

A3 Ofcom's assessment of the evidence base

- A3.1 In this Annex, we present further detail about some of the evidence that we have considered when arriving at our decisions. This includes: evidence from our model of potential financial impacts;¹ evidence from a model prepared by O&O for COBA in response to our consultation; evidence received from various other stakeholders in response to our consultation; evidence from the relevant literature; and data from BARB. This Annex does not provide a comprehensive assessment of our decisions – this is instead done in Section 4 of our statement.²
- A3.2 The structure of this Annex is as follows:
- a) First, we discuss the main evidence and relevant literature which supports the argument that a higher position nearer the start of the EPG will deliver higher viewing to channels.
 - b) Second, we discuss the two main consequences which might arise when channels change EPG position – these are 'ongoing effects' (which are ongoing benefits to PSBs and ongoing costs to commercial channels and EPG operators (where relevant)) and 'one-off costs'.
 - c) Third, we discuss in more detail the nature of those 'one-off costs', both to commercial channels and EPG operators and how we took these costs into account when arriving at our decisions.
 - d) The rest of this Annex discusses in more detail the 'ongoing effects' of changes in EPG position and how we took account of these effects when arriving at our decisions.³ Finally, we present the cumulative ongoing costs of moving the designated channels.

A higher EPG position leads to higher reach and viewing

- A3.3 In this section, we discuss the available evidence on the relationship between EPG position and the viewing of channels.
- A3.4 There is a range of evidence that supports the proposition that a position near the start of the EPG (i.e. a lower channel number) will, all things being equal, lead to higher levels of reach and viewing.⁴ This may be because viewers have tended to start at the beginning of the EPG and then scrolled down to find something to watch.

¹ We have published [our model](#) alongside our statement on the dedicated [Ofcom webpage](#).

² Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Section 4](#).

³ The estimates of the likely effects of changes in EPG position on viewing and corresponding commercial impacts that we present in this Annex involve rounding and are therefore approximate.

⁴ Obviously, EPG position is not the only influence on the audience that a channel attracts.

A3.5 Our consultation document referred in particular to reports by Technologia, FEH and EMP, as well as BARB viewing data.⁵

Technologia (2012)

A3.6 The Technologia report in 2012 was commissioned by DCMS. Technologia defined prominence as *‘the degree to which share of viewing (SOV) attained by a channel at that position is attributable to its position as distinct from all other features of the channel such as brand, audience loyalty, quality or appeal of content, cross promotion or other marketing’*.

A3.7 Technologia interviewed industry stakeholders, who drew attention to different types of prominence:

- a) being on the top page(s) or near the top of the EPG list or near the top of a genre listing;
- b) being near a popular channel;
- c) having a memorable channel number.

A3.8 Technologia noted that, whilst stakeholders stressed prominence was not a simple function of ordinal position on an EPG, higher EPG positions (near the beginning) were generally acknowledged to lead to higher audience numbers.

FEH (2010, 2013)

A3.9 The FEH reports from 2010 and 2013 (prepared for Ofcom) are econometric studies which show a strong link between positive (negative) changes in EPG position and positive (negative) changes in viewing.

A3.10 FEH noted that other factors can interact with EPG position to affect viewing (e.g. channel content and brand, but also relative location of +1 channels, changes in scheduling, significant programme launches, time trends of viewing, etc). FEH also stressed that a simple statistical correlation between viewing figures and channel position is not sufficient to prove a relationship. Whilst a simple diagram (channels on the horizontal axis and viewing on the vertical axis) would (generally) show a decline in viewing as channel slot number rose, this may be because a channel further down an EPG has 'poorer content', i.e. it is this which would explain poorer viewing figures.

⁵ Ofcom, Review of rules for prominence of public service broadcasters and local TV: Consultation on proposed changes to the linear EPG Code and future of the regime, 27 June 2018, paragraphs 4.2-4.4, https://www.ofcom.org.uk/_data/assets/pdf_file/0020/116273/consultation-epg-code-prominence-regime.pdf. 2 In particular, we reviewed the following reports: (i) [Technologia](#), The value and optimal management of channel position and prominence on electronic programme guides: A report for DCMS, 4 July 2012; (ii) [Attentional](#), An Analysis of the Audience Impact of Page One EPG Prominence: A report for Ofcom, July 2010; and (iii) [FEH Media Insight](#), An Analysis of the Audience Impact of Page One EPG Prominence: A Report for Ofcom, 29 April 2013. As Dr Farid El-Husseini was the author of both the Attentional and FEH Media Insight reports, for ease of reference we refer to them together as 'FEH'. We have also considered audience data from BARB on reach of channels on the main EPGs in the UK, set out in our EPG report: <https://www.ofcom.org.uk/research-and-data/tv-radio-and-on-demand/tv-research/epg-prominence>.

- A3.11 FEH examined 33 cases of channel moves in 2010 and 29 cases of channel moves in 2013. The studies used data on BARB daily viewing data from the six-week periods before and after a slot change. This gave sufficient data points to observe whether differences in viewing are significant and persistent but minimised the possibility of other structural factors (e.g. scheduling changes, launch of a competing channel or programme, etc) affecting performance.
- A3.12 FEH used a t-test to examine if there a statistically significant difference between average daily channel shares before and after the EPG move. However, FEH noted that, even if statistically significant, this could also reflect underlying time trends in the data (e.g. if a channel is gaining share over time as its programmes have improved). So FEH also conducted a regression-based structural break test. Where feasible, the channel's daily viewing performance was also compared (using the same statistical techniques as above) to its performance on a platform where it had not moved slot.
- A3.13 In the majority of cases in both 2010 and 2013, the econometric studies showed a strong link between channel position and channel performance, i.e. that if a channel moved nearer to the start of the EPG, it would tend to see improvements in its viewing performance (and vice versa).

EMP (2018)

- A3.14 We commissioned further work by Expert Media Partners (EMP)⁶ to examine and report on the market value of EPG slots in the Entertainment, News and Kids sections on the Sky and Virgin Media platforms.⁷ This found that slots higher up the EPG had a higher value – for example, slots on the first page of the Sky Entertainment section had an estimated average value of £22.5m, compared with £15.5m for the second page, and down to £1m for the tenth page.⁸

BARB viewing data

- A3.15 In our EPG report, we presented a number of charts which plot the 'reach'⁹ of channels by EPG slot position for EPGs on the Freeview, Sky and Virgin Media platforms¹⁰ – these are reproduced in Figure A3.1, Figure A3.2 and Figure A3.3 below. The charts show that reach generally decreases as EPG position (i.e. the channel's number) increases, although we

⁶ Expert Media Partners, Report on the UK Market in EPG Positions, July 2018, https://www.ofcom.org.uk/_data/assets/pdf_file/0025/116287/expert-media-partners.pdf. We published EMP's report alongside our consultation on the dedicated [Ofcom webpage](#).

⁷ EMP's estimates of the value of EPG slots are based on what they believe a slot would achieve if it were marketed under normal trading conditions, i.e. these are estimates of predicted 'sale prices', not 'asking prices'. See [EMP](#), page 10.

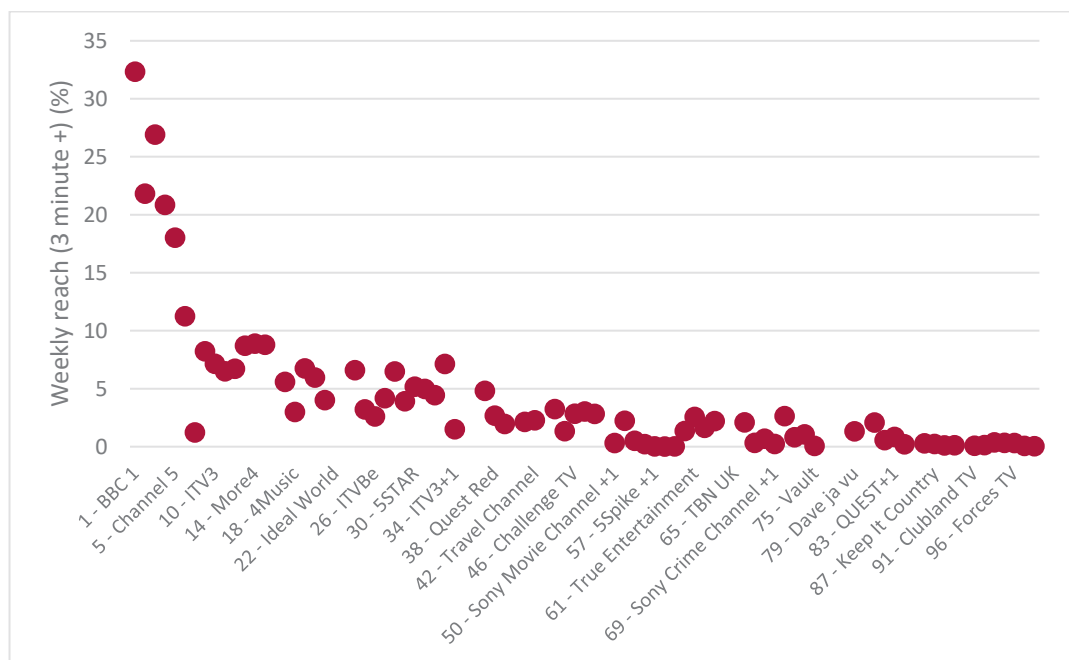
⁸ [EMP](#), Table 1, page 12.

⁹ 'Reach' is defined by BARB as the total unduplicated number or percentage of people who have seen a particular piece of broadcast output (e.g. a programme, daypart, channel, TV advertising campaign). The average weekly reach is the number or percentage of the total TV population who watched each broadcast output (in this instance, each channel) in a typical week. For this analysis, we have defined the amount of viewing an individual must have done in order to be counted as having been reached to be at least three consecutive minutes. See <https://www.barb.co.uk/glossary/#R>.

¹⁰ Ofcom, EPG Prominence: A report on the discoverability of PSB and local TV services, 27 July 2018, paragraph 1.15 and pages 22-24, https://www.ofcom.org.uk/_data/assets/pdf_file/0026/116288/report-psb-local-tv-discoverability.pdf.

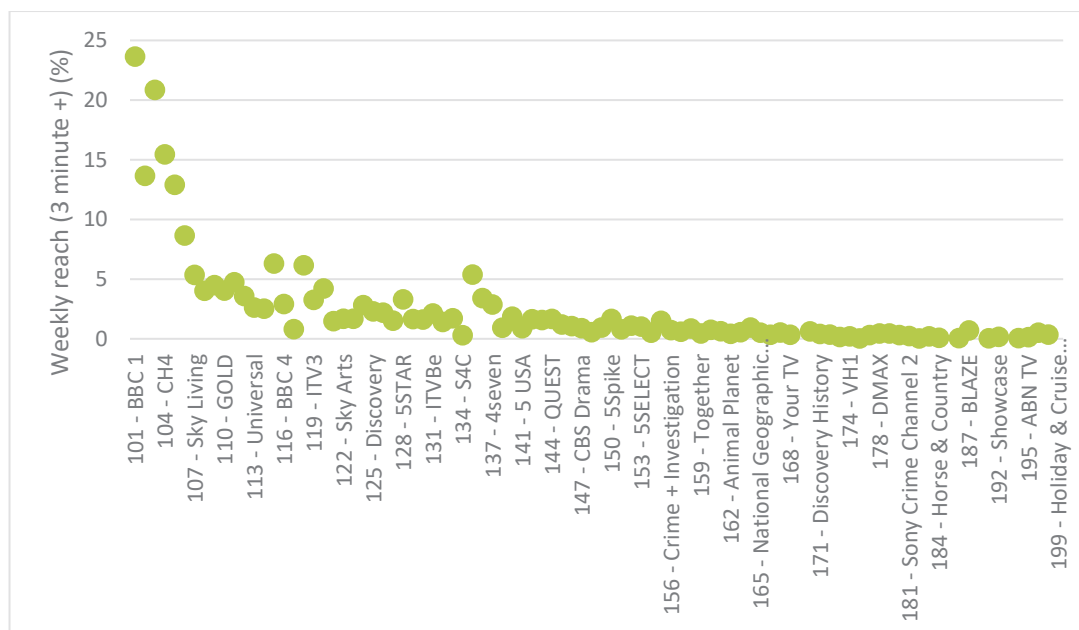
recognise that there are a number of other characteristics of a channel that affect its performance, such as target audience, quality of content and promotions.

Figure A3.1: Freeview 3+ minute weekly reach (%) by EPG position – slot 1 to 999



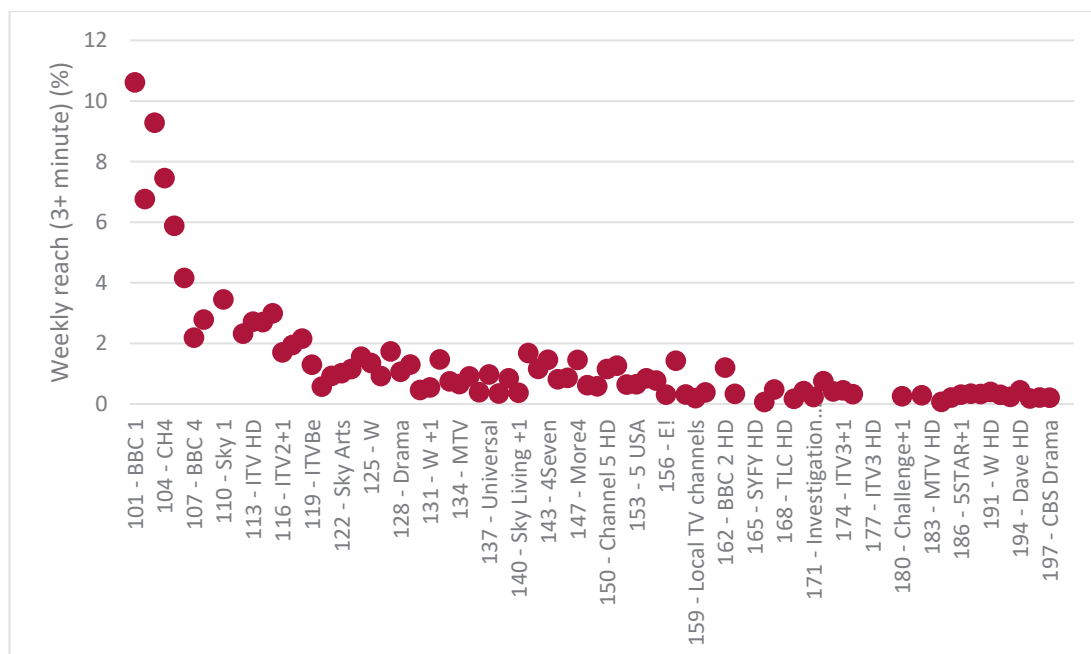
Source: BARB, average 3+ minute weekly reach (%), individuals (4+), 26/02/2018 - 03/06/2018. Channel slots are based on EPG positioning in England as at the start of June 2018. Source: http://www.digitaluk.co.uk/channels/channel_listings (accessed 8 June 2018). Note that weekly reach figures are UK wide. Where values are blank, these channels are not reported by BARB.

