

**Completed
acquisition by Tobii
AB of Smartbox
Assistive
Technologies Limited
and Sensory
Software
International Ltd**

Provisional findings report

Notified: 30 May 2019

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- A: Terms of reference and conduct of the inquiry
- B: Third Parties – brief descriptions
- C: Further Tobii submissions in respect of market definition

Glossary

Summary

1. On 8 February 2019, the Competition and Markets Authority (CMA) referred the completed acquisition by Tobii AB (Tobii) of Smartbox Assistive Technology Limited and Sensory Software International Ltd (together, Smartbox) (the Merger) for an in-depth (phase 2) merger inquiry. The CMA is required to address the following questions:
 - (a) whether a relevant merger situation has been created; and
 - (b) if so, whether the creation of that situation has resulted, or may be expected to result, in a substantial lessening of competition (SLC) within any market or markets in the UK for goods or services.¹
2. Tobii and Smartbox (together, the Parties) both supply augmentative and assistive communication (AAC) solutions globally and in the UK. AAC solutions are communication aids that cater to the needs of those who may find communication difficult for a number of reasons. These could include people with a congenital disability (such as cerebral palsy, learning disability or autism), a progressive condition (such as motor neurone disease) or a suddenly acquired disability (such as through a stroke or brain damage following an injury). The end-users of the products supplied by the Parties are therefore vulnerable consumers.
3. The Parties overlap in the supply of dedicated AAC solutions. We define dedicated AAC solutions as a combination of four components: dedicated AAC hardware; AAC software; access means (in cases where the end-user cannot control the device solely through the touch screen, an AAC solution includes a means of access, such as a switch or an eye gaze camera); and customer support (including training, technical support and repairs).
4. The Parties also sell individual components of dedicated AAC solutions, including to some of their competitors in the supply of dedicated AAC solutions: for example, Tobii sells eye gaze cameras and Smartbox licenses its AAC software (the Grid) to these competitors.
5. Tobii is based in Sweden and has offices in the US, Asia and Europe, including in the UK. Smartbox is based in the UK, and has offices in Malvern and Bristol.

¹ Enterprise Act 2002 (the Act), section 35.

6. As part of our phase 2 inquiry, we invited a wide range of interested parties to comment on the Merger. These included customers of the Parties, interest groups, competitors and resellers of AAC hardware and software. We received 38 responses to our questionnaires and obtained additional evidence from calls and written information requests from 23 third parties, as well as using evidence from the CMA's phase 1 inquiry into the Merger. We also received several submissions and responses to information requests from the Parties, held hearings with each of them, and carried out an extensive review of internal documents provided by the Parties.

Relevant merger situation

7. We provisionally find that the Merger has created a relevant merger situation within the meaning of the Act because: (a) two or more enterprises have ceased to be distinct within the statutory period for reference; and (b) the share of supply test is met.

Counterfactual

8. To assess the effects of a merger on competition, we consider the prospects for competition with the merger against what would have been the competitive situation without the merger. This is called the 'counterfactual'.
9. Around the time of the Merger (in August 2018), the Parties entered into reseller agreements, whereby Smartbox agreed to act as a reseller of certain Tobii products in the UK and Ireland, and Tobii agreed to act as a distributor of Smartbox's products worldwide.
10. Our provisional view is that the most likely counterfactual is one in which:
 - (a) Smartbox continues to operate as an independent business, whether following a management buy-out or with no change of ownership;
 - (b) Smartbox is financially able to compete as it had done pre-Merger, including funding hardware and other product development; and
 - (c) The Parties are not operating under the reseller agreements entered into around the time of the Merger.
11. Therefore, we provisionally conclude that the relevant counterfactual is the prevailing pre-Merger conditions of competition, taken to be the situation prior to the August 2018 reseller agreements being agreed.

Market definition

12. Market definition provides a framework for assessing the competitive effects of the merger.
13. Our provisional view is that the relevant markets in which to assess the effects of the Merger are:
 - (a) the supply of dedicated AAC solutions in the UK;
 - (b) the upstream supply of AAC software worldwide; and
 - (c) the upstream supply of eye gaze cameras in AAC applications worldwide.

Supply of dedicated AAC solutions in the UK

14. The Parties overlap primarily in the supply of dedicated AAC solutions, which we have defined as a combination of four components: dedicated AAC hardware, AAC software, access means and customer support. We recognise that dedicated AAC solutions thus defined are highly differentiated products and we have considered whether the conditions of competition differ across different types of dedicated AAC solutions as part of our assessment.
15. Tobii submitted that the Parties face strong competitive constraint from AAC solutions using mainstream consumer devices: some customers build their own AAC solutions by combining a consumer tablet (for example an iPad or a Microsoft Surface) with AAC software and sometimes peripherals bought independently (eg a case and external speakers). We have called such solutions 'non-dedicated AAC solutions', and we considered whether they should be included in the relevant product market. We provisionally concluded that they should not, for the following reasons:
 - (a) Customers and suppliers have highlighted a broad range of circumstances where end users of dedicated AAC solutions would not consider a non-dedicated AAC solution as a good substitute for the end user's needs.
 - (b) The Parties' internal documents that we have reviewed show that Smartbox's monitoring of competition focuses on other providers of dedicated AAC solutions and that Tobii's monitoring of competition focuses primarily on dedicated AAC solutions.
 - (c) The price of the Parties' dedicated AAC solutions has remained broadly constant over the past 3 years, which is difficult to reconcile with a

proposition that the competitive constraint from non-dedicated AAC solutions is growing.

(d) Consistent with this qualitative evidence, estimated diversion from dedicated to non-dedicated solutions is low, indicating that customers of the Parties' dedicated AAC solutions generally think of other dedicated AAC solutions, rather than non-dedicated AAC solutions, as their next best options.

16. Suppliers have told us that having a local presence is important, both to understand the local health care system and to provide training and support to customers. We also note that UK customers only purchase dedicated AAC solutions from suppliers with a UK presence. We therefore consider that the relevant geographic market for dedicated AAC solutions is the UK.
17. For these reasons, our provisional view is that the horizontal unilateral effects of the Merger should be assessed in a frame of reference for the supply of dedicated AAC solutions in the UK.

Upstream supply of AAC software worldwide

18. Tobii submitted that the relevant upstream software market is a distinct market for AAC software and that this is a market for highly differentiated products. Even though certain types of AAC software do not perform all the functions performed by the Parties' software (in particular Smartbox's Grid software), our provisional view is to define the relevant product market on a wide basis as the upstream supply of AAC software and to consider the substitutability of other AAC software with the Grid as part of our assessment of vertical effects.
19. Suppliers of dedicated AAC solutions source AAC software worldwide. We therefore consider that the relevant geographic market is worldwide.

Upstream supply of eye gaze cameras in AAC applications worldwide

20. Tobii submitted that the market for eye gaze includes eye gaze cameras for all applications (for example in consumer electronics, vehicles, gaming, and virtual reality as well as AAC solutions). However, having considered both demand-side and supply-side factors we consider that the relevant product market is no wider than the upstream supply of eye gaze cameras in AAC applications.

21. Suppliers of dedicated AAC solutions source eye gaze cameras worldwide. We therefore consider that the relevant geographic market is worldwide.

Competitive assessment – horizontal unilateral effects

22. We considered whether the Merger would enable the merged entity to increase prices, lower quality, reduce the range of its services and/or reduce product development in the supply of dedicated AAC solutions in the UK, relative to the counterfactual.
23. We provisionally find that the Parties were close competitors in the supply of dedicated AAC solutions in the UK pre-merger, and that competitors will not provide sufficient constraint to mitigate the effects of the Merger on competition. We therefore provisionally conclude that the Merger has and may be expected to result in an SLC in the supply of dedicated AAC solutions in the UK.
24. The CMA estimates that the Parties have a combined market share in the supply of dedicated AAC solutions in the UK of [60-70%] by revenue, indicating that they have a very significant market presence at present. Most customers identify the Parties and Liberator as the main suppliers of dedicated AAC solutions in the UK, with Techcess mentioned as a smaller, lesser-known competitor. Competitors and resellers also identified the Parties, Liberator and Techcess as the only significant suppliers of dedicated AAC solutions in the UK.
25. As indicated above, our review of the Parties' internal documents indicates that the Parties benchmark their offerings of dedicated AAC solutions against each other and the other providers of dedicated AAC solutions. There are also examples of Tobii seeking to develop and improve its products specifically in response to competition from Smartbox. Conversely, in the months before the merger, Smartbox was focusing on strengthening its hardware offering. In our provisional view, competition between the Parties spurred innovation and R&D.
26. The majority of the customers who responded to our questionnaire raised concerns about the impact of the Merger. Most of these concerns related to potential deteriorations in quality, service (including customer support) and/or the range of products available.
27. The closeness of competition indicated by third party views and the Parties' internal documents and development plans is also supported by our estimates of the diversion ratios from Tobii's dedicated AAC solutions to Smartbox's products, and from Smartbox's dedicated AAC solutions to Tobii's products.

Diversion to other suppliers indicates that only Liberator and, to a lower extent, Techcess represent a meaningful constraint on the Parties. Our provisional view is that the competitive interaction with non-dedicated solutions is unlikely to alleviate the effects of the removal of Smartbox as a competitor to Tobii.

Competitive assessment – vertical effects

28. We identified three potential vertical theories of harm, and for each we assessed a) the ability of the merged entity to foreclose competitors; b) the merged entity's incentive to foreclose competitors; and, where we found ability and incentive, c) the overall effect of the foreclosure strategy on competition in the affected market.

Input foreclosure of Smartbox's AAC software

29. We provisionally find that the merged entity is likely to have the ability and incentive to use its strong position in AAC software (specifically its Grid software) to make downstream competitors' access to the Grid more expensive and/or reduce the extent to which the Grid supports competitors' dedicated AAC hardware. Our provisional conclusion is that this foreclosure is likely to result in an SLC in the supply of dedicated AAC solutions in the UK.
30. Our provisional view is that the merged entity has a strong position in the upstream supply of AAC software due to its control of the Grid and that constraints from alternative software are weak. We therefore consider that the merged entity is likely to have the ability to increase the price it charges downstream competitors for the Grid and/or the ability to reduce the extent to which the Grid supports competitors' dedicated AAC hardware.
31. Our current view is that it is likely to be profitable for the merged entity to foreclose its downstream competitors from the Grid. This is due to customers switching from these competitors' dedicated AAC solutions to those provided by the merged entity. This is more likely than downstream competitors switching to alternative software as the Grid is a key driver of sales of dedicated AAC solutions in the UK. In addition, we consider that the foreclosure incentives are significantly greater as a result of the Merger.
32. We provisionally find that any adverse reputational effects would not be enough to dis-incentivise the merged entity from foreclosing downstream competitors from the Grid.
33. We provisionally find that customers and end users are likely be worse off from having a reduced range of hardware that is fully supported by the Grid

and there is also likely to be harm in the downstream supply of dedicated AAC solutions through higher prices.

Customer foreclosure of Tobii's eye gaze camera competitors

34. We provisionally find that the merged entity is likely to have the ability and incentive to limit the compatibility of the Grid with the cameras of rival suppliers of eye gaze cameras, such that dedicated AAC solutions based on the Grid were no longer a route to market for these rival camera suppliers. We provisionally conclude that this would result in a SLC in the worldwide upstream supply of eye gaze cameras to providers of dedicated AAC solutions including customers based in the UK.
35. We provisionally find that eye gaze camera suppliers depend on compatibility with AAC software, particularly the Grid, to be able to compete in the supply of eye gaze cameras in AAC applications. Dedicated AAC solutions based on the Grid software are an important route to market for rival suppliers of eye gaze cameras in AAC applications, and the alternative routes to market which do not depend on the Grid are currently limited. This means that these providers of dedicated AAC solutions, who are the customers of Tobii's eye gaze camera competitors, are likely to switch to Tobii's eye gaze cameras if the merged entity limits the Grid's compatibility with these other cameras.
36. It is likely to be profitable for the merged entity to foreclose its eye gaze camera competitors in AAC applications by limiting the compatibility of their cameras with the Grid. This is based on the low likelihood of dedicated AAC solution providers switching to alternative AAC software in order to be able to use non-Tobii cameras..
37. We provisionally find that the effects of weakening Tobii's eye gaze camera competitors are likely to include reduced innovation in eye gaze cameras to serve AAC users' needs and higher prices of these cameras than would otherwise be the case. This in turn is likely to lead to adverse effects in the downstream supply of dedicated AAC solutions, in particular from a reduction in the range of cameras available to meet end user needs in AAC as well as a worsening of price and quality of dedicated AAC solutions which include eye gaze cameras.

Input foreclosure of Tobii's eyegaze cameras

38. We considered whether the merged entity might potentially harm or weaken its competitors downstream by making access to Tobii's eye gaze camera more expensive, but provisionally consider that such vertical effects are unlikely to arise. We therefore provisionally conclude that there is unlikely to

be a SLC in the supply of dedicated AAC solutions in the UK as a result of input foreclosure of Tobii's eye gaze cameras.

39. We provisionally find that the merged entity has limited ability to foreclose its downstream rivals in the supply of dedicated AAC solutions in the UK due to the constraints from alternative eye gaze cameras used in AAC applications. Given this, we provisionally find that it is unlikely that the merged entity has sufficient incentives to make access to Tobii's eye gaze cameras significantly more expensive for its downstream competitors in the supply of dedicated AAC solutions in the UK. This is due to this strategy leading to significantly greater switching to alternative eye gaze cameras upstream compared to the switching to the merged entity's downstream dedicated AAC solutions.

Countervailing factors

40. We considered whether there are countervailing factors which may prevent any of the provisional SLCs from arising.

Entry and expansion

41. We have not seen evidence of recent successful entry and/or expansion in the supply of dedicated AAC solutions in the UK. Nor have we seen evidence of recent entry and/or expansion in the supply of AAC software that is 'fully featured' and would be a credible alternative to the Grid. We have also provisionally found that the perceived threat from new entry or expansion by competitors is low. Based on the evidence we have received, our provisional view is that the barriers to entry or expansion in the supply of dedicated AAC solutions and in the supply of 'fully featured' AAC software are significant.
42. For these reasons, it is our provisional view that entry or expansion is unlikely to be timely, likely and sufficient such as to prevent an SLC from arising.

Buyer power

43. We considered to what extent the NHS, as the main purchaser of dedicated AAC solutions in the UK, could exercise buyer power. We note that in this market most purchases are based on list prices, with standard conditions. While NHS organisations account for the majority of purchases in the UK for AAC solutions, these organisations do not procure AAC solutions collectively, and even if they did, it is not clear that the market context would afford them a large degree of buyer power. Even in a scenario when the NHS could exert a degree of buyer power (which we consider unlikely), it is not clear that this would protect other customers from the effects of the SLC, and it is not clear that the effects of an SLC in terms of R&D and innovation would be averted.

44. Therefore, our provisional view is that buyer power is unlikely to prevent an SLC through horizontal unilateral effects which have been provisionally identified in the supply of dedicated AAC solutions in the UK.

Efficiencies

45. Our provisional view is that we have seen insufficient evidence that efficiencies suggested by Tobii, including concerning R&D, could not be achieved absent the Merger, or that any such efficiencies could countervail or otherwise offset the effects of an SLC in the relevant markets.

Provisional conclusions

46. As a result of our assessment, we provisionally conclude that the completed acquisition by Tobii of Smartbox has resulted in the creation of a relevant merger situation.
47. We also provisionally conclude that the creation of that situation has resulted, or may be expected to result, in a SLC due to:
- a) Horizontal competition concerns in the supply of dedicated AAC solutions in the UK;
 - b) Vertical competition concerns with regard to input foreclosure by the merged entity of Smartbox's Grid software to the Parties' rivals in the downstream supply of dedicated AAC solutions in the UK; and
 - c) Vertical competition concerns with regard to customer foreclosure by the merged entity of Tobii's upstream competitors in the worldwide supply of eye gaze cameras to providers of dedicated AAC solutions including customers based in the UK.

Provisional findings

1. The reference

- 1.1 On 8 February 2019, the Competition and Markets Authority (CMA) referred the completed acquisition by Tobii AB (Tobii) of Smartbox Assistive Technology Limited and Sensory Software International Limited (Smartbox) (the Merger) for an in-depth phase 2 inquiry. In exercise of its duty under [section 22\(1\)](#) of the Enterprise Act 2002 (the Act), the CMA made a reference to its chair for the constitution of a group² of CMA panel members (the inquiry group) in order to investigate and report on the following questions in accordance with [section 35\(1\)](#) of the Act:
- (a) whether a relevant merger situation has been created; and
 - (b) if so, whether the creation of that situation has resulted, or may be expected to result, in a substantial lessening of competition (SLC) within any market or markets in the UK for goods or services.
- 1.2 In answering these two questions we will apply a 'balance of probabilities' threshold to our analysis. That is, we will decide whether it is more likely than not that an SLC has resulted, or may be expected to result, from the Merger.
- 1.3 Our terms of reference, along with information on the conduct of the inquiry, are in Appendix A.
- 1.4 This document, together with its appendices, constitutes our provisional findings, published and notified to Tobii and Smartbox in line with the CMA's rules of procedure.³ Further information, including a non-confidential version of Tobii's response to the phase 1 decision, can be found on the inquiry [case page](#).
- 1.5 Throughout this document, where relevant, we refer to Tobii and Smartbox collectively as 'the Parties'.

² [Section 22\(1\)](#) of the Act provides that the group is to be constituted under Schedule 4 to the Enterprise and Regulatory Reform Act 2013.

³ [CMA rules of procedure for merger, market and special reference groups \(CMA 17\)](#), Rule 11

2. The companies and the industry in which they operate

Introduction

- 2.1 The Parties both supply augmentative and assistive communication (AAC) solutions globally and in the UK. AAC solutions include a wide range of products and services that encompass mainstream devices such as consumer tablets and more tailored dedicated solutions that are in themselves differentiated.
- 2.2 This chapter provides an overview of AAC solutions and the relevant supply chain in the industry. We then provide an overview of the Parties and their operations, especially in relation to their UK businesses and of the Parties' main competitors.

The products

AAC solutions

- 2.3 AAC solutions form a specific part of a wider range of products known as assistive technology solutions (ATS). ATS refers to technology designed to support people in maintaining or improving their independence, safety and wellbeing. ATS products are designed to address a number of conditions including visual, hearing and communication impairments.
- 2.4 AAC solutions specifically cater to the needs of those who may find communication difficult for a number of reasons. Those using AAC services may include people with a congenital disability (such as cerebral palsy, learning disability or autism), a progressive condition (such as motor neurone disease) or a suddenly acquired disability (through stroke or brain damage following an injury). Family members and carers may also need to understand AAC equipment and services.⁴
- 2.5 AAC compensates for speech difficulties by making communication as quick, simple and effective as possible. The techniques used to achieve this include the use of symbols, communication boards and books, as well as computerised devices such as voice output communication aids.⁵

⁴ [NHS England Guidance for commissioning AAC services and equipment](#), page 5.

⁵ [NHS England Guidance for commissioning AAC services and equipment](#), page 5.

AAC hardware

2.6 There is a range of computerised devices available to users of AAC solutions, including:

- (a) purpose-built devices which are designed specifically for users with AAC needs (for example, devices that include an integrated camera which enables the user to control the device using their eyes);
- (b) adapted commercial or consumer tablets. These 'wrapped tablets' generally involve combining a consumer or commercial tablet with a purpose-built component aimed at users with AAC needs, typically a 'backbox' or a 'bracket' that incorporates additional batteries, speakers, ports and mounting options;
- (c) mainstream consumer tablets installed with apps designed for AAC users.

AAC Software

2.7 AAC software is specifically designed for people with communication needs to allow them to communicate. The software allows the user to input a message in different ways, ranging from electronic picture boards to more complex language systems. The message can then be communicated in several ways, eg speech generation. The software often includes computer control and may also include additional content and functionality such as educational software or accessible apps, third party content or environmental control.⁶ AAC software can vary in levels of sophistication and functionality.

Access means

2.8 Access means are the means through which an end user can access the hardware and control the software. They include touch screens, special keyboards, switches, joysticks, head mice, eye gaze cameras and infrared cameras.⁷ The required access method will depend on the end user's disability and physical impairments. For example, if the end user is unable to touch a screen or operate a switch, an eye gaze camera or head mouse will likely be required.

⁶ For example, those which enable users to control doors, lamps and/or other electronic devices eg television.

⁷ In this report we use 'eye gaze' and 'eye tracking' interchangeably.

Dedicated AAC solutions

- 2.9 In this report we focus primarily on ‘dedicated AAC solutions’, as a combination of four components: dedicated AAC hardware (including both purpose built and wrapped tablets), AAC software, access means and customer support. See paragraph 5.4 for more detail on our definition.
- 2.10 As described in Chapter 5 (Market Definition) we have observed a distinction between solutions based on mainstream devices (such as consumer tablets) and dedicated AAC solutions. Within the range of dedicated AAC solutions, the products are highly differentiated. We note that Tobii disagrees with this distinction, and the use of the term ‘dedicated’ in our definition. Our consideration of this view and, a further detailed explanation on the scope of dedicated AAC solutions, can be found in paragraphs 5.4 to 5.7.

The supply chain in the UK

- 2.11 There are a number of specialised companies, including the Parties, which provide dedicated AAC solutions in the UK. In certain markets, suppliers may also work with partner organisations which act as local distributors (referred to as ‘resellers’) of their solutions. Further detail on resellers is provided at paragraph 2.27.
- 2.12 In addition to selling these solutions directly to end-users, solutions are often procured by organisations which fund purchases on behalf of end-users. Such organisations include the NHS, local authorities, schools and charities. Advisers and prescribers, such as speech therapists, and interest groups which promote the rights of AAC users⁸ also play an important role in the supply chain by evaluating the needs of users and giving advice on appropriate solutions.
- 2.13 Customers of dedicated AAC solutions therefore include these organisations as well as end-users. Suppliers of dedicated AAC solutions, such as the Parties, market their products to experts within these organisations, explain their functionality and provide training on their products.
- 2.14 In the UK, only a small proportion of dedicated AAC solutions is sold directly to end-users. The vast majority of AAC solutions are procured in the UK by the NHS, schools, charities and local authorities on behalf of these end-users.
- 2.15 The last element in the supply chain is the customer support provided to the customer and/or the end-user. This encompasses training, technical support

⁸ Such as Communication Matters, see [Communication Matters](#) website for further details.

and repairs. Depending on the circumstances, this support can be provided to the purchaser of the solution (eg a NHS hub, who would then provide 'first line support' to the end user) or directly to the end user by the supplier of the solution.

- 2.16 In this section we discuss two components of the supply chain particularly relevant to our assessment: the role of the NHS as the largest customer for AAC solutions in the UK, and the role of resellers, which can act as competitors to the Parties as well as offering suppliers another route to market.

The NHS

- 2.17 Since April 2013 NHS England has been responsible for the commissioning of services for those with the most complex communication needs, with the aim of improving consistency in the definition of services and to improve access across England.⁹
- 2.18 When an individual requires an AAC solution, they will usually be referred to an expert (eg an NHS speech therapist). This expert will typically assess the needs of the individual, resulting in a recommendation for an appropriate communication aid.
- 2.19 The NHS is the largest customer for AAC solutions in the UK.¹⁰ In England, services for people who need and use AAC solutions are commissioned through 'specialised' and 'local' AAC services. Specialised AAC services provide assessment, review and equipment for those with the most complex communication needs.¹¹ There are 16 regionally-organised providers of specialised AAC services (NHS hubs) in England. Local AAC services manage the local AAC care for children and adults with less complex needs and coordinate the required support.¹²
- 2.20 Most children and adults who need AAC will be supported by local AAC services. NHS England estimates that those accessing local AAC services are likely to be a group around 10 times larger than those using specialised AAC services. In other words, around 10% of the AAC population require specialised AAC services (those with the most complex needs) and 90% of the AAC population require local AAC services.¹³

⁹ [NHS England Guidance for commissioning AAC services and equipment](#), page 6.

¹⁰ For example, over [X] of Tobii's and Smartbox's direct sales in the UK in 2017 were to the NHS. Tobii told us that [X] of its direct sales were to NHS bodies in 2018.

¹¹ [NHS England Guidance for commissioning AAC services and equipment](#), page 6.

¹² [NHS England Guidance for commissioning AAC services and equipment](#), page 7.

¹³ [NHS England Guidance for commissioning AAC services and equipment](#), page 6.

- 2.21 Where required, local services will make referrals to specialised AAC services. To be referred, an individual must:
- (a) have a severe/complex communication difficulty associated with a range of physical, cognitive, learning, or sensory deficits;
 - (b) have a clear discrepancy between their level of understanding and ability to speak;
 - (c) be able to understand the purpose of a communication aid; and
 - (d) have developed beyond cause and effect understanding.¹⁴
- 2.22 NHS England funds specialised AAC services directly and estimates that around 0.05% of the population will require this type of support.¹⁵ The NHS has a framework agreement in place for the purchase of Electronic Assistive Technology,¹⁶ although it is not a mandated procurement route and NHS hubs have the flexibility to make purchases ‘off-framework’. The NHS Supply Chain estimates that [X] of purchases are made outside the framework agreement.
- 2.23 In Scotland, AAC services are provided by Health Boards, Education and Integration Joint Boards, often in collaboration with the third sector. Assessments are usually multi-disciplinary, with the initial assessment carried out by staff from local teams and involving specialists where required. Referrals to specialist AAC services are made through speech and language therapists.¹⁷
- 2.24 In Wales, the National Centre for Electronic Assistive Technology (NCEAT) acts as the Welsh specialist hub service for complex AAC needs. Following initial assessment at the local service level, referrals are made to the specialist AAC aspect of the NCEAT along similar criteria as those described in paragraph 2.21 above.¹⁸
- 2.25 In Northern Ireland, AAC equipment can be accessed via The Communication Advice Centre, Belfast following referral from a speech and language therapist.
- 2.26 Where individuals do not meet the eligibility criteria to obtain funding through the NHS or local services, they are often reliant on sourcing AAC solutions

¹⁴ [NHS England Guidance for commissioning AAC services and equipment](#), page 7.

¹⁵ [NHS England Guidance for commissioning AAC services and equipment](#), page 6.

¹⁶ The framework agreement started on 1 September 2018 and runs for 24 months to 31 August 2020, with an option to extend for an additional 24 months. See [NHS Supply Chain](#) for further details.

¹⁷ See Scottish Government, [Provision of communication equipment and support: guidance](#) for further detail.

¹⁸ See [Referral Criteria for the AAC hub \(Extracted from the AAC Service Specification\)](#) for further detail.

through other support and funding streams such as specialist schools, charities and/or local authorities.

Resellers

- 2.27 In addition to selling their products directly to customers (eg NHS hubs, schools, charities, local authorities and end users), many suppliers of dedicated AAC solutions supply to distributors, who then sell to these customers. These distributors are known as 'resellers' and, in some cases, develop their own dedicated AAC solutions by combining components of the solution from different suppliers. Some resellers have both developed and produced one element of a dedicated AAC solution (eg hardware), which they then combine with other components from other suppliers. Depending on the agreement between the AAC supplier and the reseller, resellers can sell an AAC supplier's products as a standalone product, in combination with other products from the same AAC supplier and/or in combination with other products from other AAC suppliers.
- 2.28 Resellers may act as the primary customer contact for product support and technical issues and some will focus on specific AAC needs or contexts (for example on computer access or in the educational environment) to provide specialist advice and recommend suitable accessories or add-on software.

The Parties and their operations

Tobii

Overview

- 2.29 Tobii is a supplier of ATS and eye gaze solutions. Founded in 2001, Tobii is headquartered in Sweden with 15 offices in the US, Europe and Asia, as well as a global network of resellers. Tobii has around 1,000 employees, with around a third working in research and development (R&D).
- 2.30 Tobii is listed on the Nasdaq Stockholm stock exchange and has three distinct business units, which were established as wholly-owned subsidiaries of Tobii on 1 January 2019:

- (a) Tobii Dynavox AB (Tobii Dynavox), which operates an office in the UK, provides assistive technology for people with reduced ability to communicate and for special education;¹⁹
- (b) Tobii Pro AB (Tobii Pro) provides eye gaze solutions for studying and understanding human behaviour; and
- (c) Tobii Tech AB (Tobii Tech) provides eye gaze technology for integration into consumer electronics and other volume products (eg PC gaming).

2.31 Each business unit undertakes research and development activities. In the case of Tobii Dynavox and Tobii Pro, this includes R&D activities undertaken to customise eye-tracking technology developed by Tobii Tech for use in their own specific end-use applications.

Tobii Dynavox

2.32 In May 2014, Tobii acquired DynaVox Systems LLC (DynaVox Systems),²⁰ a former US supplier of speech-generating devices and symbol-adapted special education software.²¹ In its 2014 annual report, Tobii described DynaVox Systems as ‘one of Tobii’s foremost competitors in the assistive technology market’²² and stated that the acquisition:

- (a) Added a number of key products to Tobii’s portfolio, including the touch-based speech-generating device T10, communication software Compass and Boardmaker, described at the time as the ‘world’s leading software for special education’.
- (b) Doubled the sales of Tobii’s Assistive Technology division and tripled Tobii’s North American sales organisation.²³
- (c) Created Tobii Dynavox, which became ‘the world leader in assistive technology for communication’.²⁴

2.33 Through Tobii Dynavox, Tobii supplies the components of a dedicated AAC solution, comprising AAC hardware, AAC software, eye gaze cameras (other access methods are sourced from third parties) and customer support as well as integrated solutions.

¹⁹ Tobii Dynavox also provides technology for special education (ie its ‘Boardmaker’ software’).

²⁰ Tobii told us that it acquired DynaVox Systems in a public bankruptcy auction after its parent company, DynaVox Systems Inc., had entered [Chapter 11 bankruptcy proceedings](#). [X].

²¹ See [Tobii press release](#).

²² [Tobii 2014 Annual Report](#), page 10.

²³ [Tobii 2014 Annual Report](#), page 4.

²⁴ [Tobii 2014 Annual Report](#), page 10.

- 2.34 Tobii Dynavox designs, develops and produces a wide variety of AAC devices, eye gaze peripherals and AAC software. Historically, Tobii has held a strong position in ‘medical-grade’ products (AAC devices that are purpose-built to meet the requirements for eligibility for Medicare funding as durable speech generating devices in the US). It has extended its product portfolio to offer ‘mid-range’ AAC devices which are purpose-built for AAC use, but which are not specifically designed to meet the requirements for Medicare funding and can therefore be produced more cheaply. Tobii also sells ruggedised cases (with speakers) that can be used with either an iPad or a Microsoft Surface tablet. Tobii also sells a range of software, which can be installed on Tobii devices or other third party devices or downloaded for use on widely-available consumer tablets (eg iPads).
- 2.35 According to Tobii’s 2018 annual report, Tobii Dynavox holds more than 40% of the global market for assistive technology for communication²⁵ and around 75% of the global market for eye-controlled products.²⁶
- 2.36 Tobii’s target is for Tobii Dynavox to increase revenues by 10% per year and to achieve an operating profit margin of 15 to 20%²⁷ (in 2018 Tobii Dynavox earned an operating profit margin of 8.4%). In Tobii’s view, there is very low global penetration in assistive technology for communication and this offers the potential for long term market growth, driven by gradually more effective reimbursement systems²⁸ and increased awareness.²⁹
- 2.37 Tobii has stated in its 2018 annual report that the main markets for assistive technology for communication currently comprise some ten countries with systems for funding and prescribing assistive technology for communication, although access to appropriate assistive technology varies greatly between countries, regions and diagnoses.³⁰

²⁵ Tobii told us that this relates to the market for specialised, purpose-built AAC devices and does not include other AAC solutions (eg consumer tablets utilising AAC apps), [§].

²⁶ [Tobii 2018 Annual Report](#), page 20. Tobii told us that this relates to AAC solutions based on a purpose-built device with eye-tracking capability. [§].

²⁷ [Tobii 2018 Annual Report](#), page 19.

²⁸ Tobii states that “the main markets assistive technology for communication currently comprise some ten countries with functioning funding systems although access to appropriate assistive technology varies greatly between countries, regions and diagnoses. Figures are influenced by the level of knowledge among prescribers, therapists and physicians, as well as by policy decisions and whether society recognises the need for assistive technology for communication. Access is also affected by the ability of users and their relatives to engage in dialog with therapists, doctors and insurance companies.” Tobii 2017 Annual Report, pages 16 and 18.

²⁹ [Tobii 2017 Annual Report](#), page 15.

³⁰ [Tobii 2018 Annual Report](#), pages 20 and 22.

Financial performance

2.38 Tobii recorded global revenues of £112.4 million in 2018³¹ and an operating loss of £16.5 million.³² Tobii Dynavox generated 60% of the Group's revenue in 2018 and has accounted for the majority of the Group's revenue in each of the last five years.

