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Roundtable on Hub-and-Spoke Arrangements – Background Note

by the Secretariat

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The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

More documentation related to this discussion can be found at
www.oecd.org/daf/competition/hub-and-spoke-arrangements.htm.

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Hub and Spoke Arrangements

Background note by the Secretariat*

Hub-and-spoke arrangements are cartels that are not co-ordinated through direct exchanges between the horizontal competitors, but through indirect exchanges via a vertically related supplier or retailer.

The main challenge for enforcement agencies is to identify when inherently legitimate exchanges between suppliers and retailers turn into a prohibited horizontal co-ordination, without direct proof of collusion. Enforcement and jurisprudence in particular in the United States, but also in Europe, have developed concepts that are based mainly on indirect and circumstantial evidence. They require proof of a horizontal connection between the spokes, a rim, and an awareness of all actors involved.

Resale price maintenance (RPM) plays an important role in almost all cases. It is a commonly used vertical instrument to implement and police the horizontal collusion. For jurisdictions where RPM is illegal as such, it may present a less burdensome way to address hub-and-spoke infringements.

E-commerce and online price comparison tools can facilitate hub-and-spoke arrangements and RPM, in particular as regards the monitoring of an agreement, and speedy reactions to deviations. When sales platforms play a role, cross platform parity agreements can lead to a lessening of competition between horizontal competitors, and platforms could facilitate anti-competitive supplier/seller actions.

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1. Introduction

1. Hub-and-spoke arrangements can be characterised as any number of vertical exchanges or agreements between economic actors at one level of the supply chain (the spokes), and a common trading partner on another level of the chain (the hub), leading to an indirect exchange of information and some form of collusion between the spokes. In the extreme, this indirect exchange can achieve the same negative market outcomes as a hard-core price fixing cartel, without the horizontal competitors ever having exchanged information directly.

2. The topic raises interesting questions, as it essentially requires enforcement agencies to clearly define the point where a day-to-day, legitimate business occurrence, namely the exchange of often confidential information between suppliers and distributors, turns into an illegal horizontal agreement or concerted action that can be subject to harsh sanctions, and in some regimes criminal prosecution.

3. This paper focuses on these types of exchanges and their competitive assessment. An infringement that bears some similarities are cartels that are facilitated by an independent third party, which is not itself active as a supplier or retailer. While not the subject of this paper, insights on the legal assessment of these infringements can inform enforcement in hub-and-spoke cases.

4. E-commerce phenomena such as pricing algorithms, price monitoring software or online platforms can be instrumental in supporting hub-and-spoke arrangements, or can lead to similar market outcomes.

5. This note will look at the basic economics of hub-and-spoke arrangements, and their legal treatment across OECD jurisdictions. It will include brief excursions into related topics such as information exchanges and resale price maintenance (RPM), and will seek to glean some insights regarding practical enforcement questions. The note is structured as follows:

- **Section 2** introduces various forms of hub-and-spoke arrangements. It presents case examples, and seeks to describe: (i) why and in which circumstances and market structures hub-and-spoke arrangements make economic sense to the actors involved, and (ii) how such arrangements can be anti-competitive.
- **Section 3** focuses on the legal assessment of hub-and-spoke arrangements across jurisdictions. In doing so, it also deals with the legal frameworks for direct information exchanges between competitors as well as for cartel facilitators, and discusses how these are related to hub-and-spoke arrangements.
- **Section 4** looks at RPM and e-commerce business models, and how they relate to hub-and-spoke arrangements.
- **Section 5** concludes and outlines topics for future discussion and research.

2. Hub-and-spoke: characteristics and economic foundations

6. This section describes hub-and-spoke arrangements in detail, and provides case examples for various types of arrangements, while looking at the possible motivations for the conduct of the actors involved at different levels of the distribution chain. A basic analysis of the economic incentives and effects provides insights into questions such as:

why would suppliers and distributors have aligned incentives to support collusion? What types of market structures are conducive to this type of collusion? When can we expect negative welfare effects?

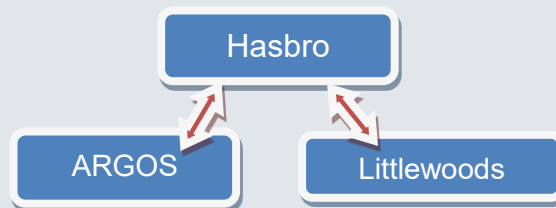
2.1. Main characteristics of hub-and-spoke arrangements

7. Two “classic” cases demonstrate how hub-and-spoke arrangements work, with the Toys case illustrating a downstream, and the Interstate case illustrating an upstream hub-and-spoke cartel:

Box 1. United Kingdom – the Toys case

In 2003, the Office of Fair Trading (OFT)¹ fined Hasbro, Argos and Littlewoods for entering into a price-fixing agreement concerning certain Hasbro toys and games. The decision was challenged before the UK Competition Appeal Tribunal (CAT), and the Court of Appeal, which both upheld the OFT infringement decision.

Hasbro was one of the largest toys and games manufacturers in the UK, while Argos and Littlewoods were the two largest catalogue retailers, directly competing with each other. After receiving complaints from Argos and Littlewoods about their low margins on these products, Hasbro decided to launch a “pricing initiative”. This consisted in persuading retailers to charge a recommended retail price (RRP) in order to increase their margins. However, both Argos and Littlewoods, as the main price makers on the market, feared that, if one of them charged the RRP, the other would undercut it in order to gain market shares.



This is where Hasbro played a key role in acting as a hub for the purposes of the anti-competitive agreement. Hasbro held separate discussions with Argos and Littlewoods in order to identify common products in their catalogues, and to check whether the retailers had objections to matching the RRP for those common products. Hasbro communicated to each of the retailers that the other had agreed to charge the RRP on the products in question. Hasbro also played a major role in continuously monitoring the retailers’ conduct, both directly or through information received from the retailers: “*Argos monitored other retailers’ prices. If they found out that a retailer was not at the Hasbro RRP, they contacted me [Mr. Wilson, Hasbro’s Account Manager for Argos] to find out why there was a difference [...] The understanding was that if Hasbro could give Argos an assurance that the other retailer would put the price back up to the RRP, Argos would also remain at the RRP.*”

The three companies were fined a total of GBP 22.65 million, with Hasbro receiving full leniency for co-operating with the OFT.

Notes:

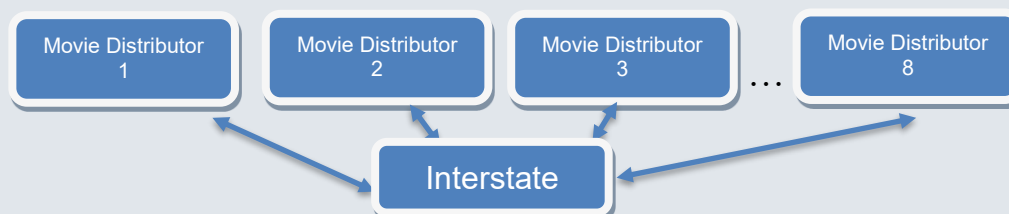
¹ The then two UK competition enforcers, the OFT and the Competition Commission, were merged into the Competition & Markets Authority (CMA) in 2014.

Sources: **OFT Decision:** Case No. CA98/8/2003, [Argos/Littlewoods/Hasbro: price-fixing of Hasbro toys and games](#). **CAT Decision:** Cases: [1014 and 1015/1/1/03](#), [2004] CAT 24, [Argos Limited/Littlewoods Limited v. Office of Fair Trading](#). **Court of Appeal Decision:** [Argos Ltd & Anor v. Office of Fair Trading \(2006\) EWCA Civ 1318](#).

Box 2. Interstate Circuit, Inc. v. United States

Interstate Circuit was one of the largest US exhibitors of motion picture movies and operated both first-run theatres, which showed newly released movies, and second-run theatres, which showed movies sometime after release for a lower price.

Due to the stiff competition from second-run theatres that showed movies for less than 25 cents (as opposed to 40 cents for first-run theatres), Interstate Circuit lost sales in its first-run theatres. For this reason, it agreed with distributors that they should require second-run theatres to charge no less than 25 cents for showing their movies. In case of non-compliance with the agreement, Interstate Circuit threatened not to show the distributors' movies in its theatres. The plan could only work if most distributors adhered, as, otherwise, (i) an adhering distributor would lose sales to its non-adhering competitors, and (ii) Interstate Circuit's threat would not be credible, as retaliation against too many distributors would be costly and thus unrealistic. In order to bring as many distributors as possible on board, the manager of Interstate Circuit sent an identical letter to all distributors explaining the plan. The letter named "on its face as addressees the eight local representatives of the distributors, [...] so from the beginning each of the distributors knew that the proposals were under consideration by the others", and explained that without unanimous co-operation the plan would result in significant business losses.



Interstate Circuit, by acting as a hub, managed to bring the upstream distributors to agree with the plan to raise the prices of the competing second-run theatres, thus limiting competition from them, without any direct communication actually having occurred among the distributors. The Supreme Court concluded that "[a]cceptance by competitors [i.e., the upstream distributors], without previous agreement, of an invitation to participate in a plan the necessary consequence of which, if carried out, is restraint of interstate commerce is sufficient to establish an unlawful conspiracy under the Sherman Act."

Source: Judgement of the US Supreme Court in [Interstate Circuit, Inc. v. United States](#), 306 U.S. 208 (1939), paras 222, 226-227.

8. The cases created important legal precedents for the assessment of hub-and-spoke arrangements in the United Kingdom and the United States. They identify the common features of hub-and-spoke arrangements, namely unlawful horizontal co-ordination between competitors at the supplier (Interstate) or distribution level (Toys), organised by a

common distributor (Interstate) or supplier (Toys). In both cases, no direct communication between the horizontal competitors needed to occur: all communication took place exclusively via bilateral communications between the common hub and the spokes, and any information exchanged between the spokes occurred only indirectly. The cases also evidence another common feature of many hub-and-spoke cases, namely a concern about low margins or retail prices.

9. The central question is under which circumstances a horizontal agreement or concerted practice can be established, based on purely or mostly *indirect exchanges* in a vertical supplier – retailer relationship. In other words - what establishes the link between two vertical information exchanges, that, individually, could be perfectly legal. The main legal questions raised by hub-and-spoke arrangements are addressed in Section 3. The economic questions – which relate mainly to the alignment of incentives of the hub and the spokes; to the market conditions that favour such an alignment; and to the circumstances where a potentially pro-competitive vertical agreement or exchange can produce an anti-competitive outcome – are discussed in the subsection immediately below.

10. Whenever there is an **explicit collusive element** between the spokes of an agreement, which has the potential to reduce competition between actors on the same market level, no further analysis should be required. While a (vertical) intermediary might facilitate the collusive scheme (see Box 12), the economic and legal assessment are the same as for horizontal hard-core cartels. Harm to consumers can be presumed, and these agreements will be treated as per se violations or restrictions of competition by object,¹ without an analysis of effects on the markets.^{2,3}

2.2. Economic incentives and consumer harm

11. If the contact between the horizontal market actors is entirely **indirect**, through a common hub, and takes place purely through **vertical** exchanges between actors on different market levels, one cannot presume harm, as in the direct collusion cases.⁴ Vertical restraints and information exchanges, including of competitively sensitive information, are a day-to-day occurrence between suppliers and their retailers,⁵ and they will often be efficiency enhancing and pro-competitive,⁶ because they can solve various commitment problems that may arise between independent vertical actors, and can increase inter-brand competition.⁷ Harm can arise when a restraint would lead to foreclosure of competitors, or the facilitation of collusion or dampening of competition.⁸

12. A related question is why there should be an **incentive for a hub** to orchestrate collusion on the other market side.⁹ Reduced competition on the retail level will likely lead to a reduction of the supplier's sales volumes, and reduced competition on the supply level will lead to increased input costs and lower margins for the retailer. In order for a hub-and-spoke arrangement to work, these negative effects on the respective profitability need to be overcome.

13. It can be shown that some degree of market power on one or both sides of the market will make successful hub-and-spoke collusion more likely.¹⁰ This is in line with the general economics of vertical restraints, which will raise concerns mostly in cases where at least one of the players enjoys a certain degree of market power, or several market players apply parallel strategies.¹¹ While hub-and-spoke collusion will reduce overall welfare, profits on both sides - retailers and suppliers - can increase in the collusive scenario, and will serve the alignment of interests.

14. Based on cases observed so far, the four basic scenarios for a hub-and-spoke arrangement are:

- The supplier responds to requests of retailers to stabilise or increase margins and/or retail prices;
- The supplier faces cost increases he wants to pass on;
- Supplier collusion; and
- A powerful retailer promotes collusion on the supplier level.

2.2.1. Supplier responds to retailer requests

15. Normally, a supplier is interested in low retail prices and fierce competition among its retailers, as this would lead to more sales and presumably higher profits for him on the upstream level. Any vertical restraints a supplier imposes will likely only serve to ensure that the retailers engage in stronger competition by providing product-related services other than price, such as available stock, pre- and after-sales services, presentation, staff qualification etc.

16. However, it is a common situation for a supplier to hear retailers expressing concerns about low retail prices or margins (because of fierce intra-brand competition). For example, in a UK case it was found that:

“...JJB [the retailer] had been badgering Umbro [the supplier] for some time to do something about the fact that Sports Soccer was already selling England replica kit at a discount, and that a crucial selling period was approaching during which it would be particularly important for JJB that it should not have to face or engage in a price war.”¹²

17. The supplier then has two options to address the retailer’s concerns. First, he could reduce the wholesale price at the cost of his own margin. If the retailer were facing strong competition on the retail market, he would have incentives to pass on at least some of the savings to consumers in the form of a lower retail price. Unless the supplier was in a strong market position, he would not be able to resist subsequent demands by other retailers to cut their wholesale prices as well.¹³ Otherwise, they would just switch to or favour the products of competing suppliers. Therefore, in the case of a supplier with no or limited market power, i.e. strong inter-brand competition, and competitive retail markets, i.e. strong intra-brand competition, this could create a downward spiral for the margins of at least the supplier, and possibly the retailers.

18. The second option for the supplier is to promote and facilitate an increase or a stabilisation of retail prices through co-ordinated price action on the market,¹⁴ for instance through resale price maintenance with subsequent monitoring and incentives, or punishment for retailers to induce them to stick to the foreseen price level or to increase it.¹⁵ This involves an exchange of expression of pricing intentions between retailers to provide reassurance that no retailer will lose business to other retailers. As made clear in the UK Toys case:

“...neither [retailer] can afford to have prices that are seriously out of step with the other. It was therefore necessary to reassure Argos that Littlewoods would also be committed to RRP’s. For its part Littlewoods required the same assurance of commitment by Argos.”¹⁶

19. In other words, the supplier provides a number of essential elements for a well-run cartel: transparency about the intended course of action of retail competitors, monitoring and sanctions. This way, while the total volume of sales may go down due to increased prices, the total profits for both suppliers and retailers might be higher than in the competitive scenario – and both sides benefit and thus find their incentives aligned.

Box 3. Estonia – The vodka cartel

In 2017, the Estonian competition agency has obtained a binding court decision that imposed fines on a hub-and-spoke cartel of the four major retailers in the country, which accounted for two thirds of the market. The retailers agreed via one major supplier to increase the retail price of the lower priced vodkas to or above a specified minimum price. All communication took place exclusively through the supplier, and not directly between the retailers.

According to the findings of the Estonian competition agency, the prices increased up to 15.7%, and there were spill over effects to lower priced vodkas of other suppliers.

As one retailer expressed in an e-mail: *“the parties involved had an opportunity to earn more money by just replacing a number of price tags, which in effect amounts to all of the “expense” of the participation in a cartel.”*

Source: 2017 Annual report of Estonia to the OECD, pp 8-10.

20. The incentives for suppliers to engage in such strategies find further support when retailers in markets with high pressure on retail margins favour suppliers that offer this kind of “market co-ordination service” to ensure higher margins to their retailers.¹⁷ In this case, all suppliers will face similar demands by the retailers, and not only intra-brand competition would suffer,¹⁸ but also inter-brand competition, as prices for all products on a market would go up, and non-compliant suppliers could face the threat of foreclosure.

