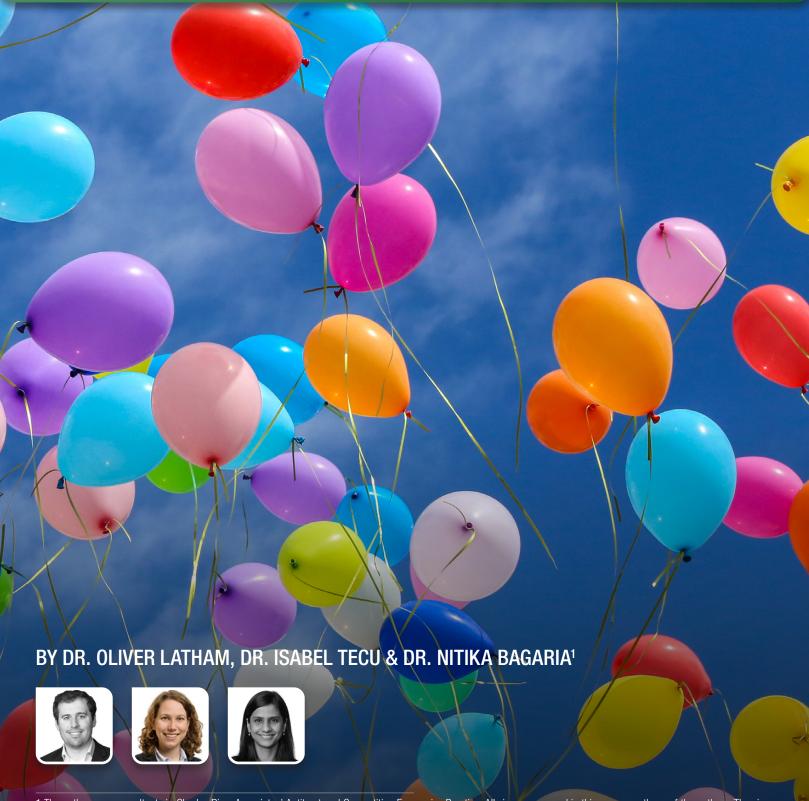
BEYOND KILLER ACQUISITIONS: ARE THERE MORE COMMON POTENTIAL COMPETITION ISSUES IN TECH DEALS AND HOW CAN THESE BE ASSESSED?





¹ The authors are consultants in Charles River Associates' Antitrust and Competition Economics Practice. All views expressed in this paper are those of the authors. The views expressed here should not be attributed to CRA or to other consultants or affiliates with CRA. Any errors and omissions are the sole responsibility of the authors. We thank Cristina Caffarra and Robert Stillman for sharing ideas and suggestions. We thank our colleagues Dale Brocklesby, Shalini Chandar, Nicolas Lopez, and Christine Xiao for invaluable help with the data analysis.

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I. INTRODUCTION

No issue has received more attention in antitrust circles in recent years than "killer acquisitions." Arising from a blockbuster academic study identifying 5 to 7 percent of pharmaceutical transactions as having resulted in the "killing" of a new drug under development,² attention has extended to other industries with particular focus on acquisitions in the technology sector. Calls for changes in the evidentiary standard for assessing such transactions, from an adoption of a "balance of harms" approach,³ to a reversal of the burden of proof in such cases⁴ are motivated by the concern that the potential harm from killer acquisitions in the technology sector is so great that it warrants an adjustment of the standards usually employed in potential competition cases. A subsequent backlash has argued these concerns are driven by "hindsight bias" and that more vigorous antitrust enforcement would prevent pro-competitive integration of complementary assets into larger organizations and undermine funding to, and innovation, by smaller firms.⁵

The goal of this paper is to take the killer acquisition concern seriously while getting a quantitative sense for how many acquisitions by Google, Amazon, Facebook, and Apple ("GAFA") display a fact pattern even remotely consistent with the killer acquisition narrative, and whether there are alternative potential competition concerns that could be of more frequent application. We gather information on 409 transactions concluded by GAFA between 2009 and 2020 and apply "filters" to get a rough first categorization of whether the target firms could possibly have been a threat to the acquirer's "core" business and whether the purchase value was large enough to be potentially consistent with a potential "market power premium". We find that, even based on these preliminary filters, only a small proportion of transactions could begin to fit the "killer" narrative and characterize some qualitative patterns among the remaining transactions showing that they are generally about GAFA acquiring new capabilities and positioning themselves to enter new markets.