Table 2-1 : Tobii global sales 2014-2018 (£ million)*

Net sales	£				
	2014	2015	2016	2017	2018
Tobii Dynavox	38.1	63.9	65.7	61.1	70.9
Tobii Pro	14.4	18.1	21.1	26.2	34.2
Tobii Tech	3.2	5.1	8.3	10.4	12.9
Other and eliminations	-2.2	-3.5	-4.3	-4.7	-5.7
Group Total	53.6	83.5	90.9	93.1	112.4

* Translated to GBP at an exchange rate of 1 SEK: 0.0863 GBP.
Source: Tobii 2018 Annual Report, page 74.

2.39 Tobii Dynavox and Tobii Pro have reported positive earnings in each of the last five years while the Group has recorded operating losses due to increased investment in Tobii Tech. Tobii continues to increase investment in Tobii Tech to meet the growing demand for eye gaze in virtual reality and other consumer electronics products, with considerable investment made in 2017 and 2018.³³

2.40 A substantial proportion of Tobii Dynavox's revenue is generated by the sale of products with eye gaze capability. For example, £[x] million ([x]%) of global 2017 sales was from the sale of such products and approximately [x] of total revenues in 2018 were derived from devices with eye gaze capability.

UK operations and financial performance

2.41 In the UK, Tobii Dynavox generated approximately £[x] million of revenue in 2017, with £[x] million ([x]%) from sales of products with eye tracking capability. Tobii data shows that, over the last three years, it made sales of dedicated AAC solutions in the UK as follows:

³¹ 2018 accounts for Tobii Dynavox UK are not yet available. However, [2017 accounts](#) show that Tobii Dynavox generated revenue of c.£1.5 million in the UK.

³² [Tobii 2018 Annual Report](#), page 75. Tobii uses SEK as its reporting currency. Figures in table 2-1 have been translated to GBP at an exchange rate of 1 SEK: 0.0863 GBP. This is the average exchange rate for 2018, see the [HMRC website](#) for further information.

³³ [Tobii 2018 Annual Report](#), page 31.

Table 2-2: Tobii Dynavox unit sales of dedicated AAC solutions in the UK (2016-2018)

	2016	2017	2018
Dedicated AAC solutions	[REDACTED]	[REDACTED]	[REDACTED]

Source: CMA analysis of Parties' sales data

2.42 In 2017, [REDACTED]% of Tobii Dynavox's UK sales were made direct to customers, as opposed to being made through resellers. [REDACTED] of 2017 UK direct sales were made to the NHS. Table 2-3 below shows the amount and proportion of sales made to different customer types in the UK in 2017.

Table 2-3: Tobii Dynavox 2017 UK direct sales by customer type

[REDACTED]

Source: [REDACTED].

2.43 Tobii Dynavox has a number of resellers in the UK, including Abilia, Beamz International, Inclusive Technology, Rompa and Sensory Guru. Tobii has a network of other resellers operating outside the UK.³⁴ In August 2018, Smartbox was appointed as a UK reseller of Tobii products.³⁵ On 28 February 2019, the CMA served an Unwinding Order on Tobii and Smartbox, requiring the termination of this agreement.³⁶ Following a subsequent derogation request (approved by the CMA), Tobii and Smartbox entered into a new agreement, whereby Smartbox acts as a reseller of Tobii eye gaze cameras in the UK and Ireland.³⁷

Smartbox

Overview

2.44 Smartbox Assistive Technology Ltd (SATL) is a UK-based company which focuses on developing and re-selling ATS for people with disabilities, including communication aids, environmental control devices, computer control technology and interactive learning solutions. Sensory Software International Limited (SSIL) previously developed the software products of SATL. However, the business activities of SSIL were transferred to SATL over

³⁴ See [Tobii Dynavox website](#) for further information.

³⁵ Smartbox had previously entered into a reseller agreement with Tobii in 2008 and acted as a reseller of Tobii products in the UK up until 2017, when the 2008 agreement was terminated.

³⁶ See [Unwinding Order](#) for further details.

³⁷ See [27 March 2019 Derogation](#) for further details.

recent years and SSIL no longer carries out meaningful business activities.³⁸ Together, SATL and SSIL are referred to as Smartbox.

- 2.45 Smartbox's flagship AAC software is the 'Grid'. The Grid is an open platform and allows third parties to integrate their own hardware and access devices with the Grid. Grid software can be combined with a range of third party devices, allowing customers and users to adopt the Grid as part of their preferred dedicated AAC solution, even where individual hardware device requirements and preferences vary.
- 2.46 Historically, Smartbox supplied hardware devices through the supply of 'wrapped tablets'.³⁹ Prior to the Merger, however, SATL had been improving its hardware offering and developing a range of purpose-built hardware devices to complement its software offering. It launched a new purpose-built device, the Grid Pad 12, in 2018.
- 2.47 Unlike Tobii, Smartbox does not develop its own eye gaze cameras and has historically procured them from various third parties to form a dedicated AAC solution (where eye gaze technology is required by users).

Financial performance

- 2.48 Outside the UK, Smartbox supplies its products predominantly in Europe and the US. The geographic split of Smartbox's 2017 sales is shown in Figure 2-1 below. The majority of its sales were in the UK.

Figure 2-1: Smartbox global and UK revenues 2015-2017

[✂]

Financial performance

- 2.49 Smartbox's global and UK revenues over the last three years are shown in Table 2-4.

Table 2-4: Smartbox global and UK revenues 2015-2017

[✂]

- 2.50 [✂]the termination of a reseller agreement between Smartbox and Tobii which meant that Smartbox could no longer supply Tobii hardware or procure Tobii eye gaze cameras for integration with its own products. Smartbox

³⁸ The [latest available \(2017\) accounts for SSIL](#) show that the company held c.£130,000 in assets at 31 December 2017. The accounts show that SSIL made charges of £60,000 to SATL in 2017 for the use of intellectual property.

³⁹ See paragraph 2.6(b) for more details.

subsequently moved to provide eye gaze cameras from SensoMotoric Instruments GmbH (SMI) but it took time to establish SMI as an alternative. Further, SMI was acquired by Apple in 2017 and SMI eye gaze cameras were withdrawn from sale which led to Smartbox losing the option of reselling SMI products. Smartbox was therefore required to invest time and resources in marketing EyeTech’s eye gaze cameras instead.

2.51 In the UK, Smartbox made sales of dedicated AAC solutions during the last three years set out in table 2-5:

Table 2-5: Smartbox unit sales of dedicated AAC solutions in the UK (2016-2018)

	2016	2017	2018
Dedicated AAC solutions	[REDACTED]	[REDACTED]	[REDACTED]

Source: CMA analysis of Parties’ sales data

2.52 In 2017, [REDACTED]%, a significant proportion, of Smartbox’s UK sales were direct sales to different customer types as opposed to resellers.

2.53 Smartbox’s resellers in the UK are Abilia, DH2 Solutions, Inclusive Technology, Liberator, RSL Steeper and Techcess (as well as Tobii).⁴⁰ Similar to Tobii, Smartbox sells its products worldwide through a network of resellers.^{41 42}

Competitors

2.54 We summarise below the main competitors of the Parties in the supply of dedicated AAC solutions in the UK.⁴³

PRC (Liberator)

2.55 Prentke Romich Company Inc (PRC) is a US company that manufactures and develops dedicated AAC solutions. PRC has developed a unique and proprietary language system called Unity which forms the basis of many of its AAC solutions.

⁴⁰ There are also companies that are not Smartbox resellers but are offered Smartbox products at discounted ‘dealer’ prices ([REDACTED]). Examples of companies that receive ‘dealer’ prices are [REDACTED]. See paragraphs 4.33 and 4.34 for details of Tobii’s reseller relationships with Smartbox.

⁴¹ See [Smartbox website](#) for further information.

⁴² See paragraph 4.34 b.

⁴³ Tobii has submitted that the Parties face strong competition from AAC solutions using mainstream consumer devices. We have considered Tobii’s submissions in the chapter on market definition, see Chapter 5, paragraphs 5.12 and 5.13.

- 2.56 PRC does not develop eye gaze devices and, since January 2019, Tobii has been the exclusive supplier of eye gaze cameras to PRC.
- 2.57 PRC uses a subsidiary company, Liberator Ltd (Liberator), to distribute its AAC solutions in the UK. Liberator has the flexibility to distribute third party AAC products based on customer demand and feedback, although its primary focus is to supply PRC's AAC solutions.
- 2.58 Liberator is a reseller of Smartbox's Grid software and is able to provide Grid with its own hardware devices as part of a dedicated AAC solution.
- 2.59 In 2017, PRC's global turnover was approximately [REDACTED], with around [REDACTED] generated in the UK.
- 2.60 PRC told us that, in 2018, it produced and sold [REDACTED] dedicated AAC hardware devices and [REDACTED] AAC software licences globally.
- 2.61 Liberator told us that in 2018 it sold [REDACTED] dedicated AAC solutions in the UK, generating revenue of [REDACTED].

Jabbla (Techcess)

- 2.62 Jabbla BVBA (Jabbla) is a Belgium-based supplier of dedicated AAC solutions. Techcess Ltd (Techcess) is the UK business of Jabbla and sells Jabbla hardware devices with either Jabbla-designed AAC software or with Smartbox's Grid software. Where customers also require eye gaze cameras, Jabbla typically sources them from Tobii, EyeTech and Alea and, to a more limited extent, from LC Technologies.
- 2.63 Techcess also acts as a distributor for some third party AAC solutions, although its primary focus is to supply Jabbla's AAC solutions.
- 2.64 In 2017, Jabbla's global revenue was approximately £[REDACTED], with around £[REDACTED] generated in the UK.
- 2.65 In 2018, Techcess told us that it sold [REDACTED] dedicated AAC solutions in the UK.

Inclusive Technology

- 2.66 Inclusive Technology Ltd (Inclusive Technology) provides special educational needs software, switches and computer access devices, simple communication aids, eye gaze and assistive technology for learners with a physical disability, sensory impairment or learning difficulty.⁴⁴ Inclusive

⁴⁴ See [Inclusive Technology website](#).

Technology acts as a reseller of dedicated AAC solutions. While it develops its own software solutions, these are primarily aimed at schools [✂].

2.67 In 2017, Inclusive Technology generated UK revenue of approximately [✂].

2.68 [✂]

Abilia

2.69 Abilia AB (Abilia) is a Swedish company that supplies environmental solutions, AAC solutions, dedicated alarms and cognitive aid solutions. Abilia develops and manufactures its own range of assistive technology. The company sells its products through a network of distributors and has operations in Sweden, Norway and the UK. Abilia also acts as a reseller of Smartbox products.

2.70 [✂]⁴⁵ [✂].

AssistiveWare

2.71 AssistiveWare B.V. (AssistiveWare) is a smaller supplier of AAC products, headquartered in the Netherlands and focusing on developing AAC software for iOS (and is therefore available only on iPad) such as Proloquo2Go, a symbol-based AAC app. [✂].

Eye gaze camera suppliers

2.72 We describe below the main suppliers of eye gaze cameras (in addition to Tobii), who are involved in AAC. There are several other suppliers of eye gaze cameras globally, but these are focused on other uses of eye gaze technology, such as gaming, research, the automotive industry, medical assessments and robotic surgery systems.

EyeTech

2.73 EyeTech Digital Systems Inc. (EyeTech) is a US company that develops eye gaze algorithms, hardware and software for eye gaze technology. EyeTech supplies its products to various markets, [✂].

2.74 EyeTech supplies eye gaze devices to many countries, including the UK. [✂].

⁴⁵ [✂]

Irisbond

2.75 Irisbond Crowdbonding S.L. (Irisbond) is a Spanish company that provides eye gaze cameras integrated with AAC software. Irisbond sells its cameras directly to customers in Spain and South America and through resellers in the US, UK and Europe. Irisbond's strategy in the UK has been to partner with suppliers of AAC software (eg Smartbox) and to develop compatible AAC solutions together. Historically, Smartbox has been the main UK partner of Irisbond, with Grid software integrated with Irisbond's eye gaze technology.

2.76 [✂]

Alea

2.77 Alea Technologies GmbH (Alea): Alea is a German company that develops and supplies eye gaze devices to many countries, including the UK where Smartbox acts as a reseller of Alea's eye gaze devices.

2.78 In 2017, Alea's global revenue was approximately [✂], [✂].

LC Technologies

2.79 LC Technologies Inc (LC Technologies) is a US company that manufactures and sells eye gaze equipment worldwide. Its leading product, the Eyegaze Edge Communication System, is fully compatible with Smartbox's Grid software.

2.80 Smartbox is a reseller of LC Technologies' eye gaze devices and LC Technologies is a reseller of Smartbox's Grid software.

2.81 In 2017, LC Technologies generated revenue of approximately £[✂] although it sold [✂] eye gaze devices in the UK, amounting to £[✂] of revenue.

Other third parties

2.82 Brief descriptions of other third parties mentioned in this report (including customers, charities and others) can be found in Appendix B.

3. The Merger and relevant merger situation

3.1 This chapter sets out the background to the completed acquisition by Tobii of Smartbox, including the details of the transaction and the rationale for the Merger. It then considers the jurisdictional test of whether a relevant merger situation has been created.

The transaction

3.2 On [REDACTED], the Tobii Board of Directors approved the proposed acquisition of 100% of the issued share capital of Smartbox. The Share Purchase Agreement (SPA) was signed on 20 August 2018 when the transaction was announced publicly.⁴⁶

3.3 [REDACTED]

(a) [REDACTED]

(b) [REDACTED]⁴⁷

3.4 [REDACTED].

3.5 [REDACTED].

3.6 [REDACTED].

3.7 [REDACTED]

(a) [REDACTED]

(b) [REDACTED].⁴⁸

The rationale for the transaction

Tobii's view

3.8 Tobii's announced rationale for the acquisition of Smartbox was to further consolidate its market leading position and strengthen its sales channels in key geographical markets, as well as to bring together the industry leading communication software, the Grid, from Smartbox with Tobii Dynavox's industry-leading touch and eye gaze solutions for assistive communication.⁴⁹

3.9 Tobii's 2018 year-end report stated that the acquisition of Smartbox increased the size of business for Tobii Dynavox by approximately 15%, added complementary products and expanded the sales and marketing presence, and is expected to create clear synergies.⁵⁰

⁴⁶ [Tobii announcement](#) (20 August 2018).

⁴⁷ [REDACTED]

⁴⁸ [REDACTED]

⁴⁹ [Tobii announcement](#) (20 August 2018).

⁵⁰ [Tobii Year-End Report Q4 January-December 2018](#), page 5.

3.10 Tobii told us that its rationale for acquiring Smartbox was to expand and complete its portfolio of AAC products. Tobii told us that it saw the Merger as combining two largely complementary businesses (Tobii being focused primarily on hardware and having a global reach, and Smartbox being focused primarily on software and the UK) and that the Merger would allow the Parties to combine their skills, expertise and resources to invest in the development of new hardware and software products to benefit people with speech, language and communication disabilities.⁵¹ Tobii told us that neither company could develop such products individually due to resource constraints.

3.11 [REDACTED], summarised the key benefits of the Merger as:

- (a) creating an instantly complete AAC product portfolio;⁵²
- (b) adding SEK 110 million in revenues;⁵³
- (c) adding talent and increasing European presence; and
- (d) creating cost and gross margin synergies.

3.12 Tobii told us that it expected the Merger to result in cost and revenue synergies including:

- (a) [REDACTED].
- (b) Reducing overheads by combining brands, sales and marketing and finance functions.
- (c) Concentrating R&D activities into specialised 'hubs'.
- (d) Removing duplication in R&D activities and overheads, enabling R&D to be undertaken more efficiently and effectively.

3.13 [REDACTED]

(a) [REDACTED]

(b) [REDACTED]

3.14 [REDACTED]

⁵¹ [Tobii response to CMA Issues Statement](#), paragraph 3(a).

⁵² Tobii told us [REDACTED].

⁵³ Smartbox generated £9.3 million of revenue in 2017 and the average exchange rate for the year to 31 December 2018 was 1 SEK: 11.581667 GBP. See [HMRC foreign exchange rates: yearly averages and spot rates](#).

Table 3-1: Cost synergies presented to Tobii Board (£'000)

[REDACTED]

Source: [REDACTED].⁵⁴

3.15 [REDACTED]:

(a) [REDACTED].

(b) [REDACTED].

(c) [REDACTED].

(d) [REDACTED].

3.16 [REDACTED].⁵⁵

3.17 Tobii told us that, absent the Merger, it had allocated R&D budgets as shown in Table 3-2. While Smartbox had not produced R&D budgets beyond 2018, the Parties told us that the below were reasonable estimates for 2019 and 2020 based on planned development projects. Post-merger, [REDACTED].⁵⁶

Table 3-2: Parties' R&D expenditure, pre- and post-transaction

<i>Parties R&D expenditure (£ million)</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>
Absent the transaction	[REDACTED]	[REDACTED]	[REDACTED]
Tobii Dynavox	[REDACTED]	[REDACTED]	[REDACTED]
Smartbox	[REDACTED]	[REDACTED]	[REDACTED]
Post-transaction		[REDACTED]	[REDACTED]

Source: Parties' submissions: [REDACTED].

3.18 In a subsequent submission, [REDACTED].⁵⁷

3.19 In addition to the potential upside on synergy benefits, the presentation prepared for the Board also states [REDACTED].

Smartbox's view

3.20 Smartbox told us that the former majority shareholders, Paul and Alyson Hawes, decided to sell the business to Tobii as they wanted to retire and

⁵⁴ Figures translated from SEK to GBP at the 2018 average exchange rate (1 SEK = 0.0863 GBP). See [HMRC foreign exchange rates: yearly averages and spot rates](#).

⁵⁵ [REDACTED]. Figures were translated to GBP at the 2018 average exchange rate (1 SEK = 0.0863 GBP). See [HMRC foreign exchange rates: yearly averages and spot rates](#).

⁵⁶ [REDACTED]. Tobii subsequently told us that these were estimates, based on assumptions which may not have been realistic or achievable ([REDACTED]).

⁵⁷ [Tobii response to phase 1 decision](#), paragraph 107.

realise the maximum value for their shares. They were also satisfied by reassurances from Tobii regarding three key sale criteria:

- (a) key roles in the merged entity for Barnaby Hawes (then Technical Director and minority shareholder in Smartbox) and Dougal Hawes (then Business Development Director and minority shareholder in Smartbox);
- (b) protections for all Smartbox staff; and
- (c) protections for commercial partners of Smartbox.

3.21 Based on our review of documents provided during the investigation, only a few documents are available that set out the sale process and there are similarly limited details of Smartbox's strategic rationale for the sale of the business to Tobii. For example, whilst minutes of a Smartbox board meeting held on [REDACTED], no details of the discussions between the Parties were noted down.

3.22 Although there is limited coverage of Smartbox's rationale in the internal documents which we have received, we note the following which, to some degree, explain Smartbox's views on the benefits of selling the business to Tobii:

- (a) A presentation outlining 'the Smartbox story' stated that bringing together Smartbox and Tobii Dynavox would mean better products, now and in the future, and would allow both companies to achieve greater reach. In this context, the presentation noted that there are millions of people without access to AAC.
- (b) An internal email to Smartbox staff stated that bringing together Smartbox and Tobii Dynavox would enable the merged entity to reach more people around the world and empower them to achieve more than ever before.
- (c) A Q&A document prepared for both external and internal use stated that the transaction would be good for customers due to:
 - (i) the ability of the merged entity to provide the combined portfolio of both companies and serve a broad range of needs, including Tobii Dynavox's leading symbol-based software (Snap + Core First) and Smartbox's Grid software; and
 - (ii) the ability to drive more innovation, drive broader programs to educate the market and empower even more people with disabilities to fulfil their dreams and potential.

Relevant merger situation

- 3.23 As described in Chapter 1 (The Reference), pursuant to [section 35](#) of the Act and our terms of reference (see Appendix A) we are required to investigate and report on two statutory questions: whether a relevant merger situation has been created and if so, whether that has resulted or may be expected to result in an SLC within any market or markets in the UK for goods or services.
- 3.24 Section 23 of the Act provides that a relevant merger situation has been created if:
- (a) two or more enterprises have ceased to be distinct within the statutory period for reference;⁵⁸ and
 - (b) the turnover test or the share of supply test (as specified in that section of the Act) is met, or both are met.
- 3.25 We address the first of the statutory questions (whether a relevant merger situation has been created) in this section.

Enterprises ceasing to be distinct

- 3.26 The Act defines an ‘enterprise’ as ‘the activities or part of the activities of a business’.⁵⁹ A ‘business’ is defined as a professional practice or any other undertaking which is carried on for gain or reward or an undertaking which supplies goods or services ‘otherwise than free of charge’.⁶⁰
- 3.27 Both Tobii and Smartbox supply assistive technology solutions. We are satisfied that Tobii and Smartbox (including their subsidiaries) are businesses and their activities are ‘enterprises’ for the purposes of the Act.
- 3.28 The Act provides that enterprises cease to be distinct once they are brought under common ownership or common control.⁶¹ As a result of the transaction, Tobii acquired 100% of the issued share capital of Smartbox.⁶² As a consequence, the enterprises which were previously separate are now under common ownership and control and have ceased to be distinct.⁶³

⁵⁸ See also [sections 24](#) and [26](#) of the Act.

⁵⁹ [Section 129\(1\)](#) of the Act.

⁶⁰ [Section 129\(1\)](#) and [\(3\)](#) of the Act.

⁶¹ [Section 26](#) of the Act.

⁶² For more information, see [Tobii's press release on acquiring Smartbox Assistive Technology, August 2018](#).

⁶³ [Section 26](#) of the Act.

- 3.29 Accordingly, we are satisfied that enterprises carried on by Tobii and Smartbox have ceased to be distinct.
- 3.30 The enterprises must have ceased to be distinct within the statutory timeframe which is either not more than four months before the date on which the reference is made or, where the merger took place without having been made public and without the CMA being informed of it, four months from the earlier of the time that material facts are made public or the time the CMA is told of material facts.⁶⁴ The four-month period may be extended under [section 25](#) of the Act.
- 3.31 The Merger completed on 1 October 2018. The statutory deadline was 20 February 2019 following an extension under 25(2) of the Act.
- 3.32 The Merger was referred for a phase 2 investigation on 8 February 2019.
- 3.33 We are therefore satisfied the reference was made within the statutory time limit.

Jurisdiction

- 3.34 The second element of the relevant merger situation test seeks to establish sufficient connection with the UK on a turnover or share of supply basis to give us jurisdiction to investigate.
- 3.35 The turnover test, which requires the value of the turnover in the UK of the enterprise acquired to exceed £70 million, is not met.⁶⁵ The value of the turnover in the UK of Smartbox did not exceed £70 million for the last financial year for which it had audited accounts, so the turnover test is not met.
- 3.36 The share of supply test is met where, as a result of two or more enterprises ceasing to be distinct, a share of supply of goods or services in the UK, or a substantial part of the UK, of at least 25% is created or enhanced.⁶⁶
- 3.37 The Parties overlap in the supply of dedicated AAC solutions in the UK. We have estimated that the Parties' combined share of supply of dedicated AAC solutions in the UK is [X] [60-70%], with an increment of [X] [10-20%] (based on revenues) resulting from the Merger.⁶⁷

⁶⁴ [Section 24](#) of the Act.

⁶⁵ [Section 23\(1\)](#) of the Act.

⁶⁶ [Section 23\(2\)](#), (3) and (4) of the Act.

⁶⁷ See market share analysis in Table 6-1.

3.38 We are therefore satisfied that the share of supply test in [section 23](#) of the Act is met.

Provisional conclusion on the relevant merger situation

3.39 In the light of the above assessment, we provisionally conclude that the Merger has resulted in the creation of a relevant merger situation. As a result, we must consider whether the creation of that situation may be expected to result in an SLC within any market or markets in the UK for goods or services.

4. Counterfactual

Introduction

4.1 To assess the effects of a merger on competition, we consider the prospects for competition with the merger against what would have been the competitive situation without the merger. This is called the ‘counterfactual’.⁶⁸

4.2 The counterfactual is an analytical tool used to provide a benchmark against which to assess whether a merger has or may be expected to result in an SLC.⁶⁹

4.3 The CMA may examine several possible counterfactual scenarios, including the continuation of the pre-merger situation, and will select only the most likely scenario as the counterfactual. The CMA will typically incorporate into the counterfactual only those aspects of scenarios that appear likely on the basis of the facts available and the extent we are able to foresee future developments.⁷⁰ Given that the counterfactual incorporates only those elements of scenarios that are foreseeable, it will not in general be necessary to make finely balanced judgements about what is and what is not the counterfactual.⁷¹

4.4 However, when it considers that the choice between two or more scenarios will make a material difference to its assessment, the CMA will carry out additional detailed investigation before reaching a conclusion on the appropriate counterfactual.⁷²

⁶⁸ [Merger Assessment Guidelines](#) (which was originally published jointly by the Office of Fair Trading and the Competition Commission and has been adopted by the CMA Board), paragraph 4.3.1.

⁶⁹ [Merger Assessment Guidelines](#), paragraph 4.3.1.

⁷⁰ [Merger Assessment Guidelines](#), paragraph 4.3.6.

⁷¹ [Merger Assessment Guidelines](#), paragraph 4.3.6.

⁷² [Merger Assessment Guidelines](#), paragraph 4.3.6.

Views of the Parties and third parties on the counterfactual

4.5 Tobii and Smartbox made separate submissions on their respective views on the appropriate counterfactual. Given the differences in each of the Parties' views on the counterfactual, we set out the Parties' separate submissions below.

Smartbox's views

4.6 Smartbox provided information on what it considered to be the likely ownership structure had the business not been acquired by Tobii. Smartbox told us that its shareholders considered two key strategic options as alternatives to the sale of the business to Tobii:

(a) A management buy-out (MBO) by Barney Hawes (then Technical Director of Smartbox), Dougal Hawes (then Business Development Director of Smartbox) and Jarrod Inott (Financial Director of Smartbox).

(b) No change to ownership.

4.7 Smartbox told us that:

(a) the sale to Tobii was the preferred option because the majority shareholders, Paul and Alyson Hawes, were keen to retire from the business and wanted to realise the full value of their shares.

(b) The MBO was considered the next best option but was less attractive than the sale to Tobii because it offered a lower value for the business and the majority shareholders would not be able to fully liquidate their shares.

4.8 Smartbox told us that no other parties were made aware of the availability of Smartbox for sale and management did not take any steps to identify potential buyers.

4.9 Smartbox told us that, had the transaction with Tobii not taken place, it would have proceeded with the MBO and provided evidence of the alternative MBO proposals under consideration.

4.10 In addition to a vendor invested management buy-out (VIMBO) option, whereby Paul and Alyson Hawes would sell their equity and offer a loan to the management team, Smartbox provided an investment proposal from

[REDACTED]⁷³[REDACTED].⁷⁴ We note [REDACTED]'s description of itself as 'a junior partner, helping businesses overcome strategic challenges as they grow, but leaving management to run their businesses.'

- 4.11 With respect to Smartbox's commercial operations and performance absent the Merger, Smartbox told us that, regardless of its future ownership structure, it would have continued to develop its own range of hardware devices that would be manufactured to Smartbox's own specifications. [REDACTED].

Smartbox views on the Reseller Agreement and Distributor Agreement

- 4.12 Around the time of the Merger (in August 2018), the Parties entered into reseller agreements, whereby Smartbox agreed to act as a reseller of Tobii Dynavox products in the UK and Ireland (the Reseller Agreement, referred to as the RA) and whereby Tobii Dynavox agreed to act as a distributor of Smartbox's products worldwide (the Distributor Agreement, referred to as the DA) (together, the Agreements). Further explanation of the Agreements is provided in paragraphs 4.32 to 4.34.

- 4.13 Smartbox told us that it was not possible to separate the Agreements from discussions regarding the Merger and it was unclear whether any such agreements would have been concluded in the absence of the Merger.

Tobii's views

- 4.14 [REDACTED].⁷⁵ We understand Tobii's position to be that the appropriate counterfactual is not one in which Smartbox would have exited the market, [REDACTED].

- 4.15 [REDACTED].⁷⁶ According to Tobii, this was because:

(a) Smartbox was a small family-owned company [REDACTED]⁷⁷ (global turnover of £9.3 million in 2017 and £9.6 million in 2016) and declining UK turnover (2016: £7 million; 2017: £4.8 million) and operating profits (2016: £1.5 million; 2017: £0.1 million).

(b) [REDACTED]:

⁷³[REDACTED].

⁷⁴ Under the terms of the proposal, [REDACTED] would invest a total of [REDACTED] (£[REDACTED] to purchase a minority ([REDACTED]%) equity stake and £[REDACTED] in loan notes) and would [REDACTED].

⁷⁵ [Tobii response to Phase 1 decision](#), paragraph 21.

⁷⁶ [Tobii response to Phase 1 decision](#), paragraph 21.

⁷⁷ [Tobii response to Phase 1 decision](#), paragraph 22. Tobii cited Smartbox's decision to cease development of the Grid Pad 14 as an example.

- (i) [REDACTED];
 - (ii) [REDACTED];⁷⁸
 - (iii) a decline in the number of licences sold for the Grid software.⁷⁹
- (c) [REDACTED].⁸⁰ [REDACTED].⁸¹

Tobii views on the Reseller Agreement and Distributor Agreement

4.16 At phase 1, the Parties told the CMA case team that they had entered into the RA and DA [REDACTED]. However, in subsequent submissions Tobii has told us that the appropriate counterfactual should include the Agreements entered into between Tobii and Smartbox in August 2018.⁸² Tobii told us that these agreements were:

- (a) entered into in the ordinary course of business;⁸³
- (b) [REDACTED];⁸⁴
- (c) [REDACTED].

Our assessment

4.17 We have identified three issues for consideration as part of the counterfactual:

- (a) The ownership of Smartbox, had the business not been acquired by Tobii;
- (b) Smartbox's likely performance absent the Merger; and
- (c) The treatment of the Agreements which the Parties entered into in August 2018.

The ownership of Smartbox

4.18 We considered the options that Smartbox told us its shareholders considered as alternatives to the sale of the business to Tobii: an MBO or no change in ownership.

⁷⁸ [REDACTED].

⁷⁹ [Tobii response to Phase 1 decision](#), paragraph 21.

⁸⁰ [REDACTED].

⁸¹ [REDACTED].

⁸² [Tobii response to CMA issues statement](#), paragraph 28.

⁸³ [Tobii response to CMA issues statement](#), paragraph 28.

⁸⁴ [Tobii response to CMA issues statement](#), paragraph 28.

- 4.19 It is not necessary for us to conclude whether the MBO would have been completed and in what form, as the competitive conditions under a counterfactual whereby existing management acquired Smartbox would not be materially different from the competitive conditions based on prevailing pre-Merger conditions.
- 4.20 We consider that Smartbox management would have likely continued to pursue a similar strategy under the [REDACTED] funded MBO as it would if its shareholders had proceeded with the VIMBO proposal, or if there was no change in ownership. In each scenario, key management personnel would have remained unchanged and we consider that the competitive strategy of Smartbox would have been likely to have been materially equivalent.
- 4.21 Our provisional view is that, had Smartbox not been acquired by Tobii, it would have continued as an independent competitor.

Smartbox's performance as an independent business

- 4.22 In view of Tobii's submissions regarding the long-term future of Smartbox, we have considered the financial position of Smartbox prior to the Merger and its likely future projections in the event that the Merger had not taken place.
- 4.23 In this context, we note that Smartbox provided summary income statement data for the previous five years as set out in Table 4-1 below.

Table 4-1: Smartbox trading summary

<i>£million</i>	<i>2014</i>	<i>2015</i>	<i>2016</i>	<i>2017</i>	<i>2018</i>
Sales	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Gross Margin	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
<i>Gross Margin %</i>	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Operating Profit	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
<i>Operating Profit %</i>	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: [REDACTED].

- 4.24 Smartbox told us that the decline in 2017 performance was due to:
- (a) The loss of the Tobii reseller agreement at the beginning of 2017 which meant that Smartbox could no longer supply Tobii hardware or procure Tobii eye-gaze cameras. The year on year reduction in sales of Tobii systems and cameras amounted to £[REDACTED].⁸⁵

⁸⁵ [REDACTED].

- (b) After working to establish MyGaze eye trackers as an alternative (produced by SensoMotoric Instruments GmbH) (SMI), SMI was acquired by Apple in June 2017 and Smartbox lost the option to resell this camera.⁸⁶ Smartbox was therefore required to invest time and resources in marketing EyeTech's products instead.⁸⁷
- (c) In the absence of Tobii hardware in 2017, sales of Smartbox solutions increased by £[REDACTED]. However, a greater proportion of sales were made through resellers, resulting in lower margins earned by Smartbox.
- (d) The development of Grid Pad 12 required a significant level of investment. Smartbox expenses [REDACTED], and this is reflected in the lower operating profits ahead of the launch of the Grid Pad 12 in 2018.
- (e) Adverse foreign exchange movements against the dollar negatively impacted earnings.

