Organisation for Economic Co-operation and Development

DAF/COMP/M(2020)2/ANN5/FINAL

Unclassified

English - Or. English

29 October 2021

DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE

# Summary of Discussion of the Hearing on Competition Economics of Digital Ecosystems

## Annex to the Summary Record of the 134th Meeting of Competition Committee held on 1-3 December 2020

3 December 2020

This document is the draft summary of discussion of the hearing on Competition Economics of Digital Ecosystems held during the 134th meeting of the Competition Committee.

More documents related to this discussion can be found at https://www.oecd.org/daf/competition/competition-economics-of-digital-ecosystems.htm

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JT03484094

# *Summary of discussion of the hearing on Competition Economics of Digital Ecosystems*

On 3 December 2020, the OECD Competition Committee held a hearing on competition economics of digital ecosystems chaired by Professor Frédéric Jenny. The hearing featured five invited speakers:

- **Marc Bourreau**, professor of economics, Telecom Paris
- **Daniel Crane**, professor of law, University of Michigan
- **Amelia Fletcher**, professor of competition policy, University of East Anglia
- **Nicolas Petit**, professor of law, European University Institute
- **Georgios Petropoulos**, research fellow, MIT, Bruegel and Stanford University

The **Chair** introduced the background and objectives of the hearing, which are to improve the understanding of digital ecosystems and have an in-depth discussion of competition issues related to digital ecosystems. The Chair also explained that the discussion would be divided into four main parts:

- The definition and main characteristics of ecosystems and the role that ecosystems play in digital markets;
- How competition between and within ecosystems works and how it may differ from competition between traditional firms;
- Potential benefits and concerns for competition of digital ecosystems; and
- What conclusions we can reach for competition policy and the enforcement of competition law with respect to these digital ecosystems.

Then, the Chair invited each speaker to explain the most important message that they would like to deliver at this hearing. **Marc Bourreau** emphasized the importance of understanding the competition between and within ecosystems which is not very strong compared to a situation where firms would offer and sell independent products and services. **Daniel Crane** described his main points would be how to identify the existance of ecosystem competition, and what kinds of interventions would be suitable to promote ecosystem of competition. **Amelia Fletcher** explained that her main objective would be to discuss what we mean by ecosystems and what are the similarities and differences between "platforms" and "ecosystems". **Nicolas Petit** hoped to explain that ecosystems competition provides an additional level of competition that allows us to revise our assumptions and possibly the welfare formulation of competition policy. **Georgios Petropoulos** explained that he would focus on concerns of digital ecosystems, particularly referring to the big platforms that exert a great control in these ecosystems - the so-called gatekeepers.

## 1. The Definition and Main Characteristics of Ecosystems and the Role that they Play in Digital Markets

The **Chair** asked Amelia Fletcher to explain her views on the definition of ecosystems and on what are the main characteristics which are important for ecosystems.

**Amelia Fletcher** started by distinguishing two different concepts of ecosystems: multi-actor ecosystems and multi-product ecosystems. A multi-actor ecosystem is a community

of independent parties, on which much of the academic work on ecosystems in the business strategy arena focuses. Digital platforms are almost inherently multi-actor ecosystems. In the digital context, however, the term of multi-product ecosystems is often used to relate to the collection of products and services offered by a single corporate organisation, often through a variety of separate divisions or businesses.

Amelia Fletcher then moved to discuss supply side and demand side factors underpinning these ecosystems. On the supply side, those factors include economies of scale and scope across markets; competencies applicable across markets; data synergies; and enhanced interoperability for users. On the demand side, there are factors facilitating ecosystems such as across-market network effects; barriers to multi-homing across markets; and barriers to switching across multiple markets. The above factors may also be mutually reinforcing (the 'flywheel' concept).

The **Chair** thanked Amelia Fletcher and asked Marc Bourreau to introduce his thoughts on the features of the digital economy to favour the development of ecosystems.

**Marc Bourreau** defined "product ecosystems" as lines of products and services offered by a firm with a technological linkage increasing the complementarity between them for consumers.