Based on these findings we ask whether there are alternative potential competition concerns with more general application and conclude that the more common concern is likely to be that the acquirer will absorb the target's skills and capabilities to replace its own (i.e. that it is the large

6 We are aware of other studies looking systematically at acquisitions by GAFA, but not of studies which have applied ex-ante screens to look at the proportion of transactions which might have "killer" characteristics. See: Argentesi, E. Buccirossi, P. Calvano, E. Duso, T. Marrazzo, A. and Nava, S. 2020. "Tech-over: Mergers and merger policy in digital markets", Vox. https://voxeu.org/article/mergers-and-merger-policy-digital-markets.

² See Cunningham, C., Ederer, F., & Ma, S. 2019. "Killer Acquisitions", Working Paper.

³ See the final report of Her Majesty's Treasury's "Furman Review" "Unlocking Digital Competition".

⁴ https://globalcompetitionreview.com/article/1177095/dg-comp-chief-economist-reverse-burden-of-proof-to-catch-killer-acquisitions.

⁵ https://laweconcenter.org/wp-content/uploads/2019/07/Concluding-Comments-The-Weaknesses-of-Interventionist-Claims-FTC-Hearings-ICLE-Comment-11.pdf.

acquirer that is a competitive threat to the small target rather than vice-versa). We discuss some examples of agencies pursuing this "reverse killer acquisition" concern and consider the issues that arise when investigating the competitive effects of such transactions.⁷

Overall, killer acquisitions are best thought of as a rare, but high impact event, and mergers in fast-moving industries can generate broader potential competition concerns outside of this paradigm. The key policy question is then how to adapt our existing tools to properly police these transactions.

II. WHY HAVE KILLER ACQUISITIONS RECEIVED SO MUCH ATTENTION, IN PARTICULAR IN TECH? AND WHAT FILTERS AND TOOLS CAN WE USE TO BETTER IDENTIFY TRANSACTIONS WHICH MIGHT FALL INTO THIS PARADIGM?

In the original killer acquisition narrative, a dominant firm acquires a nascent firm, motivated by the concern that it could evolve into a competitor and challenge the dominant firm's market power. While the concerns originated in the pharmaceutical industry the policy focus has shifted to the technology sector.⁸

Why the focus on tech? First, the size of the major platforms and the presence of network effects means that competition tends to be *for* the market rather than *in* the market, increasing the likelihood that key competitive threats will be currently nascent firms. Second, products tend to be dynamic and "today's complement can become tomorrow's substitute." Third, it may not be feasible to enter as a direct horizontal competitor, and potential competitors may first seek to grow as a complementary or vertically related product before starting to compete with the incumbent head on. Fourth, attention has been drawn to the sheer volume of transactions in this space with much attention given to the almost 400 known acquisitions by GAFA during the 2009-18 period. Finally, the welfare consequences of a miscalibration of merger policy are potentially huge — both for individual transactions as well as for innovation incentives more generally. Economists have also argued that killer acquisitions may distort the rate and direction of innovation to the detriment of social welfare.

Historically most of these transactions have not received any rigorous antitrust review (because the deal size fell below reportable thresholds, or because of a lack of clear horizontal overlaps). This is changing. But for regulators struggling with the sheer volume of acquisitions that are potential competition cases, what tools can be used to identify potential killer acquisitions?

⁷ The term "reverse killer acquisition" was coined in a Vox article by Cristina Caffarra, Greg Crawford, and Tommaso Valletti. See "How tech rolls: potential competition and "reverse" killer acquisitions", Vox https://voxeu.org/content/how-tech-rolls-potential-competition-and-reverse-killer-acquisitions.

⁸ The "Killer Acquisitions" paper by Cunningham, Ederer & Ma provided compelling evidence that killer acquisitions were in fact happening in pharmaceuticals and that these acquisitions were flying under the radar of antitrust scrutiny.

⁹ For example, at the time of its acquisition by Facebook, Instagram was a "mere photo app, with limited social network functionalities" but has since grown into a different product with "fully-fledged social network functionalities" (Lear Report p.57).

¹⁰ See Susan Athey, "Nascent Competition: Economic Incentives and Business Strategies of Tech Firms," Remarks delivered at the FTC Hearings on Competition and Consumer Protection in the 21st Century, October 17, 2018.

