



**Computer & Communications
Industry Association**

Tech Advocacy Since 1972

CCIA's Submission to the UK Competition & Markets Authority

Digital Mergers

July 12, 2019

I. Introduction

These comments are submitted in response to the Competition & Markets Authority (CMA) consultation on digital mergers.¹ The Computer & Communications Industry Association (CCIA)² commends the CMA for seeking a better understanding of the legal and policy challenges that arise with the digitalization of the global economy. CCIA welcomes the opportunity to provide its views on mergers and acquisitions related issues.

To ensure that tech-related innovation continues to play a positive role in the global economy, sound competition policy and antitrust enforcement both must play a crucial role in ensuring that competition exists across markets. Merger control, as part of the antitrust toolkit, remains a key element in ensuring that the economy remains dynamic. Competition authorities have applied merger control rules vigorously in recent years. This includes transactions where the merger effects on innovation and competition have been analyzed, particularly in the case of R&D intensive industries.

CCIA believes that antitrust authorities should continue to enforce merger control rules and evaluate transactions based on sound economic analysis that focuses on real and potential harm to consumer welfare.

II. Characteristics relevant to the assessment of mergers in digital markets

Multi-Sided Nature of Digital Services

Multi-sided firms create value by bringing market participants together. They help reduce practical barriers and transaction costs. But because many multi-sided firms work by facilitating interactions among diverse customer sets, the demand for the services that such a firm offers to each of its “sides” depends on the demand for the services it offers to its other sides. This interrelated demand has significant consequences for antitrust analysis. On a case by case basis, it may lead multi-sided firms to set prices in ways that bear little resemblance to pricing by single-sided firms. And, accordingly, it might mean that seemingly small changes in demand on any side of the market could be amplified by corresponding changes on the other sides.

¹ Competition & Markets Authority [U.K.] Call for Information - Digital Mergers, <https://www.gov.uk/government/consultations/call-for-information-digital-mergers>.

² CCIA represents large, medium and small companies in the high technology products and services sectors, including computer hardware and software, electronic commerce, telecommunications and Internet products and services. Our members employ more than 750,000 workers and generate annual revenues in excess of \$540 billion. A list of CCIA members is available at <https://www.ccianet.org/members>.

Consequently, any competition rules must account for the dynamics of multi-sided digital services. Without careful attention to the range of dynamics that multi-sided firms face in their operations, competition authorities could inadvertently discourage innovation.

Buyers and sellers often transact directly. Sometimes, though, without some intermediary, buyers and sellers may connect inefficiently or not at all. Economists have developed the concept of “multisided firms” as a way to describe business models designed to solve these problems, whether they are familiar examples such as newspapers or shopping malls, or innovative new services like dating websites.³ Multi-sided firms reduce or eliminate the practical barriers, or transaction costs, that would prevent a stamp seller in one place from connecting with a stamp collector in another.⁴ In doing so, they create value “that would not exist (or would be much smaller) in [their] absence.”⁵

Companies at the leading edge of technological innovation, including many of CCIA’s members, have harnessed technologies to serve multiple, interrelated sets of customers and offer valuable products and services to businesses and consumers alike. There is a wide range of business models that could be thought of as “multisided,” from Internet search engines, to video game platforms, to shopping malls—each with its own economic dynamics.

Because many multi-sided firms generate value by facilitating transactions among their various customer sets, the demand for the services that a multi-sided firm offers to any one “side” depends not only on the characteristics of those services, but also on demand for the services offered to the other sides.⁶ Thus, such firms must not only cater to the individual needs of their various customers, but also manage the interrelationships between those needs. And this is the most important feature of platform services, that needs to be taken into account from a competition perspective.

Payment through Provision of Personal Data

The Characteristics of Data

Despite the recent trend to equate data to currency, and thus, classify it as a payment method, the characteristics that define data make that comparison futile.