Figure A3.2: Sky 3+ minute weekly reach (%) by EPG position – slot 101 to 199



Source: BARB, average 3+ minute weekly reach (%), individuals (4+), 30/04/2018 - 03/06/2018.¹¹ (Note that we have used a shorter time period for our analysis of the Sky platform as the EPG was reshuffled at the start of May 2018). Channel slots are based on EPG positioning in the London region as at the start of June 2018. Source: <https://www.sky.com/tv-guide/> (accessed 8 June 2018). Note that weekly reach figures are UK wide. Where values are blank, these channels are not reported by BARB.

Figure A3.3: Virgin Media 3+ minute weekly reach (%) by EPG position – slot 101 to 199



Source: BARB, average 3+ minute weekly reach (%), individuals (4+), 26/02/2018 - 03/06/2018. Channel slots are based on EPG positioning as of May 2018. Source:

¹¹ Note that this period includes one day before the EPG slot move took place on 1 May 2018.

<https://my.virginmedia.com/content/dam/virgoBrowse/docs/VirginMediaTVChannelGuide.pdf> (accessed 8 June 2018). Virgin Media's EPG is UK wide (it does not vary by nation). Where values are blank, these channels are not reported by BARB.

Notes for Figure A3.1, Figure A3.2 and Figure A3.3: (1) BARB reports total viewing, including SD and HD viewing. In some cases, it also reports viewing to HD channels separately. However, it generally does not report viewing to SD channels separately. Therefore, all reach figures shown include SD and HD viewing, excluding where HD is specified. Where separate HD channels are not BARB reported, these figures are not included in the charts.

(2) Local TV figures are based on those which were BARB reported in the reported time period. This includes Made TV Network, STV2 and London Live. See methodology section of Ofcom's Media Nations 2018 report¹² for the channels included.

Our conclusion

A3.16 The evidence available to us supports the view that all else being equal higher EPG slots tend to result in increased viewing for channels relative to lower EPG slots. We reached the same general conclusion in our consultation and stakeholders did not disagree.¹³

Distinction between 'ongoing effects' and 'one-off costs'

A3.17 When we discuss 'channel moves', we refer to a situation where a channel moves (up or down) to a different *slot position* on one or more EPGs. A channel's slot position (e.g. third channel down on the second page) may be different to its channel number (as some EPGs leave some channel numbers blank). Further, a channel may change channel number without changing slot position and vice versa.

A3.18 When EPGs are re-arranged (by this we mean there are changes to channel slot positions and/or channel numbers) channels may face two different types of effects:

- a) 'Ongoing effects' – as discussed in paragraphs A3.3 to A3.16 above, if a channel moves to a slot further away from the start of the EPG, its viewing is likely to fall. For commercial channels, reductions in viewing are likely to lead to falls in revenue (e.g. from advertising, sponsorship and/or subscriptions) and so lower profitability. Viewing (and revenue) losses would be 'ongoing', as they would continue as long as the channel remained in the lower slot. Conversely, channels that move up the EPG are likely to have 'ongoing benefits', i.e. gains in viewing, and, for commercial channels, gains in revenues and profitability, that continue for as long as they are in the higher slot.

¹² Available here: https://www.ofcom.org.uk/data/assets/pdf_file/0028/115993/media-nations-2018-methodologiesannex.pdf.

¹³ We recognise that the Technologia and FEH reports are fairly old studies. However, when combined with the other more recent evidence discussed above and the absence of stakeholder disagreement, we consider that our conclusions are sound.

- b) 'One-off costs' – if a channel is given a new LCN (logical channel number or 'slot number'), it may decide to undertake extra marketing in the short term to inform existing and potential viewers of the number change. Hence, channels changing *number* may incur one-off incremental marketing costs.

A3.19 Similarly, EPG operators may also be subject to two different types of effects as a result of mandated re-arrangements to EPGs:

- a) 'Ongoing effects' – if channels change slot position on an EPG, this is likely to affect the ability of some EPG providers to monetise their EPG slots and so result in ongoing changes (losses) in the revenues of those EPG providers. For example, Virgin Media may have to reduce charges to commercial channels that are moved down the EPG. This effect is described further in paragraph A4.23 of Annex 4.¹⁴
- b) 'One-off costs' – (i) if a channel moves slot position and/or is given a new channel number, an EPG provider may incur administrative and technical costs in the short term to reorganise its EPG and implement the changes on its platform; (ii) in addition, if a channel is given a new number, EPG providers may also engage in extra marketing in the short term to inform existing and potential customers of the number change.¹⁵

One-off costs to channels and EPG providers

A3.20 In this section, we discuss the nature of the one-off costs to channels and EPG providers that we took into account when considering whether EPGs should be rearranged to enable PSB prominence.

A3.21 We noted the potential for one-off costs to channels and EPG providers in our consultation. No respondent provided evidence of the likely magnitude of such one-off costs in their consultation responses, so we sought additional information from stakeholders that raised the issue of one-off costs ([redacted] and [redacted]).

A3.22 However, the available evidence does not allow us to derive reliable precise estimates of these costs. This is for the following reasons:

- a) There are some differences in the estimates received from different stakeholders.¹⁶
- b) There are also limitations in the data that we have received. In particular, it is difficult to isolate and verify costs incurred due to changes in channel number only.¹⁷
- c) In practice the costs incurred due to channel renumbering are likely to vary across different channels because raising awareness of channel renumbering can be part of

¹⁴ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Annex 4](#).

¹⁵ For example, [redacted]

¹⁶ For example, [redacted]

¹⁷ For example, we have been informed by [redacted] that the figures mentioned above were expenditures incurred due to channel renumbering only. However, we have not been provided with detailed data (for example, marketing expenditures in the year of channel renumbering and in the years before and after the channel renumbering) that would allow us to independently verify the numbers provided by [redacted].

existing marketing and/or PR operations/campaigns which themselves are likely to differ by broadcaster.

- d) For the same broadcaster, marketing information about channel renumbering of several channels and/or across different platforms (where that may be the case) can perhaps be combined. These features will also likely vary across channels, leading to differences in one-off costs.

A3.23 Despite the lack of precise data about these costs Ofcom has borne in mind the possible extent of the costs when making our decisions. For instance, we note that some stakeholders, for instance [3<] and [3<], said that the assessment of costs of our proposals in our consultation had missed some wider negative effects on the EPG operators and broadcasters.¹⁸ They suggested that, on any particular EPG platform (e.g. Sky EPGs, Freesat EPGs), broadcasters prefer their channels to have the same channel number across the whole of the UK. Hence, if there were changes to a channel's number on the Welsh specific Sky EPG, this might lead to changes in the channel's number on other Sky EPGs outside of Wales (Sky Scotland and Sky England and Northern Ireland).¹⁹ Channels renumbered in this way may undertake extra marketing and so incur one-off costs even though they do not change slot position.

A3.24 We accept that it is generally accepted industry practice that EPGs provide the same slot number for a specific channel across all Nations and have factored this into our assessment.

A3.25 In this Annex, we have included estimates of the number of channels that may need to move position or change number – this acts as a proxy for the extent of likely one-off costs incurred across these channels.

A3.26 However, the level of one-off costs resulting from Ofcom mandated changes to EPG organisation might be mitigated to some extent. In particular:

- a) Channel renumbering has occurred over the years as part of normal business operations. For example, Sky reorganised its EPG in May 2018, while Freeview reorganised its EPG in August 2017. Thus, the changes will not result in a unique and unprecedented outcome that has never happened before.

¹⁸ [COBA consultation response](#), paragraph 14 (page 6) and paragraphs 2.3 and 2.4 (pages 13 and 14), October 2018; [Sky consultation response](#), paragraphs 6.26-6.29; Sky response to Ofcom request for further information, paragraph 16, January 2019.

¹⁹ For example, on the Sky Wales EPG, Channel 4 will move up to slot 8 from slot 16, and channels in slots 8-15 may all move down as a result (see paragraph A3.77 below). LCN 108 might be reserved across the UK for Channel 4 but this slot would then remain blank in nations other than Wales, as Channel 4 already appears at channel number 104 in these nations. Therefore, this slot would be unused and hidden for viewers in these nations. This would mean that channels below 108 in these nations would not move position on the EPG but would change channel number to ensure uniformity of channel number across the UK (e.g. Sky Atlantic, which is currently at channel 108, would be renumbered as channel 109 but still appear after channel 107).

- b) There will be an 18 months lead time before the required changes are implemented. This should give channels the opportunity to plan ahead to avoid wasted ‘short-term’ promotional activities (such as stakeholders ordering items like hats, cups, etc to promote their current channel number). Similarly, channels might be able to combine marketing to raise awareness of the channel renumbering with other marketing activities, that might occur in the normal course of business. Further, EPG providers might be able to combine changes resulting from our decisions with other planned (commercial) EPG reorganisations.
- c) We have given flexibility to EPG providers as to how they reorganise their EPGs. EPG providers can keep the channel numbers of some channels unchanged if warranted, for example if a channel has only recently invested heavily in building up recognition of its channel number. This would need to be negotiated between EPG providers and broadcasters.²⁰

Our conclusion

A3.27 Ofcom considers that changes to the organisation of EPGs are likely to result in one-off costs to channels and EPG operators. Whilst, for a number of reasons, we do not consider it is possible to reliably estimate these costs, we have taken their likely extent into consideration as part of our decision-making process. We also accept that channel numbers may change more widely than considered in our consultation, to ensure conformity of numbers across the UK on any particular EPG and have factored this into our assessment. However, we consider that channels and EPG providers have some reasonable scope to mitigate at least some of the costs that they would incur, given our proposed 18-month implementation period and the potential to consolidate with any business-as-usual marketing activity.

The Ofcom and O&O models – their implications, differences and similarities

O&O’s model and its implications

- A3.28 COBA commissioned O&O to develop a model to estimate the impact on commercial broadcasters of the proposed changes to Ofcom’s EPG prominence rules outlined in our consultation.²¹ We provide a brief description of O&O’s model below, outlining O&O’s approach, key assumptions and implications for the interpretation of its modelling results.
- A3.29 O&O estimated the impact on commercial broadcasters for the Entertainment genre only. O&O made various assumptions to estimate inputs/elements of its model:

²⁰ For example, [3<]

²¹ O&O, Estimating the impact to commercial broadcasters of proposed changes to Ofcom’s EPG prominence rules, A report for COBA by Oliver & Ohlbaum, September 2018.

- a) It estimated 2017 UK-wide advertising revenues for most, but not all, commercial channels on the Freeview, Freesat, Sky and Virgin Media platforms for the Entertainment genre only.²²
- b) It made assumptions about the channels which would move and the extent of these moves as a result of our consultation proposals;²³
- c) It assumed that when a commercial channel moves down (or up) an EPG by a single slot position, this will result in the channel losing (or gaining) 1.5% of its current viewing hours and current advertising revenues (the 'key O&O assumption'). O&O considered that this figure represents an upper bound or "worse case";²⁴ and
- d) For regionalised EPGs, it made assumptions to derive each nation's share of total viewing on the platform. In the case where a channel moves only in a particular nation on a platform, it used that nation's share of total viewing on the platform, together with an estimate of the channel's UK-wide advertising revenues on the platform, to derive an estimate of the channel's advertising revenue in that nation on that platform.

A3.30 O&O used a common approach to estimate the effects on channels on the Freeview, Freesat and Virgin Media platforms. In brief, it calculated how many slots the channels would move as a result of our consultation proposals and used the 'key O&O assumption' to determine the effect on the channels' estimated 2017 advertising revenues on the platform (on a UK-wide or nation-specific basis, as appropriate).²⁵

A3.31 For Sky, which has an active marketplace for EPG slots, O&O essentially used our model (which calculates the relative difference in estimated slot values). In line with the EMP

²² On the Freeview and Freesat platforms, O&O's model only considered the change in commercial channels' advertising revenues resulting from channel moves. It estimated potential lost advertising revenues from slot moves on these platforms as a proxy for the change in value of EPG slots, and thus the impact on commercial broadcasters. However, we recognise that advertising revenue is not the sole source of income for commercial channels, many of which may also generate revenue from sponsorship, a share of subscription fees, etc. This means that O&O's model, which focuses only on the loss in channels' advertising revenue, will tend to underestimate the impacts on commercial channels' profitability. On the Virgin Media platform, in addition to estimating lost advertising revenues, O&O also considered the implied cost savings affected channels would make from lower payments to Virgin Media (assuming Virgin Media chose to pass on these savings), if Virgin Media monetises slots on its EPG.

²³ O&O said its assumptions were informed (and their conclusions "sense-tested") by discussions with platform owners (who would have been affected by Ofcom's consultation proposals). In particular, from O&O's interviews with Sky and YouView, these platforms prefer to keep channels' numbers consistent across the nations for marketing purposes and a "nation-specific" implementation (where a channel's slot number could vary by nation) would not be desirable. See O&O, Estimating the impact to commercial broadcasters of proposed changes to Ofcom's EPG prominence rules, A report for COBA by Oliver & Ohlbaum, September 2018, slides 6 and 10.

²⁴ This 1.5% figure was based on (and calculated from) analysis of historic channel moves. O&O looked at examples, each from a different platform, in which a channel moved position only on one platform (remaining in the same position on all of the others) – and so it was able to calculate the relative impact of the shift in EPG slot. 1.5% represents an upper bound on the observed audience performance impact of the historic slot moves it examined. See O&O, Estimating the impact to commercial broadcasters of proposed changes to Ofcom's EPG prominence rules, A report for COBA by Oliver & Ohlbaum, September 2018, slides 8 and 10-11.