¹¹ The theoretical economic literature tells us that permissive merger policy may increase the *rate* of innovation because it incentivizes start-ups to chase after a future payout, but raises also the concern that it may lead to less innovation in the long run if, due to its accumulated acquisitions, the incumbent's advantage becomes so large that it no longer perceives any threat from start-ups. It generally agrees that a permissive approach to acquisitions of startups by dominant firms will incentivize the *direction* of intervention towards technologies that dominant firms are most willing to pay for, because they present a competitive threat and/or because they help the dominant firm to cement its dominant position (or both). (See Bryan, Kevin & Hovenkamp, Erik, "Antitrust Limits on Startup Acquisitions" (March 10, 2019). Forthcoming, Review of Industrial Organization. Available at SSRN: https://ssrn.com/abstract=3350064; Cabral, Luis M. B., "Standing on the Shoulders of Dwarfs: Dominant Firms and Innovation Incentives" (August 2018). CEPR Discussion Paper No. DP13115. Available at SSRN: https://ssrn.com/abstract=3235598).

Traditional quantitative tools of economic merger analysis (diversion ratios, merger simulation and so on) are likely to be of more limited use, but theory does assist with at least providing filters which can be applied to screen for acquisitions that have the hallmarks of a killer acquisition. Past antitrust cases provide a rich set of examples of dominant firms using their existing market power to undermine dynamic competitive threats and provides a theoretical framework for thinking about what sorts of assets might constitute a dynamic threat to a firm's core market position. 12 Indeed, several complainants in these antitrust cases were previously targets for acquisition. 13 Natural filters include: 14

- 1) Focusing attention where the purchaser is indeed in a position of significant market power such that "out of market," nascent competitors could be key competitive constraints.
- 2) Conducting a screen for whether there is a plausible economic mechanism through which the target could evolve into a threat to the acquirer. For example, is the target operating in a vertically related market that would allow the target to integrate into the acquirer's core market? Does the target have a large user base which is well suited to being "swung" into the acquirer's line of business? The analysis would need to consider which assets the target currently owns (e.g. know-how, technology, products), how unique those assets are compared to other players, and how these assets could plausibly be used to compete with the acquirer.
- 3) Looking at deal valuation. Any firm that is a significant competitive threat to a major incumbent should be able to command a significant valuation. If this filter is breached further scrutiny is then required to determine whether a transaction value is justifiable based on fundamentals (the target's standalone value and anticipated synergies) or if there is an unexplained excess payment consistent with a "market power premium" (i.e. the incumbent paying a share of its monopoly profits to deter or eliminate a potential entrant). Of course, it is important to interpret such valuations in the context of other business documents that may shed light on the acquirer's motivation for the acquisition.¹⁵

¹² See Carlton and Waldman, "The strategic use of tying to preserve and create market power in evolving industries," RAND Journal of Economics, Vol. 33, No.2 (2002). This provides a formulation of the intuition for how "today's complement might become tomorrow's substitute" and how this can result in incentives to foreclose.

¹³ For example, the Microsoft "browser wars" might well never have occurred had Microsoft come to financial terms to acquire Netscape https://www.businessinsider.com/worst-miss-ever-microsoft-tried-to-buy-netscape-in-1994-2011-10?r=US&IR=T.

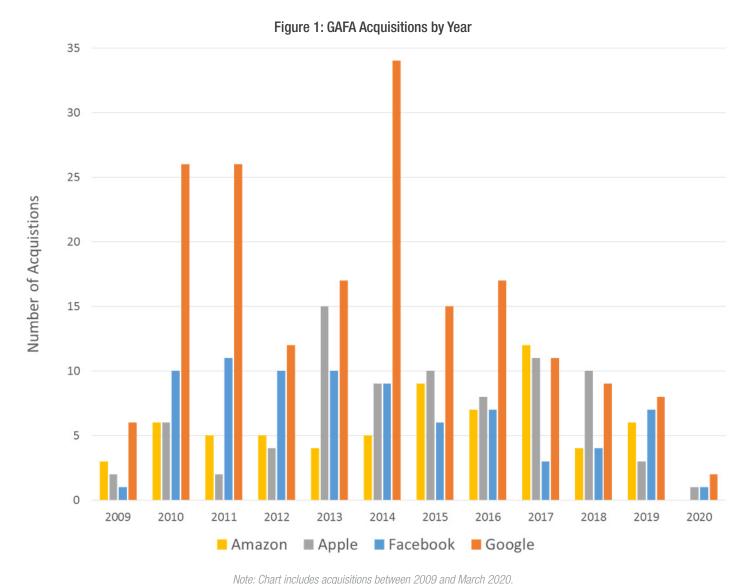
¹⁴ The U.S. Horizontal Merger Guidelines identify these same factors, even if expressed slightly differently: "A merger between an incumbent and a potential entrant can raise significant competitive concerns. The lessening of competition resulting from such a merger is more likely to be substantial, the larger is the market share of the incumbent, the greater is the competitive significance of the potential entrant, and the greater is the competitive threat posed by this potential entrant relative to others." (U.S. Horizontal Merger Guidelines at 5.3). Unsurprisingly, these criteria are very similar to criteria that we are concerned about in "traditional" merger analysis. For example, the Gross Upward Pricing Pressure Index ("GUPPI") is a function of diversion ratios, i.e. measures of the closeness of competition, and margins, i.e. measures of market power. For a recent review of these issues see the 2020 OECD background note on "Start-ups, Killer Acquisitions and Merger Control" https://one.oecd.org/document/DAF/COMP(2020)5/en/pdf.

