

Integrating innovation concepts into the merger control context

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Key Points

- This article discusses that static models in merger control are insufficient in the sense that they are not able to address the unpredictable and non-linear nature of innovation.
- Competition authorities often accept speculative innovation theories of harm while dismissing innovation defenses.
- A more neutral starting point in treating innovation is required by a fact-intensive, case-by-case analysis that incorporates dynamic efficiencies, spillover effects, and the long-term benefits of innovation.
- Finally, this article calls for a paradigm shift, moving away from static tools to a multidisciplinary methodology that ensures merger control fosters innovation and supports long-term welfare.

1. Introduction

Merger control proceedings conducted by the competition authorities are increasingly drawing the attention of scholars and market players worldwide.¹ Once a dull playground for many scholars and practitioners, they have begun to raise eyebrows in recent years as the enforcement agencies create new theories of harm to competition and to the consumers, based on rather speculative grounds surrounding harm to innovation. While it is delightful to see that innovation—as the main driver of competition—is finally receiving the attention it deserves, it is quite disappointing to discover that (i) the theories of harm advanced can be quite speculative and (ii) there seems to be a dearth of appreciation for how merger and acquisition ('M&A') activity can help the innovation process. This skewed outlook runs a significant risk of hurting innovation at a time when we need innovation most to power economic growth and support national security and economic competitiveness. Overconfidence by enforcement authorities might lead to issues that transcend economics and implicate national security and other societal issues. The problem as we see it is that the agencies are using static tools to analyze dynamic processes.²

The limitations of a static approach³ when applied to merger control proceedings are becoming even more apparent in the rapidly growing digital economy. Traditional tools and approaches that competition authorities currently use are, generally speaking, blind to innovative features of digital ecosystems. A new dynamic paradigm that would emphasize the interdependence of innovation and competition, and analyze these together instead of separately, is needed.

The current static approach often views anticompetitive (or competitive) effects as certain and predictable at the time of conducting the competitive analysis.⁴ On the other hand, the competition authorities tend to treat pro-competitive arguments regarding innovation as speculative and uncertain while generously

¹ Luís Cabral, 'Merger Policy in Digital Industries' (2021) 54 *Information Economics and Policy* <http://luiscabral.net/economics/publications/IEP%202021.pdf> accessed 6 February 2025.

² W Robert Majure, Nathaniel E Hipsman and Jessica Liu, 'Evaluating Innovation Theories of Harm in Merger Review: Economic Frameworks and Difficulties' (Cornerstone Research) <https://www.cornerstone.com/wp-content/uploads/2022/01/Evaluating-innovation-theories-of-harm-in-merger-review.pdf> accessed 6 February 2025.

³ For an exposition of the static and dynamic approaches to antitrust economics, see David J Teece, 'The Dynamic Competition Paradigm: Insights and Implications' (2023) 1 *Columbia Business Law Review*; David J Teece, 'Understanding Dynamic Competition: New Perspectives on Potential Competition, "Monopoly" and Market Power' (forthcoming) *Antitrust Law Journal*.

⁴ See *United States v Sabre Corp. and others*, case 19–1548 (D. Del. 2020) (Stark J, opinion); *Pasteur Mérieux/Merck*, European Commission Decision 94/770/EC, case IV/34.776 (Oct. 6, 1994); *Bayer/Aventis Crop Science*, European Commission Decision case COMP/M.2547 (17 April 2000); *Syngenta/Monsanto's Sunflower Seed Business*, European Commission Decision case COMP/5675 (Nov. 17, 2010). See also Mario Todino, Geoffrey van de Walle and Lucia Stoican, *EU Merger Control and Harm to Innovation—A Long Walk to Freedom (from the Chains of Causation)*, 64 *ANTITRUST BULL.* 11, 5 (2019); Linus J. Hoffmann, Anouk van der Veer, Friso Bostoen, Bowman Heiden and Nicolas Petit, *Dell – A Case Study of Dynamic Competition* 6 (DCI Case Study, Oct. 27, 2022), <https://www.dynamiccompetition.com/wp-content/uploads/2022/10/DCI-CS2-Hoffmann-et-al-compressed.pdf> accessed 6 February 2025; Ioannis Lianos, Abel Mateus & Azza Raslan, *Development Economics and Competition: A Parallel Intellectual History* 5–8 (CLES Working Paper Series 1/2012, 2012), <https://discovery.ucl.ac.uk/id/eprint/10045074> accessed 6 February 2025.

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relying on innovation concerns in establishing their theories of harm.⁵ Such a lopsided approach is bound to induce policy error. As discussed in depth in 'Innovation Paradox in Merger Control', such blatant dismissal of pro-competitive arguments about innovation while enthusiastically embracing untested innovation theories of harm creates, at least on its face, a bias against and double standard in the treatment of innovation.⁶ The enforcement agencies tend to generate unnecessary concerns and anxieties that create legal uncertainties for the stakeholders, which is, in turn, likely to stifle economic growth and undermine the competitive process that drives economic welfare. Indeed, the costs resulting from the said approach are likely high because the social returns to innovation exceed the private returns, so that social harms are amplified by errors. Therefore, the need for a new paradigm that is not just a mishmash of old economy and new economy tools and perspectives is pressing.

This new paradigm should not merely amend the static model. It should also recognize innovation as the critical factor and involve an analysis that does not treat innovation as an afterthought but as a central consideration. The hard work has yet to be done in creating a new paradigm, in part because economists and other agency personnel almost everywhere have failed to embrace the large literature outside of economics that could shed light on these issues. The situation may be changing, but it is at a glacial pace.

In this article, we begin by discussing innovation in the digital economy by taking into account the digital markets' unique features, such as multi-sided markets and network effects. We then move on to outline the current static approach to innovation in merger control and emphasize its limitations with respect to assessing the non-linear, unpredictable nature of innovation. Afterwards, we propose a shift from static tools to a dynamic competition paradigm that fully integrates innovation as a central consideration. Before concluding, we put forward policy recommendations including a fact-intensive, case-by-case approach encompassing dynamic efficiencies and spillover effects.

2. Understanding innovation in digital economy

Unique features of digital economies, such as fast-moving technological change, multi-sided markets, and complex ecosystems, pose distinctive challenges to merger control analysis.⁷

Digital platforms are part of multi-sided markets where they serve two or more groups of customers, such as advertisers, users, and content creators. They generally possess three characteristics that are relevant for the merger control analysis: (i) increasing

returns to scale, (ii) network externalities, and (iii) the role of data.⁸ For digital services, production costs either increase slightly or do not increase at all (because the marginal cost of production is almost zero) with respect to the number of customers. The first time a digital service is sold, its costs are either the same or very close to the costs of selling it to the second, third, or the hundredth customer. In addition, the more users a particular platform has, the more useful that platform becomes for the users, which is also known as the network effect. Finally, thanks to the speed of technological evolution over the last decades, companies can collect, process, and analyze data faster.⁹

The existence of highly innovative and productive digital platforms should also be recognized by competition authorities. In the context of digital markets, the following features must inform and guide the merger control analysis in accordance with the objective of multidisciplinary study of innovation: (i) recognize the role of leapfrogging innovation; (ii) recognize the potential of short-lived network effects; (iii) recognize the blurred lines between substitution and complementarity; (iv) the specificities of two-sided markets; and (v) recognize that M&A activity often helps support completely new business models (sharing economy).

