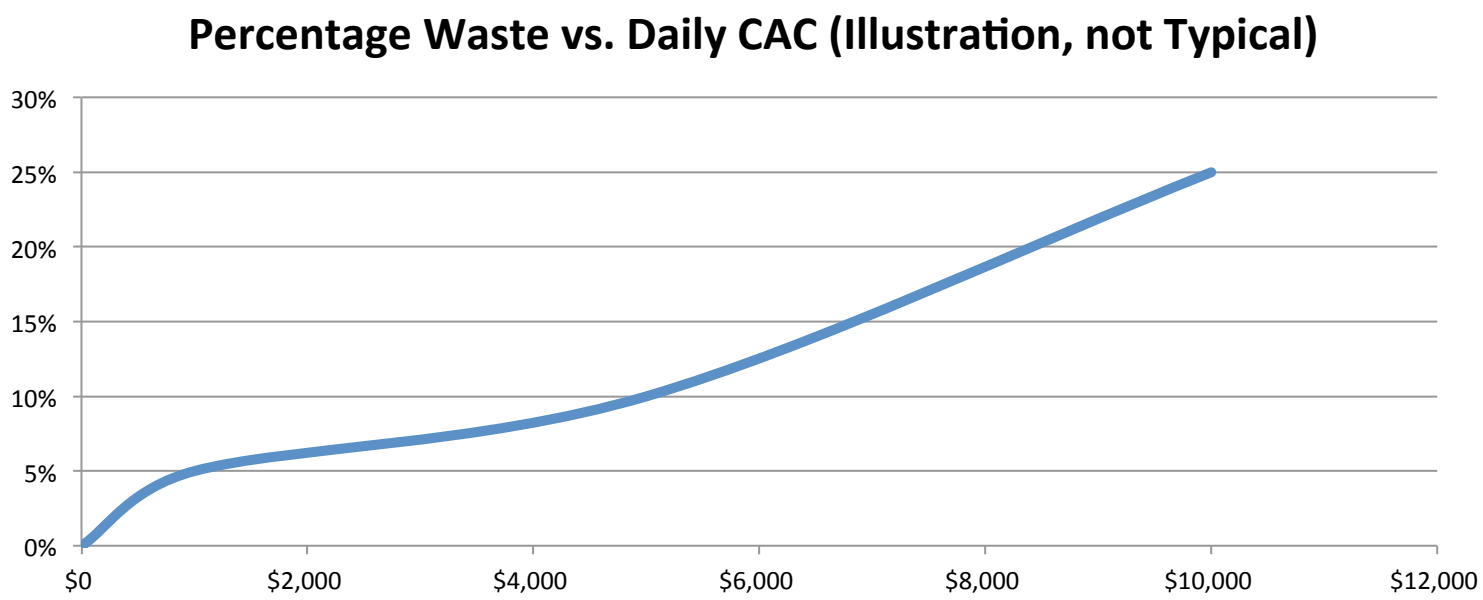
Increasing Total Acquisition -> Decreased ARPU



Most companies model ARPU at sub-scale CAC spend. Spending at a higher level will typically acquire decreasingly profitable customers

Increased CAC -> Buy more customers you'd have obtained for free

A good thought experiment: as you spend more money to acquire customers, how many are you paying for that you'd have acquired organically (for free)? How does the % of waste increase with increased LTV spend?