He explained that there are two key characteristics of the digital economy, which facilitate and encourage the development of product ecosystems. First, on the supply side, firms enjoy the presence of large economies of scope in product development. Due to their modular design, digital product components can be shared across a product line, leading to substantial economies of scope in product development, which reduce the costs for firms to expand into a multi-product entity and to create product ecosystems. Second, on the demand side, when a product ecosystem generates consumption synergies, a consumer will derive a higher utility from joining the product ecosystem than from consuming the same products from independent providers, everything else equal. Thus, the presence of demand-side synergies gives firms an incentive to expand their product lines and create product ecosystems.

The **Chair** then turned to Georgios Petropoulos to ask him to introduce key characteristics of digital ecosystems focusing on the role of platforms and data.

According to **Georgios Petropoulos**, in platform-centered digital ecosystems, the platform sets the governance rules which basically put in place mechanisms for the interaction of users. So every participant in an ecosystem should follow these particular rules in order to join in the ecosystem; and this can have to do with the level of information they have to provide.

For these decisions, the characteristics of the markets are important and, among others, Georgios Petropoulos emphasized "data-driven economies of scope" in digital ecosystems. The aggregation of data can provide further insights that can improve the quality of the service of the platform, and this improvement generates more value to each of the users that participate in the platform. Furthermore, machine learning and artificial intelligence can vastly improve the value of data for firms.

The **Chair** turned to Nicolas Petit to ask what are, in his view, the crucial factors that make ecosystems succeed.

**Nicolas Petit** stated the source of a competitive advantage for an ecosystem and a platform leader in the ecosystem comes from the ability to combine two components: (i) sensors that collect, convert, disseminate, label, and restructure distributed data; and (ii) servers that centralise analysis, computation, correlation, reproduction, search, storage, retrieval, and filtering of sensed data.

## 2. How Competition in Ecosystems Works and How It May Differ from Competition between Traditional Firms

The **Chair** thanked the experts who provided their view on the first issue and asked Daniel Crane to explain why some concepts, which are central to the analysis of competition, such as substitutability, may not be all that relevant when we talk about competition among ecosystems.

**Daniel Crane** introduced three examples of sectoral ecosystems may exhibit intensive competition among firms that do not necessarily offer substitutable products or services and hence fall outside of antitrust law's preoccupation with horizontal competition: Middleware and Operating Systems (Microsoft); E-books and Tablets (Amazon v. Apple); and Connected and Automated Vehicle.

Especially, with the example of middleware and operating system, Daniel Crane emphasized that, in ecosystems, firms are competing not to sell substitute products or services, but rather to identify or control value or differentiated nodes or propositions and to commoditise other ones. In other words, the development of independent middleware could eventually commoditise the operating system by making software developers indifferent as to the operating system on which their programs would run. In this story, middleware did not evolve to take the place of operating systems, it evolved toward commoditising operating systems and transferring the differentiated value in computer programs to the programs (and programmers) themselves. Microsoft directed its allegedly anticompetitive scheme toward stifling a competitive threat that was not—and would not likely become—a substitute for what Microsoft produced, but nonetheless threatened to eliminate Microsoft's monopoly power by shifting consumer value from operating systems to programs.

The **Chair** turned to Nicolas Petit and asked him how competition in ecosystems is different from traditional competition and why strong dynamic capabilities are required to orchestrate ecosystems successfully.

**Nicolas Petit** stated that dynamic capabilities are critical for the success of ecosystems. In practice, dynamic capabilities cover three sets of activities: sensing of unknown futures; seizing of business opportunities, value and needs; and the management of change by reconfiguration.

Nicolas Petit also emphasized that a business ecosystem's success is not structurally determined but depends on an orchestrator choosing which elements of the value chain must be internalized, and deciding what need to be supported externally, and how the various elements of the ecosystems can be aligned for continuous innovation and sufficient co-prosperity.

## 3. Potential Benefits and Concerns for Competition of Digital Ecosystems

The **Chair** moved to the third topic and asked Marc Bourreau to describe the benefits of competition among ecosystems and the concerns for competition of digital ecosystems.

**Marc Bourreau** described that, in markets with product ecosystems, we can distinguish the competition taking place between ecosystems and the competition occurring within them. First, regarding competition between ecosystems, there is concern of consumers' being locked into the ecosystem which softens competition *ex post*, while the competition *ex ante* between ecosystems is strong, compared to the competition between specialized firms, only if a few of them operate, and they are relatively symmetric. Moreover, if new entrants cannot replicate the essential component (e.g. data), they may find themselves at a

competitive disadvantage when introducing their product ecosystem, or may only be able to enter as a specialist. Furthermore, if product innovation is data-driven, incumbent ecosystem firms may be protected from potential competition, and the market will not be contestable.

