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Abstract

The instrument of concurrency, whereby UK regulatory authorities share and often in practice lead in the application of competition policy, is an important feature of the UK competition law regime. Several studies examined its pros and cons. This article takes a different approach and critically assesses Ofcom's application of its concurrent competition law powers to the telecoms sector. This review identifies a number of shortfalls and provides several recommendations on how Ofcom could improve its record in applying its competition law powers to the telecoms sector to benefit consumers.

Keywords

Concurrency; UK; telecoms; competition law.

1. Introduction[*]

The UK Office of Communications (Ofcom) has both *ex ante* regulatory powers stemming from the *Communications Act 2003* (CA03) and *ex post* competition powers from the *Competition Act 1998* (CA98) and the *Enterprise Act 2002* (EA02) and the CA03, the latter only in relation to the broadcasting sector. It shared its *ex post* powers initially with the Office of Fair Trading (OFT) and now the Competition and Markets Authority (CMA). This arrangement, referred to as "concurrency", also applies to other UK regulatory authorities such as the Gas and Electricity Market Authority (Ofgem), the Water Services Regulation Authority (Ofwat), NHS Improvement, the Office of Rail Regulation (ORR) and the Financial Conduct Authority (FCA).

The institution of concurrency, which is almost unique to the UK, has been examined and assessed in some detail by government and academic studies. This article takes a different approach. It does not look at concurrency from a theoretical or institutional perspective. Instead, it critically assesses Ofcom's main competition policy decisions under its competition powers in the telecoms sector. These include several exclusionary abuses of dominance under Chapter II of the CA98 (equivalent to Article 102 of the Treaty on the Functioning of the European Union).[1] We assess Ofcom's competition decisions in the broadcasting decision in a separate article.[2]

Given that all Ofcom's decisions are exclusionary abuses of dominance, we approached this assessment by applying a framework based on a firm's ability to abuse its dominant position, its incentives to do so and the anti-competitive effects of the identified behaviour for consumers. This is the generally accepted approach by economists, even though currently some elements of this approach may not be legally required.

This article is organised as follows:

- Section 2 briefly describes concurrency and provides a high-level overview of Ofcom's application of its competition powers;
- Section 3 provides a detailed assessment of Ofcom's main exclusionary abuse of dominance decisions; and
- Section 4 draws out the main conclusions and recommendations.

Overall, we consider that, with a couple of notable exceptions, Ofcom's approach has tended to be formalistic, rarely examined the dominant firm's incentives and almost never systematically considered whether the practice has or can have any anti-competitive effects. Instead, Ofcom's focus in most of these decisions was on finding dominance and proving that the behaviour conformed to a particular type of abuse. Instead, we consider that significantly more attention should be given to the dominant firm's incentives and effects on competition and consumers. In terms of evidence, Ofcom has relied to a significant extent on internal documents, which often require careful interpretation, and on price-cost

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[*] I have worked at Ofcom during most of the relevant period – i.e. from 2004 to 2016, with the exception of 2012-13 when I was seconded to the CC. However, I was only directly involved in the 2005 decision to accept undertakings in lieu of a reference to the CC (Ofcom, 2005) and in peer reviewing an early version of the Freeserve decision (Ofcom 2010). The views and opinions expressed in this paper are the sole responsibility of the author and do not necessarily reflect those of my past, current or future employers. While I have received many helpful suggestions and comments, the responsibility for any remaining errors remains solely with the author.

[1] Although Ofcom has also powers on agreements under Chapter I of the CA98 (equivalent to Article 101 of the Treaty on the Functioning of the European Union), a more formal (in the past with the OFT) and informal (in the past with the CC, currently with the CMA and European Commission) advisory role for mergers, we have not covered these decisions as there is much less publicly available material.

[2] In most cases, the legal basis for these decisions was either the EA02 or Section 316 of the CA03, which applies to broadcasting and is akin to competition law rules.

tests for margin squeeze or predation. These are very useful tools, but their interpretation needs to be put into a wider context by providing a credible exclusionary story backed up by additional evidence, including credible evidence of both incentives to exclude and anti-competitive effects. In most cases, the latter were missing. We consider that this increases the risks that Ofcom may make incorrect inferences and ultimately decisions.

All Ofcom's CA98 decisions in the telecom sector are non-infringements. The only infringement decision under the CA98 is *Royal Mail* in the postal sector.[3] While CA98 non-infringement decisions may, in themselves, not be a concern, Ofcom's record raises some questions about its approach to opening cases. This may reflect the lack of systematic application of an ability, incentives and effects approach as a tool to screen which cases to open. In particular, we consider that the failure to consider whether a dominant firm faces incentives to behave anti-competitively is particularly important in explaining the high proportion of cases ending as non-infringement. These could still serve a useful function, if they clarified Ofcom's approach and, hence, improve the ability of firms to comply. However, we noted that the approach used by Ofcom is often inconsistent over time and across decisions covering the same or similar type of exclusionary behaviour. To mention one among several examples, Ofcom's position shifted considerably on whether price-cost tests would be useful or whether the standard should be that of an Equally Efficient Operator (EEO),[4] adjusted EEO[5] or even a Reasonably Efficient Operator (REO).[6]

2. Concurrency

The term concurrency refers to the powers given to the UK regulatory authorities to apply aspects of *ex post* competition law to their industry of competence. Concurrency covers anti-competitive agreements (Chapter I), abuse of dominance (Chapter II) and the power to carry out market studies, which could now lead to a reference to the CMA - and earlier on to the Competition Commission (CC) for a full market investigation. Concurrency means that anti-competitive behaviour can be investigated either by the relevant regulatory authority or by the CMA, although the latter has generally agreed to leave the powers to the relevant regulatory authority.[7] More recently, the Enterprise and Regulatory Reform Act 2013 (ERRA13) also significantly enhanced the sector regulators' concurrency obligations.[8]

The institution of concurrency has been extensively debated, however, solely from an institutional perspective (Stern, 2015 and Weeds, 2004). The National Audit Office (NAO) also assessed the effectiveness of the operation and oversight of the UK competition regime. It showed that over the period 2000-01 to 2015 Ofcom opened 25 cases, all non-infringements.[9] This compared with the

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3 Ofcom, Discriminatory pricing in relation to the supply of bulk mail delivery services in the UK, CW/01122/01/14, 2018, available at https://www.ofcom.org.uk/__data/assets/pdf_file/0022/124591/01122-infringement-decision.pdf.

4 The EEO test uses the dominant firm's own costs to assess whether the dominant firm could trade profitably if it faced the upstream prices it offered to its downstream rivals and the downstream price it charged to its consumers.

5 This takes the EEO, see footnote 4, and adjusts it for costs that entrants have to incur but the incumbent does not.

6 Differently from the EEO, see footnote 4, the REO makes use of the cost of a reasonably efficient rival instead of the dominant firm's own costs. Ofcom argued in favour of the REO standard in *Royal Mail*, though it did not apply it (Crocioni, 2019).

7 See, for example, *CMA and Ofcom memorandum of understanding*, available at https://www.gov.uk/government/publications/cma-and-ofcom-memorandum-of-understanding.

8 This includes: (1) Regulatory authorities have to consider using their (*ex post*) competition powers before using their direct (*ex ante*) regulatory powers; (2) ERRA13 set out institutions and mechanisms for co-operation between the CMA and the regulatory authorities over concurrency policy, procedures and case allocation – i.e. UK Competition Network (UKCN); (3) There are also powers for the CMA to take over competition cases from regulators; and (4) Regulatory authorities can have their concurrency powers removed by the Government, if they are deemed consistently not to have used them sufficiently and caused some detriment of competition in the UK.

9 NAO, 2016, Fig. 11-12.

OFT/CMA with 67 cases, of which only 22 were non-infringements, Ofgem (five, of which one was an infringement decision) Ofwat (five, of which two ended with commitments) and the ORR (nine, of which one infringement and one commitment). Hence, Ofcom stands out for being the most active sectoral regulator, though also having the lowest proportion of infringement decisions. More recently, Ofcom found that Royal Mail (RM) infringed Chapter II. The NAO concluded that "[t]*o enforce competition law successfully, the regime needs to build up a steady flow of successful high-profile cases, decisions and fines that withstand appeal. A decision that finds an infringement of competition law can provide a deterrent effect, clarify the law and result in financial penalties. Lower profile and local, targeted cases can also play an important role in promoting deterrence, particularly among small and medium-sized enterprises. A non-infringement decision is unlikely to provide as much deterrence, but can help to clarify the law and set a precedent.*"[10]

This article instead opts for assessing the practical application of concurrent powers by Ofcom to the telecoms sector, by critically looking at its main CA98 decisions.

3. Abuses of dominance

Ofcom opened several exclusionary abuse of dominance investigations since its creation. This article focus only on the most important cases (Table 1). We do not examine these decisions in chronological order. Sections 3.1 covers the key margins squeeze decisions, while Section 3.2 examines a couple of cases including a decision to accept undertaking in lieu of a market reference based on a non-price discrimination abuse (Ofcom, 2005) and a predation case (Ofcom, 2006).

Table 1: Ofcom's Chapter II main decisions

Case	**Reference**	**Description**	**Outcome**
Non-price Discrimination	(Ofcom, 2005)	Market study type of intervention under the EA02. BT was found to have engaged in non-price discrimination against downstream rivals.	Ofcom accepted undertakings in lieu of a reference to the CC for a market investigation.
Cordless Phones	(Ofcom, 2006)	Ch. II/Art 102. BT was alleged to have engaged in predation in the market for wholesale distribution of all consumer fixed-line telephone equipment.	Non-infringement.
Freeserve	(Ofcom, 2010)	Ch. II/Art 102. BT was alleged to have engaged in a margin squeeze in the market for the supply of retail residential broadband Internet access services.	Non-infringement.
Thus/Gamma	(Ofcom, 2013)	Ch. II/Art 102. BT was alleged to have engaged in a margin squeeze in the market for the supply of wholesale end-to-end calls.	Non-infringement.
Superfast Broadband (SFBB)	(Ofcom, 2014)	Ch. II/Art 102. BT was alleged to have engaged in a margin squeeze in the market for retail SFBB.	Non-infringement.

We examine these cases under an "enhanced" ability, incentive and effects framework, which includes five elements:

1. Ability - this is reflected in the dominance assessment, as only firms with market power can successfully engage in anti-competitive behaviour and harm consumers. Dominance is, therefore, a critical element in the legal test;
2. Incentives - a dominant firm does not always have incentives to exclude. A good understanding of incentives can help in both deciding whether to open an investigation and better interpret evidence, such as the results of a price-cost test, if and when an investigation is opened;

[10] NAO, 2016, para 2.7.