Even before the introduction of digital platforms, there have been debates in the economic literature as to what type of market structure is likely to result in innovation, such as competition vs. monopoly.¹⁰ Traditional (and static) antitrust tools, such as the market definition and SSNIP tests, have been initially designed for the traditional markets of industrial economy, and as explained throughout this article, they do not fit well with the digital economy. Twenty years ago, one of us proposed an SSNIPP (price and performance) test.¹¹ Defining relevant product markets and then assessing the potential competitive landscape on their basis have not proven to be effective for assessing the competition taking place in the digital markets.¹² Drawing strict boundaries—especially when there are considerable suspicions regarding the substitutability of the products and services offered by digital platforms—does not serve well for the purpose of assessing the market power,¹³ as the innovation dimension can only be taken into consideration during the competitive assessment phase of the merger review.¹⁴

⁸ Yves-Alexandre de Montjoye, Heike Schweitzer and Jacques Crémer, *Competition Policy for the Digital Era* (European Commission, Directorate-General for Competition, Publications Office 2019) <https://data.europa.eu/doi/10.2763/407537> accessed 6 February 2025.

⁹ Gürkaynak (n 8) 337.

¹⁰ John M Yun, 'Does Antitrust Have Digital Blind Spots?' (George Mason University Law & Economics Research Paper No 20–16) 8.

¹¹ Christopher Pleatsikas and David J Teece, 'The Analysis of Market Definition and Market Power in the Context of Rapid Innovation' in David J Teece (ed), *Essays in Technology Management and Policy: Selected Papers of David J Teece* (World Scientific Publishing Co Pte Ltd) 385–416.

¹² See Nicolas Petit, 'Innovation Competition, Unilateral Effects and Merger Control Policy' (ICLE Antitrust & Consumer Protection Research Program, White Paper 2018–03) <https://laweconcenter.org/wp-content/uploads/2018/06/ICLE-Petit-Innovation-Competition-Merger-Control-Policy-ICLE-2018.pdf> accessed 6 February 2025 for the assessment of optimal merger control policy in innovative and R&D-driven markets; Nicolas Petit and David J Teece, 'Innovating Big Tech Firms and Competition Policy: Favoring Static and Dynamic Competition' (September 2022) *Industrial and Corporate Change*. See also Mary Coleman and David J Teece, 'The Meaning of Monopoly' (1998) *Antitrust Bulletin*.

¹³ See Richard S Markovits, 'On the Inevitable Arbitrariness of Market Definitions' <https://ssrn.com/abstract=135991> accessed 6 February 2025; Michael D Noel and David S Evans, 'Analyzing Market Definition and Power in Multi-Sided Platform Markets' (21 October 2005) <https://ssrn.com/abstract=835504> accessed 6 February 2025. See also Louis Kaplow, 'Why (Ever) Define Markets?' (2010) 124 *Harvard Law Review* 437, 467 for the proposal that initial estimates of market power result in arbitrary market definition.

¹⁴ Benjamin R Kern, Ralf Dewenter and Wolfgang Kerber, 'Empirical Analysis of the Assessment of Innovation Effects in U.S. Merger Cases' (2016) 16 *Journal of Industry, Competition & Trade* 373.

⁵ See, eg TomTom/Tele Atlas (Case M.4854) Commission Decision (14 May 2008), recitals 244–250 for the European Commission's position that the studies submitted by the parties are not convincing to establish that the efficiencies are quantified; Western Digital Ireland/Vivity Technologies (Case M.6203) Commission Decision (23 November 2011), recitals 996–1007 for the European Commission's position that the parties' arguments that innovation efficiencies would stem from the transaction are not verifiable; Dow/DuPont (Case M.7932) Commission Decision (27 March 2017), recitals 513–528 for the European Commission's position that the arguments put forward by the merging parties regarding innovation are difficult to assess. See also Dow/DuPont (Case M.7932) Commission Decision (27 March 2017) and Bayer/Monsanto (Case M.8084) Commission Decision (21 March 2018) for the European Commission's 'novel theory of harm' surrounding innovation.

⁶ Gönenç Gürkaynak, *Innovation Paradox in Merger Control* (Concurrences 2023).

⁷ OECD, *OECD Handbook on Competition Policy in the Digital Age* (OECD 2022) 64 <https://www.oecd.org/daf/competition-policy-in-the-digital-age> accessed 6 February 2025. See also Antonio Capobianco and Anita Nyese, 'Challenges for Competition Law Enforcement and Policy in the Digital Economy' (2018) 9 *Journal of European Competition Law & Practice* 19.

Indeed, digital platforms often commercialize innovation with complementary technologies and assets¹⁵. This interplay is generally evident through the platforms leveraging ecosystems to create value and combining the core product (or innovation) with ancillary components, which can be in the form of hardware, software, or data analytics. For instance, phone manufacturers are pairing their operating systems with their hardware (eg phone devices) and further software (eg application distribution stores) that create an enhanced user experience. Another example is the fact that electric vehicle manufacturers rely on complementary innovations in, among others, battery technology and software (such as autonomous drive) to be able to compete in the market. This means the success of a company is not measured (or dependent) on market shares or current market power established with other traditional tools, but also on its ability to keep innovating and leverage complementary technologies and assets effectively. However, these welfare-enhancing complementary technologies, and inherently, innovation, are treated as if these are barriers to entry,¹⁶ a term whose 'historic and colloquial use' results in harming consumer welfare by insinuating that these advancements may bar the market to rivals.¹⁷ Even in the assumption that an innovative ability of a company constitutes a barrier to entry in the form of, for instance, network effects, it should also be considered that such effects are created as a result of offering and maintaining high-quality services through innovative activity. The so-called 'locked-in' customer base (leading to the network effect) cannot be gained simply because the focal company was the first to offer such high-quality services. Accepting the contrary inevitably leads to a presumption that network effects are something 'for free', derived purely from being the lucky first, and should be scrutinized.¹⁸ We know from many instances of competition in real markets that absent innovation, network effects are insufficient to build competitive advantage.

The shift observed in the European Commission's ('Commission') practice, from evaluating innovation based on product markets to considering 'innovation spaces', and the gradual transition to 'the novel theory of harm', ultimately leading to the *Dow/DuPont*¹⁹ decision, are examples of an evolving understanding, which is further elucidated by case studies.²⁰ However, there is still considerable room for improvement in its practical application. The innovation space idea, in essence, tries to identify the competitors that are free and able to enter into the relevant space in the future and whether the merger in question reduces the number of competitors in a meaningful manner. That said, if not properly implemented, the idea will fail to consider all entities that can compete, including the ones that are not currently active in that space.²¹

Ensuring merger control proceedings' supportive rather than stifling effects on economic growth and welfare requires the continuous evolution of the current merger control analysis by

moving beyond traditional tools and metrics and applying a holistic approach that considers the unique features of digital platforms and ecosystems.