21. The result would be increased market prices to final customers and reduced overall output, which would amount to an obvious instance of a decrease in overall welfare. The incentives of supplier(s) and retailers are aligned in this scenario, as they share the margin increase, or at least do not suffer margin losses.

22. The **market structures** where retailer-induced hub-and-spoke arrangements are likelier to occur are those where retail markets are concentrated, and retailers have buyer power.¹⁹ If retailers had no upstream market power, then no supplier would need to fear threats of unfavourable sales practices or even delisting, it could just increase sales to other retailers.²⁰ A low number of retail competitors will also facilitate the implementation and co-ordination of a market level price stabilisation or increase scheme, as there are only few and well-known retailers to be co-ordinated. This works equally, when smaller retailers tend to adjust to the observed pricing policies of the market leaders. As mentioned in the UK Toys case (Box 1):

“Argos and Littlewoods [the retailers] were key to the success of the pricing initiative since they were the market leaders – if they could be persuaded to maintain prices at RRP then other retailers would follow suit.”²¹

23. For the supply side, the situation is less clear. Retailers will find it easier to exercise buying power, when the supply side is competitive. If the supplier(s) had market power, threats of delisting would be less likely, reducing the incentive for a supplier to support an

aligned price increase on the retail side with a potentially negative impact on the supplier's margins. However, as shown in the UK Toys (Box 1) and Sports Replica Kits (Box 10) cases, retailer-induced hub-and-spoke can also work on markets with strong suppliers.

2.2.2. *The supplier faces cost increases he wants to pass on*

24. A second scenario is a supplier facing cost increases he wants to pass on at least partly to retailers. If the retail market is competitive, then the retailers may not be able to pass this increase on to final consumers. To facilitate supplier-retailer discussions about a wholesale price increase, the supplier could seek to enable a passing on of the price increase by the retailers to end consumers in the form of higher retail prices. The obvious way to do this is to promise and facilitate a general increase of the retail price level across retailers - by providing information, assurance, monitoring and incentives or sanctions- to ensure that no retailer suffers a disadvantage when adhering to the new pricing scheme. The United Kingdom's Dairy Case is a typical example of this scenario (Box 4).

Box 4. United Kingdom – Dairy case

In August 2011, the OFT found that nine supermarkets and dairy processors had shared sensitive commercial information with the purpose of increasing retail prices of certain dairy products in 2002 and 2003. The supermarkets (the spokes), rather than directly coordinating their conducts, exchanged their pricing intentions through a dairy processor that the OFT found to be the hub. This originated from a strong drive to increase farm gate prices for fresh milk to dairy farmers – processors faced an input price increase they wanted to pass on to the supermarkets.

During the discussions, supermarkets expressed their concerns about the other retailers' potential undercutting strategy, as made clear by one of the supermarket managers who stated that, "*I must stress that if others do not generally support this initiative, I will have to withdraw my support for cheese, if I find I am uncompetitive in the wider market place.*"* The hub processor therefore played a key role in delivering the mutual understanding among supermarkets, by sharing their pricing intentions with the other spokes, thus assuring them that they could raise their retail prices knowing that their competitors would do the same.

While most of the defendants settled the case with the OFT, Tesco, one of the supermarkets, appealed the OFT's decision.

Note: * Decision of the OFT in Case No. CA98/03/2011, Dairy retail price initiatives, para. 5.231.

Source: Decision of the OFT in Case No. CA98/03/2011, Dairy retail price initiatives.

25. The *market structures* that would make such a supplier behaviour more likely are a supplier enjoying either market power, or a supply market characterised by a low number of major players, who all face similar cost pressures, and engage in similar practices. Without unilateral or collective market power and at least parallel behaviour on the supply side, it seems less likely that retailers could be convinced to accept higher wholesale prices. A safer strategy would be to replace the supplier, instead of relying on the success of an orchestrated, and likely illegal, retail price increase. Consequently, on competitive supply markets this would not be a sensible course of action for the supplier. The Polish DIY case (Box 5) provides a good example for the kind of interaction, where an oligopolistic market structure favoured parallel behaviour vis-à-vis retailers, with the result that retailers had no

or very limited options to switch suppliers in case they would not want to follow the new pricing policies.

Box 5. Poland – Paint and varnishes DIY

The Polish DIY market grew between 2000 and 2003, and saw an increasing number of price wars between the DIY chains, and a change of the retail market structure that provided DIY chains with higher purchasing power. Paint and varnish manufacturers on their end faced growing prices for input materials, which they could not pass on due to the competitive retail conditions.

In early 2005, Polifarb Cieszyn Wroclaw (PCW), a paint manufacturer, introduced a price stabilising system. The intention was to convince the DIY store chains to adhere to the recommended retail prices of the 10 best-selling products. In case of failure to comply, supplies were stopped, while as a reward for implementation of the RRP, a ‘stabilising rebate’ would be paid – which would be lost for the whole chain if one store would deviate. PCW orchestrated a system of bilateral vertical exchanges with all DIY chains, informing them of intended or applied price changes of their competitors, advertising campaigns, or actions to decrease excess stock, and mediating and appeasing disputes between them that came in the form of promotion campaigns or similar measures. Deviating DIY chains were ‘disciplined’.

This brought measurable results in terms of price increases for PCW products. In turn, Akzo Nobel and Tikkurila, also paint and varnish suppliers, introduced similar systems. However, the UoKIK did not find an illegal co-ordination between the three producers. PCW¹, Akzo Nobel², Tikkurila³ and retailers were fined by the Polish UoKIK⁴.

Sources: (Bolecki, 2011^[1]);

Notes: ¹ UOKIK Decision DOK-1-400/7/05/MB/AS; ² UOKIK Decision DOK1-410/1/06/AS; ³ UOKIK Decision DOK1-410/2/06/AS;

⁴ The fine was imposed for illegal retail price maintenance, not for horizontal collusion. However, the wording of the decisions, as outlined in (Bolecki, 2011^[1]), clearly identifies the practices as hub-and-spoke arrangements: “...the nature of the agreement in question was, in fact, horizontal – a cartel of retailers supervised and kept stable by the supplier. ... The result of such activities was a complete elimination of competition at the level of retail sales of Tikkurila products, hence, in the horizontal dimension.” (Bolecki, 2011, p. 33^[1]), quoting pt. 372 of the Tikkurila Decision, see Endnote 26.

26. Regarding the retail market structure, a very competitive market without market power on the purchasing side would not require an effort by the powerful supplier(s) to “help” the retailers pass on higher wholesale prices. They could just increase the wholesale prices, and the retailers would have to internalise most of the wholesale price increase, since they have few or no options to switch suppliers. On the other hand, if retailers had some degree of buying power, it would hurt even a powerful suppliers’ business to lose a retailer, and suppliers would feel the need to facilitate retail price increases.²² For this reason, the retail market structure supportive of supplier-induced price increases would likely be one with a limited number of players, or a mixed market structure with some powerful retailers and a number of smaller retailers that would follow the pricing strategies of the larger ones.

27. These findings are supported by observations made by the Bundeskartellamt on the market structure of the food retail and supply markets, where it investigated and fined RPM violations with a resemblance to hub-and-spoke arrangements (Box 13). Four large chains that combined 85 % of the market, and acted as “gatekeepers” dominated the retail market,

and the supply markets were also highly concentrated, with only few leading suppliers that generated most of their turnover with the leading retailers (Bundeskartellamt, 2017, p. 13^[2]).

28. Again, the overall welfare effects of such arrangements are negative, leading as they do to higher prices and lower sales volumes. The incentives of both market sides are aligned, as they allow the passing through of input cost increases to final consumers, and at least the stabilisation of margins on supplier *and* retailer side.

29. A case that displays characteristics of supplier- as well as retailer-induced co-ordinated retail price increases is the Belgian supermarket case, Box 6.²³

Box 6. Belgium – Drugstore, perfumery and hygiene products

In June 2015, the Belgian Competition Authority (BCA) found that 18 undertakings (7 retailers and 11 suppliers) had exchanged information between 2002 and 2007 in order to increase the retail prices of drugstore, perfumery and hygiene (DPH) products. Rather than exchanging information directly, retailers co-ordinated their conduct through their suppliers, each of which acted as a hub for its respective products.

In an attempt to systematise in a general frame the anticompetitive conduct, the BCA identified the following four phases:¹

1. An initial phase, where the supplier passed information to the retailers regarding the envisaged price increase of its own products;
2. A negotiation phase, where the supplier and the retailers discussed the proposed price increase, in particular concerning the amount of the increase, the implementation date and the participants. The final agreement was then shared with the other retailers;
3. An implementation phase, when the retailers applied the price increase as per the agreement, without any need for additional meetings between suppliers and retailers;
4. Finally, a control phase, when each supplier checked, with regard to its own products, the actual implementation of the co-ordinated price increase. If a retailer found out that one of its competitors was not abiding by the agreement, it contacted the relevant supplier, depending on the product, and requested its intervention.

All the parties settled and were subject to a total fine of EUR 174 million.²

Source: Public version of [Decision No. ABC-2015-I/O-19-AUD of 22 June 2015](#) in Case CONC-I/O-06/0038.

Notes:

¹ Ibid., para 31 – 34.

² An analysis of the case can be found in (Mattioli, 2016^[3]).

2.2.3. Supplier collusion

30. Another scenario to explain why suppliers would engage in retailer co-ordination resulting in lower sales volumes is the “classic” theory of harm for vertical restraints: supplier-level collusion on markets where pricing to the immediate next market stage (i.e. the wholesale price charged to retailers), is difficult to observe and monitor, and collusion instead focuses on the more easily observable final retail prices.²⁴

31. In this scenario, suppliers have to convince the retailers to stick to a certain price level, or to increase prices, and the mechanisms to achieve this are very much the same as in the previous scenarios: provide information and reassurance about the actual or intended pricing behaviour of other retailers, and enforce pricing discipline on the retailers.²⁵ This would allow for monitoring of the upstream cartel discipline. Since the price increase involves all suppliers, the welfare effects are negative. Prices go up, volumes go down.

32. On the supply side, an oligopolistic market structure would favour collusive practices, since it facilitates the cartel formation, and would make it harder for retailers to find supply alternatives, in case they would object to the price increases. The e-books case (Box 7) illustrates such a market structure, and the motivations of the suppliers involved.

33. On the retail side, an implementation can work with various market structures, but at different costs to the colluding suppliers. If the retail market consisted of a larger number of smaller competitors, the need for retail price co-ordination through the suppliers might be lower, since a market-wide price adjustment would be a natural outcome of a retailer-wide input cost increase on a competitive market. However, any co-ordination that could be required would be more costly, since a large number of retailers need to be aligned. If the retail market was oligopolistic, or consisted of a few larger players and smaller followers, the co-ordination effort would be lower for the suppliers, but the retailers would likely ask for their share of the pie, since they may have a degree of purchasing power.²⁶ As in the previous scenarios, some margin sharing could facilitate the discussions, and profits of suppliers and retailers could increase, while the final consumers pay the price.

Box 7. United States – e-books – the incentives

On 10 July 2013, the US District Court for the Southern District of New York found Apple liable of a per se violation of Section 1 of the Sherman Act for engaging in a conspiracy with five publishers to fix the retail price of e-books.

The Court described the motivation of the publishers:¹

Publisher Defendants, however, feared that the Amazon-led \$9.99 price for e-books would significantly threaten their long-term profits. ... would lead to the erosion over time of hardcover book prices and an accompanying decline in revenue. They also worried that if \$9.99 solidified as consumers' expected retail price for e-books, Amazon and other retailers would demand that publishers lower their wholesale prices, again compressing their profit margins. Publisher Defendants also feared that the \$9.99 price would drive e-book popularity to such a degree that digital publishers could achieve sufficient scale to challenge the Publisher Defendants' basic business model.

The publishers had met in private, to discuss what they perceived as a threat to the publishing industry. At the same time, they were all afraid of engaging in unilateral action against Amazon. The co-ordination was not successful before Apple entered the e-books market:

It was Apple's entry into the e-book business, however, that provided a perfect opportunity collectively to raise e-book prices. In December 2009, Apple approached each Publisher Defendant with news that it intended to sell e-books through its new iBookstore in conjunction with its forthcoming iPad device.

Publisher Defendants and Apple soon recognized that they could work together to counter the Amazon-led \$9.99 price.²

Apple presented a viable alternative to Amazon, and a welcome opportunity to decrease the publishers' dependence on Amazon.

On the platform related issues raised by the case, see Box 18.

Source: United States v. Apple Inc., 952 F. Supp. 2d 638 (S.D.N.Y. 2013). All five publishers settled, while Apple chose to go to trial and was eventually found liable for breach of Section 1 of the Sherman Act. Apple also lost on appeal to the Second Circuit Court, see United States v. Apple Inc., 791 F.3d 290.

Notes:

¹ United States District Court for the Southern District of New York, Civil Action No. 1:12-CV-2826, Competitive Impact Statement, April 11, 2012, pp 4-5.

² *Ibid.*, p 5.

34. Box 8 illustrates more traditional price cartels on the supplier side, where hub-and-spoke practices were discovered subsequently. Other cases like the Belgian DPH case (Box 6), or the Polish paint and varnishes case (Box 5) show striking parallels in the behaviours of the suppliers. However, neither the Belgian nor the Polish agency found any indication for direct collusion between the suppliers. What the cases do illustrate is that oligopolistic market structures on the supply side seem to favour supplier-induced hub-and-spoke arrangements.

Box 8. Supply-side cartels that trigger hub-and-spoke arrangements

The **German** food retail RPM cases (Box 13) seem to come close to hub-and-spoke arrangements in parallel with supplier collusion.¹ The investigations were preceded by cases dealing with illegal information exchanges between competitors in the beer, coffee, and confectionary sector – horizontal competition restraints involving suppliers that were later investigated and fined for RPM infringements, with at least strong connotations with horizontal retailer co-ordination (Becker and Vollmer, 2016^[4]).

The **Chilean** Competition Tribunal fined three supermarket chains for having formed part of a hub-and-spoke cartel for chicken in 2019.² The enforcer found that the three chains had each agreed on minimum prices for the chicken sold in supermarkets with two of their poultry suppliers. The supermarkets then policed the pricing arrangements, and suppliers intervened in case of deviations by individual supermarkets. The supermarkets knew about each other's agreements with the suppliers, and made their adherence to the agreements conditional upon the participation of the others. The conspiracy was uncovered during the investigation of a decade-long horizontal cartel between three poultry suppliers.

Sources: ¹ [Bundeskartellamt Press release, 15 December 2016](#), and detailed case information, see Cases B10-040/14, Haribo [case report](#); B10-041/14, [Ritter case report](#); B10-050/14, Melitta [case report](#); B10-20/15 Anheuser Busch [case report](#). ² Global Competition Review, 4 March 2019, [First hub-and-spoke fines issued in Chile](#).

35. The mirror image of the supplier cartel induced hub-and-spoke arrangement on the retail level would be an outright retailer cartel. Cartelised retailers could use their strong position vis-à-vis suppliers to ask them to engage in market wide RPM practices, with the aim to force retailers that do not form part of the cartel into the cartel pricing discipline.

2.2.4. *A powerful retailer promotes collusion on the supplier level*

36. The motivation for a retailer to act as a hub, and to co-ordinate the behaviour of upstream suppliers can be mainly linked to unilateral conduct theories of harm.