3. Price-cost test - in margin squeeze and predation cases, a price-cost test showing negative margins is a necessary, though not sufficient, condition to conclude that exclusionary concerns may be warranted;
4. Empirical evidence - empirical evidence, but also facts, are critical in supporting an exclusionary behaviour theory of harm and, in particular, a credible exclusionary story. These are important not only in relation to price-cost tests, but also in assessing the company's incentives to exclude and the anti-competitive effects; and
5. Anti-competitive effects - any attempt by a dominant firm to exclude its rivals must be a concern, if it ultimately harms consumers. To illustrate with the simplest example, if a dominant firm attempted to predate against rivals, but failed, consumers may gain from at least temporarily lower prices. Hence, there is a case for not punishing dominant firms if, they attempt, but fail, to exclude. In addition, but separately, assessing whether anti-competitive effects occurred or are likely to occur can provide critical information in interpreting the results of a price-cost test. For example, if the latter showed negative margins, but there was no evidence of rivals being negatively affected, further analysis and checks would be required.

Three of the Ofcom's decisions in Table 1 covered margin squeeze allegations in the telecom sector: *Freeserve* (Ofcom, 2010), *Thus/Gamma* (Ofcom, 2013) and *SFBB* (Ofcom, 2014). *Freeserve* and *SFBB* concerned broadband services, then growing markets, while *Thus/Gamma* concerned a declining market for call services.

3.1.1 Freeserve - The first meaningful attempt

British Telecom (BT), the vertically integrated UK telecoms incumbent, dominant in the upstream market for residential wholesale broadband services, was alleged to have undertaken a margin squeeze in the downstream market for retail residential broadband Internet access services in the UK. The concern focused on the possible exclusion of third party Internet Service Providers (ISPs) relying on BT's IPStream upstream product. Ofcom adopted a by then well-rehearsed approach to margin squeeze – i.e. a vertically integrated firm with upstream dominance that squeezes the margins of downstream competitors.[11] There were two cases related to different periods and several decision and subsequent appeals to the CAT. We focus on the most recent decision (Ofcom, 2010). The allegation was that BT had engaged in a margin squeeze over the period June 2002 to December 2004. Previously, Ofcom's predecessor, The Office of Telecommunications (Oftel), concluded that BT had not engaged in a margin squeeze over the period up to June 2002.

The downstream market was defined to include all broadband residential services including those provided by cable operators – i.e. Virgin Media (VM). In a margin squeeze allegation the upstream market definition is critical for a finding of dominance. The key issue was whether a downstream service offered by a cable provider that very rarely supplied upstream products to ISPs in direct competition with BT, should be included in the upstream market definition and, critically, dominance assessment. The main point of debate was whether VM's downstream services could indirectly constrain upstream providers[12] from increasing their upstream prices, in this case BT's IPStream.[13] This mechanism is referred to as "*indirect constraints*". ISPs could choose which service elements they buy from BT, and which ones they self-supply. As shown in Figure 1, downstream competitors need to self-supply progressively more service elements if they moved from IPStream, to DataStream and lastly to Local

[11] Ofcom, 2010, para 4.1.

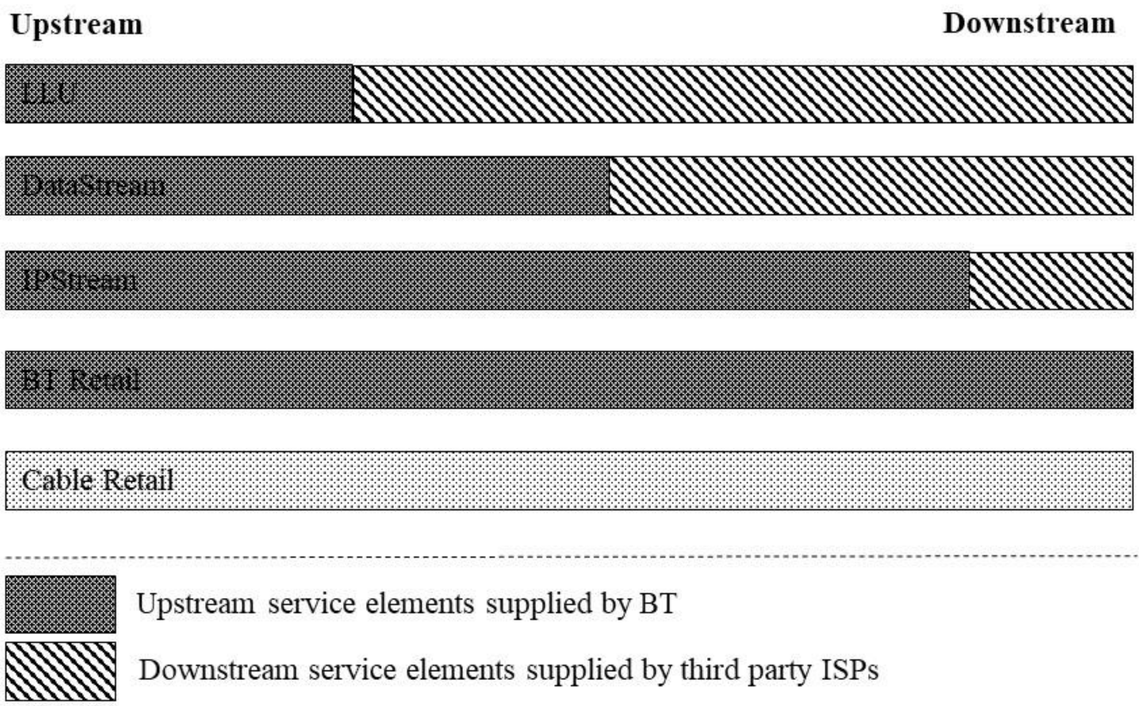
[12] BT and other third parties relying on other BT's upstream services, such as DataStream and Local Loop Unbundling (LLU). Ofcom, 2010, para 2.159.

[13] Ofcom, 2010, para 2.163.

Loop Unbundling (LLU) products. Ofcom decided to include cable in the upstream market and to separately assess the strength of its constraint in its dominance assessment.[14]

Despite cable services covered only about half of the UK and BT had a share of less than 50% in certain cable areas and nearly 90% in non-cable areas, Ofcom defined a UK-wide geographic market, because of BT's prices did not vary geographically, which, according to Ofcom, was "*indicative of a common pricing constraint.*"[15]

Figure 1: Upstream and downstream elements in BT and cable options



Ofcom concluded that BT was dominant upstream. In reaching this conclusion, Ofcom considered that this was an immature and fast growing market and, hence, market shares would be a less reliable indicator of dominance.[16] However, although it included cable in the relevant product market, Ofcom focused most of its dominance assessment on estimating the strength of the indirect constraints from cable and its impact on market shares. According to Ofcom, BT's upstream market shares, which was close to 100%, did not take into account the indirect constraints, while its downstream market share was not a good proxy because cable only exerted an indirect constraint. Ofcom's main starting point was that that because cable exerted an indirect constraint upstream, its effects were diluted and weaker.[17] As a result, Ofcom claimed that BT's (cable's) downstream market shares should be adjusted upwards (downwards) for these to be used as good proxies for market power upstream.[18] At its basic, Ofcom's argument can be interpreted as follows. As the price of IPStream is about 60% of the retail price, a 10% upstream price increase would be passed-through (assuming full pass-through) as a 6% downstream price increase.[19] It applied two methods to estimate the market share implications. First, it reduced the

[14] Ofcom, 2010, para 2.166.

[15] Ofcom, 2010, para 2.188.

[16] Ofcom, 2010, para 3.12.

[17] Ofcom, 2010, para 3.29.

[18] Ofcom, 2010, paras 3.10 and 3.32.

[19] Ofcom, 2010, paras 3.29-30.

cable downstream shares by 40% and increased the downstream shares of other operators accordingly. As a result of these adjustments, BT's upstream market share was estimated to range from 47% to 71% over the relevant period. Second, Ofcom recognised weaknesses in the former approach and also adjusted the upstream market shares on the basis of what it termed theoretical relationships between market power and market shares and, separately, between the upstream and downstream demand.[20] This adjustment increased BT's downstream market share (as a proxy for upstream market shares) from a 40-60% to a 60-100% range over the relevant period.[21] Ofcom also reported that BT's net additions increased from 47% in June 2002 to 76% in December 2004[22] and estimated BT's share of addressable lines[23] to be in the 60-70% range.[24] Overall, BT was found to be dominant upstream,[25] based on its (adjusted) upstream market shares being over 40%, its higher coverage relative to cable and the presence of high barriers to entry and expansion.[26]

The abuse assessment relied solely on a price-cost test. Ofcom opted for a Long Run Incremental Cost (LRIC) standard and applied the test to all residential broadband products.[27] It relied on three approaches:[28]

- historical cost accounting based on the actual costs and revenues, as recorded in the company's accounts;
- Net Present Value (NPV) based on discounted future cash receipts net of payments; and
- cohort analysis based on taking revenues and costs for a group of customers – i.e. those taking the service in a particular period (e.g. one month) - and estimating their NPV.

Ofcom indicated a preference for the NPV approaches.[29] *"In this case, Ofcom considers that, whilst the historical analysis is clearly of relevance in considering BT's conduct during the period, a finding of losses on the basis of the historical analysis would not be sufficient to lead to a finding of infringement since the analysis does not take into account other considerations relevant to the assessment of a margin squeeze in the circumstances of an immature and developing market."*[30] The main consideration was that in such markets prices may be particularly low in the early phases to boost initial demand and, failing to take a longer term view, may increase the risk of a false conviction (Type I error).[31] However, Ofcom also recognised that the NPV approach is based on forecast information and, therefore, subject to uncertainty.[32]

Ofcom made several adjustments to BT's data in its statement of objections to ensure that they reflected the purpose of the analysis. For example and among others, in applying its NPV approach

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[20] Ofcom, 2010, para 3.37 and Annex 2.

[21] Ofcom, Figure 3.5. At the end of the period, the adjusted reported share was higher than 100%.

[22] Ofcom, 2010, para 3.46.

[23] These lines could be quickly served, reflecting the network coverage that existed at the time.

[24] Ofcom, 2010, paras 3.51-52.

[25] Ofcom, 2010, para 3.98.

[26] Ofcom, 2010, para 3.87.

[27] Ofcom, 2010, paras 4.14 and 4.22.

[28] Ofcom, 2010, paras 4.34-36.

[29] Ofcom, 2010, para 4.41.

[30] Ofcom, 2010, para 4.43.

[31] Ofcom, 2010, paras 4.48 and 4.61. Although an authority will strive to make the right decision, it faces some positive probability to incur in errors. It may: (a) intervene when it should not. These are termed Type I errors (false convictions), which in this case mean sanctioning behaviour which is unlikely to have anticompetitive effects and/or whose likely effects are more than outweighed by efficiency justifications; or (b) fail to intervene when it should. These are termed Type II errors (false acquittals), which in this case means not sanctioning behaviour that is likely to have anticompetitive effects.

[32] Ofcom, 2010, para 4.50.

