

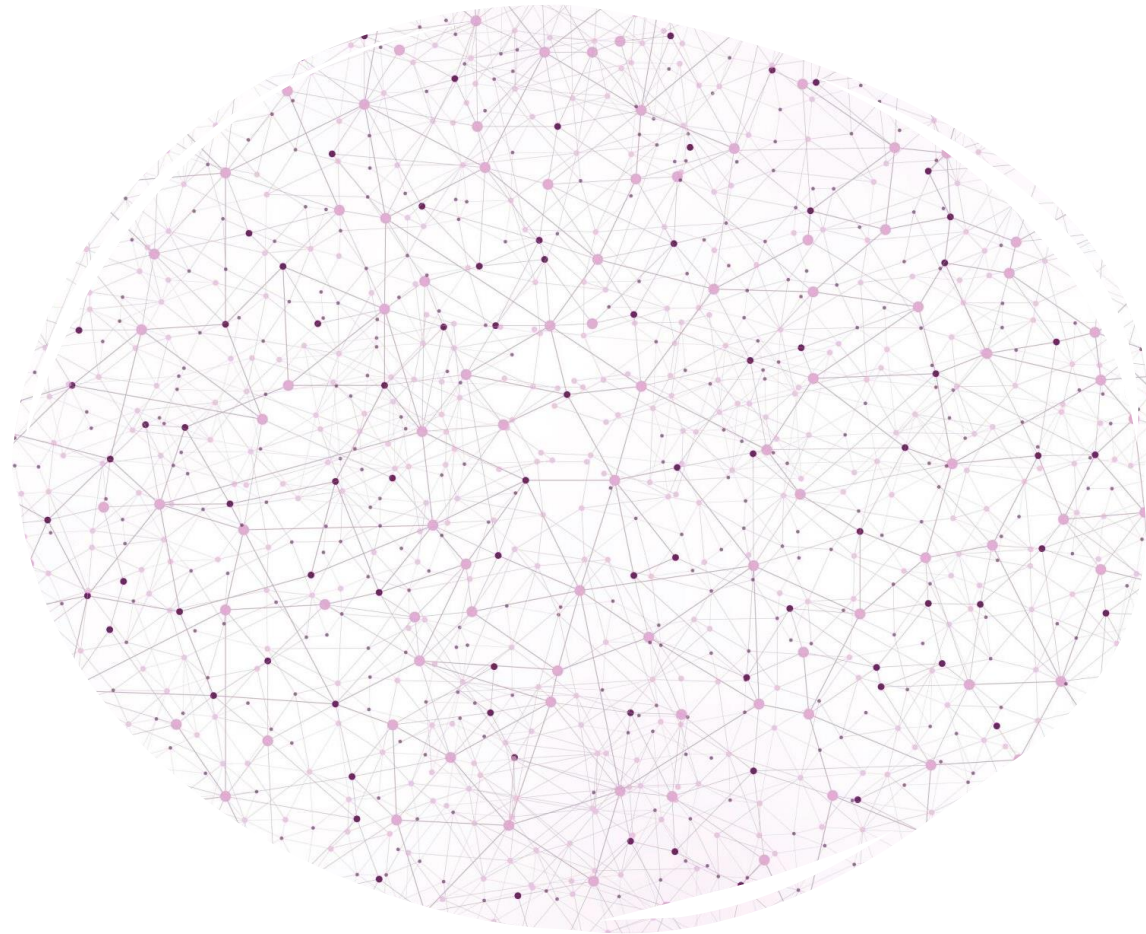
**Twenty-Second Intergovernmental Group of Experts on
Competition Law and Policy
Room XIX, Palais des Nations, Geneva
3-5 July 2024**

Digital Ecosystems and Competition Law

Presentation

*Prof. Ioannis Lianos
Faculty of Laws
University College London (UCL)*
































This material has been reproduced in the language and form as it was provided. The views expressed are those of the author and do not necessarily reflect the views of UN Trade and Development.