¹⁵ For an overview of how valuation evidence can be used to assess potential competition concerns in merger cases see Latham, O., Chisholm, S. & Lynch, S. 2019. "Acquisitions of Potential Rivals in Digital/Tech: Valuation Analysis as Key Economic Tool," https://ecp.crai.com/wp-content/uploads/2019/06/Use-of-valuation-analysis-in-merger-assessment.pdf.

III. IN LIGHT OF THESE FILTERS HOW MANY TECH TRANSACTIONS POTENTIALLY FIT THE "KILLER" NARRATIVE?

So, looking back at the oft-cited 400 acquisitions by GAFA, how many would breach the filters set out above? And if the answer is "not that many", are there theories of harm around potential competition with broader application?

To get a handle on this question we have gathered data on 409 transactions completed by GAFA between 2009 and 2020¹⁶ and conducted research to document the value of these transactions and apply the filters set out above. We focus on GAFA because of data availability and the focus on these companies in the policy debate. Applying these filters is not an exact science and some judgment calls are required, but we consider the exercise informative for getting a quantitative sense of how many potential killer acquisitions might potentially be lurking among these past deals. Figure 1 below summarizes the number of transactions by year. Most of these acquisitions (183, or 45 percent) were made by Google, followed by Apple (81, or 20 percent), Facebook (79, or 19 percent), and finally Amazon (66, or 16 percent). In more recent years, however, Google's M&A activity has declined somewhat so that its lead has become less pronounced.

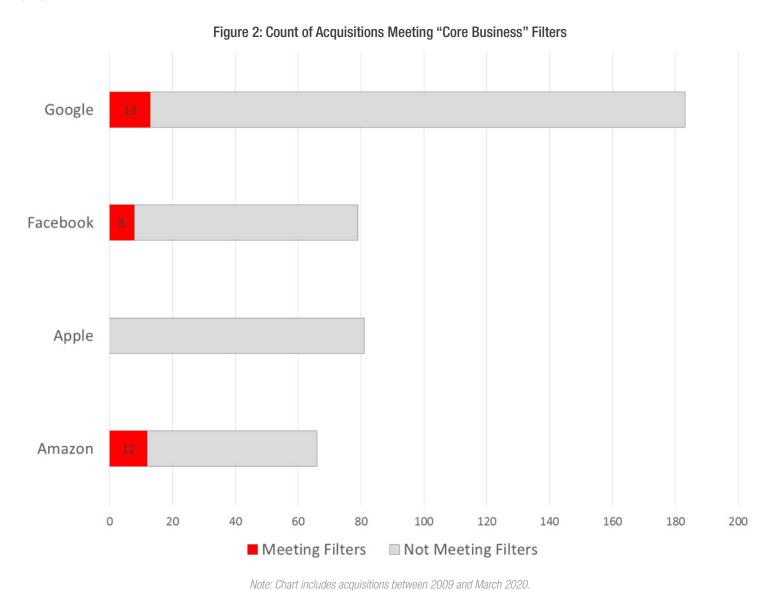


Source: Authors' analysis of GAFA transactions listed on Wikipedia

¹⁶ Our dataset runs through March 2020.