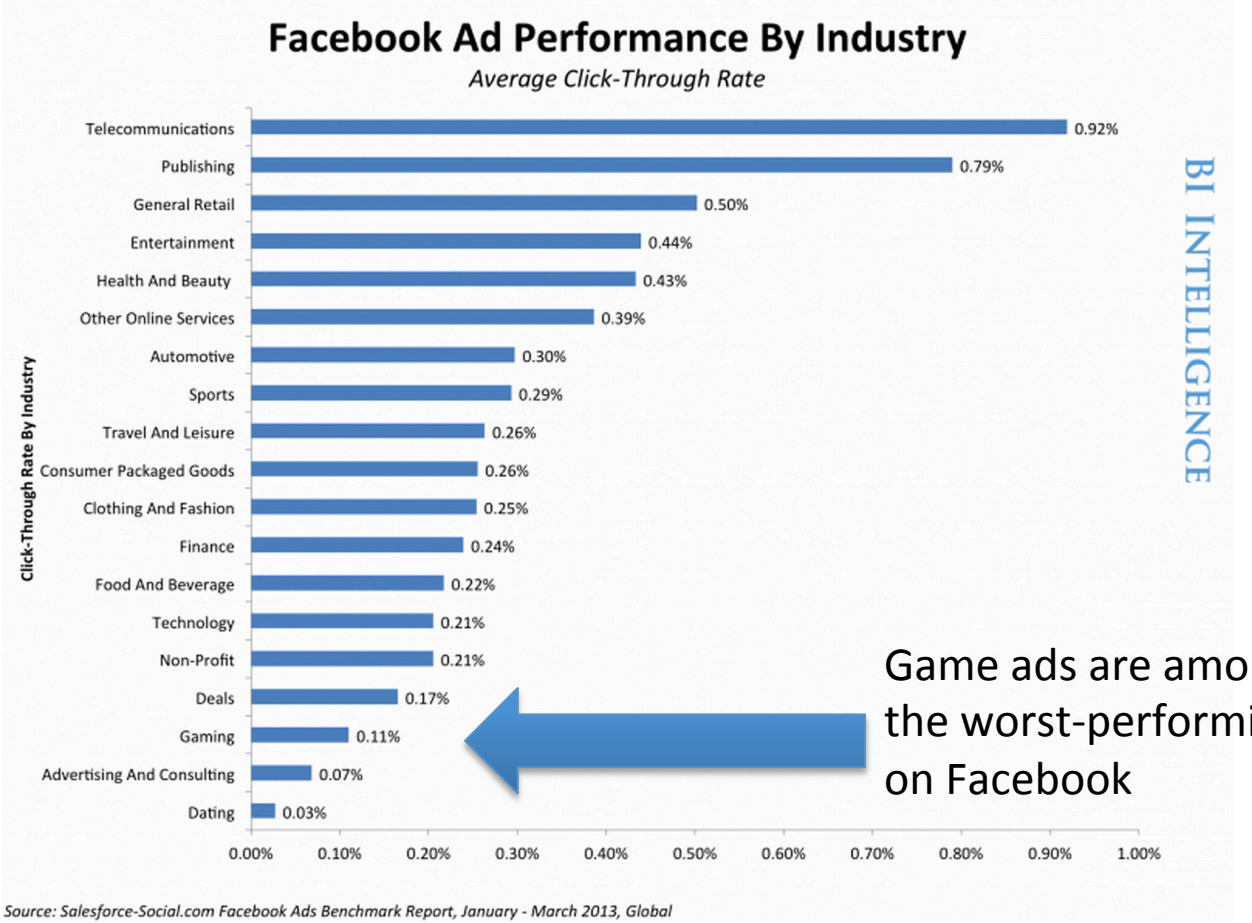


Law of Diminishing Clickthroughs

- The first display ads on the Web reached 78% Clickthrough Rate back in 1994 *
- In 2013, a few rare Facebook CTRs get as high as 1%, and games average only %0.11

* h/t to Andrew Chen for this data point, and for a more colorful version of the Law.