Ofcom noted that "*BT's calculations were based on an assumption that unit costs would fall in the future but that unit revenues would remain static (or would increase slightly).*"[33] The implied increase in margins appeared at odd with a market that was expected to face increasing competition. Ofcom provisionally found that the NPV would be negative, pointing to a margin squeeze, under a range of scenarios.[34] However, BT claimed that most of these adjustments were not appropriate[35] and Ofcom recognised the validity of some of BT's arguments.[36] Based on its revised assumptions and sensitivity analysis, Ofcom concluded against finding an infringement because: "*Ofcom's sensitivity analysis shows that, under certain assumptions which BT might have regarded as reasonable at that time, an NPV analysis commencing on 1 June 2002 might have produced positive results. Taking into account the uncertainties associated with a rapidly developing market and the fact that BT could not have been aware of the approach which Ofcom would take to the NPV analysis until November 2003, this suggests that the negative NPV analysis seen from 1 June 2002 cannot be relied upon to support a finding that BT abused a dominant position.*"[37]

Assessment

This is largely a formal decision, as Ofcom did not assess BT's incentives to exclude entrants and did not consider the possible effects of BT's alleged exclusionary behaviour. The choice to take into account the indirect constraint exerted by cable is noteworthy, but Ofcom focused too much on how to adjust market shares rather than considering how this affected its upstream dominance assessment.

A substantial part of the decision focused on the dominance assessment and, in particular, on adjusting BT's downstream market shares in order for them to be a good proxy of upstream dominance. While we consider that it is important that indirect constraints are adequately reflected in the dominance assessment, we have two main concerns with Ofcom's approach. First, adjusting market shares implicitly assumes that the latter are a good indicator of market power. They could be only if the services are homogeneous, as the Lerner Index relationship, which Ofcom uses as the basis for its adjustment, is based on a Cournot model with homogeneous products. This is not the case for broadband access services, which are differentiated along many features – i.e. speed, contention rates etc. – and critically in this case by technology - i.e. cable vs ADSL.

Second, even assuming that that market shares should be adjusted, we have some concerns with both methods used by Ofcom. The first method – reducing the cable market shares by the so-called dilution factor, which is the ratio of the upstream to the downstream price - is arbitrary by Ofcom's own admission. However, the second method also raises important questions. In essence, Ofcom argued that the constraint from cable, being indirect, was necessarily less strong, hence, BT's downstream market shares had to be adjusted to correctly reflect cable's reduced upstream constrain on BT's market power. To illustrate, suppose cable and BT had each a 50% downstream market share and that the upstream price was 50% of the downstream price. Ofcom argued that BT's upstream market shares should be 75% and that of cable 25%, respectively. However, such an adjustment may be unwarranted. As pointed out by Inderest and Valletti (2007), the answer may depend on the degree of competition upstream and downstream, respectively. If downstream competition was very intense and, hence, the firms' downstream elasticity of demand was high, upstream suppliers would be strongly constrained from increasing their upstream prices by the presence of a vertically integrated firm. In this case, downstream market shares would be a good proxy for upstream market shares and power – i.e. BT would be unable to increase its upstream price – and downstream market shares should not be modified. Conversely,

33 Ofcom, 2010, para 4.63.

34 Ofcom, 2010, para 4.65.

35 Ofcom, 2010, paras 4.66-86.

36 Ofcom, 2010, para 4.87.

37 Ofcom, 2010, para 4.136.

suppose upstream competition was strong, any attempts by the upstream dominant firm to raise its prices would be thwarted. Downstream competition consequently would play a relatively marginal role. In this case, one could safely rely on upstream market shares. The decision reported some evidence suggesting that upstream competition was limited. As mentioned above, BT was almost the sole supplier of IPStream types of services because, at the time, third party suppliers making use of DataStream and LLU were very few and cable hardly ever supplied upstream services. Conversely, the decision reports that in areas, where BT competed with cable, it had a market share of less than 50%. This signals that downstream, where cable competed directly BT, competition may have been intense. This may suggest that unadjusted downstream market shares could have been a more appropriate indicator for upstream market shares, to the extent that these were an appropriate dominance indicator to start with. Overall, we consider that indirect constraints could have been taken into account in an in-the-round assessment of BT's market power, rather than via trying to adjust market shares by assigning so much relevance to the standard 40% threshold for dominance. Instead, more attention should have been devoted to better understanding either the upstream elasticity of demand, which would have also taken into account the impact of any indirect constraint, or the degree of downstream competition between cable and BT.

An assessment of the incentives of a dominant firm to engage in exclusionary behaviour can shed light on whether an alleged abuse is likely to have taken place. If an authority concluded that a dominant firm had no or limited incentives to engage in exclusionary behaviour, any evidence to the contrary – i.e. a price-cost test showing negative margins – should be interpreted very cautiously. In other words, considering the dominant firm's incentives could considerably reduce the risk of errors. In this case, it was alleged that BT engaged in a margin squeeze by acting on the upstream price of IPStream and that of its downstream services. As shown in Figure 1, BT also offered other upstream services – i.e. DataStream and LLU – both requiring fewer upstream inputs from BT. This means that, if BT successfully squeezed its IPStream downstream rivals, the latter may have switched to either DataStream or LLU. As this could reduce its upstream profits, BT may have had limited incentives to do so. Ofcom considered this under barriers to entry rather than under BT's incentives. The decision appears correct in this respect, as Ofcom concluded that the adoption of either LLU or DataStream was too limited over the relevant period for BT to not to have an incentive to exclude.[38]

A long time elapsed between the original complaint and the final decision. Over the period of investigation, Oftel became Ofcom and the original complainant, Freeserve, changed its name twice, first to Wanadoo and later to Orange. The decision was issued six years after the end of the alleged abuse. This is relevant for two main reasons.[39] First, it increases the risk that *ex ante* pricing decisions may be seen through the lens of an *ex post* realisation. For example, *ex post* the original take-up forecasts may now seem overoptimistic, but they may have not been so at the time, given the information available then. Second and more importantly, this lag may have allowed Ofcom to carefully assess whether the alleged margin squeeze had any exclusionary effects on BT's competitors. Ofcom relied on the formal argument that a finding of abuse did not[40] require evidence of effects: "[a] *competition authority is not required to demonstrate that the conduct under investigation actually had an adverse effect on competition within the relevant market*".[41] However, this case would have particularly benefitted from at least some analysis of how competition evolved in the downstream market, where the squeeze was alleged to have taken place. This is particularly important for two reasons. First, any price-cost test results are subject to uncertainty and, in this case, the test did not yield very clear results. Margins shifted

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[38] Ofcom, 2010, paras 3.79 and 3.82. "[D]*uring the period under investigation, LLUOs* [Local Loop Unbundling Operators] *had little impact on the market for wholesale intermediate services: their market share remained low, and was less than 2% between June 2002 and December 2004, and in general they tended to focus on supplying business, rather than residential, services*" (Ofcom, 2010, para 3.79).

[39] In addition, this reduces the deterrence effect.

[40] It would now after the ECJ *Intel* Judgement (ECJ, 2017).

[41] Ofcom, 2010, para 4.5.

from being positive to negative depending on the assumptions. The estimated margins also changed over time from statement of objections to final decision and depending on the method used. Second, the abuse was alleged to have taken place over the period 2002 and 2004. By 2010, Ofcom would have been able to observe if BT Retail had been able to gain any market share during the period of alleged abuse or shortly after the abuse had ceased. It could have also assessed if any rival ISPs had exited the downstream market over the relevant period. The decision is silent on this. Ofcom reports that as of December 2004, BT's share of retail broadband connections was 24%.[42] Just a couple of years later its share had increased to 26% (Ovum, 2006). With the abuse ending in December 2004, this does not suggest that the alleged squeeze substantially increased BT's downstream market share. The decision contains no analysis of whether ISPs entered or exited the market during the relevant period. Ofcom argued that it needed "*strong and compelling evidence*" on negative margins in order to find an abuse. However, any analysis based on the price-cost test will always be inherently uncertain, unless perhaps if the authority found evidence that the dominant firm had knowingly incurred losses. This means that analysis of effects becomes even more important to limit the risk of errors.

3.1.2 Thus/Gamma – an innovative decision, but should Ofcom have opened an investigation?

In 2013 Ofcom found that BT did not abuse its upstream dominant position in the supply of Call Origination (CO) and Call Termination (CT), which are key upstream inputs for BT and its rival resellers to supply wholesale (end-to-end) calls to resellers, by engaging in a margin squeeze in the downstream market. Resellers competed with BT and other Carrier Pre-selection Operators (CPSOs) in a "*further downstream*" market, where they provided call services to final consumers. Ofcom found that overall BT earned negative margins in the downstream market, but critically, as this did not result in anti-competitive effects, it concluded that no margin squeeze had taken place. Ofcom also concluded that BT showed no intent.[43] Figure 2 illustrates the various components and players along the vertical chain. BT:

- sells calls directly to consumers in the further downstream market as a vertically integrated supplier, while at the same time also;
- provides wholesale call services to resellers in the downstream market where it competes with rival CPSOs, like Thus and Gamma, the complainants in this case, who purchase CT and CO from BT, while they either self-supply core network services or purchase them from BT or other network operators. CPSOs[44] repackage these inputs into a call wholesale product sold to resellers or they are vertically integrated and supply directly into the further downstream market;[45] and
- supplies CO, CT and core network services in the upstream market.

The margin squeeze allegation made by Thus and Gamma concerned the downstream market.

Figure 2 also shows additional alternatives in the downstream market where consumers may be interested in bundles of services, which include but are not limited to voice. We refer to this in the next section, where we assess this decision.

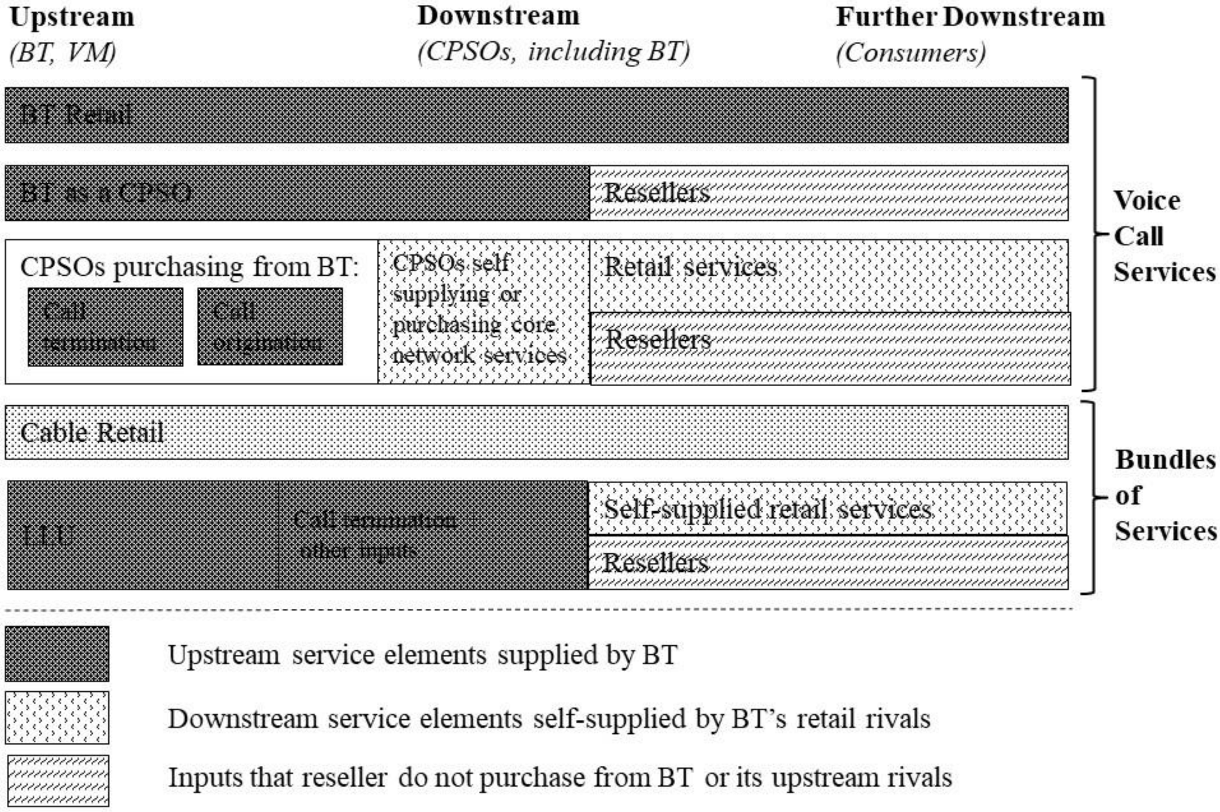
[42] Ofcom, 2010, para 2.21.