³ See, e.g., David S. Evans & Richard Schmalensee, *The Antitrust Analysis of Multisided Platform Businesses*, in 1 Oxford Handbook of International Antitrust Economics 404, 404–05 (Roger D. Blair & D. Daniel Sokol, eds., 2015).

⁴ See *id.*

⁵ *Id.* at 409.

⁶ See, e.g., Lapo Filistrucchi et al., *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. Competition L. & Econ. 293, 296–97 (2014).

Data is characterized by the so-called “Four Vs”, namely:

Volume: The amount of data available, which is infinite and non-rivalrous.

Velocity: The speed of data generation, which requires business to update datasets quickly

Variety: The diverse forms of data that are available to companies.

Veracity: The trustworthiness of data.⁷

Based on these characteristics, comparison to money, or attributing set value to data, is inappropriate.

Differently, and more importantly is to observe that competition between digital services based on their privacy and security attributes can help consumers choose services that best align with their personal privacy preferences.

Scholars Ramon Casadesus-Masanell and Andres Hervas-Drane demonstrated that in the marketplace for services partly dependent on information disclosure for revenue (used as a proxy for how protective of privacy a service might be), competition can drive the provision of services with more privacy protective features. However, where the net utility of a service far outweighs the value consumers place on data protection, that service will continue to outperform competitors who are offering an ostensibly more privacy protective service.⁸ This research indicates that consumers seek to optimize various features, including privacy, in maximizing their own personal utility.

Impact of privacy considerations in investments and acquisitions

Privacy laws and regulations can have an unintentionally adverse impact if they do not strike the correct balance between privacy and furthering innovation. Restricting companies’ use and collection of data may unintentionally impair commerce in the digital economy, and by implication, reduce investment. This especially affects firms that rely on the collection, analysis, or storage of large amounts of user data, such as companies in the online news, online advertising, and cloud computing sectors. These sectors are highly relevant to the online consumer experience as they encompass many of a user’s typical online interactions.

⁷ See IBM, The Four V’s of Big Data - Infographic, available at <http://www.ibmbigdatahub.com/infographic/four-vs-big-data> (last visited July 20, 2018).

⁸ Ramon Casadesus-Masanell & Andres Hervas-Drane, Harvard Business School, Working Paper (2013), available at https://www.hbs.edu/faculty/Publication%20Files/13-085_95c71478-a439-4c00-b1dd-f9d963b99c34.pdf.

Professor Anja Lambrecht evaluated the relationship between changes in EU privacy laws and relative venture capital investment in the EU, finding that VC investment across these three sectors was between 58-75 percent lower in aggregate each year relative to the United States, after controlling for several drivers of VC investments into firms in these industries.⁹ These conclusions reflect those of Professors Avi Goldfarb and Catherine Tucker, who found that privacy regulations “directly affect the usage and efficacy of emerging technologies” in the sectors they studied.¹⁰

Data Assets for Competition

Data intensive competition

Intervention in data-driven markets without evidence of harm to competition could harm consumers and deter innovation, especially when based on a misunderstanding or incorrect understanding of the role data plays in these markets. Therefore, understanding the nature of data usage in Internet and technology services is crucial.

The existing competition framework, based on the consumer welfare standard that relies on evidence-based analyses, should continue to be applied to data-driven markets. The value of data depends on its commercial utility, and does not present special characteristics as a dimension of competition. Authorities should therefore assess data as any other non-rivalrous asset that companies use to compete in the market under the existing competition framework.

Data as a barrier to entry

Data itself should not be seen as a barrier to entry, or to automatically grant a competitive advantage in the market.

The mere accumulation of data, in and of itself, is useless and not of importance to compete effectively. In addition to the Four Vs, data must be analyzed before it becomes useful. As such, the value of data only appears once companies have processed such data. As economists Anja Lambrecht and Catherine Tucker note:

Our analysis suggests that big data is not inimitable or rare, that substitutes exist, and that by itself big data is unlikely to be valuable. There are many alternative

⁹ Anja Lambrecht, *E-Privacy Provisions and Venture Capital Investments in the EU* (Dec. 2017), available at <https://www.ceps.eu/sites/default/files/E-Privacy%20Provisions%20and%20Venture%20Capital%20Investments%20in%20the%20EU.PDF>.