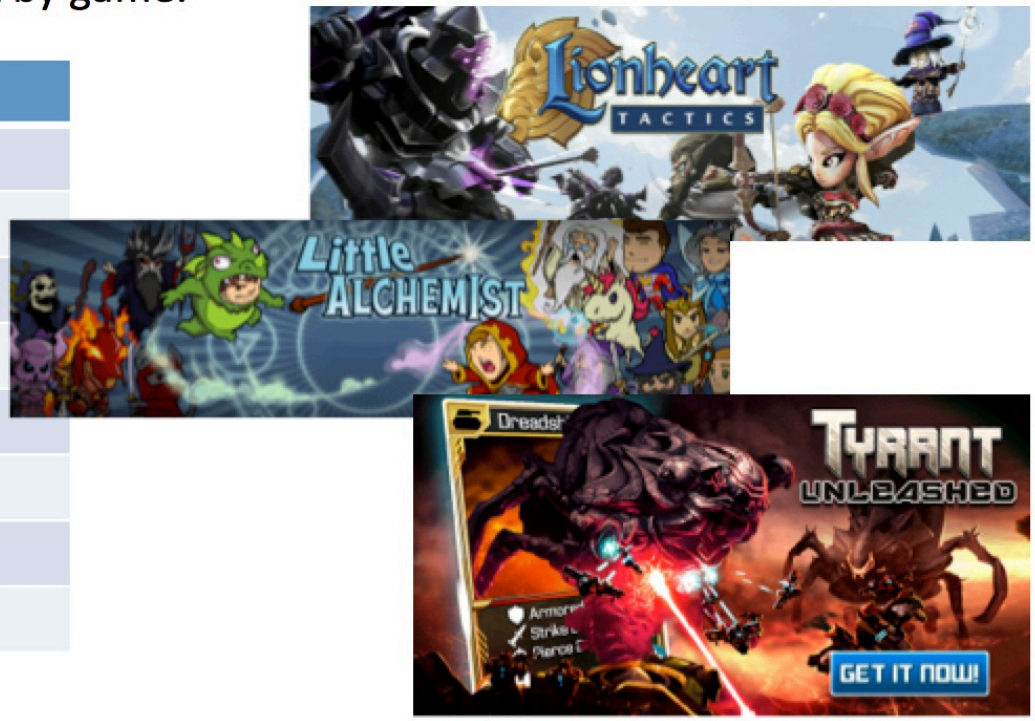
Law of Diminishing Clickthroughs



Game ads are among the