A. How many of these transactions involve a plausible threat to the acquirer's "core" market position?

We attempted to identify those transactions among the 409 that relate directly to the purchaser's "core" business or for which one could, at least at a high level, tell a plausible entry story. In particular, we looked for targets that meet our "core business" filters in that they either (a) had a direct horizontal overlap with the acquirer's "core" business, 17 or (b) were vertically-related to that core business and could plausibly grow into a competitive threat, for example by commanding a large userbase or acting as a "gatekeeper." Noting once again that this is not an exact science and that judgment calls are inevitably required, Figure 2 below shows that this number is relatively small: in total our review only flagged 33 acquisitions or 8 percent as acquisitions of targets within the acquirer's core business or vertically-related to the acquirer's core business. Thus, while there are instances (e.g. Facebook's acquisition of WhatsApp) of transactions triggering our broad-brush potential "killer acquisition" filters, these represent a small proportion of transactions. Further, the nature of our filters is that they should be considered as necessary, rather than sufficient conditions: we are not saying that the transactions surviving these filters were killer acquisitions (such a conclusion would require a thorough analysis of internal data and documents), but rather that they appear to display some necessary features consistent with this theory of harm.

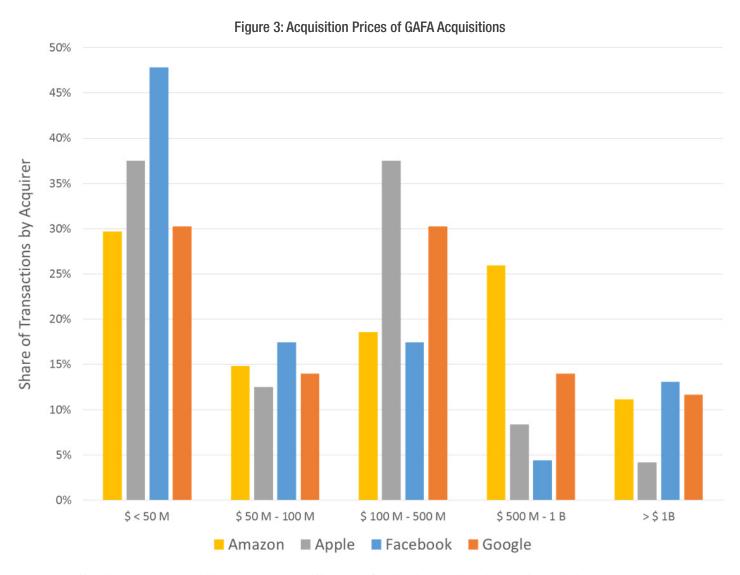


17 While of course GAFA are active in numerous sectors, we consider their "core" business to be online retail for Amazon, devices for Apple, social networking for Facebook, and search and online advertising for Google.

Source: Authors' analysis of GAFA transactions listed on Wikipedia

B. Valuation

Figure 3 below illustrates that most of the GAFA acquisitions for which the acquisition price is publicly available are relatively small in terms of acquisition value (at least relative to the market capitalization of GAFA if not in absolute terms). While of course some transactions had price tags above \$1 billion USD (the highest price was paid by Facebook for WhatsApp in 2014, \$19 billion), around one third of targets were valued at less than \$50 million.



Note: Analysis includes acquisitions between 2009 and March 2020 for which the acquisition price is publicly available (117 acquisitions).

Source: Authors' analysis of GAFA transactions listed on Wikipedia

¹⁸ Out of the 409 transactions we analyzed, we were able to identify acquisition prices for 117.

¹⁹ As explained above, applying a filter on deal size can be useful as a target that poses a significant competitive threat should be able to command a substantial purchase price. However, for acquisitions that are further scrutinized, the more relevant question is how the purchase price compares against the stand-alone value of the target and anticipated synergies and whether there is any evidence of a "market power premium".

Looking at transactions which were *both* of material value (>\$100 million) and met our core business filters, the number of surviving transactions is relatively small: 11 of the 117 transactions for which valuation information was available. Even if one lowers the valuation threshold to >\$50 million, only 16 transactions also met at least one of our core business filters. Assuming that transactions without a reported purchase price fall below the \$50 million valuation threshold, acquisitions that met our filters represent 4% of the 409 acquisitions reviewed. Of the top 10 acquisitions in terms of value only two triggered our filters, see Table 1 below.

Table 1: Top 10 GAFA Acquisitions by Value

Acquirer	Target	Sector	Date	Value (\$ B)	Meets "core business" filters
Facebook	WhatsApp	Messaging	2/19/2014	19	Yes
Amazon	Whole Foods Market	Grocery	6/16/2017	13.7	No
Google	Motorola Mobility	Mobile device manufacturer	8/15/2011	12.5	No
Google	Nest Labs	Home automation	1/13/2014	3.2	No
Google	Revolv	Home automation	10/24/2014	3.2	No
Apple	Beats Electronics	Headphones	8/1/2014	3	No
Google	Looker	Analytics	6/6/2019	2.6	No
Facebook	Oculus VR	Augmented Reality	3/25/2014	2	No
Amazon	Zappos	Retail	11/2/2009	1.2	Yes
Google	HTC (portions)	Electronics	9/21/2017	1.1	No

Note: Analysis includes acquisitions between 2009 and March 2020 for which the acquisition price is publicly available (117 acquisitions).

