# AN INTRODUCTION TO THE COMPETITION LAW AND ECONOMICS OF "FREE"


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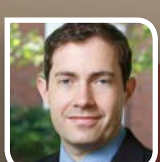

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# I. INTRODUCTION

Many of the largest and most successful businesses today rely on providing services at no charge to at least a portion of their users. Consider companies as diverse as Dropbox, Facebook, Google, LinkedIn, The Guardian, Wikipedia, and the Yellow Pages.

Some business models offer free service to one side of a two-sided market — relying on the now-familiar logic that users come to the market to connect with each other, and that free service to one type of user can increase the number of such users, creating greater value (and ultimately allowing higher prices) for another type of users. Two-sided business models are not new. Consider nightclubs offering free admission to women (thereby justifying higher prices to men), and newspapers providing free copies to readers (with higher circulation calling for higher advertising prices). More recently, this approach has become prevalent for a wide variety of online services including search engines, social networks, and other online media.[2]

Free service, however, need not be limited to two-sided markets. First, some firms justify free service via the data they collect (such as email addresses and/or telephone numbers in return for free Wi-Fi). Such firms can then use this data commercially at some subsequent stage. Second, some firms provide free service as a trial to pull in users who might later pay for additional benefits. This "freemium" approach is widely used by all manner of apps and online services, from Dropbox to Pandora to LinkedIn. Third, some firms offer service for free, but simultaneously solicit donations. Donations are an intuitive strategy for a non-profit (e.g. Wikipedia), but some businesses now use this approach (such as The Guardian, an online news site). Fourth, other firms offer free service primarily because they operate with extremely low costs. Perhaps the best-known is Craigslist, which runs 700+ city-specific marketplaces serving more than a billion listings per year, yet has a skeleton staff of just 50 employees, retaining the limited features and simple design the site offered almost since inception. With limited costs, Craigslist offers almost all its listing services free of charge.[3]

Is free service a nirvana worthy of celebration? For consumers, it is easy to answer in the affirmative. At least in the short term, free services are often high quality, and users find a zero price virtually irresistible. Of course, long-term assessments could differ, particularly if the free service reduces quality and consumer choice. Furthermore, "free" service tends to be free only in terms of currency; consumers typically pay in other ways, such as seeing advertising and providing data, though these payments

2 See, e.g. Jean-Claude Rochet & Jean Tirole (2006). "Two Sided Markets: A Progress Report," 37(3) Rand Journal of Economics, 645 (2006).

3 *Sites*, Craigslist, https://www.craigslist.org/about/sites. Craig Newmark Founded Craigslist To Give Back, Now He's A Billionaire, Forbes, https://www.forbes.com/sites/ryanmac/2017/05/03/how-does-craigslist-make-money/. Posting Fees, Craigslist, https://www.craigslist.org/about/help/posting_fees.

tend to be more difficult to measure. Meanwhile, on the paying side of a two-sided market, free service sometimes creates market concentration that, in turn, increases prices. If those costs are in turn passed through to consumers, the latter may plausibly end up worse off.

In this short paper, we examine the competition economics of "free" — how competition works in affected markets, what role competition policy might have and what approach it should take, and finally how competitors and prospective competitors can compete with "free." Our bottom line: While free service has undeniable appeal for consumers, it can also impede competition, and especially entry. Competition authorities should be correspondingly attuned to allegations arising out of "free" service and should, at least, enforce existing doctrines strictly in affected markets.

## II. THE COMPETITION ECONOMICS OF "FREE"

Zero prices shift the way competition unfolds. In this section we begin by exploring the relevant aspects of competition in ordinary markets with positive prices, then turn to the distinctive effects of free services.

### *A. Competition in Markets with Positive Prices*

Competitive dynamics in markets with free service are best understood by reviewing the fundamentals of competition in ordinary markets with positive prices.

