Remedies in EU Competition Law

Substance, Process and Policy

Edited by

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About the Global Competition Law Centre

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The Global Competition Law Centre (GCLC) forms part of the College of Europe and aims at promoting cutting-edge research in competition law and economics. It disseminates ideas and promotes research and benefits from a large network of competition professionals, built through the organisation of regular activities in Europe and elsewhere. Since its inception in January 2004, the GCLC has gained credentials as a high-level discussion forum for academics, practitioners, and enforcement officers in the competition field across the world. The GCLC regularly organises conferences, lunch talk seminars and evening policy talks, publishes books and hosts a working papers series. In addition, the GCLC awards a yearly prize for the best dissertation incompetition law and policy written at the College of Europe.

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CHAPTER 7

Challenges in Designing and Implementing Remedies in Innovation Intensive Industries and the Digital Economy*

Thomas Hoehn

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§7.01 INTRODUCTION

The systematic review of remedial interventions in antitrust and merger control supports the aim to make competition law enforcement more predictable as well as accountable. In this chapter, I reflect on a number of challenges regarding the design and implementation of remedies that in my experience have become increasingly important, particularly for remedies in R&D intensive innovation industries and the digital economy. I focus on structural remedies such as divestures of businesses and

* I presented initial thoughts at the 2019 GCLC Annual Conference dedicated to the topic of remedies in EU competition law and at an open seminar at the Portuguese Competition Authority in July 2019. My thanks to Alex Knight and Cento Veljanovski for helpful comments.

business assets to an independent purchaser to restore or maintain competition, and behavioural remedies such as data access and interoperability remedies that support entry and competition in a dynamic market environment and the digital economy in particular. I draw on my experience as Monitoring Trustee in a number of innovation-based remedies (both structural and behavioural) and as a member of the UK Competition & Markets Authority where I was involved among others in the retail banking market investigation which lead to innovative open banking remedies.[1] I review a number of recent expert reports which raised concerns regarding the competition implications of digitisation, big data, big tech and the growth of artificial intelligence (AI) in today's economy[2] as well as recent *ex post* evaluations of merger remedies policies.[3] I hope to bring a dose of realism to the discussion and put into perspective what has become a very lively area of debate and sometimes controversy.[4]

My thesis is that regarding divestiture remedies in innovation intensive industries there are a number of inter-related challenges that re-enforce each other. The first challenge arises from the sheer size and complexity of the underlying transaction and subsequent remedies, requiring more time and resources to ensure effective implementation of any remedies. The second set of challenges arises from the need to analyse incentives to compete and innovate as well as the analysis of the independence of potential purchasers in a situation of great urgency to complete a transaction through increased use of upfront buyer provisions. To deal with these challenges, I advocate that purchaser reviews in EC merger control are enhanced and extended, particularly in complex upfront merger divestiture remedies that require careful economic analysis of competition and innovation incentives and the independence of potential purchasers. This also raises the question whether overly complex mergers should be rejected as too big-to-fix. To avoid this dramatic step leading to more prohibition decisions, I support more flexibility and accountability of merger control decisions through the potential modification of remedies to obtain more assets post-closing and regular published *ex post* reviews. Regarding the design of effective remedies in the digital data economy there has been much public debate triggered by the recent publication of

1. UK Competition & Markets Authority, *Retail Banking Market Investigation – Final Report*, of 9 August 2016.
2. Jaques Crémer, Yves-Alexander de Montjoye & Heike Schweitzer, *Competition Policy for the Digital Era*, Directorate-General for Competition, Luxembourg Publication Office of the European Union (2019). Jason Furman et al., *Unlocking Digital Competition, Report of the Digital Competition Expert Panel*, HM Treasury (2019). Stigler Committee on Digital Platforms, Final Report, September 2019. Heike Schweitzer, Justus Haucap, Wolfgang Kerber & Robert Welker, *Modernisierung der Missbrauchsaufsicht für marktmächtige Unternehmen*, Endbericht**,** Projekt im Auftrag des Bundesministeriums für Wirtschaft und Energie (BMWi), Projekt Nr. 66/17, 29 August 2018.
3. *See* Federal Trade Commission**,** *The FTC's Merger Remedies 2006-2012*, A Report of the Bureaus of Competition and Economics, of January 2017, and UK Competition and Markets Authority, *Understanding past merger remedies,* Report on case study research, CMA48, updated 6 April 2017.
4. Isabelle de Silva & Justus Haucap, *Innovation et concurrence: Les concentrations favorisent-elles l'innovation ?* (New Frontiers of Antitrust – Paris, 26 June 2017), novembre 2017, Revue Concurrences N° 4-2017, Art. N° 8494; Nicolas Petit, *Innovation Competition and Merger Policy: New? Not Sure. Robust? Not Quite!*, May 2018, Concurrences Review N° 2-2018, Art. N° 86623.

expert reports on both sides of the Atlantic and the English Channel.[5] The issues raised by these reports relate not only to the analytical challenges of developing and demonstrating theories of harm but also to the question how to remedy any competition problems. The remedies considerations go beyond the challenges raised by the consideration of remedies in merger control, notably the need to deal with complex economic and technical issues. The debate over competition issues in the digital economy is very much about the increased need for an *ex ante* regulatory approach. I focus in my discussion on interoperability and data sharing remedies to promote competition and stimulate innovation in markets that are dominated by entrenched incumbents. The proposals suggest a more pro-active approach and shifts in the burden of proof for dominant digital platforms and promote data sharing and interoperability remedies. I do not favour shifting the burden of proof in antitrust and instead advocate that the EU should adopt an approach similar to the Market Investigation Regime in the UK Enterprise Act (MIR) which allows for the investigation of structural and conduct features in a market to establish whether they can be expected to harm competition based on an assessment of the balance of probabilities, arguably a lower standard of proof than under Article 102 Treaty on the Functioning of the European Union (TFEU).

I have structured my chapter in two parts: First, I will discuss the challenges of designing and implementation of merger remedies with a focus on structural remedies control in innovation intensive and high-tech industries. Second, I will discuss the challenges of designing and implementing behavioural remedies in high-tech industries and the digital data economy. I conclude with some comments on the need to be more flexible in the design and implementation of remedies in innovation intensive industries and the need for reform of the legal enforcement regime in the EU in this regard.

§7.02 STRUCTURAL REMEDIES IN MERGER CONTROL

The global merger boom of the past few years continues and raises significant challenges for enforcers, not least through the mega-mergers in the pharmaceuticals, agrochemical and IT industries. They have generated major challenges of designing and implementing timely and effective remedies in merger control. Of these, the increased complexity is the most important challenge. A complex merger leads to complexity in implementing and monitoring the effectiveness of remedies. This is not new. EU state aid remedies during the financial crisis 2008/2009, or complex remedies in media or telecom mergers in United States (US), France and EU in the 1990s and 2000s are a case in point. Yet, I have recently observed a further increase in complexity at several levels. There are legal and institutional complexities arising from global mergers which present major challenges for competition authorities and the coordination of remedies. Mergers in innovation-based industries further introduce economic complexity through the need for assessment of the incentive to compete and innovate

5. *Supra* n. 2.

of a purchaser of a divestment business when structural remedies are adopted. Another major challenge is the tight time constraints in upfront buyer cases. Therefore, the assessment of potential purchasers in a timely and comprehensive manner has become a major challenge for the Monitoring Trustee and any competition authority.

[A] Complexity

The most important challenge to the effective implementation of remedies is the increased complexity of the subject matter under investigation. The major antitrust cases such as Google Shopping and Google Advertising and global mega mergers in the agrochemical and pharmaceutical industries illustrate well the different dimensions of the complexity which are of a technical, legal, institutional, financial, and economic nature. Technical complexity is inherent in antitrust remedies in the information and communications technology (ICT) industries and requires dedicated highly specialised technical resources in a Monitoring Trustee team.

The economic and financial complexities, for example, directly affect the three major implementation risks identified by the UK Competition and Markets Authority in its guidance on merger remedies:[6]

(1) Composition risks – these are risks that the scope of the divestiture package may be too constrained or not appropriately configured to attract a suitable purchaser or may not allow a purchaser to operate as an effective competitor in the market.
(2) Purchaser risks – these are risks that a suitable purchaser is not available or that the merging parties will dispose to a weak or otherwise inappropriate purchaser.
(3) Asset risks – these are risks that the competitive capability of a divestiture package will deteriorate before completion of divestiture, for example, through loss customers or key members of staff.