²⁵ Thus, the O&O approach aims to estimate the change in revenues generated by commercial channels. However, the entire change in revenues need not fall on commercial channels only. For example, if Virgin Media monetises slots on its EPG, then the payments by channels to Virgin Media would likely depend, at least in part, on the revenues the channels expect to earn from being in a particular slot. Thus, a portion of any change in advertising revenues might fall on Virgin Media in terms of a change in what it could earn by monetising slots on its EPG.

report,²⁶ O&O treated slots on Sky as assets owned by broadcasters. Hence, O&O used the slot values from Ofcom's model (which are based on those provided by EMP). However, O&O adopted a different counterfactual and assumed that different channel moves would be required compared to our consultation.

- A3.32 An important implication of the 'key O&O assumption' is that when two channels swap slots, the gain in viewing and advertising revenues for the channel moving up may not match the losses in viewing and advertising revenues to the channel that moves down. In other words, it is not a zero-sum game and there can be asymmetries in gains and losses. This is because of the use of a *percentage* change in individual channels' viewing and advertising revenues.
- A3.33 Therefore, O&O's model will result in an increase in *total* minutes of viewing (across all channels) if a channel with relatively more viewing moves up the EPG and vice versa. Ofcom considers that whilst total viewing might change slightly because of a channel move, viewers are generally unlikely to watch TV to a significantly greater or lesser extent overall due to changes in channel locations.²⁷ Therefore, where the O&O model predicts very asymmetric changes in total viewing, we treat its estimates with caution.

Ofcom's model and its implications

- A3.34 Ofcom's model is discussed in Annex 4,²⁸ which sets out our modelling approach, the key assumptions we have used and our modelling results. We have published our model alongside our statement.²⁹ Ofcom's model uses predicted slot sale prices (or 'slot values') from EMP. We note the following:
- a) The slot values provided by EMP are 'generic', in that any slot's value is independent of the channel in that slot. This implies that slot values provided by EMP may under(over)-estimate the profit that can be earned by a popular (niche) channel in any slot, and therefore lead to less reliable estimates of the impact of channel moves in cases involving atypical channels.
 - b) Ofcom's model covers only changes in profits, and not in viewing of channels, resulting from channel moves. In Ofcom's model, changes in channel slot positions are a zero-sum game. In other words, the sum of gains in profits to all channels that move up exactly equals the sum of losses in profits to all channels that move down.

²⁶ EMP, [Report on the UK Market in EPG Positions](#), July 2018, page 3.

²⁷ Changing channels' linear EPG position affects the choices of viewers that are already browsing their TV for something to watch, but is unlikely to affect the amount of time they spend watching TV or the total number of people watching TV.

²⁸ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Annex 4](#).

²⁹ We have published [our model](#) alongside our statement on the dedicated [Ofcom webpage](#).

- c) EMP's report noted that the true value of slots on page one could be much higher than the sale prices it estimated.³⁰ Despite this drawback, in our consultation we relied on our model to estimate the impact on commercial channels of channel moves on page one because we had limited alternative evidence available. However, in response to our consultation, we have received a range of evidence from stakeholders on the potential impact of changes involving slots on page one of the General Entertainment section of the EPG (which we describe in paragraphs A3.78 to A3.83 below). Therefore, in light of the limitation recognised in EMP's report, we do not rely on our model when we estimate the effects on commercial channels of changes which involve slots on page one of the General Entertainment section of the EPG. For the avoidance of doubt, we consider that our model produces reasonable estimates of gains and losses for other channel moves (that do not involve slots on page one).

A3.35 As noted in paragraph A4.3 of Annex 4,³¹ given we have had to make a number of modelling assumptions, as did EMP, our estimates of the potential impact on commercial channels are only indicative in nature.

Re-runs of the O&O and Ofcom models

A3.36 As discussed above, there are limitations in both our model and in O&O's model. Despite these limitations, we consider that the estimates from both models, where applicable, provide reasonable proxies for the potential commercial effects that could occur as a result of changes to the positions of the designated channels. We have therefore re-run our model to derive revised estimates of the effects on commercial channels. Similarly, we have also re-run the O&O model to come up with 'revised O&O estimates' of effects on commercial channels. We have published our re-runs of the Ofcom and O&O models alongside our statement.³² We undertook revisions to account for the following:

- a) Since our consultation was published, there have been changes to the channel positions on some of the EPGs (e.g. BBC Four). We therefore use the channel positions on EPGs as at 12 June 2019 as the new basis for our estimates of impact (see Table A3.3 below).

³⁰ EMP stated that: "[...] estimates for EPG slots on Page 1 of each genre (Entertainment, News and Kids) on both Sky and Virgin are somewhat hypothetical. Most of these top slots are currently occupied either by PSB channels, or by commercial channels who are unlikely to sell." Specifically, in relation to the Sky general entertainment genre, EMP stated that: "We have assumed that the slots currently occupied by the PSBs at the top of Page 1 are unlikely to be put up for sale in the near future. So, whilst the true value of, say, 103 to ITV versus a slot in 'overspill' might be tens of millions, (or even more than £100M if we rely on the bottom-up valuation), we haven't included this hypothetical valuation in our calculations." See EMP, [Report on the UK Market in EPG Positions](#), July 2018, pages 10 and 13.

³¹ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Annex 4](#).

³² We have published [our model](#) alongside our statement on the dedicated [Ofcom webpage](#).

- b) As set out in Section 3 of our statement,³³ there are some differences between the slot positions we require for designated channels in this statement and our consultation proposals, due to our shift from specifying minimum pages to instead requiring minimum slot positions and our views regarding local TV services.
- A3.37 For both our model and the O&O model, we assume that, if a PSB channel moves up an EPG, this would result in the channel it replaced and the ones below it moving down one slot each (rather than a channel nearer the top of the EPG ‘swapping’ with the PSB). This is also the assumption we made in our modelling for our consultation.
- A3.38 Stakeholders did not generally disagree with this approach. As explained in paragraph A3.24 above, for both our model and the O&O model, we have assumed that changes in slot positions and channel numbers occur such that there is uniformity of channel numbers, to the extent possible, across the EPGs of all nations in the case of regionalised EPGs.
- A3.39 As discussed in paragraphs A4.17 and A4.25 of Annex 4,³⁴ EMP provided estimates of slot values for the General Entertainment and Children’s genres on the Sky and Virgin Media EPGs only. Also, as discussed in paragraph A3.31 above, O&O used our model for the Sky platform.
- A3.40 Hence, for slot changes in the General Entertainment genre on:
- a) the Freeview and Freesat EPGs, we use estimates derived from the O&O model;
 - b) the Virgin Media EPG, we use both the O&O model and our model; and
 - c) the Sky EPG, we use our model only, with one exception in the General Entertainment genre. For slot changes occurring on the Sky Wales EPG as a result of requiring Channel 4 to be within the first eight slots, we do not use our model given that these changes involve slots on page one (see our discussion in paragraph A3.34c) above). In this case, we instead use the key O&O assumption, together with commercial channel advertising revenues reported by O&O, to estimate the effect of the changes in relation to Channel 4 on the Sky Wales EPG. However, as noted in paragraph A3.33 above, where the O&O model predicts very asymmetric changes in total viewing, we treat its estimates with caution.
- A3.41 For slot changes in the Children’s genre, which result from requiring CBBC and CBeebies to be within the first eight slots on the Children’s section of the Sky EPG, these changes involve slots on page one. While we recognise the limitation associated with our model in estimating the impact of changes involving slots on page one (see our discussion in paragraph A3.34c) above), in the absence of alternative available evidence on the potential scale of this impact (i.e. the O&O model does not include the Children’s genre), we use our

³³ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Section 3](#), paragraphs 3.17-3.18.

³⁴ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Annex 4](#).

model to provide an indicative estimate (although we recognise there is a particular degree of uncertainty around this figure).

- A3.42 Regarding the interpretation of estimates of the commercial impacts of the changes, three of the main EPG providers (Sky, Freeview and Freesat) do not monetise the allocation of slots on their EPG. Hence, the commercial impact of the changes on the Sky, Freeview and Freesat EPGs are assumed to fall entirely on commercial channels that would move down as a result of the changes in position of the designated channels.
- A3.43 By contrast, on the Virgin Media platform, Virgin Media monetises the allocation of its EPG slots by negotiating commercial terms with broadcasters related to the value of EPG slots.³⁵ If a channel is moved to a lower slot, this will likely reduce both its revenue and the amount that Virgin Media can charge that channel for the slot. However, neither our model nor O&O's model quantifies how the loss in revenue is split between Virgin Media and the channel.

Evidence we have considered regarding the position of Channel 4 in Wales

- A3.44 In Section 4 of our statement,³⁶ we set out our analysis of the effects of requiring Channel 4 to be listed in the first eight slots of the general entertainment section of EPGs specific to Wales. In this section, we discuss the quantitative evidence relating to these effects in more detail. We first consider evidence regarding the potential effect on Channel 4's share of viewing of listing Channel 4 in the first eight slots. We then present estimates of the likely ongoing effects on the revenues of both Channel 4 and the channels that would move down the EPG if Channel 4 is listed in the first eight slots.

Channel 4 in Wales – ongoing effects on Channel 4's viewing performance of requiring it to be within the first eight slots of EPGs specific to Wales

Evidence from BARB

- A3.45 To assess the potential effect on the viewing performance of Channel 4 in Wales, we first compared Channel 4's share of viewing in the following situations:
- When it is located at slot 4. This is the default position of Channel 4 on the regionalised EPGs in the rest of the UK (i.e. outside Wales) and for Virgin Media customers in Wales (Virgin Media currently does not generally regionalise its EPG);
 - On Sky Wales – where it is located at slot 16;
 - On Freesat Wales – where it is located at slot 20;
 - On Freeview Wales - where it is located at slot 7.

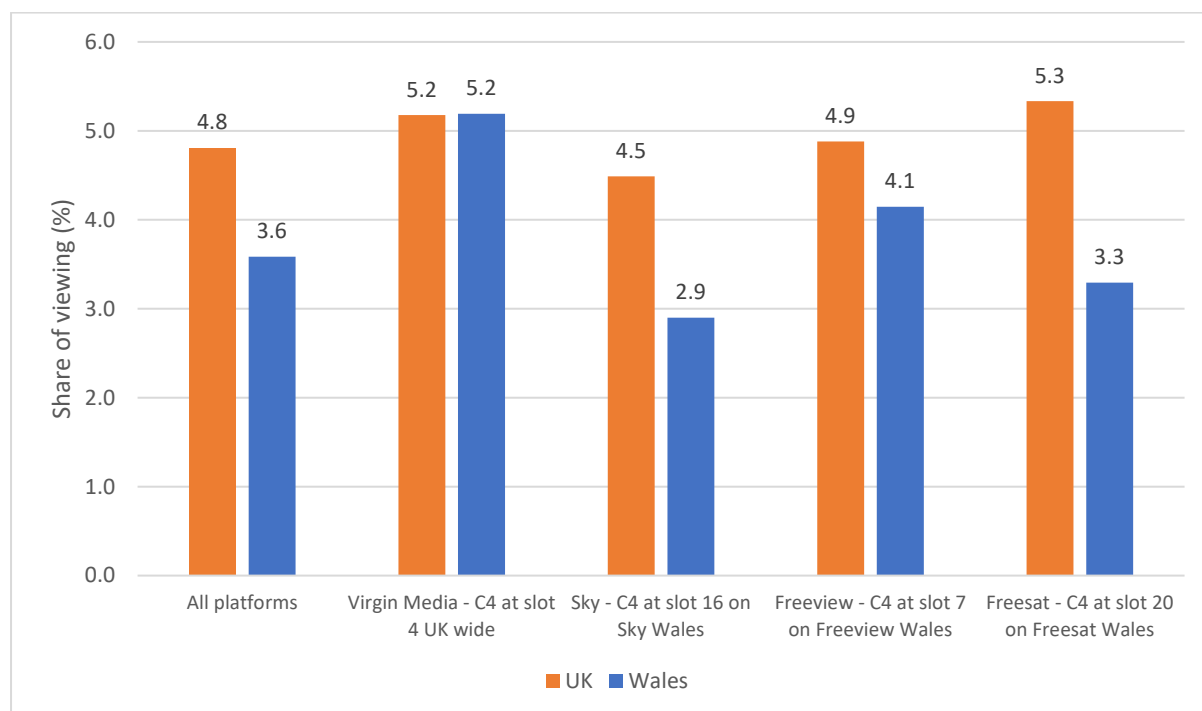
³⁵ EMP, [Report on the UK Market in EPG Positions](#), July 2018, page 6.

³⁶ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Section 4](#), paragraphs 4.20-4.36.

A3.46 Figure A3.4 below shows Channel 4’s share of viewing in Wales and for the UK as a whole on the different platforms. The highest share of viewing is achieved when Channel 4 is at slot 4. Channel 4 has its lowest share of viewing on Sky Wales, where it is in slot 16.

A3.47 We consider that the BARB data suggests that, whilst a number of factors may influence viewing (e.g. the presence of S4C in slot 4, the number of channels in the EPG and the nature of demand for the different channels, etc), requiring Channel 4 to be within the first eight slots on EPGs in Wales could increase its viewing share in Wales. This would, at a minimum, require Channel 4 to move up 8 slots on Sky Wales and 12 slots on Freesat Wales. Whilst viewing may not increase to the extent it would if it were moved to slot 4 on the two platforms’ EPGs, the differentials in viewing share between Wales and the UK shown in Figure A3.4 below imply that an increase in viewing share would likely occur. This is also consistent with our view that higher slots on the EPG tend to result in higher viewing share.

Figure A3.4: Channel 4’s share of viewing in the UK and in Wales, by platform (%), 2018



Source: BARB, network (UK) and BBC Wales area, individuals (4+), full weeks 01-01-2018 - 30-12-2018. Channel 4 includes HD and excludes Channel 4 +1.

Evidence from stakeholders

A3.48 In their responses to our consultation, two stakeholders (Sky and Channel 4) provided estimates of the likely improvement in Channel 4’s viewing performance if it were moved to a slot on the first page of the EPGs specific to Wales. We have also used evidence from O&O (on behalf of COBA) to estimate the potential improvement in Channel 4’s viewing performance.