In general, price is the most basic and most common form of competition. For one, producers regularly cut prices to increase demand, both through direct price cuts and through various discounts and rebates. Conversely, in the absence of barriers to entry, if a firm charges high prices, competitors constrain it by entering the market and bidding price down to the competitive level.[4]

Trade offs between price and quality further support well-functioning markets. Often, a rival can enter a market via a somewhat lower price at a level of quality equal to the incumbent, or via a sharply lower of price at a somewhat lower level of quality. Because some customers are willing to accept lower quality in order to obtain a substantially lower price, these strategies facilitate entry into all manner of markets — from low-cost airlines to discount electronics and beyond.

Indeed, even Christensen's well-known theory of disruptive innovation[5] crucially relies on positive prices. A Christensen disruptor begins by offering lower quality at a much lower price than incumbents. In this strategy, the disruptor then improves quality more quickly than incumbents do and also more quickly than market requirements, thereby taking market share from incumbents. Notably, it is lower prices that in the first instance draw customers to the disruptor.

In all these examples, positive prices crucially facilitate entry. A new entrant can try to offer a similar product or service at a lower price (a natural and widely-used entry strategy,) which in turn constrains the incumbents' strategy. Competitive prices result, to the benefit of consumers. Also, prices convey genuine information about the true cost of each good or service, facilitating allocative efficiency.

### *B. The Prospect of a Negative Price*

In a market where a firm, for whatever reason, offers service at a zero price, any price competition would require competitors to embrace negative prices. Indeed, multi-sided markets sometimes feature negative prices. For instance, competing credit card issuers attract customers offering "points" or rebates. Similarly, competing hotel reservation services attract customers via free nights. Both card issuers and reservation services fund these benefits through fees paid by the paying side of the market.

Despite these occasional counter-examples, negative prices usually present important challenges to firms. If a firm pays a customer to take its product, the customer may discard it rather than use it, providing no benefit to users on the other side, no benefit to the firm, and only an exploitative claiming of the payment as a windfall. If a firm pays a customer to use a service, the customer may be able to feign use — even

4 See OECD, Policy Roundtables, Excessive Pricing, 2011, at p. 33, https://www.oecd.org/competition/abuse/49604207.pdf.

5 Joseph Bower & Clayton Christensen, "Disruptive Technologies: Catching the Wave," Harvard Business Review, January-February 1995.

utilizing a software automaton to simulate human usage. For example, various services pay users to watch advertising videos and look at banner advertisements on computer screens,[6] but they face all manner of fraud, broadly from consumers who try to get paid without actually watching.[7] Additional concerns often result from reputation (a firm might look desperate if it pays customers to use its service), tax (an obligation to report payments to users), and other aspects of the law (such as prohibitions on doing business with those in disfavored countries).

Of the various firms that tried negative prices to compete with incumbents' free offerings, probably the best known is Microsoft Bing Cashback, which paid rebates to users who ran searches on Bing, clicked ads, and made purchases. Because payments required that users make purchases, Microsoft did not face the problem of falsified user activity such as "bots" running fake searches. Yet users nonetheless gamed the system. For example, a user might first decide what store she wanted to buy from, then run a Bing search to see an ad from that store, and finally click the ad to activate a rebate on a purchase she was already going to make. While Bing Cashback provided a windfall to savvy users, there was little evidence that it caused usage of Bing Search to increase more generally.[8] With Microsoft subsidizing the rebates, it was little surprise when the company ultimately ended the program.[9]

### *C. Competition in Markets with Zero Prices*

In this section, we assess the benefits and challenges raised by zero prices. We show that while zero prices offer important benefits, they can also raise concerns for competition policy.

#### 1. Benefits of Zero Prices

Markets with zero prices bring some important benefits to consumers. First, with prices set to zero, consumers avoid paying cash for a given offering. The size of the benefit can be substantial. Some users might be willing to pay hundreds of dollars per year for web search, social networking, video streaming, and other services. Yet these services are widely available without charge. This benefit is distinctively valuable to low-income consumers who can nonetheless use world-class search engines, online encyclopedias, and access global news content. With the growing concerns about inequality, helping low-income consumers is correspondingly attractive.

Second, if a service lacks any monetary charge, competition tends to focus on quality. When choosing between two free services, consumers favor the one with better quality. While that can create distortions (discussed in the next section), it also accelerates quality improvements and innovation, precisely because quality becomes the main, if not the only, parameter of competition. To the extent that consumers value the innovations, such as more accurate search results, rapid innovation is correspondingly valuable.