The legal and institutional dimensions of complexity tend to present more procedural and jurisdictional challenges. They affect the ability to design comprehensive and effective remedies in a timely manner and thereby indirectly affect the implementation risks of complex remedies. Legal and economic complexity can further occur in complex carve-outs of business assets in divestiture remedies sometimes further complicated with reverse carve-outs and complex transitional and long-term supply and technology agreements (e.g., automotive component manufacturing mergers and recent major chemicals and agrochemical mergers). In these cases, the assessment of viability post-divestment can become challenging and requires the increased monitoring of transitional supply agreements, manufacturing and other purchase and supply agreements post-closing relying on the extended monitoring of

6. Classification adopted by UK Competition Commission, Merger remedies guidance, CMA87, 2018, p. 38.

the Monitoring Trustee, following the findings of the FTC Merger Remedies Study published in 2017.[7]

To give a list of cases that have presented major challenges through their complexity we can look at the list of ten innovation mergers that were reviewed by DG Comp 2015-2017 and discussed by Carles Esteva Mosso at the 2018 American Bar Association (ABA) Conference[8] as well as another list that I have prepared to include major mergers in the ICT industries 2015-2018 (Table 7.1).[9] All these cases involved a complex assessment of innovation effects of a merger that carried through to the design and implementation of appropriate remedies. In the latter group we find cases such as Qualcomm/NXP (2018),[10] Microsoft/LinkedIn (2016),[11] Brocade/Broadcom (2017)[12] and Discovery/Scripps (2018)[13] which are notable as they led to the acceptance of behavioural remedies (including interoperability commitments) whereas the innovations cases cited by Esteva Mosso typically led to structural remedies in the form of divestiture of existing products or pipeline products.

Table 7.1 Innovation Mergers in 2015–2018

Pharmaceutical and Medical Devices
1. BD/Bard,
2. J&J/ Actelion
3. Boehringer Ingelheim/Sanofi Animal Health Business
4. Novartis/GSK Oncology Business
5. Pfizer/Hospira,
6. Medtronic/Covidien
Industrial or vehicle components
7. General Electric/Alstom
8. Halliburton/Baker Hughes
9. Knorr-Bremse/Haldex
Agrochemicals
10. Dow/DuPont
11. Bayer/Monsanto

7. Federal Trade Commission (2017) *supra* n. 3.
8. Carles Esteva Mosso, *Innovation in EU Merger Control*, ABA Spring Meeting, Washington, 12 April 2018, available at: http://ec.europa.eu/competition/speeches/text/sp2018_05_en.pdf.
9. Thomas Hoehn, *Merger Remedies and Competition Law: An Overview of Recent EU Case Law and International Policy Developments*, in *e-Competition Bulletin Merger Remedies* (Foreword) (27 September 2018).
10. European Commission, Decision of 18 January 2018, *Qualcomm/NXP*, Case M.8306.
11. European Commission, Decision of 6 December 2016, *LinkedIn / Microsoft*, Case M.8124.
12. European Commission, Decision of 12 May 2017, *Brocade/Broadcom*, Case M.8314.
13. European Commission, Decision of 6 February 2018, *Discovery/Scripps*, Case M.8665.

ITC industries
12. Discovery/Scripps
13. Qualcomm/NXP
14. Microsoft/LinkedIn
15. Brocade/Broadcom
16. Equens/Worldline
High Tech engineering
17. RR/ITC

Sources: Carles Esteva Mosso and Thomas Hoehn.[14]

In the following sections, I deal with the challenges that arise in the design and implementation of structural remedies and will deal with behavioural remedies in the second part of this chapter.

One major merger case shall serve to illustrate the degree of complexity of designing and implementing structural remedies in innovation merger: *Dow/DuPont* (2017).[15] The multi-jurisdictional coordination of the merger control investigations and the global implementation was not straightforward and required significant coordination efforts and resources at various levels (parties, external advisors (economic, legal), authorities, trustee).[16]

Case Study: *Dow/DuPont*

With a combined value of the two global agrochemicals businesses of USD 170 billion this was the largest transaction in the past few years. The transaction was reviewed and conditionally cleared subject to remedies in the major antitrust jurisdictions of the US, EU, China, and some twenty other authorities in countries with large agricultural interests such as Canada, Brazil, India etc.

The remedies in the EU which cleared the merger on 27 June 2017 included the divestment of DuPont's global herbicide, insecticides businesses and the divestment of the complete DuPont R&D business organisation including non-tangible and tangible assets:

(1) Globally, DuPont's herbicides for cereals, oilseed rape, sunflower, rice and pasture and insecticides for chewing insect and sucking insect control for fruits and vegetables etc.

14. Carles Esteva Mosso, *Innovation in EU Merger Control*, ABA Spring Meeting (Washington, 12 April 2018); Thomas Hoehn, *Merger Remedies and Competition Law: An Overview of Recent EU Case Law and International Policy Developments*, in *e-Competition Bulletin Merger Remedies* (Foreword) (e-Concurrences, 27 September 2018).
15. European Commission, Decision of 27 March, *Dow/DuPont*, Case M.7932.
16. The author was a senior advisor to the trustee monitoring the implementation of the Commitments globally.

(2) An exclusive license to DuPont's product for rice cultivation in the European Economic Area to address the more limited concerns relating to fungicides.
(3) DuPont's global R&D organisation, with the exception of a few limited assets that support the part of DuPont's pesticide business, which is not being divested.

The remedies obtained by the Department of Justice's (DoJ's) settlement included the divestiture of DuPont's market-leading Finesse and Rynaxypyr crop protection products and the divestment of its US acid copolymers and ionomers business to a buyer approved by the US. Like the European Commission, the DoJ examined the effect of the merger on development of new crop protection chemicals but did not come to the same or similar conclusion regarding the need for a divestiture of DuPont's R&D organisation and assets.

The complexity challenge for remedies can be further illustrated by an older French merger involving a large package of remedies including a significant number of behavioural remedies (fifty-nine in total): Canal Plus /TPS (2006).[17] Not surprisingly, in this case, the complex implementation proved to be too difficult and led to the imposition of significant fines in 2011 for non-compliance with the commitments and the renotification of the transaction leading to a new set of commitments.[18] Another major media merger in the US Comcast/NBC (2011) resulted in a similar large number of behavioural remedies (seventy-nine individual remedy components).[19]

The implications for the implementation of complex remedies are that more monitoring efforts are required. This applies to structural as well as behavioural remedies. Monitoring trustee teams require more technical expertise and economic skills as will become clear when we analyse below the challenges brought about by innovation mergers with remedies that seek to ensure that the incentives to innovate are maintained.

[B] Incentives to Innovate

Closely related to the challenges brought about by the complexity of antitrust actions and merger control related to major transactions is the challenge to the design of effective remedies where incentives to innovate are at the heart of the analysis but also key to the design and implementation of suitable remedies that seek to maintain or restore incentives to innovate.

It is useful to remind ourselves of the fundamental objective of EU merger control which is to ensure that 'Effective competition brings benefits to consumers, such as low

17. Avis 06-A-13 du 13 juillet 2006 relatif à l'acquisition des sociétés TPS et CanalSatellite par Vivendi Universal et Groupe Canal Plus.
18. *See* press release Authorité de la concurrence, 21 September 2011 http://www.autoritedelaconcurrence.fr/user/standard.php?id_rub = 389&id_article = 1697.
19. *United States v. Comcast Corp.*, 76 Fed. Reg. 5,459, 5,461-64(§§ IV-VI) (DOJ Jan. 31, 2011) (proposed final judgment).

prices, high quality products, a wide selection of goods and services, and innovation.'[20] Through the control of mergers, the Commission prevents mergers that would give firms the ability to not only profitably increase prices but also to diminish innovation, or otherwise influence parameters of competition. The Commission's guidelines stress that:

> in markets where innovation is an important competitive force, a merger may increase the firms' ability and incentive to bring new innovations to the market and, thereby, the competitive pressure on rivals to innovate in that market. Alternatively, effective competition may be significantly impeded by a merger between two important innovators, for instance between two companies with 'pipeline' products related to a specific product market.[21]

In the US the authorities similarly recognise the possibility that a merger may diminish innovation competition by 'encouraging the merged firm to curtail its innovative efforts below the level that would prevail in the absence of the merger. That curtailment of innovation could take the form of reduced incentive to continue with an existing product-development effort or reduced incentive to initiate development of new products'.[22]

What this means in practice is that a balancing of pro- and anticompetitive innovation and R&D effects is needed**.** Anticompetitive unilateral effects arise when a merger brings together two out of a limited number of effective innovators which, but for the merger, would have been likely to divert significant profitable future sales from each other by investing and by competing in improved, innovative products. A merger, therefore, can reduce innovation incentives, and more generally reduce the intensity of competition in innovative products, by internalising these competitive effects. Conversely, pro-competitive effects arise when a merger would stimulate innovation through the ability of firms to better appropriate the social value of their innovation. For example, in the absence of a merger competitors may be able to free ride on successful innovation carried out by their rivals. A merger could boost innovation by internalising these involuntary knowledge spill overs. Similarly, a merger may enhance innovation by bringing together complementary R&D assets, by allowing for greater scale economies in process innovation, or by enabling cost efficiencies in R&D. In *Dow/DuPont* the Commission and the DoJ had to do exactly this balancing of pro- and anticompetitive effects**.**[23]