Source: Authors' analysis of GAFA transactions listed on Wikipedia

C. Why do most transactions not trigger the "killer" filters? What are GAFA buying?

Further review of these transactions suggests that the vast majority have been about GAFA acquiring new capabilities and positioning themselves to enter new markets. Figure 4 illustrates the variety of business sectors in which GAFA have made acquisitions. One sees evidence of successive waves of interest in individual technology fields from Al²⁰ and music/video streaming,²¹ to speech recognition,²² and robotics.

Figure 4: Top 10 Target Business Sectors of GAFA Acquisitions

		Target business	% of M&A (2009-2020)
		Retail	12%
		Cloud Computing	9%
		Artificial Intelligence	6%
		Distribution	6%
		Computer Games	5%
	4	Video Streaming	5%
	4	Publishing	5%
		Home Security	3%
		App Development	3%
		Voice recognition	3%
		Others	44%
		Total	66

Target business	% of M&A (2009-2020)	
3D mapping	14%	
Photography	7%	
Augmented Reality	6%	
App Development	5%	
Voice recognition	5%	,
Machine Learning	5%	
Health	4%	Ь
Audio Streaming	4%	
Image Recognition	4%	
Data Science / Analytics	4%	
Others	43%	
Total	81	

Target business	% of M&A (2009-2020)
Cloud Computing	8%
Advertising	5%
Price Comparison Service	5%
App Development	4%
Robotics	3%
Social Media	3%
Data Science / Analytics	3%
Cyber Security	3%
Search Engine	2%
Gaming	2%
Others	62%
Total	183
	Cloud Computing Advertising Price Comparison Service App Development Robotics Social Media Data Science / Analytics Cyber Security Search Engine Gaming Others

Target business	% of M&A (2009- 2020)	
Social Media	14%	
Messaging	10%	
App Development	6%	
Augmented Reality	6%	
Publishing	5%	C
Data Science / Analytics	4%	
Advertising	4%	
Cyber Security	3%	
Sound production	3%	
Virtual Reality	3%	
Others	43%	
Total	79	

Note: Chart includes acquisitions between 2009 and March 2020. Source: Authors' analysis of GAFA transactions listed on Wikipedia

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²⁰ E.g. Deepmind, Jetpac, Dark Blue Labs and Halli Labs for Google; Ozlo for Facebook, Lattice Data and Silk Labs for Apple.

²¹ E.g. Lovefilm, Amie Street and Twitch for Amazon; Swell, Beats and Shazam for Apple, Songza for Google.

²² E.g. Ivona for Amazon; Poly9, Siri, Novarius and VocalIQ for Apple; Wit.ai for Facebook and Phonetic Arts for Google.

We see targets relating to the acquirer in numerous ways:

- 1) Incremental technological improvements to core business, where the target only offers a specific technology and does not possess the scope to compete with the acquirer: e.g. Apple bought firms specializing in semiconductors, ²³ Augmented Reality, ²⁴ and voice recognition, ²⁵ and Amazon bought firms in distribution technology. ²⁶
- 2) Complementary assets for *non-core* offerings: E.g. Google purchased assets relating to its cloud computing business,²⁷ and Apple purchased mapping companies.²⁸
- 3) Vertical services that plug into the acquirer's core ecosystem, but which are not plausibly dynamic competitive threats to the acquirer's core business: e.g. Amazon acquired video streaming companies, ²⁹ and Apple bought music recognition technology. ³⁰
- 4) Forays into new spaces: e.g. both Amazon and Google have purchased multiple firms in home automation and security,³¹ and Apple has made purchases in health.³²
- 5) Hot new technologies that receive interest from several of the GAFA companies simultaneously: e.g. Al,³³ voice recognition,³⁴ and data analytics.³⁵
- 6) Idiosyncratic side bets or "moon shots": e.g. Virtual Reality for Facebook, ³⁶ robotics for Google, ³⁷ and self-driving cars for Apple. ³⁸