4.25 Smartbox's summary profit and loss data for 2018 shows that like-for-like performance of the business has improved subsequently. After adjusting earnings figures to remove the impact of additional sales generated from the DA in Q4 of 2018 and other merger-related items (ie to calculate performance on a comparable pre-merger basis), Smartbox generated adjusted EBITDA⁸⁸ of around £[REDACTED] in 2018 (2017: £[REDACTED]).⁸⁹

4.26 Further, Smartbox produced a business plan in January 2019 to forecast the performance of the business in the event of various scenarios relating to the continuation, or not, of the RA and the DA.

4.27 For the reasons set out in paragraph 4.54 to 4.55, we do not consider the RA and DA to form part of the counterfactual. Smartbox's forecast performance in a scenario that excluded the RA and DA stated that Smartbox was expected to [REDACTED].⁹⁰

4.28 The CMA requested that the Monitoring Trustee⁹¹ (MT) conduct stress testing of the Smartbox business plan and its related forecasts. The results of this

⁸⁶ Following the acquisition of SMI by Apple, the MyGaze eye trackers were withdrawn from production. See [announcement on Smartbox website](#) for further details.

⁸⁷ [REDACTED].

⁸⁸ Earnings before interest, tax, depreciation and amortisation, adjusted to remove exceptional items and provided to measure Smartbox's underlying profitability. Some of these exceptional items were merger related.

⁸⁹ [REDACTED].

⁹⁰ [REDACTED].

⁹¹ The CMA may require the appointment of a monitoring trustee where there are relatively high risks of pre-emptive action or concerns about compliance with the Interim Enforcement Order. Further guidance is available in Annex C of the CMA's [guidance on the CMA's jurisdiction and procedure \(CMA2\)](#).

testing showed Smartbox to be resilient to significant declines in sales volumes.⁹²

- 4.29 We also note that Smartbox earns a gross margin of around [X]% on sales of the Grid Pad 12.⁹³ This compares favourably with Smartbox's historic gross margin of [X]% to [X]% earned on sales of its legacy products and is due to lower hardware and in-house assembly costs.⁹⁴ This indicates that, while Smartbox, it is still achieving healthy margins on sales of its hardware devices.
- 4.30 Given the performance of Smartbox prior to the Merger and its forecast performance into the future, our provisional view is that Smartbox would have been able to continue to operate as it had done prior to the Merger. We have not seen any evidence to suggest that the competitive constraint exercised by Smartbox was likely to weaken in the absence of the Merger, nor that it would not have had sufficient resources to develop new products, including hardware.⁹⁵

Treatment of the Reseller Agreement and Distributor Agreement

- 4.31 In this section we have considered whether the RA and DA would have been entered into absent the Merger, ie whether the Agreements form part of the counterfactual to the Merger.

The Parties' historical reseller arrangements

- 4.32 Smartbox has, in the past, acted as a reseller of Tobii products in the UK:
- (a) Between 2008 and January 2017, the Parties operated under a reseller agreement whereby Smartbox was reselling Tobii assistive technology products in the UK. The 2008 reseller agreement covered all Tobii Dynavox products, including hardware, software, accessories (including spare parts) services and documentation (eg user guides).
 - (b) [X] terminated the 2008 reseller agreement with effect from January 2017 and told us that this was because [X].
- 4.33 Tobii has historically acted as a reseller of Smartbox's software worldwide. [X], Tobii has been a reseller of Smartbox's 'Look to Learn' eye tracking

⁹² [X].

⁹³ [X].

⁹⁴ [X].

⁹⁵ We note from the [X] investment proposal that management was likely to have the option of [X], should such a financing strategy be deemed appropriate in the future.

software globally.⁹⁶ This agreement was not terminated in 2017 (when Tobii terminated the agreement under which Smartbox acted as a reseller of Tobii products).

Overview of the RA and DA

4.34 The Parties entered into the Agreements [REDACTED], but before completion (1 October 2018):

- (a) the RA was entered into on 15 August 2018⁹⁷ and provided for Smartbox to act as reseller for Tobii products in UK and Ireland; and
- (b) the DA was entered into on 29 August 2018 and provides for Tobii to act as a distributor for Smartbox's products worldwide. The DA superseded the agreement referred to in paragraph 4.33 as well as another agreement entered into by the Parties on 15 August 2018, the 'OEM Partner Agreement'. The OEM Partner Agreement permitted Tobii to resell Smartbox's 'Look to Learn', 'Look to Learn Scenes and Sounds' and 'Grid 3' software products on a worldwide basis.⁹⁸

4.35 The RA is no longer in effect following the CMA's Unwinding Order.⁹⁹ The DA is still in operation.

4.36 In relation to the scope of the RA:

- (a) [REDACTED];
- (b) [REDACTED]
- (c) [REDACTED].

4.37 [REDACTED]:

- (a) [REDACTED];
- (b) [REDACTED]

⁹⁶ The 2013 reseller agreement was updated in June 2016 to cover Smartbox's 'Look to Learn Scenes and Sounds' software in addition to the original 'Look to Learn' product. Tobii told us that it was also reselling Smartbox's Grid software although no formal agreement was in place. [REDACTED].

⁹⁷ Smartbox told us that there was an error in the dating of this document and that it was actually signed by Smartbox on 15 September 2018. [REDACTED]. Smartbox told us that it agreed that the agreement was enacted prior to signing. For the purposes of this paper, we refer to the RA being entered into on 15 August 2018. [REDACTED].

⁹⁸ The DA differs from the OEM Partner Agreement as the DA permits Tobii to resell all Smartbox products, including its hardware devices.

⁹⁹ On 28 February 2019, the CMA issued an [Unwinding Order](#) to Tobii and Smartbox, requiring the termination of the Smartbox Reseller Agreement. Following a subsequent derogation request (approved by the CMA), Tobii and Smartbox entered into a new agreement on 27 March 2019, whereby Smartbox acts as a reseller of Tobii eye gaze cameras in the UK and Ireland.

(c) [REDACTED].

Tobii's rationale for entering into the Agreements

4.38 As noted above, at phase 1, the Parties told the CMA case team that they had entered into the RA and DA [REDACTED]:

[REDACTED].

4.39 However, Tobii subsequently provided a one-page note signed by the President of Tobii Dynavox, Mr Ruben, stating that the Agreements were not related to the Merger.¹⁰⁰ Tobii stated that it strongly disagreed with the CMA's position at phase 1 that, absent an acquisition, the two companies would not be resellers of each other's products. In this regard, Tobii stated that the following factors provide support for its position that the Parties would have entered into the RA and DA absent the Merger:

(a) the Parties had been active resellers of each other's products in the past and reseller agreements are common in the sector;¹⁰¹

(b) [REDACTED].¹⁰²

(c) the suspension of Smartbox reselling Tobii devices during 2017 was a poor decision, [REDACTED]

4.40 [REDACTED]

Smartbox's rationale for entering into the Agreements

4.41 Smartbox told us that the Agreements were signed to enable the Parties to start selling all products once the SPA was signed on 20 August 2018 rather than waiting until the acquisition was completed on 1 October 2018.

Events leading up to the RA and DA

4.42 We set out below the evidence that we have received regarding the events leading up to the conclusion of the Agreements.

¹⁰⁰ [REDACTED]Tobii told us that it accepted that it provided that explanation for why the Parties entered into the RA and DA during phase 1. However, Tobii also told us that it is self-evident that a closer commercial relationship between Tobii and Smartbox would assist the integration process (as it would when any manufacturer or technology licensor merges with its distributor or reseller) and it does not follow that the RA was a step taken to integrate the Parties' respective businesses [REDACTED].

¹⁰¹ Tobii told us that, due to the broad range of end user requirements for AAC solutions, suppliers and resellers generally combine their own hardware and/or software with third party hardware and/or software in order to provide a solution which best meets an individual end user's specific needs. [REDACTED].

¹⁰² [REDACTED].

Timeline of events

- 4.43 The Parties had different accounts of how discussions between the Parties were initiated:
- (a) Smartbox told us that Paul Hawes received a phone call from Tobii's [REDACTED], in July 2017 suggesting a meeting to discuss 'common interests'.
 - (b) Tobii told us that the termination of the 2008 reseller agreement (effective from 2 January 2017) [REDACTED].
- 4.44 On [REDACTED], a meeting took place between the Parties in Stockholm. [REDACTED]:
- (a) Tobii told us that the meeting concerned discussions about Smartbox again being appointed as a reseller of Tobii products and that there was some preliminary discussion about a potential acquisition by Tobii of Smartbox. Tobii told us that the meeting concluded with an understanding between the Parties that a merger of the two companies would:
 - (i) enable Paul and Alyson Hawes to sell their shareholding and retire; and
 - (ii) provide substantial benefits for users through the combination of the two companies' portfolios.
 - (b) Smartbox told us that, at the meeting, Mr Ruben gave his initial thoughts on the rationale and benefits of a merger and Paul Hawes requested that Smartbox be able to sell Tobii eye gaze cameras.
- 4.45 Following the meeting, the Parties exchanged emails in which the potential merger was discussed, and Smartbox raised the possibility of eye gaze camera resale arrangements:
- (a) [REDACTED].
 - (b) [REDACTED]
 - (c) [REDACTED]
 - (d) [REDACTED]
- 4.46 Smartbox told us that, in January 2018, Tobii informed Smartbox that [REDACTED]:

[REDACTED].¹⁰³

¹⁰³ This is consistent with [REDACTED].

[REDACTED]:

[REDACTED].

4.47 [REDACTED].

4.48 The Parties continued discussions throughout the first half of 2018:

(a) Tobii told us that, during 2018, discussions between the Parties focused principally upon a potential acquisition [REDACTED].

(b) Tobii told us that, while discussions primarily concerned the merger, discussions were held on re-initiating Smartbox's role as a reseller of Tobii products during meetings [REDACTED].

4.49 [REDACTED], the Parties held detailed negotiations on the draft SPA as well as future product ranges, future relationships with resellers and internal and external communications. We have been provided with email evidence of such discussions.

4.50 [REDACTED].

4.51 [REDACTED]:

[REDACTED].

4.52 Tobii Dynavox and Smartbox entered into the RA on 15 August 2018. Tobii Dynavox and Smartbox also entered into the OEM Partner Agreement on 15 August 2018, which was superseded by the DA on 29 August 2018. Tobii told us that [REDACTED].

4.53 The Tobii Board approved the terms of the SPA [REDACTED] and the Parties signed the SPA on 20 August 2018.

Our provisional view on whether the RA and DA would likely have been entered into absent the Merger

4.54 We acknowledge it is conceivable that Tobii and Smartbox may have decided to enter into some form of new trading arrangements in the absence of the Merger, but it is unclear what the nature of any such arrangements might have been.

4.55 Our provisional view is that it is unlikely that Tobii and Smartbox would have successfully concluded the RA and DA absent the Merger. Further, we consider that the OEM Partner Agreement was a precursor to the DA (the two agreements being only 13 days apart) and it is therefore also unlikely that

Tobii and Smartbox would have entered into the OEM Partner Agreement absent the Merger. This is on the basis that:

- (a) The contemporaneous evidence that we have seen regarding the nature of the discussions between the Parties primarily concerns detailed merger negotiations and we have seen little evidence of separate discussions on the RA and DA (or OEM Partner Agreement). We note, in particular, the email from Mr Ruben to Paul Hawes on 14 August 2018 that refers to the Agreements as ‘an idea came up yesterday’ – suggesting the Agreements were not considered until the Merger discussions were nearing conclusion.
- (b) To the extent that discussion of reseller agreements did feature in the contemporaneous documents, the evidence we have seen does not suggest that Tobii was willing to enter into the RA or DA (or OEM Partner Agreement) absent the Merger. In particular, the documentary evidence focused on Smartbox’s request for eye gaze cameras, we did not see evidence of proposals for Smartbox to re-commence resale of Tobii’s hardware and other products, or for Tobii to extend the scope of its arrangements as a reseller of Smartbox products, until August 2018 (the time the Merger was agreed).¹⁰⁴ In respect of eye gaze cameras, we note that on [REDACTED].¹⁰⁵
- (c) The correspondence between the parties at the time the Agreements were entered into states that the ‘new reseller agreements’ should be signed ‘to rely on in the interim period between signing and closing’. This is consistent with the explanation Smartbox gave for the Agreements, and Tobii’s Phase 1 submission.
- (d) The timing of the Agreements is also closely linked to the Merger. We consider it relevant that the RA and the OEM Partner Agreement were agreed on the same day the Tobii Board approved the SPA for signing (15 August 2018), and the DA replaced the OEM Partner Agreement shortly after (29 August 2018).

¹⁰⁴ We also note that Smartbox told us that, absent the Merger, it would likely have continued to request the ability to resell Tobii eye gaze cameras [REDACTED]. [REDACTED].

¹⁰⁵ While we note Tobii’s submissions that the Agreements were entered into in the ordinary course of business and that the RA was aimed at re-establishing a previous commercial relationship between the Parties, we also note that the nature of competition between the Parties was different in August 2018 from when the previous reseller agreements were signed in 2008 and 2013. In particular, Smartbox was competing more closely with Tobii on its hardware products. Therefore, we do not consider the Parties’ historic reseller arrangement provides evidence that the RA was likely to have been entered into absent the Merger.

Provisional conclusion on the counterfactual

- 4.56 Our provisional view is that the most likely counterfactual is one in which:
- (a) Smartbox continues to operate as an independent business, whether following an MBO or with no change of ownership;
 - (b) Smartbox is financially able to compete as it had done pre-Merger, including funding [✂]; and
 - (c) The Parties are not operating under the RA, DA or OEM Partner Agreement as agreed around the time of the Merger.
- 4.57 Therefore, we provisionally conclude that the relevant counterfactual is the prevailing pre-Merger conditions of competition, taken to be the situation prior to the RA, DA and OEM Partner Agreement being agreed.

5. Market definition

Introduction

- 5.1 Market definition¹⁰⁶ provides a framework for assessing the competitive effects of a merger. It is a useful analytical tool, but not an end in itself, and identifying the relevant market involves an element of judgement.
- 5.2 In practice, the analysis of market definition and competitive effects will overlap, with many of the factors affecting market definition being relevant to the assessment of competitive effects and vice versa. Therefore, market definition and the assessment of competitive effects should not be viewed as two distinct analyses. The question for market definition is not whether a particular alternative does or does not exert a competitive constraint on the parties' products, but about the strength of this constraint relative to that exercised by other products. The CMA's aim when identifying the relevant market is to include the most significant constraints on the behaviour of the merger firms (ie the most significant competitive alternatives available to the customers of the merger firms), as these will be the immediate determinants of the effect of the merger.¹⁰⁷
- 5.3 However, the CMA recognises that the boundaries of the market may be blurred, particularly when products are differentiated, and, as such, it takes into account in its assessment the strength of the constraints between

¹⁰⁶ In this document we use the expressions 'market definition' and 'frame of reference' interchangeably.

¹⁰⁷ [Merger Assessment Guidelines](#), paragraph 5.2.1.

products in the relevant market and from products outside the relevant market.¹⁰⁸

5.4 The Parties overlap primarily in the supply of dedicated AAC solutions. We have defined a dedicated AAC solution as a combination of four components:

(a) **Dedicated AAC hardware.** This includes both ‘purpose-built’ devices and ‘wrapped tablets’. A purpose-built device is an integrated device designed specifically for the purpose of meeting AAC needs. Examples are Tobii’s I-12 or Smartbox’s Grid Pad 12. A ‘wrapped tablet’ combines a consumer or a commercial tablet with a purpose-built component, typically a ‘backbox’ or a ‘bracket’ that incorporates additional batteries, speakers, ports and mounting options. Examples include Tobii’s EyeMobile or Smartbox’s Grid Pad 10;

(b) **AAC software.** This includes communication software (text- or symbol-based) and often computer control software (which may depend on the access means used). It may also include additional content such as educational software, accessible apps, third party content or environment control functionalities;

(c) **Access means.** In cases where the end-user cannot control the device solely through the touch screen, an AAC solution includes a means of access, for example a switch, an infrared camera, or an eye gaze camera;¹⁰⁹ and

(d) **Customer support.** This encompasses training, technical support and repairs. Depending on the circumstances, this support can be provided to the purchaser of the solution (eg a NHS hub) or directly to the end user.

5.5 We are cognisant that some suppliers of dedicated AAC solutions, in particular Tobii, sometimes use the term ‘dedicated’ in the narrower sense of being certified as a medical ‘speech generating device’ in accordance with US regulations (which are discussed in Appendix C). Our definition of dedicated AAC solutions encompasses all solutions that meet the criteria set out in paragraph 5.4 and is therefore broader. For example, the Indi, a portable, purpose-built device sold by Tobii, is considered to be a dedicated AAC solution for the purpose of our inquiry even though it is not certified as a medical device in the US.

¹⁰⁸ [Merger Assessment Guidelines](#), paragraph 5.2.2.

¹⁰⁹ Even in cases where the end user can access the device through the touch screen, some accessories may be required to make this solution effective (eg a keyguard).

- 5.6 We are also aware that some customers build their own AAC solutions based on mainstream consumer devices. This typically involves the combination of an iPad or a Microsoft Surface tablet with AAC software, and sometimes additional peripherals bought independently (eg a case and external speakers). We refer to such solutions as ‘non-dedicated AAC solutions’.¹¹⁰ In some cases, a non-dedicated AAC solution may rely on the same kind of underlying consumer tablet as a ‘wrapped tablet’ (which we classify as dedicated AAC hardware). However, a non-dedicated AAC solution differs from a wrapped tablet in three respects: it does not benefit from specialised customer support; it does not include any purpose-built hardware element, which has some implications for its performance (see paragraphs 5.71 and 5.72); and the customer has to source and assemble different components themselves.
- 5.7 We recognise that dedicated AAC solutions thus defined are highly differentiated products. They differ notably in terms of the size of the devices, access options, functionalities, software, and the level and quality of support associated with them. It is possible that conditions of competition may differ for different products, notably in terms of their closeness of competition with non-dedicated AAC solutions. As such, we have considered not only whether non-dedicated AAC solutions form part of the same market as dedicated AAC solutions, but also whether the conditions of competition differ across different types of dedicated AAC solutions.
- 5.8 The Parties also sell AAC software on a standalone basis. In 2018, sales of standalone AAC software in the UK were [redacted] for Smartbox ([redacted] [0-10%] of total Smartbox UK sales) and [redacted] for Tobii ([redacted] [0-10%] of total Tobii UK sales).¹¹¹ Customers who buy standalone AAC software from the Parties can install it on dedicated or mainstream devices. Because standalone software represents a small proportion of the Parties’ sales, and as we have not received any evidence to suggest that competition concerns might arise within this segment, we have not considered a separate theory of harm concerning horizontal unilateral effects in the supply of standalone AAC software to customers.
- 5.9 We have also considered two additional ‘upstream’ markets: the supply of AAC software to suppliers of dedicated AAC solutions, and the supply of eye-gaze cameras to suppliers of dedicated AAC solutions. The Parties do not overlap in these markets (Tobii does not license its software to other suppliers

¹¹⁰ In our engagement with third parties we have also used the terms ‘mainstream devices’, ‘consumer tablets’, or ‘AAC solutions based on mainstream devices’. The presentation of the evidence in this chapter uses the terms that were used in the context of gathering that evidence.

¹¹¹ These figures include sales of AAC software through resellers and exclude sales of educational software.

of dedicated AAC solutions, and Smartbox does not produce any eye gaze camera). However, these markets are relevant for our assessment of vertical theories of harm. Our definition of these two upstream markets is set out in paragraph 5.79 and following.

Downstream product market

- 5.10 On the basis of the Parties' primary overlap, we consider that the narrowest candidate market for assessing horizontal unilateral effects is the supply of dedicated AAC solutions in the UK. In this section we consider whether non-dedicated AAC solutions should be included in the same product market as dedicated AAC solutions.
- 5.11 As part of our assessment, we asked customers of the Parties a number of questions to elicit information on their preferences and the extent to which they regard non-dedicated AAC solutions as close substitutes to dedicated AAC solutions. We also sought representations from the Parties' competitors on this question, and we considered how the Parties describe competition with non-dedicated AAC solutions in their internal documents.

Tobii's views

- 5.12 Tobii submitted that the Parties face strong competition from AAC solutions using mainstream consumer devices.¹¹² In particular, Tobii submitted that: AAC software is the same regardless of whether it is installed on a mainstream consumer device or a purpose-built device; mainstream devices have a wide range of in-built assistive communication technology and features (including touch screen access, eye-tracking software, and speakers); NHS hubs commonly provide AAC solutions based on mainstream devices to a considerable number of their users (who by definition tend to have some of the most complex needs); and that the level of customer support and training is not actually a strong factor of differentiation between mainstream and dedicated devices. Tobii also submitted that 'for many users, a standard consumer tablet, or a device based on a standard consumer tablet, will – with the correct software and perhaps also peripherals – meet their requirements',¹¹³ and that the CMA should 'consider and take proper account of both end-users' needs and the range of AAC solutions that they are in fact using in order to communicate effectively'.

¹¹² [Tobii response to the issues statement](#), paragraphs 10 and following, and previous submissions.

¹¹³ [Tobii response to phase 1 decision](#), paragraph 28

5.13 Tobii also made a number of submissions that it considers relevant to market definitions. We discuss some of these submissions in this chapter (in paragraph 5.24 and following, and paragraph 5.52 and following), and the rest in Appendix C to this document.

Evidence from third parties

Evidence from customers

5.14 Roughly 90% of the Parties' sales are made to organisations such as the NHS, schools, and charities who purchase AAC solutions on behalf of end-users (the remaining 10% of sales are made directly to end-users). Purchasing decisions are typically made by speech therapists and specialist assessors within these organisations based on their evaluation of the needs and preferences of end-users. In this context we consider that it is appropriate to gather evidence on customer preferences and substitutability patterns from these organisations (which we call 'customers'), rather than to attempt to engage with end-users.

5.15 We have sent questionnaires to 69 customers to gather views on customer preferences. We have received 30 responses. 22 of these respondents reported their spend on dedicated AAC solutions, which amounted to nearly £[redacted] in total in 2018 (see Table 5-1). The expenditure of these 22 respondents on the Parties' products represented [redacted][50-60%] and [redacted] [60-70%] of Tobii's and Smartbox's sales of dedicated AAC solutions in the UK in 2018, respectively.

Table 5-1: Customer responses received by the CMA

<i>Customer type</i>	<i>Customer type as Share of Parties' combined sales 2018</i>	<i>Contacted</i>	<i>Responded</i>	<i>Response rate</i>	<i>Reported spend for customers who responded 2018 (£)</i>
England and Wales	[90-100%][redacted]	61	23	38%	[redacted]
NHS Hubs	[50-60%][redacted]	17	12	71%	[redacted]
NHS Other	[0-10%][redacted]	15	4	27%	[redacted]
Schools	[0-10%][redacted]	10	4	40%	[redacted]
Charities	[0-10%][redacted]	9	2	22%	[redacted]
Local authorities	[0-10%][redacted]	10	1	10%	[redacted]
Scotland and NI (*)	[0-10%][redacted]	8	7	88%	[redacted]
Total	100%	69	30	43%	[redacted]

*Breakdown of sales by UK region only available in Smartbox's sales dataset. Assumed same percentage of sales to Scotland and Northern Ireland for Tobii.

Source: CMA analysis of customer responses

5.16 We used two different approaches to exploring customers' views on substitutability between dedicated and non-dedicated AAC solutions, depending on the size and sophistication of the customer. Our questionnaire to small customers (charities, schools, local authorities) included two

qualitative questions on the extent to which they considered a mainstream device to be a viable alternative to a dedicated AAC solution.¹¹⁴ Our questionnaire to NHS hubs included similar qualitative questions (to the extent they had not already been asked at phase 1), but also two more structured 'diversion questions', which we discuss in more detail in paragraph 5.22 below.

- 5.17 We also sent a questionnaire to a number of interest groups acting for people with AAC needs. Most of these interest groups do not purchase AAC solutions directly, but they provide advice to end users and guide them towards relevant funding bodies. We sent 16 questionnaires and received 6 responses. Most of the responses received were answered by specialist speech and language therapists within these organisations.

Qualitative views on substitutability

- 5.18 We asked customers about the extent to which a standard consumer tablet is a viable alternative to a dedicated AAC solution. All respondents to this question (21 respondents, including both NHS hubs and smaller customers) consider that the extent of substitutability between dedicated AAC solutions and mainstream devices is dependent on the needs of each specific end user. Many respondents specified that a consumer tablet (used along with AAC software and any required accessories) can be a viable alternative for users who can access the device through touch, although other user requirements are also taken into account during the assessment (as described in more detail below). However, many customers also identified a range of circumstances where a mainstream device could not be substituted for a dedicated device. Such circumstances included the following:

- (a) When the user cannot access the device through direct touch and instead requires complex access methods, such as eye gaze cameras or switches. Many customers noted that adding the required access method as an accessory to a consumer tablet is not always feasible or convenient.
- (b) When the user spends most of the day outside of home and/or in a wheelchair. This requires a device that is more rugged, robust, has louder speakers and a longer battery life than a mainstream device. In some cases it is possible to add accessories to a mainstream device to replicate

¹¹⁴ The two questions read: 'To what extent is a standard consumer tablet (eg an iPad or Surface Pro) a viable alternative to a dedicated AAC solution? To what extent does this vary depending on the needs of the user?' and 'In circumstances where a standard consumer tablet is a viable alternative for a particular user, how do you decide between a consumer tablet and a dedicated AAC solution?'

some of these features (eg external speakers, batteries, etc), but some customers have commented that this can be unwieldy and impractical.

- (c) When the user requires environment control functionalities (eg controlling lighting, doors, or a TV). Some customers have commented that such functionalities are harder to incorporate into mainstream devices as they require infrared or radio connectivity.
- (d) When the user is likely to require continuous support and training. Suppliers of dedicated AAC solutions typically provide a higher level of support and repair service than is available with a solution based on a mainstream device. For example, suppliers of dedicated AAC solutions may provide temporary replacement devices while performing repairs; they guarantee the integrated operation of their solutions; they provide initial training.
- (e) When the user requires certain AAC software functionalities or language packages that are only available on a dedicated AAC solution. For example, one customer commented that Scottish and regional voices are typically less available on AAC software for iPads.

5.19 The responses from interest groups were broadly similar in substance to those obtained from customers. One interest group thought that the improvement of mainstream devices could somewhat lessen (though not completely remove) the impact of the Merger. Other respondents said that a large number of users can and do use mainstream devices, but there is a subset of users who have a strong preference for dedicated solutions.

5.20 For example, Communication Matters, a UK charity which provides information on AAC solutions, told us that there is a relatively small, but significant, cohort of disabled people for whom a dedicated and highly customised device and software (and follow up support) may be essential. These include: children and adults with cerebral palsy who need AAC from childhood and who will often also have associated physical impairments which can make using off the shelf consumer computer equipment very difficult, if not impossible; those with complex physical disabilities, including adults with acquired deteriorating conditions whose needs can change over a short period of time, who require customised wheelchair seating and communication aid mounting; those with poor hand function who need large screens with keyguards (finger guides) or eye gaze technology; people who also have sensory impairments which require a lot of additional specialist software.

5.21 1 Voice, a charity supporting a network of parents and professionals working with people with communication needs, told us that for some end users, a solution based on a mainstream device would involve a complex setup and peripherals, and that the resulting solution would not be user-friendly especially if the user has a cognitive or physical impairment. For example, in such set-ups, the bluetooth peripherals needed to enable these features often ‘drop out’, leaving the person voiceless again.

Diversion ratios

5.22 The diversion questions asked NHS hubs to explain what alternatives they would use if Tobii/Smartbox dedicated AAC solutions were no longer available.¹¹⁵ The purpose of this question was to elicit information about what customers see as the closest alternatives to the products provided by the Parties. These products are the most relevant competitive constraints on the Parties.¹¹⁶

5.23 The diversion ratios estimated from responses to these questions are presented in Chapter 6 (paragraph 856.37). We assessed the diversion ratio from Tobii products to tablets to be [⊗][0 to 5%], and the diversion ratio from Smartbox products to tablets to be [⊗] [0 to 5%]. In other words: we found that, on average, NHS hubs consider that non-dedicated AAC solutions are the closest alternative to a dedicated AAC solution for less than 5% of their expenditure on dedicated AAC solutions. For both Smartbox and Tobii, the majority of the diversion was to other suppliers of dedicated AAC solutions, namely the other merging party, Liberator and Techcess.

Tobii’s views on diversion ratios

5.24 Tobii has argued that our estimates of diversion ratios are not robust because our approach to questioning NHS hubs was not in line with the CMA’s recommendations on the design and presentation of customer survey evidence in merger cases. In particular, Tobii submitted: the diversion question was not framed in terms of the most recent purchase; it was not designed to cover all possibilities; it prompted certain options and did not randomise the ordering of options; and the questions asked prior to the diversion questions had not been framed neutrally.

¹¹⁵ The question read ‘Suppose that Tobii dedicated AAC products were no longer available in the market, which products would you use instead’. This was followed by an equivalent question for Smartbox products.

¹¹⁶ [Merger Assessment Guidelines](#) paragraph 5.2.15

Our assessment

- 5.25 For the reasons set out below, we disagree with Tobii's submission and consider that it is appropriate to place some weight on these results for the purposes of assessing both market definition and horizontal unilateral effects, albeit it needs to be assessed alongside other evidence sources.
- 5.26 It is important to understand that there are material differences between a 'customer survey', to which our Good Practice recommendations apply, and the type of detailed customer engagement exercise that we have used in this case.
- 5.27 First, customer surveys are generally used where the parties' products are purchased by a large number of small customers (often individual end-consumers). The aim of a statistical sample survey is then to interview a small proportion of these customers in such a way that robust inferences can be made from their responses about the population of customers as a whole. In this context it is important that the diversion question be framed in terms of the most recent purchase, so that responses can be weighted adequately.¹¹⁷ In contrast, in this case, a large proportion ([X] [50 to 60%]) of the Parties' products are bought by a small number of large, experienced customers (16 NHS hubs). It was therefore possible to approach all these customers directly and structure the diversion question in terms of their annual purchases to get a direct estimate of diversion ratios, without resorting to a process of sampling and statistical inference. In this context it would not make any sense to frame the question in terms of the most recent purchase.
- 5.28 Second, in contrast to a large-scale customer survey which typically only allows for multiple-choice questions, a detailed questionnaire allows for more open questions where respondents can explain or qualify their views. In this context, our views on diversion and the closeness of competition between alternatives are informed not just by the quantitative responses to the diversion question, but also by the more qualitative explanations provided. As discussed in paragraph 5.18, customers have highlighted many factors that limit the substitutability between dedicated and non-dedicated AAC solutions, and the low diversion to mainstream devices is consistent with these representations.
- 5.29 Third, a customer survey often seeks views from retail customers who might buy the product infrequently and might not possess good knowledge of their options at the point of responding. In this context it is often crucial that the

¹¹⁷ Technically the sampling unit in a customer survey is generally a customer visit, rather than a customer. Framing the question in terms of the last visit can also be desirable to limit recollection issues.

front end of the survey questionnaire be designed carefully to encourage respondents to think about their alternative options without inducing any bias towards any particular options. In contrast, the questionnaire we have used in this case was addressed to expert buyers from the NHS who purchase both dedicated and non-dedicated AAC solutions on a regular basis and with good knowledge of the options available to them. In this context, we consider that the risk of inducing any bias through the particular wording or ordering of the questions is low.

- 5.30 Nonetheless, we designed our questionnaire to limit the risk of any framing bias. Our diversion question was preceded by a number of more general questions on how NHS experts make purchasing decisions and the type of solutions they use, which were framed neutrally. The questionnaire also included some questions on mainstream devices, except for NHS hubs who had already answered similar questions in our phase 1 questionnaire (and we have verified that there was no material difference between the diversion responses of these two groups of hubs). We also structured the diversion question in terms of expenditure to accommodate all possible diversion strategies (including the ‘unbundling’ of purchasing).¹¹⁸ Moreover, the table included in the questionnaire to collect responses explicitly included an entry for ‘suppliers of other alternatives (tablets)’ to encourage respondents to keep such alternatives in mind at the point of answering this question.
- 5.31 The table used to collect responses ordered the options in a non-random way: dedicated AAC solutions appeared first, and within that category the Parties appeared first. We recognise that in general the ordering of options in a diversion question may have some impact on responses. However, as discussed in paragraph **Error! Reference source not found.**, the customers who responded to our questionnaires are sophisticated purchasers with good knowledge of their options and, as such, we would expect any bias to be small and not to impact our conclusions materially.
- 5.32 For these reasons, we consider that it is appropriate to put some weight on these diversion results, albeit it needs to be assessed alongside other evidence sources. The more qualitative views submitted by customers and other third parties corroborate our provisional conclusion that diversion to non-dedicated solutions is likely to be low.