The European Commission was concerned that the Dow/DuPont merger, as notified, would reduce competition on price and choice in a number of markets for crop protection products, and also stifle innovation to improve existing crop protection products and develop new active ingredients for crop protection. In order to address the Commission's concerns, the parties agreed to divest the relevant DuPont pesticide

20. *Source*: Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2004/C 31/03), Paragraph 8.
21. European Commission, *supra*, paragraph 38.
22. *Source*: U.S. Horizontal Merger Guidelines 2010, section 6.4.
23. For a discussion *see* Esteva Mosso, *supra* n. 8.

businesses and almost the entirety of DuPont's global crop protection R&D organisation, an unusual measure by historical standards. DuPont also agreed to divest all tangible and intangible assets underpinning the divested businesses. The Commission concluded that the divestment package will enable a buyer to replace the competitive constraint exerted by DuPont.[24] Similarly, after an in-depth review, the Department of Justice found that as originally proposed:

> the merger would have eliminated important competition between Dow and DuPont in the development and sale of insecticides and herbicides that are vital to American farmers who plant winter wheat and various specialty crops. In addition, it would have given the merged company a monopoly over ethylene derivatives known as acid copolymers and ionomers that are used to manufacture many products, including food packaging.[25]

As I found in my review of merger remedies last year, the reception to this decision has been mixed.[26] In their review of EU merger control in 2017 Niels Ersboll et al discuss the Dow/DuPont merger and claim that '[t]here were no traces of this theoretical framework in past EC merger decisions. Instead the EC drew inspiration form its own guidance on technology transfer agreements and the DoJ/FTC proposal for IP licensing guidelines in the US'.[27] Economists have also weighed in on the debate. For example, Cascone Fauver et al refer to the direct effect of the proposed merger on innovation incentives, an approach reminiscent of the 'innovation markets' framework developed in the 1990s.[28] Even members of the Commission's Chief Economist team weighed into the debate and published a paper on the possible effects of mergers on innovation and consumer welfare in a model where firms compete among others through the quality of their products by innovating.[29] Their formal simulation model suggests that a merger between two out of a limited number of innovators can depress innovation incentives and more broadly reduce current and future consumer welfare, in the absence of innovation-related efficiencies, including the internalisation of knowledge spill-overs. This publication has led up to a lively debate in economic circles on the impact of mergers on innovation in an oligopoly situation.

I agree that the analysis of innovation effects in merger control is challenging, not least because of the difficulties in obtaining and assessing solid empirical evidence. In my view it is not primarily the absence of a theoretical framework that is the main challenge, rather it is a question of not having sufficient data and foresights that is able

24. *See* European Commission, *supra* n. 15.
25. Acting Assistant Attorney General Andrew Finch of the Justice Department's Antitrust Division, as quoted in Press Release Department of Justice, 15 June 2017. *See* https://www.justice.gov/opa/pr/justice-department-requires-divestiture-certain-herbicides-insecticides-and-plastics.
26. *See* Hoehn, *supra* n. 9.
27. Niels Ersboll, Athansia Gavala, Tiiu Iverson & Lazarinka Naydenova, *2017 EU Merger Enforcement Year in Review*, in Arnold & Porter, Kaye Scholer, available at https://www.arnoldporter.com/-/media/files/perspectives/publications/2018/02/2017-eu-merger-enforecment-year-in-review.pdf?la = en.
28. Jennifer Cascone Fauver, Subramaniam Ramanarayanan & Nicola Tosini, *The Increasing Cross-Border Importance of Innovation in Merger Review,* Antitrust, 70-75 (Spring 2018).
29. Giulio Federico, Gregor Langus & Tommaso Valletti, *Horizontal Mergers and Product Innovation*, (2018) available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id = 2999178.

to distinguish between pro- and anticompetitive effects and coming to robust conclusions. The challenge is increased through the difficulties of judging the success of pipeline products in early stage clinical trials and establishing whether and to what extent they will compete with other pipeline products in future. These challenges carry over into the implementation of remedies where the approval of a suitable purchaser in a divestiture remedy is required who may or may not be engaged in developing similar products. Such merger reviews are in my experience as Monitoring Trustee becoming ever more demanding and complex necessitating for innovation mergers an assessment not only of a purchaser's ability and incentive to compete but also to continue to innovate and invest in R&D at a similar level to the divesting parties. This is no mean task. Let me elaborate and explain what I mean by this.

The criteria for accepting a purchaser of a divestment business are laid out in the Commitments and have to be reviewed and assessed by the Monitoring Trustee who then provides the Commission with a purchaser approval report based on which the Commission can issue its approval decision. What do we typically look at?

- Independence
- Finances
- Expertise, strategic rationale and incentives
- Competition issues
- Analysis of the transaction documents.

This requires expertise in finance and accounting, business strategy and economics. Typically, the Trustee mandate provides for such a report to be prepared within one week of the submission of a proposal of a suitable purchaser by the parties. As my discussion of the two challenges outlined above should make clear that such an analysis is impossible to complete within one week unless there has been plenty of time prior to the formal submission of a suitable purchaser proposal. In practice the Commission does not insist on the Trustee adhering to this strict deadline as the quality of the purchaser review is more important to the Commission who has to be able to issue a purchaser approval decision that is robust and can withstand scrutiny should the purchaser approval decision be challenged in court, something that has happened in a number of instances.[30]

[C] Urgency

The other challenge which exacerbates and reinforces the two challenges discussed above has to do with the increased urgency through the increased use of upfront buyer provisions in divestiture commitments. In 2017 and 2018, approximately one in three of all EC remedy decisions imposed an upfront or fix-it-first purchaser clause.[31] They

30. *See* for example Judgments of the General Court in Cases T-279/04 and T-452/04 Editions Odile Jacob SAS v. Commission (2010).
31. *See* Allen Overy, *Global Trends in Merger Control Enforcement*, (2019) available at: http://www.allenovery.com/publications/en-gb/mergercontroltrends/Pages/Global-trends-in-merger-control-enforcement/Default.aspx.

have been common in the US but not are more regularly used in the EU and other jurisdictions.

While there are good reasons for including such provisions, they do put pressure on all parties to complete a divestiture as soon as possible. As the EU Merger Remedies Notice puts it:

> There are cases where only the proposal of an upfront buyer will allow the Commission to conclude with the requisite degree of certainty that the business will be effectively divested to a suitable purchaser. The parties therefore have to undertake in the commitments that they are not going to complete the notified operation before having entered into a binding agreement with a purchaser for the divested business, approved by the Commission.[32]

The Trustee, in particular, is under huge pressure to review and assess a buyer not at the end of a normal first divestiture period (FDP) but often right at the beginning. With the standard FDP being six months,[33] this gives the Monitoring Trustee time to get to know the business to be divested and familiarise herself with the markets the divestment business competes in as well as the potential buyers who may be interested and prima facie suitable. With the upfront buyer condition this time period is typically cut short and the learning curve is thus very steep. There are two reasons for insisting on an upfront buyer provision: (a) the difficulty in finding a suitable purchaser and (b) concerns over rapid deterioration of the divestment business. From a Trustee's perspective these concerns need to be balanced by the challenges of reviewing a complex transaction in a very short time period and the risks that full consistency of a divestment with the Commitments cannot be achieved, or the pool of suitable purchaser has not been properly identified and potential purchasers have been deterred (purchaser risk). The Trustee is under huge pressure to review and assess a buyer right at the beginning of its mandate and not towards the end of the FDP. In contrast, in a standard divestiture with an FDP of six months,[34] this gives the Monitoring Trustee valuable time to get to know the business to be divested and familiarise itself with the markets the divestment business competes in as well as the potential buyers who may be interested and prima facie suitable. With the upfront buyer condition, this time period is typically cut short and the learning curve. The Monitoring Trustee does not know the business well and issues have not arisen yet under his watch. It therefore becomes more difficult to know what clauses in the transaction agreements may be problematic and how the agreements being negotiated will continue to evolve.