¹⁰ Avi Goldfarb & Catherine Tucker, *Privacy and Innovation*, Innovation Policy and the Economy, Vol. 12, <http://www.nber.org/chapters/c12453.pdf>.

sources of data available to firms, reflecting the extent to which customers leave multiple digital footprints on the internet. In order to extract value from big data, firms need to have the right managerial toolkit. The history of the digital economy offers many examples, like Airbnb, Uber and Tinder, where a simple insight into customer needs allowed entry into markets where incumbents already had access to big data. Therefore, to build sustainable competitive advantage in the new data-rich environment, rather than simply amassing big data, firms need to focus on developing both the tools and organizational competence to allow them to use big data to provide value to consumers in previously impossible ways.¹¹

The authors further conclude that the tools used to analyze the data and ‘provide value to consumers’ confer a ‘sustainable advantage’ to companies rather than the mere possession of data.¹²

The key to gaining a competitive edge is not data, but rather, the capacity to analyze and monetize data. In other words, human capacity and better products such as improved algorithms, rather than data or scarcity thereof, is what is necessary to compete in data-driven markets.

The key element is to better understand whether incumbents that have accumulated data over the years may expand or maintain market power for the mere possession of historic data. Like any other factor of production, there is empirical evidence to prove that there are diminishing returns to the mere *accumulation* of data.

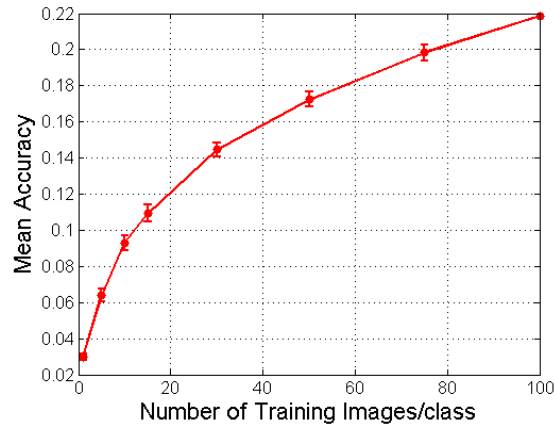
Stanford University conducted a study to analyze whether increased accumulation of data improves the outcomes of the analysis performed on such data. The Stanford Dogs Dataset contains images of 120 breeds of dogs from around the world.¹³ This dataset was constructed for the purpose of fine-grained image categorization. Researchers used this dataset for classifying breeds of dogs in images, and calculated the mean accuracy for identification as the number of images in the dataset increased. The results showed that additional access to data provided diminishing returns to the accuracy of classification results (see chart below).¹⁴ In short, a growing dataset provided diminishing returns as it grew.

¹¹ Anja Lambrecht & Catherine Tucker, *Can Big Data Protect a Firm from Competition* (Dec. 18, 2015), available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2705530.

¹² *Id.*

¹³ Stanford Dogs Dataset, available at <http://vision.stanford.edu/aditya86/ImageNetDogs/>.

¹⁴ *Id.*



Similarly, economists David Evans and Richard Schmalensee found that across technology companies, data did not grant incumbents the power to strangle competition. Their research highlighted that:

A number of previously dominant companies all had user data — so-called “attention platforms” such as AOL, Friendster, Myspace, Orkut, Yahoo!, Blackberry in mobile, as well as numerous search engines including AltaVista, Infoseek, and Lycos. This data did not give the incumbents the power to stifle competition in their respective markets, nor is there any evidence that data increased the network effects for these firms in a way that gave them a substantial lead over challengers.¹⁵

Data and market power

University of Florida Professor Daniel Sokol and Central University of Finance and Economics School of Law (China) Professor Jingyuan (Mary) Ma conclude that little, if any, user data is required as a starting point for most online services. They noted that:

The data requirements of new competitors are far more modest and qualitatively different than those of more established markets. Little, if any, user data is required as a starting point for most online services. Instead, firms may enter with innovative new products that skillfully address customer needs, and quickly collect data from users, which can then be used towards further product improvement and success.¹⁶

¹⁵ David S. Evans & Richard Schmalensee, *Network Effects: March to the Evidence, Not to the Slogans*, *Antitrust Chronicle* (Aug. 2017) at 9, available at <http://mitsloan.mit.edu/shared/ods/documents/?DocumentID=4243>.

¹⁶ D. Daniel Sokol & Jingyuan (Mary) Ma, *Understanding Online Markets and Antitrust Analysis*, 15 *Nw. J. TECH. & INTELL. PROP.* 43 (2017), available at <https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1267&context=njtip>.

This research shows why the accumulation of data alone is not a tool for companies to shut out competitors, and is unlikely to lead to decreased competition in the relevant market.

It is worth to highlight two aspects raised by economists. First, rather than facing a ‘data bottleneck’, companies are faced with a ‘talent bottleneck’. The key to gaining a competitive edge is not data as such but the capacity to analyze and monetize data. In other words, human talent is the main ingredient to successfully compete in technology markets. Second, the company examples show that data cannot be considered as a barrier to entry. In general, the relatively short history of the Internet does not show any evidence of large amounts of data being an effective wall for fending off competition.¹⁷ The most obvious answer to the question how small competitors can compete with bigger, more data-heavy companies is to come up with a better, more innovative, or just different ‘mousetrap’ that would attract users.¹⁸ Dating app Tinder is a very good example for how a company could successfully break into a market that until then used to be extremely data-heavy. For Tinder, just like for many other innovators, data collection was ultimately the result of success rather than the cause for it.

Until now the existing EU competition law framework seems to have largely accommodated the points raised above. Commissioner Vestager has stated that the accumulation of data does not automatically equal market power.¹⁹ This approach is also reflected in the Commission’s merger decisions. During the *Microsoft/LinkedIn*²⁰ merger some argued that LinkedIn might have unique data that companies were not able to replicate. The Commission rightly dismissed this argument and pointed to other data sources readily available to competing companies.

We welcome this approach and call for continued, evidence-based enforcement that takes into account the fiercely competitive online environment. Data should continue to be assessed like any other non-rivalrous asset that companies use to compete in the market.

Network Effects

¹⁷ See David S. Evans & Richard Schmalensee, *Network Effects: March to the Evidence, Not to the Slogans*, Antitrust Chronicle (Aug. 2017) at 9, available at <http://mitsloan.mit.edu/shared/ods/documents/?DocumentID=4243>.

¹⁸ See D. Daniel Sokol & Jingyuan (Mary) Ma, *Understanding Online Markets and Antitrust Analysis*, 15 NW. J. TECH. & INTELL. PROP. 43 (2017), available at <https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1267&context=njtip>.

¹⁹ Commissioner Vestager, *Competition in a big data world* (Jan. 18, 2016), https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/competition-big-data-world_en

²⁰ Case M.8124, *Microsoft/LinkedIn*. Commission decision (Dec. 6, 2016), http://ec.europa.eu/competition/mergers/cases/decisions/m8124_1349_5.pdf

Network effects, or demand side economies of scale, are present when the value of adopting a service to an incremental user is larger when more users have already adopted.²¹ The role of network effects in competition analyses is subject to broad discussion in the antitrust community. As with all other economic concepts, it is difficult to describe the role of network effects in the competitive analysis in a general manner. As *ex post* competition enforcement is based on a case-by-case approach, the role of network effects must be assessed in each individual case.²²

Importantly, network effects are likely to produce consumer benefits as the value and usefulness of the network increases in parallel with the number of network participants. Network growth creates, therefore, pro-competitive benefits that are reaped by consumers.