worst-performing on Facebook

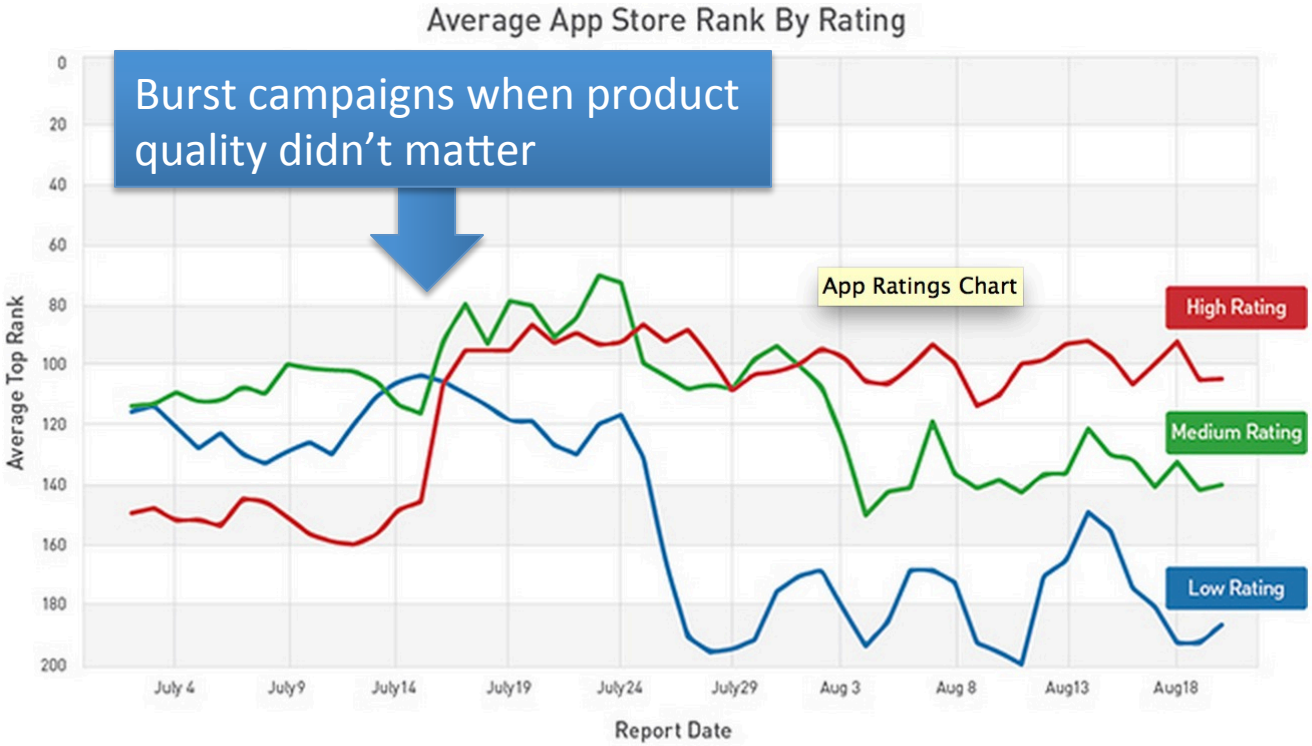
Average CPIs on a single network by game:

Game	CPI
CCG #1	$4.29
Rogue-Like #1	$3.21
MMO #1	$6.10
MMO #2	$2.59
CCG #2	$3.83
RPG #2	$3.18
CCG #3	$4.28
MMO #3	$1.56



Data source: Kongregate March 2014

Burst Campaigns



The lines track three groups of apps from the top 200: low ratings (under 3), medium ratings (3 to 3.99), and high ratings (4 and up). The Y axis shows the average app store rank for all apps in that group.

Fiksu

Advertiser/channel incentives not aligned

- Advertisers want low CPI, high long-term LTV (and high short-term yield, if possible)
- Channels want high short-term CPI revenue, typically don't care about long-term LTV

War of Asymmetric Information

- Advertisers try to optimize long-term ad performance by having better predictions of long-term LTV than advertising channels
- Channels sell advertising to the highest-short term bid for their inventory

Tragedy of the Commons

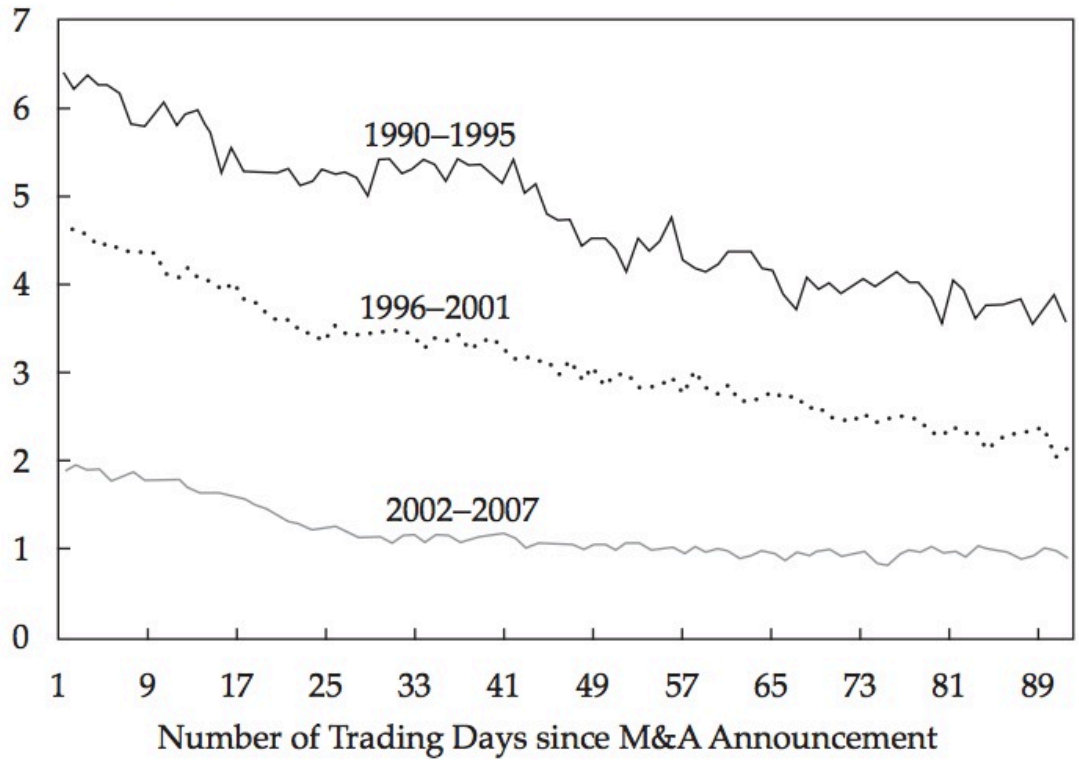
Who do you compete with in paid customer acquisition?