3. The static approach to innovation in merger control

The current antitrust analysis of innovation applied in merger control cases is built on static economic models that analyze mergers by looking at market structures and market shares, considering price effects, and finding out how a merger is expected to affect the competition within a short time frame. Even though innovation is increasingly recognized, the understanding in the enforcement agencies with respect to how critical it is for M&A does not extend far enough. Many start-ups are built on the hope and expectation of being acquired. If that exit/liquidity option is unavailable, investment dollars will go elsewhere. There is too little appreciation for these types of benefits because the economic analysis of innovation is pathetically limited. Fortunately, there is an extensive literature of innovation studies and strategic management that provides important insights. Although there have already been critiques as to the inadequacy of traditional tools (such as defining relevant product markets), these tools remain well-established and well understood, despite their relatively poor predictive power.²² This has undoubtedly created an overconfidence on the part of the competition authorities in their ability to predict anticompetitive effects.

One must realize at the outset that a static model is likely completely misleading when it comes to evaluating dynamic competition. Hence, the presumption that static models provide useful insights is mistaken. Innovation is non-linear. Competitive dynamics change rapidly.²³ Economic models of innovation processes explicitly or implicitly see research leading to developed activities and then through to manufacturing and market entry. This is sometimes referred to as the 'pipeline' approach to innovation. While this *modus operandi* may be a useful characterization of the pharmaceutical industry, it imposes certain threshold/drug efficacy requirements before larger scale testing is allowed: There are regulatory gates to open and defined bridges to cross to get to the next stage of development and approvals in pharmaceuticals, yet this is not the case in the digital, mechanical, and electrical worlds. There are feedback loops, and in some cases, the pathway is reversed. Innovation may take place by users and flow back 'upstream' to suppliers who then improve upon user innovation. This is often the case in the scientific equipment industry. Likewise, app developers may create products. Similar functionality may then get embedded by the platform into its own operating system. As such, market definition, market share, price-cost margins, and other parameters of traditional static models are not well-suited to assess the competitive effects of innovation because they have been established to analyze the competitive reality of markets not exposed to rapid technological change, often diverting them from consideration of competitive forces at work in the present and especially in the future.²⁴ They

¹⁵ See, eg Facebook/WhatsApp (Case COMP/M.7217) Commission Decision (30 October 2014); Microsoft/LinkedIn (Case M.8124) Commission Decision (6 December 2016); Apple/Shazam (Case M.8788) Commission Decision (6 September 2018); Google/Fitbit (Case M.9660) Commission Decision (17 December 2020) for the European Commission's analysis as to whether and how the target's complementary assets (data) would affect the competitive structure post-transaction.

¹⁶ Carl Christian von Weizsäcker, 'A Welfare Analysis of Barriers to Entry' (1980) 11 *Bell Journal of Economics* 399, 400–01.

¹⁷ John M Yun, 'Does Antitrust Have Digital Blind Spots?' (2021) 72(2) *South Carolina Law Review* (George Mason Law & Economics Research Paper No 20–16) <http://dx.doi.org/10.2139/ssrn.3593467> accessed 6 February 2025.

¹⁸ See *ibid*.

¹⁹ See, eg *Dow/DuPont* (n 7); *Bayer/Monsanto* (n 7).

²⁰ Gürkaynak (n 8) 192.

²¹ See Teece, 'Understanding Dynamic Competition' (n 5).

²² See Markovits (n 15); Noel and Evans (n 15); Kaplow (n 15).

²³ Richard Gilbert, 'Looking for Mr Schumpeter: Where Are We in the Competition-Innovation Debate?' in Adam B Jaffe, Josh Lerner and Scott Stern (eds), *Innovation Policy and the Economy*, vol 6 (MIT Press 2006) 159, 206 <http://www.nber.org/chapters/c208.pdf> accessed 6 February 2025.

²⁴ See OECD, *Dynamic Efficiencies in Merger Analysis* (Policy Roundtables, DAF/COMP(2007)41, 15 May 2008) 28 <https://www.oecd.org/daf/competition/mergers/40623561.pdf> accessed 6 February 2025. See also C Pleatsikas and D Teece, 'Economic Fallacies Encountered in the Law and Economics of Antitrust: Illustrations from Australia and New Zealand' (1999) 9 *Trade Practices Law Journal* 73–94.

adopt a polarizing approach to innovation. An example of how even a traditional market generates disruptive innovation is the passenger car market. At the time of the invention of modern passenger cars, there was arguably one traditional market for sales of passenger cars (and its vertically linked markets such as after-sales services). At first, these vehicles were being sold or rented. Over time, taxi services appeared. Taxi services were then complemented with geographic positioning systems (GPSs). The widespread adoption of GPSs in passenger cars, complemented with smartphones with mobile applications, led to the rise of many alternatives to traditional taxis, such as Uber, Zipcar, and Lyft, introducing another technological aspect into the taxi services. Then autonomous passenger cars were invented, leading to driverless transportation services removing the labor cost (ie the driver). Now, single-person (driver-less) transportation pods are being introduced onto the market, offering a more efficient service.²⁵

Digging in and staying with static models while assessing the innovation arguments and establishing innovation theories of harm is appealing for the competition authorities because such models focus on familiar concepts such as cost and price. However, the static models inappropriately ignore the dynamic nature of competition and are error-prone, leading to hypothesized harms that are often inherently speculative. Therefore, inevitably, the static models also overlook innovation's role as the driver of competition and economic welfare.

As also discussed in the first chapter of this article, innovation defenses are often marginalized in merger control proceedings on the grounds that they are uncertain and speculative. On the other hand, competition authorities tend to enthusiastically establish innovation theories of harm, creating a double standard toward the treatment of the innovation parameter of the merger control analysis.²⁶

Furthermore, the static approach fails to fully address the non-linear and interactive nature of innovation. It is too linear, often with the assumption that research leads to development, which leads to commercialization, much like the flow of water through a pipeline. The reality of developing new products and services is usually quite different, especially in the digital world where real-time experiments are possible. There are often a multitude of pivots and pirouettes on the path to market entry. Innovation does not begin with basic research and end with technology commercialization.²⁷ Except in a few industries, such as pharmaceuticals, there is rarely a clear pipeline of entirely new products. Instead, product and service development is usually non-linear, evolutionary, and involves many zigs and zags.²⁸ Economists'

pendant for using formal, linear (equilibrium) models can further distract them from understanding the fundamental nature of innovation.²⁹

Innovation also requires harnessing complementary technologies and assets. As there is a strong interdependence, market share is a poor measure of competitive success in innovation-driven markets. A thorough review of competitive constraints is needed to fully understand the impact of innovation on competition. In the digital economy, particularly with digital platforms, the ecosystem (not markets) should be the better unit of analysis in terms of assessing competitive effects.³⁰ The existence of platforms means that the analysis of platform decisions/behaviors requires all customer groups to be assessed. With digital platforms, those that get ahead do not always stay ahead, and multiple platforms end up competing because (i) competing platforms offer differentiated products and (ii) 'multihoming' is commonplace: customers on one or both sides can patronize multiple platforms. Market analysis in the digital platform context is further complicated because there are not only multiple sides; there are multiple layers with app developers and the like being important players, too. The combined effect of multisided markets and innovation considerations is such that market definition is a highly problematic analytical tool to use in the digital economy.