[43] Ofcom, 2013, paras 1.6 and 6.8.

[44] There are about 900 of them (Ofcom, 2013, para 3.62).

[45] Ofcom, 2013, para 3.61.

Figure 2: A graphical description of the vertical market structure



In terms of market definition, Ofcom considered three different levels: upstream, downstream and further downstream. The upstream market was where Ofcom had to find dominance. Ofcom defined three separate upstream markets covering the essential inputs CO, CT (which BT must supply at regulated prices) and core network services. The product market definitions adopted were exactly the same as those defined for the purpose of *ex ante* regulation.[46] Ofcom defined the downstream market as the supply of wholesale end-to-end calls to the merchant market. The non-infringement decision was based on the narrowest possible product market and, hence, Ofcom argued there was no need to conclude on the precise boundaries.[47] It argued a wider market definition, "*as a result of changing our approach to indirect substitutes*", would not make anti-competitive effects more likely.[48]

Given the focus on a narrow set of upstream markets, Ofcom also relied on the evidence gathered in its *ex ante* market reviews[49] to conclude that BT was dominant in the provision of CO and CT services.[50] Ofcom also concluded that the inputs supplied in the upstream markets – i.e. CO and CT – were indispensable for participating in the downstream market.[51] Unlike in *Freeserve*, there was no analysis

46 Ofcom, 2013, para 4.213.

47 Ofcom, 2013, para 4.4.

48 Ofcom, 2013, para 4.152, see also paras 4.178, 4.180 and 4.214. For all markets, Ofcom concluded there was a single UK geographic market (excluding the Hull area).

49 "*Given the extensive and recent/contemporaneous nature of the market power assessment exercise carried out in those reviews, and the absence of any evidence to contradict that assessment, we considered it was appropriate to rely on the conclusions of those reviews to assess BT's market power during the period of the investigation*" (Ofcom, 2013, para 5.17).

50 Ofcom, 2013, para 5.33.

51 Ofcom, 2013, paras 1.8 and 5.12.

of indirect constraints in the further downstream market,[52] because Ofcom focused on a narrower market definition given that this was a non-infringement decision.[53] Nonetheless, Ofcom considered whether LLU could be a possible substitute for the "*indispensable*" CO and CT inputs or to wholesale end-to-end calls at various stages in the decision.[54] LLU was not as widespread at the time of this decision, as it became later on.[55] Ofcom noted that "*the decline in CPS lines after June 2006 coincided with the introduction of competition from LLU in the provision of exchange lines and the launch by Carphone Warehouse Group (now TalkTalk Group) in April 2006 of its 'free broadband' offer (to residential customers), which had the effect of attracting customers*."[56] Nonetheless, Ofcom identified two significant limitations on the extent to which LLU-based wholesale services could provide an interoperable or comparable service to wholesale calls:[57]

- the focal product was wholesale end-to-end calls and there were no LLU based voice-only offers; and
- LLU was not ubiquitous and CPS (based on CT and CO) is the first step in the ladder of investment theory (Cave, 2006), whereby rivals can enter with limited investment and later on, they are "nudged" to invest more in their networks and move on to LLU. Ofcom recognised that "*firms may consider the use of CPS to be a method of building a sufficiently large customer base to justify the additional investment required to enter LLU. We suggested that by allowing BT to margin squeeze on the basis of 'pure' CPS wholesale calls (by which we meant competitors entirely reliant on access products for upstream inputs), firms could be foreclosed from securing a large customer base before developing an LLU product. Therefore, to prevent the potential for foreclosing dynamic retail competition, we considered that BT's Wholesale Calls' prices should be replicable on the basis of all potential wholesale inputs*".

Although Ofcom's approach to assessing a margin squeeze did not depart from the standard, it placed significantly more emphasis on effects: "*there must <u>be at least</u> the potential for anti-competitive effects in the downstream market or related markets as a consequence of the failure to maintain a sufficient margin.*"[58]

Ofcom recognised that the upstream inputs prices were regulated and, hence, BT could only engage in a margin squeeze by lowering its downstream price.[59] In testing for a margin squeeze Ofcom:

- opted for a LRIC cost standard;[60]
- estimated the costs related to output increments for both total output and selected individual CPS contracts.[61] As Ofcom explained, *"the key difference between the potential tests is the amount of*

[52] Ofcom, 2013, paras 4.48-49.

[53] "*Given that both CPS and Wholesale Calls originate on BT's network, we consider BT wholesale call origination is necessary for the supply of wholesale end-to-end calls. However, even if the downstream market were expanded to include wholesale call products provided using IA and LLU, BT wholesale call origination would be a necessary input in the supply of wholesale calls to the merchant market, for the nationwide provision of wholesale end-to-end calls*" (Ofcom, 2013, para 5.34).

[54] Ofcom, 2013, para 4.101.

[55] There were around 23 LLU operators active in the UK during the relevant period of investigation that varied in size and coverage (Ofcom, 2013, para 3.20); around 1.8 million phone lines in the UK were fully unbundled, which represented 6% of all lines in the UK (Ofcom, 2013, para 4.102) and at the end of 2008 LLU was technically available at local exchanges covering 84% of the UK population (85% at the end of 2009) (Ofcom, 2013, para 4.10).

[56] Ofcom, 2013, para 3.54.

[57] Ofcom, 2013, para 6.219.

[58] Ofcom, 2013, para 1.16 (*<u>emphasis added</u>*).

[59] Ofcom, 2013, paras 6.24-26.

[60] Ofcom, 2013, para 6.28.

[61] Ofcom, 2013, paras 6.53-54.

downstream operation common costs that are included in the cost stacks. In the case of the individual service, the definition of incremental cost is very narrow. By contrast the inclusion of various common costs means that the definition of incremental cost at the total downstream operation ("total product") level is wide."[62] Ofcom concluded that its "*primary concern was the total product test*",[63] however it also recognised that "*there are circumstances in which individual contracts may be of particular importance to competition (...) For example, in markets where there are strong economies of scale, individual contracts could be considered to be 'competition enablers'. In such circumstances, (...) winning the contracts that drive the largest volumes will be important for firms to enable them to operate at, or beyond, the minimum efficient scale. Also, even if an incumbent or dominant firm is operating significantly beyond the minimum efficient scale it may adopt a strategy of aggressively pursuing large volume contracts as a mechanism to deny entrants the opportunity to reach the minimum scale and therefore effectively compete in the market.*"[64] Ofcom clarified that such concerns would be heightened when: (a) there is a very small number of very large (principally residential) contracts and a long tail of smaller contracts; and (b) there are fixed costs that give rise to some economies of scale for CPSOs;[65]

- estimated the margins of the basis of both an EEO and an adjusted EEO test, though it expressed a preference for the latter.[66] Ofcom acknowledged that "*it is possible that the costs of an entrant could be higher than those of the incumbent due to the incumbent having some unmatchable cost advantages arising from its legacy monopoly position*";[67]
- considered two approaches for a price-cost test: (a) historical (retrospective) analysis – this can be done on a period-by-period basis or on a discounted cash flow basis;[68] or (b) forward-looking (prospective) analysis.[69] Ofcom opted for the historical case, as it argued that in stable markets such as this, the role of a forward-looking approach would be more limited. It also gave preference to a period-by-period approach;[70] and
- chose the relevant period as that from March 2008 to April 2009[71] due to data availability.[72] However, subsequently BT made available data covering the period up to December 2010 and Ofcom undertook some sensitivity analysis over this longer time-period.[73]

In the statement of objections Ofcom concluded that "*there was strong evidence that BT failed to maintain a sufficient margin between its upstream and downstream prices*",[74] over at least the period July 2008 to April 2009[75] both under an EEO and adjusted EEO basis.[76] Overall, this was confirmed in

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[62] Ofcom, 2013, para 6.36.

[63] Ofcom, 2013, paras 6.41 and 6.51.

[64] Ofcom, 2013, para 6.42.

[65] Ofcom, 2013, para 6.43.

[66] Ofcom, 2013, para 6.65-82.

[67] Ofcom, 2013, para 6.74. Ofcom identified the CPS annual charge and the CPS transfer charges as the two key costs that BT does not incur but entrants do, the latter being a more significant item (Ofcom, 2013, paras 6.80-81).

[68] Ofcom, 2013, para 6.119.

[69] Ofcom, 2013, para 6.83

[70] Ofcom, 2013, paras 6.125-140. Note that the cohort analysis Ofcom undertook in other cases, such as *Freeserve*, coincides with the contract-by-contract assessment.

[71] Ofcom, 2013, paras 6.110-111.

[72] Ofcom, 2013, para 6.145.

[73] Ofcom, 2013, para 6.362.

[74] Ofcom, 2013, para 6.88.

[75] Ofcom, 2013, para 6.379.