Third, zero prices may encourage users to multi-home by installing multiple apps and using multiple services. If the offerings in a given sector provide service at zero price, users can use or at least try several in hopes of finding the best one. Consider free online games, where most users experiment with multiple games before settling on those they prefer. In contrast, if service carried a charge, consumers would have an incentive to stick with what they already paid for, perhaps locking in an inferior incumbent. In this respect, zero prices can facilitate entry and stimulate competition.

Fourth, free service can play a useful role in a multi-faceted pricing scheme such as "freemium." When a firm offers basic service at zero price, along with one or more improved tiers at higher prices, the free version helps customers try the service and assess its quality and match. In charging positive prices for additional benefits, freemium services leave room for entrants to offer lower prices — preserving the entry strategy described in Section II.A.

Yet, despite the benefits, zero prices create important barriers to competition in certain affected markets. We turn to these concerns in the sections that follow.

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6 See e.g. ADmimsy, Inbox Dollars, Perk.tv, Swagbucks, Viggle.

7 See e.g. PTS Cheating Sites, https://www.facebook.com/PtcCheatingSites/, indexing such schemes.

8 Ben Metcalfe, "The real reason Bing Cashback is ending," Ben Metcalfe, June 4, 2010, https://benmetcalfe.com/blog/2010/06/the-real-reason-bing-cashback-is-ending-we-all-scammed-the-fk-out-of-it/.

9 Yusuf Mehdi, "A Farewell to Bing Cashback," Bing Blogs, June 4, 2010, https://blogs.bing.com/search/2010/06/04/a-farewell-to-bing-cashback.

## 2. Challenges Created by Zero Prices

a) Free service distinctively undermines paid business models

A first concern is that free services tend to undermine paid options. One might look, for example, at the experience in the news industry — where sites offering free online news have taken attention and market share from those sites that charge subscriptions, notably including most high-quality newspapers.

From one point of view, a shift to free services is innocuous and indeed efficient — rightly favoring those services that somehow manage to offer a good that users want (news) at a low or zero price. Yet subtleties within the environment may shift this interpretation. First, "free" news providers, such as BuzzFeed and Mashable, have notably different incentives for growth and monetization. A paid news site reasonably anticipates that an important "scoop" exclusive will cause more readers to subscribe, yielding a corresponding increase in revenue. This creates an incentive for distinctive, important journalism.[10] These important articles — based on extended research and investigative journalism — make readers better informed, and are likely to improve political accountability and society at large. But those are long-term benefits that neither readers nor sites are likely to internalize. In contrast, a free site can most readily increase revenue by producing click-bait articles more likely to attract readers — and less likely to have public benefits.[11]

To the extent that free news services provide lower quality news and reduce the revenues of higher quality news providers, any positive externalities from free news are correspondingly reduced. An individual reader, considering only his or her private benefit from paying for news, would ignore the associated externalities. Thus, the market is likely to produce an inefficiently low level of quality.

Further distortions arise if consumers are in some way short-sighted or confused about the benefits provided by paid offerings. For example, paid search services might provide more accurate recommendations less tainted by commercial concerns. Paid information sites might protect readers from the distortions of advertising. By reducing tracking and associated information collection, all manner of paid services could increase privacy. We think these are important potential benefits, but recognizing their value requires consumers to think more carefully about future benefits, harms, and risks. In contrast, free service has a simple and straightforward appeal.

b) Free service combined with network effects may impede entry

While zero prices tend to prevent firms from competing on price, they invite competition on quality. In the best of cases this can push users towards products and services of distinctively higher quality. For example, with search engines all offering service for free, users had every incentive to switch to Google, foregoing various competitors in favor of a Google option they saw as superior. Similarly, Facebook eviscerated MySpace in part through changes that seem to have been genuine innovations (such as broader usage by more users, as well as improving some aspects of speed and security). Most observers found these differences to be important quality improvements.