¹¹⁸ For example, a customer could in principle decide to replace a Tobii eye-tracking product with a mainstream device and an eye-tracking camera bought from separate suppliers

Evidence from competitors and resellers

Evidence from suppliers of dedicated AAC solutions

- 5.33 We sent questionnaires to suppliers and resellers of dedicated AAC solutions operating in the UK and abroad. As part of those questionnaires, we asked about the extent of substitutability between dedicated and non-dedicated AAC solutions. All respondents recognised that substitutability was limited for many users. For example, Liberator told us that the development of the iPad had enabled the emergence of a system of specialised AAC apps developed by small companies, but noted that solutions involving the combination of a tablet with specialised apps are only suitable for certain categories of users, notably those who can access functionalities by using buttons and touch screens, and who can 'look after the device'. Liberator added that the accessibility of the iPad is improving, but it still has important limitations, particularly in terms of sound volume, reliability and robustness. It noted that it is often necessary to add several accessories and peripherals to overcome these issues, which can make it complicated.
- 5.34 Techcess pointed out that dedicated AAC solutions tend to be 'tidier' with fewer trailing cables. While people with good motor control can use tablets, people with more advanced disorders affecting movement and co-ordination tend to find dedicated AAC solutions more effective.
- 5.35 Other suppliers of dedicated AAC solutions had similar views. Abilia told us that the improvement of consumer tablets was a significant threat that had already impacted the market, but that the growth of consumer tablets had declined due to realisation that dedicated products were more 'fit for purpose' for certain uses.

Evidence from suppliers of mainstream equipment

- 5.36 We sent a questionnaire to three technology companies highlighted by Tobii as potential constraints: Google, Apple, and Microsoft. The questionnaire asked a series of questions to understand the role of the products provided by these companies to address AAC needs, and how this might evolve over time.
- 5.37 Google told us that Android was designed to be accessible to as many users as possible. It pointed to specific features of Android designed to improve accessibility, including 'Talk Back' (which is an accessibility service that helps vision-impaired users interact with their devices) and 'Switch Access' (which allows users to control and interact with the screen by using a single switch rather than by using the touchscreen). Google told us that it provides the 'framework' (ie the Android application programming interface) for developers

of AAC apps to be run on Android devices, but it does not see itself as competing with suppliers of dedicated AAC hardware and software such as Tobii or Smartbox. Google does not have any partnerships with companies that use Android tablets to meet AAC needs, and it does not currently have any specific plans to expand in the market for dedicated AAC hardware and software.

- 5.38 Microsoft told us that it has invested in meeting the needs of customers with disabilities and has engineering teams dedicated to investigating and investing in platform and application level assistive technologies. Its website lists a number of initiatives designed to improve the accessibility of Windows 10, including built-in support for eye-control.¹¹⁹ Microsoft also has partnerships with a number of suppliers of AAC hardware and software, [redacted]. Due to the diverse and varying needs of customers, it could not say whether its Surface hardware is a good alternative for end users who used dedicated AAC.
- 5.39 Apple told us that the iPad incorporates a number of accessibility features designed to improve accessibility for individuals with special needs, including Siri Shortcuts, Switch Control, and Guided Access. However, Apple thought that the Parties were 'distant competitors' to itself as they offered hardware and software dedicated to serving the AAC market. Apple stated that while it is always improving its products to make them accessible to as many consumers as possible, including those with special needs, [redacted].
- 5.40 Overall, these representations indicate that these companies try to make their products as accessible as possible. However, meeting the specialised needs of users of dedicated AAC solutions is not their focus, and they tend not to see themselves as competing directly with suppliers of dedicated AAC solutions. We also note that when Apple acquired SMI, a supplier of eye gaze cameras, it discontinued the supply of SMI cameras to suppliers of dedicated AAC solutions, and we have seen no indication that it plans to re-introduce these cameras in AAC applications (its own or those of competitors).

Internal documents

- 5.41 We have considered how the Parties characterise the competition from non-dedicated AAC solutions in their internal documents. Many of the Parties' internal documents (especially Tobii's) relate to their global activities. We are conscious that there are some regulatory differences between countries that may affect competitive interactions between dedicated and non-dedicated

¹¹⁹ <https://www.microsoft.com/en-us/accessibility>

solutions, notably between the US and other countries. We have discussed this separately in paragraph 5.52 and following.¹²⁰

Smartbox documents

- 5.42 A number of Smartbox documents provided insights into how the company perceives the interactions between dedicated and mainstream devices. We have split them between three categories: documents related to the monitoring of competition; documents related to product development; and documents related to the launch of the Grid Pad range.
- 5.43 The documents in the first category (the monitoring of competition) are discussed in paragraph 6.24 and following in Chapter 6 (Horizontal unilateral effects). These documents focus entirely on other suppliers of dedicated AAC solutions, and do not mention mainstream devices.
- 5.44 The documents in the second category (product development) sometimes mention non-dedicated AAC solutions, but these are typically presented less as a competitive threat than as a source of inspiration for enhancing the functionalities of dedicated AAC solutions. These documents indicate that Smartbox sees limited competitive interactions between dedicated and non-dedicated AAC solutions, with the latter involving fewer functionalities and being intended for different types of users.
- 5.45 The most relevant documents can be summarised as follows:
- (a) A document dated March 2016 sets out a roadmap for [redacted] and discusses various developments in mobile technology. The document states that the introduction of the iPad initially displaced simple forms of communication solutions, but the impact of ‘tablets’ on high-end AAC solutions has been more limited. The document further explains that developments in mobile technology have actually been positive for high-end devices, as Smartbox has learned from these developments and has incorporated some concepts in its dedicated devices to improve their usability and effectiveness.
 - (b) [redacted].
 - (c) [redacted].
- 5.46 The documents in the third category (regarding the development of the dedicated Grid Pad and Power Pad devices) are also informative. These

¹²⁰ See also our assessment of Tobii submission on regulatory distortions in Appendix C

documents indicate that the development of purpose-built devices by Smartbox stems from a belief that it is essential for Smartbox to offer such devices to compete effectively in the market for dedicated AAC solutions, and that they appeal to different groups of customers than non-dedicated solutions.

- 5.47 The two main documents in this category can be summarised as follows:
- (a) A marketing plan for the Power Pad dated March 2017 sets out [REDACTED]. The plan states that there is a segment in the market that requires [REDACTED], showing very limited overlap between the categories of intended customers for dedicated and non-dedicated devices.
 - (b) A note in relation to a strategy meeting dated July 2017 highlights a number of developments in terms of manufacturing costs that are likely to make purpose-built devices [REDACTED].

Tobii documents

- 5.48 Tobii has provided a number of its internal documents that provide some insights into its views on competitive interactions with mainstream devices. The most recent of these documents can be summarised as follows.
- (a) [REDACTED].
 - (b) [REDACTED].

Figure 5-1: Extracts from Tobii's 2019-2021 business plan

[REDACTED]

- 5.49 [REDACTED], which is discussed in paragraph 6.29. [REDACTED]. The latter of these versions is prefaced by a slide that mentions the increased competition from the iPad for 'touch devices':

[REDACTED].

- 5.50 A number of documents focus on Tobii's 'touch' products (the Indi and the I-110). They can be summarised as follows:
- (a) [REDACTED].
 - (b) [REDACTED]:
[REDACTED].
 - (c) [REDACTED]

5.51 Overall, we observe that Tobii’s internal documents do discuss the competitive impact of non-dedicated AAC solutions, but such discussions are much less prominent than the regular monitoring of other suppliers of dedicated AAC solutions (see paragraphs 6.27 and following in Chapter 6 (Horizontal unilateral effects)). Furthermore, when they are mentioned, non-dedicated AAC solutions are presented with a specific positioning, typically competing more strongly with particular products ([REDACTED]) for particular users ([REDACTED]). The emphasis is often not on the threat that non-dedicated solutions represent for dedicated solutions, but on the business opportunity that can be realised by producing low-cost dedicated devices that could appeal to customers who would otherwise buy a non-dedicated solution. [REDACTED], but there are no clear examples of Tobii altering the pricing or the functionalities of other dedicated AAC solutions specifically in response to competition from non-dedicated AAC solutions.

Tobii’s views on the CMA’s summary of its internal documents

5.52 Tobii has submitted that the CMA has neither understood the language that is used in its internal documents, nor appreciated the context in which those documents were prepared. Tobii has pointed out that the CMA has made use of internal documents that relate to Tobii’s global business to make inferences on the merger’s possible effects on competition in the UK. [REDACTED].

Our assessment

5.53 We note that while some of Tobii’s internal documents discuss competitive developments at a global level, many focus on markets outside the US (which are collectively referred to as ‘Europe and the Rest of the World’ or ‘EUROW’). In general, these documents do not make any mention of a stronger competitive pressure from mainstream devices in these markets. For example:

(a) [REDACTED].

(b) [REDACTED].

(c) [REDACTED].

(d) [REDACTED].¹²¹

5.54 More fundamentally, we are not persuaded that the differences in regulatory requirements between the US and UK markets should have a material impact

¹²¹ [REDACTED]

on the extent to which the purchasers of dedicated AAC devices regard mainstream devices as substitutes. As UK funders are not subject to the requirement only to purchase medical-grade devices, and given that these devices tend to be more expensive than alternatives, it is reasonable to believe that UK funders only purchase such devices when it is genuinely essential to meet the needs of end-users. Put differently, even if less stringent rules in the UK allow the NHS to purchase mainstream devices for a larger share of users, it does not mean that, for those users that are provided with a complex dedicated device, mainstream devices are closer substitutes.

Sales and pricing of dedicated AAC solutions

5.55 This section discusses submissions made by Tobii on trends in the sales of its products and the pricing of dedicated and non-dedicated AAC solutions.

Tobii Analysis of ‘transaction’ data

Tobii’s views

- 5.56 Tobii has submitted an analysis of its sales data (to which it refers as ‘transaction data’) for the period [REDACTED].
- 5.57 At the hearing, however, Tobii told us that these different devices were targeted at different types of users: the Indi was described as being ‘for the ambulatory touch user’ whereas the I-12 is ‘for someone who is bed bound or in a wheelchair’, pointing out that these were ‘two different markets’ and that there had been no ‘cannibalisation’.

Our assessment

5.58 We do not agree with the conclusions that Tobii draws from its analysis, for the following reasons. First, in our view Tobii’s transaction data does not show that its customers have migrated from more expensive to cheaper devices. Figure 5-2 below shows the absolute numbers of devices sold by Tobii in the UK, [REDACTED].¹²² [REDACTED].¹²³ [REDACTED].

Figure 5-2: AAC devices sold by Tobii in the UK (numbers)

[REDACTED]

¹²² Other customers include both direct customers and resellers.

¹²³ [REDACTED]

- 5.59 If we assume that the pattern of demand is constant over time (in the sense that there is a constant flow of users with a constant distribution of needs), this trend is more consistent with the proposition that the Indi is not considered as a suitable alternative by users of the more expensive devices. That is, the categories of users who would have used an I-12 or an I-15 before the introduction of the Indi are still using an I-12 or an I-15 after the introduction of the Indi, and sales of the Indi have gone to other types of users. This view is also consistent with what Tobii told us at the hearing (see paragraph 5.57), and with the way Tobii describes the positioning of the Indi in its internal documents. When Tobii developed the Indi, it evaluated the risk of cannibalisation and concluded that it was low. [REDACTED].
- 5.60 Second, Tobii's analysis only discusses trends in the shares of sales accounted for by various types of dedicated AAC solutions, and it is not clear that it could support any inferences with respect to the competitive constraint exerted by mainstream devices. High-end devices are differentiated from mid-range devices, which in turn are differentiated from mainstream devices. Based on our analysis of sales volumes, it could be argued that the growth in volumes of lower and upper mid-range segments is consistent with these taking volumes away from mainstream devices (rather than the opposite).
- 5.61 Third, what matters from the point of view of understanding the Parties' incentives post-merger are the preferences of their existing customers. Even if it were true that some customers have 'migrated' from high end devices to cheaper devices (which we do not, based on the available evidence, consider to be the case), it does not follow that the remaining purchasers of high end devices find cheaper devices to be close substitutes. The opposite could be true if the remaining users of high-end devices are those who really value the functionality of these products, and therefore are less likely to divert to cheaper solutions if the price of high-end devices increased.
- 5.62 Lastly, if there were a material change in the competitiveness of non-dedicated AAC solutions, such that the customers of dedicated AAC solutions considered non-dedicated solutions as increasingly good substitutes for their needs, we would expect suppliers of dedicated AAC solutions to respond by lowering their prices over time to make them more competitive. Tobii's sales data indicates that there have been no material changes in the prices charged by Tobii for dedicated AAC solutions over the recent period: the prices of [REDACTED] products decreased slightly between 2017 and 2018; the price of [REDACTED] increased slightly between 2016 and 2018 (see Table 5-2).

Table 5-2: Average gross prices charged by Tobii for dedicated AAC solutions to UK customers (£)

[✂]

5.63 Table 5-3 below shows the equivalent information for Smartbox products. This indicates that the prices of most dedicated AAC solutions have slightly increased over the past three years.

Table 5-3: Average net prices charged by Smartbox for dedicated AAC solutions to UK customers (£)

[✂]

5.64 For these reasons, we do not consider that recent trends in prices and volumes indicate that the competition from mainstream devices is growing. On the contrary, the fact that the unit sales and prices of the I-series and the I-110 have remained constant over time suggests that the Indi is appealing to different categories of users, and that the competitive pressure from non-dedicated AAC solutions has not changed over time.

Tobii's pricing ladder analysis

Tobii's views

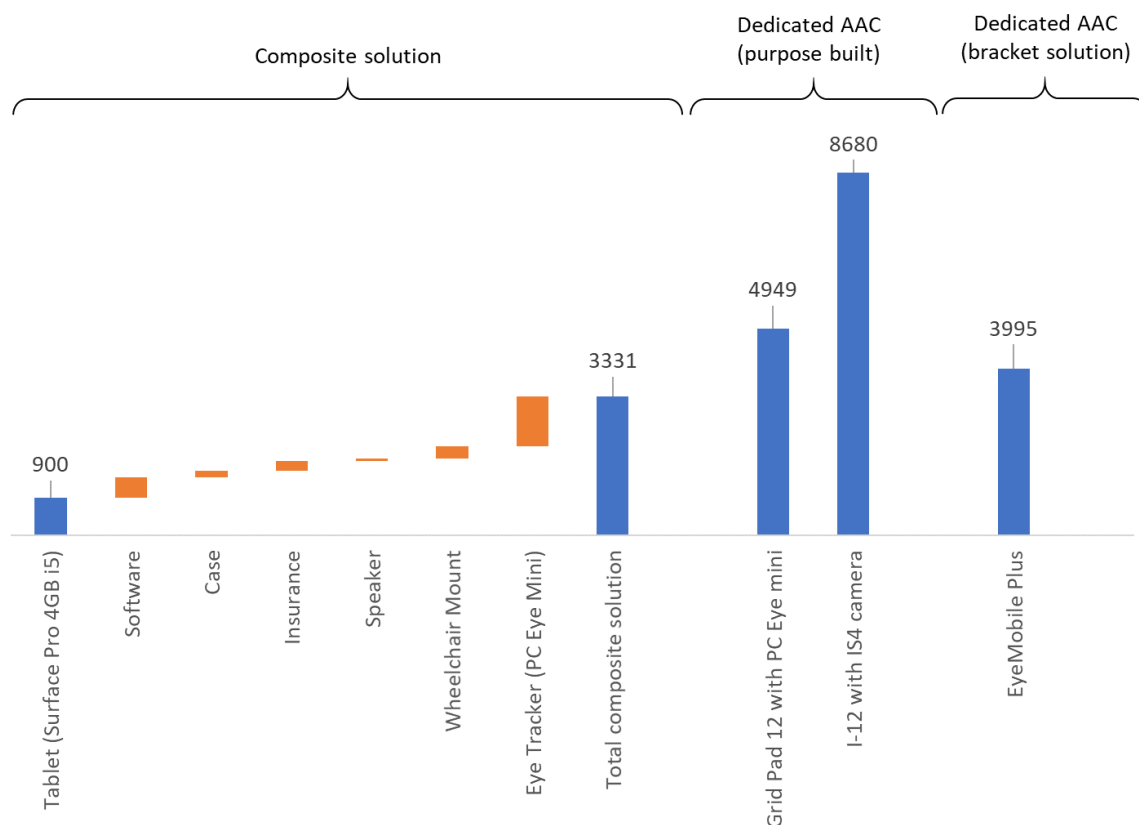
5.65 Tobii has submitted a 'pricing ladder analysis' that compares the price of consumer tablets with that of purpose built devices. This analysis starts from the price of a consumer tablet (eg an iPad or a Surface Pro) and then adds the price of the additional components required to replicate the functionalities of a dedicated AAC solution (AAC software, case, insurance, speaker, mount, and in some cases an eye-tracker). The analysis then compares this 'total package' price with that of various dedicated AAC solutions, both in terms of their upfront cost, and their lifetime cost. The comparison of lifetime costs relies on the baseline assumption that a solution based on a mainstream device lasts 3 years while a dedicated AAC solution lasts 5 years. This analysis concludes that the price differential is narrow for most configurations (typically less than [✂]%, with some comparisons showing the dedicated AAC solution as cheaper than a solution based on a mainstream device), indicating that customers would consider substituting from a dedicated AAC solution to a solution based on a mainstream device.

5.66 Tobii subsequently combined the results of this analysis with its transaction data to identify the proportion of its UK sales which were consistent with there being an equivalent price point for a non-dedicated AAC solution. [✂].

Our assessment

- 5.67 We consider that Tobii's analysis understates the price differential between dedicated and non-dedicated AAC solutions. In many cases, the analysis builds the composite solution based on relatively expensive versions of available mainstream devices, without any justification. For example, it is not clear to us why the appropriate benchmark for a Microsoft-based solution should include a Surface Pro with 16GB of RAM and an i7 chip (priced at £1,800) when Tobii's own Eye Mobile product relies on a version of the Surface Pro with 4GB of RAM and an i5 chip (priced at £900). Similarly, it is not clear to us that the appropriate benchmark for such a solution should incorporate an Alea camera (priced at £1,700) when the dedicated AAC solution it is compared to incorporates a Tobii PC Eye Mini (priced at £1,200).
- 5.68 More importantly, for the most expensive dedicated AAC solutions, the conclusion that the price gap is narrow is entirely contingent on the assumption that these devices have a product lifespan almost twice as long as that of solutions based on mainstream devices (5 years versus 3 years). Tobii subsequently submitted that dedicated AAC devices must be expected to last at least 5 years to obtain medical grade certification in the US, whereas both Apple and Microsoft assume average 'years of use' of 3 years for their mobile products. However, we note that Tobii provides a warranty of only 3 years on its devices in the UK, similar to that assumed by Tobii for mainstream devices. Moreover, even if tablets did have a shorter useful life, customers could prolong the useful life of the solution by combining a new tablet with the same peripheral and software licences. This would allow customers to prolong the useful life of the solution at a relatively low cost (this is relevant as the tablet typically represents less than half of the cost of a dedicated AAC solution). Finally, no customer has mentioned differences in product lifespan as a significant factor in their purchase decisions. For these reasons, we consider that there is a basis for comparing the cost of dedicated and non-dedicated AAC solutions based on upfront costs, without any adjustment for the expected lifetime of the equipment.
- 5.69 Such a comparison with adjusted input costs shows much broader cost differentials than suggested by Tobii. For example, a solution with eye-tracking based on a Microsoft tablet would cost approximately £3,300, while Smartbox's Grid Pad 12 costs £4,950 and Tobii's I-12 costs £8,680 (Figure 5-3). The cost of an EyeMobile (£3,995) is lower but still substantially higher than that of the non-dedicated solution.

Figure 5-3: Upfront purchase price of solutions with eye-tracking (£)



Source: Tobii assumptions (for the cost of software, case, insurance, speaker, mount, eye-tracker), amazon.co.uk (for the cost of the tablet), Parties' websites, CMA analysis.

5.70 More importantly, even if it could be established that the cost of dedicated and non-dedicated AAC solutions were comparable, it would not follow that these are substitutable as there are still some significant non-price differences between them. First, a solution based on a mainstream device does not include any customer support or training, which many customers have told us is an essential requirement for their needs. For example, Beaumont College told us that consumer tablets with added peripherals only work for its students during assessment trials or when used temporarily while waiting for funding, since during these periods students can have access to the college's technical support in case issues arise. However, Beaumont College would not recommend such a solution to its students when they leave college and no longer have access to this support. In addition, Tobii told us at the hearing that its customer support was its [✂]. Also, when describing its business strategy in the UK, Tobii told us that it saw it as necessary to 'have people on the ground' because this was 'not a plug and play business' and 'you need to have experts typically with a clinical background that go out and either educate the prescribers or actually sit together with the user and the prescriber to make sure it works'.

- 5.71 Second, there are circumstances where a non-dedicated AAC solution may not replicate the technical performance of a dedicated AAC solution, in particular where they are used with eye-tracking. Smartbox has told us that eye-tracking cameras use a lot of power in dedicated devices, and that [REDACTED]. As such, it is not clear that it would be feasible to use an eye-tracking camera with a mainstream device in the way assumed by Tobii. RCAS has told us that, because of the power usage of eye gaze cameras, it thought that Tobii's Eye Mobile products (which combine a Surface Pro tablet with a purpose-built bracket incorporating additional battery power) were the only practical solution to use an eye gaze camera with a mainstream device. Some customers noted other types of technical limitations with non-dedicated AAC solutions. For example, Surrey County Council also told us that there are some peripherals requiring specific switch ports or infra-red control which cannot be integrated into standard tablets.
- 5.72 Third, many customers and competitors told us that complex solutions incorporating a mainstream device and many peripherals are often impractical and unreliable, and that there are benefits to buying integrated solutions. For example '1 Voice' told us that Bluetooth speakers often drop out, leaving the user voiceless (see paragraph 5.21). Suffolk Communication Aids Resource Centre told us that they prefer buying hardware and software from the same supplier to avoid issues as to which supplier is responsible when technical problems arise. Liberator and Techcess have both told us that adding peripherals to overcome the limitations of mainstream devices can be complicated and that dedicated solutions are 'tidier' (see paragraphs 5.33 and 5.34).
- 5.73 We have considered how Tobii approaches such price comparisons in its internal documents. The only examples we have found relate to the Indi: [REDACTED]. These comments are consistent with the views of customers summarised in paragraph 5.72. There is no adjustment for different useful lives. We have not found [REDACTED] (see paragraph 6.28).
- 5.74 For these reasons, we do not consider that this analysis supports the view that customers of dedicated AAC solutions find non-dedicated AAC solutions to be close substitutes. If anything, the large price difference in the upfront costs of these two types of solution is consistent with the proposition that customers consider them to be highly differentiated. However, we note that the price differential is narrower for the Indi, and that Tobii internally benchmarks the price of that device against that of the iPad.

Provisional conclusions on the product market

- 5.75 Our provisional conclusions on the competitive constraint exerted by mainstream devices on dedicated AAC solutions can be summarised as follows:
- (a) Almost all stakeholders who responded to our request for information highlighted some differences between the characteristics of dedicated and non-dedicated AAC solutions and identified a range of circumstances where the latter are not a good alternative to the former.
 - (b) Smartbox's benchmarking of competitors focuses [X] on other suppliers of dedicated AAC solutions, and the company's internal documents indicate that it sees limited competitive interactions between dedicated and non-dedicated AAC solutions, with the latter involving fewer functionalities and being intended for particular categories of users.
 - (c) Non-dedicated AAC solutions feature much less prominently than dedicated solutions in Tobii's internal documents and are typically described as having a very specific positioning, competing closely with the Indi but much less with the rest of Tobii's product range.
 - (d) The price of the Parties' dedicated AAC solutions has remained broadly constant over the past 3 years, which is difficult to reconcile with the proposition that the competitive constraint from non-dedicated AAC solutions is growing.
 - (e) Consistent with this qualitative evidence, measured diversion from dedicated to non-dedicated AAC solutions is low, indicating that customers of the Parties' dedicated AAC solutions generally think of other dedicated AAC solutions as their next best options rather than non-dedicated AAC solutions.
- 5.76 Taken together, this evidence demonstrates that, in general, the competitive constraint exerted by non-dedicated AAC solutions on suppliers of dedicated AAC solutions is much weaker than that exerted by suppliers of dedicated AAC solutions on each other. As market definition is intended to capture the closer and most relevant constraints on the merging parties' products, we consider that non-dedicated AAC solutions do not form part of the same product market as dedicated AAC solutions. However, the evidence we have received also indicates that non-dedicated solutions may exert a somewhat stronger competitive constraint on some of the products supplied by Tobii (notably the Indi). We have taken this evidence into account when reaching provisional conclusions on horizontal unilateral effects (see paragraph 6.56).

5.77 Tobii submitted that ‘the analysis must be forward-looking and take account of likely technological and other developments which will make mainstream consumer devices even more suitable for delivery of AAC solutions for even those end-users with challenging needs’. However, Tobii has not specified what these developments could be. We have seen no evidence in Tobii’s internal documents indicating that the company is expecting any significant change of this kind in competitive conditions. The prices of dedicated AAC solutions have remained broadly stable over the past three years, which is not consistent with the proposition that the market is facing greater competitive pressure from non-dedicated AAC solutions.

Downstream geographic market

5.78 Suppliers have told us that having a local presence is important, both to understand the local health care system and to provide training and support to customers. We also note that UK customers only purchase dedicated AAC solutions from suppliers with a UK presence (involving at least a permanent local sales team) (paragraph 6.7). For these reasons, we consider that the relevant geographic market for dedicated AAC solutions is the UK.

Upstream markets

5.79 As part of our inquiry we have also considered three vertical theories of harm, which are summarised in paragraph 7.2. To support our assessment of these theories of harm we have considered distinct upstream markets for the supply of individual components to suppliers of dedicated AAC solutions.

5.80 The first of these vertical theories of harm relates to the input foreclosure of the Grid. The Grid is a piece of AAC software that performs a number of functions including text communication, symbol communication, access means control, computer control, environment control, and accessible apps. Even though certain types of AAC software do not perform all the functions performed by the Grid, our provisional view is to define the relevant product market on a wide basis as the upstream supply of AAC software¹²⁴ and to consider the substitutability of other AAC software with the Grid as part of our assessment of vertical effects. This is in line with Tobii’s submissions, which noted that there is likely to be distinct market for AAC software (for the

¹²⁴ This includes fully featured AAC software developed by suppliers of dedicated AAC solutions (Tobii, Smartbox, PRC and Jabbla), as well as symbol/text only AAC software provided by third parties (such as AssistiveWare and Therapy Box). See paragraphs 7.21 to 7.23.

purposes of the CMA's inquiry) and that this is a market for highly differentiated products.¹²⁵

- 5.81 The other two vertical theories of harm relate to the supply of eye gaze cameras to suppliers of dedicated AAC solutions. There is no or very limited demand-side substitution between eye gaze cameras and other access methods (for example switches), as these involve very different skills and motor limitations on the part of users.¹²⁶ On the supply-side, there are different sets of firms involved in the upstream supply of eye gaze cameras compared to other access methods. We therefore consider that the relevant product market is no wider than the supply of eye gaze cameras.
- 5.82 Tobii submitted that there is distinct market for eye gaze cameras (for the purposes of the CMA's inquiry) and that this comprises eye gaze cameras for all applications (for example in consumer electronics, vehicles, gaming, and virtual reality as well as AAC solutions).¹²⁷
- 5.83 Suppliers of dedicated AAC solutions source eye gaze cameras from only Tobii and four other firms (Alea, EyeTech, Irisbond, and LC Technologies). With the exception of Tobii, these firms focus on AAC applications. Their cameras need to be supported by AAC software and they engage with providers of dedicated AAC solutions to address challenges in eye tracking technology that are specifically relevant for AAC users. We consider that it is unlikely that other eye gaze technology suppliers do this to the same extent (see our assessment and evidence on the above points in Chapter 7, in particular paragraphs 7.58, 7.75, 7.111 and 7.112). No third party has referred to any other eye gaze cameras as an alternative to eye gaze cameras supplied by Tobii, Alea, EyeTech, Irisbond or LC Technologies.¹²⁸
- 5.84 In light of the above, our provisional view is that there are important demand-side and supply-side differences in the conditions of competition between eye gaze cameras supplied in AAC applications and those supplied in other applications. We therefore provisionally define a product market for the upstream supply of eye gaze cameras in AAC applications. While we used this product market definition, we also considered in our competitive assessment eye gaze suppliers in other applications.

¹²⁵ [Tobii's response to the Phase 1 decision](#), paragraph 37.

¹²⁶ This was confirmed by third parties.

¹²⁷ [Tobii response to the Phase 1 decision](#), paragraph 38.

¹²⁸ With the exception of eye gaze cameras supplied by SMI, which are no longer available following Apple's acquisition of SMI.

5.85 Suppliers of dedicated AAC solutions source AAC software and eye gaze cameras worldwide. We therefore consider that the relevant geographic market for these two products is worldwide.

Provisional conclusion on market definition

5.86 In conclusion, we have provisionally defined three frames of reference:

- (a) the supply of dedicated AAC solutions in the UK;
- (b) the upstream supply of AAC software worldwide; and
- (c) the upstream supply of eye gaze cameras in AAC applications worldwide.

6. Competitive Assessment – Horizontal unilateral effects

Introduction

6.1 Horizontal unilateral effects may arise when one firm merges with a competitor that previously provided a competitive constraint. The concern is that the removal of one party as a competitor could allow the merged entity to increase prices, or deteriorate other aspects of its offering that are valued by customers, for example the quality and range of products, or the level of service associated with these products. The merger might also reduce incentives for the merged entity to engage in R&D and innovate. Such non-price effects are particularly important in the context of AAC solutions since the availability of suitable products and customer support, and the improvement of such products over time, can have life-changing implications for end users. For simplicity, in the remainder of this document we use the expression ‘raising price’ as shorthand for all these possible price and non-price effects.

6.2 In this chapter we consider whether the Merger is likely to give rise to horizontal unilateral effects in the market for the supply of dedicated AAC solutions in the UK, allowing the merged entity to raise its prices relative to the counterfactual. We have defined dedicated AAC solutions as explained in paragraph 5.4.

Assessment framework

- 6.3 Where products are differentiated, as is the case for dedicated AAC solutions, unilateral effects are more likely where the merger firms' products compete closely, relative to other alternatives.¹²⁹ We have used a broad range of evidence to inform our assessment of the closeness of competition between the Parties relative to their competitors, including: representations from customers and suppliers, representations and internal documents from both Parties, and estimates of diversion ratios between the Parties based on customer responses.
- 6.4 In this chapter we first summarise Tobii's views on whether the Merger would lead to horizontal unilateral effects. We then provide our estimates of market shares in dedicated AAC solutions in the UK, then set out the evidence we obtained from third parties including the Parties' customers, competitors and other interested parties. We present our assessment of the Parties' internal documents. We then estimate diversion ratios between the Parties from the evidence we received. Lastly, we present our provisional findings on horizontal unilateral effects arising from the Merger.

Tobii's views

- 6.5 Tobii has submitted that the Merger is unlikely to lead to an SLC as a result of horizontal unilateral effects because the Parties are not particularly close competitors.¹³⁰ Tobii Dynavox had particular strengths in AAC hardware (including eye-tracking), [REDACTED]. By contrast, Smartbox had particular strengths in AAC software, but had a weak position in AAC hardware, as its products had [REDACTED]. [REDACTED]. Moreover, in Tobii's view, the merged entity will continue to face significant competition from numerous other suppliers of dedicated AAC solutions.
- 6.6 Tobii also submitted a series of more detailed comments on the evidence that we have considered in our investigation, which are discussed in paragraphs 6.44 and following, paragraphs 6.51 and following, and Appendix C.

Market shares

- 6.7 As described in Chapter 5 (Market Definition), we have provisionally defined a frame of reference for the supply of dedicated AAC solutions in the UK (combining dedicated AAC hardware, AAC software, access means, and

¹²⁹ [Merger Assessment Guidelines](#), paragraph 5.4.6.

