

Concerted Practices and Algorithmic Coordination: Does the Proposed CP Prohibition Compute?

LCA

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- ▶ “Algorithmic coordination”:
 - businesses increasingly get data esp pricing information about other businesses in real-time
 - algorithmic processing of that data may result in parallel conduct in the market
 - conduct may not involve a CAU
 - adverse welfare effects may be as significant as those caused via CAU
 - positive welfare effects also need to be considered
- ▶ Pressing topic overseas:
 - concern expressed by regulators, eg:
 - EC, Vestager, “Algorithms and Competition” (2017) at: https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/bundeskartellamt-18th-conference-competition-berlin-16-march-2017_en
 - many commentaries, eg:
 - Ezrachi & Stucke, *Virtual Competition* (2016)
 - OECD, DAF/COMP, Roundtable, Algorithms and Collusion (2017) at: <http://www.oecd.org/daf/competition/algorithms-and-collusion.htm>
 - *The Algorithms have Landed*, Antitrust Chronicle (2017) Spring Vol 2 (see esp Gal’s paper)
 - Petit, “Antitrust and AI” (2017) 8 JECL & P 361
- ▶ Position in Australia?
 - CP prohibition under CC Amendment (CPR) Bill 2017 is a focal point
 - no discussion in EM or ACCC *Framework for Concerted Practices Guidelines*
 - is proposed CP prohibition responsive to algorithmic coordination?

Assessing the Responsiveness of the Proposed CP Prohibition

- ▶ Types of algorithmic coordination (Ezrachi & Stucke, *Virtual Competition*):
 - Messenger
 - Hub and Spoke
 - Predictable Agent
 - Digital Eye
- ▶ Is the proposed CP prohibition responsive to each of these types of algorithmic coordination? Do any concerns arise?

Proposed CP Prohibition – General Concerns

- ▶ Underreach?
 - avoids need to prove CAU and no element of commitment
 - but SLC test presents a hurdle (cf per se test under object limb of Art 101(1) EU)
 - immunity policy? (cf eg CMA, *Online Sales of Posters and Frames*, Case 50223 (2016))
- ▶ Overreach?
 - broad concept of CP, but liability subject to SLC test
 - no competition condition
 - not limited to horizontal coordination – extends to vertical subject to unduly limited carve-outs
 - no rule of reason/efficiency defence
 - broad scope of individual liability under Schedule version;
 - “engage in” CP
 - no explicit fault element (cf liability for being *knowingly* concerned)
- ▶ Uncertainty?
 - “concerted practice”
 - ordinary meaning cf eg EU law
 - EM confused and confusing
 - potentially complex (see Black, *Conceptual Foundations of Antitrust* (2005) ch 5)
 - “substantial” lessening of competition
 - “give effect to” a CP

Messenger Scenario (E & S, *Virtual Competition*)

- ▶ Humans agree to collude and use computers to execute their will
- ▶ Simple extension of human will – the use of the IT environment to enhance existing collusion
- ▶ Under this scenario, humans collude – computers assist in implementing, monitoring, and policing the cartel or to facilitate information exchange and signalling
- ▶ Numerous examples include:
 - *US v Topkins*, CR 15–00201 WHO (ND Cal Apr 30, 2015)
 - *Astron & Trod Ltd* (2015), Press Release, DoJ Office of Public Affairs, *Former E-Commerce Executive Charged with Price Fixing in the Antitrust Division's First Online Marketplace Prosecution* (Apr 6, 2015), at: <https://www.justice.gov/opa/pr/former-e-commerce-executive-charged-price-fixing-antitrust-divisions-first-onlinemarketplace>
 - CMA, *Online Sales of Posters and Frames*, Case 50223 (2016)

- ▶ Main concerns:
 - computers may be used for weaker forms of communication that do not involve a CAU yet facilitate market coordination – per se cartel prohibitions will not apply
 - may be a CP (*Apco* commitment not required) but SLC test is a significant hurdle
 - individuals may be distanced from the conduct amounting to a CP →
 - knowledge element for being knowingly concerned in breach of s 45(1)(c) may be difficult to establish
 - but contrast wide scope of liability for engaging in CP under Schedule version of the prohibition
 - “engage”
 - no explicit fault element