The evaluation of network effects in competition analyses should also be accompanied by an analysis concerning the extent to which ‘single-homing’ and ‘multi-homing’ are present in a given market.²³ For example, Professors Haucap and Heimeshoff acknowledge that:

“In two-sided markets increasing concentration will be driven by indirect network effects, but capacity limits, product differentiation and the potential for multi-homing (i.e., the parallel usage of different platforms) will decrease concentration levels. How easy it is for consumers to multi-home depends, among other things, on (a) switching costs (if they exist) between platforms and (b) whether usage-based tariffs or positive flat rates are charged on the platform.”²⁴

Multi-homing refers to those instances where customers use more than one platform or service, whereas single-homing refers to those instances where customers only use one platform or service in a particular industry. Compared to previous physical networks, many of today’s online platforms may be more susceptible to disruption from new entrants thanks to lower barriers to entry, low switching costs, the prevalence of free-to-the-user business models, and multi-homing. Economist David Evans rightly states that:

“Online platforms are more susceptible to attack by entrants than network industries of a century ago. Network effects and sunk costs made the natural monopolies around the turn of 20th century difficult to challenge. Rivals had to sink massive amounts of capital into duplicating physical networks such as

²¹ See, e.g., Hal R. Varian, *Use and Abuse of Network Effects* (Sept. 17, 2017), <https://ssrn.com/abstract=3215488>.

²² See e.g., the CMA’s in-depth discussion of network effects in the recent *Just Eat/Hungryhouse* merger inquiry, <https://www.gov.uk/cma-cases/just-eat-hungryhouse-merger-inquiry#final-report>.

²³ See Jean-Charles Rochet & Jean Tirole, *Two Sided Markets: A Progress Report*, 37 RAND J. ECON 646 (2006); Jean-Charles Rochet & Jean Tirole, *Platform Competition in Two-Sided Markets*, 1 J. EUR. ECON. ASS’N 990 (2003).

²⁴ Justus Haucap & Ulrich Heimeshoff, *Google, Facebook, Amazon, EBay: Is The Internet Driving Competition Or Market Monopolization?*, Düsseldorf Institute for Competition Economics (Jan. 2013).

railroad tracks and telephone lines. Using multiple networks, or switching between them, was expensive for customers, even if a second network was available. However, online platforms can leverage the Internet to provide wired and wireless connections globally. People find it generally easy, and often costless, to use multiple online platforms, and many often do. The ease and prevalence of multihoming have enabled new firms, as well as cross-platform entrants, to attract significant numbers of users and secure critical mass necessary for growth. Incumbent platforms then face serious competitive pressure from new entrants—startups or other online platforms—because their network effects are reversible.”²⁵

In sum, the presence of network effects is not a feature unique to the digital services. In fact, any increase in scrutiny that arises from advances in technologies and even newly raised concerns should be considered across the different markets and sectors, and not be artificially limited to certain companies because of their large ‘online’ presence. To the extent that the competitive impact of such effects may merit closer analysis, relevant countervailing factors such as users’ ability to multi-home also need to be taken into account. In addition, network effects cannot be seen as a long-lasting moat. They are reversible, i.e. just like they have worked in favor of a company, they can start working against it as competitors benefit from the same effects. A case-by-case analysis that takes into account evidence, economic analysis, and that is specific to the facts remains key to safeguarding consumer welfare.

III. Relationship between characteristics and theories of harm

As described above, the interrelatedness of demand is one of the main characteristics of many digital services. The interrelatedness of demand among sides of a multi-sided firm can have consequences that are particularly significant for antitrust analysis including in the context of merger review.