[76] Ofcom, 2013, para 6.337.

the final decision and Ofcom found that BT "*earned negative margins overall and on eight individual contracts over the period July 2008 to April 2009, its contract with [Company 1] being the most significant in terms of contributing to its negative margins for the product as a whole. Absent this contract BT's margins become sensitive to the time period modelled. Although they remain negative for the period July 2008 to April 2009, they become positive over the longer period ending December 2010. As such, absent [Contract 1], the evidence of BT earning a negative margin on the Wholesale Calls product is sensitive to the time period modelled.*"[77]

As the role of Contract 1, in particular, was very important to Ofcom's conclusions, it is worth covering Ofcom's analysis further.[78] Contract 1 (and to a lesser extent Contract 2) accounted for a large (21-30%) proportion of total minutes supplied by BT[79] and BT made substantial losses on it (estimated at -10 and -20%) under both an adjusted and EEO test.[80] This meant that BT's failure to cover its total services costs over the period July 2008 to April 2009 and also to December 2010 was primarily as a result of BT's pricing of Contract 1. Critically, when Ofcom excluded Contract 1 from its analysis over the longer period from July 2008 to December 2010, BT covered its costs for the entire output increment under both an EEO and adjusted EEO tests.[81]

The decision analysed extensively the possible anti-competitive effects of the pricing of Contract 1. Even if BT's overall margins were negative and only became positive by excluding Contract 1, Ofcom concluded that it had insufficient evidence of anti-competitive effects and that there was a good explanation as to why anti-competitive effects were not expected from BT's pricing of Contract 1. The analysis of effects is what made Ofcom change its views from its statement of objections to its final decision.[82] *Ex post* evidence was critical. Ofcom argued that "[g]*iven the passage of time in this case, it is, however, appropriate to take into account available evidence of what has happened in the market to inform our assessment of what was likely to happen.*"[83] It concluded that it did "*not have sufficient evidence to demonstrate that any of the potential effects identified in the Statement of Objections have materialised in the more than four years since BT first earned negative margins on the Wholesale Calls product. Given the time elapsed since BT's conduct, the failure of actual effects to have materialised so far, and the reasons for this, we consider it unlikely that the effects identified in the Statement of Objections were likely to materialise, and that they are unlikely to materialise in the future*."[84]

Ofcom concluded that its "*assessment suggests that competition in the market for the supply of wholesale end-to-end calls has not reduced in the more than four years since BT first earned negative margins on the Wholesale Calls product. While total volumes across the merchant market have declined since 2008, and this decline has not been evenly distributed across CPSOs, we have not seen evidence that this is a result of BT's pricing conduct. The loss of CPS volumes would not seem to have significantly affected the CPSOs' cost base, nor their incentives to maintain and invest in core networks. Moreover, we do not have evidence that BT's pricing conduct gave rise to reputational effects and discouraged competitors from bidding for wholesale end-to-end call contracts.*"[85]

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77 Ofcom, 2013, paras 1.30-31.

78 Contract 2 was less important as its margins were negative but to a much lesser extent than for Contract 1 – i.e. ranging between 0% and - 10% - (Ofcom, 2013, para 6.349) and, unlike Contract 1, the profitability of Contract 2 improves significantly when a longer time-period is considered (Ofcom, 2013, para 6.367).

79 Ofcom, 2013, para 7.165.

80 Ofcom, 2013, para 6.343. Over the longer time-period, the profitability of Contract 1 is similar to that over the shorter time-period (Ofcom, 2013, para 6.345).

81 Ofcom, 2013, paras 6.372 and 6.444.

82 Ofcom, 2013, paras 1.2-3 and 7.2.

83 Ofcom, 2013, para 7.30.

84 Ofcom, 2013, para 7.5.

85 Ofcom, 2013, para 7.11. See also paras 7.286 and 7.290.

There are a number of reasons as to why Ofcom concluded that negative margins in Contract 1 did not raise concerns about anti-competitive effects. First, Company 1 engaged in bilateral negotiations exclusively with BT. This was consistent with there being no other CPSO that would have been willing to offer Company 1 prices that it would have been willing to accept.[86] Second, although Company 1 "*was now dependent on the supply of Wholesale Calls from BT to compete in the downstream market, BT's ability to use this dependence to pursue an exclusionary strategy is, in the normal course of events, highly restricted by the terms of the long term agreement between BT and [Company 1]. Specifically, BT's ability to unilaterally increase prices or terminate the contract is highly limited."*[87] BT went further and argued that, as a result, *"the net effect of the deal has been that BT, by giving [Company 1] the option to use BT's network at a low cost for an indefinite period of time, "will have enhanced its ability to compete" for as long as [Company 1] needs, and not only against other CPSOs but also against BT itself."*[88]

Ofcom also found that "*multiple firms compete for important contracts. For example, BT's response suggests that it faced competition from at least one other bidder for all but one of the contracts it was invited to bid for. For a number of these contracts ([…]), BT suspects that it faced competition from three or more bidders.*"[89] Furthermore, there was evidence of BT's rivals winning contracts when competing against BT.[90]

The analysis of anti-competitive effects is important because at a high level the evidence showed that during the period of the alleged abuse, BT's share of the merchant market grew rapidly and BT managed to steal business from all its main competitors.[91] However, Ofcom's detailed effect analysis allowed it to conclude that *"BT's rapid increase in market share was largely due to it winning two major contracts, [Contract 1 and Contract 2], which together accounted for [31-40%] of the merchant market (by value). Over the last two years, BT's market shares have remained broadly constant."*[92]

Assessment

This decision has many positive and innovative features. The two-step assessment as to whether BT earned negative margins overall and, if so, what were the underlying causes was innovative and helped reducing the risk of making incorrect inferences from the price-cost test results. The analysis of whether the negative margins that BT made on Contract 1 could lead to anti-competitive effects was also particularly innovative. The theory of harm centred on BT's possible incentives to exclude entrants for the particularly large order, such as Contract 1, because this could deprive entrants of the ability to exploit economies of scale (Fumagalli and Motta, 2013). Even if the evidence led Ofcom to reject this theory of harm, Ofcom was correct in testing this out. This case perfectly illustrates the benefits of carefully considering the effects of an alleged anti-competitive behaviour. Had Ofcom relied and stopped at a relatively high-level assessment of the price-cost test results, as in *Freeserve*, it would have incurred a Type I error (false conviction) and found an infringement where there was none. Hence, this is a real example of how considering anti-competitive effects can positively complement the other critical steps in a margin squeeze abuse assessment.

While overall we consider that this was one of Ofcom's best decisions, we also note that the investigation lasted five years only to reach a non-infringement decision. In this respect, it is legitimate

[86] Ofcom, 2013, paras 7.250-253 and 7.271.

[87] Ofcom, 2013, paras 7.14, 7.256-258 and 7.272.

[88] Ofcom, 2013, para 7.94.

[89] Ofcom, 2013, para 7.191.

[90] Ofcom, 2013, para 7.193.

[91] Ofcom, 2013, paras 5.41 and 5.44.

[92] Ofcom, 2013, paras 5.45-46.

to pause and ask whether there was anything that Ofcom could have done in order to reach a more informed decision early on, as to whether it should have opened an investigation in the first place. One aspect, which the decision does not explore, is whether BT had sufficiently strong incentives to squeeze its CPSOs rivals. This is not only useful evidence in concluding whether or not a behaviour is anti-competitive, but can also be critical in deciding whether or not to open an investigation. If an authority could conclude early on that the facts of the case pointed to the dominant firm not having incentives to exclude, it may decide not to open an investigation. There were significant factors pointing to BT not having strong incentives to engage in exclusionary behaviour:

- as the upstream price was regulated, BT could have only squeezed the rivals' downstream margins by lowering its downstream price. Ofcom acknowledged this.[93] This makes this type of margin squeeze akin to predation and, critically, implies a profit sacrifice by BT, which would not necessarily be required if the margin squeeze involved instead increasing the upstream price (Crocioni and Veljanovski, 2003). When upstream inputs are expected to remain price regulated for the foreseeable future and when there are limited entry barriers downstream, rivals could exit but easily re-enter, as Ofcom noted,[94] making it more difficult for the dominant firm to raise prices after the rivals' exit;
- any gains from exclusionary behaviour appear minimal because this was a declining market.[95] This makes the current costs of BT's behaviour large relative to the future benefits from exclusion. It very much differs from *Freeserve* or *SSFB*, which involved rapidly growing markets; and
- a strategy of squeezing rivals out of CPS could have had the effect of pushing BT's rivals towards service bundles that required LLU. This was already taking place, driven by technology and consumers' increasing preferences for bundled services. Ofcom acknowledged this by stating that "[w]*e noted that, even if it were relevant, the investment decisions in LLU are primarily based on the expected demand for broadband services*."[96] A margin squeeze in end-to-end wholesale calls could have accelerated this shift. As LLU requires rivals to purchase fewer inputs from BT, this would have increased the extent of competition BT would have faced across the vertical chain.[97] This is not an outcome that BT would have wanted to encourage.

It may be worth considering the last point further. In defining the product market Ofcom argued against including services other than voice. One of the main reasons for doing so was that it "*further identified that even if the downstream market definition was expanded to include wholesale call products provided using IA and LLU, BT wholesale call origination was still likely to be a necessary upstream input in the supply of wholesale calls to the merchant market*."[98] In Figure 2, we show the options for customers and providers when they purchase not only a voice product but bundles of services, including often broadband access, sometimes TV and more rarely mobile services. BT's rivals rely on LLU, together with CT (and some other services) in order to provide bundles of services. Ofcom may have concluded that these bundles are not part of the relevant market, but they may still exercise some constraint on BT's ability to raise its upstream inputs prices to CPSOs. Critically, though when considering

93 See footnote 59.

94 Ofcom, 2013, para 7.224.

95 Ofcom, 2013, Figure 3.4.

96 Ofcom, 2013, para 4.108.

97 *"In addition, C&W also provided its views on the economic context of the downstream market which is relevant to the effects assessment. C&W commented that the downstream market is "a mature market with a declining market size and revenue", noting that the size of the market has decreased as providers such as TalkTalk and Sky migrate their customers to LLU*" (Ofcom, 2013, para 7.149). Ofcom also argued that *"[f]urthermore, the overall reduction in competitor volumes has taken place against the backdrop of a declining market, as call minutes are migrated to LLU*" (Ofcom, 2013, para 7.228).

98 Ofcom, 2013, para 5.15. Interestingly Figure 3.2 (Ofcom, 2013) has a footnote: "*Services provided using LLU have been excluded from the diagram.*"

substitutability over a timeframe longer that that used for market definition purposes, the risk of an accelerated migration to LLU could be sufficient to dis-incentivise BT from squeezing its CPSO rivals. Therefore, a careful consideration of BT's incentives to exclude may have suggested that it was unlikely that BT had engaged in exclusionary behaviour.

Edwards and Walker (2013) go further to argue that Ofcom's approach may limit BT's ability to respond to competition from LLU operators. This on the basis that "[w]*here end-customers buy broadband in a bundle with calls, the incremental cost of originating calls over LLU or fibre is considerably less than using BT CO*." They also question whether the use of a LRIC standard is appropriate when the concern is not about new entry, but well-established existing competitors that have already sunk their costs. This is because they argue that the main difference between LRIC and Average Avoidable Costs (AAC) is sunk costs. Although LRIC also includes non-sunk fixed costs, they raised a valid point, especially given that the strong preference for a LRIC cost standard in telecommunications cases can be called into question (Crocioni, 2018).