In conclusion, the static approach in merger control analysis is in its very nature not adequate for assessing innovation and its post-transaction effects, as static models fail to account for the non-linear and unpredictable nature of innovation. To foster a more competitive and innovative economy, it is essential to move beyond the static model and adopt the dynamic competition paradigm that fully integrates innovation into antitrust analysis.

4. The treatment of innovation in case law of the commission

The commission's treatment of innovation in merger control proceedings presents a gradual shift from a static, structured, mostly market-specific approach to a more expansive, relatively dynamic view of competition in innovation. It has initially been grounded in considering late-stage pipeline products within clear cut-product markets and then slowly spread out to include early-stage R&D and ultimately broader 'innovation spaces'.³¹ The current approach of 'innovation spaces' is more dynamic in the sense that it at least acknowledges the non-linear aspect of innovation. However, the way innovation is assessed within innovation spaces still remains quite speculative, allowing the Commission to lower evidentiary standards for assessing harm while imposing high burdens on transaction parties to prove efficiencies, which creates an asymmetry to the detriment of the transaction parties.

Traditionally, the Commission's treatment of innovation has been realized within clearly defined relevant product markets. This approach allows for a reliable, though not very flexible, assessment in considering innovation's impact on competition. In *Pasteur Mérieux/Merck*, for instance, the Commission assessed the competition within the late-stage pipeline products for vaccines by defining a specific (future) product market that is based on overlapping R&D activities.³² Similarly, in *Ciba/Sandoz*, the (future)

²⁵ See John Hagel, John Seely Brown, Tamara Samoylova and Michael Lui, 'From Exponential Technologies to Exponential Innovation' (Deloitte University Press, Report 2 of the 2013 Shift Index Series) < Deloitte_ES_Sector-Publico_From-exponential-technologies-to-exponential-innovation.pdf > accessed 6 February 2025.

²⁶ See Gürkaynak (n 8) 40, 132. for a discussion regarding the restrictions imposed by the competition authorities. Despite the competition authorities' explicit commitments to protecting innovation, they remain hesitant to consider future possibilities where innovation may flourish. Dynamic efficiency and synergies are not weighed against their theories of harm properly, even when efficiencies are case-specific and quantifiable. This is further elaborated in Chapter 4, below.

²⁷ See 'Interorganizational Requirements of the Innovation Process' (1989) *Managerial & Decision Economics*; see also National Center for Science & Engineering Statistics, National Science Foundation, *Research and Development: U.S. Trends and International Comparisons* (NSF 23-350) <https://nces.nsf.gov/pubs/nsf23350> accessed 6 February 2025 for statistics indicating that the pharmaceutical sector exhibits a high R&D intensity, with a 16.1% R&D-to-sales ratio in 2021 compared to an average of 4.6% across all industries.

²⁸ Richard Blundell, Rachel Griffith and John Van Reenen, 'Market Share, Market Value and Innovation in a Panel of British Manufacturing Firms' (1999) 66 *Review of Economic Studies* 29.

²⁹ See Stephen J Nickell, 'Competition and Corporate Performance' (1996) 104 *Journal of Political Economy* 724.

³⁰ Michael G Jacobides and Ioannis Lianos, 'Ecosystems and Competition Law in Theory and Practice' (2021) <http://dx.doi.org/10.2139/ssrn.3772366> accessed 6 February 2025.

³¹ Dow/DuPont (n 7); Bayer/Monsanto (n 7).

³² *Pasteur Mérieux/Merck* (Case IV/34.776) Commission Decision 94/770/EC (6 October 1994).

relevant product markets were defined by taking into account the innovation progress of the parties' overlapping activities.³³

In *Glaxo Wellcome/SmithKline Beecham*,³⁴ the Commission put greater emphasis on the potential effects of the transaction on the overall R&D activities in the sector. However, the assessment was still conducted with respect to the defined product markets, which were determined on the basis of overlapping existing and late-stage pipeline products. In *Medtronic/Covidien*, the Commission evaluated the anticompetitive concerns related to the market for drug-coated balloons to treat vascular diseases because Medtronic held a leading position in this market and Covidien had an advanced pipeline product.³⁵ There have also been several other examples of the Commission's traditional approach related to innovation tied to specific current products and future markets.³⁶

The examples above illustrate that the Commission's traditional approach related to innovation has primarily focused on well-defined product markets and largely restricted to late-stage pipeline products nearing market entry, excluding early-stage developments.

Following the traditional approach, the Commission's decisions started to present a gradual shift, the early signals of which were seen in *Novartis/GSK*³⁷ in 2015, where the innovation theories of harm were assessed as independent from a product market. *Novartis/GSK* is also the first time the Commission included pipeline concerns for earlier stages.

The most significant shift occurred in *Dow/DuPont*.³⁸ Unlike prior cases, the Commission's concerns were not specific to product markets, and the analysis focused on 'innovation spaces', encompassing early R&D activities and even the ones that are in the 'discovery stage'. The Commission has since confirmed that theories of harm can be put forward without a defined product market. The Commission employed this novel approach in the two different transactions in the seed and agricultural sector that took place after *Dow/DuPont*: *ChemChina/Syngenta*³⁹ and *Bayer/Monsanto*.⁴⁰

In *ChemChina/Syngenta*, the Commission focused on early-stage development, and since *ChemChina* did not engage in early R&D, the transaction was conditionally approved with divestitures. In *Bayer/Monsanto*, the Commission again used the novel approach and recognized Bayer and Monsanto as close innovators in 'innovation spaces', where, according to the Commission, high entry barriers were present. The Commission conditionally approved the transaction, with significant divestitures, including Bayer's seed and trait business and a global digital agriculture license.

It should be mentioned that in all three examples above (*Dow/DuPont*, *ChemChina/Syngenta*, and *Bayer/Monsanto*), the Commission did not assess the potential strength of future competitors (based on their R&D projects and pipeline products) and disregarded the likelihood of success for the merging

parties' R&D initiatives. Slight shifts appear in *Johnson and Johnson/Actelion*⁴¹ and *BMS/Celgene*,⁴² where the Commission considered the strength of future competitors. In these cases, as well as in *Google/Fitbit*,⁴³ the Commission also assessed overlaps in potential innovation markets and considered the possible outcomes of the transaction parties' pipeline and R&D products.