[D] Independence

The suitability assessment of a potential purchaser requires among others an assessment of whether a purchaser is independent from and unconnected to the merging

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32. *See* paragraph 53, Commission notice on remedies acceptable under Council Regulation (EC) No 139/2004 and under Commission Regulation (EC) No 802/2004.
33. *Ibid.*, paragraph 98.
34. *See ibid.*, paragraph 98.

parties. One issue that I want to raise in this context concerns the potential for common ownership of the merging parties and the proposed purchaser becoming an issue for purchaser approval. Common ownership of shares in competing firms by institutional investors has been identified by antitrust scholars in the US as a potential problem for effective competition in certain highly concentrated industries such as airlines.[35] The European Commission has picked up on this and took it into account in recent merger decisions such as Dow/DuPont (2017) and Bayer/Monsanto (2018). In Dow/DuPont the Commission found that seventeen shareholders collectively owned ca. 21% in BASF, Bayer and Syngenta and 29%-36% of Dow, DuPont and Monsanto.[36] The Commission considered that:

> in general, market shares used by the Commission for the purpose of the assessment of the Transaction tend to underestimate the concentration of the market structure and, thus, the market power of the Parties, and that common shareholding in the agrochemical industry is to be taken as an element of context in the appreciation of any significant impediment to effective competition that is raised in the Decision.[37]

What does this mean for the analysis of the analysis of a proposed purchaser in a divestiture remedy? Should the assessment of a purchaser's independence of the parties and their incentives to compete be taken into account and if how? As an illustrative example, in Tables 7.2 and 7.3, I show the institutional shareholding of the seller and the buyer in Linde/Praxair (2018)[38] where the parties agreed to sell the majority of Praxair's European business to Taiyo Nippon Sanso Corporation.

Table 7.2 The Major Shareholders in Praxair/Linde

Praxair (PX)/Linde Plc	
Major Shareholders	*Equities (%)*
Capital Research & Management Co. (World Investors)	6.11
The Vanguard Group, Inc.	4.05
Norges Bank Investment Management	3.27
SSgA Funds Management, Inc.	2.37
Massachusetts Financial Services Co.	2.37
BlackRock Fund Advisors	2.21
Wellington Management Co. LLP	1.47
Parnassus Investments	1.02
Franklin Advisers, Inc.	0.97
Walter Scott & Partners Ltd.	0.80

Source: https://www.marketscreener.com (accessed 31 January 2019).

35. *See* José Azar, Martin C. Schmalz & Isabel Tecu, *Anticompetitive Effects of Common Ownership*, 73(4) *Journal of Finance* available at SSRN: https://ssrn.com/abstract=2427345.
36. *See supra* n. 15, paragraph 80, Annex 5.
37. *Supra*, paragraph 81.
38. European Commission, Decision of 19.12.2018, *Praxair/Linde*, Case M.8480.

As shown in Tables 7.2 and 7.3, in January 2019 there was only one common major shareholders in Taiyo Nippon Sanso Corp, The Vanguard Group, with 0.89% in the Japanese company and 4.05% in the German/US entity. However, if we take into account that the major shareholder in the Japanese entity is Mitsubishi Chemical Holdings Corp, the common shareholding increases as The Vanguard Group holds another 2.19% in Mitsubishi Chemical Holdings (*see* Table 7.4). In addition, BlackRock Fund Advisors have 3.58% in Praxair/Linde and 1.80% in Mitsubishi Chemical Holdings Corp. Likewise, we find common indirect ownership in the buyer and seller through Norges Bank Investment Management.

Table 7.3 Major Shareholders in Taiyo Nippon Sanso Corporation

Taiyo Nippon Sanso Corporation (4091)	
Major Shareholders	*Equities (%)*
Mitsubishi Chemical Holdings Corp.	50.60
Taiyo Nippon Sanso Business Association	4.33
JFE Holdings, Inc.	2.92
Meiji Yasuda Life Insurance Co.	2.31
Mizuho Financial Group, Inc.	1.89
Japan Agricultural Cooperatives Group	1.62
Asset Management One Co., Ltd.	1.49
Nomura Asset Management Co., Ltd.	0.89
The Vanguard Group, Inc.	0.85
Capital Research & Management Co. (Global Investors)	0.84

Source: https://www.marketscreener.com (accessed 31 January 2019).

Table 7.4 Major Shareholders in Mitsubishi Chemical Holdings Corporation

Mitsubishi Chemical Holdings Corporation (4188)	
Major Shareholders	*Equities (%)*
Mitsubishi Chemical Holdings Corp.	5.52
Meiji Yasuda Life Insurance Co.	4.27
Asset Management One Co., Ltd.	4.20
Sumitomo Mitsui Trust Asset Management Co., Ltd.	4.05
BlackRock Fund Advisors	3.58
Nippon Life Insurance Co.	2.82
Nomura Asset Management Co., Ltd.	2.66
The Vanguard Group, Inc.	2.19
BlackRock Japan Co., Ltd.	1.80
Norges Bank Investment Management	1.60

Source: https://www.marketscreener.com (accessed 31 January 2019).

Thus, the direct and indirect common shareholding structure of all three entities reveals common ownership linkages, albeit at lower levels than those found in Dow/DuPont. Nevertheless, it is instructive to consider the concentration of ownership in a divestiture as well as the underlying transaction. This adds to the complexity of the implementation of divestiture commitments and may in some circumstance be important.

§7.03 BEHAVIOURAL REMEDIES IN THE DIGITAL ECONOMY

I have focused in the first part of this chapter on the challenges that typically arise with structural remedies adopted in merger control. Now I would like to discuss the challenges when designing and implementing behavioural remedies. Behavioural remedies figure prominently in the area of antitrust investigations involving high-tech companies and digital platforms. However, as shown in Table 7.1, behavioural remedies have also been imposed in EU merger control, most notably in a number of mergers in the ICT sector.[39]

The recent publication of various expert reports commissioned by the Director General of DG Competition and a number of national competition authorities around the world have highlighted the need to review the regulatory instruments to deal with market power and competition issues regarding dominant digital platforms and incumbency advantages related to data.[40] For example, the academic expert panel advising the Director General of DG Competition suggests more sharing of data alongside other suggestions on how EU Competition Policy should deal with increased scope for market power through digital platforms by shifting the burden of proof for dominant platforms. Furman et al, advising the UK Government,[41] propose the creation of digital market unit alongside suggestions for greater personal data mobility and remedies involving greater data openness as have been applied following the Open Banking market investigation of the Competition & Market Authority (CMA).[42] Schweitzer et al, advising the German Ministry of Economics,[43] ask whether the threshold for intervention in the digital economy is currently set too high to allow for a timely

39. In the US there also have been a number of more recent cases where behavioural remedies have been accepted in the form of consent decrees in mergers such as Ticketmaster-Live Nations, Comcast-NBCU, and Google-ITA. *See* John E. Kwoka & Diana L. Moss, *Behavioural Merger Remedies: Evaluation and Implications for Antitrust Enforcement*, 57(4) The Antitrust Bulletin, 797-1011 (Winter 2012).
40. *See* the reports listed *supra* n. 2.
41. Jason Furman et al., *Unlocking Digital Competition*, Report of the Digital Competition Expert Panel, HM Treasury, 13 March 2019.
42. *See* CMA – Competition & Market Authority, 2016, *supra* n. 1 and subsequent CMA Orders of January 2017.
43. Heike Schweitzer, Justus Haucap, Wolfgang Kerber & Robert Welker, *Modernisierung der Missbrauchsaufsicht für marktmächtige Unternehmen*, Endbericht, Projekt im Auftrag des Bundesministeriums für Wirtschaft und Energie (BMWi), Projekt Nr. 66/17, 29. August 2018.

intervention against unilateral conduct with long-term negative effects, and suggest a number of proposals for reform, including data-sharing obligations for data rich companies.

In the US, the Stigler Committee similarly argues that 'rapid self-correction in markets dominated by large digital platforms is unlikely' and suggests the establishment of a Digital Authority with the task of collecting data and digital transactions and interactions thus creating a light-touch regulatory system to enhance among others data portability and interoperability.[44] The issues raised by these reports relate not only to the complexity of analysis of competition issues in antitrust cases but also to merger control involving the acquisition of actual or potential competitors and start-ups that have promising technologies (e.g., Facebook/WhatsApp (2014), Microsoft/LinkedIn (2016)).[45]

What these remedy proposals would mean for the effective implementation of remedies and what challenges they represent for a Monitoring Trustee or any regulatory agency entrusted with overseeing the implementation of these remedies can without a detailed assessment of the case law only be speculative. I would argue that the challenges will be similar to the ones discussed in section on structural remedies in merger control above as the issues raised by the digital data economy are by their nature bound to be complex. They require a careful balancing of innovation and competition effects of remedies involving extensive data sharing, data portability, data and protocol interoperability. From my trustee experience and research I would like to discuss the challenges posed by such behavioural remedies starting with a review of interoperability remedies in EU case law (including case study healthcare industry), followed by a discussion of proposals to increase the use of data portability, data interoperability and data sharing (including case study open banking) in the digital economy. I will end this section with a brief discussion of the implications for remedies implementation of procedural and institutional proposals for reform.