- Companies trying to run real game businesses that need LTV > CAC and are doing it right
- Companies who overestimated LTV and are paying more for CAC than they should
- Companies that are trying to build "enterprise value" and willing to pay CAC > LTV, sometimes much higher
- Companies outside the game industry bidding up inventory (e.g., e-commerce companies during holiday seasons)

Game business or arbitrage business?

- It is hard to be both
- Arbitrage = focus on analytics, shouldn't necesarilly prefer your own game, capital intensive up-front because you need to spend on ads well in advance of positive yields
- Game business = core entertainment value, building franchises, building long-term value
- If ads are where most of your capital goes, you might be more of an arbitrage business

Arbitrage in Finance



Jetley, G. and Ji, X. (2010). The Shrinking Merger Arbitrage Spread: Reasons and Implications. Financial Analysts Journal, 66(2).

What about non-advertising customer acquisition?

That can be hard, too.

Social virality

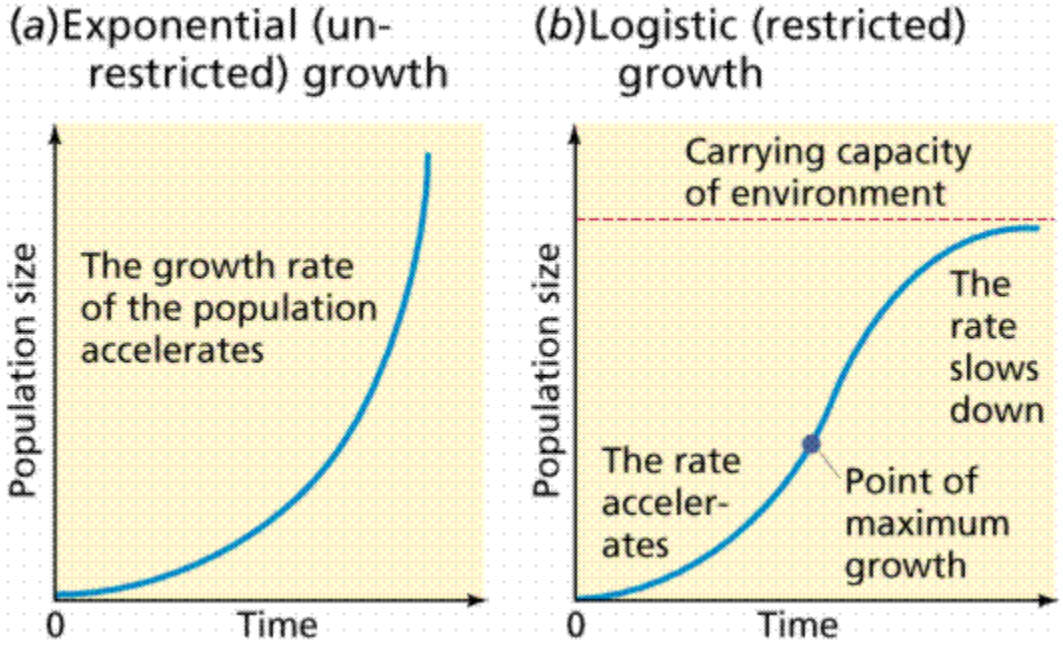


Image from Purves et al., Life: The Science of Biology, 4th Edition, by Sinauer Associates (www.sinauer.com) and WH Freeman (www.whfreeman.com)

Word-of-mouth and "viral" adoption of a new game can be thought of as similar to population growth models used in biology (or viral propagation in epidemiology)

Why the S-curve Collapsed

Zynga games in 2008: k-Factors of 5+

- No “immune system” so propagation was totally unrestrained; few competitors
- People were not accustomed to ignoring it yet

Social games since about 2012:

- K-Factor of <1 is typical, meaning you never normally reach the midpoint in the S-curve with “viral” mechanics alone
- True word of mouth needed; product quality matters

Bottom line: you need to hack

#1 Rule for Hacking the System

Be different

How to be different

- Treat customer acquisition as R&D
  - Focus on discontinuous and disruptive innovations for customer acquisition
- Seek customer acquisition channels where distribution partners are totally aligned based on sharing in LTV
- Experiment with ways to drive genuine word-of-mouth
- Product matters! Thought experiment: what would happen if you shifted more of the marketing budget into game R&D?

Let's get specific

- Build games with 2X or more over "average" LTVs
  - Focus on long-term engagement rather than metrics like D1 retention
- Build games with much lower CACs
  - I like 20% or less of total LTV on CAC (many companies spend 80%, 90% or even more than 100%) when that expense ratio is an up-front, marginal close
  - I can go higher when incentives are aligned, such as rev-share deals with advertisers

How to increase CTR

(and consequently lower CPM + Effective CPI)

- Think of customer acquisition as an R&D effort—know about new channels before everyone starts using them
- Use—or create—well-known brands/franchises
- Clever use of integrated PR programs
- Use peripheral media events to drive excitement and recognition
- Identify partners willing and able to align incentives and abandon (most) CPI-oriented channel