¹³⁰ [Tobii's response to phase 1 decision](#).

support). We have produced estimates of market shares in dedicated AAC solutions using two sources of evidence: data provided by customers on their purchases of dedicated AAC solutions, and data provided by suppliers on their sales of dedicated AAC solutions in the UK. Table 6-1 below provides estimates of market shares based on the aggregation of customer responses.

Table 6-1 Estimated market shares in the supply of dedicated AAC solutions in the UK based on customer responses, 2016-18, by revenue and volume

	2016		2017		2018	
	(£)	(units)	(£)	(units)	(£)	(units)
Tobii	[10-20%] [£]	[0-10%] [£]	[20-30%] [£]	[10-20%] [£]	[10-20%] [£]	[10-20%] [£]
Smartbox	[50-60%] [£]	[30-40%] [£]	[40-50%] [£]	[30-40%] [£]	[40-50%] [£]	[30-40%] [£]
Liberator	30% [0-5%] [£]	[30-40%] [£]	30% [5-10%] [£]	40% [10- [£]	30% [5-10%] [£]	40% [10- [£]
Techcess		20% [£]		20% [£]		20% [£]
Abilia	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]
Inclusive technology	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]
Others	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]	[0-5%] [£]
Tobii + Smartbox	[60-70%] [£]	[40-50%] [£]	[60-70%] [£]	[40-50%] [£]	[60-70%] [£]	[50-60%] [£]

Source: CMA analysis of customer questionnaire responses

6.8 These results show that Smartbox, Tobii, Liberator and Techcess are the only significant suppliers of dedicated AAC solutions in the UK. In 2018 other suppliers accounted in aggregate for only [£] [0-10%] in value and [£] [0-10%] in volumes. The 'others' category in Table 6-1 includes a number of suppliers mentioned by some customers, namely Ability World, Therapy Box, Sensory Guru and Dad in a Shed. Based on these suppliers' websites and their own representations (summarised in paragraph 6.20), it is not clear that they actually supply dedicated AAC solutions, but we have kept them in our estimates of market shares as the position of the Parties does not materially vary whether or not they are included.¹³¹

6.9 Table 6-2 below provides estimates of market shares in the supply of dedicated AAC solutions in the UK based on the aggregation of competitor responses. These are broadly consistent with the estimates based on customer responses.

¹³¹ A small number of customers further included in their response purchasing information from additional suppliers not included, namely Currys/PC World, Nexgen Computers, E2I Limited, Logan Technologies, Access Audio, Unex and Atos Medical. Based on a review of their websites (where found), we concluded these suppliers were not active in the market for dedicated AAC solutions, and therefore excluded them from our estimates. The total revenue values provided for each these suppliers were all (mostly materially) below [£].

Table 6-2 Estimated market shares in the supply of dedicated AAC solutions in the UK based on supplier responses, 2016-18, by revenue and volume

	2016		2017		2018	
	(£)	(units)	(£)	(units)	(£)	(units)
Tobii	[0-10%][§]	[0-10%][§]	[10-20%][§]	[10-20%][§]	[10-20%][§]	[20-30%][§]
Smartbox	[50-60%][§]	[50-60%][§]	[40-50%][§]	[50-60%][§]	[40-50%][§]	[40-50%][§]
Liberator	{20-30%}[§]	{20-30%}[§]	{20-30%}[§]	{20-30%}[§]	{20-30%}[§]	{20-30%}[§]
Techcess	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]
Abilia	[§]	{10-20%}[§]	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]
Inclusive Technology	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]
Therapy Box	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]
Microlink	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]	[0-5%][§]
Tobii and Smartbox	[60-70%][§]	[60-70%][§]	[60-70%][§]	[60-70%][§]	[60-70%][§]	[60-70%][§]

Source: CMA analysis of competitor questionnaire responses

6.10 Both approaches to determining market shares show that in 2018 Tobii and Smartbox together had a market share in the supply of dedicated AAC solutions in the UK of between [§] and [§] [60-70%] by value, and between [§] and [§] [50-70%] by volume, depending on the source considered. Between 2016 and 2018, Tobii’s market share has increased, while Smartbox’s market share has slightly decreased. The market share of the next competitor, Liberator, is substantially smaller in size than that of the merged entity (between [§] and [§] [20-30%], depending on the source considered), and other competitors have only small market shares (combined less than [§] [5-10%] by value).

6.11 Tobii has submitted that observable outcomes, such as falling prices, low profits, and lots of innovation are diametrically opposed to the CMA’s view that the Parties hold very high market shares in the relevant markets. We disagree with the proposition that prices have been falling in the market (see paragraph 5.62), and we do not consider that there is any robust evidence that profits in this market are low (see Appendix C). In any case, whilst the question of whether current market outcomes are consistent with effective competition is relevant context to our inquiry, it is not determinative of whether the merger could lead to a substantial lessening of competition and poorer outcomes for customers and end users.

Evidence from third parties

Evidence from customers

6.12 This section summarises the evidence received from customers on the closeness of competition between the different suppliers of dedicated AAC solutions.

Views on the relative positioning of different suppliers

6.13 We asked customers to comment on the relative positioning, strengths and weaknesses of suppliers of dedicated AAC solutions (both in written answers to our questionnaire and in a series of bilateral calls). In general, customers identified Tobii, Smartbox and Liberator as the main suppliers of dedicated AAC solutions, with Techcess as a smaller, lesser-known competitor. Some customers listed alternative suppliers, but these were generally described as providers of lower tech and/or niche solutions.

6.14 These responses can be summarised as follows:

- (a) **Tobii** is generally considered a leader in eye gaze technology and its hardware is often praised. Some customers have also highlighted the quality of its language packages (Communicator and Snap), while others perceive them as inferior to the Grid. Many customers have told us that Tobii's customer service was [✂].
- (b) **Smartbox** has been consistently highlighted for its excellent customer service and the integration of customer feedback into their product development. It has also been praised for its collaborative approach with other suppliers, and the flexibility of its products to integrate elements from different suppliers to obtain the best solution. There is general consensus that Grid 3 is excellent, particularly because it is intuitive, easy to use, and familiar to most therapists and users. The views on its hardware offering were mixed and depended on the product considered.
- (c) **Liberator** has been consistently highlighted for its strong customer service. Its hardware offering is perceived as strong by most customers, particularly due to its reliability and robustness. The views on its software offering are more mixed. Some customers explained that its language system was harder to grasp than others, but offered more possibilities once mastered.
- (d) **Techcess is generally seen as a smaller player, with some good hardware characteristics and software features. However, lack of**

familiarity with its software Mind Express makes it difficult for it to gain popularity among therapists and users. Its software is also generally perceived as somewhat less intuitive than the Grid. Views on its customer support are also more mixed.

- (e) **Inclusive Technology** was mentioned by a few customers as an additional competitor in the supply of dedicated AAC solutions. However, it was generally perceived as a supplier of mostly lower priced, simpler solutions. NHS Lanarkshire specifically defined it as an ‘excellent supplier of peripherals and accessories to enable access to dedicated devices and mainstream technology’. CALL Scotland highlighted as a weakness the fact that it is ‘not an AAC specialist supplier’.
- (f) **Abilia** was also mentioned by some customers, primarily for its mid-tech Lightwriter device. Abilia’s Lightwriter is a text-to-speech device which is accessed either via direct typing or switch scanning of the keyboard.
- (g) Similarly, **Logan Technologies** was mentioned by two customers, as a supplier of lower range devices. Surrey County Council stated that Logan Technologies ‘doesn’t supply the high end tablet devices, so [is] completely different to the bigger players’. Treloar School and College told us that Logan Technologies supplies ‘unique and robust hardware which meets a specific need, not available from other suppliers’.
- (h) **Therapy Box** was mentioned by two respondents, mainly as a supplier of ‘niche products’ compatible with an iPad and sold with more limited customer support than for dedicated AAC solutions.¹³²

General views on the Merger

- 6.15 We provided the opportunity for customers to add any further comments or views about the Merger.¹³³ As shown in Table 6-3, the majority of customers raised concerns about the Merger. Only a few customers had positive views about the Merger, particularly relating to the ability to purchase Tobii devices with Smartbox’s Grid software installed.

¹³² Birmingham Community Healthcare, The Communication Advice Centre, Belfast

¹³³ The question read ‘If you have any other views or comments on the merger and its potential impact on the market for AAC solutions, please provide them below’.

Table 6-3 Summary of general views about the Merger

	<i>Number of customers</i>
Raised concerns about the merger	18
Had a positive view about the merger	4
Had no further comments	8
<i>Total number of respondents</i>	30

Source: CMA analysis of customer questionnaire responses

6.16 Most customers provided further details about the rationale for their concerns about the Merger. Table 6-4 below summarises the key topics identified and how frequently they were raised.

Table 6-4: Specific negative concerns about the Merger mentioned by respondents

	<i>Number of customers</i>
Deterioration of customer service	12
Reduction of product range/choice	12
Lower incentives for innovation	11
Increase in prices	6
Loss of access to the Grid	3
Loss of compatibility with Tobii cameras	3
Respondents who raised concerns	18

Source: CMA analysis of customer questionnaires

6.17 The most frequent concerns raised related to the potential deterioration of Smartbox's strong customer service, lower incentives for innovation and the reduction of available product range. For instance, Assistive Communication Service expressed some concern that Smartbox's offering might change as a result of the Merger, highlighting specifically the loss associated with the discontinuation of some of Smartbox's hardware announced following the Merger:

Smartbox is a very strong UK brand with excellent support, software and innovation. We have worked hard with them over many years and are concerned that this brand identity will change. There are currently less solutions available for us and we are having to look at alternative combinations of software and hardware. Smartbox dedicated devices were often a much more cost-effective product that met patients' needs.

6.18 Other topics raised related to the potential move from Smartbox's 'open software' approach to Tobii's more integrated business model. Assistive Communication Service expressed concerns about the potential loss of access to Smartbox's Grid software from competitors' devices.

As a service, it's important to stress that for our population of users we frequently use Grid 3 software as this is most clinically appropriate. Losing the ability to use this software across a range of hardware would be significantly detrimental for many of our users.

- 6.19 Some customers also commented on expected changes to the Parties' product range. Upon completion of the Merger, the Parties announced that they would immediately discontinue sales of Compass and Smartbox's hardware range (with the exception of the Grid Pad 12 and the Touch Pad), and that they would place Communicator 5 in maintenance mode.¹³⁴ Some customers told us that the products that would be discontinued had value to them. For example, Barnsley Hospital said that Smartbox's traditional hardware range, based on commercial tablets with additional equipment 'bolted on', included devices that could be used more flexibly and were lighter than other options, and that the termination of these products would leave a 'gap' in the market between 'really portable tablets' and a dedicated device. Similarly, with respect to the proposed termination of Communicator 5, RCAS said:

I understand that Tobii intend to drop Communicator 5 in favour of Grid3. There are some unique features within Communicator 5 which might then be lost if not first implemented in Grid3. These include a dwell free keyboard, user editable phrase categories, greater ability for the user to change settings using their chosen access method, and the ability to pause selections while video clips are played.

Evidence from competitors and resellers

- 6.20 We asked the Parties' competitors and resellers to identify their competitors and comment on their relative positioning, strengths and weaknesses. The responses were consistent with the views expressed by customers. In general, they identified the Parties, Liberator and Techcess as the only significant suppliers of dedicated AAC solutions. Other market participants were generally described as having a different positioning in the market.

- (a) **Liberator** stated that its main competitors in the provision of dedicated AAC solutions in the UK are Tobii and Smartbox, ranking itself as 'number 3' in the market. It further noted that 'there is a quite a big gap with the next on the list which is Techcess'. With regard to positioning, Liberator considers that Smartbox is particularly strong in software, while Tobii is

¹³⁴ [Smartbox's website \(2019\), 'Your questions answered'](#).

stronger in hardware. Liberator noted that its hardware offering is similar to that of its competitors (Tobii and Smartbox), while its software offering is different. Liberator's language solution is 'more difficult to learn at the beginning', but once the user masters it, it 'enables richer and more effective communication'. With regard to customer service, Liberator considers that Tobii's customer support is weaker than that of Smartbox.

- (b) **Techcess** told us that 'its main competitors (Tobii, Smartbox and Liberator) are much bigger and have more resources', which constrains its ability to grow, even with the backing of Jabbla (its parent company). Techcess also mentioned Abilia and Inclusive Technology, which 'do some work with schools, they have communication AC in their catalogue and have eye gaze cameras'. However, Techcess noted that Abilia and Inclusive Technology are not as big as its main competitors.
- (c) **Abilia** supplies a specific range of dedicated AAC devices, namely the 'LightWriter' series. Abilia's LightWriter includes a physical keyboard, which converts the text entered by the user into speech. Text entry can either be by direct typing or by 'switch scanning'. Therefore, this product is targeted specifically at literate users who are unable to speak but are able either to direct type into a keyboard or to switch scan a keyboard.
- (d) **Inclusive Technology** is a reseller of AAC products in the UK, focused on education customers. It buys AAC products at a discount from manufacturers and resells these products at list price to UK customers (as part of a broader portfolio of assistive technology products). [✂].
- (e) **Therapy Box** is a developer of AAC apps, sold through the AppStore and PlayStore in the UK and internationally. In the UK only, it is also a reseller and supplier of AAC solutions, since it sells bundles combining its apps with AAC hardware (dedicated and non-dedicated) from other manufacturers. Therapy Box told us that its products compete with The Grid for some customer groups, but Tobii is a more distant competitor because it focuses less on software.
- (f) **AssistiveWare** is the developer of Proloquo2Go, an AAC app sold on Apple's app store. AssistiveWare told us that its software competes with the Parties' software to the extent that it is available on iPads. However, AssistiveWare also noted that some users may require or prefer to use communication software on dedicated devices, and that it did not compete in that space.

(g) **Microlink** is a supplier of workplace adjustments for disabled employees, which also acts as a reseller of AAC products. In the last three years, Microlink has sold only seven units of dedicated AAC solutions in the UK.

6.21 We also contacted **DH2 Solutions**, **RSL Steeper** and **Medequip Assistive Technology**, which were listed by Smartbox as AAC resellers. DH2 Solutions told us that it generally does not have a presence in the AAC market, but its environmental control solutions sometimes include a simplified AAC function. RSL Steeper is an ATS provider which has recently entered the AAC market through the reselling of Abilia equipment in some regions of the UK. Medequip Assistive Technology told us that it does not compete with the Parties in the supply of dedicated AAC solutions.

Internal documents

6.22 This section summarises our analysis of the Parties' internal documents that we found relevant to the assessment of competition in the relevant market. We first summarise documents related to the Parties' monitoring of competitors, and then focus on the Parties' product development plans.

6.23 In our view, Smartbox' internal documents show that Smartbox benchmarks its offering of dedicated AAC solutions exclusively against other providers of dedicated AAC solutions, namely Tobii, Liberator and Techcess, while Tobii's internal documents show that Tobii's monitoring of competition focuses on Smartbox and [REDACTED]. The product development plans indicate that Smartbox had significant ambitions to improve its hardware further, while Tobii was concerned about a competitive gap between its software offering and that of Smartbox.

Monitoring and benchmarking of competitors

Smartbox documents

6.24 Smartbox provided a number of documents discussing its performance compared to competitors. [REDACTED]. We have observed that Tobii appears to be mentioned more often than Liberator, which in turns appears to be mentioned more often than Techcess. There is no mention of non-dedicated solutions.

6.25 These documents can be summarised as follows:

(a) A presentation initiating the development project for the Grid Pad in 2016 mentions three competitors: Tobii, Jabbla and Liberator.

- (b) A presentation prepared for Smartbox by a market research company and dated January 2017 discusses the results of a customer survey (focused on NHS hubs). The presentation discusses various aspects of Smartbox's performance (notably in terms of customer support). It exclusively compares this performance with that of Tobii.
- (c) A marketing plan for the Power Pad dated March 2017 identifies only three competitors for the device: Tobii, Liberator, and Techcess. The internal sales guide for the device lists only two competitors: Tobii and Liberator.
- (d) A presentation dated July 2017 and entitled 'Device comparison' compares the technical specifications of Smartbox devices with those of Liberator, Tobii, and Techcess. An updated version in Excel format dated July 2018 uses the same competitor set.
- (e) The internal sales guide for the Grid Pad 12 dated 2018 explains that the product is intended for 'people with complex communication and access needs'. [REDACTED] (Figure 6-1).

Figure 6-1 [REDACTED]

- (f) [REDACTED]The launch plan for [REDACTED] discusses competitors to these devices. [REDACTED]. The document does not mention other competitors.
- (g) Several documents present some information on individual competitors [REDACTED]. Another presentation dated October 2018 focuses on particular [REDACTED]. A 'competitor analysis note', also dated October 2018, provides more factual information [REDACTED]. An Excel spreadsheet dated 2017 compares the pricing of Smartbox products to [REDACTED]. There were no such documents focusing on other competitors.

6.26 A number of Smartbox's documents focus on competition in AAC software. In particular:

- (a) An Excel spreadsheet entitled [REDACTED]:
 - (i) [REDACTED];
 - (i) [REDACTED];
 - (ii) [REDACTED].

We note that the traditional suppliers of dedicated AAC solutions feature prominently in this benchmarking of competitor software. Other suppliers

only feature as suppliers of symbol and text AAC software and not as suppliers of fully-featured AAC software.

- (b) The sales guide for the Grid for iPad (which is sold by Smartbox as a symbol- and text-AAC software rather than fully featured AAC software), dated 2018, mentions a number of competitors. However, Tobii figures prominently in this analysis, with three different pieces of software presented as competing with the Grid for iPad.

Tobii documents

6.27 Tobii also provided a number of internal documents discussing competition, which are summarised below. Tobii monitors a number of competitors, including [REDACTED]. However, these other suppliers are generally described as focusing on particular segments of the market, and Tobii's monitoring of competition for dedicated AAC solutions generally focuses on Smartbox and [REDACTED]. The documents indicate that Tobii regarded Smartbox's hardware as inferior to its own, and expected to be able to maintain this gap in the future. Despite this relative perceived weakness in hardware, the documents show that Tobii considered Smartbox as a strong competitor, both due to the attractiveness of its wrapped tablets for certain customers and the quality of its software. There are examples of Tobii expanding its product range and improving its software specifically in response to competition from Smartbox (see paragraph 6.28c). The sequence of documents indicates that, over the 18 months preceding the merger, Tobii was increasingly concerned by the competitive threat posed by Smartbox (see paragraph 6.29), and the documents issued shortly before the Merger place more weight on Smartbox than on other competitors (see for example paragraph 6.281(e)). [REDACTED] (see paragraph 6.281(g)).

6.28 These documents can be summarised as follows:

- (a) [REDACTED].¹³⁵

Figure 6-2[REDACTED]

[REDACTED]

- (b) [REDACTED].

- (c) [REDACTED].

- (d) [REDACTED].

¹³⁵ [REDACTED].

(e) [REDACTED]:

[REDACTED]

[REDACTED]:

[REDACTED].

This shows that Tobii considered Smartbox as a competitor even before it introduced its purpose-built hardware range.

(f) [REDACTED].

(g) [REDACTED].

(h) [REDACTED].

6.29 [REDACTED].

Figure 6-3 [REDACTED]

[REDACTED]

Table 6-5 [REDACTED]

[REDACTED]

Product development plans

Smartbox documents

6.30 Smartbox provided a number of documents outlining the company's thinking on its hardware strategy. These documents indicate that the company has [REDACTED] in the development of new hardware.

6.31 The documents can be summarised as follows:

(a) A presentation on Smartbox's hardware strategy dated October 2017 states that the goal is [REDACTED]. It lists the top suppliers of AAC hardware being: [REDACTED] .

(b) A presentation discussing product strategy in March 2018 outlines various hardware development projects, distinguishing between 'large' and 'small' devices. Projects for large devices include [REDACTED]. Projects for small devices include a [REDACTED].

6.32 Tobii has submitted that [REDACTED]. As discussed in Chapter 4, our provisional conclusion is that in the counterfactual scenario Smartbox is financially able to compete as it had done pre-Merger, including funding [REDACTED]. We further note

that Smartbox has recently introduced the Grid Pad 12, and that this has been successful with some UK customers. [REDACTED]¹³⁶ For these reasons, we consider that Smartbox's plans to develop its hardware range are credible.

Tobii documents

6.33 Tobii's documents related to product development plans indicate that it has been conscious of a competitive gap between its software offering and that of Smartbox. [REDACTED].

6.34 [REDACTED]:

(a) [REDACTED]:

[REDACTED].

(b) [REDACTED]:

[REDACTED].

(c) [REDACTED]

[REDACTED]

(d) [REDACTED].

(e) [REDACTED].

(f) [REDACTED].

6.35 [REDACTED]..

Estimates of diversion ratios

6.36 In differentiated products markets, the CMA often uses diversion ratios to inform its assessment of the risk of unilateral effects. The diversion ratio from Tobii to Smartbox is the proportion of Tobii's sales of dedicated AAC products that would divert to Smartbox. The diversion ratio from Smartbox to Tobii is defined symmetrically. Diversion ratios are useful in that they have a direct interpretation in term of incentives to raise price.¹³⁷ However they are difficult

¹³⁶ [Unwinding Order](#)

¹³⁷ The economic intuition underpinning this framework is best understood with a simple 'thought experiment'. Suppose that Tobii is contemplating a price increase for its dedicated AAC solutions in the UK. The customers who really value the features of Tobii's products will continue to buy these products after the price rise, but other customers who have a weaker preference for these products will 'divert' to other solutions (these customers are often referred to as 'marginal customers'). The set of alternative solutions that marginal customers can divert to includes both other dedicated AAC solutions sold by competing suppliers, and mainstream devices. Tobii will

to estimate with precision and are therefore best interpreted alongside other evidence, and this is the approach we have taken in this case.

6.37 As explained in paragraph 5.22, we have estimated diversion ratios based on responses from NHS hubs to our written questionnaire. Table 6-6 below presents (unweighted) average diversion ratios from each party to alternative suppliers.

Table 6-6 Unweighted average diversion ratios from the Parties' products

<i>Alternative supplier</i>	<i>Scenario 1: Tobii AAC solutions no longer available</i>	<i>Scenario 2: Smartbox AAC solutions no longer available</i>
Tobii	0%	[30-40%]
Smartbox	[50-60%] [☒]	0%
Liberator	[20-30%] [☒]	[30-40%] [☒]
Techcess	[10-20%] [☒]	[20-30%] [☒]
Therapy Box	[0-5%] [☒]	[0-5%][☒]
Consumer Tablets	[5-10%] [☒]	[0-5%][☒]

Source: CMA analysis of customer questionnaire responses

6.38 We found the diversion ratio from Tobii's dedicated AAC products to Smartbox's products to be [☒] [50-60%], and the diversion ratio from Smartbox's dedicated AAC products to Tobii's products to be [☒] [30-40%]. That is, when NHS hubs buy a dedicated AAC solution from Tobii, in more than half of the cases the closest alternative is a product from Smartbox. Conversely, when NHS hubs buy a dedicated AAC solution from Smartbox, in [30-40%] of the cases the closest alternative is a product from Tobii. This indicates that the Parties are close competitors, and is consistent with the qualitative evidence from customers. The estimated diversion ratios also support the position that only Liberator and, to a lower extent, Techcess exert any competitive pressure on the Parties. Other suppliers receive minimal diversion.

6.39 Table 6-7 below presents 'weighted' diversion ratios, where diversion responses have been weighted by each customer's reported 2016-18 expenditure on the Parties' products.

increase the price until the extra revenue earned on the customers who continue to buy its products (this can be thought of as the 'benefit' of the price increase) is offset by the lost margin on the customers who divert to other solutions (this can be thought of as the 'cost' of the price increase). In this context, the effect of the Merger can be understood as reducing the cost of a price increase: before the Merger, the cost of a price increase reflects diversion to all other solutions, including Smartbox; after the Merger, that cost is reduced since the merged entity can 'recoup' the margin associated with customers who divert to Smartbox. Therefore, the incentive to increase prices for Tobii post-merger is proportionate to the share of Tobii's marginal customers who regard Smartbox products as their second-best option (the 'diversion ratio').

Table 6-7 Average diversion ratios from the Parties' products, weighted by expenditure

<i>Alternative supplier</i>	<i>Scenario 1: Tobii AAC solutions no longer available</i>	<i>Scenario 2: Smartbox AAC solutions no longer available</i>
Tobii	0%	[30-40%] [£]
Smartbox	[40-50%] [£]	0%
Liberator	[30-40%] [£]	[30-40%] [£]
Techcess	[10-20%] [£]	[20-30%] [£]
Therapy Box	[0-5%] [£]	[0-5%] [£]
Consumer Tablets	[0-5%] [£]	[0-5%] [£]

Source: CMA analysis of customer questionnaire responses

6.40 In general, weighting diversion ratios is a more robust methodology, since it places more weight on the responses of customers who spend more on the Parties' products. However, in this case the number of responses available to calculate weighted diversion ratios (10 responses) is slightly smaller than the number of responses available to calculate unweighted diversion ratios (12 responses). This is because two of the NHS hubs that responded to the diversion question did not provide any expenditure data. The 10 respondents who did provide expenditure data bought approximately [£] million worth of dedicated AAC solutions from the Parties (representing [£][30-40%] of the Parties' sales of dedicated AAC solutions in the UK). Considering both metrics and rounding results, the estimates set out above imply a diversion ratio from Tobii to Smartbox of [40-50%], and a diversion ratio from Smartbox to Tobii of [30-40%].

6.41 To help interpret these diversion ratios, we have combined them with estimates of the variable margins of each party to form an estimate of the Gross Upward Price Pressure Index (GUPPI). The GUPPI is a simple indicator that consists of a multiplication of the diversion ratio from company A to company B by company B's margins. The GUPPI provides an indication of the incentive of the merged entity to raise price unilaterally post-merger.

6.42 The Parties have provided estimates of their variable margins on sales of dedicated AAC solutions. These are [£] for Tobii and [£] for Smartbox. The GUPPI from Tobii to Smartbox is therefore [£] [10-20%]. The GUPPI from Smartbox to Tobii is [£][10-20%].

6.43 While the threshold GUPPI level at which competition concerns may arise will vary, depending on all the circumstances of a given case, we note that these GUPPI figures are high on any basis (particularly in comparison to previous

merger cases where the CMA has used a GUPPI threshold to indicate whether a merger is likely to give rise to price rises).¹³⁸

Tobii's submissions on GUPPI

6.44 In response to our working papers, Tobii submitted that:

- The CMA's GUPPI results should be disregarded because the diversion ratios on which they are based are unusable;
- The survey of end users carried out by Tobii provides alternative diversion ratios which are consistent with much lower GUPPI results;
- The considerable doubt over the plausibility of the CMA inputs to the diversion ratios means careful regard must be paid to the sensitivity of the GUPPI results to the parameter values;
- Significant changes in product offer and mix occurring in the market for AAC solutions means that care must be exercised when drawing inferences from GUPPI analyses which are static in nature.

Our assessment

6.45 We have discussed the first of these points in paragraph 5.25 and following of Chapter 5. Our estimates of diversion ratios reflect responses from customers who account for roughly half the Parties' sales in the UK, and our questionnaire was designed to limit the risk of bias. For these reasons we consider that it is appropriate to put some weight on this evidence.

6.46 We have discussed the second of Tobii's points in Appendix C to this document. In our view, the small sample size achieved by Tobii and the lack of transparency around the recruitment and composition of its panel mean that we cannot put any weight on this evidence.

6.47 With respect to the third point, we consider that our finding that GUPPI levels are high relative to typical thresholds would hold even if diversion ratios were lower than our estimates. Even if the diversion ratios were half of what we estimated, the GUPPIs would still be approximately [5-10%], a level at which the CMA typically finds competition concerns.

6.48 With respect to the fourth point, while we recognise that competition from non-dedicated AAC solutions has prompted Tobii to launch the Indi, we have seen

¹³⁸ For example, in three recent cases the CMA has considered that a GUPPI in excess of 10% gives rise to an expectation of a SLC: Ladbrokes/Coral (2016), Greene King/Spirit (2015), and Eurotunnel (2013).

no other evidence indicating that competitive dynamics have changed materially in the market for dedicated AAC solutions, or were about to change materially in the near future. The prices of the Parties' dedicated AAC solutions have remained broadly stable over the past 3 years (see paragraph 5.62). The volumes of high-end dedicated AAC solutions sold by Tobii have remained broadly stable despite the introduction of the Indi (see paragraph 5.64). Neither Smartbox's nor Tobii's internal documents forecast any significant changes in the competitive outlook. Tobii's internal documents [REDACTED], but this is associated with high volume forecasts and does not seem to be in response to a new competitive threat.

- 6.49 Overall, we consider that it is appropriate to put some weight on this evidence, albeit it needs to be assessed alongside other evidence sources. The key findings from this analysis are that: the diversion from Tobii accrues primarily to Smartbox, which indicates that Smartbox is Tobii's closest competitor; the diversion from Smartbox is more evenly spread between its three main competitors, but diversion to Tobii remains significant, indicating Tobii is a close competitor to Smartbox; and the combination of these diversions with the Parties' margins imply that the merged entity would face a strong incentive to increase price post-merger.

Other evidence submitted by Tobii

- 6.50 Tobii submitted a number of reports and analyses that it considered relevant to our competitive assessment. We assess the submission on the closeness of competition below, and assessments of other submissions (where not previously discussed in this chapter) are in Appendix C.

Tobii submission on the closeness of competition

- 6.51 Tobii asked its UK sales team to provide a list of all the marketing activities it undertook in the last three years and the competitors it faced at each of these events. Marketing activities included awareness days, clinics, conferences, exhibitions, individual assessments and training events. The information was collected specifically for the purpose of this inquiry and based largely on memory recall. Tobii submitted that Tobii Dynavox frequently came up against AAC solutions provided using consumer tablets, and a broad range of suppliers who both build AAC solutions based on purpose-built devices and develop AAC solutions based on consumer tablets. Tobii submitted that Tobii Dynavox came up against these suppliers more than it came up against Smartbox, and that this evidence suggests that Tobii and Smartbox are not

each other's closest competitors, and may not even be particularly close competitors.¹³⁹

Our assessment

6.52 Tobii has provided no information on the theme or focus of these marketing events and limited information on how this information was collected (eg how the request to its sales team was framed). Based on what we have seen, we find it difficult to draw any strong inference on closeness of competition between the Parties from this evidence. It is not clear that the marketing events included in this analysis focused on users of dedicated AAC solutions. Tobii asked its sales team to consider 'which other product(s) or competitor(s) the customer would have considered'. It is not clear how the respondent would have interpreted this question in the context of a marketing event (eg a conference or an exhibition) where the sales person might have spoken with a broad range of customers, whose interests may have ranged across a variety of AAC solutions and components. We recognise the fact that many customers use non-dedicated solutions to meet their AAC needs,¹⁴⁰ and as such we do not find it surprising that such solutions (or suppliers of their components) are present at marketing events. It does not follow that such solutions are regarded as good alternatives by customers of dedicated AAC solutions.

Our provisional findings on horizontal unilateral effects

6.53 Our provisional findings can be summarised as follows:

- (a) The Parties' market shares in the supply of dedicated AAC solutions in the UK are approximately [REDACTED] [10-20%] for Tobii and [REDACTED] [40-50%] for Smartbox. This gives them a combined market share of [REDACTED]% [60-70%] and indicates that they have a very significant market presence at present.
- (b) Most customers identify the Parties and Liberator as the main suppliers of dedicated AAC solutions in the UK, with Techcess mentioned as a smaller, lesser-known competitor.
- (c) The majority of the customers who responded to our questionnaire raised concerns about the impact of the Merger. Most of the concerns raised

¹³⁹ [REDACTED]

¹⁴⁰ See paragraph 5.6.

related to potential deteriorations in quality, service (including customer support) and/or the range of products available.

- (d) Submissions from competitors and resellers were consistent with the views expressed by customers. In general, they identified the Parties, Liberator and Techcess as the only significant suppliers of dedicated AAC solutions in the UK. Other market participants were generally described as providing different types of products, or focusing on more specific customer segments.
- (e) Based on the internal documents we have seen, Smartbox benchmarks its offering of dedicated AAC solutions exclusively against the three other providers of dedicated AAC solutions, namely Tobii, Liberator, and Techcess. Tobii appears to be mentioned more often than Liberator, which in turn appears to be mentioned more often than Techcess.
- (f) Based on the internal documents we have seen, Tobii's monitoring of competition for dedicated AAC solutions focuses on Smartbox and [REDACTED]. The documents show that Tobii considered Smartbox as a strong competitor, in particular due to the quality of its software. There are examples of Tobii expanding its product range and improving its software specifically in response to competition from Smartbox. The sequence of documents indicates that, over the 18 months preceding the merger, Tobii was increasingly concerned by the competitive threat posed by Smartbox. [REDACTED].
- (g) Smartbox's product development plans indicate that, in the period leading up to the Merger, it had [REDACTED] to improve its hardware.
- (h) Tobii's product development plans indicate that, in the period leading up to the Merger, it was conscious of a competitive gap between its software offering and that of Smartbox. [REDACTED].
- (i) The closeness of competition indicated by third party views and the Parties' internal documents and development plans is also supported by our estimates of the diversion ratios from Tobii's dedicated AAC solutions to Smartbox's products (at [REDACTED] [50-60%]) and from Smartbox's dedicated AAC solutions to Tobii's products (at [REDACTED] [30-40%]). Combining these diversion ratios with estimates of variable margins gives an estimate of the Gross Upward Pricing Pressure Index (GUPPI) of around [REDACTED] [10-20%] for both Parties, and even at materially lower diversions (around half the level we have estimated) the Parties would have a strong incentive to raise prices post-merger. Diversion to other suppliers indicates that only

Liberator and, to a lower extent, Techcess, represent a meaningful constraint on the Parties.

