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Regulating platforms and ecosystems: an introduction

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Digital technologies and modular production methods have led to the emergence of a new generation of global leaders which cement their market position by orchestrating digital platforms and ecosystems of complementors, which offer them new ways to create and capture value that often transcend the boundaries of existing sectors. Their business models, built on intangibles such as software code and access to data, support expansion that is both breathtakingly rapid and effectively costless. With capital markets all too willing to invest in these firms' growth, and regulators unable to rein them in, these firms have been able to accumulate unprecedented power and wealth, with profound implications for competition, the economy, and society itself. This special issue confronts the challenge of regulating platforms and ecosystems head-on, revisiting the economic, strategic, and legal foundations that enable us to detect and redress issues of dominance and competition and address questions of the appropriate conception of and limits of the law. The papers included cover topics including the true nature of competition with an emphasis on dynamics and innovation, new approaches for legal and economic analysis including the alternatives for the "welfare criterion" and the protection of sunk investments, the approaches to take on tech mergers and acquisitions, the virtues and limits of self-regulation, the potential for radical breakups of Big Tech, and the issues of data, when privacy protection and competition steer us in different directions. Contributors also weigh up the case for regulatory intervention, the practical challenges involved, and the future state that we hope such actions will bring about.

JEL classification: K21, L1, L12, L4, L41, L5, L86, L88, M21

1. The dawn of a new world

At the turn of the 20th century, the architecture of economic activities began to undergo radical change. The expansion of digital technologies and the proliferation of modular production methods unlocked opportunities for a completely different type of firm (Baldwin, 2021). In place of vertically and horizontally integrated corporate behemoths, or industrial conglomerates that drew their power from synergies in product or capital markets, we saw the emergence of *ecosystem orchestrators*. Their power rested not only on their own prowess, but also on their ability to collaborate with a range of complementors to create and capture value. Firms such as Microsoft and Intel, by focusing on both their own added value and the web of relationships they created, were able to outcompete integrated behemoths like IBM, DEC, or the Apple of yesteryear (Bresnahan and Greenstein, 1999; Jacobides and Tae, 2015). "Platform leaders" (Gawer and Cusumano, 2002) were recognized as a new breed of firms who rewrote the strategy playbook, fundamentally altering the dynamics of their sectors.

The 2000s unleashed a wave of technological excitement, with digitalization increasingly delivering on its promise, customers moving online, and "monetization" the word on everyone's lips. During this phase, a new generation of "ecosystem plays" symbolized new ways to organize

in the digital economy (Jacobides *et al.*, 2018; De Meyer and Williamson, 2020). By the mid-2010s, bolstered by stronger technology, platforms linking consumers and producers became hot properties in their own right. Traditional modes of intermediation were challenged, with technology offering superior alternatives. Platform owners' ability to benefit from their complementors became a key topic, and research on platforms boomed (Parker *et al.*, 2016; Cusumano *et al.*, 2019). Significant shifts were noticeable throughout the economy, with researchers extolling the merits of the transformation (Petit and Teece, 2021). From eBay in auctions to Amazon in e-commerce, from Booking.com and Expedia.com in travel to Uber and Lyft in ride-hailing, firms saw opportunities to rethink how sectors were structured, forging a fresh set of organizational principles that became ever more pervasive (Williamson and De Meyer, 2020; Adner, *forth.* 2021). Established firms, such as Russia's leading bank, Sberbank, even changed their names (to Sber) to signal that they aspired to be "ecosystem firms," no longer tethered to a single industry.

A few firms championed new ways to package goods and services, as we can see in the fluid "social media" market (Jenny, 2021). The growth of connectivity and the improvements in sensors made it beneficial for actors to provide ever-larger bundles of products and services based on technological prowess. Everyone became reliant on their device, and the proliferation of Internet of Things helped open up new possibilities in linking businesses. Now your fridge could tell when you were running out of milk and re-order it without you having to lift a finger. Industrial stalwarts such as Haier, China's industrial appliance leader, turned to the "Internet of food" and "Internet of clothes." Customers were spoiled for choice.

On top of all these changes, we also saw deregulation, as regulators worldwide changed their attitudes toward new business models and considered that experimentation is good, spurred on by the concerns over rent-seeking from entrenched incumbents. Regulators in every area from energy to financial services became more open to new ideas constructing "regulatory sandboxes" to facilitate safe innovation, as technology-aided transformation became socially accepted and politically desirable. Thus, it became easier to experiment, adjust, and invent new ways of organizing (Lianos, 2019a; Jacobides *et al.*, 2020b), often transcending the boundaries of established industries.