37. A powerful retailer can benefit from aligning the competitive behaviour of its suppliers, if the co-ordination targets their behaviour vis-à-vis the retailer's competitors: terms and conditions, wholesale prices, exclusion. All of which would either bring the retailer's competitors in line with his market strategy, and/or would decrease their competitiveness, prompt market exit or prevent market entry. This in turn strengthens the market power of the retailer. Classic examples are the Interstate Case (see Box 2), and the United States Toys case, where the dominant discount retailer Toys "R" Us (TRU) pressured the leading toy manufacturers into boycotting sales to so-called "warehouse" clubs, which sold at lower prices (Harrington, 2018, pp. 10-18_[5]). The indirect information exchange mechanism is very similar to the supplier co-ordinated hub-and-spoke arrangement, and suppliers face the same fears as retailers, and need the same assurances:

Mattel, Hasbro, Tyco, Little Tikes, Fisher-Price and others [suppliers] all wanted to know how competitors were reacting to TRU [retailer]. The manufacturers wanted assurances from TRU that their competitors were subject to the same rule. They informed TRU that they wanted a level playing field to avoid being placed at a competitive disadvantage.²⁷

38. The negative welfare effects derive from the (increased) unilateral market power, and consist of higher prices and/or decreases of non-price competition parameters, such as quality, variety, innovation, etc., and lower volumes.²⁸

39. It is hard to imagine such a scenario where the downstream hub would not enjoy significant market power. Otherwise, it would seem hard to convince the upstream suppliers to increase their dependence on this retailer, by harming other retail alternatives:

While most - if not all - of the toy companies disliked having to choose between what they saw as two bad options - (1) sell to TRU and restrict club sales, or (2) sell to the clubs and risk retaliation from TRU - the decision was made easier by the horizontal agreement which took the sting out of reducing sales to the clubs. From the manufacturers' point of view, the boycott was the second-best alternative.²⁹

40. However, the United States e-books case (Box 7 and Box 18) illustrates a case that can serve as an example for both, the supplier cartel and the retailer driven hub-and-spoke practice, and where a new entrant without market power encouraged the horizontal supplier collusion. Still, Apple was certainly a very credible new entrant, and Apple's interest was to gain access to e-books from all major publishers, and to have no less competitive retail prices than Amazon.

41. Unilateral conduct-based hub-and-spoke scenarios will be easiest to realise with a limited number of upstream suppliers. While there is always the risk that few and larger upstream suppliers would not find it in their interest to support an exclusionary retailer strategy, a high number of small upstream suppliers would make co-ordination rather costly to initiate and police for the downstream retailer. The Interstate and the Toys case illustrate how effective co-ordination can help to overcome the suppliers' reservations.

42. This kind of conduct could also work the other way round – a supplier with market power aligns the conduct of its retailers to foreclose supplier competitors, for example by organising collective restrictive shelving policies or exclusion from marketing campaigns,

etc. As already shown in the first subsection, suppliers that facilitate price and margin increases on the retail level, could benefit from the exclusion of supply side competitors that are not prepared to “support” their retailers in this way, in addition to increased margins. This could become the primary goal of a supplier with unilateral market power.

2.3. Main findings

43. The outlined scenarios demonstrate:
1. That hub-and-spoke arrangements can be welfare reducing. Retail prices will increase or stay above a competitive level, and sales volumes of the affected products decrease, and quality and other non-price parameters may also be affected negatively. They can reduce intra-brand as well as inter-brand competition; and
 2. That hub-and-spoke collusion is more likely when one or both sides of the market are characterised by some degree of market power, or act in parallel. This finding is in line with the general theories of harm in vertical restraints cases;³⁰ and
 3. That there are a number of ways in which retailer and supplier incentives can be aligned, and that some kind of margin sharing can serve as a catalyst for hub-and-spoke schemes.
44. Actual enforcement cases involved retailers active on the last stage of the market, and their suppliers. Hub-and-spoke arrangements are not limited to any particular product market, such as food retail, but can affect markets such as sports products, toys, books, drugstore items etc. Competition agencies may wish to be vigilant, when markets are characterised by a low number suppliers and/or retailers, experience margin pressure, and when repeated interactions between vertical market players are the norm. The mutual awareness of all suppliers and retailers of these repeated interactions and of parallel negotiations can enable and facilitate hub-and-spoke arrangements (Buccirossi and Zampa, 2013, p. 94_[6]).
45. A credible theory of harm should look for convergence of interests between the suppliers and their retailers,³¹ to answer the question why a supplier – or a retailer – would engage in practices that reduce competition on the opposite side of the market.
46. None of the outlined scenarios and theories of harm excludes the possibility of pro-competitive justifications and net benefits to consumers;³² however, so far none seem to have been argued or found in a hub-and-spoke case.

3. The legal assessment

47. This section aims to identify the basic steps and elements necessary to prove an illegal hub-and-spoke arrangement, and it will look at national experiences and established case law. However, the experience of jurisdictions with this type of infringement differs greatly.

48. The United States have a significantly longer tradition of cases and jurisprudence. To the best of the Secretariat’s knowledge, no other jurisdiction has comparable experience. Second comes the United Kingdom, with a number of cases that went through an appeal. Estonia also had a hub-and-spoke cartel fine confirmed in court (Box 3). Otherwise, neither the European Union, nor any of its other member states, had cases that were explicitly categorised as hub-and-spoke arrangements *and* went through judicial review.³³ The

Secretariat’s research has not produced such cases in other parts of the world either.³⁴ The analysis will therefore focus on the existing jurisprudence in the United States and in Europe, in particular the United Kingdom, and, where applicable, will include elements from the existing case law on information exchanges and facilitator liability.

3.1. A combination of a vertical and a horizontal restraint

49. Most competition regimes have clear rules and enforcement traditions governing enforcement against horizontal and vertical competition restraints. In a nutshell, horizontal restrictions of competition between competitors are regularly viewed with great suspicion, while vertical restrictions between actors on different market levels are widely recognised for their potential to have pro-competitive effects. This is well reflected in their legal treatment: a horizontal restriction is more likely to be treated as a per se violation (US) or an object violation (EU), while most vertical restraints will be assessed under a rule of reason (US) or based on their competitive effects or even block exempted (EU).

50. As outlined in Section 2, hub-and-spoke arrangements are forms of horizontal co-ordination that are implemented through vertical arrangements between actors on different levels of the market. This affects the legal analysis, as the lines between horizontal and vertical arrangements can become blurred, and the familiar rules of assessment may need rethinking. In addition, questions of liability arise that are less straightforward than in pure horizontal cases, and less well-established than in vertical cases.

3.1.1. Assessment in the United States

51. The Supreme Court of the United States has ruled on hub-and-spoke arrangements in multiple decisions since the 1930s, and has firmly established an **inference standard** (Orbach, 2016, p. 5^[7]) to establish the “**rim**” around the spokes:³⁵

52. According to the case law, the “**rim**” connecting the horizontal spokes, which are otherwise just individual parties to parallel vertical agreements, draws the line between presumptively legal vertical agreements and illegal horizontal agreements. The rim establishes the agreement needed to conclude a per se violation of Sec. 1 of the Sherman Act. Without the rim, the parallel vertical agreements can only be subject to a rule of reason analysis (Orbach, 2016, p. 3^[7]). The US courts have firmly rejected rimless wheel theories,³⁶ and considered such cases mostly as mere parallel conduct that does not imply an illegal agreement, without further ‘plus’ factors.³⁷

53. It is the rim that can be established by **inference** – thus “inference standard” – without the need to prove direct communication or agreements between the spokes; it suffices to conclude on the existence of a rim from the vertical co-ordination (Orbach, 2016, p. 4^[7]),³⁸ and circumstantial evidence can be used.³⁹ This is essential for hub-and-spoke arrangements, which are often characterised precisely by an absence of direct communication between the spokes – and direct agreement/communication would turn them into standard cartel cases.

54. Some case examples may illustrate how the existence of a rim can be inferred from parallel vertical relationships:

- In Interstate Circuit (Box 2), the only knowledge that the competitors on the spoke level had was that their competitors had received identical letters from Interstate, the movie exhibitor. The court was satisfied that this established the agreement to a sufficient degree, as all competitors had knowledge that the others had received

identical information, and they accepted it. Inference was further drawn from the unanimity of action and the lack of a benign motive. This was supported by the radical shift in industry practice that the new policies represented, and a lack of probability that this could be explained by chance.

- The analysis was refined in the Toys “R” Us (TRU) case.⁴⁰ TRU was the dominant discount retailer for toys and had pressured the leading toy manufacturers into boycotting sales to so-called “warehouse” clubs, which sold at even lower prices (Harrington, 2018, pp. 10-18^[5]). The agreement, the *rim*, was inferred from direct communication evidence between TRU and the toy manufacturers, showing that TRU engaged in “shuttle diplomacy”, communicating to each manufacturer that it was speaking to the other manufacturers in parallel, and assuring them of the intentions of the other manufacturers. This was further supported by a parallel and abrupt change in policy – fewer sales to warehouse clubs, contradictory to rational business policy – , and the manufacturers making their course of action conditional upon other competitors’ similar actions. Later on, TRU served as a central clearinghouse for complaints by the manufacturers. The court saw sufficient proof that the vertical agreements and actions in question effectively resulted in a horizontal agreement, and that they could not be seen as merely parallel, similar vertical agreements.
- In *Parke, Davis & Co.*,⁴¹ Parke Davis, a manufacturer of pharmaceutical products, had introduced a strict minimum RPM policy. This was communicated to all retailers, and Parke Davis announced that it would not sell to retailers that did not apply the policy. Wholesalers were not allowed to sell to deviating retailers, and Parke Davis informed a number of retailers that, if they adhered to the policy, their major competitors would do the same. Sales were resumed when a retailer indicated willingness to follow the RPM policy. The court found:⁴²

“But if a manufacturer is unwilling to rely on individual self-interest to bring about general voluntary acquiescence which has the collateral effect of eliminating price competition, and takes affirmative action to achieve uniform adherence by inducing each customer to adhere to avoid such price competition, the customers’ acquiescence is not then a matter of individual free choice prompted alone by the desirability of the product. ... The manufacturer is thus organizer of a price-maintenance combination or conspiracy in violation of the Sherman Act.”⁴³

- The latest case to confirm the validity of the inference standard was the Apple e-books case (Box 7 and Box 18). Apple argued that its relationship with the publishers comprised a series of parallel but independent vertical agreements. The court decision reiterates previous case law and confirms that the combined actions of Apple and the publishers constituted a *per se* violation of Sec. 1 Sherman Act. The case contains ample evidence of communication on the horizontal as well as vertical level, and shows that Apple acted as a central communication hub to reassure the publishers of the state of Apple’s individual negotiations with their competitors, and the results of such negotiations. The case also provides an example of a set of circumstances where the change of business strategy - from wholesale to agency model - was risky, if not suicidal, on an individual level, but made economic sense if done collectively.

55. Two other case examples serve to clarify under which circumstances a **rim cannot** be inferred:

- In PepsiCo,⁴⁴ Pepsi alleged, among other things, that Coca-Cola's distribution agreements with independent food service distributors (IFD), in which Coca-Cola reserved exclusivity for its products, constituted a per se illegal hub-and-spoke collusion organised by Coca-Cola between these IFD. The only proof offered in support of the hub-and-spoke allegation was that Coca-Cola assured all IFD that it applied this policy uniformly, and it encouraged the IFD to report violations. In rejecting the case, the court held that this case was clearly distinguishable from other hub-and-spoke cases, in particular because Coca-Cola's policy could not be compared to price fixing or volume reducing conspiracies.
- Musical Instruments dealt with a complaint alleging that several guitar manufacturers had entered into a horizontal conspiracy to apply a policy of minimum advertised prices, organised through parallel agreements with a large distributor, Guitar Center.⁴⁵ The court found that the complaint did not go beyond allegations of mere parallel conduct, and that even conscious parallelism in an interdependent market could not constitute a per se violation of Sec. 1 Sherman Act. No 'plus factors' that would allow to frame permissible parallel conduct as an illegal conspiracy were found.

56. Once the horizontal conspiracy, the rim, is proven to satisfaction, the conduct in question constitutes a per se violation of Sec. 1 Sherman act. This leaves no room for efficiency considerations.⁴⁶

57. In summary, while it might not be sufficient to show that the horizontal spokes acted in parallel, at the request of a common vertical business partner, or knew that similar policies would be adopted by their competitors, additional '**plus factors**' can help to establish an orchestrated horizontal conspiracy. The elements that can support such an inference include direct communications between the horizontal competitors, actions against independent business interests, actions that are conditional on a similar or identical course of conduct of competitors, and a significant departure from past business practices (Brass and Higney, 2016, pp. 3-6^[8]).

3.1.2. Assessment in Europe

58. In Europe, the United Kingdom has prosecuted a number of hub-and-spoke cartels, which led to infringement decisions that were subject to judicial review, and Estonia has also succeeded in court with one case (Box 3). The European Commission mentions hub-and-spoke arrangements in its horizontal and vertical guidelines,⁴⁷ but it has not dealt with cases of indirect co-ordination between suppliers and retailers so far.⁴⁸ Some member states have actively prosecuted hub-and-spoke agreements, but the cases are either still ongoing,⁴⁹ settled⁵⁰ or under appeal.⁵¹

59. Insights into the legal assessment under European law can therefore be derived mostly from the United Kingdom. The United Kingdom's national legal provisions on agreements or concerted practices have to be applied in a manner consistent with the treatment of corresponding questions arising under EU law, including the jurisprudence of the European courts.⁵²

60. At the outset, the United Kingdom's courts looked at the European jurisprudence on concerted practices and anti-competitive exchanges of information between competitors, see Box 9.⁵³

Box 9. Concerted practices and information exchanges between competitors - Europe

European case law has a long tradition of dealing with anti-competitive horizontal practices. Art. 101 (1) TFEU prohibits anti-competitive agreements as well as concerted practices.

A **concerted practice** is “a form of coordination between undertakings which, without having reached the stage where an agreement properly so-called has been concluded, knowingly substitutes practical cooperation between them for the risks of competition.”¹ This means that “each economic operator must determine independently the policy which he intends to adopt on the common market”. While this “does not deprive economic operators of the right to adapt themselves intelligently to the existing and anticipated conduct of their competitors, it does however strictly preclude **any direct or indirect contact** between such operators, the object or effect whereof is either **to influence** the conduct on the market of an actual or potential competitor **or to disclose** to such a competitor the course of conduct which they themselves have decided to adopt or contemplate adopting on the market.”²

A concerted practice further requires **reciprocal** contacts between the market players. For this to be established, disclosure of information from one side, and reception by the other side suffices: “where one competitor discloses its future intentions or conduct on the market to another when the latter requests it or, at the very least, accepts it.” This does not require formal commitments. “It is sufficient that, by its statement of intention, the competitor should have eliminated or, at the very least, substantially reduced uncertainty as to the conduct to expect of the other on the market.”³

With regard to the conduct, “a concerted practice implies, besides undertakings’ concerting together, conduct on the market pursuant to those collusive practices, and a relationship of cause and effect between the two.” To establish this, “...subject to proof to the contrary, which it is for the economic operators concerned to adduce, there must be a **presumption** that the undertakings participating in concerting arrangements and remaining active on the market take account of the information exchanged with their competitors when determining their conduct on that market, particularly when they concert together on a regular basis over a long period ...”⁴ This is commonly known as the “**Anic-presumption**”. “Depending on the structure of the market, the possibility cannot be ruled out that a meeting on a single occasion ... may, in principle, constitute a sufficient basis for the participating undertakings to concert their market conduct.”⁵

What matters is “the opportunity to take account of the information exchanged with their competitors in order to determine their conduct on the market in question and **knowingly substitute** practical cooperation between them for the risks of competition. Where it can be established that such undertakings successfully concerted with one another and remained active on the market, they may justifiably be called upon to adduce evidence that that concerted action did not have any effect on their conduct on the market in question.”⁶

Sources: ¹ [Case 48/69 ICI v Commission](#) [1972] ECR 619 (“Dyestuffs”), para 64. ² Joined Cases 40/73, etc., [Suiker Unie v Commission](#) [1975] ECR 1663, paras 173-174 ; emphases added. ³ [Joined Cases T-25/95 etc., 11 Cimenteries CBR v Commission](#) [2000] ECR II-49, paras 1849 and 1852. ⁴ [Case C-49/92 P Commission v Anic Partecipazioni](#) [1999] ECR I-4125, paras 118, 121. ⁵ [Case C-8/08 T-Mobile Netherlands BV v Raad van Bestuur van de Nederlandse Mededingingsautoriteit](#) [2009] ECR I-4529, para 59; emphasis added. ⁶ *Ibid.*, para 61, emphasis added.