- (j) As discussed in Chapter 5, the competitive constraint exerted by non-dedicated solutions on suppliers of dedicated AAC solutions is much weaker than that exerted by suppliers of dedicated AAC solutions on each other. As such, the competitive interaction with non-dedicated solutions is unlikely to alleviate the effects of the removal of Smartbox as a competitor to Tobii.

6.54 Overall, our provisional view is that this evidence, taken together, shows that the Parties were close competitors in the supply of dedicated AAC solutions in the UK pre-merger, and that their competitive interaction may have intensified as Smartbox had plans to improve its hardware while Tobii was working to improve its software. Following the Merger, PRC (Liberator) would be the only significant remaining constraint on the merged entity, with Techcess exerting a lower degree of constraint.

6.55 We also note that one manifestation of a possible SLC, namely a reduction in the range of products available to customers,¹⁴¹ had been decided upon prior to completion of the Merger, and was about to materialise when the CMA initiated its investigation (paragraph 6.19). Some customers complained about the effect of this range reduction. Our provisional view is that this is a concrete manifestation of an SLC caused by the Merger that would directly harm customers.

6.56 As discussed in paragraph 5.50, Tobii's internal documents indicate that it developed the Indi [X] to compete against non-dedicated AAC solutions, and Tobii's transaction data suggests that the introduction of the device has [X] on sales of other devices. Accordingly, our provisional view is that the Indi competes in a discrete segment of the dedicated AAC market in which the competitive constraints from non-dedicated AAC solutions are stronger than in the rest of the dedicated AAC market. Given these enhanced competitive constraints in this segment, we consider it unlikely that horizontal unilateral effects would arise in this particular segment.

¹⁴¹ See paragraph 6.19. We also note that the CMA's [unwinding order](#) applied to the discontinuation of certain Smartbox projects and the shelving of certain development projects.

Provisional conclusions on the horizontal unilateral effects of the Merger

6.57 For the reasons given above, we provisionally conclude that the Merger has and may be expected to result in an SLC in the supply of dedicated AAC solutions in the UK.

7. Competitive Assessment - Vertical Effects

7.1 The Parties are involved in different levels of the supply chain: upstream in the supply of AAC software and eye gaze cameras in AAC applications, and downstream in the supply of dedicated AAC solutions.¹⁴² We considered the interrelationship between these different markets, and the extent to which the merged entity may be able to reduce competition by withholding or deteriorating access to an important input or route to market to its rivals.¹⁴³ We considered whether such vertical concerns arise from the merged entity's position in AAC software (specifically Smartbox's Grid software) and in eye gaze cameras (supplied by Tobii).

7.2 We assessed whether the Merger has resulted, or may be expected to result, in a SLC due to the following vertical effects:

- (a) Input foreclosure¹⁴⁴ by the merged entity of Smartbox's Grid software to the Parties' rivals in the downstream supply of dedicated AAC solutions in the UK.
- (b) Customer foreclosure by the merged entity of Tobii's eye gaze camera competitors upstream on a worldwide basis.
- (c) Input foreclosure by the merged entity of Tobii's eye gaze cameras to the Parties' rivals in the downstream supply of dedicated AAC solutions in the UK.

7.3 Below we set out our assessment of these vertical effects, starting with our assessment framework.

¹⁴² The Parties are also active in dedicated AAC hardware but they do not supply it as an individual component to competitors.

¹⁴³ We use the terms 'rivals' and 'competitors' interchangeably

¹⁴⁴ In relation to these vertical theories of harm 'foreclosure' means weakening the ability of rivals to compete post-merger.

Assessment framework

- 7.4 Vertical theories of harm involve the merged entity harming the ability of its rivals to compete post-merger, for example through:
- (a) Input foreclosure: raising effective prices or worsening non-price aspects, such as quality, of an input to its rivals (partial input foreclosure), or refusing to supply them completely (total input foreclosure); and
 - (b) Customer foreclosure: using the merged entity's position downstream in the value chain to affect the routes to market available to its competitors upstream, leading customers to divert to its own upstream products as a result.
- 7.5 Such actions may harm the ability of the merged entity's rivals to provide a competitive constraint on the merged entity. The CMA only regards foreclosure to be anticompetitive where its effect is to reduce competition sufficiently to give rise to an SLC in the affected market, not where it merely disadvantages one or more competitors.
- 7.6 The CMA's approach to assessing these vertical theories of harm involves three steps.¹⁴⁵
- (a) Assessing the **ability** of the merged entity to foreclose competitors: for input foreclosure, we considered the extent to which rivals can use alternative inputs to the merged entity's products. For customer foreclosure, we considered to what extent competitors have alternative routes to market that are not dependent on the merged entity.
 - (b) Assessing the merged entity's **incentive** to foreclose competitors: an input foreclosure strategy implies a loss of profits in the input market upstream (from the lost sales of the input to competitors) but a gain of profits in the market downstream (from customers' switching to the merged entity's products). We considered these gains and losses in determining whether input foreclosure would be profitable, taking into account the relative size of the margins upstream and downstream and other factors. We undertook a similar assessment for customer foreclosure. We also considered how the merger changes the incentives to foreclose rivals.
 - (c) Assessing the overall **effect** of the foreclosure strategy on competition in the affected market. Examples of effects in this case would be: the extent

¹⁴⁵ See [Merger Assessment Guidelines](#), paragraph 5.6.

to which an input foreclosure strategy of Smartbox's AAC software and/or Tobii's eye gaze cameras may reduce the ability of competitors to compete post-merger and increase further the merged entity's already strong position in the supply of dedicated AAC solutions in the UK; and the extent to which a customer foreclosure strategy towards Tobii's eye gaze camera rivals may reduce the ability of these rivals to compete post-merger and increase further Tobii's already strong position in the supply of eye gaze cameras worldwide (and possibly consequently the merged entity's position in dedicated AAC solutions in the UK).

7.7 Below we apply the CMA's framework on ability, incentives and effect to each of the vertical theories of harm.

Input foreclosure of Smartbox's AAC software

7.8 In this section we consider whether the merged entity would be likely to harm or weaken competitors in the downstream supply of dedicated AAC solutions in the UK by making their access to Smartbox's Grid software more expensive or more difficult (input foreclosure of the Grid software). We consider whether such vertical effects are likely in terms of the ability and incentives of the merged entity to foreclose its downstream rivals from the Grid in this way, and whether the effects of this strategy are likely to lead to a substantial lessening of competition in the supply of dedicated AAC solutions in the UK.

Ability (input foreclosure of Smartbox's AAC software)

7.9 We have focused on the ability to foreclose the Parties' most significant competitors in the downstream supply of dedicated AAC solutions in the UK, Liberator and Techcess (as identified in our assessment of horizontal unilateral effects in Chapter 6).

7.10 In this section we consider:

- (a) the feasibility of a number of mechanisms to foreclose downstream rivals from the Grid; and
- (b) the extent to which downstream rivals can avoid being foreclosed by using alternative software to the Grid.

Grid foreclosure mechanisms

7.11 We considered the ability of the merged entity to foreclose rival suppliers of dedicated AAC solutions in the UK from the Grid in the following ways:

- (a) Selling the Grid on worse terms to these competitors (partial input foreclosure);
- (b) Reducing the extent to which the Grid supports rival dedicated AAC hardware (partial input foreclosure) such that the Grid runs less smoothly on rivals' devices and/or does not support all features of their hardware (eg their eye gaze cameras);
- (c) Producing different versions of the Grid software for dedicated AAC solutions:
 - (i) a fully featured version that is only available on the merged entity's dedicated AAC solutions; and
 - (ii) one with fewer features that is available on a standalone basis and is the only version available to competitors (partial input foreclosure).¹⁴⁶
- (d) Restricting the sale of the Grid software by ceasing to license the Grid to these competitors (total input foreclosure); and
- (e) Making the Grid software incompatible with hardware from its competitors (total input foreclosure).

7.12 Our provisional view is that there is more limited scope for the last three of these foreclosure mechanisms (listed above at paragraph 7.11(c) to (e)) to arise on the basis that:

- (a) Producing another version of the Grid would increase software development costs and add complexity to the software development process.¹⁴⁷
- (b) If the merged entity ceased to license the Grid to its downstream rivals, these competitors could still buy and resell a retail version of the Grid (albeit at a higher price).¹⁴⁸ This type of total foreclosure would therefore not be feasible in practice.

¹⁴⁶ Smartbox already supplies Grid for iPad, which has fewer features than the Grid 3 windows software that Liberator and Techcess use as part of their dedicated AAC solutions. We considered the feasibility of developing another version of the Grid, specifically another version of Grid 3 for the windows operating system, as a mechanism for partially foreclosing Liberator and Techcess from the fully featured version of Grid 3 that they currently use.

¹⁴⁷ Smartbox told us that it had previously maintained multiple versions of the Grid (specifically its Grid 2 software) but that '[×]' and it was a lot of work to maintain a separate version' [×].

¹⁴⁸ Under an EU directive, a copyright holder of software cannot use its copyright to oppose the resale of this software, including for software downloads. See *UsedSoft GmbH v Oracle International Corp*, Court of Justice of the European Union, [Judgment in Case C-128/11](#), 3 July 2012.

- (c) It would be difficult to make the Grid completely incompatible with rival dedicated AAC hardware given that the Grid runs on Windows 10 (and other versions of Windows), an operating system used by the merged entity and its rivals in the supply of dedicated AAC solutions. This difficulty is consistent with the lack of concerns by competitors over this type of foreclosure mechanism.¹⁴⁹

7.13 In our assessment below we have therefore focused on the first two foreclosure mechanisms above: (i) selling the Grid on worse terms to downstream rivals; or (ii) reducing the extent to which the Grid supports rival dedicated AAC hardware.¹⁵⁰

Selling the Grid on worse terms to downstream competitors

7.14 We estimated the extent to which the merged entity could increase the wholesale prices of the Grid, taking into account its pricing of the retail version of the Grid (which downstream competitors could buy). While we estimate that the price rises of the Grid to competitors would account for around [redacted] [0-5%] of the current price of a dedicated AAC solution they sell with the Grid, the price rises could be significantly higher if the merged entity set higher retail prices of the Grid.

- (a) The merged entity could readily raise the wholesale prices it charges downstream competitors for the Grid up to its retail price level. Based on the 2018 retail price, we estimated that the increased cost to Liberator and Techcess of paying this higher price would be approximately [redacted].¹⁵¹ If this is passed on to customers, it would equate to a price increase of around [redacted] [0-5%] of the prices of the dedicated AAC solutions sold by Liberator and Techcess with the Grid (which vary from around £4,000 to £7,500).
- (b) The merged entity could increase its retail prices of standalone copies of the Grid in order to increase the wholesale prices it charges downstream competitors for the Grid (wholesale prices cannot exceed retail prices as otherwise competitors could opt to pay the lower retail price). In such a scenario price rises faced by competitors could account for significantly more than [redacted] [0-5%] of the price of a dedicated AAC solution. This could

¹⁴⁹ For example, Techcess has explained that the Grid operates in a Windows 10 environment so every tablet that runs Windows 10 can run the Grid [redacted].

¹⁵⁰ We note that Tobii has stated that it has made a public commitment to continue to license the Grid to third parties (See [Tobii Response to the Issues Statement](#), paragraph 57). This public commitment does not prevent the merged entity from foreclosing downstream rivals from the Grid. It is not an irreversible commitment and does not rule out the merged entity from raising prices of the Grid to its rivals or reducing the extent to which the Grid supports rival hardware.

¹⁵¹ CMA analysis of Smartbox's transaction data.

be a credible strategy given the scope for this to increase the merged entity's profits from taking sales from its rivals downstream in dedicated AAC solutions, where the margins are higher than in AAC software (see paragraph 7.36 below). The merged entity could also minimise any losses of its retail sales of the Grid from an increase in the Grid's retail prices by offering discounts off its standard retail price to key retail customers.

Reducing the extent to which the Grid supports rival dedicated AAC hardware

7.15 We consider that the merged entity could reduce the extent to which the Grid supports the dedicated AAC hardware of rivals, for example how smoothly the Grid runs on a device and what hardware features it supports. We consider this to be a credible strategy, as supported by the following evidence:

- (a) Smartbox told us that downstream competitors have requested that [redacted]. This is consistent with a Smartbox software strategy document on the Grid from November 2017, which includes supporting all features of competitor hardware under the heading 'expected quality'. This strategy document also refers to integration of the Grid with new eye gaze cameras. The merged entity could withdraw this support or charge downstream competitors for it.
- (b) Based on what Tobii has told us, we consider that how well the Grid works on a dedicated AAC solution depends on work undertaken by Smartbox. Specifically, Tobii told us that Smartbox has done a 'fairly thorough job' to make sure that Grid works really well on its devices, noting the 'really smooth integration, not just for the eye tracker, but the different buttons, the infrared port, etc'.

The extent to which downstream rivals can avoid being foreclosed by using alternative software to the Grid

7.16 Tobii submitted that the Grid software is not an essential or 'must-have' input and referred to other alternatives including software developed in-house by rival suppliers of dedicated AAC solutions and other software that competitors could license or develop.¹⁵² However, vertical effects from a merger can still arise when an input is important but not 'must have' or essential. The relevant question is to what extent downstream rivals could avoid being foreclosed by switching to alternative inputs.¹⁵³ Below we therefore consider how important

¹⁵² [Tobii response to phase 1 decision](#), paragraphs 93-96

¹⁵³ This is the approach taken in previous CMA merger inquiries, for example in the CMA's phase 2 merger inquiry on [Tesco/Booker \(2017\)](#). In the vertical effects assessment of that case, the CMA considered the extent to which retailers could switch away wholesale purchases from Booker to alternative wholesalers rather than having

the Grid is to rival suppliers of dedicated AAC solutions in the UK and the extent to which these rivals could use alternative software.

7.17 Table 7-1 below shows the dedicated AAC hardware and AAC software combinations (including the Grid) offered by the merged entity (Tobii and Smartbox) and their competitors in the UK. Suppliers of dedicated AAC solutions offer their own in-house AAC software as part of their dedicated AAC solutions. In Liberator’s case, this is software from its parent company (see Table 7-1), PRC. For Techcess, this is Mind Express software from its parent company, Jabbla. Smartbox is the only supplier of dedicated AAC solutions that supplies its software to rivals to be used as part of their own dedicated AAC solutions.

Table 7-1: UK software offering in dedicated AAC solutions

Software	Software Developer	Dedicated AAC providers that offer the software on their hardware			
		Smartbox	Tobii	Liberator (part of PRC)	Techcess (part of Jabbla)
Grid 3	Smartbox	Yes	Yes*	Yes	Yes
Communicator 5	Tobii	-	Yes	-	-
Unity	PRC	-	-	Yes	-
Essence	PRC	-	-	Yes	-
LAMP	PRC	-	-	Yes	-
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Mind Express 4	Jabbla	-	-	-	Yes

Sources: [REDACTED] Information from Techcess and Liberator, [Techcess online price list](#), [Liberator UK website](#), [Smartbox UK website](#), [Tobii Dynavox UK Website](#) and [REDACTED].

- indicates that the software is not offered by a dedicated AAC provider on its own hardware. The software may still be compatible with the hardware if both are Windows based. * Tobii has explained that the Grid is offered on a range of its devices. It was offered at no extra cost on the I-110, I-series and EyeMobile Plus devices from 24 August 2018. From 6 November 2018, Tobii started automatically adding the Grid to these devices. This stopped on 1 of April 2019, when Tobii began offering the Grid as a separate SKU which had to be separately requested and which incurred an extra cost. [REDACTED]

7.18 Liberator’s supply of dedicated AAC hardware with the Grid installed accounts for [REDACTED] [20-30%] of Liberator’s sales of dedicated AAC solutions in the UK. This share is even higher for Techcess, whose sales of dedicated AAC hardware with Grid software account for [REDACTED] [30-40%] of its sales of dedicated AAC solutions in the UK.

7.19 The fact that Liberator and the Techcess offer the Grid, even when they have in-house alternatives (see Table 7-1), suggests that the Grid is an important driver of their sales of dedicated AAC solutions. Liberator and Techcess have confirmed this by noting that they may lose around [REDACTED] [10-30%] of their sales

a narrower focus on whether Booker’s wholesale offering was ‘must have’. The CMA’s approach is also reflected in the CMA’s [Merger Assessment Guidelines](#), paragraph 5.6.10(b).

of dedicated AAC solutions in the UK if the Grid is no longer offered as a software option on their dedicated AAC solutions:

- (a) Liberator estimated that it would [redacted] of its sales of devices that it had made with the Grid installed, therefore losing [redacted][20-30%] of its total sales of dedicated AAC solutions.
- (b) Techcess estimated that it would lose around [redacted] [40-60%] of its sales of devices that it had made with the Grid installed,¹⁵⁴ therefore losing [redacted] (10-30%) of its total sales of dedicated AAC solutions.¹⁵⁵

7.20 These estimated losses suggest that Liberator and Techcess would have limited ability to switch away from the Grid to other software without significantly weakening their competitive position. This suggests that there are insufficient constraints from alternative software.

7.21 The importance of the Grid as a component of dedicated AAC solutions is corroborated by other evidence:

- (a) The Grid is the most popular software included as part of dedicated AAC solutions in the UK. In 2018 [redacted] [50-60%] of dedicated AAC solutions sold in the UK included the Grid software. In contrast, the equivalent figures for PRC's software and Jabbla's software were only [redacted] [10-20%] and [redacted] [0-5%] respectively.¹⁵⁶
- (b) Customers consider the availability of the Grid as important to their decisions to purchase a dedicated AAC solution (see paragraph 7.39 below).
- (c) The Grid has a number of strengths over alternative software provided by PRC and Jabbla, including being more intuitive¹⁵⁷ and having unique features, in particular the flexibility built into the system and the wide range of content developed for it.¹⁵⁸ Smartbox's benchmarking of its Grid software against software offered by Tobii (Communicator 5), Jabbla (Mind Express 4) and PRC (NuVoice) shows that the Grid has many features that this rival AAC software does not replicate. For example, this

¹⁵⁴ This implies that it could use other software to retain the sales of the remaining [redacted] of its devices that did have the Grid installed.

¹⁵⁵ [redacted]. Specifically Techcess stated that it would lose [redacted] of its sales of devices, which is equivalent to around [redacted] of its sales of devices with the Grid installed.

¹⁵⁶ The equivalent figures for Tobii's software are: Communicator 5 [redacted] [10-20%], Snap + Core First [redacted] [10-20%] and Compass [redacted] [5-10%]. Tobii sometimes installs more than one type of software on one of its devices' therefore there is some overlap between these figures, which is why the sum of the figures for each piece of AAC software (including software from Smartbox, PRC and Jabbla) is over 100%.

¹⁵⁷ Liberator has noted that PRC's software is not generally considered as intuitive as the Grid [redacted]. This is also consistent with evidence submitted by customers in the assessment of incentives.

¹⁵⁸ As noted by Smartbox [redacted].

benchmarking shows that the Grid is unique among this software in offering symbolised email, communication via certain social media platforms (Whatsapp, Twitter and Instagram), remote editing, an integrated online app store, and cloud storage.

- (d) For existing users of the Grid, user inertia over changing software makes it difficult for suppliers of dedicated AAC solutions to replace the Grid with other software. Liberator noted this, explaining that existing users would need to invest time and effort to learn new software. User inertia over changing software is confirmed by a Smartbox hardware strategy document from October 2017, which notes that [redacted] and that ‘people don’t like changing operating system’. Smartbox has further clarified that it has an open file format but that it is hard to transition a user to different software, particularly when there has been a lot of customisation or when comparable features are not available in other software.

7.22 We also consider that there is no AAC software from third parties that Liberator and Techcess could use as a credible alternative to the Grid. There is an important distinction between the fully featured AAC software offered by Smartbox, Tobii, PRC and Jabbla and other AAC software offered by third parties. [redacted].

7.23 The Grid is an AAC software platform that performs a number of functions including text communication, symbol communication, access means control, computer control, environment control, and accessible apps. Third party AAC software does not offer all these features. For example, software from AssistiveWare, Avaz, CoughDrop and Therapy Box focus on symbol and/or text communication using touch control but provide no support for eye gaze cameras or head pointers. The difference between the AAC software by these third parties and the Grid is reflected in Smartbox’s submissions on Avaz and CoughDrop, with Smartbox referring to:

- (a) Avaz as offering a ‘single solution’ (ie only one language system that can be used within the app) and ‘not an editing platform that lets you create whatever you want’; and
- (b) significant functional difference between what you can do with CoughDrop and what you can do with Grid.

7.24 In addition, most third party AAC software does not run on Windows, the operating system used on Liberator and Techcess’s dedicated AAC solutions.

This is the case for software provided by AssistiveWare, Avaz, and Therapy Box. The only exception of which we are aware is CoughDrop.¹⁵⁹

- 7.25 The lack of credible alternatives to the Grid offered by third party AAC software providers is also consistent with Liberator and Techcess not referring to this software as an alternative to the Grid even when prompted by the CMA.¹⁶⁰
- 7.26 Lastly, we consider that there are significant barriers to developing AAC software that would be a credible alternative to the Grid, which means it is unlikely that any such alternative may be available in the near future. We have set out our assessment on this in the section on barriers to entry and expansion in chapter 8. Due to these barriers to entry and expansion, in particular the costs and time involved in developing software to rival the Grid, we consider that improvements that PRC and Jabbla are making to their own software are unlikely to be sufficient for their software to be a credible alternative to the Grid in the near future (in particular see paragraphs 8.20, 8.55 to 8.58, 8.60 to 8.62, 8.65, 8.66 and 8.73 to 8.75).

Provisional conclusion on ability

- 7.27 We provisionally conclude that the merged entity is likely to have the ability to foreclose its downstream competitors in the supply of dedicated AAC solutions in the UK from the Grid.
- 7.28 Based on our assessment above, we find that the merged entity has a strong position in the upstream supply of AAC software due to its control of the Grid and that constraints from alternative software are weak. In particular:
- (a) we consider that the merged entity could significantly increase the price it charges downstream competitors for the Grid and/or could reduce the extent to which the Grid supports the dedicated AAC hardware of competitors; and
 - (b) we find that downstream rivals would not be able to avoid such foreclosure mechanisms by switching away from the Grid without significantly weakening their competitive position in the supply of dedicated AAC solutions.

¹⁵⁹ Source: <https://www.mycoughdrop.com/>

¹⁶⁰ The CMA asked suppliers of dedicated AAC solutions, 'Is there any other AAC software currently available in the market that you are not currently using but that could provide an alternative to Smartbox's Grid?'

Incentives (input foreclosure of Smartbox's AAC software)

7.29 In this section, we assess whether foreclosing downstream competitors from the Grid (through an increase in the price of the Grid to these competitors and/or a reduction in the extent to which the Grid supports rivals' hardware) would be profitable and, therefore, whether the merged entity would have an incentive to engage in such a strategy. As part of this assessment, we consider the extent to which the Merger increases the incentives to foreclose downstream competitors relative to the situation absent the Merger.

Framework for assessing whether foreclosure would be profitable

7.30 To understand what determines whether foreclosure would be profitable, we first consider the simplest foreclosure scenario, total foreclosure (where the merged entity would stop supplying the Grid software to its competitors (Liberator or Techcess) or would make the Grid incompatible with their products). In this scenario, some of the customers who previously bought dedicated AAC solutions with the Grid from these competitors may switch to the merged entity's dedicated AAC solutions. By pursuing this strategy, the merged entity would lose the margin it had made on sales of the Grid software to competitors (this is the financial cost of the strategy), but it would gain the margins made on any additional sales of its dedicated AAC solutions (this is the financial benefit of the strategy).

7.31 In a partial foreclosure scenario, where the merged entity increases the price of the Grid to its competitors, competitors may pass on this price increase to their customers of dedicated AAC solutions. This could lead some of these customers to switch to the merged entity's dedicated AAC solutions. As with total foreclosure, the merged entity would lose the margins from any lost sales of the Grid to competitors and gain the margins from any new sales of its own dedicated AAC solutions. The only difference from total foreclosure is that, with partial foreclosure, the merged entity still sells the Grid to competitors and it earns higher margins on these sales, an additional benefit of such strategy. Similar effects arise when rather than increasing the Grid price, the strategy involves a reduction in the extent to which the Grid supports the dedicated AAC hardware of its rivals (which may also benefit the merged entity by lowering software development/support costs).

7.32 To assess whether a foreclosure strategy would be profitable, we need to assess whether the financial benefits are likely to be higher than the financial costs, which in turn depends on:

- (a) the lost sales of the Grid upstream, made via rival dedicated AAC solutions;

- (b) the proportion of these lost sales that are recaptured by the merged entity's sales of its own dedicated AAC solutions downstream (which we refer to as a diversion); and
- (c) the margins the merged entity earns on the Grid upstream and the margins it earns on dedicated AAC solutions downstream.

- 7.33 We do not have quantitative estimates of diversion in these foreclosure scenarios, but we can use the Parties' margins to calculate the minimum diversion ratio that would make a total foreclosure strategy profitable (the 'critical diversion threshold'). It is then possible to undertake a qualitative assessment of whether the diversion is likely to exceed this critical diversion threshold.
- 7.34 We have only calculated critical diversion thresholds for total foreclosure. It is not straightforward to estimate a critical diversion threshold for other scenarios. For example, in a partial foreclosure scenario based on charging higher prices to competitors, the critical diversion threshold depends on the scale of this price increase (on which we would have to make an assumption) and the volume of sales made of the Grid via competitors that the merged entity retains at a higher price (of which we do not have an estimate).
- 7.35 The critical diversion threshold in a partial foreclosure scenario will, however, be lower than in a total foreclosure scenario: the merged entity needs to recapture fewer sales for a partial foreclosure strategy to be profitable because of the additional benefits involved (see paragraph 7.31). The critical diversion threshold under total foreclosure is therefore still informative for assessing the incentives to engage in partial foreclosure. If we find that diversion is likely to exceed this threshold under total foreclosure, then diversion is also likely to exceed the lower threshold under partial foreclosure.

Assessment of whether diversion is likely to exceed the critical diversion threshold

- 7.36 The average wholesale variable margin made by Smartbox on its sales of the Grid software to competitors and resellers of dedicated AAC solutions in 2018 was [REDACTED].¹⁶¹ The average variable margin made by Smartbox and Tobii on sales of dedicated AAC solutions in 2018 was [REDACTED]¹⁶² (where the margins made by Smartbox and Tobii were weighted by their sales in the UK market). The critical diversion threshold in a total foreclosure scenario is therefore

¹⁶¹ CMA analysis of margin data provided by Smartbox [REDACTED]. This CMA analysis adjusted the variable margins submitted by Smartbox by adding the cost of materials to variable costs.

¹⁶² CMA analysis of margin data provided by Smartbox and Tobii [REDACTED]. The CMA analysis adjusted these margins by adding the bill of materials as a variable cost for Tobii and "materials, production labour/overheads and under/over recoveries to inventory" as variable costs for Smartbox.

[REDACTED][10-20%] [REDACTED].¹⁶³ That is, the merged entity would need to recapture at least [REDACTED] [10-20%] of the lost upstream sales volumes of the Grid software made via competitor devices through customers switching to its dedicated AAC devices.

7.37 We consider that diversion to the merged entity's dedicated AAC solutions is likely to be higher than the [REDACTED] [10-20%] critical diversion threshold. It is our view that customers of dedicated AAC solutions that combine the Grid with rival AAC hardware are more likely to switch to dedicated AAC solutions that have the Grid (ie the merged entity's solutions) than they are to switch to other options (ie dedicated AAC solutions offered by Liberator and Techcess that use these rivals' in-house AAC software). This is due to the Grid being a key driver of sales of dedicated AAC solutions in the UK, which we explain further below.

7.38 First, the role of the Grid in driving sales of dedicated AAC solutions is reflected in its high share of supply of AAC software installed on dedicated AAC solutions in the UK compared to other AAC software (see paragraph 7.21(a) above).

7.39 Second, it is important to customers to have the Grid as part of a dedicated AAC solution, including for customers of Liberator and Techcess:

(a) Most customers (11 out of 18)¹⁶⁴ that bought a Liberator or Techcess dedicated AAC solution with the Grid found the availability of the Grid of 'high' or 'significant' importance.

(b) Only two (out of 18) customers¹⁶⁵ did not find the availability of the Grid on Liberator or Techcess devices very important.^{166 167}

¹⁶³ This is the average wholesale variable margin made by Smartbox on its sales of the Grid software to competitors and resellers of dedicated AAC solutions in 2018 divided by the average variable margin made by Smartbox and Tobii on sales of dedicated AAC solutions in 2018. Because the margins on Grid software are this fraction ([REDACTED]) of the margins on dedicated AAC solutions, the merged entity only needs to recapture this fraction of lost Grid sales volumes through customers switching to its dedicated AAC devices for foreclosure to be profitable.

¹⁶⁴ [REDACTED] Barnsley Hospital, GOSH, Lincolnshire EATS, Birmingham Community Healthcare, Royal Hospital for Neuro Disability, RCAS, Assistive Communication Service, Sequal Trust, The Communication Advice Centre, Belfast, NHS Ayrshire & Arran, Leeds Community Healthcare NHS Trust.

¹⁶⁵ [REDACTED] ACE Centre North and ACE Centre South

¹⁶⁶ The remaining 5 customers noted that the importance of the Grid varied depending on the needs of the user ([REDACTED] Cambridge CASEE, Bristol Communication Aid Centre, Surrey County Council, Treloar School and College, MK CAT (Adults)).

¹⁶⁷ We do not have diversion estimates on what customers would do if they could no longer combine the Grid with dedicated AAC hardware from Liberator and Techcess (or if these combinations were more expensive or more prone to technical issues) since what customers do depends on how important the specific features of the Grid or the Liberator/Techcess device are for each end user. Nevertheless, we consider that importance that customers place on the Grid strongly indicates that the diversion ratio to the merged entity's dedicated AAC solutions (which offer the Grid) would be significant. That is, out of the customers that stopped buying dedicated AAC solutions which combined Liberator/Techcess hardware with the Grid, a significant proportion of their sales

- 7.40 Third, the Grid has a number of strengths over alternative software provided by PRC and Jabbla (as noted at paragraph 7.21(c) above). In particular, customers have told us that the Grid is more intuitive compared to software from Liberator and Techcess. Customer responses in general indicate that this is a key point of distinction (notwithstanding the positive aspects of Liberator and Techcess's software). For instance, Cambridge CASEE noted that Smartbox's software from a usability perspective is extremely good. In contrast, it noted that a key weakness of Liberator's Unity software is the time that it takes to learn to use this language system, with this resulting in fewer new AAC users of Liberator's Minspeak language systems. Similarly, it noted that Jabbla's Mind Express software has a user interface that is quite complex and people supporting the AAC user often require considerable levels of support initially until they get accustomed to using it themselves.
- 7.41 Fourth, for existing users of the Grid, changing to alternative software is unlikely due to significant customer inertia (see paragraph 7.21(d)).

Wider considerations

- 7.42 Tobii has referred to adverse reputational effects if it were to foreclose its rivals in the supply of dedicated AAC solutions from the Grid.¹⁶⁸ We consider that any adverse reputational effects would not be enough to dis-incentivise the merged entity from foreclosing downstream rivals from the Grid. Any reputational effects are unlikely to affect the profitability of Grid input foreclosure. Customers are unlikely to switch away from the merged entity's dedicated AAC solutions due to any reputational issues associated with restricting access to the Grid given the importance that they place on finding a dedicated AAC solution that best meets the needs of end users (see paragraphs 7.54). Any adverse reputational effects would also be minimal in a partial foreclosure strategy as the Grid would continue to be available to downstream competitors.
- 7.43 We also consider that the prospect of entry and expansion in AAC software is unlikely to disincentivise the merged entity from engaging in Grid input foreclosure. This is due to significant barriers to developing AAC software that would be a credible alternative to the Grid, which means that it is unlikely that any such alternative would be available in the near future (see paragraph 7.26).

are likely to divert to the merged entity's solutions (which offer the Grid), rather than divert to Liberator/Techcess's dedicated AAC solutions that use other software.