Digital Ecosystems & Competition Law

Prof. Ioannis Lianos
i.lianos@ucl.ac.uk

Personal views only. Do not engage the CAT

Rank	Name	Market Cap	Price	Today	Price (30 days)	Country
1	 Apple AAPL	\$2.994 T	\$192.53	▼ 0.54%		 USA
2	 Microsoft MSFT	\$2.794 T	\$376.04	▲ 0.20%		 USA
3	 Saudi Aramco 2222.SR	\$2.136 T	\$8.82	▲ 0.15%		 S. Arabia
4	 Alphabet (Google) GOOG	\$1.755 T	\$140.93	▼ 0.25%		 USA
5	 Amazon AMZN	\$1.570 T	\$151.94	▼ 0.94%		 USA
6	 NVIDIA NVDA	\$1.223 T	\$495.22	▲ 0.00%		 USA
7	 Meta Platforms (Facebook) META	\$909.62 B	\$353.96	▼ 1.22%		 USA
8	 Tesla TSLA	\$789.89 B	\$248.48	▼ 1.86%		 USA
9	 Berkshire Hathaway BRK-B	\$776.89 B	\$356.66	▼ 0.25%		 USA
10	 Eli Lilly LLY					 USA

“Winner-takes-most”

- With network effects, larger sales size is equivalent to higher quality
- Consumers prefer products with higher sales because they have many complements
 - Prefer Windows because of many apps, even when stand-alone Mac is more desirable
 - Prefer a large instant messenger network to alternative smaller IM network
- Result 1: High sales make the product more desirable and drive even higher sales (positive feedback loop)
- Result 2: Equilibrium with high inequality in sales and profits across companies
- Result 3: Very concentrated markets
- Profits of “winners” increase exponentially with scale/sales
- Top company has much higher sales and profits than the second largest; second one much larger than third, etc.
- Often the fourth or fifth largest company are too small to make any difference in the market structure



Traditionally, the focus of the company was internal

- Tweaking the value chain to make perfect products
- In platforms & ecosystems, the focus is external
 - Platform tries to bring together as many as possible from both (or all) sides, match them and create transactions
 - Need to minimize the conflicts among participants
 - The notions of a buyer and a seller are blurred
- **Not easy to do it right**
 - Especially because you need to bring in **both** sides of a platform
 - Microsoft almost killed Apple/Mac in the 80s (and killed IBM's OS/2) by attracting more developers to write applications for Windows
 - Apple has killed Microsoft's cellphone OS
 - Android (Google) is taking over from Apple as dominant smartphone platform



Ecosystems

JOURNAL ARTICLE

Ecosystems and competition law in theory and practice

Michael G Jacobides, Ioannis Lianos 

Industrial and Corporate Change, Volume 30, Issue 5, October 2021, Pages 1199–1229,

<https://doi.org/10.1093/icc/dtab061>

Published: 18 November 2021 **Article history** ▼

Definition of ecosystems

- “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” Teece (2012: 105–6)
- “alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialise” Adner (2017: 42)
- “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” Jacobides et al (2018: 1)

Main elements

- Multiple independent actors
- Unique, supermodular & non-generic complementarities
- Modularity
- Alignment Structure – Private Governance/Orchestration

It is not just about the digital economy...!

Ecosystem as an (economic) transplant

- Digital Competition Reports (UK, EU, US, BRICS)
- Article 2A Greek Competition Law – first competition law provision on ecosystems
- General Court of the EU, **Case T-604/18, Google Android**
 - 116. [...] in a **digital ‘ecosystem’**, which brings together several categories of supplier, customer and consumer and causes them to interact within a platform, **the products or services which form part of the relevant markets that make up that ecosystem may overlap or be connected to each other on the basis of their horizontal or vertical complementarity**. Taken together, the relevant markets may also have a **global dimension in the light of the system that brings its components together and of any competitive constraints within that system or from other systems**.
 - 117 Identifying the conditions of competition relevant to the assessment of the position of economic strength enjoyed by the undertaking concerned **may therefore require multi-level or multi-directional examination in order to determine the fact and extent of the various competitive constraints that may be exerted on that undertaking**.
- UK Mobile Ecosystem Market Study (2022)
- EU Market Definition Notice (2024)
- Mergers: Booking/eTraveli (2023)
- ...