[A] Interoperability Remedies in EU Competition Law[46]

Effective interoperability between networks, devices, applications, data repositories and services has become a major EU policy goal which aims to boost economic welfare, innovation and competitiveness.[47] The concept has long been recognised as being important in the context of high-tech industry such as healthcare and telecoms

44. *See* Stigler Committee, *supra* n. 2.
45. European Commission, Decision of 3 October 2014, *Facebook/WhatsApp*, Case M.7217, and Microsoft/LinkedIn, *supra* n. 11.
46. This discussion is based on Thomas Hoehn & Alex Lewis, *Interoperability Remedies, FRAND Licensing and Innovation: A Review of Recent Case Law*, 34(2) European Competition Law Review 101-111 (2013).
47. *See* Wolfgang Kerber & Heike Schweitzer, *Interoperability in the Digital Economy*, 8 Journal of Intellectual Property, Information Technology and Electronic Commerce Law (JIPITEC) (2017), for an recent overview of interoperability in the digital economy and Soon Yong Choi & Andrew B. Whinston, *Benefits and Requirements for Interoperability in the Electronic Marketplace*, 22 Technology in Society 33-44 (2000).

industries[48] where the development of communication protocols and standards to secure reliable and safe interconnection of systems designed and operated by different providers became critical.[49] At the European policy level the EU Digital Agenda (2010) identified interoperability as a critical factor and a significant potential obstacle to achieving a truly digital society.[50]

Interoperability remedies are nothing new in EU competition law. In the field of antitrust, Microsoft was forced by a Decision of the European Commission in 2004 to license interoperability protocols for its Windows Server Operating System Software. The senior Commission official who was in charge of the Microsoft investigation expressed his support for interoperability remedies stating, 'that these (interoperability solutions) favour market entry by a greater number of players ... they stimulate competition in high-tech industries'.[51]

In the field of merger control interoperability remedies are important and not altogether that rare. In a number of high-profile mergers and acquisitions, firms such as Google, Intel, Cisco, Siemens and GE have offered commitments to provide free and open access to healthcare systems (GE/Instrumentarium, 2012),[52] to license intellectual property on fair reasonable and non-discriminatory (FRAND) terms (Google/Motorola, 2011),[53] to agree the provision of interoperability information for microprocessor chips (Intel/McAfee, 2011)[54] and to divest interoperability protocols for videoconferencing solutions (Cisco/Tandberg, 2010)[55] in order to obtain clearance for major acquisitions. More recently some of the ICT merger cases listed in Table 7.1 also involved interoperability remedies.[56]

In an earlier paper (Hoehn and Lewis, 2013),[57] we reviewed EU case law on interoperability remedies and argued that for the firms involved, the implementation of interoperability commitments means that they may be subject to regulatory oversight often for an extended period. Such longer-term behavioural commitments affect R&D plans and product innovation strategies of the firms concerned, particularly when firms

48. *See* for example the AAMI White Paper 2012 on Medical Device Interoperability, Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communication networks and associated facilities, OJ 2002, No. L 108/7, and The EU Software Copyright Directive (2010).
49. For a comprehensive treatment of the concept of interoperability and its applications, *see*: John Palfrey & Urs Gasser, *Interop: The Promise and Perils of Highly Interconnected Systems* (Basic Books 2012).
50. EU Commission, A Digital Agenda for Europe, Brussels, 19.5.2010, COM(2010)245 final, p.3. The EU Software Copyright Directive (2010) and the EU Draft Directive on Digital Goods and Services entail similar, but more context-specific definitions.
51. Speech by Cecilio Madero Villarejo given at Annual Conference on European Antitrust Law, Brussels, 3 March 2011 http://ec.europa.eu/competition/speeches/text/sp2011_02_en.pdf accessed 25 October 2011.
52. European Commission, Decision of 2 September 2003, *GE/Instrumentarium*, Case M.3083.
53. European Commission, Decision of 13 February 2012, *Google/Motorola Mobility*, Case M.6381.
54. European Commission, Decision of 26 January 2011, *Intel/McAfee,* Case M.5984.
55. European Commission, Decision of 29 March 2010, *Cisco/Tandberg,* Case M.5669.
56. It should be noted at this stage that interoperability commitments in EU merger control often have gone hand in hand with a structural commitments to divest a business. This was the case in GE/Instrumentarium (2003) and Cisco/Tandberg (2010).
57. *Supra* n. 466.

have to reveal critical innovative aspects of their plans at an early stage in the R&D process to allow third parties to develop interfaces and compatible products on a timely basis. Competition through innovations may be at risk and become muted or stifled. Moreover, as interoperability standards and protocols often rely on formal intellectual property rights, interoperability commitments typically contain commercial terms that state whether these rights are to be licensed against a FRAND royalty payment and there is inevitably room for interpretation. However, there is little guidance as to the principles that should be applied to calculate FRAND royalties in competition law remedies.[58] This raises the question as to whether, and to what extent, interoperability remedies in merger control and antitrust, can at the same time promote both competition and innovation, or whether there is a conflict between these two objectives, particularly in high-tech industries.

Case Study: Interoperability in the healthcare industry[59]

The medical, pharmaceutical and healthcare manufacturing sectors have been at the forefront of interoperability. In healthcare, interoperability describes the extent to which systems and devices can communicate, exchange and interpret data, in order to safely fulfil an intended purpose. For two systems to be interoperable, they must be able to exchange data and subsequently present that data such that it can be understood by a user. As noted in a National Institute and Standards Technology article,[60] interoperability among medical devices and clinical information systems is important as point-of-care devices are often the primary source (or destination) of patient care information and data.

The healthcare industry has been working towards the goal of interoperability for decades. With respect to patient data and the interoperability of medical devices, the main effort has been focused at standards bodies such as Health Level Seven International (HL7) and Integrating the Health Enterprise (IHE). The focus has been on the need for patients' data to become operable on different systems. The challenge in this area has been that there are multiple actors involved, with different agendas (hospitals, equipment manufacturers, drug manufacturers, GPs) and different approaches to data architecture and usage.

58. Cento Veljanovski, *Pricing Patents – FRAND Royalties as an Antitrust Remedy after Microsoft*, *Casenote*, January, Case Associates (2008). Larry Goldstein & Brian Kearsey, *'Technology Patent Licensing' an International Reference on 21st Century Patent Licensing, Patent Pools and Patent Platforms* 28–29 (Aspatore Books 2004). Neil Marshall, Helen Jenkins& Gunnar Niels, *The Price of Intellectual Property: What Is FRAND?* in *The Handbook of Competition Economics* Global Comp. Rev. 12 (July Suppl. 2008); Damien Geradin & Miguel Rato, *Can Standard-Setting Lead to Exploitative Abuse? A Dissonant View on Patent Hold-Up, Royalty Stacking and the Meaning of Frand*, 3 European Competition Journal 101, 133 (2007). These papers have all discussed proposed definitions of FRAND. Despite this, the concept of FRAND remains ill-defined and open to interpretation.
59. This case study is based on Appendix 2(b), Guidelines for valuing interoperability information – SMART 2013/0045 Final Report [EN], a study prepared for the European Commission DG Communications Networks, Content & Technology by Thomas Hoehn, Alex Lewis, Jessica.
60. http://hit-testing.nist.gov/healthcare/medicaldevices/files/paper/Med_Dev_Semantic_Interoperability.pdf.

Merging entities in recent years have submitted interoperability remedies to the European Commission as a condition to gaining approval in healthcare mergers, a sign that the interconnectivity of devices is key to the continuity of competition and innovation in the sector.

Siemens – Dräger (2003)[61]

In order to receive approval from the European Commission for its joint venture with Dräger, the parties committed (a) divest Siemens's Life Support Systems unit, which includes the company's world-wide anaesthesia delivery and ventilation business and (b) provide the necessary electrical and mechanical interface for rivals' patient monitors to be able to interconnect with its own equipment used in operating theatres and intensive care units. This remedy was implemented without the appointment of a Monitoring Trustee.