23 E.g. portions of Dialog Semiconductor.

24 E.g. Vrvana.

25 E.g. Siri.

26 E.g. Kiva Systems.

27 E.g. Cloudsimple, Alooma.

28 E.g. C3 Technologies, Mapsense.

29 E.g. LoveFilm, Twitch Interactive.

30 E.g. Shazam.

31 E.g. Amazon bought Ring, Google bought Nest Labs.

32 E.g. Tueo Health, Beddit.

33 E.g. Amazon bought Graphiq, Apple bought Lattice Data, Facebook bought Ozlo, Google bought Halli Labs.

34 E.g. Amazon bought Yap, Apple bought VocalIQ, Facebook bought Wit.ai.

35 E.g. Apple bought Topsy, Facebook bought Onavo, Google bought SocialGrapple.

36 E.g. Oculus VR.

37 E.g. SCHAFT, Inc., Meka Robotics.

38 E.g. Apple bought Drive.ai.

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IV. WHAT SHOULD THIS FINDING MEAN FOR MERGER POLICY? ARE THERE OTHER POTENTIAL THEORIES OF HARM WITH MORE FREQUENT APPLICATION?

The analysis above indicates that, even on a broad brush and likely over-inclusive approach, killer acquisitions in tech are likely rare. This is not meant to be dismissive: rare events with large negative welfare effects need to be guarded against. However, this observation raises the question of whether this should be the only, or even primary, theory of harm when looking at transactions where a large acquirer is buying a smaller player.

Looking at the example transactions discussed above, the most natural alternative concern would be to "flip" the original killer narrative: rather than asking whether the nascent target was a threat to the incumbent acquirer is it possible that, but for these transactions, GAFA would have entered these product or service lines organically such that the transaction results in the discontinuation of innovation effort by the acquiring firm? This "reverse killer acquisition" narrative (where the incumbent is a competitive threat to the target rather than vice-versa) is increasingly arising in merger review. The UK CMA has been particularly active in pursuing such concerns. See, for example, *PayPal/iZettle* (where, while one might have started with killer acquisition concerns, the CMA's focus quickly turned to the question of whether PayPal would become a stronger competitor to iZettle's business); *Amazon/Deliveroo* (where the concern was that Amazon might re-enter restaurant delivery to compete with Deliveroo); and *Sabre/Farelogix* (where, as well as a concern that Farelogix was a dynamic threat to Sabre, the CMA pursued a concern that Sabre could develop a rival to Farelogix's market-leading "merchandising" product). So how should one analyze this alternative theory of harm and how similar are the issues to the classic killer acquisition story?

V. HOW TO ANALYZE POTENTIAL COMPETITION CONCERNS WHICH FALL OUTSIDE OF THE "KILLER" NARRATIVE?

Historically, the reaction to this "reversed" potential competition story would be "what's not to love": on their face these are essentially conglomerate transactions, which we know can generate efficiencies by internalizing externalities, extending benefits from the target across a broader user base of the acquirer, and "plugging gaps" in functionality.

However, in a world where there is a sense that big tech can do anything it sets its mind to, competition agencies are likely to increasingly view any large conglomerate transaction as a potential competition case in disguise and interrogate whether, but for the transaction, the efficiencies outlined above could be achieved organically by the purchaser with the benefit of retaining the target as an additional competitor. This is not an unreasonable concern to have, but how should one navigate such cases? Natural gating questions are:

- 1. **How unique is the target firm?** The loss of one of the GAFA companies, or any large incumbent, as an organic entrant and incremental competitor will be less concerning if the target is operating in a comparatively unconcentrated space: if there are 20 similar start-ups and multiple alternative potential entrants, the concern that the transaction takes the number of players from N+1 to N will be less concerning.
- 2. How to assess the purchaser's commitment to organic entry into the target's space without the transaction? Underpinning the "reverse" killer acquisition concern is a sense that the very fact a large firm is willing to sink a large sum of money into acquiring a complementary asset signals a willingness to enter this space organically if the deal could not be done. In order to make this concern more

³⁹ We note that, in the case of Pharma, a killer acquisition is any transaction which results in the anticompetitive cancellation of product development by either party (whether that of the target or acquirer). The "reverse" terminology comes into play in tech when the killer acquisition concern is less about both firms having directly competing products but about the target's product developing in a way that challenges the incumbent.

⁴⁰ For further discussion for the reverse killer acquisition theory see the Caffarra et al. Vox article cited above.

⁴¹ Consultants at CRA advised the Parties in each of these transactions. We note that the US Department of Justice did not pursue the merchandising concern in its challenge to the Sabre/Farelogix deal and that its challenge based on Farelogix being a threat to Sabre was rejected at trial.