2. Confronting the limits of our abstractions

Abstractions are tools for thought—and, like all tools, they have their limits. They are suited to some jobs, but not others. They may be useful for a while, then become less so. And, like all cognitive frames (Goffman, 1974), they may affect how we see the world around us—and what possibilities we perceive to change it.

The limits of the abstractions we use in economics (and, to a significant extent, strategy) have been apparent for some time. For many years, we took the nature of "industries" as given—even though an industry itself, and what it does, changes over time as technologies and regulations evolve. For example, "a bank" in 1990 bore little resemblance to how "a bank" looked in 2006 (Cetorelli *et al.*, *forthcoming*). By and large, we learned to live with this by ignoring subtle questions of "what we mean by 'the entertainment industry'" and "how do you measure 'a market'"—because industries were still stable enough for imperfect approximations to be operationally useful.

However, the early 2000s ushered in *much* greater change in the nature of industries and markets. There was increasing variety in terms of how firms added and captured value, and a multitude of new "business models" proliferated. The rise of interest in "monetization" was a symptom of a deeper change in how sectors were structured: their architectures became much more malleable, and sectors no longer moved in unison.

Sectoral boundaries dissolved under the onslaught of technology. Increasingly, the focus of competition was not to prevail *within* a sector, but to reshape its very structure (Jacobides, 2010; Jacobides and Winter, 2012; Lianos, 2019a; Jenny, 2021). The ideas of "an industry" as a set of similar firms, or "a market" as a set of readily identifiable substitutable goods, became so approximate that they no longer captured the key aspects of economic behavior. Hence, the notion of an "industry"—even one that evolves over time—became increasingly tenuous. It became abundantly clear that sectors' architectures (Jacobides *et al.*, 2006) were very endogenous indeed, with key firms vying to set the rules of the game that they themselves were playing. And on top of all

that, there were issues that fell outside the standard strategy textbook—such as the growing role of artificial intelligence (AI) and the paramount importance of access to data (Aggarwal *et al.*, 2019; Parker *et al.*, 2021; Kira *et al.*, 2021).

Overall, our abstractions have begun to look a little threadbare. Indeed, it is only recently that systematic research has grappled with the underlying dynamics of new sector structures and how they relate to what we know about modes of organizing (for early work on platforms, consider Gawer and Cusumano, 2002, and also; Parker *et al.*, 2016; Cusumano *et al.*, 2019; for ecosystems, Adner, 2017; Jacobides *et al.*, 2018; Kapoor, 2018). The challenge here is that these new forms of organizing redefined the nature and the extent of corporate power.

3. The underpinnings of power and concentration

Dramatic shifts in market capitalization are testament to the huge promise of ecosystem firms. Since 2016, the top five firms in the Western world in terms of market capitalization have all made aggressive use of platforms and ecosystems to dominate: Apple, Alphabet (Google), Microsoft, Amazon, and Facebook. What is remarkable is not only that they have displaced the traditional leaders—oil giants, industrial conglomerates, and banks—but also that they have cemented their relative positions and grown so rapidly in both absolute and relative terms, with market capitalizations for all, enhanced as they were from coronavirus disease (COVID)-19, in excess of \$1 trillion. In China, Tencent, Alibaba, and Baidu are equally dominant, while a host of new platform and ecosystem “unicorns” (i.e. worth \$1 billion+) have sprung up, their valuations ostensibly based on the promise of future customer and complementor lock-in and, as such, profits.

“Financialization” has sped up the process still further, with the capital markets happy to confer astounding (and, some might argue, excessive) multiples on platform firms (Lianos *et al.*, 2019b). Loss-makers like Uber, whose prospects remain unclear, still command valuations of over \$50 billion. The largesse of capital markets has been consequential, as it has undermined a key ally of incumbents during periods of rapid change: inertia. Traditionally, the fact that incumbents held cash reserves and capital hampered the growth prospects of disruptors. But this is no longer so, thanks to the explosion of stock markets as the primary means to allocate capital and the low-interest-rate environments of the early 21st century—largely driven by the aftermath of the global financial crisis and unorthodox monetary policy. With plentiful capital looking for a home, any investment that promised growth could secure funding in a snap. Thus, new platform and ecosystem ventures attracted significant capital. This allowed new firms to turn the tables of the existing industrial order, as they were courted by the very incumbents they sought to usurp (Teng and Jacobides, 2020). As Khan (2017) noted, these firms go for growth, not profits, since that is what capital markets value—turning traditional industry dynamics on their head.