GE – Instrumentarium (2003)[62]

Similarly, as a result of its acquisition of Instrumentarium in 2003, GE committed to divest Spacelabs, including its worldwide patient monitoring business and to enter into a series of supply agreements with the purchaser. GE/Instrumentarium also undertook to provide the necessary electrical and mechanical interface for third parties' patient monitors and clinical information systems (CIS) to be able to interconnect with its own equipment used in operating theatres and intensive care units, including anaesthesia delivery devices and ventilators. The implementation of these commitments was overseen by a Monitoring Trustee entrusted to ensure that third party competitors had reliable and timely access through industry standard agreements to interface information.[63]

The imposition of remedies on merging firms calls for a mechanism by which these remedies can be monitored, for example, through the appointment of a Monitoring Trustee in the EU or a Monitor in the US.[64] The imposition of a Monitoring Trustee on a merged entity to ensure compliance with a commitment can be somewhat intrusive and the effects extend from compliance into strategic decision-making of R&D efforts and expenditure. During the monitoring process, the company may have to make decisions relating to products covered by the commitments such as to alter an existing product, discontinue a product or to introduce a next generation product. As a result, future innovations and next generation products may become subject to the scrutiny of the Monitoring Trustee and indeed the Commission. This may cause firms

61. European Commission, Decision of 30 April 2003, *Siemens/Draeger*, Case M.2861.
62. *See supra* n. 52.
63. The author acted as the Monitoring Trustee in this case for ten years.
64. The role of the Monitoring Trustee is outlined in Commission's model text of the Trustee Mandate *See* Best Practice Guidelines: The Commission's Model Texts for Divestiture Commitments and the Trustee Mandate under the EC Merger Regulation, Sections C and D. For a Trustee perspective *see*: Jonas Brueckner & Thomas Hoehn, *Monitoring Compliance with Merger Remedies – The Role of the Monitoring Trustee*, Competition Law International 73-80 (2010).

to be more wary and negatively impact their innovation incentives if after development, a future product or technology will fall under the scope of the commitments and be subject to a licence to all competitors (e.g., scope creep). This is important as third-party interests will manifest themselves and need to be taken into account by the Monitoring Trustee. The role of third parties is crucial. Through interoperability commitments they are granted access rights to essential equipment and proprietary technology and this will often lead top conflicts that require adjudication by the Monitoring Trustee and/or competition authority. As the implementation of such remedies may have a significant effect on a company's decision-making and R&D plans through the quasi-regulatory oversight by competition authorities for the duration of the remedy the importance of this effect cannot be underestimated in dynamic high-tech industries.

[B] Data Portability, Data Interoperability and Data Sharing

The three recent expert reports on the challenges to competition policy in the digital (data) economy all promote solutions and remedies that include greater data portability and interoperability solutions.[65] The DG Comp expert panel report, for example, uses the term 'interoperability' in 104 instances, underlining the importance the expert panel assigns to the concept. In Chapters2 on digitisation and competition and Chapter 4 on platforms, they argue among others. that in the digital economy there is a tendency for dominant platforms and ecosystems to emerge that benefits from interoperability within and between members of the ecosystems through the use of private application programming interfaces (APIs). Competition between platforms and different ecosystems, however, is made more difficult by the lack of interoperability. They infer from that that intervention through a presumption in favour of a duty to ensure interoperability in Article 102 cases may be necessary. Similarly, the Furman Report and Stigler Committee advocate interventions designed to enhance data portability and interoperability.[66]

Cremer et al draw an important distinction between data portability and different types of interoperability: 'Portability of data refers to the ability of users to transfer the data that a platform has collected about them. … The EU's General Data Protection Regulation (GDPR) has introduced a limited right to data portability (Article 20) as a means to avoid data-driven lock-ins.' Data interoperability is similar to data portability but is a wider concept in that it is based on a continuous and potentially real-time access to personal or machine user data. Interoperability needs to be understood in four different ways: data portability, data interoperability, protocol interoperability and full protocol interoperability.

It would seem to be helpful to provide here a short definition of these terms based on Cremer et al.:[67]

65. *Supra* n. 2.
66. *See* Furman et al. and Stigler Committee, *supra* n. 2.
67. Cremer et al., *supra* n. 2, at 83.

- Data portability: Individual right of access to personal data that a platform has collected about them (e.g., Article 20 General Data Protection Regulation (GDPR)) which can facilitate switching between data driven services for users but is limited to accumulated historical data. Data portability in this narrow sense refers to historical personal data.
- Data interoperability is similar to data portability but always requires some form of protocol interoperability to be effective. It represents a more comprehensive potentially standardised system of access to data (including real-time) for data subjects and machine users, often through a sector-specific access regime requiring protocol interoperability (e.g., APIs) to open up secondary markets for new or competing providers (e.g., PSD2 Directive).
- Protocol interoperability refers to the ability of two services or products to technically interconnect with one another. It ensures that two systems can fully work together and that complementary services can be provided. This is the way in which interoperability has usually been thought of in EU competition policy (e.g., Microsoft operating system software). Full protocol interoperability requires a much deeper integration and requiring common standards (e.g., telecommunications services.
- Finally, full protocol interoperability refers to standards that allow substitute services to interoperate, e.g., messaging systems.

These concepts are worth evaluating in terms of what they imply for their implementation when mandated as a remedy in competition law. First, they all are of a regulatory nature and oblige companies to accept in well-defined circumstances requests for access to historical or real-time data. Defining these circumstances requires a carefully drafted set of commitments and rules. Not surprisingly, third parties with an interest in accessing personal data of potential customers or interoperating with systems and platforms of dominant competitors will try and shape the terms on which these access and transfer rights are defined. Second, compliance with such requests needs to be monitored and consumers or businesses must be able to rely on effective enforcement mechanisms. Data portability, for example, is primarily a consumer (B2C) remedy. As conceptualised in the GDPR it represents an individual right of the data subject that can help counter data lock-in and facilitate switching by facilitating access to anonymised use of individual-level data and aggregated data. It must be conceptually distinguished from further-reaching B2B data access rights as inherent, for example, in the CMA Open Banking Orders and the EU Payment Services Directive 2015/2366 which establish, for the financial sector, a much more elaborate data sharing regime to ensure interoperability between different services. For B2C remedies an ombudsman function would seem most appropriate whereas for industry specific B2B remedies other solutions can be envisaged where industry bodies or dedicated sector regulators may become involved or, as in the cases discussed above, a Monitoring Trustee with relevant specialist technical skills.

This is what has happened in the UK with the establishment of the Open Banking Implementation Entity (OBIE) in 2018. The OBIE was created by the CMA to deliver the APIs, data structures and security architectures that will enable developers to harness

technology, making it easy and safe for individuals and SMEs to share the financial information held by their banks with third parties. While OBIE is a private body its governance, composition and budget are determined by the CMA.[68]

Case Study: Open Banking[69]

Open Banking is a secure way for consumers to give providers access to their financial information. Open Banking requires that, at a consumer's request, firms must share specified account information with a third party in a standardised way. This means that consumers can elect to have information from accounts held across multiple providers, shared with one app. This has paved the way for a number of new propositions to emerge which make use of this information, for example, to help consumers better manage their money, budget or to compare different accounts.

The reforms to deliver Open Banking were pursued by the CMA following a market investigation, as a remedy to boost competition and innovation in the retail banking market. The CMA used its order-making powers to require the largest banks to implement Open Banking, working with representatives from the wider industry. They did this by funding an implementation entity that is governed by the CMA. The regulation requires work to implement and the entity does this through vigorous efforts to design standards and practices that make it function effectively.

In addition, under the Revised Payment Services Directive (PSD2), third parties who access consumers' account information must be authorised and regulated by the Financial Conduct Authority. This regulation is considered to be crucial in giving consumers confidence to trust third parties with their account information.

There are already signs that Open Banking is having some success in allowing new, innovative providers of financial services into the market. For example, around 200 organisations are currently going through the process to be regulated to be able to provide bank account information services.

In an evaluation of the Open Banking Orders commissioned by the OBIE, one year after the roll out of the first account information API, the report by the Open Data Institute and Fingleton Associates (2019)[70] commented that the most successful elements of Open Banking so far were: (i) the Open Banking standards; (ii) the implementation approach; and (iii) the Open Banking ecosystem. This is confirmed by statistics published by the OBIE: by mid-2019 there were 180 entities approved by the

68. It is funded by the UK's nine largest current account providers (the so-called CMA 9) and overseen by the CMA, the Financial Conduct Authority and Her Majesty's Treasury. The nine mandated institutions (referred to as the CMA9) are: AIBG, Bank of Ireland, Barclays, Danske, HSBC, Lloyds Banking Group, Nationwide, RBS and Santander.
69. Fuhrman et al., *supra* n. 2, p. 69.
70. https://www.openbanking.org.uk/wp-content/uploads/open-banking-report-150719.pdf.

financial conduct authority (FCA) to offer services that use Open Banking, 116 of which were third party providers (TPP) and 53 customer propositions were live. Arguably a great success for a remedy two years after the CMA made its orders. Another report quoting Financial Research Survey data found that:

> Digital-only fintech banks, including Monzo and Starling Bank, account for over one in 10 (13%) new current accounts opened in the UK, in the six months ending June 2019. Other smaller but more 'traditional' providers (i.e. with a network of branches), including Nationwide, TSB and Metro Bank account for 21 percent of new current account openings, while the 'Big Five' and their subsidiaries account for 65 percent. This proportion is down five percentage points from 2018, which might cause incumbent providers some concern.[71]

Regarding the implementation ODI and Fingleton commented that although the OBIE is funded by the largest retail banks in Great Britain and Northern Ireland, the implementation entity is structured to be independent of them. This allows the OBIE to balance the demands of TPP, banks and other groups in the design and without becoming captured by any one group. Representatives of TPPs who were interviewed for the report praised the OBIE's development sandboxes, and handling of inbound support requests: 'The standards, documentation of those standards, communication when standards come out, clarifications, responses on email, the working groups they have, all has been incredibly positive.'[72]

The UK Financial Conduct Authority, building on the well-received and early success of the Open Banking Orders set up the Advisory Group on Open Finance in 2019 to discuss the potential of extending Open Banking-like data-sharing to a wider range of financial products.[73] The claim that Open Finance could build on this by enabling similar access to a wider range of financial products. It could also improve the financial health of consumers and businesses by enabling them to see all of their accounts from different suppliers in one place and helping them to manage savings, loans, investments and pensions. It could facilitate switching products or transferring funds between products to maximise the interest received, possibly doing so automatically. It could also facilitate access to financial advice and credit.