Second, competition within ecosystems may fail to emerge and be sustainable. Ecosystem firms benefit from supply/demand side synergies and can internalize the complementarities between their products and services. Thus, when entering a market where an ecosystem firm operates, a new innovative firm may find itself at a substantial disadvantage. Therefore, even without any anti-competitive behaviour from the dominant ecosystem firms, competition within the ecosystem may fail to emerge. Moreover, the incumbent firm may engage in various entry-deterring strategies (e.g. bundling, platform envelopment, prevent accessing to key components such as data), limiting entry prospects. All in all, there could be a "kill zone" in markets with product ecosystems, due to the market power of the incumbent firms.

The **Chair** thanked to Marc Bourreau and asked Daniel Crane how ecosystem competition could enhance efficiencies.

**Daniel Crane** suggested that ecosystem competition can sometimes have important efficiency effects and hence enhances consumer welfare. For example, Amazon and Apple battled over whether a customer's critical purchasing decision was either where they bought an e-book or on what device they chose to read. This was an intense, largely non-horizontal technological and commercial competition between ecosystem rivals with important implications for consumer welfare. What we learned from this is there can be a large innovation component in the competition between ecosystems, maybe much more than in a non-digital sector or outside of the ecosystems and, therefore, we should be cautious when we analyse this competition.

The **Chair** turned to Amelia Fletcher to ask whether inherent factors that drive the development of digital ecosystems might be pro-competitive or anti-competitive.

**Amelia Fletcher** stated while inherent factors of ecosystems are likely to enhance a firm's position across markets, they may be pro-competitive. For example, in many markets we see robust competition between corporations which are active across multiple markets. Moreover, supply/demand side synergies and flywheel effect can potentially facilitate entry across markets. Activity across multiple markets can also sharpen firms' incentives to offer consumers good value for money, since a consumer that chooses to switch to a new provider in any one product market may end up switching across all markets.

However, there is also potential for anti-competitive effects. Denying access to data or interoperability to third parties, for example, can be detrimental for competition. Moreover, strategic leverage across multi-sided platform markets (e.g. gatekeeper platform's self-preferencing, platform envelopment, moat strategy) may exacerbate those anti-competitive effects.

Governance rules in ecosystems are also important. A set of rules for how ecosystems are going to function can be pro-competitive in that it makes the whole area safe and trustworthy for the various users. However, it can also be anti-competitive if those rules are disproportionate or if they are used mainly to exclude or weaken rivals.

The **Chair** then asked Georgios Petropoulos to explain competition concerns and theories of harm related to so-called gatekeepers.

**Georgios Petropoulos** also emphasized that governance rules are important to guarantee the safety and the transparency of ecosystems, but they may also generate incentives for platforms to design the rules to their own benefit. Concerns and theories of harm have been

developed for big platforms that exert great control in the ecosystem they operate, the so-called gatekeepers.

One important characteristic of these ecosystems is the high information asymmetries. The information advantage of gatekeeper platforms allows them to control the ecosystem and generate significant value for their intermediation services. For example, self-preferencing, if it cannot be objectively justified, may foreclose efficient competitors, and this is a typical example of how leveraging market power at an intermediary level can distort market competition upstream. On top of that, gatekeeper platforms may have control over framing consumer choices, policies for goods supplied through the platform and technical standards. In many cases, they can keep control over the user relationship as well as they also implement their own access rules. Under entry barriers through such practices, incentives for innovations are likely to decrease.

## 4. Competition Policy and Competition Law Enforcement with respect to Digital Ecosystems

The **Chair** thanked the speakers for the discussion so far and opened the last part of the discussion, on competition policy and competition law enforcement. First, he asked Daniel Crane to expand on his remarks in his contribution, "the important question is not whether the existing antitrust statutes could be made applicable to ecosystems, but whether it would be advisable to do so."

**Daniel Crane** stated, when analysing the dynamic efficiency of ecosystem competition, it is hard to predict exactly who the competitors will be and what kinds of interventions are good or bad for innovation. He suggested the additional layer of the notion of potential competition into the traditional substitutability concepts might be useful for the analysis of competitive dynamics in digital ecosystems.