Despite such advances, free service may present material impediments to competition. For one, many two-sided markets can provide benefits to one set of users at zero price thanks to revenue that comes from other users. An entrant typically cannot beat "free" by lowering prices because negative prices are often unfeasible, as discussed in Section II.B. Nor can an entrant easily find fee-paying customers on the other side, for lack of sufficient customers on the first side. In such markets, the combination of free service and network effects makes entry distinctively difficult.

The impact of free service on competition extends beyond advertising markets and into other information goods. Consider a rival maker of smartphone operating systems, assessing how to compete with Google Android. Given Android's zero price to both consumers and phone manufacturers, the entrant would quickly conclude its new offering must also be free. But Android enjoys all manner of positive network effects, most obviously the myriad apps users can run on Android phones. A user considering a rival OS would forego these apps and typically require some compensating payment for that loss. The entrant could pay users and manufacturers to accept its operating system by, for example, subsidizing handset equipment. But the users who respond to such offers are distinctively price-sensitive — they are the users who seek a subsidized

10 See David Skok, "The current move to subscription models is a revolutionary shift for journalism," *Poynter*, April 27, 2017 ("Most of the publications seeing success with digital subscriptions rely on quality over quantity journalism."), https://www.poynter.org/news/current-move-subscription-models-revolutionary-shift-journalism.

11 For example, critics allege that the majority of free online news provider BuzzFeed's posts were click-bait. See Logan Rhoades, "A Full 63% of BuzzFeed's Posts are Clickbait," November 12, 2014, https://keyhole.co/blog/buzzfeed-clickbait/.

handset and accept a narrower selection of apps. Such users are usually less valuable to app developers and advertisers, making the subsidy tenuous, or worse.

c) Free service invites overproduction on quality

Free service creates heightened barriers to competition in markets where advertisers' payments support free service to consumers. Suppose a given region had two "yellow book" directories of area businesses. One book charges high prices to advertisers and uses those revenues in part to fund a large book with durable paper, multiple indexes and cross-references, and large fonts. Another book charges low prices to advertisers, achieving similar net profit by foregoing those benefits. Any prudent consumer would choose the former book — realizing that he will see the same price for goods and services whichever book he uses to select a vendor, so he might as well choose the fancier book. This might be an efficient choice, as it gains benefits that, in aggregate, exceed the production costs of the fancier book. But it might also be inefficient, imposing high charges on advertisers and in turn driving up the prices of goods and services. Nor is this market structure in any way limited to telephone books; search engines and other online advertising share these incentives. We call this market structure "price coherence," and our analysis finds that markets with this structure systematically tip towards overprovision of benefits to customers, above the efficient levels, needlessly driving up final prices for goods.[12]

Notably, free service on one side of the market can even drive out rivals and push towards a single dominant firm. Returning to the "yellow book" example, notice the challenge faced by the second book publisher — facing little consumer adoption, and hence correspondingly lower ability to attract advertisers. Nor is it promising for the second yellow book to copy the product features of the first. Those require additional revenue, but advertisers will rightly decline to pay. In such a market, the most likely outcome is the continued decline and ultimately exit of the secondary publisher. This broadly tracks experience in online advertising markets, where dominant platforms have been stable for some time and where entrants and smaller firms have largely struggled.

d) Risk of deception or exploitation

A consumer paying for a good or service can directly assess the appropriateness of the fee relative to the value provided. But in markets with zero prices, consumers make no such trade-off. A service might collect outsized value from using customer data, showing ads, or making other use of a user's activity, and the user would not know it. From one point of view, if the user is not harmed by these activities, perhaps they have no reason to object. Yet there is some reason to think consumers would be alarmed if they knew, for example, how online tracking services collect and analyze their behavior. From this standpoint, users would be better served by transactions with explicit terms such as simple posted prices.