¹⁶⁸ Tobii has noted that it would be 'complete business suicide' reputationally if restricted or limited access to the Grid [REDACTED].

Effect of the Merger on foreclosure incentives

- 7.44 Smartbox supplies its downstream rivals in dedicated AAC solutions with the Grid software so may already have an ability and some incentive to foreclose downstream rivals from the Grid, for example by setting a higher price for this input. To assess the effect of the Merger on the supply of the Grid software to downstream rivals, we have therefore considered the extent to which the Merger increases the incentive to foreclose rivals from the Grid software.
- 7.45 We consider that the foreclosure incentives of the merged entity would be significantly higher than those of Smartbox absent the Merger.
- 7.46 First, the merged entity has a stronger position downstream in the supply of dedicated AAC solutions in the UK than Smartbox would have absent the merger, so there is greater scope for the merged entity to benefit from weakening its rivals in this market. That is, the merged entity would take more sales from these rivals than would Smartbox alone when foreclosing rivals from the Grid. This is to some extent illustrated by the merged entity's combined share of dedicated AAC solutions in the UK of [REDACTED] [60-70%] compared to Smartbox's share of [REDACTED] [40-50%] by value in 2018 (see Table 6-1 in Chapter 6).
- 7.47 Second, adding the Grid to Tobii hardware, in addition to Smartbox's hardware, would put the merged entity in a stronger position to take more sales from foreclosed downstream competitors. This is due to the importance of the Grid in driving sales of dedicated AAC solutions. The increased use of the Grid on Tobii's dedicated AAC solutions therefore mean that these solutions are more likely to take sales from foreclosed downstream competitors than Tobii's current UK market share of [REDACTED] [10-20%] by value in 2018 in dedicated AAC solutions would suggest (as in 2018 Tobii generally did not include the Grid software in its dedicated AAC solutions).
- 7.48 Third, the Merger affects the strategic rationale for Smartbox to support competitor hardware. Pre-merger, [REDACTED].¹⁶⁹ [REDACTED]. .

Provisional conclusion on incentives

- 7.49 Based on our assessment above, we provisionally conclude that the merged entity would be likely to have the incentives to foreclose rival suppliers of dedicated AAC solutions from the Grid (and such incentives are significantly greater as a result of the Merger).

¹⁶⁹ [REDACTED].

Effects (input foreclosure of Smartbox's AAC software)

- 7.50 We consider that the competitive constraints exerted on the merged entity by Liberator and Techcess in the downstream supply of dedicated AAC solutions in the UK would be substantially weakened as a result of the foreclosure strategies described above (ie a higher price for the Grid and/or a reduction in the extent to which the Grid supports their dedicated AAC hardware). This is of particular concern given that these competitors would be the most important remaining constraints on the Parties post-merger in the downstream market (see our assessment of horizontal unilateral effects in Chapter 6).
- 7.51 Customers and end users would be worse off from having a reduced range of hardware that is fully supported by the Grid. We place significant weight on this given the vulnerability of the user group, specifically the difficulty end users face in communicating and the importance of having a wide range of effective dedicated AAC solutions to meet the range of AAC needs (see paragraph 2.7).
- 7.52 We also consider that customers would be harmed through higher prices. The extent of these price rises depends on the degree to which the merged entity's competitors in dedicated AAC solutions would pass on the higher prices they pay the merged entity for the Grid.
- 7.53 There may be some scope for the merged entity's downstream competitors to absorb part of the price increases of the Grid. Specifically, Liberator has stated that it offers the Grid software at no additional cost if the Grid is the selected software at device purchase. It has not changed this approach in response to a recent increase in the price it pays for the Grid (from [X] to [X]).
- 7.54 Notwithstanding this evidence, we consider that it is likely that suppliers of dedicated AAC solutions would pass on cost increases, particularly if they are more significant than the recent cost increases of the Grid faced by Liberator. This is due to evidence that customers in this market are not particularly sensitive to price as their priority is meeting end user needs. When asked about their decision process for the purchases of dedicated AAC solutions, only three customers mentioned cost as one of the factors under consideration (out of 20 customer responses¹⁷⁰). Even where cost is a factor, there is evidence that customers place higher priority on meeting end user needs. For instance, the Scottish Centre of Technology for the Communication Impaired told us that it observes and discusses with the user

¹⁷⁰ Two further respondents provide funding, but do not typically undertake the assessment as to which dedicated AAC solution is most appropriate for each user ([X] Sequal Trust, and South Lanarkshire Council).

and their support team the needs and requirements of the user and system, and then matches these to the most cost-effective solution that meets all of those needs and requirements.

Provisional conclusion on input foreclosure of Smartbox's AAC software

7.55 On the basis of the above assessment, we provisionally conclude that there is likely to be a SLC in the supply of dedicated AAC solutions in the UK as a result of the merged entity having the ability and incentive to foreclose its rivals in this market from the Grid software.

Customer foreclosure of eye gaze camera competitors

7.56 In this section, we consider whether, by bringing together Tobii's activities in eye gaze cameras upstream and the Parties' activities in the supply of dedicated AAC solutions downstream, the Merger is likely to result in the merged entity having the ability and incentive to foreclose its rival suppliers of eye gaze cameras in AAC applications. In particular, we consider whether the merged entity is likely to have the ability and incentive to reduce competitors' ability to compete in the worldwide market for eye gaze cameras in AAC applications by degrading the Grid's interoperability with their cameras, thus affecting an important route to market for those cameras. We describe the details of our assessment below.

7.57 As set out in paragraph 5.84, we defined the relevant market for our assessment of this customer foreclosure theory of harm as the market for eye gaze cameras in AAC applications worldwide. Suppliers of dedicated AAC solutions source eye gaze cameras from Tobii and four other firms: Alea, EyeTech, Irisbond, and LC Technologies.

7.58 To compete in the supply of eye gaze cameras in AAC applications, these suppliers' cameras need to be supported by AAC software and, therefore, eye gaze camera suppliers invest in collaborations with suppliers of AAC software (in particular, Smartbox) to develop their cameras for use in AAC applications. For instance, we noted that:

- (a) Irisbond told us that in 2017 it started a partnership with Smartbox that led to the successful integration of its Irisbond Duo camera and the Grid software, as well as with Smartbox's new dedicated AAC hardware product GridPad 12. Irisbond explained that it had invested a significant amount of resources in this partnership, and that its future development plans in AAC applications depended on having access to a partnership with an AAC software supplier.

(b) [REDACTED].¹⁷¹

(c) LC Tech told us that the investment required to find and integrate an alternative software with its own camera and dedicated AAC hardware would deter a significant amount of its other development plans.

7.59 Furthermore, as noted in our assessment of effects (see paragraph 7.111), the current challenges that eye gaze camera suppliers are addressing to improve the way they meet the needs of AAC users are different from the challenges faced in other eye tracking applications.

7.60 Therefore, we focused our assessment on the merged entity's ability and incentive to weaken eye gaze camera competitors' product development in AAC applications by limiting their available routes to market, as well as the effect that this foreclosure would have on the markets for eye gaze cameras in AAC applications and for dedicated AAC solutions more widely.¹⁷²

Ability (customer foreclosure of eye gaze competitors)

7.61 In this section, we describe our analysis of the ability of the merged entity to foreclose its rival suppliers of eye gaze cameras in AAC applications by limiting their routes to market. In particular, we set out our assessment of:

- (a) the customer foreclosure mechanisms available to the merged entity, in particular the technical ability of the merged entity to limit the compatibility of the Grid with rival eye gaze cameras;
- (b) the dependence of rival eye gaze camera suppliers on the Grid as a route to market; and
- (c) whether, as submitted by Tobii (see paragraph 7.87), the option of these rivals expanding into non-AAC applications would prevent the merged entity from weakening them as competitors in AAC applications.

Customer foreclosure mechanisms

7.62 The merged entity brings together Tobii's activities in eye gaze cameras upstream and the Parties' activities in the supply of dedicated AAC solutions downstream:

¹⁷¹ [REDACTED].

¹⁷² Tobii submitted that AAC in general (and Smartbox in particular) represents a very small proportion of total worldwide demand for eye gaze cameras [REDACTED]. However, this does not address our concern that the merged entity would be able to foreclose its competitors in the supply of eye gaze cameras in AAC applications by making the Grid incompatible with their cameras.

- (a) Tobii Tech is a supplier of eye gaze cameras for a range of applications. Tobii Tech supplies eye gaze cameras in AAC applications to providers of dedicated AAC solutions, including, but not limited to, its sister company Tobii Dynavox. Tobii Dynavox uses only Tobii Tech's eye gaze cameras as part of its dedicated AAC solutions.
- (b) Smartbox is a provider of dedicated AAC solutions. It also sells its own AAC software (in particular, the Grid) to rival providers of dedicated AAC solutions worldwide, who use it as part of their solutions. Smartbox does not manufacture its own eye gaze cameras, but it sources them from a range of suppliers.

7.63 We considered two potential foreclosure mechanisms by which the merged entity could reduce the sales of its rival suppliers of eye gaze cameras in AAC applications:

- (a) Strategy 1: Through Smartbox's position as a provider of dedicated AAC solutions:
 - (i) Cease sourcing eye gaze cameras from Tobii's rivals; or
 - (ii) Promote Tobii's eye gaze cameras over rival cameras.
- (b) Strategy 2: Through Smartbox's position in AAC software, make the Grid incompatible with non-Tobii eye gaze cameras (or develop the Grid to favour integration with Tobii's eye gaze products), prompting suppliers of dedicated AAC solutions that use the Grid software to stop buying non-Tobii cameras.

7.64 Our provisional view is that it is unlikely that the merged entity would be able to foreclose its eye gaze camera competitors using 'strategy 1'. To substantially weaken rival suppliers of eye gaze cameras in AAC applications, which supply these cameras on a global basis, the merged entity would need to be able to affect a significant proportion of their global sales in this market. However, the proportion of non-Tobii eye gaze cameras in AAC applications which were sold specifically to Smartbox in 2018 is relatively low (a weighted average of [redacted][20-30%]).¹⁷³

7.65 In contrast, the proportion of non-Tobii eye gaze cameras in AAC applications which were sold as part of a dedicated AAC solution based on the Grid is

¹⁷³ CMA calculation of the weighted average across Tobii's eye gaze rivals of their share of eye gaze camera units sold for AAC applications specifically to Smartbox (weighted by each supplier's number of eye gaze camera units sold for AAC solutions). Based on responses [redacted] from: Alea, Irisbond, EyeTech and LC Tech.

significantly higher (a weighted average of [REDACTED] [80-90%]).¹⁷⁴ Suppliers of dedicated AAC solutions which include the Grid in some or all of their dedicated AAC solutions include not only Smartbox, but also Jabbla and PRC, as well as other suppliers which are not active in the UK (such as Forbes and LC Tech).

7.66 Therefore, we considered ‘strategy 2’ to assess whether the merged entity could make non-Tobii cameras incompatible with the Grid.

Ability to limit the compatibility of the Grid with rival eye gaze cameras in AAC applications

7.67 We considered a number of ways in which the merged entity could potentially limit the compatibility of the Grid with rival eye gaze cameras:

- (a) stopping or reducing its technical support for issues arising with the Grid software when used in conjunction with rival eye gaze cameras;
- (b) modifying the current version of the Grid to make its access features incompatible with the current generations of rival eye gaze cameras;
- (c) stopping Smartbox’s collaboration with rival eye gaze cameras in the joint development of future generations of cameras such that the Grid’s access features will not be compatible with these new cameras.

7.68 Tobii acknowledged that making the Grid incompatible with rival eye gaze cameras would be technically feasible. Tobii later submitted that any eye gaze camera compatible with software that emulates a mouse cursor can control this software. However, we noted that there are more advanced ways in which an eye gaze camera can control the Grid and make full use of its functionalities. Limiting the compatibility of rival eye gaze cameras with the Grid so that the user can only access the Grid through mouse cursor control would result in a significant reduction of the ability for the user to benefit from the Grid’s features with those cameras.

7.69 This is confirmed by a Tobii internal document which [REDACTED].

[REDACTED]

7.70 We considered that a lack of compatibility of rival eye gaze cameras with most access features of the Grid would significantly weaken the ability of those cameras to meet end users’ needs when used in combination with the Grid.

¹⁷⁴ CMA calculation of the weighted average across Tobii’s eye gaze rivals of their share of eye gaze camera units sold for AAC solutions which included the Grid (weighted by each supplier’s number of eye gaze camera units sold for AAC solutions). Based on responses [REDACTED] from: Alea, Irisbond, EyeTech and LC Tech.

We considered that, in such a situation, these cameras would not be a credible alternative to Tobii's cameras for worldwide providers of dedicated AAC solutions using the Grid.

- 7.71 Therefore, we considered that it is feasible for the merged entity to engage in any of the potential foreclosure mechanisms set out above.

Dependence of rival suppliers of eye gaze cameras on the Grid as a route to market

- 7.72 By limiting the compatibility of the Grid with rival eye gaze cameras, the merged entity could reduce the ability of these competitors to supply their cameras to dedicated AAC solution providers that use the Grid software worldwide, which accounts for the vast majority of non-Tobii eye gaze camera suppliers' global sales (as set out in paragraph 7.74 below). Providers of dedicated AAC solutions that currently use the Grid software in all or some of their solutions include Smartbox, PRC and Jabbla, but also additional suppliers who are not active in the UK market but who use the Grid software as part of their solutions outside the UK, such as Forbes and LC Tech.
- 7.73 We contacted Tobii's main competitors in the supply of eye gaze cameras in AAC applications: EyeTech, Alea, Irisbond and LC Tech. All four had concerns about the loss in sales that they would face if the merged entity were to make the Grid incompatible with their eye gaze cameras.
- 7.74 A substantial share of each rival's worldwide sales of eye gaze cameras in AAC applications in 2018 were for dedicated AAC solutions that included the Grid:
- (a) Eyetech estimated that it would lose [X] of its sales of eye gaze cameras in AAC applications as a result of the Grid being incompatible with its cameras.
 - (b) Alea estimated that [X] of its sales of eye gaze cameras in AAC applications in 2018 were for hardware integrated with the Grid.
 - (c) LC Tech told us that, in the last two years, all of its eye gaze camera sales for AAC applications were sold as part of its own dedicated AAC solution called Eyegaze Edge. LC Tech estimated that [X] of its Eyegaze Edge product sales in 2018 incorporated the Grid.
 - (d) Irisbond estimated that [X] of its sales of eye gaze cameras in AAC applications in 2018 were for hardware integrated with the Grid. Irisbond noted that it has been selling a significant share of its eye gaze cameras directly to AAC end users and associations in emerging markets such as Spain and Latin America, along with a very basic AAC software

(Akzede/EyeLearn) as an entry level product.¹⁷⁵ However, since its agreement with Smartbox, it has been actively promoting the Grid in these markets as well. In 2018, around [REDACTED] of its sales in these countries were linked to the Grid, and it expected this share to grow to more than [REDACTED] in 2019.

7.75 Furthermore, all four rival eye gaze suppliers estimated that a large share of their total revenues in recent years corresponded to AAC applications, indicating high dependence on this field as a source of revenues:

- (a) EyeTech estimated that [REDACTED] of its total sales of eye gaze cameras in 2018 were for AAC applications.
- (b) Alea estimated that [REDACTED] of its total sales of eye gaze cameras were for AAC applications.
- (c) LC Tech estimated that [REDACTED] of its total revenues related to AAC applications.
- (d) Irisbond estimated that [REDACTED] of its total sales of eye gaze cameras were for AAC applications.

7.76 The above evidence provides an initial indication that the merged entity's eye gaze camera competitors in AAC applications are highly dependent on the Grid being compatible with their cameras. We consider this further below in terms of their alternative routes to the market for eye gaze cameras in AAC applications which do not depend on the Grid.

Alternative routes to the market for eye gaze cameras in AAC applications that do not depend on the Grid

7.77 The main routes to market for suppliers of eye gaze cameras in AAC applications are either through dedicated AAC solution providers that have their own software (PRC, Smartbox, Jabbla) or through other providers that use Smartbox's Grid Software as part of their dedicated AAC solutions (eg Forbes in the US).¹⁷⁶ Tobii uses only its own eye gaze cameras. We consider these routes to market below, including whether providers of dedicated AAC solutions that currently use Smartbox's Grid software are likely to switch to alternative software in order to buy non-Tobii eye gaze cameras.

¹⁷⁵ [REDACTED].

¹⁷⁶ Tobii submitted that there are other suppliers of AAC devices which are not dependent on the Grid, either because they have their own software or because they run third party communications software [REDACTED]. However, Tobii did not specify who these providers are, and whether the alternative AAC software is compatible with non-Tobii cameras.

- 7.78 [REDACTED] Liberator (PRC's UK subsidiary) explained that PRC's software is only compatible with cameras specifically developed for PRC, namely Tobii's Look camera and, previously, SMI's NuEye camera (which is now obsolete). Liberator added that it is able to offer other eye gaze cameras with PRC's AAC hardware by using the Grid software instead of PRC's software.¹⁷⁷
- 7.79 [REDACTED].
- 7.80 Therefore, we considered that PRC is not currently an alternative route to market for suppliers of eye gaze cameras, [REDACTED].
- 7.81 This leaves Jabbla as the main customer of eye gaze camera suppliers in AAC applications that has alternative software to the Grid. [REDACTED] which only represents [REDACTED] of the total sales of eye gaze cameras for AAC applications worldwide.¹⁷⁸
- 7.82 As an additional potential route to market, we considered the potential for expansion of Jabbla's sales of Mind Express as a standalone software, for instance if global providers of dedicated AAC solutions (such as Forbes or LC Tech) started using Mind Express as part of their solutions as an alternative to the Grid. However, we considered that any such expansion is unlikely to be material for the following reasons:
- (a) As set out in paragraphs 7.21 and 7.40, the Grid has a number of strengths over Mind Express. In particular, customers told us that Mind Express is not very intuitive or easy to learn, with users often requiring considerable levels of support initially to get used to it.
 - (b) While Jabbla told us that Mind Express and the Grid are comparable software products, it does not follow that Mind Express is a credible alternative to the Grid. To the contrary, [REDACTED]
 - (c) The strengths of the Grid over Mind Express are reflected in the Grid's higher worldwide sales. In 2018, Smartbox sold [REDACTED] licences of the standard version of the Grid 3 worldwide (of which [REDACTED] were sold as standalone software, excluding the Grid 3 for iPad).¹⁷⁹ Smartbox confirmed that a large majority of its global sales of the Grid as a standalone software was made to rival providers of dedicated AAC solutions. In contrast, [REDACTED].

¹⁷⁷ [REDACTED]

¹⁷⁸ CMA analysis of Tobii's transaction data and responses [REDACTED] from Alea, Irisbond, EyeTech and LCTech.

¹⁷⁹ CMA analysis of Smartbox's transaction data.

(d) Forbes, a US provider of dedicated AAC solutions which sold [REDACTED] units of its own dedicated AAC hardware in 2018, told us that the Grid stands alone in its ability to offer a high level of functionality on a Windows platform, and that there are no other comparable options.

(e) LC Tech, an eye gaze manufacturer who supplies its cameras as part of its own dedicated AAC solutions, told us that it was considering alternative software to the Grid. However, LC Tech explained that Mind Express does not have all the features of the Grid and it is currently not customised by LC Tech to suit its customers' needs.

7.83 We also considered whether other developments of AAC software could be used by worldwide providers of dedicated AAC solutions as an alternative to the Grid in the foreseeable future.

7.84 In this context, we noted that [REDACTED], and that LC Tech told us that its reseller Interactive Minds is developing its own AAC software with the intention of becoming an alternative to the Grid.¹⁸⁰

7.85 However, we considered that these developments are unlikely to be timely, likely and sufficient to reduce the dependence of non-Tobii eye gaze cameras on the Grid (see paragraphs 8.65, 8.66 and 8.73 to 8.75). This is because there are significant barriers to developing AAC software that would be a credible alternative to the Grid in the foreseeable future (see, for instance, paragraphs 8.20, 8.21, 8.55 to 8.58 and 8.60 to 8.62).

7.86 Furthermore, switching to an alternative software would entail significant costs for providers of dedicated AAC solutions, which could reduce further their willingness to switch. For instance:

(a) Smartbox told us that many providers of dedicated AAC solutions worldwide have created their own bespoke language content based on the Grid, so switching to another software would be significantly more disruptive than switching to an alternative camera.

(b) Forbes told us that its WinSlate dedicated AAC device is built around using the Grid as its software engine, and that without affordable access to the Grid, they would not be able to provide this product anymore.

(c) LC Tech told us that the investment required to find and integrate an alternative software with its own camera and dedicated AAC hardware will

¹⁸⁰ [REDACTED]

'siphon off' a significant amount of LC Tech's resources from other development plans, delaying its market introduction of new products.

Eye gaze camera rivals' potential for expansion into non-AAC applications

- 7.87 Tobii submitted that eye gaze cameras are used for multiple applications outside of AAC, that the technology required for non-AAC applications is the same as for AAC applications, and that future growth in total global demand for eye gaze cameras is forecasted to be driven mainly by non-AAC applications.¹⁸¹
- 7.88 As set out in the sections above, one of the possible foreclosure mechanisms is for the merged entity to weaken the product development plans of its rival suppliers of eye gaze cameras in AAC applications by limiting the compatibility of the Grid with their new generations of cameras. The potential for expansion into non-AAC applications for these rival eye gaze camera suppliers would not prevent the merged entity from reducing rival eye gaze camera suppliers' product development specific to addressing AAC users' needs.
- 7.89 We also noted that, in any event, the scale of any such expansion is uncertain and unlikely to become material at least in the next two years. This is on the basis of the following evidence:
- (a) [✂]
 - (b) Irisbond told us that 10% of its revenue in the last two years came from pilot applications in neuromarketing, and that it has been working on expanding into this and other applications, where it believes there is high growth potential. However, Irisbond noted that a key challenge is the lack of commercial expertise in working with partners outside the AAC field. Irisbond estimated that, although its next generation of cameras may work in other applications, the main driver of sales in 2020 will still be AAC. Irisbond added that this next generation of cameras may include different versions of cameras for each eye tracking application.
 - (c) [✂]
 - (d) LC Tech told us that less than 2% of its total revenues related to non-AAC applications. LC Tech sells eye tracking analysis systems, primarily used in academic research, to monitor people's eye gaze activity while performing specific tasks, such as reading, driving vehicles or operating

¹⁸¹ [Tobii's response to Phase 1 decision](#), para 101.

computers. However, LC Tech did not refer to these applications when asked about new product development plans for the next 2 years. Furthermore, LC Tech noted that the unanticipated expenditure required to find and integrate an alternative to the Grid would significantly reduce its available R&D resources for the development of new products.

Provisional conclusion on ability

7.90 We provisionally conclude that the merged entity is likely to have the ability to foreclose its rival suppliers of eye gaze cameras for AAC applications by limiting the compatibility of the Grid with their cameras. Based on the evidence above, we find that:

- (a) Eye gaze camera suppliers depend on compatibility with AAC software, particularly the Grid, to be able to compete in the supply of eye gaze cameras in AAC applications;
- (b) Dedicated AAC solutions based on the Grid software are an important route to market for rival suppliers of eye gaze cameras in AAC applications; and
- (c) The alternative routes to market which do not depend on the Grid are currently limited, and providers of dedicated AAC solutions currently using the Grid are unlikely to switch to alternative AAC software in order to be able to use non-Tobii eye gaze cameras.

Incentives (customer foreclosure of eye gaze competitors)

7.91 We assessed whether the merged entity would be likely to gain from weaker competition in the upstream supply of eye gaze cameras in AAC applications given Tobii's position in this market. The merged entity may have an incentive to use Smartbox's Grid software to weaken its eye gaze camera competitors, an incentive that Smartbox would not have absent the Merger as it does not produce eye gaze cameras. We therefore considered whether the potential gains from using the Grid to foreclose the merged entity's rival suppliers of eye gaze cameras were sufficiently high to give the merged entity the incentive to engage in this customer foreclosure strategy.

7.92 As set out in the sections below, we analysed the financial incentives for the merged entity to engage in the customer foreclosure strategy, as well as other strategic and reputational considerations.

Financial incentives to foreclose

7.93 We applied the same analytical framework as in our assessment of the previous vertical theory of harm. This involved calculating a ‘critical diversion threshold’ using the Parties’ margins and assessing whether this threshold is likely to be exceeded such that there may be a financial incentive to foreclose upstream suppliers of eye gaze cameras in AAC applications from their available routes to market (see paragraphs 7.30 to 7.33 above for a full explanation of this framework).

7.94 In the event that the merged entity limited the compatibility of the Grid with rival eye gaze cameras, worldwide providers of dedicated AAC solutions who previously used the Grid in combination with a non-Tobii camera as part of their solution would then have two choices.

- Option 1: Continue using the non-Tobii camera and switch to an alternative software to the Grid, for example Jabbla’s Mind Express software. In this case, the merged entity would lose the wholesale variable margin made on its sale of the Grid (£[REDACTED]) on average per device in 2018).¹⁸²
- Option 2: Continue using the Grid and switch to a Tobii camera. In this case, the merged entity would retain the margin made on the Grid and also earn the margin on the Tobii camera (£[REDACTED] per unit on average for the camera in 2018),¹⁸³ that is a total margin of [REDACTED].

7.95 Therefore, in a scenario where providers of dedicated AAC solutions worldwide could no longer use non-Tobii cameras in combination with the Grid, the critical diversion threshold is [REDACTED] [20-30%] ([REDACTED]).¹⁸⁴ That is, there would be financial incentives to foreclose if worldwide providers of dedicated AAC solutions that had sold the Grid in combination with a non-Tobii camera would choose to continue using the Grid and switch to a Tobii camera (option 2) in at least [REDACTED] [20-30%] of cases, rather than continuing to use the non-Tobii camera and switching to an alternative software to the Grid (option 1).

7.96 The extent to which dedicated AAC solution providers worldwide would be forced to use a Tobii camera if the Grid’s compatibility with rival cameras was significantly reduced depends on whether they can find a credible alternative to the Grid. As set out in paragraphs 7.82 to 7.86, the evidence indicated that

¹⁸² See paragraph 7.36 for further details.

¹⁸³ For this we used unit gross margin data from Tobii [REDACTED]. This included ‘bill of materials’ as a cost so we consider it a better estimate of Tobii’s estimate of variable margins, which excluded this cost category.

¹⁸⁴ This is the average wholesale variable margin made by Smartbox on its sales of the Grid to competitors and resellers in 2018 divided by the total margin made in 2018 on a Tobii camera and the Grid.

there is no such credible alternative and that there are significant costs involved in switching software. In particular, we noted:

- (a) The strengths and the popularity of the Grid over the only current alternative (Jabbla's Mind Express);
- (b) The significant barriers to developing new software that would be a credible alternative to the Grid;
- (c) The significant costs for dedicated AAC solution providers to switch software.

7.97 Given this evidence that switching to an alternative software to the Grid is unlikely to be a credible option (option 1 above), we considered that it is likely that there would be significant switching by these dedicated AAC solution providers to Tobii cameras (option 2 above), enough for the diversion rate to exceed the [REDACTED] [20-30%] critical diversion threshold. This would make it profitable for the merged entity to foreclose its eye gaze camera competitors.

Strategic considerations

7.98 We considered wider strategic considerations which might affect the incentive for the merged entity to engage in the customer foreclosure strategy. In particular, we considered the potential strategic incentive for the merged entity to use the foreclosure strategy to strengthen its position in the market for eye gaze cameras in AAC applications, as well as in the downstream market for dedicated AAC solutions.

7.99 A review of Tobii's internal documents indicated that the foreclosure strategy [REDACTED]. In particular, [REDACTED]:

[REDACTED].

7.100 A situation where the Grid's compatibility with non-Tobii cameras was significantly reduced would also weaken rival suppliers of dedicated AAC solutions worldwide, due to the reduction in the range of cameras that they would be able to provide in combination with the Grid, or their need to use an inferior software as part of their solutions (particularly in the case of LC Tech, whose dedicated AAC solutions are based on its own cameras). This would create an additional strategic incentive for the merged entity to engage in the customer foreclosure strategy.

Reputational considerations

7.101 Tobii submitted that the merged entity would not have the incentive to limit the compatibility of the Grid with rival eye gaze cameras due to the high reputational costs that such a strategy would imply for the merged entity.¹⁸⁵

7.102 However, we noted that many access features of Tobii's AAC software products Communicator 5 and Snap+Core First are only compatible with Tobii's own eye gaze cameras (see Tobii's internal software compatibility comparison in [REDACTED])

7.103).

7.104 Similarly, [REDACTED] (see paragraph 7.78), even though such an arrangement could, in principle, have reputational costs for Tobii (in limiting the range of options available to customers), similar to those Tobii submitted it would seek to avoid.

7.105 Furthermore, any potential reputational effects of a customer foreclosure strategy would be minimal if the merged entity limited the compatibility of the Grid only with new generations of cameras, since this would not affect existing customers.

7.106 Accordingly, we do not agree that reputational considerations would disincentivise Tobii overall from engaging in a customer foreclosure strategy.

Provisional conclusion on incentives

7.107 We provisionally conclude that the merged entity is likely to have the incentive to limit the compatibility of the Grid with rival eye gaze cameras in AAC applications, given the low likelihood of dedicated AAC solution providers switching to alternative AAC software in order to be able to use non-Tobii cameras. We also find that Tobii would be likely to have wider strategic incentives to engage in this strategy, [REDACTED].

Effects (customer foreclosure of eye gaze competitors)

7.108 We considered whether the effect of the merged entity foreclosing eye gaze camera suppliers in AAC applications would be to increase further Tobii's already strong global position in the supply of eye gaze cameras in AAC

¹⁸⁵ In relation to this point, Tobii added that it sells its software on the App and Windows stores, in line with its objective to increase sale volumes of standalone software [REDACTED].

applications worldwide, weakening competition in this market. In particular, we considered whether this weaker competition is likely to give rise to:

- (a) reduced innovation in eye gaze cameras used in AAC applications, particularly for features that are relevant specifically for AAC;
- (b) higher prices for these cameras;
- (c) adverse effects in the downstream supply of dedicated AAC solutions which use eye gaze cameras as an input, in particular a reduction in the range of cameras available to meet end user needs in AAC as well as a worsening of the price and quality of dedicated AAC solutions incorporating eye gaze cameras.

7.109 We discuss each of these potential effects below.

Reduced innovation in AAC applications

7.110 We noted that a reduction in the available routes to market for rival eye gaze cameras in AAC applications is likely to reduce the extent to which eye gaze camera competitors invest in improving their cameras for AAC applications. For instance:

- (a) As part of its general concerns about the Merger, Irisbond noted that, as the main AAC software provider, Smartbox is currently a catalyser for eye gaze camera manufacturers in enabling product improvement, fair competition and innovation. Irisbond added that the Merger would imply the loss of a key partner for innovation and for the development of a wider variety of innovative and affordable AAC solutions.
- (b) As set out in paragraph 7.58, partnerships with AAC software providers and, in particular, with Smartbox, are key in enabling innovation in the supply of eye gaze cameras in AAC applications.
- (c) The evidence set out in paragraph 7.58 also indicates that the significant investment required to become compatible with alternative AAC software would weaken the ability for eye gaze camera suppliers to invest in other innovation projects in AAC applications. [REDACTED].

7.111 Tobii submitted that research and innovation in eye-gaze cameras is currently driven by the demands of the 'mass market' consumer electronics and automotive sectors as opposed to the AAC sector, [REDACTED]. Tobii added that it estimates that approximately [REDACTED] companies are presently engaged in eye tracking technology R&D, including Apple, Microsoft, Google, Samsung and Facebook.

7.112 However, the available evidence suggests that some of the current challenges in eye tracking technology are specifically relevant for AAC users, and that rival suppliers of eye gaze cameras in AAC applications are actively engaging with providers of dedicated AAC solutions to find ways to address these challenges. For instance:

- (a) Smartbox told us that a key challenge in AAC is for eye tracking to work well regardless of the position of the head with respect to the screen. Smartbox noted that this was less relevant for non-AAC applications such as virtual reality, where the headset is fixed in front of the users' eyes. Some AAC users currently have to go through a calibration process every time their position changes, which is [REDACTED].¹⁸⁶ [REDACTED].
- (b) Smartbox added that it communicates extensively with suppliers of eye gaze cameras in AAC applications on these opportunities for improvement and that, [REDACTED], they are generally responsive. In particular, Smartbox considered that the most responsive eye gaze supplier is [REDACTED]. Smartbox noted that [REDACTED].
- (c) PRC similarly told us that AAC users are typically more likely to have challenging eye conditions and head movement patterns in comparison with the rest of the population. PRC added that a key challenge going forward is for eye gaze cameras to be able to adjust to a wider range of eye conditions. PRC is constantly monitoring the developments of other suppliers of eye gaze cameras in AAC applications. In particular, PRC interacts mostly with EyeTech and Irisbond and, to a lower extent, LC Tech.