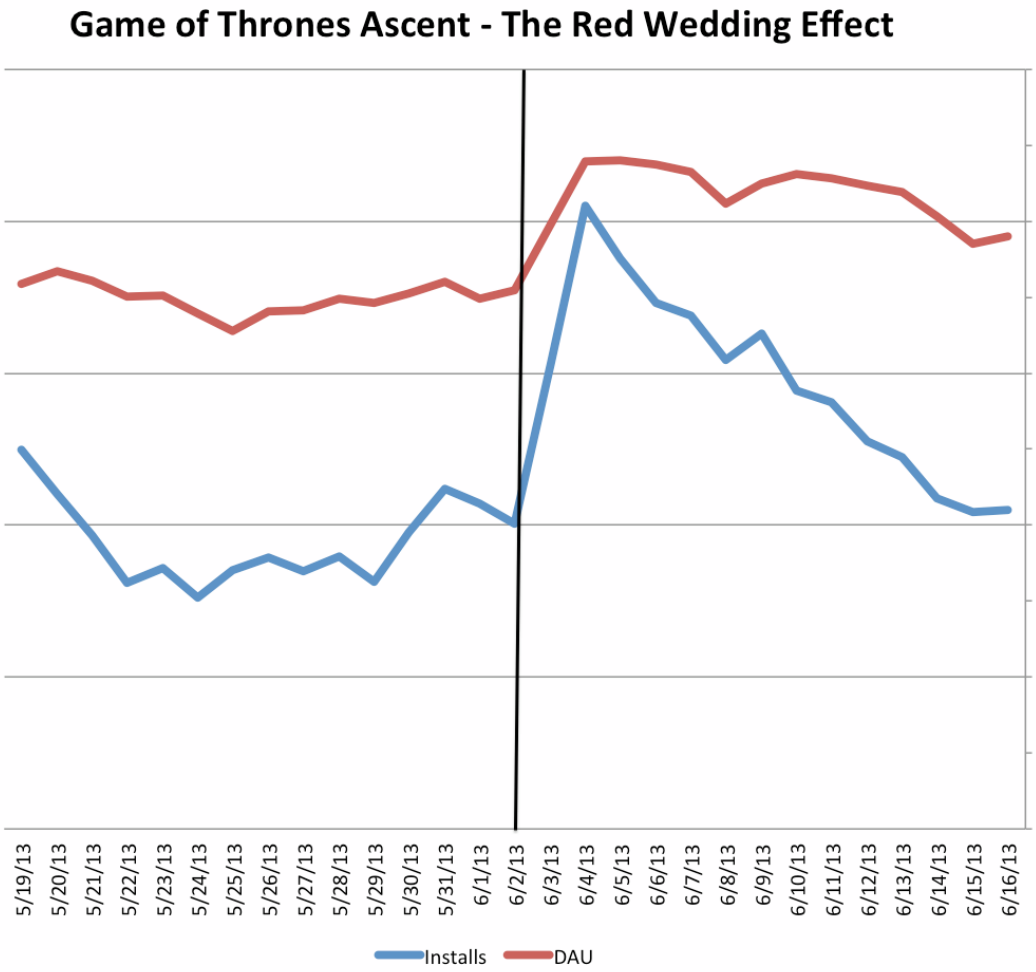
Facebook Ads, with new types

- Retargeting ads on Facebook: around 21X standard CTRs (on average) via FBX ad units
- At Disruptor Beam we had over 5% CTR on Timeline Ads for the first few weeks these ad units were new (**that's about 5,000% better CTRs** than standard Facebook ads)

…but these worked for us in the early days, because we tried them ahead of most companies.

We Release Content Weekly

- 40+ content packs shipped since the game launched
- Weekly production schedule
- 2D, CCG-style art and dialog-driven narrative fits into a weekly production schedule and remains authentic to the source material
- Weekly content updates typically drive a new weekly cycle of engagement and monetization
  - When show airs, content is tied to episodes just aired
  - When show is between seasons, focuses on original content about your character's story



The Red Wedding (Season 3, Episode 9) aired on June 2nd, 2013.

Within two days:

- DAU increased by 23%.
- Installs increased by 100%.
- Effects felt 14 days afterwards.
- Players monetized 100% - 125% better than other cohorts.

Identify your One Metric to Rule Them All

- Hint: it probably isn't D1 Retention, DARPU, or DAU (although those might be useful to you)
- Your OMtRTA should explain everything else in the business
- Spend $ on ads and ongoing game R&D to optimize this number before worrying about most others
- At Disruptor Beam we use "number of players who start at least X sessions/month" [we sometimes change our what X should be]

Benefits of our approach

- Use more capital for things that increase the One Metric, less on aspects with diminishing returns
- Forces all forms of customer acquisition (organic, paid, novel, product-driven, etc.) to drive the metric that everyone agrees on—and tests whether any of these cases can *scale*
- If you do end up doing paid UA, then all the things I mentioned will also tend to decrease eCPI

Concluding Points

- Understand all the costs in your LTV formula
  - Not just ad costs—other support costs and **opportunity** costs
- Identify one metric that explains the entire business
- Treat customer acquisition as an R&D effort
- Product really, really matters

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