Evidence from Sky

- A3.49 Sky assumed that, if Channel 4 was moved onto page one of Sky Wales: *“the combined viewing share of Channel 4 and S4C on Sky in Wales would, at most, match the current viewing share of Channel 4 on Sky in the rest of the UK. Therefore, the viewing share of Channel 4 in Wales would increase from 2.75% to 3.83%”*,³⁷ i.e. an increase of 1.08 percentage points or 39.4% on Sky in Wales.
- A3.50 We agree that, if Channel 4 was moved to the bottom of page one of Sky Wales, it would probably increase its share of viewing in Wales, but that this increase would be unlikely to be as large as if Channel 4 moved into slot 4. We consider that the approach adopted by Sky (i.e. requiring the combined viewing share of Channel 4 and S4C on Sky in Wales to match the current viewing share of Channel 4 on Sky in the rest of the UK)³⁸ is a reasonable – albeit imperfect³⁹ – way of accounting for the fact that Channel 4 would not move up to slot 4 in Wales (which is occupied by S4C).
- A3.51 Sky’s approach generates an estimate of 39.4% for the potential increase in Channel 4’s viewing share on Sky in Wales, which we estimate to be equivalent to a 1.7% increase in Channel 4’s viewing share on Sky in the UK. Sky is taken by around 31% of UK households.⁴⁰ This might imply that the increase in Channel 4’s share of viewing for the UK, across all platforms, might be around 31% of the estimate above, i.e. around 0.5%.⁴¹
- A3.52 Channel 4 would also be required to move up 12 slots from slot 20 to slot 8 on Freesat in Wales and Sky did not estimate the effect of this on Channel 4’s share of viewing. We used Sky’s methodology to estimate the likely increase in Channel 4’s share of viewing if it was moved up Freesat Wales and estimated that this would be equivalent to a 1.9% increase in Channel 4’s share of viewing on Freesat in the UK. If adjusted for Freesat representing 4% of UK households,⁴² this would suggest an increase in Channel 4’s viewing share across all platforms in the UK of around 0.1%.
- A3.53 If we sum the increases on Sky Wales and Freesat Wales calculated above using Sky’s approach, this might suggest a total increase of around 0.6% in Channel 4’s share of viewing across all platforms in the UK, if it was moved up to slot 8 on Sky Wales and Freesat Wales.

³⁷ [Sky consultation response](#), October 2018, paragraph 6.21.

³⁸ [Sky consultation response](#), October 2018, paragraph 6.21; and Sky response to Ofcom request for further information, paragraph 1 and attached spreadsheet, January 2019.

³⁹ Specifically, Sky’s approach implicitly assumes that total viewing of all other channels (apart from Channel 4 and S4C) is the same in Wales and the rest of the UK and that S4C’s higher popularity in Wales is solely at the expense of Channel 4. These assumptions are unlikely to hold.

⁴⁰ Source: BARB Establishment Survey 2018, figure for those who have a subscription with Sky.

⁴¹ The calculation for Sky in this paragraph (and the calculation for Freesat in the next paragraph) converts the increase in Channel 4’s UK viewing share on an individual platform into an increase in Channel 4’s UK viewing share across all platforms. In each case, the calculation implicitly assumes that Channel 4’s UK viewing share is the same across all platforms. Channel 4’s UK viewing share is fairly similar across platforms. We therefore consider this is a reasonable assumption and that our calculation represents a reasonable approximation of the potential increase in Channel 4’s UK viewing share. As a cross-check, we carried out alternative calculations to take into account the slight differences in Channel 4’s UK viewing share across platforms. This does not change our results.

⁴² Source: BARB Establishment Survey Q1 2019.

Evidence from Channel 4

- A3.54 In its response to our consultation, Channel 4 said: *“Our internal modelling suggests that moving Channel 4 up to the first page of EPGs in Wales will result in a significant uptick in our reach and discoverability in Wales with a [3<] increase in share for Channel 4 (total) in Wales. This equates to an increase in overall national share [3<] which we calculate could result in an uplift in revenues [3<]”*.⁴³ In response to a request for further information from Ofcom, Channel 4 outlined two methods it had used to derive its estimates of the likely increase in its share of viewing.⁴⁴
- A3.55 Channel 4 assumed that, to comply with our consultation proposal, Channel 4 would need to:
- a) move up 1 slot on Freeview Wales;
 - b) move up 12 slots on Freesat Wales; and
 - c) move up 8 slots on Sky Wales.
- A3.56 Channel 4’s first method assumed that, if Channel 4 moved up one slot on an EPG specific to Wales, this would increase its share of (individual) viewing on that platform in Wales by [3<]. Channel 4 then used this assumption and the number of slots that Channel 4 would be required to move up on each EPG, to estimate the increase in Channel 4’s viewing in Wales. This was then used to calculate the change in Channel 4’s share of individual viewing in the UK as a whole. According to Channel 4, this method implied that, as a result of moving up the EPGs specific to Wales, Channel 4’s share of individual viewing for the UK would rise by [3<]. Channel 4 said this created a low case scenario.
- A3.57 Channel 4’s second method assumed that if Channel 4 moved to the first page of EPGs specific to Wales, it would do “almost” as well in terms of share of viewing as it does nationally at slot 4. Channel 4 suggested that this would result in a [3<] increase in Channel 4’s share of viewing in the UK. However, Channel 4 did not provide any detailed explanation of how it derived this estimate. Channel 4 said this created a high case scenario.
- A3.58 Overall, Channel 4 suggested that, while both the low case and high case scenarios are extremes, moving Channel 4 to the first page of the EPGs specific to Wales could result in an increase in Channel 4’s UK share of viewing of between [3<], and it suggested using a midpoint value of c. [3<].
- A3.59 However, we consider that the estimates in both the low case and high case scenarios based on Channel 4’s modelling assumptions may be slight overestimates for two reasons:
- First, if Channel 4 is required to be within the first 8 slots of the EPGs specific to Wales (rather than on page one of these EPGs under our consultation proposal) this implies that, unlike in Channel 4’s modelling, a channel move is no longer required on Freeview in Wales. However, this change is unlikely to have a significant effect on either Channel

⁴³ [Channel 4 consultation response](#), paragraph 3.8.

⁴⁴ Channel 4 response to Ofcom request for further information, 1 February 2019.

4 estimate, as our consultation proposal would only have required a move of one slot on Freeview Wales.

- Second, Channel 4 may have included the share of viewing of Channel 4+1 and Channel 4 HD within the “Channel 4 (total)” share of viewing, which might overstate the impact, as these channels would not technically move slot. However, for those viewers with HD boxes on Sky and Virgin Media, Channel 4 SD and Channel 4 HD swap positions, which might imply that some of the share of viewing of Channel 4 HD should be included.

Evidence from O&O

- A3.60 As outlined in paragraph A3.29c) above, O&O’s ‘key assumption’ is that a move upwards of 1 slot on any EPG would increase a channel’s volume of viewing on that EPG by 1.5% of its current viewing volume.
- A3.61 We have used this assumption and the viewing data supplied by O&O to estimate the potential increase in Channel 4’s viewing if it moved up eight slots on Sky Wales (from slot 16 to slot 8) and twelve slots on Freesat Wales (from slot 20 to slot 8). This approach suggests an increase of around 0.3% in Channel 4’s volume of viewing in the UK. This corresponds to a 0.3% increase in Channel 4’s UK share of viewing.
- A3.62 As discussed in paragraph A3.83 below, O&O’s approach results in the estimated viewing gains to Channel 4 significantly outweighing the viewing losses to other channels. We have considered whether this implies that the estimated increase in Channel 4’s UK viewing share of 0.3% derived using O&O’s ‘key assumption’ and its viewing data is too high. However, this seems unlikely given it is lower than our estimate using Sky’s approach (0.6%) [3<].

Our conclusion

- A3.63 We have considered a range of evidence from stakeholders, as well as data from BARB, in assessing the potential effect on Channel 4’s share of viewing in the UK if it were required to move up to slot eight on Sky Wales and Freesat Wales. As discussed above, we have several different estimates of the potential increase in Channel 4’s UK viewing share from various stakeholders (Sky, Channel 4 and O&O). While we consider there are limitations associated with each of these estimates, we consider that they are informative. Looking at them together suggests that 0.3% to 1% represents a reasonable range for the likely increase in Channel 4’s share of viewing in the UK if it were required to be within the first eight slots of the EPGs specific to Wales.

Channel 4 in Wales – ongoing effect of increased viewing on Channel 4’s advertising revenue

- A3.64 An increase in Channel 4’s share of viewing is likely to increase its share of commercial impacts (“SOCl”). Given that advertising agencies allocate share of advertising spend between broadcasters on the basis of their SOCl, we consider that an increase in Channel 4’s SOCl is likely to lead to a rise in its advertising revenues.

- A3.65 Channel 4, Sky and O&O made detailed submissions about the likely revenue increases which could be achieved by Channel 4 as a result of it moving up the EPGs specific to Wales. We outline their approaches and estimates below.
- A3.66 We then take our estimated range of 0.3% to 1% for the likely increase in Channel 4's share of viewing in the UK if it moved up to slot 8 on Sky Wales and Freesat Wales (see paragraph A3.63 above) and convert this into an estimated range for the resulting likely increase in Channel 4's advertising revenues. We have not used our model to derive estimates of revenue increases for Channel 4 for the following reasons:
- a) As explained in paragraph A4.27 of Annex 4,⁴⁵ our model did not quantify the potential financial impact of the changes on the Freesat Wales EPG; and
 - b) Regarding the Sky Wales EPG, the changes are likely to affect the position of channels on page one of the general entertainment section. As discussed in paragraph A3.34c) above, we have concerns about the reliability of the valuations of slots on page one of the general entertainment section of the EPG provided by EMP.

Evidence from Channel 4

- A3.67 As discussed in paragraphs A3.54 to A3.57 above, Channel 4 used two methods to estimate the likely increase in Channel 4's share of viewing in the UK and took a midpoint value of c. [3<] between [3<]. To estimate the resulting change in its revenues, it assumed that a [3<] rise in its UK share of viewing [3<]. [3<] a [3<] increase in advertising revenues (i.e. a [3<] 'monetisation' factor). This would imply an increase in Channel 4's advertising revenue of c. [3<], based on Channel 4's advertising revenue of c. [3<].⁴⁶

Evidence from Sky

- A3.68 Sky did not explicitly calculate increases in Channel 4's revenue. However it, assumed that the viewing share of Channel 4 on Sky in Wales would increase from 2.75% to 3.83% (see paragraph A3.49 above) and, using a number of assumptions, calculated that this would imply an increase of 260,000 adult commercial impacts for Channel 4. Sky characterised this increase of 260,000 commercial impacts as making no discernible difference, when compared to the total commercial impacts for the Channel 4 sales house (estimated at around 215m in the year ended August 2018).⁴⁷
- A3.69 We disagree with this part of Sky's analysis. In our view, the 260,000 increase in adult commercial impacts should be compared to the commercial impacts delivered by the individual Channel 4 channel, rather than the Channel 4 sales house (which handles advertising sales for the Channel 4 portfolio of channels, UKTV, BT Sport and Box Plus).⁴⁸ If

⁴⁵ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Annex 4](#).

⁴⁶ [Channel 4 consultation response](#), paragraph 3.8; and Channel 4 response to Ofcom request for further information, 1 February 2019.

⁴⁷ [Sky consultation response](#), paragraph 6.21; and Sky response to Ofcom request for further information, January 2019, paragraphs 1-3 and 9 and attached spreadsheet.

⁴⁸ <https://www.4sales.com/index.php/our-content> (accessed on 23 May 2019).

the 260,000 commercial impacts are expressed as a share of Channel 4's total commercial impacts for the year ended August 2018,⁴⁹ this would imply a rise in SOCI of around 0.5%. This figure excludes the increase in SOCI resulting from Channel 4's more prominent position on Freesat Wales.

Evidence from O&O

A3.70 O&O did not explicitly model the increase in advertising revenues which might be achieved by Channel 4. However, we have used O&O's 'key assumption' that a single upward move in slot position would lead to a 1.5% rise in advertising revenues (see paragraph A3.29c above), together with O&O's estimate of Channel 4's advertising revenues,⁵⁰ to estimate an increase in Channel 4's advertising revenues of approximately £1.6m p.a. across all platforms in the UK.⁵¹

Inference from our estimates of the change in Channel 4 viewing

A3.71 As set out in paragraph A3.63 above, if Channel 4 moved up the Sky Wales and Freesat Wales EPGs, we consider that a reasonable range for the increase in Channel 4's share of viewing in the UK might be 0.3% to 1%.

A3.72 Channel 4 and O&O use a broadly similar approach to derive increases in advertising revenue from increases in share of viewing. Channel 4 assumes that a given percentage increase in share of viewing [x%] a 'monetisation' factor of [x%] and [x%] Channel 4's advertising revenue. A similar method is used by O&O, which assumes that a given percentage rise in viewing volume leads to the same percentage rise in commercial impacts and in advertising revenues (thus O&O uses a 'monetisation' factor of 100%).

A3.73 Sky did not calculate the increase in Channel 4's advertising revenues but its approach to estimating the increase in Channel 4's viewing is encompassed by our 0.3% to 1% range.

A3.74 We have used Channel 4's approach to convert our estimated range for the increase in UK share of viewing (0.3% to 1%) into an estimated range for the increase in Channel 4's advertising revenues [x%].

A3.75 Applying this approach suggests that Channel 4's advertising revenues might increase by between:

- a) £0.7m p.a. (= 0.3% [x%]); and
- b) £2.4m p.a. (= 1% [x%]).

⁴⁹ The source for Channel 4's total commercial impacts for the year ended August 2018 is the spreadsheet attached to Sky's response to Ofcom request for further information, January 2019.

⁵⁰ As discussed in paragraph A3.31 above, O&O essentially used our model (based on the EMP slot values) to generate estimates of impacts on commercial channels on the Sky platform. However, as discussed in paragraph A3.34c) above, we have not relied on estimates using EMP slot values to estimate the effects on commercial channels of changes involving slots on page one of the general entertainment section of the EPG.

⁵¹ This consists of a gain in advertising revenues for Channel 4 of £1.4m p.a. on Sky Wales and £0.2m p.a. on Freesat Wales.