⁴² This theory of harm is not unique to tech. As a recent example, the European Commission expressed similar concerns when it announced its Phase II investigation into the proposed acquisition of TachoSil, a hemostatic patch, by Johnson & Johnson ("The Commission's investigation revealed that absent the transaction, Johnson & Johnson would have strong incentives to enter the EEA/UK markets for dual haemostatic patches either with its existing product currently unavailable in the EEA/UK or with new dual haemostatic patch that it might have developed absent the transaction," see EC Press Release "Mergers: Commission opens in-depth investigation into proposed acquisition of Tachosil by Johnson," March 25, 2020, available at https://ec.europa.eu/commission/presscorner/detail/en/ip_20_529).

concrete one clearly needs a careful review of internal documents to understand counterfactual entry incentives. As well as already extant entry plans, a key question would be whether the acquirer had identified the target firm's sector of operation as a strategically important space to bolster or improve its core business. ⁴³ Clearly, concerns around counterfactual entry would be more likely if the transaction was considered of existential importance than if it appeared to be more of a whim or frivolity. As well as documentary evidence, deal valuation is likely to be of relevance as it is in a killer acquisition context: both because it is a signal of the uniqueness of the target and the commitment of the purchaser to the market in which it operates.

- 3. How valuable are the purchaser's assets to enter the target's space? The reason why potential competition concerns are likely to focus on big tech is that they are perceived to be able to easily enter new markets as a result of their financial resources, internal expertise, and existing userbases. However, a full assessment of potential competition concerns will need to consider how valuable these advantages are vs. other potential entrants, the extent of commonality between the assets and expertise of the target vs. the incumbent and so on. For example, in the *Amazon/Deliveroo* case a key question would be the extent to which a logistics operation optimized for "milk round" multi-stop deliveries has economies of scope with a "point-to-point" restaurant delivery infrastructure and the extent to which Amazon was able to cross-sell new services to its existing userbase. Viewed through this lens one would generally anticipate being more permissive about transactions involving assets which fall far outside of the purchaser's core expertise and, as noted above, this seems to be the case for a significant fraction of transactions by GAFA in recent years.
- 4. **How to take account of efficiencies?** The challenge with assessing these theories of harm is that the efficiencies associated with a purely conglomerate transaction still apply, the question is just whether they could be quickly replicated by the purchaser in the counterfactual without the deal. Key questions will be to gauge the extent of advantage in terms of time to market and the extent to which the target firm provides a "best of breed" solution that the purchaser would not be able to match were it to enter organically.⁴⁴

These questions are not that different from those in the standard killer acquisition scenario. They require careful consideration of potential entry strategies and the likely counterfactual. The key difference from the killer acquisition scenario is that we do not face the same challenge of guarding against "low probability high impact events" nor the same asymmetry between potentially huge costs of incorrect merger clearances and smaller costs of incorrect prohibitions. As such, while transactions of this sort can generate anticompetitive effects which need to be taken seriously, they do not raise the same existential questions about the effectiveness of merger review or the need for softening of the standard of review. Rather, we just need to take these concerns seriously and engage in a rigorous assessment of pro- and anticompetitive effects.

Overall, concerns about "reverse" killer acquisitions are likely to receive increasing scrutiny in merger review. This is correct in our view. The only question is how to appropriately distinguish between truly complementary or otherwise efficiency-enhancing transactions and those which prevent effective and timely organic entry by the purchaser.

VI. CONCLUSION

Potential competition in tech does not stop with "Killer Acquisitions." Indeed, our analysis shows that true killer acquisitions (while important when they arise) are likely to be relatively thin on the ground. As such, the more common theory of harm going forward is less likely to be the removal of dynamic threats to the acquirer's core business, but rather the possibility that the counterfactual to the transaction is organic entry by the purchaser. This is a reasonable concern and one that should be scrutinized. While we do not claim to have all the answers, we have set out some of the questions and trade-offs which can used to shed light on these issues.

⁴³ The *PayPal/iZettle* case is a good example. The CMA concluded that the need to offer an "omnichannel" payment solution (one covering both offline and online payment functionality) meant that PayPal would have strong incentives to build out its offline payments capability but for the transaction. Ultimately, however, the CMA concluded that this would take time and that the presence of other competitors meant that this loss of potential competition was insufficient to prohibit the transaction.

⁴⁴ Examples in the list of transactions studied above would include Siri and LoveFilm. In each case it seems plausible that the purchaser had a strong interest in entering the space in question and had the internal capabilities to enter. However, given the presence of other competing voice assistants and streaming services it is plausible that the higher-quality and faster development time afforded by these acquisitions would offset any loss of organic entry.



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