THE FUTURE OF E-COMMERCE



Different dimensions of power in a complex economy

Dimensions of power relevant for competition law analysis

■ Modernising the law on abuse of market power - Report (2017)

□ 'Intermediation power'

- A significant ability to steer "information consumers" to certain offers, and thereby to affect – and possibly restrain – competition'
- Relevance of a platform in mediating access to sales or supply markets even vis-à-vis firms that do not have a market relationship with the platform

□ Furman Report (2019)

- 'Strategic market status'

□ ARCEP (2020)

- 'Pouvoir structurant'

- **Resource dependency** - horizontal or vertical (e.g. market share, bottleneck power, economic dependence, technological dependence)

- **Panopticon power** (being at the centre of a network)

- **Power to set the agenda/manipulate preferences** (on personalised markets)

- **'Architectural advantage'**: Being in a position to influence the way the industry is organised/structured and the value allocation between the industry (or ecosystem) actors.

- Power emerging out of central positioning in networks and informational asymmetries

- Positioning not necessary in adjacent vertical markets

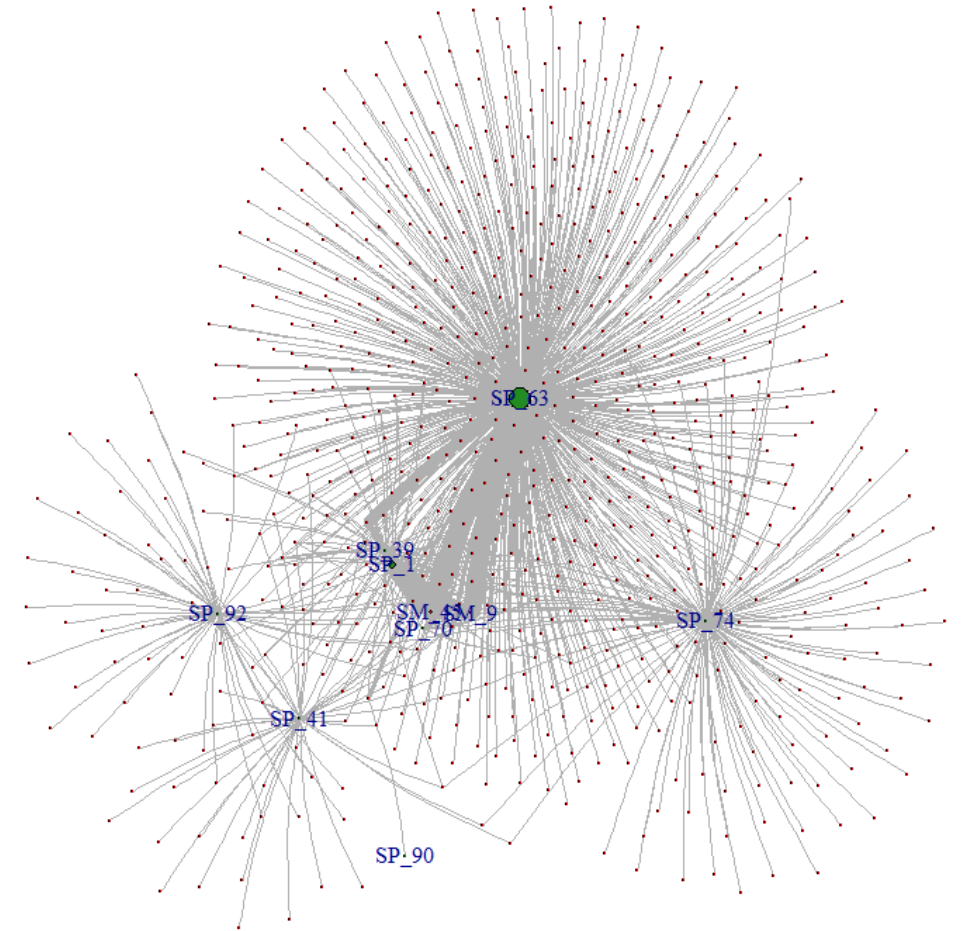
- See I. Lianos & B. Carballa Schmichowski , New Dimensions of Power in Competition Law: Theory and Metrics (forth., 2021)