Our conclusion

A3.76 Based on the reasonable range we estimated for the increase in Channel 4's viewing share in the UK of 0.3% to 1% (see paragraph A3.63 above), we consider that £0.7m to £2.4m p.a. represents a reasonable range for the increase in Channel 4's advertising revenues if it were required to be within the first eight slots on EPGs specific to Wales. This range encompasses the estimate generated by O&O's approach [3<].

Channel 4 in Wales – ongoing effects on commercial channels of requiring Channel 4 to be within the first eight slots of EPGs specific to Wales

A3.77 In arriving at our decision to require Channel 4 to be within the first eight slots of EPGs specific to Wales, we have also considered the effect on commercial channels that would move down the EPG to accommodate Channel 4 moving up. As explained in paragraph A3.37 above, we have assumed that when a designated channel moves up the EPG, all the channels between the designated channel's existing slot and its new slot move down one slot each. This would lead to the following channel moves as a result of requiring Channel 4 to be within the first eight slots of EPGs specific to Wales:

- On the Sky Wales EPG, we assume 7 commercial channels will move down by one slot each (and 86 channels will have to be renumbered in each of England, Scotland and Wales, while 89 channels will have to be renumbered in Northern Ireland); and
- On the Freesat Wales EPG, we assume 9 commercial channels will move down by one slot each (and 65 channels will have to be renumbered in each of England, Northern Ireland and Wales, while 64 channels will have to be renumbered in Scotland).⁵²

A3.78 We first discuss evidence from stakeholders on the effects of our consultation proposal on other channels. We then outline our views on the likely effects in terms of the changes in viewing and advertising revenues that might be faced by other channels.

Evidence from Sky

A3.79 In its response to our consultation, Sky suggested that if Channel 4 moved to page one of the Sky Wales EPG, the effects of this change on other channels might be as follows:⁵³

- a) Sky Atlantic would move from the bottom of page one to the top of page two of the Sky Wales EPG – from slot 108 to 109. Sky suggested that, as a result, Sky Atlantic would lose 10% of its viewing on Sky in Wales.
- b) Sky assumed that total viewing would remain constant, with the remainder of the increase in viewing to Channel 4 drawn from channels above Channel 4 on page one of the Sky Wales EPG.

⁵² Overall, 8 channels will move down on the Sky Wales EPG (7 commercial channels and 1 BBC channel), while 12 channels will move down on the Freesat Wales EPG (9 commercial channels and 3 BBC channels). However, in estimating the commercial impact of requiring Channel 4 to be within the first eight slots of EPGs specific to Wales, we focus only on the impact on the commercial channels that will move down.

⁵³ [Sky consultation response](#), paragraphs 6.22-6.24; and Sky response to Ofcom request for further information, January 2019, paragraph 1 and attached spreadsheet.

- c) Sky assumed that the losses to the channels above Channel 4 on page one of the Sky Wales EPG would be in proportion to their current viewing. In other words, as BBC One has the highest share of viewing, it would lose the largest amount of viewing.
- d) Sky assumes that no channels below Sky Atlantic on page two of the Sky Wales EPG would lose viewing, despite several moving further away from the start of the EPG.

A3.80 Therefore, under Sky's assumptions, the affected channels that would lose viewing and (in the case of commercial channels) advertising revenues are: BBC One, BBC Two, ITV, S4C, Channel 5, Sky One, Sky Witness and Sky Atlantic.

A3.81 We accept that, if Channel 4 moved up to the eighth slot of the Sky Wales EPG, channels above Channel 4's new slot position may lose some viewing and (in the case of commercial channels) advertising revenues. For example, a viewer that just scans the first page and selects the most attractive programme may now choose to watch Channel 4, rather than BBC One. However, evidence strongly suggests that channels which move down the linear EPG will lose viewing (see paragraphs A3.3 to A3.16 above). Therefore, we doubt that the effect on the other channels within the first eight slots of the Sky Wales EPG will be as extreme as Sky presents.

Evidence from O&O

A3.82 As noted in paragraph A3.29c) above, the O&O model assumes that channels moving down a slot on an EPG will lose 1.5% of their viewing and advertising revenues on that EPG. Using O&O's 'key assumption', together with O&O's estimate of advertising revenues of commercial channels that will move down,⁵⁴ suggests that channels moving down the Freesat Wales EPG would face negligible losses in advertising revenues, while channels moving down the Sky Wales EPG would face losses in advertising revenues of £0.1m p.a. if Channel 4 was required to be within the first eight slots of EPGs specific to Wales.

A3.83 However, the O&O model results in the viewing gains to Channel 4 significantly outweighing the viewing losses to other channels (the viewing gains would be around 6.5 times the viewing losses to other channels). As discussed in paragraph A3.33 above, this disparity means we treat these estimates with caution. However, we explain in paragraph A3.62 above why we consider that the estimated viewing gains to Channel 4 are unlikely to be too high. Therefore, we consider that the loss in viewing to other channels, and consequently their loss in advertising revenues, is likely to be too low. Hence, we do not rely on the estimates set out in the preceding paragraph.

Possible effects on other channels using our estimates of the potential changes in Channel 4's advertising revenues

A3.84 In the absence of alternative figures, a rough assumption is that the gain in advertising revenue to Channel 4 might be broadly equal to the combined loss in advertising revenue

⁵⁴ As discussed in paragraph A3.31 above, O&O essentially used our model (based on the EMP slot values) to generate estimates of impacts on commercial channels on the Sky platform. However, as discussed in paragraph A3.34c) above, we have not relied on estimates using EMP slot values to estimate the effects on commercial channels of changes involving slots on page one of the general entertainment section of the EPG.

to the commercial channels moving down the Sky Wales and Freesat Wales EPGs. As set out in paragraph A3.76 above, we consider that a reasonable range for the increase in Channel 4's advertising revenue might be £0.7m to £2.4m p.a. However, we consider this range might be an overestimate of the loss to commercial channels for two reasons. First, some of the decline in viewing may be felt by BBC channels (see footnote 52 and paragraph A3.81 above). Second, it is also possible that Channel 4 is able to monetise its viewing to a greater extent than the commercial channels that move down. In either case, the losses to commercial channels moving might be lower than the gains to Channel 4, implying an overall increase in advertising revenues.

Our conclusion

A3.85 In the absence of alternative figures, we consider a reasonable range for the loss in advertising revenues to commercial channels that move down the Sky Wales and Freesat Wales EPGs as a result of requiring Channel 4 to be within the first eight slots of EPGs specific to Wales might be £0.7m to £2.4m p.a. (this may be an overestimate). While we recognise that some loss in viewing and advertising revenues may be felt by channels above Channel 4's new slot positions in Wales, we generally consider that the losses in viewing and advertising revenues will be felt by commercial channels that move down the Freesat Wales and Sky Wales EPGs.

Evidence we have considered regarding the position of BBC Four

A3.86 In Section 4 of our statement,⁵⁵ we set out our analysis of the effects of requiring BBC Four to be listed in the first 24 slots of the general entertainment section of all EPGs. In this section, we discuss in more detail the quantitative evidence relating to these effects. We first consider evidence on BBC Four's viewing performance and the potential effect on BBC Four's share of viewing of listing BBC Four in the first 24 slots. We then present estimates of the likely ongoing effects on the revenues of the channels that would move down the EPG if BBC Four is listed in the first 24 slots.

A3.87 Within this analysis, we have also considered the effects on BBC Four and other commercial channels of moving BBC Four to slot 10 of the Freeview Scotland EPG, as this would ensure that all channels including BBC Four have the same LCN across all nations on Freeview.⁵⁶

BBC Four – ongoing effects on BBC Four's viewing performance of requiring it to be within the first 24 slots of all EPGs

A3.88 Since our consultation, BBC Four's slot position has changed on the Freeview Scotland EPG. When BBC Scotland launched on 24 February 2019, the BBC replaced BBC Four with BBC Scotland in slot 9 and moved BBC Four down to slot 77 on Freeview Scotland. BBC Four did

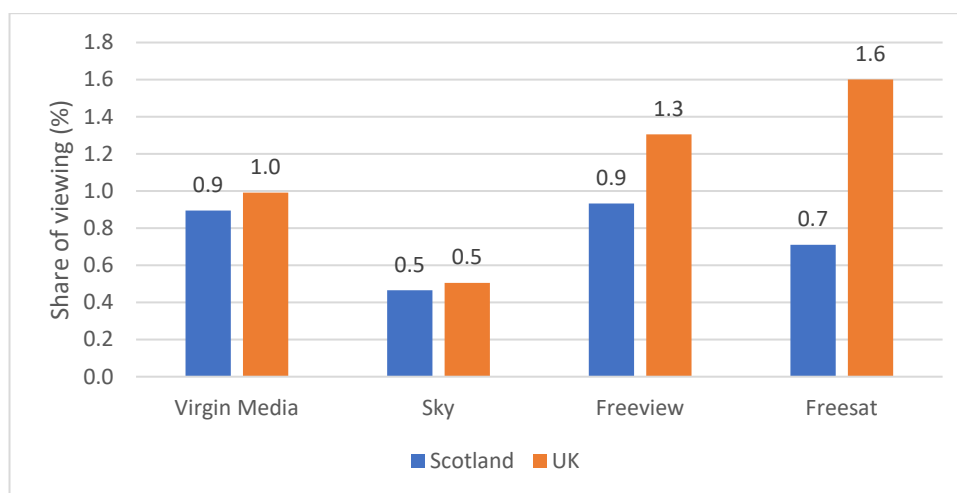
⁵⁵ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Section 4](#), paragraphs 4.37-4.50.

⁵⁶ If BBC four is moved up to only slot 24 on Freeview Scotland, then BBC Four will have a different LCN in Scotland compared to the other nations.

not change position on the other Freeview regionalised EPGs outside of Scotland or on the EPGs of other platforms, where it is already listed within the first 24 slots.

A3.89 Figure A3.5 below compares BBC Four’s viewing share in Scotland and in the UK as a whole on all of the main platforms in the 12 full weeks after the channel’s move on Freeview Scotland. This shows there is little difference in BBC Four’s viewing performance on Sky or Virgin Media. In contrast, there are significant differences on both Freeview and Freesat, where BBC Four’s viewing share is considerably lower in Scotland. Whilst this might be expected on Freeview Scotland, given the change in BBC Four’s slot position, there was no change in BBC Four’s slot position on Freesat Scotland. However, the Freesat data may not be as reliable due to the smaller sample sizes involved.

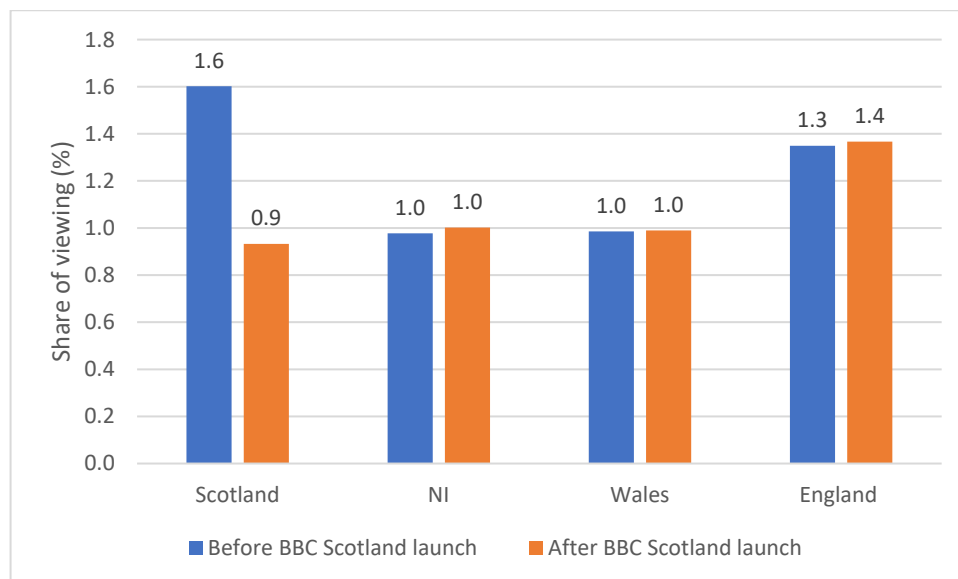
Figure A3.5: BBC Four’s share of viewing in the UK and in Scotland, by platform (%), following the launch of BBC Scotland



Source: BARB, network (UK) and BBC Scotland area, individuals (4+), full weeks 18/02/2019 – 12/05/2019.

A3.90 Figure A3.6 below shows the viewing share of BBC Four on Freeview Scotland, Freeview Northern Ireland, Freeview Wales and Freeview England, in the 12 full weeks before and after the launch of BBC Scotland. This suggests a significant fall in BBC Four’s viewing share on Freeview Scotland as a result of its downward move (i.e. its viewing share has almost halved).

Figure A3.6: BBC Four’s share of viewing in the nations on Freeview (%), before and after the launch of BBC Scotland



Source: BARB, BBC Ulster area, BBC Wales area, BBC England Area and BBC Scotland area, individuals (4+), full weeks 26/11/2018 – 17/02/2019 (before launch) and 18/02/2019 – 12/05/2019 (after launch).

- A3.91 In our view, the BARB viewing data suggests that, if BBC Four moved up from slot 77 on Freeview Scotland to the lowest compliant position (i.e. slot 24), its share of viewing would increase. However, we consider that BBC Four’s viewing share would be unlikely to return to the levels it achieved in slot 9 on Freeview Scotland (i.e. 1.6%) as this is a higher position (this would imply an increase of about 72% or 0.67 percentage points in viewing share).
- A3.92 Overall, we consider that, in light of the BARB data in Figure A3.6 above and the factors outlined in the preceding paragraph, a reasonable estimate for the increase in BBC Four’s share of viewing on Freeview Scotland if it moved from slot 77 to slot 24 might be substantially less than 72% (or 0.67 percentage points).
- A3.93 However, as noted in paragraph A3.87 above, if BBC Four is moved to slot 24, it would have a different LCN on Freeview Scotland compared to the Freeview EPGs in other nations. Hence, we have also considered the effects of moving BBC Four up to slot 10 on Freeview Scotland – this would ensure uniformity of LCN for BBC Four and other channels across the Freeview regionalised EPGs. We consider that, in this scenario, the viewing share gains to BBC Four would be greater (as it would have moved higher up the EPG), though it may not fully recover all of its lost viewing given that its new slot (10) would be slightly lower than its original slot (9).
- A3.94 We have not used the O&O model to estimate the viewing gains to BBC Four of moving up the Freeview Scotland EPG. This is because O&O’s viewing data reflects BBC Four’s viewing at slot 9 on Freeview Scotland which was before the launch of BBC Scotland, rather than its new position in slot 77 after the launch of BBC Scotland. Any gains in viewing estimated using O&O’s viewing data and ‘key assumption’ would therefore be considerably

overstated (the 1.5% gain in viewing per slot move would be applied to a starting level of viewing that is ‘too high’).⁵⁷

Our conclusion

A3.95 Based on our analysis of BARB data, we consider that, if BBC Four moved from slot 77 to slot 24 on Freeview Scotland, a reasonable estimate for the increase in its viewing share on Freeview Scotland might be substantially less than 72% (or 0.67 percentage points). If BBC Four moved from slot 77 to slot 10, then we consider its viewing share increase could be greater, though unlikely to reach its level prior to the launch of BBC Scotland (i.e. lower than a 72% or 0.67 percentage point increase in viewing share).