3.1.3 Superfast Broadband - Back to the starting line

Ofcom (2014) assessed whether BT had undertaken a margin squeeze in the retail provision of Super-Fast Broadband (SFBB) services. At the time, the term SFBB indicated broadband connections with speeds of at least 30 Mbit/s,[99] which then consisted of 17.5% of all UK broadband connections.[100] BT was found dominant in the provision of upstream services that are required to provide retail SFBB services. Under Ofcom regulatory regime, BT's competitors could get access to BT's upstream inputs via Virtual Unbundled Local Access (VULA). Critically, BT had considerable freedom in setting the prices of both its upstream and downstream services, as it had no cost orientation obligation.[101]

Ofcom assessed whether a margin squeeze had occurred for new customers cohorts at the prices of three offers - February 2013, May 2013 and January 2014 – and concluded that it "*did not have sufficient evidence*" to support a finding of abuse.[102]

Market definition was not critical, as Ofcom concluded that BT would be dominant in the upstream market irrespective of whether the upstream market was defined as "*wholesale local access*" or, more narrowly, as just VULA services.[103] While VM did not offer third party wholesale access to its cable network, BT supplied its retail customers and competing retail broadband providers.[104] Unlike *Freeserve*, Ofcom did not consider in detail the issue of indirect constrains. Interestingly over the relevant period, VM had almost twice as many SFBB subscribers as BT.[105]

Ofcom listed the same six standard conditions for a margin squeeze to be deemed an abuse, as in Thus/Gamma, but, unlike in Freeserve, including "*(at least) the potential for anti-competitive effects in the downstream market as a consequence of the failure to maintain a sufficient margin.*"[106] Ofcom opted for a LRIC-based[107] EEO test: "[w]*e have investigated a number of allegations of anti-competitive exclusionary behaviour in recent years using our ex post competition powers. Despite some*

[99] Ofcom, 2014, para 2.7.

[100] Ofcom, 2014, para 2.8.

[101] Ofcom, 2014, paras 2.50-51.

[102] Ofcom, 2014, para 1.14.

[103] Ofcom, 2014, para 4.42.

[104] Ofcom, 2014, para 2.40.

[105] Ofcom, 2014, para 2.9.

[106] Ofcom, 2014, para 3.12.

[107] Ofcom, 2014, para 5.29. Note that unlike in *Thus/Gamma* "*at least*" is in brackets, signalling a small, but important, difference in emphasis.

consideration of REO cost test results, Oftel/Ofcom's primary approach in these cases has been based on an EEO methodology."[108] In reaching this conclusion not to adjust the EEO costs, Ofcom considered three approaches:

- as in Thus/Gamma, if entrants had higher costs than incumbent due to regulatory obligations. Ofcom concluded that "*we consider that BT's total costs associated with its choice of wholesale inputs are likely to be higher than other CPs' costs because it uses WLR rather than MPF*";[109]
- based on BT's economies of scales and scope. Ofcom argued that BT would not be "*able to reliably estimate the network costs of its competitors*";[110] and
- for differences in customer bases between entrants and dominant firm as "*TalkTalk claimed that BT has a base of legacy customers who make a very high volume of calls. TalkTalk submitted that these customers are not contestable by rivals and therefore should be excluded from the EEO test.*"[111]

The treatment of the common and shared costs and the relevant output increment was critical and required a significant degree of judgement when applying the price-cost test. Ofcom examined in significant detail how to treat shared and common costs because "[a]*lthough there are some costs which can be considered as SFBB-specific (e.g. the supply of routers), there are several costs categories (such as platform costs and portal fees) which are shared between SBB and SFBB. There are also some cost categories (such as customer service and some marketing costs) that are shared with voice and TV services (i.e. additional products sold by BT Consumer) and others that are shared with the rest of BT Group.*"[112] Ofcom considered the degree of scalability of the main shared costs[113] and acknowledged it had to exercise significant judgement.[114] Ofcom also had to exercise judgement in deciding to run a price-cost test on (a) SFBB alone, excluding therefore other ADSL-based broadband services;[115] (b) on all BT's retail products together;[116] and (c) in including both voice and TV services.[117]

[108] Ofcom, 2014, para 5.9.

[109] Ofcom, 2014, paras 5.20 and 5.93-95.

[110] Ofcom, 2014, para 5.22.

[111] Ofcom, 2014, para 5.25.

[112] Ofcom, 2014, para 5.77.

[113] Ofcom, 2014, paras 5.83-92.

[114] Two examples illustrate this. First, Ofcom applied "*a specific percentage to cost items that are shared across all BT Consumer products. This percentage represents our estimate of those costs that are incremental to the SFBB portfolio*" (Ofcom, 2014, paras 5.87). Second, in relation to BT Group costs, Ofcom "[a]*s the first types of cost (direct and indirect) are primarily driven by BT Consumer, we consider them to be scalable in a similar manner to costs such as IT, accommodation and labour. We therefore include a proportion of direct and indirect BT TSO costs in our assessment of LRIC for the SFBB portfolio*" (Ofcom, 2014, paras 5.90).

[115] Ofcom, 2014, para 5.53.

[116] "*While we acknowledge that some of BT's competitors' (including TalkTalk's) customer bases may have different characteristics to BT's customer base, we note that all SFBB providers offer a range of SFBB packages which vary by speed and value-added features. We consider it appropriate for our test to allow competitors to compete for the portfolio of BT's SFBB services as a whole*" (Ofcom, 2014, para 5.62).

[117] Ofcom, 2014, para 5.74.

The price-cost test adopted[118] can be expressed simply as:

(1) $P - AC - OC_D - FC_D > 0$

where:

P	=	all retail revenues from supplying SFBB;
AC	=	the price of wholesale inputs supplied by BT;
OC_D	=	BT's downstream operating costs; and
FC_D	=	BT's downstream one-off/upfront (mostly customer acquisition) costs.

Ofcom considered all the three approaches it relied on in *Freeserve*: (a) discounted cash flow; (b) period-by-period approach and (c) cohort analysis.[119] However, Ofcom relied solely on the cohort analysis because doing so allowed it to carry out the analysis using BT's historic (rather than forecast) financial data;[120] assess profitability over the expected average customer lifetime; and consider new customers and be representative of the prices against which an EEO would compete to acquire new customers.[121] Ofcom also made another important assumption: "[i]*n applying the cohort approach we assume that BT's monthly margins (i.e. both revenues and costs) stay constant over time. By not factoring in price increases during the average customer lifetime, we ensure that the analysis does not build in the potential anti-competitive effects of pricing below cost for an initial period.*"[122]

This translates into testing whether the NPV of historical margins cover the initial one-off customer acquisition costs:

(2) $\sum_{t=1}^{n}(P - AC - OC_D) * (1 + i)^{-t} > FC_D$

where:

n	=	the average customer lifetime; and
$(P - AC - OC_D)$	=	yearly profit margin, which is assumed to remain constant at historical levels.

Ofcom dedicated a large part of this decision to the question of whether BT Sport should be included in the May 2013 and January 2014 offers. This follows BT's announcement on 9 May 2013 that its broadband customers would be able to access its BT Sport package in standard definition free of charge from its launch on 1 August 2013.[123] Ofcom argued that BT's strategy was to use BT Sport to support its broadband business: "*we consider that if BT did not expect returns from the margin on incremental or retained broadband subscribers, it is likely either that BT would not have incurred the same investment costs, or that it would have adopted different approaches to distributing the channel. Accordingly, we consider that part of the costs of BT Sport should be considered as part of BT's costs*

[118] Ofcom, 2014, para 5.98.

[119] Ofcom, 2014, para 5.101.

[120] *Ofcom also argued that its "assessment uses actual data for 2012/13 wherever possible, meaning that we do not need to rely on a large number of assumptions or forecasts (an important exception to this is in relation to BT Sport, which is discussed in Section 6)"* (Ofcom, 2014, para 5.119). This required significant judgement as Ofcom had to decide how to allocate common and shared costs.

[121] Ofcom, 2014, para 5.118.

[122] Ofcom, 2014, para 5.125.

[123] Ofcom, 2014, para 2.24.

of serving its broadband customers."[124] Ofcom added "*the total costs*[125] *of BT Sport (e.g. in respect of content and production costs) having subtracted direct revenues from BT Sport (e.g. wholesale deals with Virgin Media and Setanta in Ireland, sales to commercial customers ('pubs and clubs'), sales to residential customers on the Sky platform, and channel advertising revenues).*"[126] Therefore, Ofcom considered BT Sport as an additional customer acquisition costs, which is equivalent to adding it to FC_D in (2).[127] Ofcom assessed revenues and costs over a three-year period, which corresponded with the duration of the sport rights BT acquired at the auction.[128] This meant that the full cost of the Premier League (PL) rights was included pro rata in Ofcom's calculation of the net costs.[129]

Based on the results of its price-cost test (including a range of sensitivity assessment),[130] Ofcom concluded that "*BT maintained a sufficient margin between its upstream and downstream prices such that it covered its downstream costs.*"[131]

Ofcom included *"(at least) the potential for anti-competitive effects in the downstream market as a consequence" among the six conditions for finding a margin squeeze and stated that it "provide[d] [its] comments in relation to the potential for anti-competitive effects in the downstream market as a consequence of any failure to maintain a sufficient margin.*"[132] However, Ofcom did not consider it necessary to look at the effects, because it concluded that no margin squeeze had taken place according to its price-cost test results.[133] TalkTalk claimed that BT's main rivals have achieved only a combined market share of 9% of customers using BT's local access network.[134] The decision also states that *"*[a]*t the time of the complaint, the number of SFBB customers served by these providers* [TalkTalk and Sky] *was relatively low, but was increasing over time. In December 2013, TalkTalk served 177,000 SFBB customers which increased from 73,000 SFBB customers in March 2013."*[135]

Assessment

This is not a conceptually complex case. Ofcom correctly left the market definition open and took a conservative approach by applying the price-cost test to the narrowest possible market. However, some aspect of the decision are very formalistic and in stark contrast with *Thus/Gamma* and also with *Freeserve*.

First, unlike *Freeserve*, where indirect constraints played a critical role in a similar market, these were not mentioned at all. Although we are critical of Ofcom's approach to this issue in *Freeserve*, it is surprising that Ofcom did not take into account VM's downstream market share at all. This is especially surprising given that VM had twice as more subscribers than all consumers that subscribed to BT and all providers relying on VULA.

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[124] Ofcom, 2014, para 6.36.

[125] Ofcom used BTs historical revenues and costs, where available, and forecasts where there was no historical data available (Ofcom, 2014, para 6.61) and to estimate future BT Sport subscribers (Ofcom, 2014, para 6.65).

[126] Ofcom, 2014, para 6.8.

[127] Ofcom, 2014, para 6.38.

[128] Ofcom, 2014, paras 6.50-53.

[129] Ofcom, 2014, para 6.46.

[130] The reason for running a sensitivity assessment was that *"[a]lthough we consider that our approach overall represents a reasonable view of BT's margins for its SFBB products, we recognise that any modelling exercise involves making a number of assumptions*" (Ofcom, 2014, para 7.42).

[131] Ofcom, 2014, para 7.49.

[132] Ofcom, 2014, para 7.5.

[133] Ofcom, 2014, paras 1.14, 5.53 and 7.54.

[134] Ofcom, 2014, para 2.66.

[135] Ofcom, 2014, para 2.10.