The **Chair** turned to Amelia Fletcher to expand on her remarks in her contribution, "it is far from obvious that antitrust is the right way to handle the complex and non-obvious question and that maybe ex ante regulation may be better suited to the complexity of the competition problem raised by the platforms and the ecosystems."

**Amelia Fletcher** suggested there is an urgent need of intervention since there is risk not only that individual platform markets tip to being highly concentrated but also that we observe whole ecosystems of markets within which there are very few active players.

However, standard antitrust tool, with its threat of high sanctions for breach, is not always the best, and *ex ante* pro-competitive regulations are arguably the better tools for digital ecosystems. With ex ante regulations, we can essentially take a more flexible, proportionate approach to the real issues where we look at the harm, not necessarily with any culpability alleged; and we can also think about what the pro-competitive things are that we might miss if we intervene. Also, regulation needs to be carefully designed to facilitate the entry of platforms into other platforms' markets because that is the most likely source of new entry.

The **Chair** turned to Georgios Petropoulos to ask him what is his policy proposal regarding digital ecosystems.

**Georgios Petropoulos** suggested that a proper response to the market competition concerns of digital ecosystems would requires an *ex ante* regulatory intervention which (i) deals with the great information asymmetry that leads to market failures; (ii) imposes fair access rules that restore transparency and the level playing field between third-party sellers and platform's own upstream subsidiary; and (iii) removes any unjustified barriers that prevent users to multi-home.

First, he introduced specific rules for facilitating information sharing, which is called "*in situ* information exchange mechanism". New regulation obliges gatekeepers to open their data infrastructures to competitors while keeping their governance model separated. Data is always used at the location it is collected (i.e. *in situ*). User grants permission for third party access, and third party brings algorithms to data instead of data to algorithms (i.e. there is no data transfer).

Second, with respect to vertical integration, the rule should be clear: platforms should not be able to affect competition in the upstream level favouring their own subsidiaries. For this purpose, (i) platforms should be obliged to publish the criteria, (ii) The regulator should be in the position to verify if these criteria are satisfied and whether there exists algorithmic bias in the matching process that promotes platform's own upstream subsidiaries to the expense of their competitors, and (iii) in case the published criteria are found to be misleading, then a significant penalty should be imposed.

Lastly, regarding M&As, competition authorities should investigate more merger cases in which gatekeepers are involved. Moreover, during the investigation, authorities should develop a more forward-looking perspective by assessing the potential competition.

The **Chair** thanked to Georgios Petropoulos and turned to Nicolas Petit to ask him what are the perspectives that dynamic capabilities suggest for competition law enforcement.

**Nicolas Petit** explained the the problem of competition law enforcement is one of imperfect information: the facts are hard to observe, and, in digital ecosystems, the problem is magnified. It is impossible to determine the difference in efficiency between an observed practice and some alternative experience that does not exist due to the dynamic nature of the industry.

Dynamic capabilities and dynamic competition offer an alternative to this intellectual impasse. Through a dynamic capabilities lens, the focus of analysis shifts from the business practice to the business organization. The basic function of a dynamic capabilities driven antitrust policy would obviously be to serve the competitive process by advancing dynamic competition. The goal of a dynamic capabilities version of the competitive process is to produce long term consumer welfare benefits. A dynamic capabilities driven competition policy would rely on concrete practical filters and tests to diagnose and remedy of market failures.

The **Chair** thanked to speakers and asked to Greece and Mexico to present their contributions to the participants.

**Greece** suggested the existing provisions that we have in antitrust laws might not necessarily deal with ecosystem strategies. However, for example, the new German Competition Law (GWB) and recent competition law proposal in Greece would be good examples of new approaches to deal with digital ecosystems since *ex ante* regulations are limited and do not take into account the positive effects of platforms' conducts.

**Mexico** introduced IFT's analysis and studies that can develop the knowledge about market behaviour, consumer behaviour patterns, content offering, data algorithms and other elements surrounding this new ecosystem, such as IFT´s Regulatory Vision 2019-2023; Study on the Use of ICT and Internet Activities in Mexico (2019); and Probability Calculator of Adoption of ICT and Internet Activities in Mexico.

After briefly summarizing the discussion, the **Chair** thanked to the speakers and participants and closed the session.