BBC Four – ongoing effects on commercial channels of requiring BBC Four to be within the first 24 slots on the Freeview Scotland EPG

A3.96 We have assumed that, if BBC Four moved up from slot 77 to slot 24, the channels located in slots 24 to 76 (53 channels) would move down the Freeview Scotland EPG by one slot each. This would require 56 channels to be renumbered (53 of which are shown UK-wide and 3 of which are shown in Northern Ireland only) in addition to the renumbering of BBC Four on Freeview Scotland.

A3.97 As discussed in paragraph A3.93 above, we have also considered the effects of moving BBC Four up to slot 10 on Freeview Scotland. In this scenario, we assumed that all channels located in slots 10 to slot 76 (67 channels) would move down one slot each on the Freeview Scotland EPG. This would require a total of 71 channels to be renumbered (68 of which are shown UK-wide and 3 of which are shown in Northern Ireland only).

Evidence from the O&O model

A3.98 As noted in paragraph A3.39 above, our model did not estimate the impact on commercial channels of changes on the Freeview EPG. We have therefore used the O&O model to estimate the potential effects on commercial channels of moving BBC Four up the Freeview Scotland EPG. This generates an estimate for the loss in advertising revenue to commercial channels of about £0.4m p.a. if BBC Four moves to slot 24 and £0.9m p.a. if it moves to slot 10.⁵⁸

Our conclusion

A3.99 If BBC Four moves to either slot 24 or slot 10 of the Freeview Scotland EPG, then other commercial channels will have to move down that EPG. This would be likely to result in losses in their share of viewing and also their advertising revenues, as well as potentially leading to many channels being re-numbered. The O&O model provides estimates, which

⁵⁷ This issue does not prevent us from using the O&O model to estimate the impact on other channels, as discussed in paragraph A3.98 below.

⁵⁸ However, the O&O model uses estimated advertising revenues for 2017, i.e. before BBC Scotland was launched. If the advertising revenues of the commercial channels that are now below BBC Scotland have been affected in any way by BBC Scotland’s launch, then these numbers may not be valid. Hence, we treat these estimates with caution.

we treat with caution, of the loss in advertising revenue to commercial channels of about £0.4m p.a. if BBC Four moves to slot 24 on Freeview Scotland and of about £0.9m p.a. if it moves to slot 10.

Evidence we have considered regarding the position of the BBC children's channels

A3.100 In Section 4 of our statement,⁵⁹ we set out our analysis of the effects of requiring CBBC and CBeebies to be listed in the first eight slots of the children's genres or areas of all EPGs. In this section, we discuss in more detail the quantitative evidence relating to these effects. This includes evidence on the viewing performance of CBBC and CBeebies on different platforms and the potential effect on their share of viewing of listing them in the first eight slots. We also present estimates of the likely ongoing effects on the revenues of the commercial channels that might move down the EPG if CBBC and CBeebies are listed in the first eight slots.

CBBC and CBeebies – ongoing effects on the viewing performance of CBBC and CBeebies of requiring them to be within the first eight slots of the children's genre of all EPGs

A3.101 Our consultation proposed that CBeebies and CBBC should be allocated positions on the first page of the children's genre of each EPG. This would mean changes on the Sky EPG, as the two channels are currently located in the bottom half of page two of the children's genre (at slots 13 and 14). CBeebies and CBBC are in compliant positions on other platforms.

A3.102 At the time of our consultation, we suggested that the evidence was mixed regarding the extent to which viewing of the two channels might increase as a result of the proposal. After considering the views of stakeholders in response to our consultation and the latest available evidence, we consider that, on balance, it is likely that viewing of the two BBC children's channels on the Sky platform would rise as a result of requiring them to be within the first eight slots of the children's genre.

Evidence from stakeholders

A3.103 COBA noted that the analysis in our consultation had suggested that BARB data was "less persuasive", showing that in reality a higher EPG position makes little or no difference to the viewing of the BBC children's channels.⁶⁰ COBA and Name withheld 2 argued that they had evidence that viewing to children's channels and, in particular the BBC channels, is often the result of direct channel number entry rather than browsing through the EPG.⁶¹

⁵⁹ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Section 4](#), paragraphs 4.64-4.87.

⁶⁰ [COBA consultation response](#), paragraph 5.7.

⁶¹ [COBA consultation response](#), paragraphs 23 and 5.6; and [Name withheld 2 consultation response](#), page 3.

Sky said that the high viewing of these channels indicated they were easily discoverable and noted that viewers are familiar with their channel numbers.⁶² Sky also said that we had not shown clearly that there was likely to be a benefit to these channels in terms of viewing.⁶³

A3.104 The BBC, however, provided evidence that appears to show that the BBC children’s channels have lower viewing by their target audiences on Sky than on Virgin Media, where they are higher in the listings.⁶⁴ Specifically, the BBC’s analysis of BARB data included:

- a) a comparison of share of viewing of the children’s genre channels only, on Sky and Virgin Media, for housepersons with children aged 0 to 3 years and children aged 4 to 6 years (the CBeebies target audience); and
- b) a comparison of the share of viewing of the children’s genre channels only, on Sky and Virgin Media, for children aged 6 to 12 years (the CBBC target audience).

A3.105 The BBC also made adjustments to the BARB data to account for the fact that the Sky platform has tended to have more children’s channels than the Virgin Media platform.

A3.106 The BBC’s BARB analysis focused on the target audience (by excluding adults and older children). It also excluded channels outside the children’s genre. This BARB data shows relatively large differences in the viewing performance of CBBC and CBeebies between Sky and Virgin Media. Table A3.1 and Table A3.2 below summarise these results.

Table A3.1: CBBC and CBeebies share of viewing on Sky and Virgin Media (not adjusted for differences between the platforms)

	Timeslot	Housepersons with children aged 0-3 and Children aged 4-6 (exc. Guests)		Children aged 6-12 (exc. Guests)	
		Sky platform	Virgin Media platform	Sky platform	Virgin Media platform
CBBC share %	0700-2059			6.2	17.7
CBeebies share %	0600-1859	27.7	48.1		

Source: BBC data from BARB for the period 3rd April 2017 to 1st April 2018. Share of viewer hours calculated from viewer minutes over the broadcast hours of the relevant PSB channels.

⁶² [Sky consultation response](#), paragraph 5.16.

⁶³ [Sky consultation response](#), paragraphs 5.2-5.5.

⁶⁴ [BBC consultation response](#), paragraph 36.

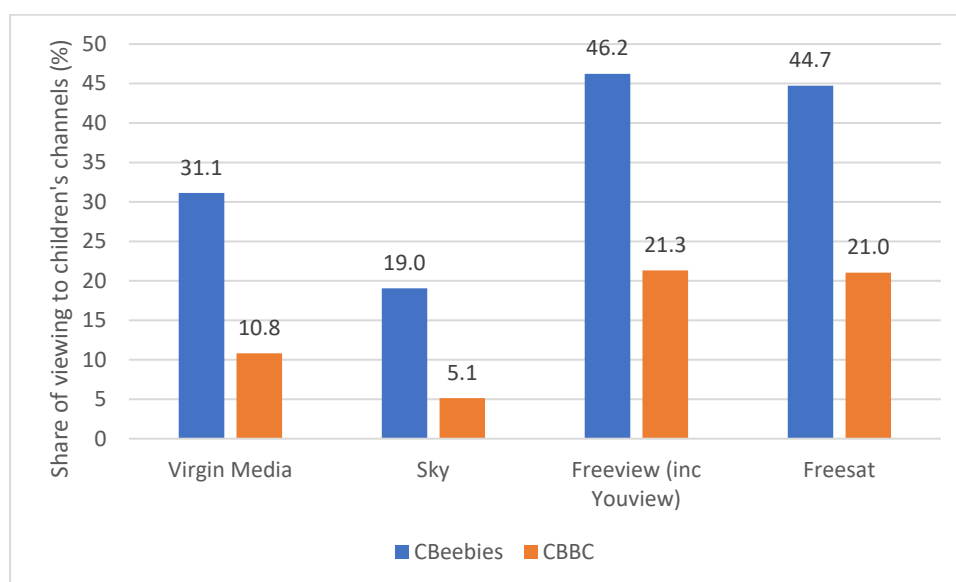
Table A3.2: CBBC and CBeebies share of viewing on Sky and Virgin Media (adjusted for differences between the platforms, i.e. share of viewing of channels common to both children’s genre EPGs)

	Housepersons with children aged 0-3 and Children aged 4-6 (exc. Guests)			Children aged 6-12 (exc. Guests)	
	Timeslot	Sky platform	Virgin Media platform	Sky platform	Virgin Media platform
CBBC share %	0700-2059			6.7	17.7
CBeebies share %	0600-1859	30.7	48.1		

Source: BBC data from BARB for the period 3rd April 2017 to 1st April 2018. Share of viewer hours calculated from viewer minutes over the broadcast hours of the relevant PSB channels.

Further Ofcom analysis

A3.107 We have also undertaken some further analysis of BARB data. We examined share of viewing by children aged under 16 (including housepersons with children aged under four) of children’s genre channels only.⁶⁵ Therefore, this analysis is similar to the BARB data submitted by the BBC (it is share of viewing of the children’s genre channels only), but it has a wider population base (i.e. all children aged under 16). Our results are presented in Figure A3.7 below.

Figure A3.7: Share of viewing to children’s channels of CBBC and CBeebies by children aged 4 to 15 and housepersons with children aged under four, by platform – 2018

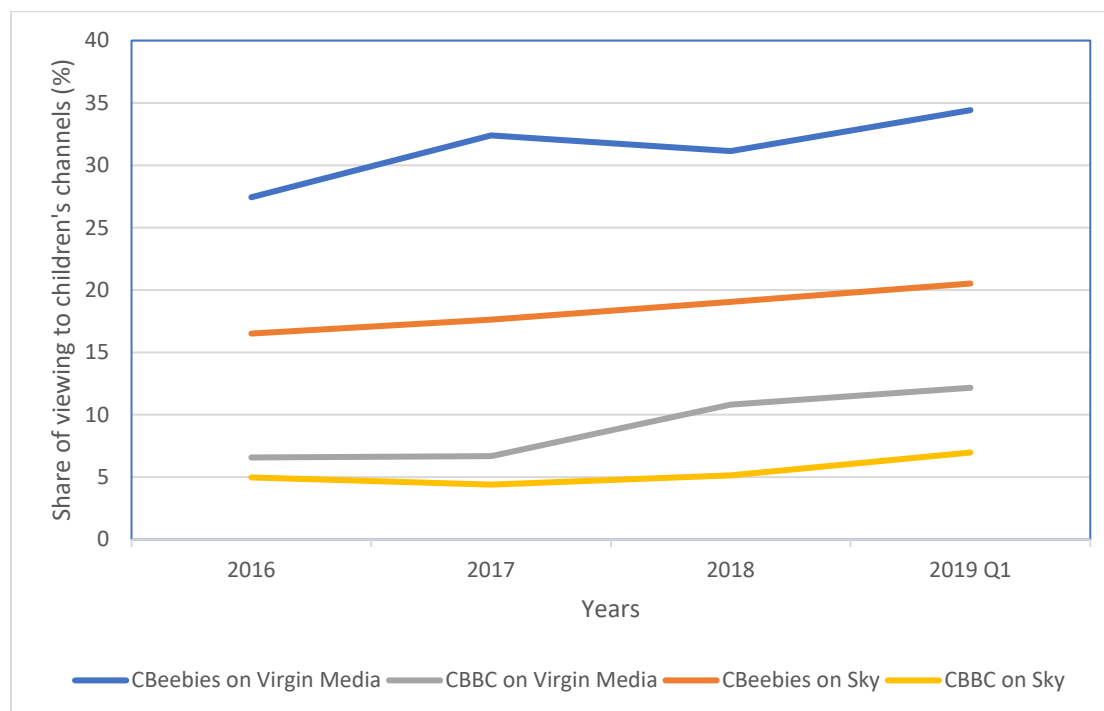
Source: BARB Audience: housepersons with children present in the household aged 0 to 3; and children aged four to fifteen. Share of viewing of all measured children’s channels (based on average audience ‘000s).

A3.108 Some of this data should be treated with a degree of caution as some of the sample sizes from the BARB runs are relatively small. However, when we examined time trends in the

⁶⁵ The data in [our consultation, Annex 7](#), Figure 3 presented shares of viewing by all individuals 4+. It was thus not focused on viewing by children.

data, this seemed to confirm that shares of viewing of the two channels by children aged under 16 and housepersons with children were consistently higher on Virgin Media compared to Sky over the past few years. This can be seen in Figure A3.8 below, which shows the viewing share of the two channels on the two platforms from 2016 to 2019 Q1.

Figure A3.8: Comparison of CBeebies and CBBC's share of viewing to children's channels on Virgin Media and Sky over time – by housepersons with children aged under four and children aged four to fifteen



Source: BARB. Audience: housepersons with children present in the household aged 0 to 3; and children aged four to fifteen. Share of viewing of all measured children's channels (based on average audience '000s).