Second and critically, Ofcom argued that there was no need for assessing the effects of BT's alleged behaviour, because this would only be required if the price-cost test pointed to negative margins. This would be correct only if we expected no, or a very small degree of, uncertainty in the price-cost test estimates. Indeed, if this was the case, one could argue that any effect assessment would be redundant. The price-cost test would be a good proxy for anti-competitive effects. Unfortunately, running a price-cost test requires authorities to exercise substantial judgement. A number of examples were mentioned above, including the decision on how to allocate shared and common costs to SFBB, the assumption of constant operating margins and the timescale for recovering FPLA auction rights costs.[136] Uncertainty is, therefore, unavoidable. This means that there is a high risk of committing either Type I or Type II error. However, Ofcom's decision to only rely on the cohort approach and rule out from the start the discounted cash flow and period-by-period approach may have increased rather than reduced this risk. Undertaking all three analysis would have improved the amount of information available to Ofcom.

However, the key contribution to ensuring that Ofcom minimised the risk of incurring either a Type I or II error would be to ensure that the results of the price-cost test were aligned with the observed or likely effects of BT's behaviour in the market. The two are complementary pieces of analysis, whereby, a negative (positive) price-cost test outcome needs to be reinforced by evidence that the dominant firms' competitors have (have not) been excluded. Ofcom's decision does not contain sufficient information to provide comfort that its price-cost test and its effects analysis were aligned. The only information available suggests that the number of SFBB subscribers of BT's main competitors, TalkTalk and Sky, was small, but increasing, with TalkTalk's subscribers more than doubling from March to December 2013. However, in a growing market such as SFBB, it would have been useful to show trends in relative market shares and how these may have changed pre, during and, if possible, post the alleged abuse. Hence, while Ofcom's decision may have been correct in this case, it seems incorrect to argue *a priori* that an effect-based analysis in a margin squeeze is not required, unless there is an indication that margins may be negative. Overall, this decision does not show much evolution from *Freeserve* and is a significant step back from *Thus/Gamma*.

3.2 Other abuse of dominance cases

Although most of Ofcom's recent decisions deal with margin squeeze abuses, some earlier cases covered predatory and non-price discrimination abuses.

3.2.1 Predation without dominance

Ofcom found that BT had not engaged in predation in the market for the wholesale distribution of all consumer fixed-line telephone equipment (though the complaint was limited to cordless phones, hence, the case is referred to as *Cordless Phones*) in the UK.[137] Despite concluding that BT was not dominant in such a market and there was no indication of intent,[138] Ofcom went on to assess whether BT had predated. Ofcom argued that its finding that BT had not priced below costs reinforced its conclusion on dominance as the complainant had alleged that BT's strategy had raised entry barriers.[139]

[136] For example, although Ofcom (2014, para 6.53) argued that there are uncertainties beyond the three-year period chosen to recover the cost of acquiring the FPLA rights, it is likely that the winner of the rights enjoyed some incumbency advantages which makes it more likely to win again the rights at the following auction. If correct, that was a benefit that translated into future lower costs that should be factoredin. This was a further area where judgement was required (Ofcom, 2014, para 6.56).

[137] Ofcom, 2006, paras 127-135.

[138] Ofcom, 2006, para 662.

[139] Ofcom, 2006, para 5.

BT's market share was in the 40-50% range.[140] However, Ofcom did not solely rely on market shares in its dominance assessment. It noted that BT's prices trended very similarly to prices of other suppliers and that BT did not initiate any price reductions,[141] barriers to entry and expansion were low[142] and BT was restrained by retailers' buyer power.[143] Ofcom's analysis of BT's internal documents also reinforced its conclusion that BT did not have market power.[144]

Ofcom argued that "[*a]lthough BT's share is high in this market, Ofcom considers that there are other important factors, in particular low barriers to entry and expansion, and constraints imposed on BT's pricing from demand side constraints that limit any ability for BT to act independently of competitors and consumers*."[145] Therefore, it concluded BT was not dominant.[146]

Nonetheless, Ofcom decided to also test for predation. It justified this on the basis that: *"having regard to the relatively high level of BT's market share, Ofcom has also considered it appropriate to examine whether BT was pricing below cost and whether the complainants' allegations of predation could be supported in the event that Ofcom's conclusion on dominance was incorrect.*"[147] Separately for each of the ten phone models it selected, Ofcom assessed whether BT's prices covered its:

- Average Variable Costs (AVC) - Ofcom concluded that all BT's phone models made a contribution to recover BT's costs,[148] with one exception, which it found objectively justified;[149] and
- Fully Allocated Costs (FAC) - Ofcom also concluded that BT recovered the FAC for all, but for two phone models, one of which was the same for which Ofcom found BT did not cover its AVC.[150]

Ofcom noted that the FAC test and the application of both tests to each phone model was a stricter predation test than required.

Assessment

This is an example of a case that should have not progressed to a full investigation. Although BT's share of wholesale distribution of phones was relatively high, *a priori* it does not seem that there could have been substantial barriers to entry into distribution. Hence, BT appeared unlikely to be dominant and, as a result, its incentives to predate were unclear. Hence, this is a further example of how an early assessment of BT's incentives may have advised against opening an investigation.

Once Ofcom opened the case and concluded that BT was not dominant, there was also no need to go further and undertake a price-cost test for predation. The argument by Ofcom that to test for predation was useful in case BT's dominance was incorrect is unconvincing, especially given that, critically, Ofcom had concluded that BT never initiated the price reductions in its sample of ten phone models.

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[140] Ofcom, 2006, paras 151-212.

[141] Ofcom, 2006, paras 219-222.

[142] Ofcom, 2006, para 341.

[143] Ofcom, 2006, paras 399-401.

[144] Ofcom, 2006, paras 662.

[145] Ofcom, 2006, para 426.

[146] Ofcom, 2006, para 429.

[147] Ofcom, 2006, para 430.

[148] Ofcom, 2006, para 561.

[149] Ofcom, 2006, para 579.

[150] Ofcom, 2006, paras 620-624.

Lastly, we note that while the market was defined to include all phone models, Ofcom applied its price-cost tests separately to each of the ten models. It then focused on whether there was a justification for its finding of prices below cost for a few of the models. The purpose of this analysis is somewhat unclear given that a predation strategy that focuses on a small proportion of phone models is unlikely to be successful. The analysis appears more like a reflection of *ex ante* regulatory obligations that aims at ensuring that entrants can replicate the incumbent's offer rather than a predation test.

3.2.2 Non-price discrimination

In June 2005, Ofcom published its final decision on whether to refer the fixed telecom sector to the CC under the EA02 (Ofcom, 2005, 2005a and 2005b). It accepted undertakings from BT in lieu of a reference. The theory of harm Ofcom identified was that a vertically integrated firm, dominant upstream, which is subject to cost based price caps for its upstream inputs, would have the ability and the incentives to engage in non-price discrimination against downstream rivals. According to Ofcom, BT had an incentive to supply worse quality upstream inputs to its downstream rivals. Ofcom argued that non-price discrimination is much harder for Ofcom to identify, and subsequently to verify than price discrimination.[151]

Ofcom based its conclusion on its finding that BT was vertically integrated,[152] had persistent market power in all upstream markets and, as a result, it was able to behave anti-competitively.[153] Ofcom dedicated a significant attention to BT's incentives to engage in non-price discrimination.[154]

Ofcom started by stating that *"[i]n theory, discriminating against downstream competitors will under most circumstances deliver two benefits to a vertically integrated firm with upstream market power:*

- *capturing downstream profits. Discriminating against downstream competitors is likely to reduce the intensity of competition from downstream competitors, allowing the vertically integrated firm to earn higher profits downstream by raising prices, or increasing market share, or both; and*
- *protecting upstream market power. Discriminating against downstream competitors could prevent the emergence of strong downstream competitors which could in future enter the upstream market, threatening at least in part the position of market power of the vertically integrated firm in upstream markets."*[155]

This makes it clear that the behaviour could come both under the heading of static leveraging - i.e. trying to capture the downstream rivals' profits – and dynamic leveraging - i.e. trying to protect upstream revenues by excluding downstream rivals' attempts to enter upstream.

Ofcom argued that *"a vertically integrated firm with upstream market power may have more incentive to engage in non-price discrimination than price discrimination, as price discrimination may involve it forgoing short term profits. The incentives for a vertically integrated firm with market power to engage in discrimination are present even when engaging in non-price discrimination is costly for the firm. Moreover, Ofcom notes that these incentives would be even stronger for BT if by engaging in discriminatory behaviour, it was to save rather than incur costs.*"[156]

[151] Ofcom, 2015a, para F.28.

[152] Ofcom, 2015a, paras F.21-22.

[153] Ofcom, 2015a, paras F.3-20.

[154] Ofcom, 2015a, paras F.23-38.

[155] Ofcom, 2015a, para F.24.

[156] Ofcom, 2015a, para F.29.

Ofcom examined in details the factors that may affect BT's incentives to engage in non-price discrimination: "*Taking the example of a vertically integrated monopolist, who sells wholesale inputs also to a number of downstream competitors and is subject to price controls and an obligation not to discriminate, the incentive to engage in non-price discrimination increases if a number of factors exists*:

- *if price regulation of the upstream input is tight;*
- *the higher the downstream profit opportunity;*
- *the higher the degree of substitutability between the vertically integrated and the competitors' downstream products; and*
- *the more efficient and the less capacity constrained the vertically integrated firm's downstream division is."*[157]

This follows the literature on non-price discrimination, which is referred to as sabotage (Cave et al., 2006) and Ofcom provided some reasoning as to why it considers that these apply to BT's position.[158]

Lastly, Ofcom provided past examples that believed showed that BT had acted on its incentives.[159] In practice, these examples could be thought of as an analysis of anti-competitive effects, given that the behaviour was deemed to have lasted for years.

Assessment

In accepting BT's undertaking in lieu of a reference to the CC, Ofcom adopted a clear ability, incentives and effects approach, though it did not provide detailed information and evidence, probably because this was not an infringement decision, but a decision to accept the remedies BT had proposed. The discussion of incentives is innovative, as it followed the literature on sabotage (Reiffen and Ward, 2002). However, there is limited details to better understand whether the empirical evidence strongly supported the factors that Ofcom mentioned as strengthening BT's incentives. Although some evidence related to this case is available in separate article on this decision (Cave et al., 2006), it would be good practice to publish such information in the decision to provide better guidance to the industry.

4. Conclusions

Two sets of conclusions are drawn from the analysis of these cases. First, we consider how well the cases examined conform to our "enhanced" ability, incentives and effects framework. Second, we draw some general lessons for Ofcom in enforcing *ex post* competition law.

4.1 Conformity to an "enhanced" ability, incentives and effect framework

We draw the following conclusions (Table 3 provides a summary):

1. Ability - We identified some concerns in Ofcom's analysis. In *Cordless Phones*, Ofcom proceeded to undertake a full assessment of predation, despite a non-dominance finding. In *Freeserve*, Ofcom's indirect constraints analysis was innovative, but was too preoccupied to adjust downstream market shares to support an upstream dominance finding. That led to missing out some critical inferences from the degree of downstream competition, suggesting that Ofcom should have relied on unadjusted downstream markets shares. Lastly, in a striking contrast with *Freeserve,* in *SFBB* there was no analysis of indirect constraints, despite VM had a share of retail subscribers more than double that of BT;

[157] Ofcom, 2015a, para F.32.