The pot was stirred up even further by the economics entailed by production technology. First, in a world increasingly dominated by software, production economics have some unusual attributes. The first is an extreme ratio between fixed and variable costs. Much of the innovation consists of writing code—and once it is written, replication is close to costless. This leads to “winner-take-all” contests (Arthur, 1989). Such dynamics are further accentuated by the fact that digitalization has been accompanied by globalization, making the “relevant market” significantly broader. Economies of learning further boost such economies of scope—as does the fact that customer data can be used in many contexts, not just one (Varian, 2019). AI and the ability of Machine Learning to learn from, predict, and propose courses of action (Aggarwal *et al.*, 2019) have made it even easier for a few firms to dominate, both within the AI ecosystem itself and in terms of firms that use AI (see Jacobides *et al.*, 2021).

The power of these properties to drive concentration—however we measure it—is plain to see. In the stock market, five firms constitute a quarter of the total US market capitalization. New business formation is down almost everywhere, while income inequality and Gini indexes have reached highs not seen since the heyday of the robber barons. The share of labor has declined steadily as that of capital has increased, with average living standards receding, thus fueling a

cycle of populism in the mid-2010s on both sides of the Atlantic (Grullon *et al.*, 2019; Autor *et al.*, 2020; Davis, 2021).

4. The regulatory challenge

Optimists assume that the dominance of a few ecosystem firms may reflect their superior dynamic capabilities (Petit and Teece, 2021). However, pragmatists paint a much more sobering picture. Jenny (2021) describes the problematic conduct of the new leading firms, while Kwoka and Valletti (2021) show how regulatory authorities have failed to impose rules and remedies to curb bad behavior. Biggar and Heimler (2021) remind us that the antitrust standard used in the USA draws on Bork's (1978) "consumer welfare" criterion, which says that if a consumer cannot be shown to have been harmed by higher prices, then there is no antitrust case to answer, and the monopoly could merely be the result of innovative prowess. Such a position ignores the plight of suppliers, workers, (Khan and Vaheesan, 2017; Lianos, 2020) and—in the case of platforms and ecosystems—complementors. This diverse group encompasses actors ranging from individual Deliveroo bikers and entrepreneurial app developers right up to major firms like Tinder (Match.com), who can still suffer abuse from firms like Apple (Jacobides, 2021).

Regulatory authorities are understaffed and ill-equipped to tackle these challenges, so transgressions may slip through the cracks—yet society expects more. As Cusumano *et al.* (2021) point out, in several instances the situation is so serious that tech firms may benefit from willingly and credibly curtailing their own practices by self-regulation, since otherwise they may raise questions about their societal license to operate, attracting even harsher regulation from outside. For all of the lobbying by Big Tech, its deep expertise in fields such as economics—where it employs more PhDs than most university departments (Athey and Luca, 2019), and even accusations that the academic and regulatory community may be in their pocket (Ochigame, 2019), public sentiment is turning. Recent econometric evidence suggests that the growth of superstar firms (like Big Tech) is associated with increasing margins, and declining share of labor in terms of compensation (Autor *et al.*, 2019), as income inequality continues to rise (Philippon, 2019). More broadly, the dominance of a few firms is widely seen as a problem (Lamoreaux, 2019) that could undermine not only economic activities but even democracy and polity itself, not least through the decimation of the traditional press and the growing impact of social media (Persily and Tucker, 2020). With changes in public sentiment, politicians, and regulators, are reacting.

Lina Khan's meteoric rise from PhD candidate to Head of the US Federal Trade Commission illustrates, in our view, how ripe the field of regulation was for change. Khan's contribution (2017) was to demonstrate how the current regulatory paradigm fails to tackle issues of competitive dominance—as illustrated, for example, by Amazon's unfair practices, which did not run afoul of current regulation or metrics (Lianos and Carballa-Schmichowski, 2021). As Big Tech broadened and deepened its reach, and its behaviors came to be seen as anticompetitive, excessive, and unfair, concerns grew. The year 2019 was a turning point, as four key reports appeared: one by the UK Treasury (Furman *et al.*, 2019), one by the European Commission in the European Union (Crémer *et al.*, 2019), one by Brazil, Russia, India, China, and South Africa (BRICS) competition authorities (Lianos *et al.*, 2019b), and one by the Stigler Centre in the USA (Scott Morton *et al.*, 2019). These paved the way for research that asked whether the entire regulatory edifice needed to be rebuilt (Lianos, 2019b). This, in turn, heralded significant regulatory action, including the EU's Digital Services and Digital Markets Act (Jacobides *et al.*, 2020a; Caffarra and Scott Morton, 2021) and US cases against Google and other Big Tech firms (see Jenny, 2021). Countries such as the UK are already moving toward the establishment of a new Digital Competition Unit in 2021, whereas the need for change is made throughout the world (Wheeler, 2021), even while most regulatory agencies still lack the skill, focus, and resources to be up to the task.¹