The shift from 'innovation considerations in specific relevant product markets' to 'innovation spaces' is promising. However, 'innovation spaces' lacks a legal framework, which makes its boundaries ambiguous and analytical approach highly speculative. The lack of legal framework, by itself, creates an environment in the merger control sphere where the transaction parties are left with legal uncertainties, not being able to reasonably estimate the boundaries of the Commission's arguments.

All in all, the Commission's approach in treating innovation in merger control proceedings has been traditionally tied with well-defined product markets and late-stage pipeline products. Although this approach allowed for a certain degree of analysis of innovation, it was limited to established markets. The *Dow/DuPont* decision was the most apparent shift toward a 'novel approach', introducing the 'innovation spaces' by expanding the analysis beyond early-stage pipeline projects and not limiting the analysis with clearly defined relevant product markets. Those being said, the Commission has consistently dismissed parties' innovation defenses as speculative but accepted generously at least equally speculative concerns about potential harm to innovation. As such, innovation is rarely considered as a balancing factor against the innovation theories of harm, and it has rather been used unilaterally to establish potential competition concerns.

A proposition regarding how innovation should be treated has recently been proposed within the scope of the 'Draghi Report'.⁴⁴ The fact that the Draghi Report felt compelled to propose an innovation defense reinforces the argument of this article that the current practice is insufficient and a more balanced approach to treating innovation in merger control proceedings is pressing.

While authorities have increasingly considered dimensions beyond price, such as quality and innovation, as demonstrated above, their approach is considered by the Draghi Report as 'sometimes too backward-looking', potentially rendering the Commission's focus unnecessarily on existing market structures rather than the dynamic nature of future competition. The proposal of the Draghi Report for innovation defense with measurable commitments to R&D investments suggests that innovation defense would play a critical role in addressing the imbalance. That being said, the report also cautions that the defenses must be carefully structured to prevent abuse and ensure that they are used to justify legitimate mergers. The Draghi Report's recognition of these nuances strengthens the argument that the absence of an operationalized innovation defense is a significant gap in the current merger control regime.

5. The need for a new paradigm and central role of innovation in merger control analysis

Innovation should not be considered merely as an important competitive factor in merger control analysis. Rather, it should

³³ *Ciba-Geigy/Sandoz* (Case IV/M.737) Commission Decision 97/469/EC (17 July 1996).

³⁴ *Glaxo Wellcome/SmithKline Beecham* (Case COMP/M.1846) Commission Decision (8 May 2000).

³⁵ *Medtronic/Covidien* (Case COMP/M.7326) Commission Decision (28 November 2014); see also *Pfizer/Hospira* (Case COMP/M.7559) Commission Decision (4 August 2015).

³⁶ *Bayer/Aventis Crop Science* (Case COMP/M.2547) Commission Decision (17 April 2000); *Syngenta/Monsanto's Sunflower Seed Business* (Case COMP/M.5675) Commission Decision (17 November 2010).

³⁷ *Novartis/GlaxoSmithKline's Oncology Business* (Case COMP/M.7275) Commission Decision (28 January 2015).

³⁸ *Dow/DuPont* (n 7) §§ V.8.4–V.8.6, recitals 2039–2395.

³⁹ *ChemChina/Syngenta* (Case M.7962) Commission Decision (5 April 2017).

⁴⁰ *Bayer/Monsanto* (n 7).

⁴¹ *Johnson and Johnson/Actelion* (Case M.8401) Commission Decision (9 June 2017).

⁴² *BMS/Celgene* (Case M.9294) Commission Decision (29 July 2019).

⁴³ *Google/Fitbit* (n 17).

⁴⁴ Mario Draghi, *The Future of European Competitiveness – In-depth Analysis and Recommendations* (European Commission, September 2024).

be considered the core driving force behind competition and economic welfare. The introduction of the America Competes Reauthorization Act of 2010,⁴⁵ for instance, is a result of the US policymakers' objective of increasing innovation through R&D activities and eventually boosting economic growth. Although this example is from the United States, it is a reflection of the theory that enhanced innovation will eventually result in economic growth in any given country.⁴⁶ Research has also shown that there may be an inverted U-shaped relationship between product market competition and innovation,⁴⁷ and growth is achieved by technology.⁴⁸

In short, there is consensus on the fact that innovation is likely to enhance economic growth, competition, and economic welfare. There are opposing theories as to how the market structure should look like for companies to maintain their motivation to innovate.⁴⁹ The competition authorities also acknowledge the importance of innovation,⁵⁰ and they closely scrutinize mergers where they believe there might be concerns that the innovation could be harmed post-transaction, especially within the last ten years.⁵¹ However, they tend to focus on establishing theories of harm surrounding how innovation might be hurt post-transaction and ignoring arguments as to how a given transaction could boost innovation in the market in the long run.⁵² If the competition authorities were using more robust multidisciplinary theories of innovation, that would be comforting. Sadly, they are not. While economists have done important work on innovation, so have scholars and practitioners in management, strategy, operations, complex systems, venture capital, entrepreneurship, information systems, sociology, and several other fields. Given the multifaceted nature of innovation, enforcement decisions made from the perspective of only one field will surely suffer from an omitted variables problem and likely turn out to be wrong. Given the stage we are at in understanding dynamic competition, there is no room for hubris. While economics as a field quite correctly looks at incentives and market structure for assessing business conduct and transactions, other fields remind us of the relevance of organizational learning, strategy, internal and external learning, leadership, entrepreneurship, and the role of venture

finance. Important heterodox work in economics (eg evolutionary economics and complexity economics) has hitherto been ignored, perhaps because it is silently hostile to mainstream assumptions (eg equilibrium) and tools (eg production functions).

As presented in cases, the Commission often relies almost exclusively on market structure and incentives as the sole variable. Thus, Tirole discusses 'replacement effects'⁵³, and following, Arrow explores how incumbency can impact innovation.⁵⁴ The lens that is used to explain the adoption of innovation is incentives, and little else. Whether innovation is rewarded inside the enterprise also matters, as innovation scholarship takes place not only in economics but also in management, sociology, political science, and elsewhere. A rich and robust understanding of innovation requires multidisciplinary and contextual knowledge.

This deficiency is problematic in the sense that theories of harm are poorly formed and rely on a high degree of speculation, not only because the future is uncertain and innovation is non-linear, but also because they have a highly stylized view of innovation that is remote from reality. Indeed, it can sometimes be a caricature of reality. Moreover, there are almost always counterfactuals that could demonstrate with a similar level of certainty that innovation will not be less harmed in the absence of the proposed merger.

In short, despite the increasing recognition of innovation's importance, competition authorities often tend to focus on establishing innovation theories of harm on speculative grounds, failing to learn from considerable scholarship outside the field of economics. The agencies are not giving equal weight to the arguments that are often well-accepted in the management literature as to why innovation will not be harmed (and may well benefit) as a direct result of the proposed merger. This tendency is a result of the static approach that overlooks the dynamic nature of technologies and markets. Traditional tools and methodologies—as explained earlier under Chapter 3—focus on short-term effects, which fall short in analyzing the benefits and competitive pressures associated with innovation in the long run. To properly inform policy, traditional competition analysis must be replaced with a dynamic approach where innovation not only is seen as the catalyst and the main driver of competition but is understood in a rich organizational context.