Hub and Spoke Scenario (E & S, *Virtual Competition*)

- ▶ Single pricing algorithm supplied by algorithm developer (hub) to users (spokes) to enable them to determine their market prices:
 - each competitor outsources its pricing to an upstream supplier's pricing algorithm
 - competitors do not interact directly with each other, yet they all use the upstream supplier's pricing algorithm to determine the market price or react to market changes
 - market behaviour of the competitors may be “magically” aligned when they all use a similar “brain” to determine their price strategy
- ▶ Hub and Spoke differs from Messenger:
 - in an algorithm-driven hub and spoke, computer does not merely execute the orders of humans; rather, it is the competitors' use of the same pricing algorithm that stabilizes prices and dampens competition
- ▶ Examples:
 - Case C-74/14, *Eturas and Others* (2016)
 - Uber use of pricing algorithm to determine price charged by drivers - *Meyer v Kalanick*, Case 1:15-cv-09796-JSR, slip op (SDNY. March 31, 2016)

► Main concerns:

- element of “concerted practice” is uncertain in this context:
 - does UK hub and spokes CP analysis (*JJB Sports PLC v OFT* [2006] EWCA Civ 1318) apply?
 - does *Eturas* requirement of awareness of communication apply (cf *Eturas* obscurity whether ought to have been aware is sufficient)?
 - sufficient that 2 or more spokes (or hub and 1 spoke?) were aware that coordination by 2 or more spokes was *likely* to result ?
- SLC test is likely to raise complex issues about operation of pricing algorithms and counterfactuals
- SLC test is not subject to efficiencies defence yet efficiencies typically are important reason for use of pricing algorithms
- scope of individual liability for “engaging in” a hub and spokes CP under Schedule version may be widespread, depending on:
 - number of spokes
 - number of individuals in each spoke who participate in connecting the spoke to the hub
 - what if any fault element might be read into “engage in a concerted practice”

Predictable Agent Scenario (E & S, *Virtual Competition*)

- ▶ Pricing algorithms act as predictable agents and continually monitor and adjust to each other's prices and market data
- ▶ Algorithm is programmed to:
 - monitor price changes and swiftly react to any competitor's price reduction
 - follow price increases when sustainable, that is, when others follow in a timely manner so that no competitor benefits from keeping prices lower
- ▶ No collusive agreement between competitors
- ▶ Each firm unilaterally adopts its own pricing algorithm, which sets its own price
 - each firm has an independent economic self-interest in developing and relying on algorithms; indeed, it may be contrary to the firm's economic self-interest to rely on human pricing or trading
- ▶ Algorithms are likely to use common code snippets from sites like stackoverflow.com – more parallelism than from independently created separate algorithms
- ▶ Likely result is algorithm-enhanced conscious parallelism
- ▶ May or may not be anti-competitive intent
- ▶ Examples:
 - M Lewis, *Flash Boys: A Wall Street Revolt* (2014)
 - “Gravy” algorithm, *In the Matter of Athena Capital Research, LLC*, US SEC, Administrative Proceeding File No 3-16199 (Oct 16, 2014) at: <https://www.sec.gov/litigation/admin/2014/34-73369.pdf>

► Main concerns:

- given the unilateral nature of Predictable Agents, their use seems unlikely to amount to a CP or attempt to engage in a CP:

Absent evidence of an agreement to change market dynamics, most competition agencies lack enforcement tools, outside of merger control, that could effectively deal with the change of market dynamics through algorithms. Unilaterally, a firm without market power may develop an algorithm that detects the market behaviors of competitors; anticipates the rivals' algorithms' likely reactions to different competitive responses; and opts for the path that, given the competitive reactions, will maximize profits, which may often be the path toward conscious parallelism. (E & S, *Virtual Competition*, 68)

- SLC test is not subject to efficiencies defence yet efficiencies are important reason for use of Predictable Agent algorithms:

If the algorithms increase market transparency, the defendants will often have an independent legitimate business rationale for their conduct. Courts and the enforcement agencies may be reluctant to restrict this free flow of information in the marketplace. Its dissemination, observed the Supreme Court, “is normally an aid to commerce,” and “can in certain circumstances increase economic efficiency and render markets more, rather than less, competitive.” Indeed, concerted action to reduce price transparency may itself be an antitrust violation. (E & S, *Virtual Competition*, 69)

- ▶ Computers, in learning by doing, determine independently the means to optimize profit:
 - .. computers can anticipate and react to competitive threats well before any pricing change. Each firm's algorithm determines whether it can profit by undertaking a competitive initiative. ... The real-time data—from tracking the behavior of rivals, potential entrants, and customers—will reveal when competitors are seeking to increase sales (including expanding into serving new territories or types of customers, such as institutional buyers). [Each algorithm can] quickly detect any competitive manouver, and thus know when and how to retaliate. (E & S, *Virtual Competition*, 72)
- ▶ Two key technological advances facilitate market coordination:
 - ability of computers to process high volumes of data in real time
 - increasing sophistication of algorithms to engage in autonomous decision making and learning by experience (AI)
- ▶ Anticompetitive outcomes:
 - no evidence of anticompetitive agreement or intent
 - computer algorithms reduce or remove degree of strategic uncertainty in marketplace, and promote greater transparency
- ▶ No test cases yet but suggestive examples:
 - Uber “God View” technology
 - “The Making of a Fly”: <https://www.wired.com/2011/04/amazon-flies-24-million/>

► Main concerns:

- can a corporation “engage in” a “concerted practice” without necessarily assenting via a human agent (cf *Eturas* requirement of “tacit assent”)?
- given the unilateral nature of the deployment of Digital Eyes, may be difficult or impossible to prove a CP or attempted CP, eg:
 - did the alleged parties to the CP “knowingly substitute practical cooperation between them for the risks of competition” (EM)?
- boundary between a CP and conscious parallelism is difficult to draw as a matter of algorithm-based compliance:

Assuming that the computers are programmed to refrain from violating the competition laws, the company may have done all that it can to ensure compliance. From a technological perspective, programming compliance may be challenging when one attempts to capture the creation of a market dynamic such as conscious parallelism. A command not to fix prices may be simple to execute, but under reinforcement learning the algorithm will experiment with solutions including, as the competition authorities recognize, the myriad possibilities of coordinated interaction, not all of which are illegal. Can the law credibly ask developers to instruct the algorithm not to react to market changes—to be inefficient? (E & S, *Virtual Competition*, 78)
- SLC test is not subject to efficiencies defence yet efficiencies are important reason for use of Digital Eye algorithms

Does the Proposed CP Prohibition Compute?

- ▶ The application of the proposed CP prohibition to algorithmic coordination does not appear to have been thought through – a Kodak moment?
- ▶ ACCC guidelines may assist but cannot be expected to resolve key issues/difficulties
- ▶ Judicial clarification – slow, unpredictable, costly and not necessarily productive
- ▶ Amend proposed CP prohibition:
 - define “concerted practice”:

“A concerted practice is conduct engaged in by a corporation for the purpose of:

 - (a) coordinating the terms or conditions on which goods or services are supplied or acquired, to be supplied or acquired or likely to be supplied or acquired with a person who competes, is likely to compete or would, but for the concerted practice, compete with the corporation in relation to the supply or acquisition of those goods or services; and
 - (b) thereby substantially lessening competition between the corporation and that person in relation to the supply or acquisition of those goods or services.”

(Beaton-Wells & Fisse, Final Report; Submission, 22 May 2015, 11-12, at:
http://www.brentfisse.com/images/Beaton-Wells-and-Fisse-Submission-Final%20Report_250515_FINAL.pdf)
 - need for supply/acquisition exemption:

revise Exposure Draft s 44ZZRS version significantly
(see Fisse (2017) 45 ABLR 260, 262-265)
- ▶ But concept of concerted practice cannot be expected to cover Predictable Agents and Digital Eye scenarios adequately – a fundamental problem with proposed CP prohibition
- ▶ Contrast various suggestions that algorithms be regulated (eg OECD):
 - some suggestions (eg price regulation) are problematic in the extreme

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