[158] Ofcom, 2015a, para F.34- 37.

[159] Ofcom, 2015a, Annexes G-K.

2. Incentives - Considering whether a dominant firm had incentives to engage in exclusionary behaviour could improve the likelihood to select cases were concerns are founded. This concern emerges in a number of decisions. *Thus/Gamma* is overall an innovative decision, but perhaps an early consideration of incentives may have advised against opening an investigation. The same conclusions would apply to *Cordless Phones*, where considering BT's incentives could have led to a similar early conclusion. All the other decisions contain no analysis of incentives, with the exception of *Non-price discrimination* where there was an assessment of the key factors that provided BT with an incentive to engage in exclusionary behaviour. As this was the oldest decision we examined, it is unclear why this approach was subsequently abandoned;
3. Price-cost test - Price-cost test were the key, if not the sole, driver behind Ofcom's non-infringement finding in both *Freeserve* and *SFBB*, where Ofcom neither examined BT's incentives nor the effects of BT's alleged behaviour. In *Cordless Phones*, the price-cost test was irrelevant, given the non-dominance finding. Furthermore, the predation test was applied too narrowly to each phone model. Instead, in *Thus/Gamma* it was only an important first step of the analysis, which was adapted, refined and placed in the right context by a thorough analysis of effects.[160] There is more consistency in terms of the choice between and EEO vs. REO test. Almost all cases opted for an EEO test with a notable exception. In *Thus/Gamma* Ofcom also undertook an adjusted EEO. Ofcom concluded that the evidence showed that an entrant incurred some cost driven by regulation that BT did not face. On that basis, it relied on an adjusted EEO test;[161]
4. Empirical evidence - *Thus/Gamma* is the case which made the most extensive use of empirical evidence and facts. The remaining cases used evidence only for selected elements: in *Freeserve* and *Cordless Phones*, Ofcom used evidence to undertake a price-cost test and to establish dominance (i.e. the indirect effects adjustment in *Freeserve*), in *SFBB* and solely for the price-cost test, in *Non-price discrimination* mostly to support its effect analysis; and
5. Anti-competitive effects - The only decisions where anti-competitive effects were given full consideration and proved critical is *Thus/Gamma*. Ofcom took advantage of the fact that a significant time had elapsed from the alleged behaviour to assess whether it had led to exclusion. In *Freeserve* Ofcom had a similar opportunity in terms of elapsed time, but chose not to undertake any analysis of the potential anti-competitive effects. There is some analysis of effects in *Non-price discrimination* in the form of examples.[162]

There are two main lessons from this assessment. First, in none of these decisions Ofcom has fully relied on a framework, such as the one suggested above, that could minimise the risk of committing either Type I or Type II errors. Second, while it is appropriate for an authority to adjust its approach to the features of the cases it faces, it is unclear whether Ofcom has been sufficiently consistent in its approach to provide clear guidance to companies. For example, the decisions do not clarify why in some cases the analysis of indirect constraint was critical while in other it was not. This also applies to the assessment of incentives, analysis of anti-competitive effects, need for a price-cost test and, if so, of which type.

[160] In *Royal Mail*, Ofcom dismissed the need for a price-cost test altogether, though a margin squeeze framework appeared much more appropriate than examining BT's behaviour as a price discrimination. As such, a price-cost test would have been a logical and critical first step in *Royal Mail*, (Crocioni, 2019).

[161] In *Royal Mail*, instead, although Ofcom opted against running a price-cost test, it strongly signalled that an REO standard would be more appropriate (Crocioni, 2019).

[162] In *Royal Mail* Ofcom appears to have undertaken some effects analysis, also because a sufficient amount of time had elapsed and the complainant ultimately exited the market. Ofcom's *Royal Mail* decision argued against running a price-cost test and, therefore, did not allow Ofcom to reach clear-cut conclusions on whether the complainant's exit was due to RM's behaviour or other reasons (Crocioni, 2019).

Table 3: Summary of Abuse of Dominance Cases Assessment

Case	**1 – Ability**	**2 – Incentives**	**3 - Price-cost Test**	**4 - Empirical Evidence**	**5 - Effects**
Freeserve (Ofcom, 2010)	Yes (Too much focus on market shares and incorrect interpretation of indirect constraints)	No	Yes	Yes (Only in relation to the price-cost test and indirect constraints)	No
Thus/Gamma (Ofcom, 2013)	Yes	No	Yes	Yes (Covering most aspects, but incentives)	Yes (Detailed and critical piece of analysis)
SFBB (Ofcom, 2014)	Yes (But there are some question marks about BT's dominance given VM's high share of subscribers)	No	Yes (But only relied on one approach)	Yes (Solely related to the price-cost test)	No
Cordless Phones (Ofcom, 2006)	No (It concludes that there was no dominance, but still undertakes a price-cost test)	No	Yes (There was no need to run it, given the non-dominance finding)	Yes (Related to the price-cost test and dominance assessment)	No
Non-price discrimination (Ofcom, 2005)	Yes	Yes (But not backed up by empirical evidence)	Not relevant (It was not required)	No (The arguments were sketched, but the decision contained very little empirical evidence to support that, other than some examples of effects stemming from BT's behaviour)	Yes (In the form of examples of actual behaviour and effects)

4.2 Wider lesson for Ofcom to better apply ex post competition law

Our recommendations come under three main headings.

***Better decision-making on whether or not to open investigations* -** most of the cases Ofcom decided to open have led to non-infringement decisions. While this in itself does not raise concerns, it highlights that Ofcom could benefit from a better gating process as to under which circumstances it should open an investigation. At the earliest phase prior to opening, or in the early phase of, an investigation Ofcom should consider:

- which theory of harm could be relevant, under which conditions consumers could be harmed and testing at a high level whether preliminary evidence points to these condition being present. Ofcom did not spell out its main theory of harm in some instances;
- whether a dominant firm has sufficiently strong incentives to exclude its rivals is critical at this stage. If not, Ofcom should carefully consider refraining from opening an investigation. This is relevant for many decisions - i.e. *Thus/Gamma*, *cordless phones*, *SFBB* and *Freeserve*;
- whether *ex ante* intervention may address most concerns. In some cases addressing a regulatory failure may address the main alleged competition concern;
- whether there are or likely to be any anti-competitive effects stemming from the alleged abuse, especially if some time has already elapsed since the period when the abuse took place. If no rival had exited since, Ofcom could refrain from opening an investigation (i.e. *Freeserve*, *Cordless Phones* and *Thus/Gamma*); and
- whether during an early phase of the investigation evidence suggested that either the firm was unlikely to be dominant (i.e. *Cordless Phones*), had limited incentives to exclude (i.e. *Thus/Gamma*) and/or there was no evidence of anti-competitive effects (i.e. *Freeserve* and *Thus/Gamma*). Convincing evidence on either of the latter could suggest closing down an investigation at an early stage.

***Reducing the risk of errors* -** once Ofcom decided to open an investigation, it could undertake several actions to reduce the risk of incurring either a Type I or Type II error:

1. spell out any relevant theories of harm, which Ofcom would like to test and all the required conditions;
2. dedicate fewer resources to assess dominance based on static indicators, such as market shares. While consideration of indirect constraints was an important step in *Freeserve*, Ofcom was more concerned about adjusting market shares rather than fully understanding the implication of the presence of a vertically integrated rival on upstream competition; and
3. focus more resources on thoroughly testing credible theories of harm, examine the dominant firm's incentives and consistently assess the existing or potential for anti-competitive effects. Critically, the indications provided by each element of the analysis need to mash into a coherent exclusionary story. The clearest example is where a finding of negative margins in a price squeeze abuse does not match evidence of no exclusionary effects, as in *Thus/Gamma*. A similar analysis would have been helpful in *Freeserve* and *SFBB*. A further important consideration is whether a margin squeeze entails a profit sacrifice and the implications in terms of incentives of the dominant firm to exclude. For example, Ofcom could have relied more on the lack of incentives in *Thus/Gamma*.[163] Incentives were only central in *Non-price discrimination*, the first decision examined.

[163] Conversely, in *Royal Mail* Ofcom did not fully consider the fact that its own *ex ante* regulatory obligations allowed or even incentivised RM to engage in exclusionary behaviour with incurring a profit sacrifice. RM, therefore, had particularly strong incentives to exclude.

Stronger consistency in approach **-** the appropriate approach to exclusionary behaviour could change over time to reflect the evolution of the economic and legal thinking. Furthermore, the same approach may need to be adapted to the features and circumstances of each case. Nonetheless, we consider that Ofcom could provide significant benefits to the industry by adopting a more consistent approach, for example, by noting when it adopted an apparently different approach to similar cases and the reason for this choice. Examples include:

- Indirect constraints – Ofcom dedicated significant attention to these in *Freeserve*. However, this analysis was absent in subsequent decisions, despite these had similar features to those in *Freeserve*. While Ofcom avoided examining indirect effects in *Thus/Gamma* by adopting the narrowest possible market definition, it is unclear why it did not assess the potential for indirect constraint from cable in *SFBB*, where VM had a substantially higher share of retail subscribers than BT;
- Anticompetitive incentives – these were only considered in the first decision examined, *Non-price discrimination*. It is unclear why these were ignored in all subsequent decisions;
- Anti-competitive effects – these were examined in detail only in *Thus/Gamma* and, in part, in *Non-price discrimination*. We consider this analysis an important complement, at the very least, of the assessment of anti-competitive behaviour. It is unclear why Ofcom did not undertake this analysis in its other decisions;
- Use of price-cost test – this is a necessary, but not sufficient, condition to find an exclusionary abuse. In *Freeserve* and *SSFB* the price-cost test was the main if not only piece of evidence Ofcom relied upon, while in *Thus/Gamma* it provided important, but not decisive, evidence of an abuse;
- Type of test – there are a number of variations in the price-cost test, such as EEO, adjusted EEO or REO. Ofcom relied almost exclusively on an EEO test, but clearly justified its departure from this in *Thus/Gamma*;[164] and
- Methodology used in price-cost test – Ofcom often relied on a number of approaches to run a price-cost test. In *Freeserve,* it relied on three methods: historical, forward-looking NPV and cohort analysis. In *Thus/Gamma*, Ofcom justified opting for the historical approach, as it argued that in stable markets such as this, the role of a forward-looking approach would be more limited. It also gave preference to a period-by-period or cohort approach. This makes good sense. In *SFBB*, Ofcom also considered all the three approaches it relied on in *Freeserve*. However, it relied solely on a cohort analysis, because doing so, Ofcom argued, allowed it to carry out the analysis using BT's historic (rather than forward-looking) financial data. This choice is more difficult to justify, as in *SFBB* (and in *Freeserve*) the market was growing, while in *Thus/Gamma* it was declining. This information suggests that a forward-looking approach would have been useful in *SFBB*.

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164 However, it is unclear why in *Royal Mail* Ofcom argued in favour of, though did not apply, a REO test.

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