- A3.109 On balance, taking into account all the evidence discussed above, we consider that if CBBC and CBeebies were moved to the top eight slots of the Sky children's genre (i.e. from slots 13 and 14 to slots 7 and 8, respectively), this would probably result in an increase in their viewing by their target audiences.
- A3.110 The BARB data appears to show that when the two BBC children's channels are in higher slot positions they receive higher viewing. This implies that scrolling around the children's genre EPG still occurs, even if there is some direct number entry. As such, the relative position in that section of the EPG still has some importance to viewing of children's channels, which is consistent with the general view (expressed in the Technologia report and in the econometric studies by FEH) that higher positions attract higher viewing (see paragraphs A3.6 to A3.13 above).
- A3.111 On Virgin Media, CBBC's share of viewing is more than double that on Sky (10.8% compared to 5.1%, i.e. around 111% higher – see Figure A3.7 above). CBeebies' share is around 63% higher. However, the potential gains in viewing share to CBBC and CBeebies are unlikely to be as large as the differences shown in Table A3.1 and Table A3.2 above or

in Figure A3.7 above. This is because their share of viewing on other platforms is highly likely to be affected by the fact that they are in the top two slots of the children's genres, whereas the changes would only require them to be within the first eight slots of the Sky children's genre.⁶⁶

Our conclusion

A3.112 Overall, we consider that, in light of the BARB data in Figure A3.7 above and the factors outlined in the preceding paragraph, a reasonable estimate for the increase in the share of viewing of CBBC and CBeebies if they are required to be within the first eight slots of the children's genre of the Sky EPG might be substantially less than 111% (or 5.7 percentage points) for CBBC and substantially less than 63% (or 12.1 percentage points) for CBeebies.

CBBC and CBeebies – ongoing effects on commercial channels of requiring CBBC and CBeebies to be within the first eight slots of the children's genre on the Sky EPG

A3.113 If CBeebies and CBBC moved up to slots 7 and 8 of the children's section of the Sky EPG (the minimum compliant positions), other channels would have to move downwards to accommodate them. We have assumed that six commercial channels would have to move down the children's section of the Sky EPG by two slots each (these six channels are owned by Disney). All channels located in slots 7 to 14 (8 channels) may also change their channel number (with associated one-off costs, which as discussed in paragraph A3.27 above we consider can be mitigated at least to some extent).

A3.114 It is likely that if commercial channels move down the EPG they will lose share of viewing and in turn lose revenues (e.g. from advertising or from merchandising characters and other intellectual property controlled by the channel owner). In our consultation, we used our model (which is based on EPG slot valuations provided by EMP) to estimate the annual losses in profits to those commercial channels that would move down the children's genre on the Sky EPG. We estimated the collective potential loss in profits would be about £0.3m p.a., all of which would fall on Disney.

A3.115 Requiring CBBC and CBeebies to be within the first eight slots of the children's section of the Sky EPG involves channel moves on page one. As discussed in paragraph A3.41 above, we recognise the limitation associated with using our model to estimate the impact of changes involving slots on page one. Despite this limitation, in our consultation we relied on our model to estimate the impact on channels in the children's section of EPGs because we had limited alternative evidence available. We have not received any further evidence on this impact in response to our consultation – in particular, the O&O model does not include the children's genre. Therefore, in the absence of alternative available evidence on

⁶⁶ In the past, differences in channel performance between the Sky and Virgin Media platforms might have also been affected by the fact that the Sky children's genre had significantly more children's channels than the Virgin Media children's genre. However, in recent years, the difference in the number of children's channels on the two platforms has considerably lessened, with only one or two children's channels present on Sky and not Virgin Media.

the scale of this impact, we use our model to provide an indicative estimate (although we recognise there is a particular degree of uncertainty around this figure).

Our conclusion

- A3.116 As set out in paragraph A3.112 above, we consider that CBBC and CBeebies are likely to gain share of viewing if they are required to be within the first eight slots of the children's genre on the Sky EPG. As a result, commercial channels that move down the children's section are likely to lose viewing share and revenues.
- A3.117 As set out in paragraph A3.115 above, while we recognise the limitation associated with using our model to estimate the impact of changes involving slots on page one, in the absence of alternative available evidence, we consider our model provides an indicative estimate of the potential impact on commercial channels in the children's genre of the Sky EPG. We estimated the collective potential loss in profits to commercial channels would be about £0.3m p.a., all of which would fall on Disney, although we recognise there is a particular degree of uncertainty around this estimate.

Evidence we have considered regarding the position of BBC Alba in Scotland and UK-wide EPGs and S4C on UK-wide EPGs

- A3.118 In Section 4 of our statement,⁶⁷ we set out our analysis of the effects of requiring: BBC Alba to be listed in the first 24 slots of the general entertainment section of the EPGs specific to Scotland and UK-wide EPGs⁶⁸; and S4C to be listed in the first 24 slots of UK-wide EPGs.⁶⁹ In this section, we discuss in more detail the quantitative evidence relating to these effects.
- A3.119 We first consider evidence on the viewing performance of BBC Alba and S4C and the potential effect on their share of viewing of listing them in the first 24 slots of EPGs specific to Scotland and UK-wide EPGs, respectively. We then present estimates of the likely ongoing effects on commercial channels that would move down the EPGs and on Virgin Media (as an EPG provider).
- A3.120 We do not discuss BBC Scotland in this section, as BBC Scotland's position is currently compliant with our views on prominence on each EPG (there would therefore be no need to move any channels).

⁶⁷ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Section 4](#), paragraphs 4.88-4.111.

⁶⁸ Currently, Virgin Media is the only major EPG provider that does not provide a fully regionalised EPG. However, it does provide a slightly different variant of its UK-wide EPG for Scotland (where BBC Scotland is listed at a slot reserved for BBC One HD across the rest of the UK). While we note this variation, for simplicity we refer to Virgin Media's EPG as UK-wide.

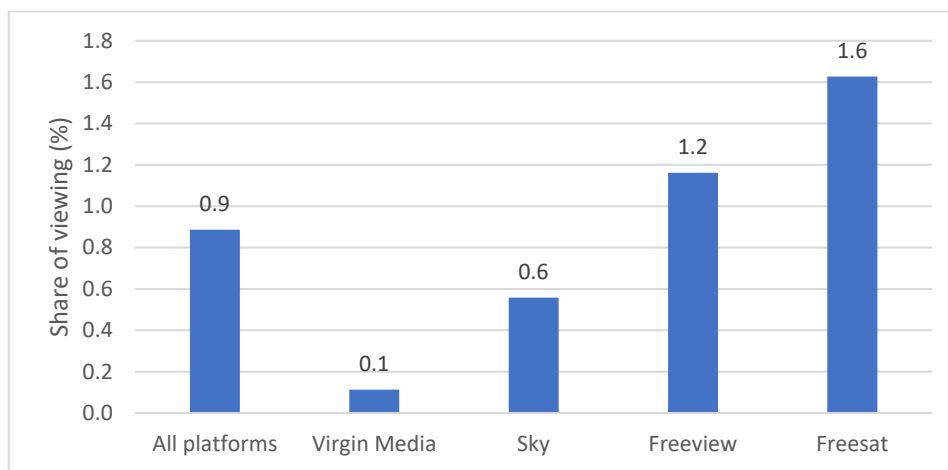
⁶⁹ S4C is guaranteed slot 4 on EPGs specific to Wales.

S4C and BBC Alba – ongoing effects on the viewing performance of S4C and BBC Alba

Potential ongoing effects on viewing of S4C

A3.121 Figure A3.9 below shows S4C’s share of viewing in Wales by individual platform and for all platforms combined. Its share of viewing is lowest on Virgin Media in Wales (0.1%) where it is currently at slot 64. S4C is at slot 4 on all the other (regionalised) EPGs specific to Wales, where it achieves higher viewing shares on Sky (0.6%), Freeview (1.2%) and Freesat (1.6%) in Wales. S4C’s performance on Sky Wales may be the best comparator to its performance on Virgin Media, as these are both pay TV platforms, with similar numbers of channels in the general entertainment section of their EPGs.

Figure A3.9: S4C’s share of viewing in Wales by platform (%), 2018



Source: BARB, S4C total area, full weeks 01-01-2018 – 30-12-2018.

A3.122 The large upward move in S4C’s slot position that would be required on Virgin Media (from slot 64 to slot 24, i.e. a move up of 40 slots) and the disparity between the shares of viewing shown above in Figure A3.9, suggests that the viewing share of S4C on Virgin Media in Wales would, in consequence, increase significantly. However, we doubt that S4C’s share of viewing would match that achieved on Sky Wales (0.6%), since S4C’s viewing performance on Sky Wales is likely to reflect the fact that it is in slot 4.

A3.123 We therefore consider that S4C’s viewing share would be likely to increase by substantially less than 0.4 percentage points⁷⁰ on Virgin Media in Wales. In addition, S4C is an indigenous language channel and, as such, any increase in viewing may be limited by the fact that this channel broadcasts in Welsh.

A3.124 We have also used the O&O model to estimate the potential increase in viewing of S4C if it was required to be within the first 24 slots on UK-wide EPGs. This suggests a rise of around 59% in S4C’s total viewing hours on the Virgin Media platform in the UK. We also estimate,

⁷⁰ This is less than the 0.5 percentage points implied by Figure A3.9 due to rounding, i.e. S4C’s viewing share on Virgin Media is 0.11% and its share on Sky Wales is 0.56%.

using O&O's 'key assumption', that there would be an increase in S4C's viewing share on Virgin Media in Wales of 0.1 percentage points.⁷¹ This is in line with our estimate set out in the preceding paragraph.

A3.125 As discussed in paragraph A3.134 below, O&O's approach results in the estimated viewing losses to channels that move down significantly outweighing the viewing gains to S4C. We have considered whether this implies the estimated gain in viewing to S4C derived using O&O's 'key assumption' and its viewing data is too low. However, this seems unlikely given it broadcasts in Welsh (and, as discussed in paragraph A3.127 below, we expect gains in viewing to BBC Alba may be limited by the fact it broadcasts in Scottish Gaelic).

Potential ongoing effects on viewing of BBC Alba

A3.126 Whilst BBC Alba's current position is compliant on the Freeview Scotland and Freesat Scotland EPGs, it would need to move up from its current slot positions on the Sky Scotland and Virgin Media EPGs if it was required to be within the first 24 slots on EPGs specific to Scotland and UK-wide EPGs. At a minimum, BBC Alba would be required to move from slot 40 to slot 24 on Sky Scotland. On Virgin Media, if S4C is assumed to move from slot 64 to slot 24 on Virgin Media (see paragraph A3.122 above), then BBC Alba would have to move at a minimum from slot 60 to slot 23.

A3.127 BBC Alba is not measured by BARB so we cannot compare its share of viewing across platforms.⁷² However, we consider that upward moves on Sky Scotland and Virgin Media would both be likely to result in higher viewing to BBC Alba on the basis that positions higher up the EPG tend to attract higher viewing (see paragraph A3.16 above). However, BBC Alba is an indigenous language channel and, as such, any increase in viewing may be limited by the fact that this channel broadcasts in Scottish Gaelic.

Our conclusion

A3.128 In light of the evidence above, we consider that S4C and BBC Alba are likely to gain some viewing as a result of requiring them to be within the first 24 slots. Based on the BARB data in Figure A3.9 above and the factors outlined in paragraph A3.122 above, a reasonable estimate for the increase in the share of viewing of S4C on Virgin Media in Wales, if it is required to be within the first 24 slots of UK-wide EPGs, might be substantially less than 0.4 percentage points.

⁷¹ O&O's model does not present S4C viewing hours on Virgin Media in Wales. We therefore apply O&O's 'key assumption' to BARB data for S4C viewing hours on Virgin Media in Wales to calculate the potential increase in S4C viewing hours on Virgin Media in Wales. We then use BARB data for total viewing hours on Virgin Media in Wales to calculate both S4C's current viewing share and its potential viewing share on Virgin Media in Wales if it is required to be within the first 24 slots on UK-wide EPGs (assuming that total viewing on Virgin Media in Wales does not change).

⁷² The O&O model does not provide viewing estimates for BBC Alba either. We cannot therefore use the O&O model to estimate potential gains in the viewing of BBC Alba if it was required to be within the first 24 slots of EPGs specific to Scotland and UK-wide EPGs.

BBC Alba and S4C – ongoing effects on commercial channels and EPG providers

- A3.129 We have assumed that, if BBC Alba is moved up to slot 24 on Sky Scotland, this implies that 16 commercial channels are moved down the EPG (each by 1 slot).^{73,74}
- A3.130 On Virgin Media, we have modelled S4C moving up from slot 64 to slot 24 and BBC Alba moving up from slot 60 to slot 23.⁷⁵ Therefore, each channel currently in slots 23 to 55 plus the channel in slot 59 (i.e. 34 channels in total) would move down two slots each. Channels currently in slots 56 and 57 (i.e. 2 channels) would move down three slots each; and the channels currently in slots 61 to 63 (i.e. 3 channels) would move down by one slot each.⁷⁶ This would also lead to a total of 41 channels being renumbered.
- A3.131 Based on our model, we estimate:
- a) the potential annual loss in profits to commercial channels to be £0.1m p.a. on the Sky Scotland EPG, if BBC Alba was moved up to slot 24;⁷⁷ and
 - b) a loss to Virgin Media in terms of its ability to monetise its slots of £2.1m p.a., as a result of moving S4C and BBC Alba up the Virgin Media EPG.
- A3.132 As discussed in paragraph A3.34a), our model (which is based on slot values provided by EMP) may lead to less reliable estimates of the impact of channel moves in cases involving atypical channels. In particular, EMP said that: *“Smaller niche or specialist channels, particularly those that appeal to ethnic minority groups, are less likely to see as significant an uplift in viewing figures as a result of moving to a higher EPG position.”*⁷⁸ As discussed in paragraphs A3.123 and A3.127 above, the gains in viewing to S4C and BBC Alba are likely to be limited by the fact they broadcast in Welsh and Scottish Gaelic respectively. Hence, the losses in viewing to commercial channels, and consequently their loss in advertising revenues, may also be lower. This suggests the commercial impact on Virgin Media (as an EPG provider) could be lower than the estimate of £2.1m p.a. under our model in paragraph A3.131b) above.
- A3.133 Using the O&O model, we estimate a combined commercial impact on commercial channels and Virgin Media (as an EPG provider) of £2.7m p.a. on the Virgin Media platform. As discussed in paragraph A3.43 above, some of this impact will fall on Virgin Media (as an

⁷³ Requiring Channel 4 to be listed in the first eight slots of the general entertainment section of EPGs specific to Wales would lead to all channels from LCN 108 onwards being renumbered in all nations. Moving BBC Alba up to slot 24 on the Sky Scotland EPG would not require renumbering of any channels currently above LCN 108. Hence, there will be no increase in the number of channels that would require renumbering due to BBC Alba being moved up to slot 24 on the Sky Scotland EPG.