Beyond policy, although, the broader challenge—documented by Jacobides and Lianos (2021)—is that our analytical toolkit is ill suited to address the nature of the offence, the metrics

1 In the words of technology analyst, "the Irish regulator (responsible for Google in Europe) has a smaller annual budget than what Google spends on kombucha" (R. Kramer, SMS session on Regulating Platforms, October 2020).

to measure it, or the means to address it. As [Biggar and Heimler \(2021\)](#) note, if we focus on the welfare criterion, we might not even see the status quo as problematic. Meanwhile, the protection of the competitive process, as an alternative goal, has yet to be convincingly articulated in conceptual and theoretical terms. The deeper problem is that, as [Kwoka and Valetti \(2021\)](#) argue, “remedies” as traditionally construed have done little to curb competitive excesses. So we may want to reconsider bolder structural solutions such as disaggregating key firms. After all, we did this successfully in the past when technologies called for it, in areas such as telecommunications or transportation.

As [Petit and Teece \(2021\)](#) convincingly argue, these problems have largely arisen because economic policy itself, particularly in the context of antitrust, has been focused on static competition rather than innovation. A generation of antitrust practitioners and judges, especially in the USA, was socialized in the tenets of the Chicago School ([Bork, 1978](#)). The tools that drew on the Schumpeter–Arrow debate offered clarity, precision, and ease of measurement—however, they also absolved us of any obligation to confront the complex dynamics that underpin the process of value creation, or what competition and exploitation really are ([Davis, 2021](#)). Hence, current metrics are focused on a static, overly stylized rendition of the world that fails to capture the challenges that actually arise. For example, we are still far from fully appreciating the role of data and their attendant policies ([Kira et al., 2021](#)). And while the optimists point to the shifting fortunes of technological giants in the late 20th century, including the relative demise of IBM and growth of new firms such as Facebook and Google, the foundation of contemporary Big Tech power does seem to be qualitatively different. Not only are the digital production economics different, making them harder to dislodge, precisely because of the nature of innovation, platform and ecosystem orchestrators have also built a disconcerting track record of building powerful positions as orchestrators, where their original openness to complementors turns into a much harder-nosed approach in exploiting their partners once they engender lock-in ([Rietveld et al., 2020](#)).

Reality, we submit, cannot be ignored for long. We must create new regulatory tools to improve competition, both between and within platforms ([Parker et al., 2021](#)). We also need to adjust our framework, theories, and entire approach as we confront today’s regulatory challenges—particularly those raised by platforms and ecosystems.

5. Rethinking competition law and the role of law in competition

All the papers in this special issue represent bold efforts to rethink the theory that underpins regulatory action. They articulate the challenge at hand and question the approach currently in place, identifying what needs to change in law as we tackle the challenges ahead. Seen through the lens of legal institutionalism, which considers the law as a “constitutive part of the institutionalized power structure” ([Pistor, 2013, 2019](#)), the legal system can be conspicuous not only through its presence, but also by its absence—the silence of the law. A case in point is legal systems’ lack of engagement with the economic, organizational, and social changes that resulted from digitalization, the growth of platforms, ecosystems, and AI. The lack of a proper regime of property rights on personal data, for instance, has enabled digital platforms to harvest this valuable raw material, with no corresponding protection of users’ interests—instead, merely relying on their “consent” to terms and conditions in the context of a contractual relation characterized by a sizeable power asymmetry² ([Economides and Lianos, 2021](#)). Also, the persistent focus of competition law on inter-brand and inter-platform competition has left the important issues of intra-platform and intra-ecosystem competition neglected.³

2 The possession of these data does not rely on a properly defined property regime (hence the distinction between possession and property rights), but on the control by these digital platforms of important bottlenecks in the way consumers access the Internet, and the various services this may afford them access to.