At this stage, it is worth mentioning other initiatives that seek to promote data sharing and data interoperability. The Data Transfer Project launched in 2017 by Google, Facebook, Microsoft and Twitter, is a collaboration of organisations committed to building a common framework with open-source code. It extends data portability beyond a user's ability to download a copy of their data from their service provider to providing the user the ability to initiate a transfer of their data into and out of any participating provider.[74] It will be interesting to see how far such private initiatives go. Private efforts by digital platforms may struggle at some stage to overcome the

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71. *See* UK Research Report MasterCard/Ipsos, September 2019, citing the Financial Research Survey (FRS) of current accounts opened in the last six months. June 2019. https://www.ipsos.com/sites/default/files/ct/news/documents/2019-10/the-state-of-pay-2019-2020-ipsos-vocalink.pdf.
72. *See* ODI and Fingleton (2019) *supra*, at p. 34.
73. https://www.fca.org.uk/firms/advisory-group-open-finance.
74. https://datatransferproject.dev/dtp-overview.pdf.

challenges of misaligned incentives as interoperability might have broader benefits but to the cost of the dominant companies. In my experience, the Open Banking Working Group established by the UK retail banks was instrumental in developing the key concept and analysis, but it required legislative action by the CMA to create an effective implementation of these concepts.

[C] Proposals for Institutional and Procedural Reform

The Digital Competition Expert Panel, commissioned by the UK Treasury and chaired by Jason Furman, recommends the establishment of a digital markets unit and in effect proposes a system of *ex ante* regulatory framework for digital platforms. The digital markets unit would be charged with drawing up a code of conduct for platforms with a 'strategic value status' to prevent them to disadvantage rivals and rival products. Second the digital markets unit should take measures to enable greater personal data mobility and promote tools and systems with open standards that increase competition and consumer choice.[75] In the view of the Expert Panel, Open Banking provides an instructive example of how policy intervention can overcome technical and co-ordination challenges and misaligned incentives by creating an adequately funded body with the teeth to drive development and implementation by the nine largest financial institutions: 'The experience from Open Banking demonstrates that, although complex, the challenges associated with implementing data mobility can be overcome. In taking forward work on data mobility, the digital markets unit should learn from the experience of Open Banking as well as other initiatives in related areas such as the Smart Data Review.'[76]

The Expert Panel recognises that dealing with such complex issues would require specialist expert skills and would be costly. Some of these challenges were also explored in another UK Government report on personal data portability[77] and include the requirement for technical knowhow, trusted independence, the powers to require participation, and a willingness to run 'sandboxes', where innovators can build and test propositions. This echoes the theme discussed above about the challenges of designing and implementing merger remedies in innovation and high-tech industries.

These proposals have been met with some criticisms regarding the dramatic shift away from competition law enforcement based on an *ex post* approach, which relies on a case-by-case analysis of business conduct and implies an effects-based approach, in favour of a per se prohibition of certain types of conduct (or at least rebuttable presumptions).[78] Deutscher questions the assumption by Furman et al that the *ex ante* approach is justified because the welfare costs of under-enforcement under the current regime in digital markets (large number of false negatives, e.g., Type II errors) are

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75. *See* Furman et al., *supra* n. 2, pp. 5, 60-77.
76. *Ibid.*, p. 70.
77. Ctrl-Shift report for the Department for Digital, Culture, Media and Sport, Data Mobility, The personal data portability growth opportunity for the UK economy, 2018.
78. Elias Deutscher, *Is Furman Right to Propose Ex Ante Platform Regulation as the Best Way to Address Competition Concerns in the Digital Economy?*, CCP Research Bulletin No. 37, 14-16 (Spring 2019).

outweighed by the potential costs of over-enforcement in a world of more *ex ante* regulation of digital markets (too many false positives, e.g., Type I errors and high regulatory enforcement costs). He also claims that the Furman Report dodges the question what the requisite threshold should be for establishing strategic market status. Is the concept one of relative market power or superior bargaining power? In other words, what are the standards of proof for interventions? These questions are relevant. The Furman proposals for more proactive *ex ante* regulation and a shifting of the burden of proof highlights the need to distinguish between the burden and the standard of proof that is applied to antitrust enforcement actions in the digital economy.[79] The two are interrelated but different legal concepts with far reaching consequences for the conduct of an antitrust investigation and the costs they impose on the regulators and the parties. As Advocate General Kokott eloquently summarised in her Opinion to the *T-Mobile* judgment:

> The standard of proof determines the requirements which must be satisfied for facts to be regarded as proven. It must be distinguished from the burden of proof. The burden of proof determines, first, which party must put forward the facts and, where necessary, adduce the related evidence ([…] also known as the evidential burden); second, the allocation of that burden determines which party bears the risk of facts remaining unresolved or allegations unproven […].[80]

Cremer et al and Furman et al also advocate a change in the burden of proof whereas Schweitzer et al make proposals that lead to a different standard of proof for investigation of certain types of conduct by certain companies in the digital economy. This again raises the issues whether lowering the threshold for intervention would lead to over-enforcement. The UK MIR of the UK Entreprise Act 2002 relies on a lower threshold for investigation with no requirement to show an abuse of a dominant position. My view is that the UK MIR is well suited to deal with such issues and represents a lowering and broadening of thresholds for intervention not dissimilar to the reform proposals for Germany advocated by Schweitzer et al under the German Competition Act which allows. The MIR allows the CMA to investigate a market and identify features (structural or conduct features) that can be expected to have an adverse impact on competition (AEC). The burden of proof rests with the competition authority. However, this legislative instrument which is unusual and has a long history in the UK is relatively wide in scope and not contingent on proving the existence of market power. The focus is on market features that impede, distort or prevent competition (the same language as in Article 101).

The CMA guidelines on market investigation refer to five sources of competitive harm that may justify a finding of an AEC:

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79. For a recent contribution to this discussion *see* Pieter Van Cleynenbreugel, *The Commission's Burden of Proof in Article 101(1) TFEU: Evidentiary Shortcuts Cut Short?*, Competition Policy International (December 2019). For an earlier contribution *see* Cento Veljanovski, *Mergers, Conterfactuals and Proof after Metcash*, 40 ABLR 263 (2012).
80. Opinion of Advocate General Kokott in Case C-8/08, *T-Mobile*, EU:C:2009:110, paragraph 60. Cited in Van Cleynenbreugel *supra* n. 79, p. 4.

(1) unilateral market power, including networks and two-sided platforms;
(2) barriers to entry and expansion;
(3) coordinated conduct, including tacit collusion;
(4) vertical relationships; and
(5) weak customer responses.

These criteria seem to be tailor-made to an investigation of dominant digital platforms and apply more readily than the traditional test for abuse of market power under Article 102. The burden of proof is not shifted; however, the standard of proof is a different one as an AEC can be found on the balance of probabilities which is arguably a weaker test than finding an abuse of a dominant position.

Another important feature of the UK MIR is that the scope for remedies is wide-ranging. Potential remedies include structural remedies. These are rarely used but have been applied for example in the investigation of the British Airports and the Cement industry.[81] Clearly the threshold for intervention would be lower than under Article 102 TFEU or Chapter II of the UK 1998 Competition Act. More generally, the design and implementation of remedies under an MIR can be built into the investigation into the early stages of an enquiry and appropriate monitoring systems can be established or recommendation can be made for existing regulatory bodies to take over the *ex post* enforcement and monitoring of remedies.[82] The case study of on Open Banking in the previous section is a good example of a regulatory entity overseeing the implementation of the data portability and interoperability remedies funded by the retail banking industry but operating independently.[83]

§7.04 CONCLUSIONS

In this chapter, I assessed the challenges in designing and implementing remedies in two parts. In the first part I discussed four major challenges of designing and implementing timely and effective remedies in merger control. Of these, the increased complexity is the most important challenge. This raises the question which I would like to address in my concluding remarks, namely whether there is a limit to the degree of complexity a merger control review leading to complex remedies can tolerate and what if anything can and should be done. Is it simply a question of allowing for more time and require more resources? Should overly complex competition issues leading to complex remedies be rejected as too big to fix? Or is it a question of relying on *ex post* reviews of remedies and modifications of commitments by the authorities within a certain time period? These are important questions.