Such a paradigm shift would also require a broader reconsideration of how innovation output is accurately measured,⁵⁵ which is without doubt beneficial and, in fact, required to assess how healthy the advanced economies are. Many jurisdictions and the OECD are working on how to measure this intangible attribute.⁵⁶ The one-sided approach taken by the competition authorities seems to suggest that, where 'innovation' is pointed out by competition authorities as a cause for concern in a given transaction, it is objectively measurable. But too often 'innovation' turns into a non-measurable, opaque, unverifiable, or speculative concept. When enhanced innovation is relied on as a defense, it

⁴⁵ America Competes Reauthorization Act of 2010 Pub L No 111–358.

⁴⁶ Beñat Bilbao-Osorio and Andrés Rodríguez-Pose, 'From R&D to Innovation and Economic Growth in the EU' (2004) 35 *Growth & Change* 434.

⁴⁷ Philippe Aghion, Nick Bloom, Richard Blundell, Rachel Griffith and Peter Howitt, 'Competition and Innovation: An Inverted-U Relationship' (2005) 120 *Quarterly Journal of Economics* 701.

⁴⁸ Paul Donovan, 'Why Do Some Economies Grow Faster Than Others?' (2020) UBS Nobel Perspectives <https://www.ubs.com/microsites/nobel-perspectives/en/laureates/robert-solow.html> accessed 6 February 2025; Rui Zhao, 'Technology and Economic Growth: From Robert Solow to Paul Romer' (2019) 1 *Human Behavior & Emerging Technology* 62.

⁴⁹ Roger Van den Bergh, Peter Camesasca and Andrea Giannaccari, *Comparative Competition Law and Economics* (Edward Elgar Publishing 2017) 51; Joseph A Schumpeter, *Capitalism, Socialism and Democracy* (3rd edn, Harper & Brothers 1950); FA von Hayek, *New Studies in Philosophy, Politics, Economics, and the History of Ideas* (University of Chicago Press 1978) 179; Ludwig von Mises, *Human Action: A Treatise on Economics* (Foundation for Economic Education 1996); Eric Hoppmann, *Marktmacht und Wettbewerb* (Mohr 1977).

⁵⁰ See Turkish Competition Authority, *Guidelines on the Assessment of Horizontal Mergers and Acquisitions* (2022) paras 86–92; Commission, *Guidelines on the Assessment of Horizontal Mergers under the Council Regulation on the Control of Concentrations between Undertakings* [2004] OJ C31/5 paras 8, 15, 38, 45, 71, 81; CMA, *Merger Assessment Guidelines* (2021) ss 2, 8; Margrethe Vestager, 'Competition: The Mother of Invention' (European Competition and Consumer Day, 18 April 2016) https://ec.europa.eu/competition/publications/weekly_news_summary/2016_04_22.html accessed 6 February 2025.

⁵¹ See, eg Dow/DuPont (n 7); Medtronic/Covidien (n 37); ChemChina/Syngenta (n 41); Bayer/Monsanto (n 7); CMA, *Completed Acquisition by Tobii AB of Smartbox Assistive Technologies Limited and Sensory Software International Ltd (Final Report)* (15 August 2019); Microsoft/Activision Blizzard (Case M.10646) Commission Decision (5 May 2023).

⁵² Dow/DuPont (n 7); Case C-12/03 P Commission v Tetra Laval [2005] ECR I-987.

⁵³ Jean Tirole, *The Theory of Industrial Organization* (MIT Press 1997) 392.

⁵⁴ Kenneth Arrow, 'Economic Welfare and the Allocation of Resources for Invention' in National Bureau of Economic Research (ed), *The Rate and Direction of Inventive Activity: Economic and Social Factors* (Princeton University Press 1962) 609.

⁵⁵ As one of the authors of this paper, Teece has proposed that ecosystem innovation should be one of the leading criteria. The question is whether the transformation/conduct at issue improves or harms the robustness of the ecosystem.

⁵⁶ Balkrishna C Rao, 'Economic Recognition of Innovation' (Singapore Economic Review Conference 2007); see also Ministry of Economic Affairs, *Science, Technology and Innovation in the Netherlands* (The Hague 2006) for the explanation of the Summary Innovation Index as a tool to measure innovation.

is too often dismissed by the competition authorities.⁵⁷ The best way to measure innovation can surely be debated. However, such behavior by the enforcement agencies often reflects a lack of appreciation of relevant facts as well as ignorance of significant research outside of economics that could be harnessed to produce better enforcement policy.⁵⁸

Competition authorities need to focus on the long-term benefits of innovation. They should not, as is often the case, default to what is easy to measure in the short term and ignore longer-term benefits for innovation and economic welfare.

More broadly, the dynamic competition paradigm supports a case-by-case approach, carefully tailored to the characteristics of the case at hand, and is open to the use of approaches that might not fit neatly into existing rules and frameworks, theories, and models.⁵⁹

6. Policy implications and recommendations

The static approach in the merger control analysis is likely to fall short, especially in markets that are driven by innovation because—as explained throughout this article—innovation is inherently non-linear and unpredictable. In innovation-driven markets, a one-size-fits-all method can hardly be deemed valid. It is, in fact, argued that (i) knowledge diffusion within the merged entity, (ii) spillovers, (iii) appropriability, (iv) coordination of R&D investments, (v) sequential innovation, and (vi) legal certainty issues regarding intellectual property rights, which arise due to the effects of a merger on innovation, should also be assessed, and the efficiencies that may be realized due to economies of scale or scope, or the sharing of R&D resources, in and of themselves, are not sufficient for the purposes of the analysis.⁶⁰

A. A neutral starting point with fact-intensive analysis

Claims that mergers inherently decrease the incentive to innovate (assuring a perfect monopoly protected by a perfect patent) are not well-grounded and have been challenged by many scholars. Recent research provides a more nuanced understanding. Some have argued that merging parties may be able to internalize the innovation externalities, which, in turn, is likely to lower incentives to innovate for the merged entity post-transaction.⁶¹ Some scholars elaborated further on this perspective in a different paper published approximately 1 year after, suggesting that the reduction in innovation incentives post-merger is contingent on the lack of cost efficiencies and knowledge spillovers.⁶² Moreover, it was also argued that the effects on innovation incentives of mergers vary, depending on factors such as R&D synergies that enhance the ability to innovate.⁶³ Clearly, most theoretical models are embarrassingly non-robust and should not be guides to

policy, but we fear that too often they animate the focus and the decisions of agency staff.

However, incentives are not the ‘be all and end all’ divining rod for analyzing the effects of mergers. Capabilities matter too, as the agencies recognize,⁶⁴ but they have yet to commence the hard work of figuring out just how.