The multiple dimensions of (economic) power

Power family	Type of power	Source of power	Modality of power exertion	Scope of power sourcing exertion in an economic context	Existence of standard metrics or modelling in competition law
Coercion	Coercion	Capacity to influence other actors' conduct and/or to affect outcomes directly in the context of a bargaining process	Absence of alternative "reasonable choices"	Value chain/ecosystem and horizontal	No (because the concept is either too broad or too subjective)
Process-based	Process-based	Capacity to apply credible sanctions that affect another agent's gains	Credible sanctions that affect another agent's gains	Value chain/ecosystem and horizontal	Yes
Resource dependence	Standard market power	Market structure	Affecting equilibrium quantities or prices in a market	Horizontal	Yes
Resource dependence	Exclusionary/bottleneck	Supply-side (e.g. an essential facility or input, a technology) and demand-side (e.g. high switching costs, strong positive network effects) conditions creating a bottleneck	Exclusion from the bottleneck resource	Value chain/ecosystem	Yes
Resource dependence	Social exchange theory	Differential dependency between value co-creators	Obtaining a high share of the co-created value through bargaining	Value chain/ecosystem	No
Positional	Panopticon	A position in the network of value co-creation that allows to collect valuable information	Strategic use of the information to obtain a higher share of value	Value chain/ecosystem	No
Positional	Architectural	Capacity to influence the industry architecture by affecting at least one of its interphases (technological, institutional, social)	Influencing the industry architecture to obtain a higher share of the value created in the industry	Value chain/ecosystem	No

Positional power

- The topography of networks is particularly important in view of the tendency of complex systems to create asymmetric network structures, such as ecosystems, in which some nodes are ‘hubs’, and are far more connected than others
 - ‘Degree centrality’ simply involves counting the number of connections a node has (in terms of potential communication activity): those with a high degree of centrality are more active players
 - ‘Betweenness centrality’ measures are based on the frequency with which a point falls between pairs of other points on the shortest paths (or geodesics) connecting them
 - ‘closeness centrality measures’ may also provide an index of positional power to the extent that a particular point is closer to another, by measuring how fast a given node in a network can reach other nodes
- See, I. Lianos & B. Carballa, *New Dimensions of Power in Competition Law: Theory and Metrics* (forth., 2021)



Network of sales/purchases between Greek suppliers and supermarkets for the pasta product category in 2019

Beyond foreclosure theories of harm?

- **The ecosystem “glue”**
- **Products may not be related (substitutes, complements)**
- **No need for bundling theories of harm (as for conglomerate mergers) – the essence is not a bundling strategy to be adopted in the future but the reinforcement of the ecosystem “glue”**
- **Difficult issues regarding the integration of the so called “efficiencies” in the analysis as some may consider that they may form part of the theory of harm**
- **Essential issue is compatibility in the creation of shared networks/resources**
 - N. Economides & I. Lianos, A Co-opetition theory of harm for Ecosystems, work in progress (2024)

Some (self-referential & recent) reading...

Towards a Legal Theory of Digital Ecosystems

Faculty of Laws University College London Law Research Paper No. 16/2024

Amsterdam Law School Research Paper No. 2024-22

Amsterdam Centre for Transformative private law Working Paper No. 2024-01

80 Pages • Posted: 31 May 2024

[Ioannis Lianos](#)

University College London - Faculty of Laws

[Klaas Hendrik Eller](#)

University of Amsterdam

[Tobias Kleinschmitt](#)

Humboldt University Berlin



JOURNAL ARTICLE

A Coat of Many Colours—New Concepts and Metrics of Economic Power in Competition Law and Economics

[Ioannis Lianos](#) ✉, [Bruno Carballa-Smithowski](#) [Author Notes](#)

Journal of Competition Law & Economics, Volume 18, Issue 4, December 2022, Pages 795–831, <https://doi.org/10.1093/joclec/nhac002>

Published: 21 April 2022 **Article history** ▼