61. As in the United States, the central question is under which circumstances a horizontal agreement or concerted practice can be established, based on purely or mostly indirect exchanges in a vertical supplier – retailer relationship. In other words - what establishes the link between two vertical information exchanges, that, individually, could be perfectly legal. In addition, questions of liability play an important role. When can individual market actors be charged for a concerted practice, when part of the allegedly illegal actions were beyond their direct control.

62. Two cases by the then Office of Fair Trading (OFT, now CMA), the Toys case⁵⁴ (Box 1) and the Replica Football Kit case (Box 10),⁵⁵ provided the basis for an in-depth legal review, in first instance by the Competition Appeals Tribunal (CAT)⁵⁶ and in second instance by the Court of Appeal (CA).⁵⁷

Box 10. United Kingdom – Replica sports kits

Umbro was a producer of authentic replicas of shirts, shorts and socks for English football clubs (replica kits). JJB was one of the major sports retailers, and Sports Soccer was an aggressive entrant to the retail market. Umbro had always provided recommended retail prices (RRP) for its products. When Sports Soccer started pricing aggressively below Umbro's RRP, competing retailers started to pressure Umbro to reduce the wholesale price so they could maintain their profit margins. JJB approached Umbro for it to stop Sports Soccer's aggressive pricing. In response, Umbro entered into bilateral communications with all retailers, to price at or above RRP, and additionally provided the information that other retailers were planning to do so. In the relationship to JJB and Sports Soccer, Umbro provided confirmation of the intended reaction of the other to the agreed RRP, after it had transported the initial message. Some retailers also held direct meetings, promoted by Umbro.

The OFT fined the parties for concerted behaviour and found that the RRP, while not illegal as such, operated as focal point for the concerted behaviour.

Source: (Harrington, 2018, pp. 27-31^[5]).

63. In second instance, the CA established criteria for the finding of a concerted practice that involves supplier(s) and retailer(s), which provided the basis for later cases as well:

*“if (i) retailer A discloses to supplier B its future pricing intentions in circumstances where A **may be taken to intend** that B will make use of that information to influence market conditions by passing that information to other retailers (of whom C is or may be one), (ii) B does, in fact, pass that information to C in circumstances where C **may be taken to know** the circumstances in which the information was disclosed by A to B and (iii) C does, in fact, use the information in determining its own future pricing intentions, then A, B and C are all to be regarded as parties to a concerted practice having as its object the restriction or distortion of competition.”⁵⁸*

64. It follows that three **objective**, conduct-related criteria need to be met in order to establish the triangular relationship, and the concertation between A and C, the horizontally competing actors:

1. A discloses future (pricing) intentions to the hub B;

2. B passes the information on to C; and
3. C uses the information in determining its own behaviour (pricing) on the market.

To ensure that neither A nor C would be held liable for behaviour that is beyond their control – the communication behaviour of B - the Court has added two *subjective* elements regarding the *state of mind* of A and C.

4. A must communicate the relevant information to B specifically with the intention that it will be passed on to a horizontal competitor; and
5. C, the horizontal competitor at the receiving end, must know why and under which circumstances B obtained the information by A.

65. This means that the individual vertical exchanges on future pricing intentions need to be linked to each other by intentions, actions, and circumstances that allow the conclusion that a concerted action has taken place. It may be already difficult to establish the existence of all factual elements, but the challenge is certainly how to establish the intentions and the state of mind of the retailers. The CAT has provided some insights and examples in a later case, Dairy (Box 4),⁵⁹ on its interpretation of the CA's conduct and subjective criteria.

66. The CAT held that an employee's actions can be attributed to the undertaking, which makes it possible to deduce the state of mind of an undertaking from that of its employees.⁶⁰ Inferring this state of mind is a matter of fact, and requires an analysis of the circumstances in which the exchanges happened, including the relevant person's statements. It is not about reading someone's mind.

- Indicia that would support intention and actual foresight on the part of A that B would pass on pricing information to C include reciprocity – A had previously received such information from C via B –, or the absence of legitimate commercial reasons for the communication of the relevant information.⁶¹ Inadvertent or accidental disclosures would be less likely to establish the requisite state of mind.⁶² Types of information that could raise concerns are individualised information, and information that is not in the public domain.⁶³
- In the case of C, if it thought that the information that it received via B was not credible, or mere speculation, then C would not be taken to have known the circumstances of disclosure from A to B. This would again require an assessment of the circumstances and contemporaneous evidence. In the event of C's knowledge of ongoing negotiations between B and A, it would be less credible for C to claim that it did not know the circumstances under which A obtained the information. Taking into account all the relevant circumstances of the disclosure of information from A, via B to C, "*... C must be shown to have appreciated the basis on which A provided the information to B, so that A, B and C can all be regarded as parties to a concerted practice.*"⁶⁴

67. The CAT has interpreted the final element, the actual use of the information by C, in the light of the Anic presumption (Box 11). Even if C were merely a recipient of the information about the future conduct of A, it can be presumed that C cannot fail to take it into account when determining its own future course of business. However, C can rebut the presumption.⁶⁵

Box 11. The “state of mind”-test in practice

To understand better how the United Kingdom’s CAT assesses the subjective elements of a hub-and-spoke exchange, the Dairy decision provides helpful insights. The following example summarises the part of the case,⁶⁶ where the CAT was satisfied that the evidentiary requirements were met:

A and C are retailers, while B is the supplier of cheese. The CAT confirmed that the objective, conduct related criteria 1-3 as outlined above (para 64) were met. The transmission of information from A to B was confirmed on the basis of indirect evidence, internal e-mails in possession of B that reported on or included information of communication with A. E-mails and witness statements showed that the information was then passed on to C.

A denied that it had intended or foreseen that B would pass on information about A’s future pricing behaviour to C. The CAT found that this lacked credibility: first, at the time the information was transmitted to B, A had made it clear that it was going to accept the cost price increase and would increase its retail prices, provided that other retailers would not undercut those prices; second, there was no legitimate business reason for the transmission of any of the pricing and timing information. Thus A may be taken to have intended, and in fact foresaw, that this information would be passed on to other retailers by B, to influence conditions on the cheese retail market.

C denied that the information had any value to it, and stated that it was mere sales hustle by a supplier. The CAT found that the assertions by C were not credible: C must have considered competitor-related future pricing information as relevant. Since C was B’s most important customer, it seemed unlikely that B could afford to cheat on C or provide incorrect information. Furthermore, C’s responsible purchasing manager was the recipient of the information, and she knew that the information on future pricing intentions and the timing thereof were not part of any legitimate business conversation between B and A, so the reason B had obtained this information was because A wanted this information to be spread to other retailers. C was also aware of the pressures facing the industry, and of the desperate attempts of cheese producers to raise cost and retail prices for cheese across the industry. C’s representative was facing internal pressure to increase cost prices, and had to meet ambitious margin goals at the same time. This created considerable uncertainty regarding the success of passing on the cost price increase to consumers. Finally, she knew that the situation was similar for comparable retailers and their purchasing representatives. All this proved the state of mind of C, and that C could be taken to have known the circumstances in which A had passed on the information to B.

Lastly, C did nothing to refuse the information, and to stop receiving this kind of information.

Source: Case No: 1188/1/1/11, [Tesco v. Office of Fair Trading](#), [2012] CAT 31, paras 221 – 281. * *Ibid.*, strand 2 of the 2002 initiative.

68. The OFT/CMA had no other successful hub-and-spoke enforcement action since.⁶⁶

69. There has been some debate regarding the interpretation of when someone “may be taken to intend”, which could mean **actual foresight**, or that an action would be **reasonably foreseeable**.⁶⁷ Neither the CA in the Toys/Sports Kits cases, nor the CAT in the Dairy case, did actually decide on this matter.⁶⁸

70. The ECJ's recent jurisprudence may shed some light here, and could provide a justification for adopting a lower standard – 'reasonable foreseeability' – which would amount to **constructive knowledge**. In *VM Remonts*, the ECJ ruled that an undertaking may be held liable on account of the acts of an independent service provider when, inter alia, "*that undertaking could reasonably have foreseen the anti-competitive acts of its competitors and the service provider and was prepared to accept the risk which they entailed.*"⁶⁹ This would seem to be a situation, which is comparable to the supplier-retailer scenario, as it addresses a communication in a non-horizontal relationship, where confidential information was transferred between two horizontally related actors by an intermediary.

71. The discussion in Europe about the correct approach to hub-and-spoke arrangements under European competition law is likely to continue. In the literature, the current standard as established by the CA and the CAT does not meet with unanimous consent. Important questions regarding the legitimacy of information exchanges in vertical supplier – retailer relationships seem unresolved, and some authors ask for additional research into market structures to explain when to expect an anti-competitive outcome from such exchanges (Odudu, 2011^[9]). Others call for a move away from a formalistic approach to an approach that focuses more on the economic incentives that lead to harmful collusive outcomes (Amore, 2016^[10]), (Buccirossi and Zampa, 2013^[6]).

72. Apart from the legal challenges, the proof of a hub-and-spoke infringement also raises significant practical enforcement challenges for the authorities (Groves, n.d.^[11]):

- At least two instances of exchange of information need to be demonstrated. Since many exchanges occur over the telephone or in personal meetings, information exchanges are rarely fully documented. Further, when documents exist, they are often ambiguous.
- Intent is rarely demonstrated by documentary evidence. It needs to be inferred on the basis of witness statements or from circumstantial evidence. This requires significant evidence beyond that referring to information exchanges, to assess the situation and mind-set of an industry at a specific point in time
- Pro- and anti-competitive behaviour in negotiations between suppliers and retailers can be difficult to distinguish. There are legitimate reasons to disclose future pricing behaviour, and aggressive statements and references to price or margin levels and observed competitor behaviour are part of negotiation strategies that aim at reducing wholesale prices.
- In retail markets with a certain number of suppliers and retailers, such practices, in particular when they result from retailer requests, are rarely limited to one product group, and may have been in force for a number of years. The number of parties to be investigated can quickly become very high, and can go beyond what a competition agency can successfully manage in terms of searches, IT, hardcopy evidence, and involved parties. This will then raise questions of prioritisation (see also (Becker and Vollmer, 2016, pp. 242-243^[4])).

73. The difficulties in investigating and proving a hub-and-spoke case may explain the very limited European case practice to date. At the same time, a number of European agencies has prosecuted and fined RPM violations, and the European Commission has recently enforced against RPM again. The relationship between RPM and hub-and-spoke arrangements will be analysed in Section 4.

3.2. Liability of the hub

74. Horizontal co-ordination between actors at the same level of the market is the main concern in hub-and-spoke cases, and the previous sections outlined how and when their liability for the infringement may be established.

75. A related concern in hub-and-spoke cases is the liability of the vertically related actor, the hub, for the horizontal infringement. Arguments in defence of the lack or limited liability of the hub are, first, that it is not part to the horizontal restriction of competition, as it is not active on the same market as the spokes, and second, that the hub was not necessarily aware of having been the instrument for a horizontal conspiracy by its vertical business partners.

76. In the United States, per se hub liability in hub-and-spoke cases was confirmed in Toys “R” Us⁷⁰ and Interstate.⁷¹ According to the case law, it needs to be demonstrated that the vertical player was a knowing participant in that agreement and facilitated the scheme. In the e-books case (Box 7 and Box 18), Apple conceded that it had, at best, unwittingly facilitated the publishers’ conduct. The courts were not convinced, and found that Apple had been aware of the publisher’s conspiracy, and had facilitated the agreement.⁷² The appeal court observed: “*Antitrust law has never required identical motives among conspirators when their independent reasons for joining together lead to collusive action.*”⁷³ The hub is as culpable as the spokes.

77. While the question of the hub’s liability was not addressed explicitly in the UK cases – in both cases the hub was fined for the infringement, without this playing a role in the appeal –, European jurisprudence has provided considerable guidance on the liability of cartel facilitators, as have US cases (Box 12). This jurisprudence is arguably applicable to hubs that facilitate collusion between the spokes. The courts have emphasised that the liability of the facilitator is a necessary condition for the full effectiveness of Art. 101 TFEU. Very similar to the US, the courts require an intention of the facilitator to contribute to the common objectives of the horizontal conspirators, and an awareness of the planned or effected conduct, as well as a willingness to take the risk.

Box 12. Cartel facilitator cases

In the EU AC-Treuhand Cases, AC-Treuhand was found guilty of facilitating cartels of producers of organic peroxides¹ and of heat stabilisers². AC-Treuhand is a consultancy firm which offers a range of services to national and international associations and interest groups,³ and it

“played an essential and similar role ... by organising a number of meetings which it attended and in which it actively participated, collecting and supplying to the producers concerned data on sales on the relevant markets, offering to act as a moderator in the event of tensions between those producers and encouraging the latter to find compromises, for which it received remuneration.”⁴

On appeal, the GC upheld the EC’s decision,⁵ and the ECJ rejected AC-Treuhand’s subsequent appeal. While Advocate General (AG) Wahl argued that AC-Treuhand could not be found liable, as it was neither active on the market affected by the cartel nor changed its behaviour on this market, and never was a competitive constraint on this market,⁶ the ECJ reached the exact opposite conclusions. It observed that such an argument would run counter the full effectiveness of Article 101 TFEU since “*it would not be possible to put a*

stop to the active contribution of an undertaking to a restriction of competition simply because that contribution does not relate to an economic activity forming part of the relevant market on which that restriction comes about or is intended to come about.”⁷

The criteria set out for facilitator liability by the ECJ are: (i) an intention to contribute by its own conduct to the common objectives pursued by the cartelists; (ii) an awareness (or reasonable foreseeability) of the actual conduct planned or put into effect by the undertakings in the pursuit of those objectives, and (iii) a willingness to take the risk.⁸

In *Eturas*,⁹ the provider of a common online travel booking system allowed travel agencies, which had acquired by contract an operating licence from Eturas, to offer travel bookings for sale on their websites through a uniform presentation method determined by Eturas. Eturas then introduced a cap on online booking discounts of 3% and informed the travel agencies accordingly. Eturas and most of the travel agencies were subsequently found liable for a concerted practice.¹⁰

ICAP was an interdealer broker and was found liable as a facilitator of the Japanese Yen (JPY) LIBOR cartel (February 2015) as it had circulated spreadsheets of quotes including price and volume information on JPY LIBOR rates to the participating banks, and had disseminated misleading information among panel banks.¹¹

In the US case *American Column & Lumber*, a trade association appointed a “Manager of Statistics” to serve as a “clearing house of the members, for information on prices, trades statistics, and practices,” facilitating an exchange of information among competitors (Orbach, 2016, p. 1_[7]).¹²

Realcomp was owned by associations of competing real-estate brokers, and maintained several real-estate related policies. The Court found that Realcomp was liable for an infringement of Art. 1 Sherman Act, as one of the policies governed the multiple listing service and this amounted to “a contract, combination, or conspiracy”.¹³ (Apostolov et al., 2016, p. 8_[12]).

In all the referenced cases,¹⁴ the facilitator was either expressly appointed or created by the cartelists to perform the co-ordination and information dissemination tasks (AC-Treuhand, American Column & Lumber, Realcomp), or provided a service that was closely related or supportive to the products/services sold by the cartel members (ICAP, Eturas).