First, multi-sided firms may set prices in ways that defy the expectations of an economic analysis grounded in single-sided markets. For example, they may give valuable services away for free to build an audience that will attract advertisers or sellers.²⁶ The second, related consequence is that multi-sided firms may face highly elastic demand, which can lead to transitory market structures that significantly constrain their ability to impact output and price. A restaurant reservation website, for example, may attract what appears to be a significant share of the market for diners. But that share is dependent on the website’s ability to offer diners a sufficient number of

²⁵ David Evans, *Why The Dynamics Of Competition For Online Platforms Leads To Sleepless Nights, But Not Sleepy Monopolies* (2017), available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3009438.

²⁶ *See id.* at 300.

restaurants. If restaurants switch to a different site because of a price increase, the previously significant market share might quickly dry up.²⁷

These effects can upset assumptions that ordinarily hold for single-sided firms. For example, the prices charged to each side by a multi-sided firm vary in relation to the aggregate variable cost of providing products or services to customers on various sides of the market and not only with the marginal cost of one product (as they would in a single-sided market).²⁸ Thus, “[a]n increase in marginal cost on one side [of the market] does not necessarily result in an increase in price on that side relative to price on the other side[s].”²⁹ And because increasing the customer base on one side of the market may make participation more valuable to participants on the other sides, price increases that stimulate participation may actually accompany an increase in consumer welfare overall.³⁰

Furthermore, the current antitrust framework requires the definition of markets to assess competitive effects and determine whether an antitrust violation has taken place or not. Given the particularities that characterize multi-sided business models, including the extent of inter- and intra-platform competition, it is important that economic analysis informs antitrust authorities’ enforcement decisions. Competition authorities should be careful with defining markets too narrowly. Online advertising is a good example where online players, although in fierce competition with each other, also compete with other players in the wider advertising market. While they compete to attract ‘eyeballs’ and consequently advertisers, many think of these companies as operating in their own silos, unconstrained by their competitors who target the very same advertising income.

Harm to Innovation

CCIA believes that the UK and national competition authorities can apply the existing antitrust framework to a large and diverse set of businesses, including both single-sided and multi-sided business models. In doing so, competition authorities should take into account real-world business realities and apply sound economic analysis to its enforcement actions. It is fundamentally important to have a clear understanding of the underlying business models of these complex services. Competition law *itself* does not have to be adjusted for online players. It

²⁷ See Evans & Schmalensee, *supra* at 408, 410–11.

²⁸ See David S. Evans, *The Antitrust Economics of Multi-Sided Platform Markets*, 20 Yale J. on Reg. 325, 343 (2003).

²⁹ David S. Evans & Michael Noel, *Defining Antitrust Markets When Firms Operate Two-Sided Platforms*, 2005 Colum. Bus. L. Rev. 667, 681–82 (2005).

³⁰ See Evans, *supra*, at 361.

has deliberately been constructed in a flexible manner to able to deal with a broad range of companies and their business practices.

Merger control, as part of the antitrust toolkit, remains a key element in ensuring that the economy remains dynamic. EU competition authorities as well as competition authorities abroad have applied merger control rules vigorously in recent years. This includes transactions where the merger effects on innovation and competition have been analyzed, particularly in the case of R&D intensive industries. CCIA believes that antitrust authorities should continue to enforce merger control rules and evaluate transactions based on sound economic analysis that focuses on real and potential harm to consumer welfare.

Evaluating the impact of a transaction on innovation, along with price and product quality, is not new. When applying merger control rules, competition authorities have long analyzed the impact that transactions could have on innovation, particularly when there are overlapping markets. While some competition experts have suggested that it is a difficult exercise to predict how innovation will be impacted by a particular transaction, antitrust authorities have managed to analyze harm to innovation in a number of cases. Authorities analyze harm to innovation on a case-by-case basis and, among other factors, industry-specific elements such as market concentration, R&D output, and innovation efforts from merging parties and competitors. At the very least, an assessment of potential competition needs clear evidence that the party is a potential competitor that had plans to enter a market in a significant way before drawing conclusions.

