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**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
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Competition Economics of Digital Ecosystems – Note by Greece

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This document reproduces a written contribution from Greece submitted for Item 3 of the 134th OECD Competition Committee meeting on 1-3 December 2020.

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

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1. Over the last few years, research has focused on the way firms try to gain advantage not only by competing within a particular sector, but by shaping its very nature, and the architecture that governs its workings. Digital technologies, combined with regulatory change, have enabled the transformation of existing sectors and the emergence of new ones, including social media, search and geolocation-based services, enhanced by advances in mobility. Many of the world's most valuable firms are platform orchestrators. Such orchestrators benefit from their complementors while also using them strategically – not by controlling them, but by enabling them. Orchestrators also come to wield significant power by exploiting the “bottlenecks” that emerge in these new industry architectures. Some of the resulting big winners have been those platform orchestrators who have succeeded in building ecosystems around their platforms.

2. These transformations have led to new asymmetries of power, strengthened by a new breed of expansive actors who wield unusual power across the board. These often include a core (digital) platform orchestrator and a select group of their complementors – for example, app developers, network operators and device manufacturers. Hence, the “field” of competition is not the relevant product market, but an ecosystem of various complementary products, such as a mobile device, its operating system, an online marketplace for apps and content, apps, services, the digital network and so on.

3. “Ecosystems” have emerged over the last few years as a new area of focus for competition and antitrust law as well as practice. But what do we know about this increasingly fashionable construct? The concept of an ecosystem has gradually morphed from an analogy focusing on interdependent parts to the acknowledgment of a more purposeful set of complementarities. For example, Teece (2012) defines an ecosystem as “a group of interacting firms that depend on each other’s activities... reliant on the technological leadership of one or two firms that provide a platform around which other system members, providing inputs and complementary goods, align their investments and strategies”. Narrowing down the definition further, Jacobides et al (2018) suggested that ecosystems are “groups of firms that must deal with either unique or supermodular complementarities that are non-generic, requiring the creation of a specific structure of relationships and alignment to create value.”

4. Adopting this narrower definition raises the question of what should concern those involved in competition and antitrust. Interconnectivity among all the elements of the ecosystem becomes key for acquiring competitive advantage, and “offers many potential bottleneck locations” to be exploited. For example, digital platform orchestrators make strategic use of their APIs (Application Programming Interfaces, which enable external apps to connect), algorithms based on Big Data analytics or contractual restrictions – among other forms of ecosystem “glue” – in order to ensure interconnectivity and interoperability for final consumers. However, the same means also provide them with profitable points of control and the resources to build a strategic competitive advantage. Thus, those who control ecosystems can generate profit through a fresh set of dynamics:

- They can exploit their users’ willingness-to-pay better than conventional firms in one of two ways. First, if their platform acts as an intermediary, they can better

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understand the willingness-to-pay of the various sides of their market through data harvesting and personalisation, thus extracting a higher surplus for their “matching”. Second, they can increase users’ willingness to pay for the platform itself by adding new functionality and features and inducing complementors to develop products that increase the value of the platform.

- They can extract more surplus value from their ecosystem – for instance, by capturing “value as a portion of the sale of every complementary product or service sold for the platform, including its complements they build themselves”.

5. Yet, while these dynamics may raise novel competitive concerns, the question of how we should address them remains open to debate. Moving beyond the problem of defining ecosystems (since the definition of “markets” is, itself, not void of analogous challenges), we consider the pragmatic trade-offs in devising a regulatory framework that can regulate ecosystems, without unduly restricting competition, or protecting non-ecosystem incumbents from firms that, as ecosystem orchestrators, might bring about a different model of production and competition. We aim to transpose the emerging theory of (business) ecosystems into the analysis of competition law.

6. We thus consider a number of challenges pertinent for competition law and its enforcement. (i) What are the constitutive elements and boundaries of an ecosystem, and how can the concept be better operationalised in competition law enforcement? (ii) How do we assess competitive interactions between ecosystems, and what reference point can we use to understand them? (iii) How do we assess the dominant position within an ecosystem, and what qualitative criteria and metrics can we use to measure it? Is dominance always linked to the role of ecosystem orchestrator?