Sources: ¹ [Case T-99/04 AC-Treuhand v Commission](#) EU:T:2008:256. ² [Case AC-Treuhand v Commission C-194/14 P](#) EU:C:2015:717. ³ (Kovacic, Marshall and Meurer, 2018_[13]) provide interesting insights into AC Treuhand’s role in multiple cartels. ⁴ [Case AC-Treuhand v Commission C-194/14 P](#) EU:C:2015:717, para. 9. ⁵ [Case T-27/10, AC-Treuhand v European Commission](#), EU:T:2014:59. ⁶ [Opinion of AG Wahl](#) of 21 May 2015 in Case C-194/14 P, *AC-Treuhand AG v European Commission*, EU:C:2015:350. ⁷ [Case C-194/14 P, AC-Treuhand v Commission](#), para. 36. ⁸ *Ibid.*, para. 30. ⁹ [Case C-74/14 Eturas](#) EU:C:2016:42. ¹⁰ [Case No A-97-858/2016](#), judgment of 2 May 2016, Lithuanian Supreme Court. ¹¹ EC’s decision of 4 December 2013 in [Case COMP/AT.39861 – Yen Interest Rate Derivatives](#); and Judgment of the General Court of 10 November 2017; [Case T-180/15, Icap and Others v Commission](#); and Judgment of the Court of Justice of 10 July 2019, [Case C-39/18 P](#). ICAP was held liable for facilitation of a part of the infringements the Commission had found, but the fine was annulled in the end due to a failure of the EC to state reasons for the calculation of the fine. The EC is expected to adopt a new decision on the fine, PARR, 6 August 2019 <https://app.parr-global.com/intelligence/view/prime-2883174>. ¹² *Am. Column & Lumber Co. v. United States*, 257 U.S. 377, 401 (1921). ¹³ *Realcomp II, Ltd. V. FTC* 635 F.3d 815, 824-825 (6th Cir. 2011). ¹⁴ Similar in [VM Remonts, \(Case C-542/14, Judgment of the European Court of Justice of 21 July 2016\)](#), which involved allegations of bid-rigging through an independent consultant who prepared tender submissions for several rival undertakings, sharing commercially sensitive information in doing so (OECD, 2018, p. 42_[14]).

3.3. Main findings

78. It is far from trivial to determine that a hub-and-spoke arrangement took place, and this is largely because courts and agencies acknowledge the potential benefits of even detailed information exchanges or conduct restrictions in the context of relationships between suppliers and retailers. These conduct restrictions and information exchanges are often pro-competitive, and will be in violation of competition law only in exceptional cases.

79. One exception to this occurs in instances of horizontal collusion orchestrated through a number of parallel vertical relationships, which aim at increasing prices for consumers, or excluding competing suppliers or retailers – i.e. hub-and-spoke arrangements.

80. When horizontal collusion is proven to the required degree, hub-and-spoke arrangements are treated in the same way as “ordinary” horizontal cartels. In the United States, they are per se violations of the Sherman Act, and in the EU, they would be object infringements of Art. 101 TFEU. The difficulty lies in proving horizontal collusion, as there are, contrary to the “ordinary” cartel cases, no or hardly any direct contacts between the competitors.

81. Thus, agencies need to rely on circumstantial evidence to infer the horizontal understanding and links between the spokes. Useful evidence in addition to parallel conduct are vertical exchanges of information that have no legitimate business reason, agreements conditioned on another competitor’s conduct, abrupt changes in industry behaviour, and actions that are contrary to individual businesses’ interests, and only make sense in an overall concerted action.

82. The inference of a horizontal agreement between the spokes, and of the required state of mind of all actors involved ultimately requires a coherent theory of harm that not only describes specific actions, but also identifies the incentives of all vertically related actors to act in a way that is to their individual benefit, but will end in harm to consumers.

4. RPM and e-commerce and hub-and-spoke

83. The previous sections discussed actual hub-and-spoke cases, their economics and their legal assessment. The following section will look at RPM, and, additionally, mostly e-commerce related phenomena such as pricing algorithms, and vertical restraints used by online sales platforms. They all can raise competition concerns similar to the ones in hub-and-spoke cases, and can support indirect horizontal co-ordination.

4.1. The role of resale price maintenance

84. A number of RPM cases brought by European agencies⁷⁴ in recent years included elements of hub-and-spoke arrangements,⁷⁵ and the previous sections demonstrated that RPM is a vertical competition restraint used to achieve hub-and-spoke collusion. This raises the question, if competition agencies should pay closer attention to RPM cases, because of the risk of a hidden hub-and-spoke agenda.⁷⁶

4.1.1. Experiences in Austria and Germany

85. The competition authorities of Austria and Germany have each imposed significant fines for RPM on a large number of retailers and their suppliers. The Austrian

Bundeszweibewerbsbehörde (BWB) dealt with 27 cases between 2012 and 2016 against numerous producers and food retailers. The fines amounted to a total of EUR 67.8 million, and concerned in particular dairy products, brewery products and non-alcoholic beverages.⁷⁷ The investigations started after investigations into horizontal collusion in the brewery sector.

86. The German Bundeskartellamt fined food manufacturers and retailers for vertical price fixing in proceedings that lasted from 2010 until 2016. 27 companies were fined a total amount of EUR 260.5 million. The investigations targeted the product categories confectionery, coffee, pet food, beer, body care products, baby food and baby cosmetics (see Box 13), and were partly triggered by horizontal collusion cases in the same sectors (see Box 8).

Box 13. Germany - food retail RPM cases

A number of examples illustrate why RPM cases in the German food retail sector bear at least a close resemblance to hub-and-spoke cases:

In one case, *AB InBev* was found to have moderated sales price increases by major retailers between 2006 and 2009. The retail prices were increased in response to wholesale price increases by AB InBev. The retailers would accept the wholesale price increase only under the condition that all retailers were going to increase their retail prices, so that the retailers could pass the increase on to consumers. AB InBev co-ordinated the increases, including implementation deadlines and target prices through repeated vertical exchanges of information with all retailers.

Gummy bear producer *Haribo* was active in and fined for RPM. Haribo had faced substantial difficulties in implementing higher wholesale prices, as one of the main retailers, the discounter Aldi, was reluctant to agree to a higher retail price in turn. The other retailers were reluctant to increase their retail prices, and to accept the increased wholesale price, as long as Aldi would not go along. Because of significant pressure by Haribo, Aldi finally agreed to a retail price increase. Haribo passed this information on to the other retailers, along with a request for them to increase their prices. The retailers were active in monitoring prices of their competitors and informed Haribo when a competitor undercut the agreed price level.

Melitta, a coffee producer, pursued a policy of recommended retail prices (RRP) that were in fact binding. Melitta aimed to gain more or less explicit agreement by the retailers to the implementation of new RRP levels on specified calendar weeks. It also offered one-off payments as financial incentives to retailers for doing so. Melitta communicated the intended and implemented price increases between the retailers. In case of serious undercutting of the RRP, Melitta would communicate to the retailer, “that this might lead to price competition on the part of other retailers”, and often retailers would offer to write letters to Melitta, explaining that the price had been a printing mistake or other error. Such letters were then submitted to other retailers.

Sources: Bundeskartellamt [Press release, 15 December 2016](#), and detailed case information, see Cases B10-040/14, Haribo [case report](#); B10-041/14, [Ritter case report](#); B10-050/14, Melitta [case report](#); B10-20/15 Anheuser Busch [case report](#).

87. The national cases inspired the BWB’s and the Bundeskartellamt’s guidance notes (Box 14), which emphasise a risk of horizontal retailer co-ordination related to minimum

resale price agreements, and reflect the observations and experiences made in the RPM proceedings.

Box 14. Guidance on RPM practices

In its non-binding Standpoint on Resale Price Maintenance,¹ the Austrian **Bundeswettbewerbsbehörde** (BWB) observes that vertical agreements such as those setting a minimum resale price may be used inter alia to achieve horizontal collusion between retailers, even in the absence of any direct contact between them. The typical scenario is one of “*a triangular relationship among a supplier and multiple retailers, [when] vertical agreements have the object or effect of achieving horizontal coordination concerning the fundamental competition parameters between retailers (by object or effect) and there is a concurrence of wills between the retailers.*”² In such or similar cases, since RPM has a horizontal dimension, it can be more damaging than pure RPM without elements of horizontal co-ordination. The BWB states that RPM amounting to horizontal co-ordination resulting from “*conscious and joint conduct of the retailers*”³ is a grave violation of competition law and thus is “*routinely punished with high fines.*”⁴ In a list of prohibited behaviours typically considered as RPM or even horizontal collusion, the BWB includes the case of disclosure of price-related information by a supplier to other retailers acquired through a contractual relationship with another retailer.

Similarly, in its Guidance note on the prohibition of vertical price-fixing in the brick-and-mortar food retail sector,⁵ the **Bundeskartellamt** warns companies about the potential anti-competitive nature of data exchanges, where such data are used “*to coordinate pricing strategies [...] between retailers with the supplier acting as a mediator, or between suppliers with the retailer acting as a mediator.*”⁶ Regarding its enforcement priorities, the German watchdog highlights that it “*attaches particular importance to infringements which go beyond vertical price fixing between suppliers and retailers [i.e., purely vertical agreements] by aiming to coordinate the competitive conduct between retailers or between suppliers [i.e., amounting to horizontal collusion at the retail or supply level], or to facilitate such coordination.*”⁷

The **European Commission** voices similar concerns of RPM facilitating horizontal collusion in its Vertical Guidelines.⁸

Sources: ¹ (Bundeswettbewerbsbehörde, 2013_[15]). ² Ibid., p. 4. ³ Ibid., p. 4. ⁴ Ibid., p. 17. ⁵ (Bundeskartellamt, 2017_[2]). ⁶ Ibid., para. 96. ⁷ Ibid., para. 104. ⁸ (European Commission, 2010_[16]), para 224.

88. The Austrian and German publications include examples of legitimate behaviour in supplier-retailer communications, and of behaviour that is illegal, or potentially risky, depending on the circumstances of the case. The identified critical behaviours resemble the ones identified for hub-and-spoke collusion: exchange of (pricing) information without a legitimate business reason, transfer of competitor pricing information between retailers, conditional agreements to price increases.

4.1.2. More case examples

89. Germany and Austria are not the only authorities to have fined RPM violations in cases that seem to bear close similarities to hub-and-spoke arrangements.

90. The Polish competition authority has imposed fines for RPM in two cases, where it has communicated clearly that the RPM was a tool to implement a hub-and-spoke

conspiracy. One prominent example is the DIY case (see Box 5). Another case is the Swatch case, where Swatch and several of its retailers entered into vertical RPM agreements, and the retailers at the same time used their vertical communication through Swatch to co-ordinate their market behaviour.⁷⁸ In two French cases, significant fines were imposed on both sides of an RPM violation. The French competition authority fined major perfume manufacturers *and* retailers for RPM practices in 2006 a total of EUR 44 million.⁷⁹ The decision states that the agreements stopped all price intra-brand competition between the retailers, and that some retailers were engaged actively in the monitoring of prices of competitors.⁸⁰ In a 2007 decision, toy manufacturers and retailers were fined EUR 37 million,⁸¹ and the press release summarises that “*The suppliers concerned reached agreements with their distributors in order to fix their products' resale prices in all the retail outlets. Suppliers also monitored the market and retail pricing policies, practices in which the distributors concerned actively participated.*”⁸²

91. The active participation of the retailers in the monitoring of their competitor’s prices distinguishes all cases mentioned in this section from plain RPM cases, and explains why both sides were fined by the agencies.⁸³

92. RPM practices which could raise horizontal concerns can additionally be triggered by the increased tendency of manufacturers to sell their goods via their own brick-and-mortar or online shops,⁸⁴ in parallel to sales through independent retailers. In such cases, the manufacturer is a direct competitor of its retailers, and not merely a supplier, and might seek to align their retail pricing behaviour with its own. The recent EC case against GUESS can serve as an example.⁸⁵

4.1.3. Main findings

93. RPM cases brought by European agencies show that RPM can be used to serve the interests of suppliers and their actively involved retailers to limit horizontal competition on retail prices, thus raising these prices for consumers. None of the cases seemed to have valid efficiency justifications.

94. Opting for an RPM case instead of a full-blown hub-and-spoke investigation could serve as a shortcut, at least under legal frameworks where RPM is considered an infringement by object, like in the EU.⁸⁶ Since RPM is the commonly used tool to implement hub-and-spoke arrangements, a competition agency that puts an end to the RPM will also disrupt the underlying hub-and-spoke arrangement. It cannot function without. The legal requirements for an RPM case are certainly lower. An agency needs to prove that a price related communication between a supplier and a retailer amounted to RPM, but no more than that. This would constitute an object violation of Art. 101 (1) TFEU and its national equivalents, without the need for further analysis of effects or efficiencies or of complicated tri- or multilateral relationships.

95. However, the choice of proceeding – RPM or hub-and-spoke – may influence the tools an agency can use for the investigation, as well as the level of fines, and the reputational damage to the offenders. The leniency system of a jurisdiction or its investigation powers such as dawn raids may only apply to horizontal competition violations. The rules and ceilings for fines may also differ for horizontal and vertical restraints, and they tend to be lower for vertical restraints.⁸⁷ In the end, agencies will have to make an informed choice that balances procedural efficiencies, the availability of investigation tools, the prospective level of fines, and the message they want to send with a case.⁸⁸

4.2. E-commerce

96. The legal and economic analysis and the cases presented so far all stemmed from the brick-and-mortar world. However, in many markets e-commerce plays an increasing role. In digital markets, prices can be set and easily adjusted with the help of pricing algorithms, and algorithms can play a role in monitoring the price setting behaviour of other market participants. Sales platforms can influence the price setting behaviour of suppliers and/or retailers on their and other platforms, with the help of across platform parity agreements (APPA) and most favoured nation clauses (MFN). Platforms may even take a direct influence on the pricing behaviour of independent sellers or service providers and align it.

97. Some of the e-commerce business models and technologies can facilitate indirect horizontal collusion and/or may amount to RPM. The following parts of the note merely aim at a brief description of the hub-and-spoke related challenges of a number of e-commerce related phenomena. How does the legal framework of analysis developed for the offline world apply to e-commerce business models? Does the legal framework need to be updated, and if so how? Are there cases, which can provide guidance?

4.2.1. Price setting/monitoring algorithms

98. The competition analysis of pricing algorithms in the hub-and-spoke context will benefit from a clearer distinction between the two different types of collusion frequently found under the headline of hub-and-spoke collusion in the digital realm.

99. Most of the debate on algorithms and hub-and-spoke collusion is actually a discussion of liability in typical cartel facilitator cases (see para 77 and Box 12). Ezrachi and Stucke have identified hub-and-spoke collusion as one of four categories within the spectrum of illicit conduct that could be influenced by artificial intelligence or algorithms (Ezrachi and Stucke, 2017^[17]).⁸⁹ In their hub-and-spoke scenario, competitors use the same algorithm or software to determine their pricing, or they employ the same IT service provider to optimise their pricing behaviour on the market, intentionally or not. This may then lead to collusive outcomes. These outcomes may amount to tacit collusion, if there is neither knowledge nor intent behind the parallel use of the same software or service provider. The evaluation may change when the parallel use is based on actual knowledge that other competitors base their pricing decision on the same software, or when the service provider is using the competitor information to maximise joint profits of all competitors (see also (CMA, 2018^[18])).

100. This is broader than the definition of hub-and-spoke used in this paper. The authors deal with indirect horizontal collusion that is realised through a common service provider or intermediary, not an independent market actor up- or downstream from the colluding entities, as discussed in this paper. The established case law on concerted practices and facilitators applies.⁹⁰

101. Turning to supplier – retailer hub-and-spoke arrangements, behaviours that help to implement hub-and-spoke arrangements in the brick and mortar world, like exchange of up-to-date retail pricing information and monitoring of retail prices, can be greatly facilitated and exacerbated with the help of price monitoring and tracking software (OECD, 2017, pp. 26-27^[19]). This is certainly true for online sales, where all pricing information is online, but can also apply to brick-and-mortar sales, when offline prices match online prices.