## III. PLAUSIBLE STRATEGIES FOR ENTRANTS

Despite the challenges listed above, entrants do have some potential strategies available

First, an entrant could take the bull by its horns and seek to push through the problem. For example, with sufficient efforts to recruit consumers, a platform could try to overcome the supposed lack of consumers and the resulting advertiser hesitance to participate and to pay fees. Relatedly, with sufficient capitalization, a platform could accept its losses during a period of insufficient participation on the fee-paying side. For the very largest and best-funded entrants, these strategies seem to be possible, though with exceptional expense and risk. Consider Microsoft's decade-plus commitment to online search, at one point losing as much as $1 billion per quarter.[13] That said, this strategy requires exceptional funding, so it is limited to a small subset of potential entrants.

Second, an entrant could attempt to outcompete incumbents through sharply increased quality sufficient to induce switching, even if there is no financial incentive to switch. Indeed, Google arguably used this strategy as it entered a search market already crowded with incumbents like Yahoo and AltaVista. That said, such a sharp increase in quality is correspondingly unusual. Most potential entrants offer more modest benefits, especially at the outset. If entry is limited to those with the very largest advances, entry will be less frequent. In markets where scale is necessary to achieve quality, for example because large-scale operation yields data that improves quality, new entrants are particularly unlikely to outcompete incumbents on quality.

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12 Edelman, Benjamin & Julian Wright, "Price Coherence and Excessive Intermediation," (130:3) (2015) *Quarterly Journal of Economics* 1283.

13 David Goldman, "Microsoft's Plan to Stop Bing's $1 Billion Bleeding," CNN Money, September 20, 2011, https://money.cnn.com/2011/09/20/technology/microsoft_bing/.

Third, an entrant could try to offer an entirely new service that does not directly compete with any incumbent, and thus is not hampered by the difficulty of undercutting a free incumbent. For example, at its launch, Twitter was quite different from all incumbents, and its main impediment to adoption was general user hesitance, not a specific incumbent's zero price. This strategy seems to be viable yet, like the others, also importantly limited. Only rarely does an entrant devise an entirely new type of offering, of broad interest, with potential far-reaching effects. If entry is limited to these unusually successful new firms, entry will be predictably rare.

Fourth, an entrant may find an opportunity when consumers tire of incumbents' service despite the appeal of "free." For example, after Facebook faced a series of scandals, including data broker Cambridge Analytica siphoning data of about 87 million users as well as Russian meddling and the spread of "fake news," some users indicated that they would leave the service.[14] Others, including EU Competition Commissioner Vestager, remarked that they would prefer a paid version of Facebook, rather than the current free version with its privacy and advertising-related problems.[15] Her instinct seemed to resonate with some users, and a confluence of disasters may occasionally threaten firms with free service. But entry will be infrequent if it is limited to situations when incumbents face a combination of multiple problems.

Fifth, an entrant may see an incumbent's free service, and respond not by trying to match, but by charging a positive price and eliminating whatever is unwanted or annoying about the incumbent's service. For example, in response to an incumbent offering free service thanks to advertising, an entrant charging a subscription can forego advertising. Netflix's positioning *vis-à-vis* YouTube broadly fits this pattern. In other circumstances, an entrant may offer its customers both free and paid service, typically the former with ads and the latter without. Spotify's free and paid services fit this approach. These subscription models sometimes get traction, but usually face significant challenges. Consider for example customer hesitation to pay money for offerings seen as new and unproven, as well as low signup rates when selling subscriptions.

Even where these strategies create opportunities for entrants, there are also doubts about the feasibility of these strategies in the face of today's large and entrenched incumbents. When Google unseated Yahoo and Altavista, those firms were much smaller in market capitalization, employees, scope of operation, user base, and every other dimension compared to today's tech giants. Any entrant seeking to oust a dominant tech firm today would face larger, better-organized, multi-product competitors that are therefore better positioned to respond and defend themselves.

## IV. POLICY RESPONSES

Policy-makers have promising responses available if they seek to address the competition concerns associated with free services.

First, free service creates a heightened need for antitrust enforcement. Because entrants face additional challenges when entering markets with zero pricing, there is a particularly strong case to prevent dominant firms from erecting further barriers to entry or eliminating small rivals. For example, as early as 2014, we noted Android practices which on their face limited mobile device manufacturers' customizations and hence business models, while simultaneously hindering entry by competing apps and services.[16] But it took until 2018 for the European Commission to order Google to cease these practices. This delay allowed competition problems to worsen.