⁷⁴ [3<] See Sky response to Ofcom request for further information, paragraphs 17 and 25, January 2019.

⁷⁵ Virgin Media does not currently fully regionalise its EPG, so nations channels will need to be moved up the EPG across the UK. If Virgin Media chose to regionalise its EPG, these channels would only need to move up within the EPG specific to the relevant nation, thereby changing the impact.

⁷⁶ Of these, there is a BBC channel in slot 61, while the remaining channels are all commercial channels.

⁷⁷ [3<]

⁷⁸ See EMP, [Report on the UK Market in EPG Positions](#), July 2018, page 8.

EPG provider) and the remainder on the commercial channels that will be moved down, but we do not know how this loss is split between Virgin Media and the channels.

A3.134 However, the O&O model results in the viewing losses to channels that move down significantly outweighing the viewing gains to S4C (the viewing losses to other channels would be more than 50 times the viewing gains to S4C). As discussed in paragraph A3.33 above, this disparity means we treat these estimates with caution. However, we explain in paragraph A3.125 above why we consider that the estimated viewing gains to S4C are unlikely to be too low. Therefore, we consider that the loss in viewing to other channels, and consequently their loss in advertising revenues, is likely to be too high. Hence, we consider that the combined commercial impact on commercial channels and Virgin Media (as an EPG provider) is likely to be lower than the estimate of £2.7m p.a. under the O&O model in the previous paragraph.

Our conclusion

A3.135 We consider that both S4C and BBC Alba are likely to gain viewing share if they are required to be within the first 24 slots. As a result, commercial channels that move down are likely to lose viewing share and advertising revenues. We consider that the total annual loss in profits to commercial broadcasters may be about £0.1m p.a. on the Sky Scotland EPG, while the combined commercial impact on commercial channels and Virgin Media (as an EPG provider) could be up to £2.7m p.a. on the Virgin Media platform (some of which will fall on Virgin Media (as an EPG provider) and the remainder on the commercial channels that will be moved down).

Evidence we have considered regarding the position of Local TV

A3.136 In Section 4 of our statement,⁷⁹ we set out our analysis of the effects of requiring Local TV to be listed in the first 24 slots of the general entertainment section of the Freeview EPGs. This represents a revision to our consultation proposal as explained in Section 4 of our statement,⁸⁰ i.e. it would only apply to Freeview and *not* the other platforms.

A3.137 Local TV is currently listed in the first 24 slots of the general entertainment section of the various Freeview EPGs, so there would be no need for any changes – and hence there would be no costs to other channels in terms of lost viewing and revenues.

A3.138 However, we consider it is relevant to estimate the costs to commercial channels and EPG providers that would have been likely to occur under our consultation proposal. That proposal would have required Local TV to be listed in the first 24 slots of the general entertainment section of *all* EPGs. It is relevant to consider what these costs would have been, as the existence of these costs supports the view that if we had continued with the

⁷⁹ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Section 4](#), paragraphs 4.112-4.134.

⁸⁰ Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Section 4](#), paragraphs 4.118-4.119.

consultation proposal, there is a risk that some EPG providers might have stopped carrying Local TV services.⁸¹

A3.139 In this section, we assume that the ongoing effects of changes to Local TV are *in addition to* (i.e. over and above) the ongoing effects of changes to S4C and BBC Alba described in the previous section. In other words, we estimate the ongoing effects of changes to Local TV assuming that the changes regarding S4C and BBC Alba have been implemented.

Local TV – ongoing effects of our consultation proposal on commercial channels and EPG providers

A3.140 If Local TV had had to be within the top 24 slots on the Virgin Media and Sky EPGs, this would have meant that Virgin Media could have moved Local TV up on its UK-wide EPG and Sky could have moved Local TV up on its Sky Wales EPG (Local TV is already within the first 24 slots on the other Sky EPGs). Commercial channels and Virgin Media (as an EPG provider) would have faced costs on the Sky and Virgin Media platforms. On the Sky platform, the extent of these costs depends on whether Local TV would have been moved to the lowest compliant slot, or whether it would have been moved to a different (higher) slot that required less channel re-numbering.

A3.141 We have therefore considered the costs arising in the following scenarios:

- a) On the Virgin Media platform, the costs of Local TV moving up from slot 58 to slot 22, an upward move of 36 slots. An additional two more channels would need to be renumbered in this case, compared to a situation where only S4C and BBC Alba are required to move up.
- b) On the Sky Wales EPG the costs of moving Local TV up from slot 33 to slot 24, an upward move of 9 slots.^{82,83}

A3.142 Based on our model, we estimate that the scenarios above would have the following additional ongoing effects (i.e. over and above the ongoing effects arising from the changes regarding S4C and BBC Alba):

- a) A loss to Virgin Media in terms of its ability to monetise its slots of around £1.1m p.a; and
- b) A negligible loss in profits to commercial channels if Local TV was moved to slot 24 on Sky Wales.⁸⁴

⁸¹ Local TV is not carried on Freesat.

⁸² Moving Local TV up to slot 24 on the Sky Wales EPG would be the minimum that would be required. However, this would leave Local TV on Sky Wales with a different LCN than that on Sky England. [3<] See Sky response to Ofcom request for further information, paragraphs 17 and 24, January 2019.

⁸³ Requiring Channel 4 to be listed in the first eight slots of the general entertainment section of EPGs specific to Wales would lead to all channels from LCN 108 downwards being renumbered in all nations. Moving Local TV up to slot 24 on the Sky Wales EPG would not require renumbering of any channels currently above LCN 108. Hence, there will be no increase in the number of channels that would require renumbering due to Local TV being moved up to slot 24 on the Sky Wales EPG.

⁸⁴ [3<]

A3.143 We also used the O&O model to estimate the potential costs that might have occurred on the Virgin Media platform. The O&O model suggests that, on the Virgin Media platform, the additional commercial impact of our consultation proposal (over and above the changes regarding S4C and BBC Alba) would have been around £1.4m p.a. (with this impact split between the commercial channels moving down and Virgin Media as an EPG provider).

Our conclusion

A3.144 We consider that the impact on commercial channels on the Sky platform of requiring Local TV to be within the first 24 slots of all EPGs is likely to be small. The impact on the Virgin Media platform (some of which would fall upon Virgin Media as the EPG provider) would be considerably larger. This lends credibility to Virgin Media's claim that *"If such prominence [of Local TV] was to be imposed, the disruption caused (including to consumers) by the need to reposition other channels, would potentially make the future carriage of these channels hard to justify."*⁸⁵

Cumulative ongoing costs of our decisions

A3.145 Table A3.3 below summarises the potential impact of each of our individual decisions both in terms of the number of commercial channels that will need to be moved and the potential ongoing cost to commercial channels and EPG providers (where relevant).

A3.146 Table A3.4 below sets out total impacts in terms of potential ongoing cost to commercial channels by platform. This table does not include one-off costs.

⁸⁵ [Virgin Media consultation response](#), page 3.

Table A3.3: Summary of the impact of each of our individual decisions⁸⁶

Designated channel	New obligation	Current non-compliant positions in our counterfactual ⁱ	Required EPG changes ⁱⁱ	Ongoing cost to commercial channels (£m p.a.) ⁱⁱⁱ	Ongoing cost to EPG providers (£m p.a.) ⁱⁱⁱ
S4C and Channel 4 on EPGs specific to Wales	S4C in slot 4 in Wales and Channel 4 within first 8 slots	Sky (Channel 4): Channel 4 in slot 16 on Sky Wales	<ul style="list-style-type: none"> 7 commercial channels and 1 BBC channel moved down in Wales 86 channels renumbered in each of England, Scotland and Wales, 89 channels renumbered in NI 	0.7-2.4 ^{iv}	None
		Freesat (Channel 4): Channel 4 in slot 20 on Freesat Wales	<ul style="list-style-type: none"> 9 commercial channels and 3 BBC channels moved down in Wales 65 channels renumbered in each of England, NI and Wales, 64 channels renumbered in Scotland 		
Other UK-wide or nations channels: <ul style="list-style-type: none"> BBC Four; BBC Scotland and BBC Alba in Scotland; and S4C on UK-wide EPGs 	Within first 24 slots	Virgin Media (S4C and BBC Alba): BBC Alba in slot 60 and S4C in slot 64 on Virgin Media	<ul style="list-style-type: none"> 38 commercial channels and 1 BBC channel moved down UK-wide 41 channels renumbered UK-wide 	<2.7 ^v	
		Sky (BBC Alba): BBC Alba in slot 40 on Sky Scotland	<u>BBC Alba moved to slot 24:</u> <ul style="list-style-type: none"> 16 commercial channels moved down in Scotland^{vi, vii} 		
		Freeview (BBC Four): BBC Four in slot 77 on Freeview Scotland	<u>BBC Four moved to slot 24:</u> <ul style="list-style-type: none"> 53 commercial channels moved down in Scotland 54 channels renumbered in each of England, Scotland and Wales, 57 channels renumbered in NI 	0.4	None
			<u>BBC Four moved to slot 10:</u> <ul style="list-style-type: none"> 67 commercial channels moved down in Scotland 68 channels renumbered in each of England, Scotland and Wales, 71 channels renumbered in NI 	0.9	None

⁸⁶ A version of Table A3.3 is presented in [Section 4](#) of our statement (Figure 1), without channel renumbering information.

Designated channel	New obligation	Current non-compliant positions in our counterfactual ⁱ	Required EPG changes ⁱⁱ	Ongoing cost to commercial channels (£m p.a.) ⁱⁱⁱ	Ongoing cost to EPG providers (£m p.a.) ⁱⁱⁱ
BBC Children's channels: CBBC and CBeebies	Within first 8 slots of Children's section	Sky (CBBC and CBeebies): CBBC in slot 13 and CBeebies in slot 14 on Sky Children's	<ul style="list-style-type: none"> 6 commercial channels moved down 8 channels renumbered UK-wide 	0.3	None

Table A3.4: Summary of the cumulative impact of our decisions by platform

Platform	Total number of channels moved down or renumbered	Ongoing cost to commercial channels (£mil p.a.) ⁱⁱⁱ	Ongoing cost to EPG providers (£mil p.a.) ⁱⁱⁱ
Virgin Media	BBC Alba moved to slot 23 and S4C moved to slot 24 <ul style="list-style-type: none"> 38 commercial channels and one BBC channel moved down UK-wide 41 channels renumbered UK-wide 	<2.7 ^v	
Sky	BBC Alba in Scotland moved to slot 24^{vi,vii} <ul style="list-style-type: none"> 16 commercial channels moved down in Scotland 	0.1	None
	CBBC and CBeebies moved to slots 7 and 8 <ul style="list-style-type: none"> 6 commercial channels moved down UK-wide 8 channels renumbered UK-wide 	0.3	None
	Channel 4 in Wales moved to slot 8 <ul style="list-style-type: none"> 7 commercial channels and 1 BBC channel moved down in Wales 86 channels renumbered in each of England, Scotland and Wales, 89 channels renumbered in NI 	0.7-2.4 ^{iv}	None
Freesat Channel 4 moved to slot 8 <ul style="list-style-type: none"> 9 commercial channels and 3 BBC channels moved down in Wales 65 channels renumbered in each of England, NI and Wales, 64 channels renumbered in Scotland 			
Freeview	BBC Four in Scotland moved to slot 24 <ul style="list-style-type: none"> 53 commercial channels moved down in Scotland 54 channels renumbered in each of England, Scotland and Wales, 57 channels renumbered in NI 	0.4	None
	BBC Four in Scotland moved to slot 10 <ul style="list-style-type: none"> 67 commercial channels moved down in Scotland 68 channels renumbered in each of England, Scotland and Wales, 71 channels renumbered in NI 	0.9	None

ⁱ As discussed in paragraph A3.36a) above, our counterfactual is based on the published channel slot positions on each platform, accessed on 12 June 2019. Source: <https://www.sky.com/tv-guide> for Sky channels (for each nation, we have used the corresponding guide for that nation); <https://www.virginmedia.com/virgin-tv-edit/tips-and-tricks/virgin-tv-channel-guide.html> for Virgin Media channels; <https://www.freeview.co.uk/tv-guide> and <https://www.freeview.co.uk/app/uploads/2019/04/Freeview-Channel-Guide-2019.pdf> for Freeview channels (for each nation, we have used the corresponding guide for that nation); and <https://www.freesat.co.uk/tv-guide/> for Freesat channels (for each nation, we have used the corresponding guide for that nation). For further discussion about our counterfactual on the Sky and Virgin Media platforms, see paragraph A4.28a) of [Annex 4](#). We have used a similar approach for the Freeview and Freesat platforms. See Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Annex 4](#).

ⁱⁱ As discussed in paragraphs A3.37 and A3.38 above, this is based on our assumption that EPG providers will implement the changes by moving channels down by one slot to accommodate each designated channel moving up, and that in the case of regionalised EPGs, EPG providers will try to maintain the uniformity of LCN across nations. For further discussion in the context of the Sky and Virgin Media platforms, see paragraph A4.28c) of [Annex 4](#). We have used a similar approach for the Freeview and Freesat platforms. See Ofcom, Review of prominence for public service broadcasting: Statement on changes to the EPG Code, 4 July 2019, [Annex 4](#).

ⁱⁱⁱ The estimates are indicative only.

^{iv} As set out in paragraph A3.85 above, this is an estimate of the combined cost of the changes to Channel 4's position on commercial channels that are moved down the Freesat and Sky EPGs in Wales. This may be an overestimate.

^v As discussed in paragraph A3.135 above, this is the combined commercial impact on commercial channels and Virgin Media (as an EPG provider), some of which will fall on Virgin Media and the remainder on the commercial channels that will be moved down. However, as discussed in paragraph A3.43 above, we do not know how this impact is split between Virgin Media and the channels.

^{vi} As discussed in footnote 73 above, since the changes to Channel 4's position will lead to all channels from LCN 108 onwards being renumbered, the changes that might occur for BBC Alba on Sky Scotland do not add to the amount of channel renumbering required.

^{vii} [3<]