102. One of the findings in the European Commission's e-commerce sector inquiry was that 30% of the manufacturers systematically track the online prices of independent retailers of their goods, and 38% use price-tracking software for this purpose.⁹¹ As regards price monitoring of competitors' prices, 53% of the respondent retailers did so, and 67% used automatic software for this purpose.⁹² The Portuguese competition authority found that 37% of surveyed companies used specific software to track competitor prices, and of those 79% adjusted their prices in reaction to the information obtained through the algorithm (Autoridade da Concorrença, 2019^[20]).

Box 15. Russian Federation – the LG case

From 2014 to 2017, LG Electronics RUS had co-ordinated resale prices for LG smartphones with its independent retailers through a price monitoring software. LG had issued lists of recommended resale prices, and communicated to its retailers that it expected those prices to be implemented. In case of non-compliance, LG terminated shipments to the retailers. The retailers also used price-monitoring software to control the prices set by their competitors and informed LG when they found deviations from the RRP level, often asking explicitly for LG's intervention.

FAS Russia's investigation benefitted from lively email exchanges between LG and its retailers, which were discovered in the dawn raids undertaken by FAS Russia.

Sources: 2018 Annual Report on Competition Policy Developments in the Russian Federation to the OECD, pp 18 – 19; Presentation by FAS Russia at the [OECD-GVH Regional Centre for Competition in Budapest](#), 8 March 2018.

103. The implications of the use of price-tracking and monitoring software in the hub-and-spoke context, and for RPM schemes that display similar characteristics, are obvious. Where such a scheme is at work, the monitoring of adherence of all retailers to the arrangements is easier and can even be instantaneous, for suppliers and retailers alike. While the initial agreement about a price adjustment round will still require some direct, bilateral communication between suppliers and at least the main retailers, subsequent implementation and monitoring would not require direct communication about observed price discrepancies, except for the supplier, who would directly engage in discussions with only the deviating retailer. All the other retailers could trust that an intervention will take place, without alerting the supplier, and can monitor the success of the intervention through the price-tracking tool. This can reduce the amount of bilateral communication – making it harder for competition agencies to prove the collusion or market-wide RPM. However, the case examples in Box 15 and Box 16 show that retailers will often still make complaints, thus leaving a communication trail.

104. One could argue that instantaneous price tracking and adjustments could also destabilise a hub-and-spoke scheme, as deviations could result in an immediate downward spiral, and price-stabilising intervention might not be successful. The same argument can, however, be used in favour of stabilisation of hub-and-spoke arrangements as well. As all retailers are aware of the potential of immediate reactions by their competitors, there is little gain in deviation, since the time span in which the competitive advantage could be enjoyed would be very short (see also (OECD, 2017, p. 27^[19])).

Box 16. European Commission – Consumer electronics online price fixing

In 2018, the European Commission fined the consumer electronics manufacturers Asus, Denon & Marantz, Philips and Pioneer more than EUR 111 million for imposing fixed or minimum resale prices on their online retailers. This concerned consumer electronics goods such as kitchen appliances, notebooks and hi-fi products.

The producers used sophisticated price tracking tools to detect deviations from the minimum or fixed retail prices by the independent online retailers, in order to intervene swiftly. Their interventions focused in particular on the lowest pricing online retailers. Since many of the retailers, and in particular the largest online retailers, used pricing algorithms that would automatically adjust to the prices of the price mavericks, the manufacturers' interventions had a much larger impact on the market than just on the directly targeted retailers.

In this case, and despite the use of sophisticated monitoring and adjustment algorithms, there was still a lot of email communication between manufacturers and deviating suppliers, and complaints by competing retailers were frequent.

Sources: [Press release](#) European Commission, 24 July 2018, Antitrust: Commission fines four consumer electronics manufacturers for fixing online resale prices; see also decisions [Case AT.40465 – Asus](#), [Case AT.40182 – Pioneer](#), [Case AT.40181 – Philips](#), and [Case AT.40469 – Denon & Marantz](#).

105. In terms of the legal analysis of hub-and-spoke arrangements that target online pricing, the established frameworks apply. While the individual use of price monitoring and/or adjustment software as such cannot be considered illegal, as this would fall squarely into the box of intelligent adaptation to observed market behaviours of competitors and normal market interdependence (see Box 9 and Endnote 37), plus factors, as outlined in section 3, might be observed and lead to a conclusion that the practice infringes competition law.

106. As regards detection, hub-and-spoke cases that are facilitated through algorithms will still require direct communication on wholesale and retail prices, since algorithms cannot track information about future pricing intentions or (conditional) commitments of retail competitors. These communications still need to be transmitted in the traditional way. It is true that there might be less of a paper trail in the monitoring phase, as software can convey the required information quickly and reliably. However, recent RPM cases show that old habits die hard, and retailer complaints are still a frequent occurrence.

4.2.2. Online sales platforms

107. Competition restraints that relate to online sales platforms/marketplaces, or price comparison websites continue to be subject of heated debate,⁹³ as reflected in discussions held at the OECD.⁹⁴ This section will focus on some phenomena related to business models using an online intermediary, such as a platform, which raise competition concerns similar to hub-and-spoke arrangements. The restraints that have received particular attention by enforcement authorities are price parity agreements, also called most favoured nation clauses, and unified price setting for all (service) operators active on a platform.

Across platform parity agreements (APPA)

108. Retail platforms connect sellers and potential buyers of goods and services. They often offer additional services to enhance and improve the shopping experience, and to create trust, such as secure payment services, regulated return policies and customer evaluations.⁹⁵ Examples are online shopping malls such as Amazon marketplace, travel and hotel booking platforms, event ticket platforms, etc. Platforms usually earn a commission or fee per transaction,⁹⁶ and they compete with other platforms that offer similar services. To this purpose, platforms invest in services and product presentation, and they impose vertical restraints on the suppliers that use the platform. Different restraints commonly observed in the online platform context are set out in Box 17.

Box 17. Terminology – vertical restraints in the platform context

There is a certain amount of confusion in the discussion of vertical online-restraints, and often terms such as APPA, MFN, RPM or Retail Price MFN are used interchangeably. They do, however, depict different phenomena:

Across Platform Parity Agreements - APPA – describe contractual clauses between a seller (manufacturer, retailer or service provider) and an electronic trade platform by which the seller undertakes to charge on that platform a price that is not higher than the price charged on other platforms. ***Retail Price MFN*** is sometimes used as well,* and has the same meaning as APPA i.e. it is an agreement between a seller and the platform to charge no higher prices on this platform than on any other sales platform.

Most Favoured Nation Clauses - MFN - are clauses normally embedded in long-term contracts between two firms for the provision of intermediate goods or raw materials whereby the supplier undertakes to apply to the buyer the best price conditions among those applied to any other buyer.

Resale Price Maintenance – RPM – fixes the price to be charged to the next level customer by a wholesaler or retailer, imposed by the supplier.

The main difference between APPA and MFN is that with an MFN clause, the parties discipline the price of their own transaction, whereas with an APPA the parties agree on a pricing obligation that does not concern their transaction but rather a transaction that one of them (the seller) will conclude with a party outside the agreement – on another platform. In this respect, an APPA is similar to an RPM, as it will lead to uniform pricing on all platforms. However, an APPA differs from an RPM because the agreement does not fix a price or puts a limit to the price charged to the buyer, as the seller remains free to set whatever price it chooses, as long as the same item is not offered on other platforms at a better price.

Sources: (OECD, 2013^[21]), the background note was drafted by Paulo Buccirossi, and a later publication by Buccirossi was based on the note (Buccirossi, 2015^[22]).

Note: * See for example (Fletcher and Hviid, 2014^[23]).

109. These vertical restraints can raise similar competition concerns as RPM in the offline context, and can occasionally also play a role in a hub-and-spoke context. The best-known example for an APPA imposed by a retailer on its suppliers that served as a conduit for a horizontal alignment of the suppliers' business models, and led to an alignment of prices on the retail level, are the Apple e-books cases. Both the United States and the

European Commission prosecuted very similar business practices. While the United States prohibited the practices as a hub-and-spoke collusion, the European Commission did not use the terminology, but described the same practices in what it categorised as an illegal concerted practice that involved book publishers and Apple. We will focus on the US Department of Justice's case, which went successfully through two instances of legal review.⁹⁷ The European Commission's case concluded with an Art. 9 Reg. 1/03 commitment decision.⁹⁸

Box 18. United States – e-books case

In 2010, Apple wanted to enter the e-book market with the launch of its iPad and the iBookstore. Amazon was already active on the market with the Kindle reader and the Amazon online bookstore. All major publishers sold through Amazon based on a *wholesale* model, i.e. the e-books were sold to Amazon at wholesale price, and Amazon then set the prices for the e-books sold on its platform freely.

As described in Box 7, publishers as well as Apple were unhappy about the low retail prices set by Amazon, in particular for new releases and bestsellers. However, despite their concerns and a regular exchange of those concerns between them, the publishers did not manage to change Amazon's pricing policy. It was in this situation that Apple presented itself as a welcome retail alternative to the publishers.

Apple proposed an agency model to the publishers, where the publisher would set the retail prices for e-books sold via the iBookstore themselves, limited by maximum prices that depended on the pricing of the hardcover edition. Apple would receive a commission of 30% for each e-book sold. This, however, did not resolve the problem of low-price competition by Amazon, and Apple still faced the risk of being unable to sell e-books if Amazon's pricing strategy would not be changed. To this purpose, Apple included an MFN clause in the publishers' contracts, which obliged them not to sell e-books on the iBookstore at higher prices than on any other platform.* The only way the publishers could solve this problem was to move to an agency model in their contracts with Amazon as well, but individually this was a risky strategy, unless all publishers moved to the agency model at the same time.

Apple played a very active part in communicating between the publishers the state of its individual negotiations with the publishers, and their respective steps to negotiate agency contracts with Amazon, to provide the reassurance the publishers needed for this risky move. By March 2010, most of the major publishers had negotiated agency agreements with Amazon.

Note: * What is called MFN clause in the US e-books case is technically speaking an APPA, because this is precisely what was demanded – parity of lowest prices charged to final customers. See also (OECD, 2013, p. 28^[24]).

110. The e-books case displays all elements of a retailer/distributor induced hub-and-spoke arrangement. The book publishers benefitted from the co-ordinated move to agency sales models and realised higher prices after the move on a market-wide level.⁹⁹ Apple secured retail price equality for all e-books, and, with this, a launch of the iBookstore without a competitive disadvantage compared to the incumbent Amazon. There was an ample flow of information between Apple and all publishers, providing the much-needed

reassurance for the individually risky move, in addition to horizontal conversations between the publishers.

111. In this example, there is no real difference between brick-and-mortar and e-commerce hub-and-spoke. As described in Section 2, reaching an agreement will be more likely if all sides share the profits, and there is a certain degree of market power on both market sides,¹⁰⁰ to provide the leverage for the hub, and to facilitate the co-ordination of the spokes. It should also be noted that it was not the APPA as such that raised the competition concern, but the aligned and orchestrated switch to an agency model facilitated by the APPA, and the subsequent price alignment for e-books.

112. However, the use of APPA as such by online sales platforms has triggered significant enforcement action, which often addressed horizontal concerns.¹⁰¹ Final customers can compare retail prices offered on different platforms in real time, and switch immediately to the lowest price offer, if they can move freely between platforms. When the supplier/platform interaction is characterised by an agency model, where sellers set the prices they charge to customers independently, this can increase the platforms' incentives to influence the prices of independent sellers who operate across platforms.

113. While there are pro-competitive explanations for APPA, such as the prevention of free riding,¹⁰² they may also result in anti-competitive horizontal competition effects. One such effect can be the imposition of identical retail prices across all platforms, at least when APPA are a feature across all sales platforms. While it is true that an APPA does not prescribe a fixed or minimum retail price, and therefore cannot be legally characterised as an RPM, the effect is the same since it prevents intra-brand (or, to be more precise, inter-platform) price competition. Final consumers will face identical prices. A US Department of Justice report pointed out that a firm that is required "*to reduce prices to some only at the cost of reducing prices to all may well end up by reducing them to none*" (Bennett and Enrique González-Díaz, 2015, p. 38_[25]).^{103, 104} Thus, an APPA may well facilitate upstream supplier concertation, since it allows for easy monitoring and creates market transparency.

114. In addition to concerns about prices, APPA also create risks of horizontal and foreclosure effects between platforms. If platforms have market power, then an APPA facilitates increases of commission rates, without consequences for the sales realised on this platform. The sellers cannot switch, and are obliged to charge the same prices on all other platforms, regardless of the commission rates there. This will reduce platform competition on price (i.e. platform commissions),¹⁰⁵ and can also discourage the entry of low-frills platforms, as they would not benefit from lower commission rates. Due to the horizontal concerns, APPA are considered by some as the online world equivalent to RPM.¹⁰⁶ As put by (Fletcher and Hviid, 2014, p. 32_[23]), "... *Retail Price MFN clauses can be characterised as roughly equivalent to RPM 'at its worst'.*"

115. The enforcement actions that targeted MFN/APPA clauses as such featured concerns about a decrease of competition on the horizontal level, but did not address any indirect or direct collusion facilitated by the APPA. While it cannot be excluded that APPA can serve as an instrument to implement a hub-and-spoke collusion, as seen in the United States e-books case, this does not appear to be the primary competition concern in retail platform cases.

Unified price setting by platforms

116. As regards hub-and-spoke arrangements, platforms that take a direct influence on the prices the suppliers charge to the customers have raised some interest.¹⁰⁷ This is

different from an APPA, where the platform is not interested in the price as such. In theory, this should not pose serious challenges to the competition assessment, as it is a factual scenario, which is again best described as a horizontal hard-core cartel organised via a facilitator, and not a hub-and-spoke arrangement, which involves actors on different levels of a market with divergent interests. When suppliers use a platform service provider to align their prices, for example by using an algorithm to calculate the profit maximising price for all suppliers at a given point in time, this would typically be considered as a hard-core cartel between the suppliers, where the platform has the role of the paid intermediary or facilitator (see para 99). Prices can also be set uniformly by the platform itself, using an algorithm to find the profit maximising price for all suppliers – thereby maximising the platform’s commission. In both cases, the effect on the market is the same. Liability for price collusion depends on the level of awareness of the intermediary and the suppliers, and on the kind of relationship they are involved in (see Section 3 and paras 74 - 77). Another scenario are hybrid platforms, where the platform operator also acts as a seller himself, and thus competes with the other platform sellers on the retail level. This may give rise to horizontal competition concerns, as there might be an incentive for such a platform operator to apply hub-and-spoke mechanisms in his dealings with the independent sellers on its platform, or to implement other anti-competitive horizontal practices.¹⁰⁸

117. There are instances where price fixing by platforms has been claimed to amount to collusion. Platforms for taxi services with a unified pricing scheme are an example of this, and have proven to be quite challenging for competition enforcers.¹⁰⁹ The assessment needs to consider many different factors, and as the business models for ride sharing services may differ within and across jurisdictions, a unified enforcement approach cannot be expected (see Box 19). For example, where the service providers belong to a single economic entity as the platform, or are employees of the platform, unified pricing would not be an anti-competitive agreement, as there are no independent actors involved. In all other cases, when the taxi service providers remain (truly) independent, the traditional rules on co-ordinated pricing behaviour would theoretically be applicable (Nowag, 2018, pp. 8-20^[26]), and the platform could be considered as the hub that co-ordinates the pricing behaviour of the drivers.