Second, policy-makers should take seriously the non-price harms that consumers may suffer. We acknowledge that it is difficult to put a dollar value on harms such as privacy degradation, reduced rate of innovation, or threats to democracy. But the lack of explicit prices does not mean the harms are any less real. Nor is it any surprise that the harms are not measured in dollars. In a world of consumers receiving services free of charge, key problems will almost always arise in areas other than the price. To fulfill their stated mission, competition regulators must consider these harms in earnest, not reject them out of hand.

Third, in some instances policy-makers might consider mandating positive prices. In general price regulation invites predictable objections, including the difficulty of setting prices. Price regulation would raise particularly acute concerns if it sought to disallow entire business models such as giving away one thing in anticipation of revenue elsewhere. We recognize these challenges. Nonetheless, certain circumstances

14 Deepa Seetharaman, "Facebook Shares Tumble as Growth Outlook Darkens," *The Wall Street Journal*, July 25, 2018.

15 Jorge Valero, "Vestager: 'I'd like a Facebook that I pay, with full privacy,'" *Euractiv.com*, June 27, 2018, https://www.euractiv.com/section/competition/interview/vestager-id-like-a-facebook-that-i-pay-with-full-privacy/.

16 Benjamin Edelman, "Secret Ties in Google's 'Open' Android," February, 13, 2014, http://www.benedelman.org/news-021314/. See also Benjamin Edelman & Damien Geradin, "Android and competition law: exploring and assessing Google's practices in mobile," 2 (2016) European Competition Journal, 159.

may call for limited price regulation, and may also make this approach feasible. The EU's General Data Protection Regulation ("GDPR")[17] requires, for example, that when services ask users to agree to tracking, the consent be "freely given" with no detriment if the user declines.[18] Under GDPR, a user probably cannot be said to "agree" to Facebook's data practices if the only alternative was to forego use of Facebook altogether. On the other hand, if Facebook offered users both a free site with tracking, and a paid site with less or no tracking and less use of customer information, a user could plausibly be said to choose between those options. Thus, the GDPR consent process could effectively mandate an option for a positive price, while avoiding the most obvious objections to price regulation.

Fourth, policy-makers might be increasingly skeptical towards mergers and acquisitions — seeking more and smaller firms, the better to facilitate entry. Indeed, an independent Waze would have been the most obvious competitor for Google Maps. Likewise, an independent YouTube would have been a strong competitor for the time users spend at both Google and Facebook, while an independent WhatsApp could have offered users at least an alternative to Facebook's messaging feature, if not more of Facebook's services, with much less privacy concerns thanks to WhatsApp's (then) paid service with no advertising or tracking. Sometimes, as with Waze, the competition concern is apparent on the face of a proposed transaction. At least as often, the problem is less obvious at the outset. But when a firm's "free" service reinforces its dominance, and when such a firm seeks to acquire another, experience calls for heightened concern. Policy-makers should be correspondingly skeptical.

Fifth, policy-makers could insist that traditional remedies remain available. Historically, consumers could sue for privacy violations and other harms. These days, in the U.S., arbitration clauses and class action waivers grant firms practical immunity, preventing the threat of such suits from constraining the practices of powerful firms. The European Commission seeks to address similar concerns through its proposed regulations protecting business users of online intermediation services.[19] Policy-makers can restore an appropriate balance, for example by disallowing litigation waivers as a condition of approving large transactions or as part of a regulatory settlement for prior violations.

## V. CONCLUSION

While free service offers important advantages, it may also raise competitive concerns including undermining paid business models, creating barriers to entry, inviting overproduction in quality, and risking deception or exploitation. Rivals have limited counterstrategies, and there is good reason to think that affected markets will see less competition as a result. Our bottom line is that these factors call for a strict application of competition rules to achieve the benefits of competition.

17 Regulation (EU) 2016/679 of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation), O.J. 2016, L 119/1.

18 GDPR Article 7.4.

19 Proposal for a Regulation on promoting fairness and transparency for business users of online intermediation services, Brussels, 26.4.2018 COM(2018) 238 final.

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