Additionally, it has also been pointed out that a merger by the only two firms working on a specific line of R&D may diminish innovative activity. However, this is also dependent on the absence of increased appropriability or R&D synergies post-transaction.⁶⁵ On the other hand, the negative impact of the internalization of cannibalization can be balanced with other factors. According to RBB Economics, for instance, a reduction in the number of competitors in an industry may positively influence the firms’ innovation incentives to invest in R&D. Appropriation is one of these alternative effects. RBB Economics in fact states that the cannibalization effect can reduce overall innovation only in the case of a merger to monopoly.⁶⁶

It is clear that the actual impact of mergers on innovation is multifaceted and depends on various factors such as synergies, appropriabilities, R&D spillovers, and the market structure. Hence, the assumption that mergers impede innovation incentives stemming from the Arrowian standpoint starts losing its workability. A more accurate assumption instead may be that mergers are likely to impede incentives for innovation in particular cases where certain conditions are absent, and some other conditions are present, post-transaction. However, why should this assumption be more credible than its exact opposite, ie ‘Mergers are not likely to impede incentives for innovation, unless certain conditions are absent, and some other conditions are present post-transaction’? Therefore, the common presumption in enforcement circles that mergers are likely to impede incentives for innovation places an undue burden of proof on the merging parties.

In light of the above, a neutral standpoint would ensure that arbitrary assumptions do not affect the merger control analysis and that the analysis is conducted with an open-minded approach, grounded in the specifics of each case. In line with this, it has been argued that any assumption, if needed, in merger control should be that mergers are innovation-neutral as a starting point.⁶⁷

In a similar vein, models suggest that a hypothetical monopolist can sustain its monopoly through innovation efforts, or its lack of innovation efforts may lead to the emergence of a duopoly because of a new entrant possessing new technology.⁶⁸ In either scenario, innovation would be maintained in the market. Such a model also reveals the importance of the consideration of both firm-level and market-level dynamics in assessing merger’s effect on innovation, highlighting the complexity of innovation incentives.

⁵⁷ Gürkaynak (n 8) 33.

⁵⁸ There is some hope, as the US Department of Justice began engaging in multidisciplinary enquiry during Susan Athey’s tenure as the Chief Economist of the Antitrust Division.

⁵⁹ Pierre Régibeau and Katharine E Rockett, ‘Mergers and Innovation’ (2019) 64 *Antitrust Bulletin* 31.

⁶⁰ *Ibid.*

⁶¹ Giulio Federico, Gregor Langus and Tommaso Valletti, ‘A Simple Model of Mergers and Innovation’ (2017) 157 *Economics Letters* 136 <https://doi.org/10.1016/j.econlet.2017.06.014> accessed 6 February 2025.

⁶² Giulio Federico, Gregor Langus and Tommaso Valletti, ‘Horizontal Mergers and Product Innovation’ (2018) 59 *International Journal of Industrial Organization* 1 <https://doi.org/10.1016/j.ijindorg.2018.03.001> accessed 6 February 2025.

⁶³ George Priest, ‘The Limits of Antitrust and the Chicago School Tradition’ (2012) 15–21 <https://doi.org/10.1112/stanford/9780804774901.003.0002> accessed 6 February 2025.

⁶⁴ The DOJ-FTC guidelines in the US reference capabilities, but provide no guidance as to how they ought to come into play (see Teece, n. 23).

⁶⁵ Vincenzo Denicolò and Michele Polo, ‘Duplicative Research, Mergers and Innovation’ (2018) 166 *Economics Letters* 56 <https://doi.org/10.1016/j.econlet.2018.02.021> accessed 6 February 2025.

⁶⁶ RBB Economics, ‘An Innovative Leap into the Theoretical Abyss: Dow/DuPont and the Commission’s Novel Theory of Harm’ (2017) <https://www.datocms-assets.com/79198/1667304872-rbb-brief-54.pdf> accessed 6 February 2025.

⁶⁷ Vincenzo Denicolò and Michele Polo, ‘The Innovation Theory of Harm: An Appraisal’ (2018) 27–28 <https://ssrn.com/abstract=3146731> accessed 6 February 2025; Michael L Katz and Howard A Shelanski, ‘Merger Policy and Innovation: Must Enforcement Change to Account for Technological Change?’ in Adam B Jaffe, Josh Lerner and Scott Stern (eds), *Innovation Policy and the Economy*, vol 1 (MIT Press 2005) 1, 6.

⁶⁸ Richard Gilbert and David Newbery, ‘Preemptive Patenting and the Persistence of Monopoly’ (1982) 72 *American Economic Review* 514.

There are also studies emphasizing the 'relevance of considering post-merger heterogeneities when evaluating competitive merger outcomes' by providing evidence on the fact that 'firms' post-merger output further increases (and post-merger price further declines) if merging firms are more efficient, operate in more elastic product markets, are more innovative, and acquire knowledge in technological areas that are relatively unexplored to themselves.⁶⁹

A blanket assumption that mergers always impede innovation incentives fails to consider the nuanced effects of mergers on innovation, including potential efficiency gains and diversion effects.⁷⁰ It is suggested that reduced product-market competition might even stimulate innovation by increasing the scope for price differentiation and strengthening pre-emption incentives for incumbents.⁷¹ In addition, the merged entity may sometimes close one of the research units not because of a decrease in its incentives to innovate, but for reasons that pertain to the efficiency of its R&D activities.⁷²

Given these complexities, it is recommended that merger reviews adopt a fact-intensive, case-by-case approach initiated from a neutral starting point toward mergers' potential effects on innovation.

B. Consideration of dynamic efficiencies/efficacy and incorporating spillover effects⁷³

Dynamic efficiencies/efficacy in merger analysis, as opposed to static efficiencies, consider the evolving nature of markets and the potential for innovation and growth that mergers can bring in the long run. 'Efficiencies' stemming from technology integration facilitated by a merger are not always immediately quantifiable, but over time, they can have significant positive impacts on both innovation and competition.⁷⁴

Despite the ever-growing scaremongering around so-called killer acquisitions,⁷⁵ mergers (even those including acquisition of nascent firms) rarely occur with the sole purpose of eliminating potential competition in the market.⁷⁶ Mergers may be realized for several reasons, including, among others, synergies and economies of scope and scale. Industry-level clustering of mergers

can be a response to increased competition, indicating that mergers can help the competitive process by allowing firms to reallocate assets and resources strategically so as to maintain or enhance competitiveness in evolving markets.⁷⁷

The proposition that mergers impede innovation assumes that the merger in question does not generate any integration gains. However, it has been illustrated under specific scenarios (where decisions on investment and prices are taken simultaneously, sequentially, or with quality-enhancing investments) that if the synergies in the form of economies of scope are significant enough, the merged entity is likely to increase its investments, which may outweigh any detrimental effect on prices. Furthermore, it is noted that involuntary spillovers stemming from mergers can be internalized, which incentivizes the merged entity in the long run to invest further.⁷⁸

Additionally, it is found that mergers tend to increase innovation incentives for the merged entity in the absence of buyer power, but not for their competitors. With the presence of buyer power, however, the incentives for rivals increase, while those for the merged entity can either increase or decrease.⁷⁹ This divergence further illustrates the need for a detailed, case-specific analysis of mergers.