Box 19. Enforcement approaches to unified price setting for taxis

A 2016 US class action alleged that Uber had orchestrated a price fixing agreement for its drivers through its algorithm setting the price for rides. The antitrust suit was later dismissed.¹

The Competition Commission of India (CCI) in 2018 dismissed allegations against Uber and Ola for concerted action between their drivers, and RPM in the vertical relationship to their drivers. For the hub-and-spoke allegation, the CCI decided that the drivers had not colluded with each other, but had merely acceded to the algorithmic platform prices. On RPM it concluded that because of a lack of resales of taxi services, RPM could not be asserted.²

Luxembourg’s competition authority decided in 2018 that Webtaxi, an application where individual taxi drivers can sign up and charge their customers a price calculated by the Webtaxi algorithm, benefits from an individual exemption under Art. 101 (3) TFEU, and the equivalent national provision. The agency found that the algorithmic price co-ordination amounted to horizontal price fixing and was as such a restriction of competition

by object, but the practice in question met all the requirements of the efficiency defence. Without the uniform price, the service would not be of interest to the customers.³

In 2017, in an application for preliminary ruling before the European Court of Justice, Advocate General Szpunar argued in his Opinion that Uber should be considered an independent provider of taxi services, regardless of the status of its drivers. The opinion expressly does not take a stand on matters of employment or competition law.⁴

Sources: ¹ (Nowag, 2018^[26]), [Spencer Meyer v Travis Kalanick, 15 Civ 9796](#); 2016 US. Dist. Lexis 43944; [Meyer v Kalanick, 291 F. Supp. 3d 526 \(S.D.N.Y. 2018\)](#). ² Competition Commission of India, [Case No. 37 of 2018](#). ³ Conseil de la Concurrence, [Decision No 2018-FO-01](#), 7 June 2018. ⁴ Opinion AG Szpunar, [Case C-434/15 Asociación Profesional Elite Taxi](#) EU:C:2017:364.

118. The case from Luxembourg demonstrates that even in horizontal price fixing cases facilitated through a platform intermediary an efficiency defence can be successful. The central questions are if there would be a successful business model without the co-ordinated pricing; what would the impact on competition be on a market-wide level; would consumers benefit sufficiently, and are there less restrictive means to achieve the same or a very similar product or service offering? Here a difference in the enforcement approaches between Europe and in the United States might prove to be significant. Hard-core restraints such as horizontal price fixing are a competition infringement by object under Art. 101 (1) TFEU. However, even these infringements can benefit from an individual exemption under 101 (3) TFEU,¹¹⁰ provided they satisfy the conditions laid down in Art. 101 (3) TFEU.¹¹¹ This is different for per se violations of Sec. 1 Sherman Act, which does not allow for efficiency justifications.¹¹²

4.2.3. Main findings

119. While it may be tempting to argue a renaissance of hub-and-spoke cases fuelled by new technologies, algorithms, platforms and online pricing, the reality looks less exciting so far. When algorithms are used to co-ordinate pricing behaviour between firms, this will be better characterised as an outright horizontal collusion, or a horizontal collusion achieved through a facilitator or intermediary. The same is true for platforms, which directly impose prices on the sellers of goods or services, often using an algorithm. The horizontal collusion does not emanate from an often inherently legal vertical relationship and exchange between a supplier and its retailers (or vice versa), but is the result of an exchange or co-ordination that has no other purpose than the collusive outcome.

120. However, online pricing and monitoring can certainly facilitate hub-and-spoke arrangements, because they increase market transparency, facilitate monitoring, and enable immediate reactions to deviations from the common scheme. Retail platforms may assume the role of the hub to align the competitive behaviour of the suppliers active on the platform, just as in the offline world.

121. Enforcers will need to keep track of online tools and their use, and e-commerce business models, and they may need to step up their IT capacities, but the legal framework for the assessment of hub-and-spoke arrangements still seems to be fit for purpose.

5. Concluding remarks

122. Hub-and-spoke arrangements are not a mere theoretical construct. Their underlying rationale is simple: they offer an opportunity for retailers and their suppliers to curtail competition on one or both market sides, to the detriment of final consumers who literally pay the price. The involved suppliers and retailers benefit through shared higher margins, or the exclusion of competitors. Market power on one or both sides of the market, and oligopolistic market structures will facilitate indirect collusion.

123. Discussions on retail prices between suppliers and retailers seem to offer an easy way in to hub-and-spoke arrangements. While such discussions are often part of a perfectly legitimate exchange between suppliers and individual retailers, this changes when past and intended pricing by competitors, own intentions conditional upon competitors' behaviours, or observed competitor prices are discussed. A number of European agencies have prosecuted such practices as RPM, which is an option in jurisdictions where RPM is a hard-core violation.

124. E-commerce and online sales do not change the legal or economic nature of hub-and-spoke exchanges or RPM, but they facilitate them to a certain extent, as increased market transparency facilitates monitoring and instantaneous reactions to deviations. At the same time, fewer explicit exchanges between suppliers and retailers may be required to keep the scheme going, which will make it harder for competition agencies to find the required evidence.

125. Proving a hub-and-spoke arrangement is not trivial, because of the indirect nature of the horizontal conspiracy. Due to the lack of direct evidence for exchanges between competitors, competition agencies have to rely on indirect and circumstantial evidence, and need to analyse multiple communication streams that connect a supplier and a multiple of his retailers, or vice versa. The aim is to show the horizontal component to the required degree, the rim that connects the vertical exchanges, and the intentions and states of mind of the parties involved in the exchange. Demonstrating these elements is possible, but courts have rightly established high standards that must be met, to prevent the prosecution of legitimate and efficiency enhancing vertical exchanges, or of actors unaware of their role in the scheme.

126. Any agency seeking to prosecute a hub-and-spoke arrangement would be well advised to present a consistent and credible theory of harm. Would the market structure and conditions explain why and how the economic incentives of suppliers and retailers are aligned, and how the gains from the anti-competitive conduct are shared? Can a suspect behaviour be explained by a legitimate purpose?

127. The topic will remain challenging, for competition enforcers and businesses alike. Enforcement should not chill and deter legitimate business conduct between vertically related players. More guidance, based on insights from enforcement experience, will certainly be welcome. Enforcement will benefit from more research into market structures, behaviours and incentives, which will allow us to better distinguish between anti-competitive and legitimate vertical exchanges in the supplier – retailer relationship. This should also facilitate screening for and prioritisation of enforcement cases.

128. Lastly, legal certainty can only be achieved when agency decisions are challenged in court. Questions that come to mind are: shouldn't RPM cases with a hub-and-spoke agenda go all the way, and address the horizontal instead of merely the vertical infringement? Do the advantages offered by a settlement outweigh the missed opportunity

for creating a legal precedent? Is a commitment decision the right path of action in the case of a hard-core horizontal restriction of competition?

Endnotes

¹ See for example [Case T-80/15](#) (2017); *ICAP v. European Commission*, paras 43-45, on the EU case law on “by object” restrictions.

² Theoretically, under the European legal framework applicable to horizontal collusion, Art. 101 TFEU, anti-competitive effects could be offset by efficiencies with adequate consumer participation, Art. 101 (3) TFEU. In more detail (Whish and Bailey, 2018, pp. 160-161_[27]).

³ Why it would make economic sense to involve yet another party in the illegal activity, which bears an increased risk of leaks, detection, and distortion of information for the cartelists, is another question (Harrington, 2018, p. 4_[5]). However, it does not alter the assessment of the predominantly horizontal nature of collusion.

⁴ This does not refer to cartels that use a facilitator, which is not active on an upstream or downstream market in relation to the spokes. While the communication in these cases may also be mostly indirect, the horizontal co-ordination is the main motivation for the communication through and with the facilitator. There is no potential pro-competitive explanation. This puts these types of cases in the per se or by object infringement categories.

⁵ See for example (Buccirossi and Zampa, 2013, pp. 95-96_[6]); (Odudu, 2011, pp. 213, 230-231_[9]); Case Nos 2005/1071, 1074 and 1623 [Argos Limited and Littlewoods Limited](#) v Office of Fair Trading and JJB Sports Plc v Office of Fair Trading (2006) EWCA Civ 1318, para 106.

⁶ Economic theory suggests that a supplier would only engage in vertical restrictions and the limitation of intra-brand competition if it serves to maximise his overall sales volumes and to improve his position in the inter-brand competition (OECD, 2013_[24]). This behaviour would be welfare enhancing, as inter-brand competition is the relevant driving force; it ensures that pricing cannot go above the competitive level, and that the supplier maximises its sales volumes. See also (OECD, 2010, pp. 30-32_[57]).

⁷ For more detailed elaborations on the pro- and anti-competitive effects of vertical restraints, and their legal treatment: (OECD, 2013, pp. 10-16_[21]); (European Commission, 2010, pp. 22-25_[16]); (Whish and Bailey, 2018, pp. 637-642_[27])

⁸ *Ibid.*

⁹ See for example: (Sahuguet and Walckiers, 2014, p. 2_[31]); (Odudu, 2011, p. 217_[9]); (Overd, 2010_[35]). (Van Cayseele, 2014_[29]) show numerous reasons, why the intermediation of a common supplier would not be trustworthy, economically useless or unlikely to be faster than direct policing of the anti-competitive agreement by the spokes.’

¹⁰ See also (Overd, 2010_[35]).

¹¹ See for example: (European Commission, 2004, pp. 101-102_[59]); (European Commission, 2010, pp. 34-35_[16]); (OECD, 2013, pp. 15-16_[21]).

¹² FN 5, OFT case, para 92.

¹³ It will often be relatively easy to re-engineer wholesale prices from publicly observable retail prices, and to exercise pressure on the supplier to grant equally favourable conditions to the other retailer (Buccirossi and Zampa, 2013, p. 95_[6]).

¹⁴ Similar reasoning: (Odudu, 2011, p. 217_[9]); (Buccirossi and Zampa, 2013, p. 97_[6]).

¹⁵ See also (Bennett et al., 2011, p. 1291_[48]).

¹⁶ FN 5, OFT case, para 47.

¹⁷ See also (Overd, 2010_[35]).

¹⁸ It is easily overlooked that retailers also compete in their own right. They are not merely distributors for the suppliers' products. In particular, when markets are mainly characterised by a limited number of retail chains, they are brands themselves. So any alignment of prices for the products they sell would not "only" reduce intra-brand competition for the affected product(s), but also inter-brand competition of the retail chains themselves. See also (Buccirossi and Zampa, 2013, p. 98_[6]).

¹⁹ (Sahuguet and Walckiers, 2014_[31]) reach the conclusion that when retailers have bargaining power, suppliers policing the downstream collusion, i.e. hub-and-spoke arrangements, will be detrimental to consumer welfare. Similarly, (Dobson and Waterson, 2007_[47]), albeit in an analysis of the welfare effects of RPM. See also (Amore, 2016_[10]).

²⁰ This does not necessarily mean that the downstream retail market would not be competitive as such, even with a limited number of large retailers. They may enjoy buyer power, but face significant competition on the retail market at the same time. It can probably be said that the more competitive the downstream retail market is, the more likely it will be that a few large retailers can threaten significant harm to their suppliers, as they will not hesitate to delist and switch suppliers if the product does not bring the required margin. With competitive upstream markets, this threat is credible and potentially very harmful to the individual suppliers, but not to the retailers.

²¹ Witness statement David Bottomley, in [Decision of the Office of Fair Trading No. CA98/8/2003, Hasbro/Argos/Littlewoods](#), para 48.

²² It should be kept in mind that suppliers often produce a range of products, for example in the food or cosmetics sector. While they may have strong market positions for some products/brands in the respective sector, this may not be true for all their products. This would provide retailers with a credible potential to threaten delisting of products where the supplier has less power, and can be more easily replaced, which in turn would make it more likely that suppliers have an interest in facilitating a retail level price increase.

²³ Public version of [Decision No. ABC-2015-I/O-19-AUD of 22 June 2015](#) in Case CONC-I/O-06/0038 - Hausses coordonnées des prix de vente de produits de parfumerie, d'hygiène et de droguerie, para 31: »Dans la phase initiale, l'initiateur d'une hausse coordonnée de prix de vente était soit le fournisseur soit le distributeur. Quel que soit le cas, le fournisseur transmettait aux distributeurs concernés des informations sur la hausse de prix coordonnée envisagée, exclusivement pour ses propres produits.»

²⁴ For example (Bennett et al., 2011, pp. 1290-1291_[48]).

²⁵ (Jullien and Rey, 2007_[41]) have shown that in this context – supplier collusion – RPM can be effective to facilitate the upstream collusion. The implementation of RPM on the retail level will often require the mechanisms described for hub-and-spoke arrangements, in particular if the retailers have some degree of market power, to convince all retailers that they will not suffer losses if they agree to the RPM.

²⁶ Even if suppliers cartelise, powerful retailers may have outside options, such as reverting to own brands, supporting cartel outsiders, or creating new suppliers.

²⁷ (Harrington, 2018, p. 13_[5]), from Toys "R" Us, 126 F.T.C. 415 (F.T.C. September 25, 1997), at 436-7.

²⁸ More on non-price competition parameters can be found in (OECD, 2018_[60]).

²⁹ (Harrington, 2018, p. 12_[5]), from Toys "R" Us, inc. v. FTC. 126 F.T.C. 415, 585 n.49 (F.T.C. October 14, 1998).

³⁰ See FN 7.

³¹ See also (Buccirosi and Zampa, 2013, p. 93_[6]), who suggest that vertically convergent interests could be a useful screen for harmful hub-and-spoke arrangements.

³² This balancing of pro- and anti-competitive effects of a vertical restraint would take place under the rule of reason analysis (US), unless the conduct in question is considered to be a per-se violation, and in the application of Art. 101 (3) TFEU.

³³ Most national cases with strong connotations with hub-and-spoke infringements were prosecuted as RPM cases (for example the Polish DIY case, Box 5, or the German and Austrian food retail cases, Box 13, accordingly, the legal review focused on the vertical restraint, the RPM, and not the horizontal collusion implemented through vertical restraints. The Belgian Drugstore products case (Box 6) was settled, and no appeal was launched.

³⁴ Australia has a number of cases where horizontal collusion was facilitated through an association or a service provider (Apostolov et al., 2016_[12]), but these are not hub-and-spoke cases in a retailer-supplier relationship. This paper focuses on the cases where the co-ordination was achieved through a vertical business relationship.

³⁵ Judgements of the US Supreme Court in: [Interstate Circuit, Inc. v. United States](#), 306 U.S. 208 (1939); [United States v. Mansonite Corp.](#), 316 U.S. 265 (1942); [Klor's, Inc. v. Broadway-Hale Stores, Inc.](#), 359 U.S. 207 (1959); [United States v. Parke, Davis & Co.](#), 362 U.S. 29 (1960), [United States v. Gen. Motors Corp.](#), 384 U.S. 127 (1966).

³⁶ For example [PepsiCo](#), 315 F.3d, at 110-11; [Dickson](#), 309 F.3d at 198-205, [Impro Products](#), 715 F.2d at 1279-80, [Elder-Beerman Stores](#), 459 F.2d at 153-54; [Mylan Labs](#), 770 F.Supp. 1053; Source: (Orbach, 2016_[7]), Fn 27.

³⁷ "Parallel action is not, by itself, sufficient to prove the existence of a conspiracy; such behavior could be the result of "coincidence, independent responses to common stimuli, or mere interdependence unaided by an advance understanding among the parties." – from [United States v. Apple, Inc.](#), 791 F.3d 290 (2d Cir. 2015) at 315, quoting *Twombly*, 550 U.S. at 556 n. 4, 127 S.Ct. 1955. The decision then summarises the US case law on parallel conduct, and how to prove a conspiracy.

³⁸ However, different in *Klor's*, Fn 35, where the court seemed to require direct horizontal co-ordination evidence (Orbach, 2016, p. 11_[7]).

³⁹ "When circumstantial evidence is used, there must be some evidence that "tends to exclude the possibility" that the alleged conspirators acted independently. *Monsanto*, 465 U.S. at 764, quoted in *Matsushita*, 475 U.S. at 588." – from [Toys "R" Us, Inc. v. FTC \(TRU\)](#), 221 F.3d. 928.

⁴⁰ [Toys "R" Us, Inc. v. FTC \(TRU\)](#), 221 F.3d. 928.

⁴¹ See Endnote 38.

⁴² The case is also interesting, as it confirmed that the case went beyond the limits of the Colgate doctrine (*United States v. Colgate & Co.*, 250 U.S. 300 (1919)), which protects unilateral refusals to deal.

⁴³ *Ibid.*, pp 18-19.

