

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE**

Algorithms and Collusion - Note from Singapore

21-23 June 2017

This document reproduces a written contribution from Singapore submitted for Item 10 of the 127th OECD Competition committee on 21-23 June 2017.

*More documents related to this discussion can be found at
www.oecd.org/daf/competition/algorithms-and-collusion.htm...*

Please contact Mr. Antonio Capobianco if you have any questions about this document
[E-mail: Antonio.Capobianco@oecd.org].

JT03415002

Singapore

1. In this note, the Competition Commission of Singapore (“CCS”) provides its input in respect of work carried out in Singapore to date related to the topic “Algorithms and collusion”. The work highlighted in this paper refers to a study on e-commerce commissioned by CCS entitled “*E-commerce and its impact on competition policy and law in Singapore*” (“CCS’s Commissioned Study”), following which CCS produced an occasional paper entitled “*E-commerce in Singapore – How it affects the nature of competition and what it means for competition policy*”.

2. CCS commissioned the study from consultants, DotEcon, in early 2015 to understand the development and characteristics of e-commerce in Singapore, how e-commerce can give rise to specific competition issues and the implications for competition policy and law in Singapore.¹ One aspect of the study identified as bringing substantial challenges to the application of competition policy was the increasing use of algorithms and robo-sellers - systems that use pricing algorithms in combination with extensive market data to set prices.² Set out below are the observations from CCS’s Commissioned Study on this issue.

3. CCS’s Commissioned Study highlighted that in e-commerce, greater price transparency can result in lower prices, which benefits consumers, but that if the focus of competition shifts exclusively to price, product or service quality may suffer.³ While the study noted that greater price transparency online may be pro-competitive, it also noted that this could likewise facilitate collusion between firms, as monitoring each other’s behaviour becomes easier.⁴ The study further noted that the risk of co-ordinated outcomes may also increase with the growing use of robo-sellers. Such systems were noted as being better at detecting and punishing deviant behaviour and less tempted than their human counterparts by short-run gains to deviate from the collusive outcome.⁵

4. In this regard, CCS’s Commissioned Study highlighted data as a key asset. It identified that access to larger amounts of data may allow robo-sellers to gain a better understanding of market conditions and more effectively set prices that maximise profits taking account of specific conditions at the time.⁶ This could result in keener competition as firms have a greater ability to gather and process more detailed information about demand and the behaviour of their competitors. However this in combination with the use of algorithmic pricing and robo-sellers, may present a greater risk of tacit collusion, and may result in a greater prevalence of price discrimination.⁷ While the CCS’s

¹ DotEcon Study for the Competition Commission of Singapore, “E-commerce and its impact on competition policy and law in Singapore”, Final Report, October 2015, page 4.

² Ibid, page 97.

³ Ibid, page iii.

⁴ Ibid, page iii.

⁵ Ibid, page 70.

⁶ Ibid, pages 76 to 77.

⁷ Ibid, page iv.

Commissioned Study noted that the effects of price discrimination on relevant market definition can be assessed by the CCS under the competition law framework in Singapore albeit possibly posing some practical difficulties, it noted that the extent to which (tacit) collusion supported by the use of common pricing algorithms can be addressed is less clear.⁸ CCS's Commissioned Study noted that there may be difficulties in detecting such behaviour and that firms using pricing algorithms may not knowingly enter into such practical co-operation.⁹ CCS also notes that firms may be able to block competitors from tracking their prices which would make tacit collusion more difficult.

5. CCS in its occasional paper on how e-commerce affects competition and the impact this has on competition policy noted the competition concerns raised by CCS's Commissioned Study.¹⁰ The occasional paper observed that the use of algorithmic pricing systems and online price transparency may make it easier for companies to collude and fix prices.¹¹ For example, companies may use sophisticated systems to monitor their competitor's online prices to ensure that they do not undercut their rivals. The occasional paper noted that the issues identified in CCS's Commissioned study were not specific to the e-commerce setting, but that some of the identified features and issues are likely to be more prevalent in online markets. Consequently CCS highlighted that such markets may require particular attention when CCS conducts its assessment. CCS also highlighted that it was alive to the fact that online price information could facilitate collusion.

6. Recognising this, CCS has in its cases sought to make inquiries regarding how pricing is structured and the tools that may be used to determine this. CCS is also undertaking further work in this area with a report commissioned in April 2017 on the landscape of data and data analytics in Singapore.¹²

7. The report will look at the current industry landscape and companies' data usage and sharing practices in Singapore, including:

- a. How selected industries are being transformed or will be transformed by harnessing data;
- b. Outlook, trends and key challenges to growth of the data and analytics industry, and how these may affect businesses; and
- c. The adoption of data, and prevalence of data sharing of companies in Singapore and their underlying motivations or inhibitions.

8. The consultant's study will form part of CCS's broader study on the implications of data and data analytics on competition policy and law, personal data protection, and intellectual property rights in Singapore.

⁸ Ibid, page iv.

⁹ Ibid, page iv.

¹⁰ Ibid.

¹¹ E-commerce in Singapore – How it affects the nature of competition and what it means for competition policy, page 13.

¹² CCS000ETQ17000005- Provision of services to understand the data and analytics.