81. *See BAA Airports Market Investigation* – Final Report, of 19 March 2009 and *Aggregates, Cement and Ready-mix Concrete Market Investigation* – Final Cement Market Data Order, of 13 April 2016.
82. Andrea Coscelli & Antonia Horrocks, *Making Markets Work Well: The UK Market Investigations Regime*, Competition Policy International (11 September 2014).
83. *See* ODI and Fingleton (2019), *supra* at p. 34.

Before I provide my own views, I would like to refer to the discussion raised by *Bayer/Monsanto*[84] where this question whether the transaction was too big to fix was asked and the recently retired head of the compliance division of the US Federal Trade Commission (FTC), Daniel Ducore, felt compelled to answer with a letter to the American Antitrust Institute (AAI). The AAI had criticised the remedy for raising 'execution risk'. Ducore's letter discusses the broad scope of the remedy, the risks that remain, and some suggestions for how the Antitrust Division should continue to review this particular remedy in the years following its implementation and share its learning with the public.[85] In his robust defense of the settlement, which is a fix-it-first remedy and makes the approved buyer BASF party to the settlement although it is not a named defendant in the Complaint, Ducore points out one of the more unusual aspects of the decree, namely to 'reduce the "asset package risk" to near zero by allowing BASF within the first year following divestiture, to obtain any additional assets if such assets have been "previously used" by the Divestiture Businesses and are "reasonably necessary" for the businesses continued competitiveness'. The final decision lies with the DoJ in its sole discretion and Ducore acknowledges that '… it is rare that either the Division or the FTC has provided for the buyer's reaching back to obtain additional assets'.

I believe this case illustrates very well the dilemma of complex mergers requiring broad and complex remedies. I fully agree with Ducore that *ex post* reviews are essential to inform and reassure the public and that the antitrust authorities are held accountable for such high-profile decisions. More generally, it is in my view very important that regular *ex post* reviews of decisions of competition authorities are undertaken and published. The UK CMA does so regularly and is to be complimented for this. The CMA builds on a rolling programme of *ex post* evaluations of merger decisions started by the UK Competition Commission (one of its predecessor bodies) in 2004 and offers a number of learning points regarding merger remedies policy and different types of remedies. Among the general lessons is the need for parties to have appropriate incentives to implement remedies and the limited circumstances in which behavioural remedies might be effective (Hoehn, 2018).

The most recent CMA report further refers to the conclusions regarding the need to recognise the difficulties of selling selected assets rather than on-going (e.g., stand-alone) business and the need for sufficient information to be provided to potential purchasers.[86] The CMA report also highlights an observation made by the FTC in its 2017 remedy study that there was a reluctance of some buyers to raise concerns with FTC or an independent monitor and that the FTC needed to impress on affected parties to raise issues when they arise. In the opinion of the CMA there is an important difference between the US/Canadian and EU systems in that DG Comp can only consider remedy proposals offered by the parties. While it has the ability to decline

84. Decision (EC), M.8084 – *Bayer/Monsanto*. Please note that the author was a senior advisor to the trustee monitoring the implementation of the Commitments globally.
85. Daniel Ducore, Letter to Diana L. Moss, President American Antitrust Institute, 2 August 2018.
86. CMA – Competition & Market Authority, Merger remedy evaluations – Report on case study research, CMA109, of 18 June 2019.

those proposals the only real alternative is to propose and prepare for a prohibition decision. The CMA believes that this may lead to 'problems related to an inadequate scope of divestiture packages and perhaps also to a lack of suitable purchasers'.

From my own experience, and as discussed in this chapter, I would further advocate that the status of purchaser reviews in EC merger control is enhanced and the Trustee given more time to evaluate the suitability of a proposed purchaser, particularly in complex merger remedies that require economic analysis of competition and innovation effects and sometimes also common ownership structures. One week is clearly not enough! The Trustee will also require sufficient resources to evaluate such complex effects. These resources are not only those that economists can provide but also external legal and industry expertise. This means that the appointment of a suitably qualified trustee or trustee team becomes central to the successful implementation of a complex remedy. It is not surprising that in my experience the European Commission has insisted on the inclusion of a technical expert as a key member of a trustee team.

In the second part of this chapter, I discussed the challenges for remedies design and implementation facing antitrust authorities when dealing with competition issues in the digital economy. Various reports have called for a new and different approach to deal primarily with market power of dominant digital platforms and ecosystems that are protected by network effects and high barriers to entry and the scope for anticompetitive behaviour,[87] including the risk of such platforms stifling or impeding competition through acquisitions of start-ups and potential competitors. One argument that has been frequently advanced is that competition authorities should challenge more readily dominant digital platforms and show a greater willingness to use interoperability and data sharing remedies. Other proposals seek to create a regulatory and institutional framework to deal with digital markets and in the case of Jean Tirole promote a more experimental or participative antitrust approach in the digital economy.[88] A third strand of proposals argues for the shifting of the burden of proof in certain situations and move towards a more *ex ante* regulators approach.

My own view is that interoperability remedies are not new in European competition law and have been applied in several merger cases in the ICT and medical equipment industries as well as in the famous Microsoft case of over fifteen years ago requiring dedicated technical monitoring resources. Data sharing remedies are currently being implemented in the European retail banking sector following the Open Banking Orders in the UK and the revised EU Payment Service Directive 2015. As discussed above these remedies have met with some success resulting in the UK from a major effort by a dedicated implementation entity and a willingness to experiment using sandboxes and prizes for innovative solutions to deal with the complexity of the open API remedies.

The challenge discussed in this chapter whereby traditional interoperability remedies in R&D intensive sectors require a balance between preserving incentives to innovate and promote competition the situation regarding data interoperability is

87. *Supra* n. 2.
88. *See* Jean Tirole, *Economics for the Common Good* (Princeton University Press 2019).

subtly different. The incentive problem in the digital data economy is not necessarily the same as in the knowledge economy. The economic problem in the data economy is not so the need to stimulate the creation of data but the need to incentivise the sharing of data.[89] When it comes to designing and implementing remedial actions in the face of dominant digital platforms the same trade-off needs to be considered. There is currently a big debate over the plans by Facebook to integrate part of the two platform businesses it acquired a few years ago, WhatsApp and Instagram, and merge portions of their data stores with Facebook's Messenger system. While some have argued forcefully for Facebook to be broken up, others have promoted a proposal to extend the interoperability and data portability between Facebook and non-affiliated social networks which would preserve the social network benefits.[90]

Regarding the proposals for institutional reforms and the shifting of the burden of proof through a per se prohibition, or a presumption of illegality, of certain business practices for dominant digital platforms I agree that together with the creation of dedicated digital markets unit this would create a system of *ex ante* regulation. This would increase Type I errors due to over-enforcement (too many false positives) while Type II errors (too few anticompetitive practices being caught) would decrease. The trade-off between competition and innovation would tilt in favour of more competition now. The effect on the incentive to innovate by incumbents as against entrants is difficult to assess in abstract. Like others, I believe in a more flexible approach to antitrust in the digital economy that allows for learning from experience.[91]

My proposal would be to find an alternative to changing the burden of proof under Article 102 and consider the UK's MIR as a model for tackling competition issues in the digital economy. Under the MIR the burden of proof is not shifted; however, the standard of proof is a different one as an AEC can be found on the balance of probabilities which is arguably a weaker test than finding an abuse of a dominant position. Another important feature of the UK MIR is that the scope for remedies is wide-ranging. Under an MIR regime a structural remedy to break-up of Facebook would therefore no longer seem to be that far-fetched. Such a proposal is similar to the proposals for reform of the control of market abuse by Schweitzer et al who advocate broadening the concepts of relative market power and superior market power versus SMEs found in German competition law as a potentially effective instrument to close gaps in controlling abusive behaviour in the digital economy. Like the MIR in the UK this would lower the threshold for intervention without necessarily shifting the burden of proof.

89. *See* Victor Mayer-Schönberger & Thomas Range, *Reinventing Capitalism in the Age of Big Data*, (John Murray 2018).
90. *See* KEI Submission to FTC 12 July 2019. https://www.keionline.org/31202.
91. Tirole, *supra* n. 88.