3 Markets marked by platform competition are horizontally concentrated, sometimes to such an extent that the second or third player in the market may not offer a viable competitive alternative to the established platform. Inter-platform competition remains weak, and there is significant inequality in the distribution of market shares among horizontal competitors. Because of the presence of network effects and winner-takes-most competition, it is rather difficult to conceive that the situation may change with remedies such as targeted data access and data portability. In

To the legal institutionalist scholar, regulatory strategies of action or inaction are the result of a balancing act between the interests of various stakeholders—a reflection of the power of their claims for capturing the surplus generated by innovation. This parallels the views in industry architecture work that emphasize the endogeneity of sectoral rules and roles and more applied work that has noted the role of geopolitics.⁴ But moving from description to prescription, even when a problem is identified, and a frame is set, there are different potential ways forward, and varying conceptions of just how far legal rules, soft or hard, should go. Considering the approaches to the role of the state, and of the extent to which law mediates economic activities, we see three possible avenues. First, a Schumpeterian approach, where the state actively promotes product, process, organization, and market innovation and conceives its role as enhancing structural competitiveness of open economies to competition—what some have named “the Schumpeterian workfare state” (Jessop, 1993).⁵ Second, an approach inspired by the precautionary principle, with proactive state intervention to tackle/deter possibly harmful activities/economic structures and ensure that the principles and values of the Regulatory State are not jeopardized. Third, an approach promoting safe spaces for experimentation—for instance, through the constitution of sandboxes or the promotion of self-regulation—with the state keeping away from implementing the law to pre-selected partners in a specific context (defined in terms of time, space, and field of activity), while using this experience as a source of learning that would shape normative activity and implementation of the law in the future.

This special issue paper covers much of the spectrum described above. Petit and Teece (2021), while defending the narrow focus on consumer welfare, evoke Schumpeter to favor dynamic over static competition and emphasize the need to engage with the “broad-spectrum competition” cutting across markets that characterize the emergence of ecosystems. The proposed concept of potential competition emerges as an antidote for antitrust intervention, as it is assumed that dynamics can unleash competitive forces. Most other contributions draw on their appreciation of dynamics and emphasis on innovation to arrive at different conclusions: Jacobides and Lianos (2021), Kwoka and Valletti (2021), Jenny (2021) as well as Parker *et al.* (2021) are closer to the precautionary/interventionist approach. They recognize the importance of lock-in for complementors and end-users in trajectories of innovation as an important policy concern that requires some form of intervention. Their concern with the capacity of the existing competition law tools and methods to engage with the complex strategies adopted by digital platforms is that potential newcomers might be unduly pressured, as they do not share Petit and Teece’s (2021) conviction that innovation will beget competition. Biggar and Heimler’s (2021) proposal to focus competition law to tackle the situations of ex ante sunk investment expropriation under the narrow circumstances in which there is no effective inter-ecosystem competition seems closer to the Schumpeterian approach, while Cusumano *et al.* (2021) side with the experimentation approach, by championing self-regulation (at least under certain conditions), with ecosystems generating their own norms with “credible threats of government regulation” used as a motivation, and possibly as last recourse.

The papers in this issue also offer a broad array of view in terms of the need to complement or substitute current regulatory tools with new ones, whether by adjusting the competition law toolkit or building new forms of direct regulation, in particular to contain gatekeepers. Kira *et al.* (2021) also remind us of the challenge that the State has to combine regulations aimed for different purposes such as antitrust and privacy protection, which lead to tensions in terms of the impact of laws in general. Whatever the authors’ approach, although, all the articles demonstrate, to varying degrees, why competition is *not* just a click away and provide valuable foundations

markets with strong network effects, once a few firms are in operation, the addition of new competitors, even under free entry, does not change the market structure in any significant way. Although eliminating barriers to entry can encourage inter-platform competition, the resulting competition may not significantly affect market structure. Hence, it is possible that competition authorities may not be able to significantly affect market structure by eliminating barriers to entry.

4 For instance, it is relatively easier for Europeans, who do not have any of the Big Tech on their shores, to be more proactive in regulation. See, among others, Jacobides *et al.* (2020a).