All in all, the initial assumption that mergers are likely to impede incentives for innovation should be abandoned. This is because, as the studies mentioned above suggest, (i) reduction in innovation post-merger is contingent on the lack of cost efficiencies and knowledge spillovers, (ii) it is dependent on the absence of increased appropriability or R&D synergies post-transaction, and (iii) the cannibalization effect can reduce overall innovation only in the case of a merger to monopoly.

A new competition paradigm with an innovation-centric competition policy, which recognizes innovation as the focal point of merger control analysis, especially in the innovation-driven markets, is needed. To achieve that, static tools that have been developed to assess short-term effects based on static parameters need to be supplemented by new and fit-for-purpose tools that would accurately evaluate the effects on innovation, both transitory and long-term.

Most importantly, we need to move toward a case-by-case approach in merger control analysis where rigid rules are laid aside in favor of increased flexibility in methodology.

7. Conclusion

In this paper, we advance a more dynamic framework that can improve competition policy and contribute to a more sensible assessment of innovation in merger control. We disfavor traditional, static merger control tools because they are not sufficient to properly assess how mergers impact innovation and competition. We propose that a flexible, multidisciplinary, case-by-case approach be adopted.

Despite the rhetoric from the enforcement agencies about fostering innovation, a forward-looking and innovation-focused merger control analysis remains absent. Issues with respect to

⁶⁹ Ralph B Siebert, 'What Determines Heterogeneous Merger Effects on Competitive Outcomes?' (2022) 70(1) *Journal of Industrial Economics* 217 <https://doi.org/10.1111/joie.12283> accessed 6 February 2025.

⁷⁰ Bruno Jullien and Yassine Lefouili, 'Horizontal Mergers and Innovation' (Toulouse School of Economics, Working Paper No 18-892, 2018) 5 https://www.tse-fr.eu/sites/default/files/TSE/documents/doc/wp/2018/wp_tse_892.pdf accessed 6 February 2025.

⁷¹ Yongmin Chen and Marius Schwartz, 'Product Innovation Incentives: Monopoly vs. Competition' (2013) 22 *Journal of Economics & Management Strategy* 513.

⁷² Marc Bourreau and Alexandre de Streel, 'Digital Conglomerates and EU Competition Policy' (2019) SSRN Electronic Journal 20 <https://dx.doi.org/10.2139/ssrn.3350512> accessed 6 February 2025.

⁷³ Teece has pointed out that the term 'dynamic efficiency' is an oxymoron in as much as in organizational settings, efficiency is at war with innovation and vice versa. See Teece (n 23).

⁷⁴ Jeremy K. West, 'Dynamic Efficiencies in Merger Analysis' (2008) SSRN Electronic Journal <https://doi.org/10.2139/ssrn.1144029> accessed 6 February 2025.

⁷⁵ See Colleen Cunningham, Florian Ederer and Song Ma, 'Killer Acquisitions' (2021) 129(3) *Journal of Political Economy* 649 <https://doi.org/10.2139/ssrn.3241707> accessed 6 February 2025.

⁷⁶ In the pharmaceutical market, arguably carrying the highest risk of the occurrence of killer acquisitions, the likelihood of a killer acquisition is measured as between 5.3–7.4% (Cunningham, Ederer and Ma (n 77)). In the digital market, the rate is measured at approximately 1 in 175: A Gautier and J Lamesch, 'Mergers in the Digital Economy' (2021) 54 *Information Economics and Policy* 100,890. A study including a relatively small number of case studies establishes that '(...) [the] idea of killer acquisitions does not hold under three tests of competitor perception, expansion, and disruption': Marc Ivaldi, Nicolas Petit and Selçukhan Ünekbaş, 'Killer Acquisitions in Digital Markets May Be More Hype than Reality' (2023) <https://cepr.org/voxeu/columns/killer-acquisitions-digital-markets-may-be-more-hype-reality> accessed 6 February 2025.

⁷⁷ Marcin W. Krolkowski and Kevin Okoeguale, 'Economic Shocks, Competition and Merger Activity' (2019) 1(1) *Journal of Business Accounting and Finance Perspectives* 1 <https://doi.org/10.26870/1> accessed 6 February 2025.

⁷⁸ Massimo Motta and Emanuele Tarantino, 'The Effect of a Merger on Investments' (Centre for Economic Policy Research (CEPR) Discussion Paper No DP11550, 2016) https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2850392 accessed 6 February 2025.

⁷⁹ Simon Loertscher and Leslie M Marx, 'Merger Review for Markets with Buyer Power' (2019) 127 *Journal of Political Economy* 2967, 2970 <https://people.duke.edu/~&x007E/marx/bio/papers/BuyerPower.pdf> accessed 6 February 2025.

how a given merger can foster innovation (or how it cannot harm innovation) should be given equal weight with the innovation theories of harm, as there is no evidence that the latter is less speculative than the former. On the contrary, there are concrete models suggesting that innovation can only be harmed in conditions where certain parameters (such as increased appropriability and R&D synergies) are absent post-transaction. It should also be recognized that certain synergies and appropriability could emerge years later. As such, requiring merging parties to present R&D synergies and appropriability at the time of the merger, and further insisting that these be quantifiable and clear, undermines the competition authorities' mission to protect consumer welfare on a more sustainable, mid-to-long-term basis.

The recent Draghi report which proposes that the merging parties should be allowed an 'innovation defense', may help address the 'paradox' by requiring competition authorities to give equal consideration to innovation defenses, as they do to innovation theories of harm.⁸⁰

Sticking to a narrow view of innovation as if it is merely creating short-term benefits for consumers, the preventive measures claimed to be for the benefit of consumers may

hinder competition outcomes because short-term concerns stemming from, for instance, potential price increases lead the authorities to overlook larger but less immediate benefits as a result of a regulatory myopia. An encompassing assessment of the impacts of mergers on innovation requires a more balanced approach with careful weighing of potential upsides as well as downsides.

Without doubt, a uniform treatment of innovation is not easy because each case involves its own dynamics. As such, it is imperative that a case-by-case analysis looks at managerial and organizational issues, as well as incentives and market issues. It is not disputed that competition authorities, from time to time, have to intervene to protect innovation incentives, but they must also look at the particular capabilities and how mergers can enhance capabilities and associated competition. Intervention should be a last resort.

This calls for a change of mindset and a methodology that will be able to account for the role of innovation and capabilities in the evolution of competition dynamics. Abandoning the straitjacket of static models will allow a more robust analysis that is more likely to advance economic dynamism and longer-term consumer welfare.

⁸⁰ Draghi (n 46).