In conclusion, the current competition framework is well-equipped to tackle competition challenges that may arise in the context of innovation-centered transactions and does not require an update of analytical tools to specifically account for mergers in the ‘digital economy’. This is in tune with the majority of stakeholder views, including the majority of NCAs, expressed in submissions to DG Competition’s consultation on procedural and jurisdictional aspects of EU merger control.³¹ While that consultation focused on potential complementary jurisdictional thresholds in EU merger control, also in that area the majority of respondents were not convinced that changes are needed to account for the specificities of digital economy mergers.

Non-Horizontal Effects

There is currently an ongoing discussion of potentially anticompetitive ‘leveraging’ in digital markets. It is important to make sure leveraging does not become a catch-all theory of harm that

³¹ Stakeholders’ submissions and the Commission’s summary of the consultation (from 2017) are available at: http://ec.europa.eu/competition/consultations/2016_merger_control/index_en.html

would prevent companies that are allegedly dominant in one market from effectively expanding and improving their products to provide a better user experience. There is a fine line between accusations of abusive leveraging and genuine product improvement. If competition authorities developed a too wide view of ‘leveraging’, they would effectively lock companies into one tightly defined market. The competitive process and ultimately consumers are not served by preventing companies from improving their products. Product development, expansion, and improvement are key characteristics of companies competing on the merits.

IV. Conclusion

The CMA should continue to apply an evidence-based antitrust framework that incorporates innovation as an element of the competition analysis. Evaluating the impact of the transaction on innovation, along with price and product quality, is not new. When applying merger control rules, competition authorities have long analyzed the impact that transactions could have on innovation, particularly when there are overlapping markets, as has been the case for many pharmaceutical deals.³²

While some competition experts have suggested that it is a difficult exercise to predict how innovation will be impacted by a particular transaction, antitrust authorities have managed to analyze harm to innovation in a number of cases. Authorities analyze harm to innovation on a case-by-case basis and, among other factors, industry-specific elements such as market concentration, R&D output, and innovation efforts from merging parties and competitors.

Sound antitrust enforcement will continue to be key to maintaining competition in the different technology markets. Ensuring that merger decisions regarding R&D-intensive markets such as tech transactions are grounded in strong evidence is fundamental to maintaining the right incentives for companies to innovate, and for continued economic growth.

³² Remarks of FTC Commissioner Deborah Majoras, Antitrust Enforcement in the Pharmaceutical Industry: Success and Challenges (May 16, 2007), https://www.ftc.gov/sites/default/files/documents/public_statements/remarks/051607aci_pharma.pdf.

Annex

Per the FTC's request for empirical research regarding the topics at issue in the hearing announcement, CCIA offers the following additional resources.

- Daniel Sokol, *Vertical Mergers and Entrepreneurial Exit* (March 10, 2019). 70 Florida Law Review 1357, 2018; University of Florida Levin College of Law Research Paper. Available at SSRN: <https://ssrn.com/abstract=3217095>
- Daniel Sokol, *Troubled Waters Between U.S. and European Antitrust*, 115 MICH. L. REV. 955 (2017).
- Frank T. Rothaermel *et al.*, *Balancing Vertical Integration and Strategic Outsourcing: Effects on Product Portfolio, Product Success, and Firm Performance*, 27 STRAT. MGMT. J. Gerard Hoberg & Gordon Phillips, *Product Market Synergies and Competition in Mergers and Acquisitions: A Text-Based Analysis*, 23 REV. FIN. STUD. 3773 (2010).
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- Herbert Hovenkamp, *Appraising Merger Efficiencies*, 24 GEO. MASON L. REV. 703 (2017).
- Herbert Hovenkamp, *The Chicago and Harvard Schools and the Dominant Firm*, HOW THE CHICAGO SCHOOL OVERSHOT THE MARK: THE EFFECT OF CONSERVATIVE ECONOMIC ANALYSIS ON U.S. ANTITRUST (2007).
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- James C. Cooper *et al.*, *Vertical Antitrust Policy as a Problem of Inference*, 23 INT'L J. INDUS. ORG. 639 (2005).
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