5 This does not imply Schumpeterians would opt for heavy-handed state involvement, although even a regime of “permissionless innovation” would require at least a (state) system of ensuring the adjudication and enforcement of property rights.

for remedying the lack of competition in the context of platforms and ecosystems. They also show the latent promise of other areas of law, such as the development of codes of conduct, soft law regulation, or even full-fledged regulation, which have thus far been left by the wayside (European Commission, 2020).⁶

Finally, these papers raise fundamental questions of what the law should protect us against. The most difficult issue is the fact that Big Tech is assiduously leveraging customers' behavioral predispositions and that regulators are increasingly concerned about it (Jenny, 2021). As Petit and Teece (2021) note, and Big Tech firms argue, why should regulators intervene if final consumers like the convenience that ecosystems offer? As Biggar and Heimler (2021), Jenny (2021), and Jacobides and Lianos (2021) point out, the answer to this question hinges on what problems regulation is expected to solve, and whether we are prepared to trade off consumer convenience against more competitive and equitable intra-ecosystem structures, especially given their pervasiveness and impact on social and economic conditions. More importantly, this depends on whether we believe that consumers may inadvertently hurt themselves and that their choices may hurt their long-term interests; on whether we are concerned that structural inequality will exacerbate the vulnerability of weaker stakeholders in the digital economy; and, fundamentally, on whether we believe that regulation should aim to redress such costs—or not.

To answer these questions we have to address delicate questions of principle, and also consider what drives (and what affects) consumer choice, and its manipulation. We know, for instance, that consumers have a number of behavioral biases (Thaler, 2015) and that Big Tech firms use A/B testing (i.e. experiments in real time to see what performs well) to improve their hold on consumers (Athey and Luca, 2019). The exploitation of such biases has been confirmed by the UK's Competition and Markets Authority (CMA; 2020: 194), which recently found that “platforms' choice architecture, something designed by the company, may exacerbate natural consumer biases.” This raises the question of whether “customer convenience,” bundled as it is with biases, should be the sole criterion—and, if not, what we should replace it with.

Experimental studies on the welfare effects of one element of Big Tech, social media, raise another fascinating question. Allcott *et al.* (2020) find that eliminating Facebook “reduced online activity, while increasing offline activities such as watching TV alone and socializing with family and friends; (ii) reduced both factual news knowledge and political polarization; (iii) increased subjective well-being; and (iv) caused a large persistent reduction in post-experiment Facebook use”, suggesting economists' ascribed value to social media (e.g. Brynjolfsson and Collis, 2019) may be misguided. This raises the question of whether we should protect customers from an easy, perhaps even downright addictive solution. As Rosenquist *et al.* (2020) have recently argued, “While digital platforms such as social media websites are, on the surface, somewhat different from addictive products such as tobacco and opiate derived pain medications, they meet the core criteria needed to justify regulation. The stimuli produced by digital platforms are not physical substances consumed by the body such as recreational and prescribed drugs, however, their effects on the brain follow the same common pathway of reward through the nucleus accumbens, which in turn regulates pathways of addiction.” This raises the question of why tech-provided services should be treated differently from other addictions which *are* regulated from cigarettes to alcohol, where the State sets some limits to protect its citizens, even from themselves. Where exactly we draw the line of the involvement of the rule of law, and the extent to which competition or other enforcement authorities should intervene, becomes another fascinating topic for future debate.

6. The context and focus of this special issue

The genesis of this special issue was interdisciplinary curiosity. In the context of his work for the monograph on *Competition Law and the Intangible Economy* (Lianos, 2022), Lianos became acquainted with the business literature on the emergence of ecosystems, and in particular the work of Jacobides. Lianos felt that the current competition law framework, with its focus on relevant markets and its one-dimensional view of power (market power), was no longer adequate

6 While the UK's CMA is at long last proposing codes of conduct, given the power that ecosystem orchestrators have it is impressive that the treatment of these complementors has evaded consideration, let alone action.

for the complexity of business strategies in the digital economy. This was the cue for a series of conversations between the two scholars. Jacobides, for his part, believed that as concentration grew, an understanding of shifting industry architecture (and, later, of digital ecosystems) would be vital for strategy and policy alike. Also, the more he worked on ecosystem strategy, the more policy concerns came to the fore—leading to an increased engagement with, and study of, regulation. Thus began a fruitful collaboration that extended to applied policy work.⁷

Building on Jacobides' work with the World Economic Forum on ecosystems (e.g., [Jacobides et al., 2019](#)), and leveraging Lianos' work for the BRICS competition authorities ([Lianos et al., 2019b](#)), we co-organized a workshop to focus on the challenges of regulating platforms. It was clear to us that the field would benefit from a truly interdisciplinary meeting of minds, where regulators, Big Tech executives, customer advocates, judges, heads of competition authorities from Europe (and Africa), antitrust practitioners, and leading scholars from Information Systems (IS), strategy, economics, law, and regulation would come together to better understand and advance our knowledge. The event took place on February 27–28, 2020 with the joint sponsorship of London Business School and University College London's Faculty of Laws, with the support of the World Economic Forum.⁸