- ⁴⁴ [PepsiCo, Inc., v The Coca-Cola Company](#), 315 F.3d 101.
- ⁴⁵ [Musical Instruments And Equipment Antitrust Litigation](#), 798 F.3d 1186 (2015).
- ⁴⁶ See for example [General Motors, 384 U.S.](#) at 142. This constitutes a major difference to the approach under European law, where a violation of Art. 101 (1) TFEU can be outbalanced by efficiencies, Art. 101 (3) TFEU. For a more detailed discussion on the application of the per se standard as opposed to the rule of reason analysis, and further references to case law, see (Orbach, 2016, pp. 11-14^[77]).
- ⁴⁷ See (European Commission, 2011^[62]), para 55; and (European Commission, 2010^[16]), paras 212, 224.
- ⁴⁸ The European Commission, in *Musique Diffusion Francaise*, had found a concerted practice of Pioneer exclusive distributors with the aim to prevent imports to France. However, while part of the violation consisted in vertical exchanges, there had also been joint meetings of Pioneer and the distributors, and with this a clear direct exchange between competitors, where Pioneer had a facilitating role. [Joined Cases 100-103/80, SA Musique Diffusion Francaise v. Commission](#), (1983).
- ⁴⁹ For example Portugal, see GCR, 25 March 2019, [Portugal sends first hub-and-spoke SO](#).
- ⁵⁰ For example Belgium, see Box 6.
- ⁵¹ For example Latvia, see GCR, 12 October 2017, [Latvia fines hub-and-spoke cartel](#).
- ⁵² See CAT in [Tesco v. OFT, Case No: 1188/1/1/11, \[2012\] CAT 31](#), para 42. This may change after the United Kingdom leaves the EU, but it is the legal framework that applied to the UK case-law until then.
- ⁵³ On the US practice, where agencies and courts have identified instances where exchanges of information can be a facilitating factor for collusion and therefore should be prohibited, (OECD, 2010, pp. 40-42^[57]), also (Prewitt and Fails, 2015^[34]).
- ⁵⁴ OFT, [Decision No. CA98/8/2003](#), Agreements between Hasbro U.K. Ltd, Argos Ltd and Littlewoods Ltd fixing the price of Hasbro toys and games.
- ⁵⁵ OFT, [Decision No. CA98/06/2003](#), Price-fixing of Replica Football Kit.
- ⁵⁶ [Cases 1021/1/1/03 and 1022/1/1/03](#), [2004] CAT 17, JJB SPORTS PLC and Allsports Limited v Office of Fair Trading.
- ⁵⁷ Case Nos 2005/1071, 1074 and 1623Argos Limited and Littlewoods Limited v Office of Fair Trading and JJB Sports Plc v Office of Fair Trading (2006) EVCA Civ 1318, para 141; https://www.catribunal.org.uk/sites/default/files/Jdg_CoA_1014Argos_Little_JJB191006.pdf (both cases were joined before the Court of Appeal).
- ⁵⁸ Case Nos 2005/1071, 1074 and 1623Argos Limited and Littlewoods Limited v Office of Fair Trading and JJB Sports Plc v Office of Fair Trading (2006) EVCA Civ 1318, para 141; https://www.catribunal.org.uk/sites/default/files/Jdg_CoA_1014Argos_Little_JJB191006.pdf, (emphases added).
- ⁵⁹ Case No: 1188/1/1/11; [Tesco v. Office of Fair Trading](#), [2012] CAT 31.
- ⁶⁰ *Ibid.*, paras 60 – 62.
- ⁶¹ *Ibid.*, para 72, with the example that there are a number of legitimate business reasons for disclosing intentions about future price reductions to a supplier, but less so for maintenance or increase of prices. However, legitimate reasons cannot be excluded for the latter.
- ⁶² *Ibid.*, paras 64 – 74.
- ⁶³ *Ibid.*, paras 350 – 354.

⁶⁴ Ibid., paras 82 – 85.

⁶⁵ Ibid., para 86.

⁶⁶ The allegations of unlawful A-B-C exchanges in the Tobacco case, issued in 2008, were dropped after the OFT had received the responses to its statement of objections (Odudu, 2011, p. 214^[9]). The remainder of the case, consisting of allegations of bilateral illegal vertical pricing arrangements and pricing parity agreements between tobacco manufacturers was successfully appealed, without the CAT ruling on the substance of the allegations (<http://www.offt.gov.uk/OFTwork/competitionact-and-cartels/ca98/decisions/tobacco>). The investigations into A-B-C infringements between suppliers and retailers in the grocery sector were closed by the OFT in 2010, on “administrative priority grounds”. However, the OFT stated that “The decision to close this investigation should not be taken to imply that the OFT would not prioritise suspected A-B-C information exchanges in the future.” (<https://www.gov.uk/cma-cases/uk-grocery-sector-retailers-and-suppliers-price-coordination>).

⁶⁷ (Whelan, 2011, p. 837^[28]), discusses whether actual or constructive knowledge (= reasonably foreseeable) would be more in line with European jurisprudence. He argues that while both approaches would provide sufficient room for lawful retailer-supplier conversations, the ECJ in Dyestuffs (see FN 1 in Box 9) defined a concerted practice as co-ordination that has not reached the stage of an agreement, “knowingly substitutes practical co-operation... for the risks of competition”. This would, according to Whelan, certainly include actual knowledge, but is questionable for constructive knowledge. (Odudu, 2011, pp. 208, 210-211^[9]) points out that in Anic (see FN 4 in Box 9), the ECJ deemed both, intent and reasonable foreseeability, as sufficient alternatives for information disclosure leading to illegal co-ordination. However, he posits that it might not be appropriate to apply case law developed for horizontal co-ordination to the vertical sphere. (Buccirossi and Zampa, 2013, p. 103^[6]) argue based on the General Court’s decision in AC Treuhand (<Case T-99/04 AC-Treuhand> AG v Commission, para 134) that constructive knowledge could be sufficient.

⁶⁸ In Toys/Sports Kits the higher standard of actual foresight was met, and the CA expressed a certain preference for it. In Dairy it was either met or the relevant strand of the case could not be upheld because of other evidential or legal reasons, so the CAT did not need to decide the question.

⁶⁹ European Court of Justice, <Case C-542/14, VM Remonts>, (emphasis added).

⁷⁰ See Endnote 43.

⁷¹ See Box 2.

⁷² See Box 7 and Box 18.

⁷³ <United States v. Apple Inc., 791 F.3d 290>, 317.

⁷⁴ The activities in Europe may be explained by the different legal treatment of RPM in Europe as opposed to the United States. While RPM is a hard-core violation of Art. 101 TFEU and the national legal equivalents of the EU member states, and as such considered to be an infringement by object, the United States apply the rule of reason approach to RPM since Leegin (<Leegin Creative Leather Products, Inc. v. PSKS, Inc.>, 551 U.S. 877). As a result, enforcement under European competition law might be less demanding, as there is no need to examine the effects of an RPM, and so far, there seem to have been no valid efficiency justifications under Art. 101 (3) TFEU.

⁷⁵ For obvious reasons, we focus on these cases in the context of this note, and this does not imply that all RPM cases necessarily have a horizontal component, nor that RPM could not generate efficiencies. For more a more detailed overview of pro- and anticompetitive effects of RPM, the economics, and the legal treatment, see (OECD, 2008^[53]), also (OECD, 2013^[21]), (OECD, 2018^[14]), as well as (Dobson and Waterson, 2007^[47]), (Orbach, 2008^[36]), (Rey and Vergé, 2010^[33]), (Bennett et al., 2011^[48]), (European Commission, 2010^[16]).

⁷⁶ When the OECD dealt with RPM last in 2008, the collusive theories of harm, and, in particular, retailer induced RPM schemes that would facilitate retailer collusion, were regarded as an unlikely option for parties to adopt (OECD, 2008, pp. 30-31^[53]). This may have changed, as a number of recent case examples show.

⁷⁷ 2016 Annual Report on Competition Policy Developments in Austria to the OECD, pp 4 – 5.

⁷⁸ 2015 Annual Report on Competition Policy Developments in Poland to the OECD, p 7.

⁷⁹ Conseil de la Concurrence, [decision 06-D-04 \(March 2006\)](#).

⁸⁰ Ibid., p 130.

⁸¹ Conseil de la Concurrence, [decision 07-D-50 \(December 2007\)](#).

⁸² [Press release 20 December 2007](#).

⁸³ There are more cases in Europe, where suppliers and retailers were fined for an RPM infringement. However, the accessible documents provide no insights into the nature of the retailer involvement. Romania has repeatedly fined food retailers and their suppliers for RPM, with the latest fine of EUR 18.8 million in January 2019, see: PaRR, 21 January 2019, <https://app.parr-global.com/intelligence/view/prime-2778336>; and an earlier fine of EUR 35 million in 2015 (see: PARR, 13 January 2015, <https://app.parr-global.com/intelligence/view/prime-1947064>). The Romanian Competition Council has communicated that suppliers and retailers agreed on fixed or minimum retail prices. In 2013, Bulgaria fined 15 companies, suppliers and retailers, EUR 1.06 million for RPM for sunflower oil. The RPM scheme included discount incentive systems for the retailers (see: 2013 [ANNUAL REPORT ON COMPETITION POLICY DEVELOPMENTS IN BULGARIA](#) to the OECD, pp 4-5; PaRR, 15 October 2013, <https://app.parr-global.com/intelligence/view/prime-1674577>).

⁸⁴ European Commission, [Staff Working Document](#) accompanying the Final Report on the E-commerce Sector Inquiry, SWD (2017) 154 final of 10 May 2017, paras 178 - 187.

⁸⁵ Case AT.40428 – GUESS; [decision of 17 December 2018](#).

⁸⁶ RPM is currently listed as one of the hard-core violations that make any vertical agreement ineligible for an exemption from Art. 101 (1) within the framework of the Vertical Block Exemption Regulation, Art. 4 (a) VBER - [Commission Regulation No 330/2010](#). The European Commission has started the process of the review of the VBER, and the debate about the correct placement of RPM as a hard-core, object infringement can be expected to be one of the main discussion topics for the years to come. See also http://ec.europa.eu/competition/consultations/2018_vber/index_en.html.

⁸⁷ The Bundeskartellamt stated that within its fining framework, the fines for vertical infringements cannot be imposed in the upper range, which is reserved for horizontal hard-core infringements (Becker and Vollmer, 2016, p. 65^[4]).

⁸⁸ (Whelan, 2011, p. 285^[28]) points out that: “If the restraint in question is unlawful, the fact that the distortion on competition has a horizontal element (as opposed to a mere vertical element, as in the case of resale price maintenance) ensures that a more serious infringement of the competition law rules is committed than would otherwise have been the case.”

⁸⁹ The four categories according to (Ezrachi and Stucke, 2017^[17]) are the computer as messenger (traditional cartel using software to implement an anti-competitive agreement), hub-and-spoke collusion, the predictable agent, and the digital eye. The main difference between the categories is the decreasing role of direct and indirect interaction and/or control of the market players over the pricing behaviour that is influenced to an ever larger extent by artificial intelligence.

⁹⁰ More discussion of this type of cases and their legal assessment for example in (Marx, Ritz and Weller, 2019^[37]), (Monopolkommission, 2018^[61]), (Heinemann and Gebicka, 2016^[43]).

⁹¹ European Commission, [Staff Working Document](#) accompanying the Final Report on the E-commerce Sector Inquiry, SWD (2017) 154 final of 10 May 2017, paras 576-577.

⁹² *Ibid.*, para 149.

⁹³ See for example (Akman, 2016^[49]), (Bennett and Enrique González-Díaz, 2015^[25]), (Dobson and Waterson, 2007^[47]), (Ezrachi, 2015^[45]), (Fletcher and Hviid, 2014^[23]), (Gabrielsen, Johansen and Lomo, 2018^[44]), (Mantovani Claudio Piga Carlo Reggiani et al., 2019^[38]).

⁹⁴ (OECD, 2013^[24]), (OECD, 2015^[58]), (OECD, 2018^[14]), (OECD, 2018^[52]).

⁹⁵ The (European Commission, 2017, pp. 34-35^[51]), in its final report on the e-commerce sector inquiry, sets out in more detail the additional services provided by online platforms.

⁹⁶ On different remuneration models, see (Nowag, 2018, p. 6^[26]).

⁹⁷ [United States v. Apple Inc., 952 F. Supp. 2d 638 \(S.D.N.Y. 2013\)](#); [United States v. Apple Inc., 791 F.3d 290](#).

⁹⁸ European Commission decision CASE COMP/AT.39847-E-BOOKS, [C\(2012\)9288](#) (consolidated version) and [C\(2013\)4750](#). An Art. 9 [Reg. 1/03](#) commitment decision is a decision where the European Commission imposes commitments on the undertakings concerned based on its preliminary assessment of a case. This does not involve a decision on an infringement of Art. 101 or 102 TFEU.

⁹⁹ <https://casetext.com/case/united-states-v-apple-inc-1> [United States v. Apple Inc., 791 F.3d 290](#), pp 14 – 15.

¹⁰⁰ While Apple did not enjoy any market power on the e-books retail market, it however presented a very credible threat to the strong market position of the incumbent Amazon, and was clearly the publishers' best option to win back a strategic influence on book prices.

¹⁰¹ Enforcement actions against online travel platforms - French Competition Authority, [Decision 15-D-06](#), 21 April 2015; Italian Competition Authority, [Decision](#) 21 April 2015; Swedish Competition Authority, [Decision 596/2013](#), 15 April 2015; German Competition Authority, [Decision B 9 – 66/10](#), 20 December 2013, and [Decision B 9 – 121/13](#), 22 December 2015. Insurance industry: UK Competition and Markets Authority, Private motor insurance market investigation, [Final Report](#) 24 September 2013. Amazon marketplace cases - German Competition Authority, [Decision B 6 – 46/12](#), 26 November 2013; UK Competition Authority, case [CE/9692/12](#) (November 2013). EU Amazon e-book MFNs, [Case AT.40153](#), 4 May 2017.

¹⁰² See for example (Bennett and Enrique González-Díaz, 2015, pp. 34-36^[25]), (Ezrachi, 2015^[45]).

¹⁰³ As quoted in (Bennett and Enrique González-Díaz, 2015, p. 38^[25]), from (Lenoir, Plankensteiner and Créquer, 2014^[39]).

¹⁰⁴ See also (Mantovani Claudio Piga Carlo Reggiani et al., 2019^[38]), who show that the removal of APPA in the hotel booking sector in France and Italy led to significant reductions in room prices in the medium run.

¹⁰⁵ A lot will depend on the market position of the platform that is imposing an APPA. If sellers can easily switch between platforms and de-list, it is unlikely that a platform will raise commissions (Bennett and Enrique González-Díaz, 2015^[25]).

¹⁰⁶ For more literature, see FN 93.

¹⁰⁷ See (OECD, 2018, pp. 23-24^[50]), and (Nowag, 2018^[26]).

¹⁰⁸ The recently opened investigation by the EC into Amazon's use of the retailer data it generates addresses horizontal concerns. See [EC press release of 17 July 2019](#).

¹⁰⁹ In addition to the competition law related challenges, the new taxi services also raise regulatory challenges. The topic was discussed at the OECD in 2018 (OECD, 2018^[50]).

¹¹⁰ Art. 101 (3) TFEU: The provisions of paragraph 1 may, however, be declared inapplicable in the case of: any agreement or ... concerted practice ..., which contributes to improving the production or distribution of goods or to promoting technical or economic progress, while allowing consumers a fair share of the resulting benefit, and which does not: (a) impose on the undertakings concerned restrictions which are not indispensable to the attainment of these objectives; (b) afford such undertakings the possibility of eliminating competition in respect of a substantial part of the products in question.

¹¹¹ [Case T-17/93 Matra Hachette](#) v Commission, para 85; [Case C-439/09 Pierre Fabre](#), para 199.

¹¹² See FN 46. In this context, the elaborations in *United States v. Apple Inc.*, 791 F.3d 290, 297-298, on the dissenting opinion are of interest.

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