The meeting was a success—and, for most of us, the last such gathering we attended pre-covid. We made great strides toward transcending professional and disciplinary boundaries in a multi-stakeholder context, which informs this special issue, as selected workshop participants were invited to submit a paper.⁹ The issue will no doubt interest the readers of this journal, but also strategists, policymakers, and regulators—not to mention engaged citizens, as it tackles what we believe is a key challenge facing society today. We were fortunate that practically every invitee accepted the invitation to contribute, despite the demands of their schedules.¹⁰

This issue starts with Frederic [Jenny's \(2021\)](#) paper, which builds on the challenges of regulating platforms and ecosystems in practice. Drawing on his experience as the Chairman of the OECD Competition Committee, Jenny provides a grounded analysis of the regulatory issues that emerge in this new context and graphically illustrates how our existing regulatory apparatus falls short—for instance, how merger control has proven to be inadequate. Yet, far from taking the easy road of evangelizing a new perspective that will be able to cure all ills, he carefully considers the difficult trade-offs involved. He shows how far regulation theory and antitrust practice have to travel in order to become truly effective, before looking at some of the current debates on issues such as gatekeepers. He also considers the subtleties around the role of data and considers the challenges that arise if we want to use antitrust to tackle the exploitation of behavioral tendencies by Big Tech. Finally, Jenny also considers the dual challenges of competition within and between ecosystems, and the issues they raise in practice.

We then move on to a paper that forcefully argues that the framework used in economic analysis, especially in work that informs regulation, is anchored in an overly stylized version of reality—and offers a bold alternative. [Petit and Teece \(2021\)](#) sketch an intellectual history of the economics of competition and how they relate to the economics of innovation and explain how a view informed by work in technology management, strategy, and industry evolution can improve our framing significantly. They offer a structured analysis of the types of rents, to ensure that we only focus on those that have a genuinely negative implication and tackle the thorny issue of “what we should be after” by suggesting a modified welfare standard for competition policy

⁷ In the spirit of full disclosure, Lianos is the President of the Hellenic Competition Commission, where Jacobides serves as the Chief Digital Economy Expert Advisor. Jacobides has also advised Big Tech firms in Europe, the USA, and Asia on strategy and regulation as the Lead Advisor of EvolutionLtd and is an Academic Advisor to Boston Consulting Group.

⁸ We would like to thank Cristian Citu, who tirelessly and effectively worked on the meeting on behalf of the World Economic Forum, and his colleagues Nokuthula Lukhele and Derek O'Hallaran for their support of this project.

⁹ We would like to thank the rest of the Editorial team of Industrial and Corporate Change (ICC) for their confidence and hope that the papers deliver on the “Economics Done Right” agenda, blending industry analysis with business history and technology studies with law and regulation. Our aim was to provide a granular analysis of the issue at hand, to inform theory and policy alike. We owe a debt of gratitude to the outstanding scholars who have been involved as authors and reviewers and went through a very demanding and time-constrained review process.

¹⁰ Alas, Marco Iansiti and Feng Zhu could not submit their paper on network externalities and their role due to data use restrictions. Lina Khan was also prevented from contributing by schedule restrictions related to her policy work.

and formulating tests to measure dynamic competition. Interestingly, their approach yields the most optimistic reading of current competitive dynamics of any paper in this volume. The shift from statics to dynamics, they claim, would obviate a number of the concerns raised, as there is competition between “mologopolies” (Petit, 2020).¹¹ This intriguing idea seems difficult to reconcile with the arguments of Jenny or Kwoka and Valetti (2021), or the evidence in Parker *et al.* (2021) on the dynamic downsides of dominance [e.g. through mergers and acquisitions (M&A)]. However, the authors do concur with Jenny (2021) on the difficulty of creating a “counterfactual analysis” as the basis for policy recommendation—a necessary step if we consider the need for a truly dynamic framework.

Our own paper (Jacobides and Lianos, 2021), after defining the term “ecosystem” and its relevance for competition, considers how ecosystems have been treated in regulation theory and practice. We argue that competition law should tackle ecosystems directly—just as regulation confronted other dynamics that it was initially ill-equipped to address (aftermarkets and network effects). We suggest that regulators need to expand their purview and explicitly consider “ecosystem failures” by investigating ecosystem architectures and business models and by combining the current slate of new *ex ante* regulations with an *ex post* approach. We illustrate our argument with the Greek competition law proposal, which we co-authored given our roles in the Hellenic Competition Commission and the Law Preparation Committee.

Biggar and Heimler (2021) then move to the criteria and justification for regulatory action. They point out that while the “consumer welfare” criterion may well be insufficient to tackle many platform or ecosystem excesses, the alternative is far from clear. Putting some flesh on the bones of “protecting the competitive process,” they propose the consideration of sunk investments and aim to pinpoint the nature of the exploitation that regulators may want to consider, articulating a transaction cost rationale which, they argue, should provide a guide for regulatory action.

Cusumano *et al.* (2021) acknowledge the competition issues that platforms and ecosystems engender, but focus on how these should be tackled. Their complex nature and the inherent difficulties of devising effective *ex ante* and *ex post* regulation, they argue, suggest that self-regulation may be a valuable tool which we should consider more carefully. Going through historical examples in sectors which have used self-regulation (from films to airline reservation systems) they show that they can yield significant benefits, provided that the lack of regulation risks undermine the viability of the sector overall (leading to a “tragedy of the commons” risk, a la Ostrom, 1990). Interestingly, the latent threat of blunt regulatory action may underpin firms’ incentives to self-regulate in the first place; it is not just the concern with sectors such as, say, social media losing their legitimization and “social license to operate,” but the fear of more sweeping sanctions that creates this “commons” concern. This suggests that self-regulation (whose limits the authors also consider) may be a complement to rather than a substitute of traditional regulation.

Kwoka and Valetti (2021) tackle a topic of practical importance by bringing both evidence and analysis to bear. While they recognize that it is very difficult to reach a clear assessment of future states, they argue that this ambiguity is no excuse for regulatory inaction and that regulators should consider how their action, or inaction, affects not only market dynamics, but also innovation. Their focus, like most of the papers in this issue, is on these dynamic features, which they feel are hampered by dominant players. They show that those players that emerge following a merger can impose a particularly heavy burden. Thus, the authors propose that the breakup of Big Tech—derided as populist posturing and unthinkable in some policy circles—should, in fact, be actively considered. They cite historical precedents where such breakups have worked, pointing out that the counterarguments have not been borne out in practice.

Parker *et al.* (2021) consider the evidence on tech mergers. They suggest that while such mergers are often used to enhance efficiency, they may also entail anticompetitive aspects—as can be

11 The question of the conditions under which inter-ecosystem competition is enough to tackle intra-ecosystem dynamics is, we believe, an important and open question. One of us (Jacobides, 2021) has recently argued that under some conditions, “gatekeepers” emerge that become so structurally dominant that their power cannot be tamed just because a number of them compete. As such, the extent to which we can rest assured that Schumpeterian gales will force innovation, or whether entrenched platform firms will do whatever they want, is an empirical question that policymakers can (and should) assess directly.

seen in some of histories of Google, Apple, Facebook, Amazon, and Microsoft. The authors' view is that, rather than focusing solely on merger control, we may want to change the nature of information access that platform players are interested in, thus potentially *obviating* some of the side effects of mergers. Such a policy of mandating in situ data access to outsiders would forestall the very incentives for the anticompetitive part of M&A—which, in a platform setting, may be motivated by data. The authors also make concrete proposals for the conditions under which the burden of proof should be reversed and consider the particular aspects to look at in terms of vertical constraints and, crucially, dynamic considerations.

Finally, Kira *et al.* (2021) delve even more deeply into the issue of data protection. They point out that, in addition to competition regulation, data protection is something with which all firms must contend. They consider how policies that relate to data may affect both privacy and competition dynamics and focus in particular on the areas where the regimes in place provide an “off-diagonal” solution—i.e. they either enhance privacy but (potentially severely) restrict competition (as with Apple's recent iOS 14 update cf. Sokol and Zhu, 2021), or they protect competition but undermine privacy. The authors consider how we can take a holistic view to this challenging problem.

In all, these papers identify the challenges that regulation has to address, so that we can build a more equitable and efficient society while leveraging the benefits that platforms and ecosystems can yield. Given the regulatory turmoil and desire for action on both sides of the Atlantic and the Pacific we hope that this special issue will help inform policymaking and provide the necessary theoretical and empirical underpinning. We hope it will deepen our understanding of some complex phenomena and catalyze more thorough research which we urgently need.

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