7.113 As Tobii acknowledged (see paragraph 7.110 above), research and innovation in eye gaze technology by companies who do not specialise in AAC applications (including Apple, Microsoft and Google) is driven by the demands of 'mass market' consumer sectors.¹⁸⁷ Therefore, we considered that it is unlikely that these companies would focus their innovation efforts on addressing the specific needs of AAC users to the same extent as suppliers of eye gaze cameras in AAC applications would do.

Higher prices for eye gaze cameras in AAC applications

7.114 Weaker competition in the supply of eye gaze cameras in AAC applications worldwide could lead to an increase in prices in this market. In particular, PRC

¹⁸⁶ Definition of cortical visual impairment sourced from the [National Eye Institute's website](#).

¹⁸⁷ Tobii later submitted that to its understanding there are no eye gaze technology companies who specialise in AAC. [REDACTED]. This contrasts with the information provided by Alea, Irisbond, EyeTech and LC Tech, who told us that a large proportion of their revenues relates to AAC applications (see para 7.75).

explained that a loss of competition from EyeTech and Irisbond could reduce the likelihood of future availability of alternatives to Tobii’s eye gaze camera products, as it considered that EyeTech and Irisbond are in the best position to improve their solutions to compete with Tobii.

Adverse effects in the downstream market for dedicated AAC solutions

7.115 We consider that less innovation in eye gaze cameras and an increase in their prices is likely to have adverse effects on the supply of dedicated AAC solutions which use eye gaze cameras as an input in terms of their prices and quality.

7.116 There would also be direct effects in the downstream market for dedicated AAC solutions arising from the merged entity limiting the compatibility of the Grid with rival eye gaze cameras. This would reduce the range of dedicated AAC solutions available to meet end users’ needs, with dedicated AAC solutions that use the Grid offering a reduced range of eye gaze camera options compared to the counterfactual absent the Merger. This would be particularly problematic for those end users whose needs are best met by the Grid in combination with a non-Tobii camera.

7.117 While these downstream effects would be global in nature, the adverse effects would likely be more acutely felt in the market for dedicated AAC solutions in the UK. As shown in Table 7-2, Tobii’s volume share of eye gaze cameras in AAC applications worldwide is significantly higher than in the UK. This implies that, in the UK, the share of AAC users who currently use non-Tobii cameras (and who, therefore, might be most affected by a weakening of these suppliers) is larger than in the rest of the world.

Table 7-2: Volume shares of eye gaze cameras in AAC applications in 2018, UK and worldwide

<i>Eye gaze supplier</i>	<i>Volume share worldwide*</i>	<i>Volume share in the UK†</i>
Tobii	[70-80%][§]	[50-60%] [§]
Alea	[0-5%] [§]	[5-10%][§]
EyeTech	[10-20%] [§]	[30-40%][§]
Irisbond	[0-5%] [§]	[5-10%][§]
LC Tech	[0-5%][§]	[0-5%][§]

Source: CMA analysis of information from[§] responses from third party eye gaze competitors, Liberator, Techcess and Inclusive Technology as well as Smartbox’s and Tobii’s transaction data.

* Relates to sales to suppliers and resellers of dedicated AAC solutions globally, with the exception of Tobii and Irisbond (which also include direct/retail sales, see individual notes below).

† Only relates to cameras that we know for certain to be sold alongside or integrated with a dedicated AAC solution in the UK. These shares do not include cameras made by SMI as these were taken off the market when SMI was acquired by Apple. Because some AAC providers stocked up on these cameras they were still being sold in combination with solutions. If they were included, the shares would be as follows: Tobii [§] [40-50%], EyeTech [§] [20-30%], Irisbond [§] [5-10%], Alea [§] [5-10%] and SMI [§] [20-30%].

‡ Relates to all (including retail sales) of the PCEye range and the Tobii I12/I15 and EyeMobile devices in 2018.

§ Includes direct sales made in Spain and Latin America for the worldwide shares.

Provisional conclusion on effect

7.118 Based on the assessment above, we provisionally conclude that a customer foreclosure strategy where the merged entity limited the compatibility of the Grid with rival eye gaze cameras would likely result in an SLC in:

- (a) competition in the upstream market for eye gaze cameras in AAC applications worldwide; and
- (b) competition in the downstream supply of dedicated AAC solutions worldwide, and particularly in the UK.

Provisional conclusion on customer foreclosure of eye gaze camera competitors

7.119 On the basis of the above assessment, we provisionally conclude that there is likely to be an SLC in the worldwide supply of eye gaze cameras to providers of dedicated AAC solutions, including customers based in the UK as result of the merged entity having the ability and incentive to foreclose its rivals from an important route to market by limiting the compatibility of the Grid software with their eye gaze cameras. As a consequence of this SLC, we also provisionally find that there is likely to be adverse effects in the market for dedicated AAC solutions in the UK.

Input foreclosure of Tobii's eye gaze cameras

7.120 In this section we consider whether the Merger would be likely to substantially lessen competition in the downstream supply of dedicated AAC solutions in the UK by the merged entity making its competitors' access to Tobii's eye gaze cameras more expensive (or otherwise restricting access to these products in a way that would raise downstream rivals' costs).¹⁸⁸

7.121 We have focused on the foreclosure of the Parties' most significant competitors in the downstream supply of dedicated AAC solutions in the UK: Liberator and Techcess (the same approach we took for input foreclosure of Smartbox's AAC software). Tobii supplies its eye gaze cameras to both

¹⁸⁸ Our assessment below focuses on the ability and incentives of the merged entity to increase the price that it charges downstream competitors for Tobii's eye gaze cameras. Given our provisional findings that it is unlikely that there is an incentive for the merged entity to do this, there is also unlikely to be an incentive to foreclose access to Tobii's eye gaze cameras in other ways. The incentives are likely to be no higher for other foreclosure mechanisms as they do not have the benefit of increasing the margins on Tobii's camera sales to competitors as result of charging these competitors higher prices. We have therefore not considered other foreclosure mechanisms separately.

Liberator and Techcess via these competitors' parent companies, PRC and Jabbla respectively.

- (a) In 2018, Techcess sold [X] dedicated AAC solutions with an eye gaze camera in the UK, which represented [X] of its total sales of dedicated AAC solutions (up from [X] in 2017). Out of these [X] sales, [X] had a Tobii camera, [X] had an Eyetech camera, and [X] had an Alea camera.
- (b) [X]. PRC integrates the camera module into the main hardware of its dedicated AAC solutions rather than offering the camera as an accessory that can be mounted to its dedicated AAC hardware. PRC is the only rival to the merged entity in the UK that fully integrates the eye gaze camera in this way. Liberator has also started offering Irisbond eye gaze cameras mounted to its dedicated AAC hardware.

Ability (input foreclosure of Tobii's eye gaze cameras)

7.122 There is scope (in principle) for the merged entity to increase significantly the prices it charges PRC and Jabbla for Tobii eye gaze cameras. [X].¹⁸⁹ Removing this discount would involve a price increase of around [X] per camera. Similarly, while pricing to PRC is subject to an existing agreement between PRC and Tobii, this agreement is subject to termination ([X]) and renegotiation.¹⁹⁰

7.123 In this section we consider the ability of the merged entity to impose a price increase on its eye gaze cameras to its downstream competitors PRC and Jabbla using a range of evidence including:

- (a) market shares (which provide an indication of how strong Tobii's position is in eye gaze cameras for AAC applications); and
- (b) constraints from rival eye gaze cameras used in AAC applications.

7.124 We also assess submissions made by Tobii on this issue.

Market shares

7.125 We estimate that Tobii's global market share of eye gaze cameras used in AAC applications was over [X] [70-80%] by volume (see Table 7-2 in the effects section of the customer foreclosure assessment above) and over [X] [60-70%] by value in 2018 (see Table 7-3 below). These estimates include sales of Tobii's eye gaze cameras used in its own dedicated AAC solutions

¹⁸⁹ This is the camera that Tobii predominantly sells to Jabbla.

¹⁹⁰ [X].

(both direct sales and sales through resellers), sales of Tobii's eye gaze cameras used in competitors' dedicated AAC solutions, and standalone sales of Tobii's eye gaze cameras. These shares show Tobii's strong global position in the supply of eye gaze cameras in AAC applications.

Table 7-3: Global shares of eye gaze cameras used in AAC applications by value in 2018

<i>Eye gaze supplier</i>	<i>Global share</i>
Tobii*	[60-70%][REDACTED]
Alea	[5-10%][REDACTED]
EyeTech†	[10-20%][REDACTED]
Irisbond	[5-10%][REDACTED]
LC Tech§	[5-10%][REDACTED]

Source: CMA analysis of [REDACTED] information from Alea, EyeTech, Irisbond, LC Tech and Tobii's transaction data.

Note: We have excluded SMI from these shares as SMI no longer supplies eye gaze cameras.

* [REDACTED].

† [REDACTED].

§ To calculate the value for LC Tech we have assumed that all sales relate to the LC Eyegaze Edge camera and have used the Smartbox retail price for this product (£3,950).

7.126 Based on our estimates, Tobii's position in eye gaze cameras in AAC applications is not as strong in the UK as it is globally, but its share by volume in the UK is still significant at [REDACTED] [50-60%]¹⁹¹ (see Table 7-2 in the effects section of our customer foreclosure assessment above).

7.127 Considering rivals' eye gaze cameras, there have been no sales of dedicated AAC solutions with LC Tech's eye gaze camera in the UK. Given the lack of existing supply and the fact that LC Tech's eye gaze camera in the UK appears to be significantly more expensive than other eye gaze cameras,¹⁹² we have not considered LC Tech as a credible alternative supplier to Tobii. We focus instead on the eye gaze cameras supplied by EyeTech, Irisbond and Alea as possible alternatives to Tobii's eye gaze cameras.

7.128 Tobii's high eye gaze camera market shares indicate that the merged entity may be in a position to weaken Liberator and Techcess by increasing the price their parent companies pay for Tobii's eye gaze cameras.

Constraints from rival eye gaze cameras used in AAC applications

7.129 Tobii submitted that it has no ability to foreclose, in particular noting that:

¹⁹¹ This volume share specifically refers to the share by volume in terms of eye gaze cameras sold as part of a dedicated AAC solution (i.e. excluding standalone sales of eye gaze cameras).

¹⁹² Based on retail prices: Smartbox's UK site lists the retail price of LC Tech's eye gaze camera as £3,950. In comparison, Smartbox's UK site lists significantly lower prices of eye gaze cameras from Alea (£1,695), EyeTech (£1,250), Irisbond (£1,250) and Tobii (£849).

- (a) there are other existing suppliers of eye gaze cameras for use in AAC solutions that competitors could use instead of Tobii's eye gaze cameras;¹⁹³ and
- (b) when Tobii stopped supplying Smartbox with Tobii eye gaze cameras, Smartbox used other eye gaze cameras instead and was not foreclosed.¹⁹⁴

7.130 We set out below our assessment on the existence of credible alternatives to Tobii's eye gaze cameras and evidence on Tobii's cameras not being an important driver of choice of dedicated AAC solutions.

7.131 First, there are eye gaze cameras available to Jabbla, PRC and their UK subsidiaries that are similar in price or less expensive than Tobii's cameras.

- (a) Jabbla pays around [REDACTED] per camera for Tobii's PCEye Mini (featuring Tobii Gaze software). Jabbla paid slightly [REDACTED] is also looking to source eye gaze cameras from [REDACTED]. [REDACTED].
- (b) PRC pays a unit price of [REDACTED] for Tobii's IS4 eye gaze camera integration module ([REDACTED]). In comparison, Irisbond offers its eye gaze camera integration module for [REDACTED] per unit.¹⁹⁵

7.132 Second, the available evidence also indicates that these alternative products are of broadly similar quality to those of Tobii. While the evidence shows that Tobii's eye gaze cameras are superior to alternative cameras in terms of certain features, the opposite holds in terms of other features.

7.133 In some respects, there is evidence to suggest that Tobii's eye gaze cameras are technically superior to alternative eye gaze cameras used in AAC applications:

- (a) A Tobii document notes that its IS4 eye gaze camera supports the tracking of both bright and dark pupils whereas eye gaze cameras from Alea, EyeTech and Irisbond only support dark pupil tracking.
- (b) PRC evaluated eye gaze cameras from EyeTech and Irisbond prior to choosing an eye gaze camera from Tobii. [REDACTED].

¹⁹³ Tobii's response to the CMA's Phase 1 Decision, para. 99.

¹⁹⁴ [REDACTED], Tobii also submitted that where the merged firm's upstream input is not a 'must have', nor an indispensable input for downstream rivals to be able to compete (because there are range of alternatives), the merger does not limit downstream rivals' choice of supply, so there will be no ability to foreclose. We disagree with this proposition. There can be vertical effects arising from input foreclosure when an upstream input is neither 'must have' nor indispensable for the reasons set out at paragraph 7.16.

¹⁹⁵ CMA analysis of information provided by eye gaze camera suppliers and PRC.

7.134 In other respects, there is evidence that alternative eye gaze cameras match or outperform Tobii's eye gaze cameras:

- (a) A technical test from Smartbox concluded that [redacted] eye gaze camera was the clear best performer at being able to track eyes in a wide range of lighting conditions compared to eye gaze cameras from [redacted].
- (b) Irisbond told us that its camera is just as good as Tobii's camera. Similarly, Alea considered the functionality of its eye gaze camera to be competitive with Tobii's eye gaze cameras based on market feedback.
- (c) [redacted].

7.135 Third, evidence we received from customers indicates that Tobii eye gaze cameras are not an important driver of choice of a dedicated AAC solution:

- (a) Customers that purchased a dedicated AAC solution from Techcess with a Tobii eye gaze camera (11 customer responses to our requests for information) did not indicate that the Tobii camera was an important driver of these purchases when asked.¹⁹⁶
- (b) Instead customers tended to state that the Tobii camera was important only in terms of the flexibility this option adds to being able to find the most appropriate solution for each user, for example because some users have more success with a particular type of eye gaze camera. This was the case for 7 out of these 11 customer responses.¹⁹⁷
- (c) Or customers indicated that the availability of the Tobii cameras was not a major factor in their purchases of Techcess devices (3 out of the 11 customer responses).^{198 199}

7.136 Fourth, when Tobii stopped supplying Smartbox with Tobii eye gaze cameras, Smartbox was able to use eye gaze cameras from Alea, EyeTech, and Irisbond instead. This evidence suggests that dedicated AAC solution providers are able to switch away from Tobii's eye gaze cameras.

7.137 Fifth, we considered estimates from PRC and Techcess on the sales they would lose if they no longer offered Tobii's eye gaze cameras. These estimates suggest that in this scenario these rivals may [redacted]. But they

¹⁹⁶ No respondents had purchased a Liberator device with a Tobii eye gaze camera, since this solution was not available at the time we sent our request for information to customers.

¹⁹⁷ [redacted]Barnsley Hospital, Royal Hospital for Neuro Disability, Bristol Communication Aid Centre, Leeds Community Healthcare NHS Trust, Treloar School and College, KM CAT (Adults).

¹⁹⁸ [redacted]Cambridge CASEE, ACE Centre North and the Regional Communication Aid Service.

¹⁹⁹ The one remaining response (Assistive Communication Services) did not specify the importance of having a Tobii camera in driving their decisions.

nevertheless suggest that in around the other [X], these competitors could switch to alternative eye gaze cameras.

7.138 We consider that PRC and Techcess would lose significantly fewer downstream sales than they have estimated given the evidence above on Tobii's cameras not being an important driver of choice of dedicated AAC solution. There are credible alternatives to Tobii's cameras that they could use instead, as Smartbox did when Tobii stopped supplying it with eye gaze cameras (as set above at paragraphs 7.131 to 7.136).

7.139 Based on the above, we consider that PRC and Jabbla are likely to be able to switch a significant proportion of their purchases of Tobii eye gaze cameras to alternative eye gaze cameras used in AAC applications. As such, the ability of the merged entity to increase the price of its eye gaze cameras to its downstream competitors is limited by this constraint.

7.140 Before reaching a provisional conclusion on this, we set out below further submissions made by Tobii on the ability to foreclose its downstream rivals from its eye gaze cameras.

Constraints from potential entry

7.141 Tobii submitted that there are approximately 30 other suppliers of eye gaze technology which could easily expand into supplying of eye gaze technology and cameras for AAC solutions.²⁰⁰ As we have found that the existing alternative supply options would limit the merged entity's ability to successfully pursue a foreclosure strategy, we do not consider it necessary to reach a conclusion on the potential constraints from any entry into this market.

The gaming versions of Tobii cameras

7.142 Tobii submitted that competing providers of AAC solutions could purchase Tobii Tech's eye gaze cameras currently supplied for gaming use (eg the Tobii 4C model) from numerous distributors such as Amazon.²⁰¹ We consider that this is unlikely to be a credible strategy that Liberator and Techcess could use to avoid being foreclosed due to differences between Tobii's AAC eye gaze cameras and Tobii's eye gaze cameras supplied for gaming use.

7.143 Tobii's internal documents indicate that it sought to address the risk of its eye gaze gaming cameras competing with its AAC cameras by developing AAC

²⁰⁰ [Tobii's response to the phase 1 Decision](#), paragraph. 99. [X].

²⁰¹ [Tobii's response to the phase 1 Decision](#), paragraph. 98.

eye gaze cameras with purpose-built features. For example, one document notes that the [REDACTED]

7.144 We also note that the Tobii's 4C gaming camera is a peripheral so cannot be integrated into dedicated AAC hardware in the way that PRC has done with Tobii's eye gaze camera integration module.

Provisional conclusion on ability

7.145 Based on the evidence above, we provisionally conclude that the merged entity has limited ability to foreclose its downstream rivals in the supply of dedicated AAC solutions in the UK due to the constraints from alternative eye gaze cameras used in AAC applications. We have taken into account these constraints in our assessment of incentives below.

Incentives (input foreclosure of Tobii's eye gaze cameras)

7.146 In this section we assess the incentives of the merged entity to foreclose its downstream competitors (Liberator/PRC and Techcess/Jabbla) in the supply of dedicated AAC solutions in the UK from Tobii's eye gaze cameras. We have taken the same approach as in our assessments of the previous two vertical theories of harm. We calculated a 'critical diversion threshold' using the Parties' margins and assessing whether this threshold would be exceeded such that there may be an incentive to foreclose downstream rivals from Tobii's cameras (see paragraphs 7.30 to 7.33 above for an explanation of this).²⁰²

7.147 The variable margin made by Tobii on sales of its eye gaze cameras to resellers in 2018 was £[REDACTED].²⁰³ The average variable margin made by Smartbox and Tobii on direct sales of dedicated AAC solutions supporting eye gaze in 2018 was £[REDACTED]²⁰⁴ (where the margins made on each product are weighted by their sales). Using these margins we estimate a critical diversion threshold of [REDACTED] [10-20%][REDACTED].²⁰⁵ That is, a total input foreclosure strategy would be profitable if the merged entity recaptured at least [REDACTED] [10-20%] of its

²⁰² We also considered Tobii's arguments on the reputational consequences of foreclosing downstream rivals from its eye gaze cameras but consider that any such consequences are unlikely to affect the merged entity's incentives materially. This finding is supported by the fact that Tobii has not agreed to supply Smartbox with its cameras despite the prospect of any reputational issues and due to customers having limited ability to punish the merged entity if such reputational issues were to arise (as set out at a paragraph 7.42).

²⁰³ For this we used unit gross margin data from Tobii [REDACTED]. This included 'bill of materials' as a cost so we consider it a better estimate of Tobii's estimate of variable margins, which excluded this cost category.

²⁰⁴ CMA analysis of margin data from Smartbox and Tobii, based on Smartbox Power Pad and the Tobii I12/I15.

²⁰⁵ This is the variable margin made by Tobii on sales of its eye gaze cameras to resellers in 2018 divided by the average variable margin made by Smartbox and Tobii on direct sales of dedicated AAC solutions supporting eye gaze in 2018.

lost upstream sales of Tobii's eye gaze cameras as result of customers switching to the merged entity's downstream dedicated AAC solutions.

- 7.148 If the merged entity significantly increased the price of Tobii's eye gaze cameras to its downstream competitors, it is likely that there would be significant switching by these competitors to alternative cameras. Indeed, as noted in our ability assessment, Tobii's cameras are not an important driver of customers' choice of dedicated AAC solutions and there are credible alternatives to Tobii's eye gaze cameras supplied by its competitors (as set out at paragraphs 7.130 to 7.139).
- 7.149 Downstream competitors that continue to sell Tobii eye gaze cameras as part of their dedicated AAC solutions, but at a higher price, may face some sales losses, with some customers diverting to the merged entity. We believe, however, that the sales gained by the merged entity downstream would be small compared to the number of Tobii cameras replaced with an alternative camera upstream. This is due to demand for dedicated AAC solutions not being particularly price sensitive (see paragraph 7.54) compared to how suppliers of dedicated AAC solutions would respond to price rises of Tobii's cameras (as set out above at paragraph 7.148).
- 7.150 As most switching would be to alternative cameras upstream rather than to the merged entity downstream, we consider that diversion to the merged entity's dedicated AAC solutions would be low and unlikely to exceed the critical diversion threshold. The incentives to increase the price of Tobii's eye gaze cameras to downstream competitors may therefore be limited.
- 7.151 We also note that foreclosing PRC and Jabbla from Tobii's eye gaze cameras would increase the opportunities for eye gaze camera competitors to supply PRC and Jabbla. This could undermine, at least in the short term, a customer foreclosure strategy of these eye gaze camera competitors, which, as set out in the previous section, we provisionally found to be a profitable strategy for Tobii.

Provisional conclusion on incentives

- 7.152 Based on our assessment above, and given the limited ability to foreclose, we provisionally conclude that it is unlikely that the merged entity has sufficient incentives to make access to Tobii's eye gaze's cameras significantly more expensive for its downstream competitors in the supply of dedicated AAC solutions in the UK. This is due to this strategy leading to significantly greater switching to alternative eye gaze cameras upstream compared to the switching to the merged entity's downstream dedicated AAC solutions.

Provisional conclusion on input foreclosure of Tobii's eye gaze cameras

7.153 We provisionally conclude that there is unlikely to be a substantial lessening of competition in the supply of dedicated AAC solutions in the UK as a result of input foreclosure of Tobii's eye gaze cameras. The merged entity has limited ability and incentives to weaken competitors in this way.

The interaction of vertical effects and horizontal effects

7.154 We have provisionally found a substantial lessening of competition due to vertical competition concerns with regard to input foreclosure of the Grid software and customer foreclosure of Tobii's AAC eye gaze camera competitors.

7.155 These vertical effects exacerbate the competition concerns arising from horizontal unilateral effects in the downstream supply of dedicated AAC solutions in the UK. Foreclosing rivals in this market from the Grid would weaken the remaining constraints on the merged entity's dedicated AAC solutions in the UK and add to the loss of competition between the Parties. Customer foreclosure of rival eye gaze camera suppliers would also reduce the strength and range of eye gaze cameras offered downstream in the supply of dedicated AAC solutions in the UK.

8. Countervailing factors

Introduction

8.1 This chapter considers whether there are countervailing factors which may prevent an SLC (or SLCs) from arising. Specifically, we consider the effect of entry or expansion, buyer power and efficiencies.

Entry and expansion

Introduction and CMA framework for assessing entry and expansion

8.2 Our Guidelines state that in assessing whether entry or expansion might prevent an SLC, we will consider whether such entry or expansion would be: (a) timely; (b) likely; and (c) sufficient.²⁰⁶ Our Guidelines also state that potential (or actual) competitors might encounter barriers which adversely affect the timeliness, likelihood and sufficiency of their ability to enter (or expand in) the market, and therefore barriers to entry (and expansion) are

²⁰⁶ [Merger Assessment Guidelines](#), paragraph 5.8.3.

specific features of the market that give incumbent firms advantages over potential or growing competitors.²⁰⁷

- (a) As regards timeliness: entry and/or expansion must be sufficiently timely and sustained to constrain the merged entity. The timeliness of entry or expansion is assessed on a case-by-case basis, depending on the characteristics and dynamics of the market, but the CMA would normally consider entry or expansion that has a significant impact on competition within two years to be timely.²⁰⁸
- (b) As regards the likelihood of entry or expansion: we consider both the scale of any barriers to entry and/or expansion that may impact on the likelihood of entry or expansion and also whether firms have the ability and incentive to enter the market. For example, in a market characterised by relatively low absolute barriers to entry and/or expansion, entrants may nevertheless be discouraged from entry by the small size of the market, or the credible threat of retaliation by incumbents.²⁰⁹
- (c) As regards sufficiency: entry or expansion should be sufficient to deter or defeat any attempt by the merged entity to exploit any lessening of competition resulting from the Merger.²¹⁰

8.3 In this section we consider entry and expansion into:

- (a) the supply of dedicated AAC solutions in the UK as a possible factor offsetting the loss of competition through horizontal unilateral effects that we identified in this market;
- (b) the supply of AAC software as a credible alternative to Smartbox's Grid software as a possible factor preventing the loss of competition through input foreclosure of Smartbox's Grid software;
- (c) the supply of AAC software (as an element of a dedicated AAC solution) as preventing the loss of competition through customer foreclosure of Tobii's eye gaze camera competitors.

8.4 In relation to the loss of competition arising from customer foreclosure in the market for eye gaze cameras in AAC applications, we also considered whether this loss of competition would be prevented by new entry or expansion into this upstream market from providers of eye gaze technology

²⁰⁷ [Merger Assessment Guidelines](#), paragraph 5.8.4.

²⁰⁸ [Merger Assessment Guidelines](#), paragraph 5.8.11.

²⁰⁹ [Merger Assessment Guidelines](#), paragraph 5.8.8.

²¹⁰ [Merger Assessment Guidelines](#), paragraph 5.8.10.

active in other applications (eg gaming cameras). However, eye gaze cameras in other applications would still need to be compatible with the relevant AAC software in order to be incorporated into the Parties' dedicated AAC solutions, just as eye gaze cameras in AAC applications must be. As set out in paragraph 7.90, our provisional view is that there are limited routes to market that do not depend on the Grid, and it would be open to the merged entity to foreclose this route to rivals post-merger. Therefore, we have not considered entry and expansion of suppliers of eye gaze cameras in other applications further in this chapter.

Parties' views

Tobii's views

- 8.5 Tobii submitted observations as to entry and expansion in the UK AAC sector more generally, rather than specifically regarding dedicated AAC solutions. For example, Tobii told us that it was aware of successful previous entry and expansion in the UK AAC sector and cited the examples of Logan Technologies, Therapy Box and Dad in a Shed.²¹¹
- 8.6 Tobii also cited the introduction of the Apple iPad and Microsoft's Surface tablets as new products that have been adopted by a significant number of users of AAC solutions.²¹²
- 8.7 Tobii submitted that barriers to entry were low and that there were a number of other providers of AAC solutions active internationally (in particular in the US, such as Lingraphica, Forbes AAC and Talk To Me Technologies) which could quickly expand to the UK.²¹³ In particular, Tobii told us that there were no regulatory or localisation requirements in the UK and that existing providers would only need to establish a UK-based sales and customer support function or, alternatively, to operate through UK-based resellers.²¹⁴ However, it was not aware of any businesses intending to commence the development and sale of AAC hardware devices, nor did Tobii have specific knowledge of potential entry by third parties.
- 8.8 Tobii told us that entry in the supply of AAC solutions in the UK from an existing supplier active in another country would be:

²¹¹ [REDACTED]

²¹² [REDACTED].

²¹³ [Tobii response to issues statement](#), paragraph 3(d).

²¹⁴ [Tobii response to phase 1 decision](#), paragraph 8.3.

- (a) timely, as it could be achieved in less than a year, whether through a reseller or establishment of a UK sales operation;
- (b) likely, as there were at least eight established suppliers²¹⁵ of AAC solutions overseas that could readily enter the UK market and could do so at low cost, building upon their existing AAC or ‘eye-control’ businesses overseas; and
- (c) sufficient, as entry by one or more established suppliers of AAC solutions would be sufficient to replace Smartbox as an effective competitor.²¹⁶

8.9 Tobii further told us that mainstream technology companies (such as Apple, Microsoft and Google) continue to expand their assistive technology capabilities and that, due to their size and technical sophistication, these companies would impose a substantial competitive constraint on the merged entity.²¹⁷ In particular, Tobii submitted that these companies were increasingly producing their own assistive technology, and continuing to improve the durability, functionality and accessibility of their devices so that they can be used to meet the requirements of ever more users of AAC technology.²¹⁸

8.10 Tobii also submitted the results of an entry modelling analysis undertaken in relation to the supply of AAC hardware. In summary, Tobii submitted that the analysis showed that entry is not profitable at prevailing prices and that entry only becomes [redacted]²¹⁹ Tobii told us that this was consistent with the effective functioning of competition and consistent with barriers to entry being low, as if entry were profitable already, that could be indicative of barriers to entry (as otherwise entry would already be observed).²²⁰

8.11 Tobii told us that, while the current penetration rate and awareness of AAC solutions was low, the market for AAC solutions was nascent and had good growth potential. Tobii therefore told us that current low awareness levels should not be viewed as a barrier to entry in the supply of AAC solutions.²²¹

8.12 With regard to AAC software, Tobii told us that a significant number of AAC software providers have entered the market in the recent past.²²² As well as

²¹⁵ [Tobii response to issues statement](#), paragraph 54. Tobii identified Forbes AAC, Talk to Me Technologies, Ablenet, Rehavista, Humanelektronik, Lingraphica, LC Technologies and EyeFree as international suppliers that could expand into the UK.

²¹⁶ [Tobii response to issues statement](#), paragraph 60.

²¹⁷ [Tobii response to issues statement](#), paragraph 3(d) and Tobii response to phase 1 decision, paragraph 4.

²¹⁸ [Tobii response to phase 1 decision](#), paragraphs 30 and 50.

²¹⁹ [redacted]

²²⁰ [redacted]

²²¹ [redacted] Also, Tobii stated that the needs of 80% of the 350,000 people in the UK who require AAC solutions had not been addressed [redacted]

²²² [redacted].

software offerings from PRC/Saltillo and Liberator, new AAC software titles continued to enter the market on a regular basis.²²³

Smartbox's views

- 8.13 Smartbox provided several examples of companies that had been active in the supply of dedicated AAC solutions. However, Smartbox told us that, over time, the number of companies has declined²²⁴ due to financial pressures, acquisitions and exits from the UK market.²²⁵
- 8.14 Smartbox told us that a new entrant would face challenges in introducing new hardware to the market and that it considered that its history of adapting tablet computers had helped considerably in bringing the Grid Pad 12 to market.²²⁶
- 8.15 Smartbox told us that a new entrant supplying dedicated AAC hardware would need to design and manufacture bespoke hardware to meet the needs of people with complex communication needs.²²⁷ Smartbox estimated that this would require an initial investment of £[redacted] to £[redacted] if this was outsourced.²²⁸
- 8.16 Smartbox submitted that existing manufacturers of tablet technology (such as Apple, Microsoft, Dell, Lenovo, etc) would have the resources required to create dedicated AAC hardware devices but may face other key barriers including:
- (a) motivation to develop products for a relatively small user group;
 - (b) providing the specialist support required for AAC users; and
 - (c) time and specialist knowledge to develop their own AAC software and content to complement the devices.²²⁹
- 8.17 Smartbox also told us that a new entrant may face challenges in:

²²³ Tobii told us that examples include: 'Proloquo2Go' from AssistiveWare, 'ChatAble' and 'PredictAble' from Therapy Box, 'GoTalk NOW' from Attainment, 'Avaz Pro' from Avaz, 'Clicker Communicator', from Crick Software and 'CoughDrop' from CoughDrop. [redacted]

²²⁴ Beaumont College, an independent college for learners with AAC needs, also commented on consolidation in the AAC sector, citing the examples of Tobii's acquisition of Dynavox in 2014 and Abilia's acquisition of Toby Churchill (which previously supplied the LightWriter range of AAC devices).

²²⁵ [redacted]

²²⁶ [redacted]

²²⁷ Smartbox told us that typical features include voice amplification, rugged design, mounting capability and compatibility with a range of alternative access methods (eg switches, head trackers, eye gaze cameras). Other features may include a second screen to face the communication partner, a remote power button and user accessible radio-controlled environment control (for alarms, lights etc). [redacted]

²²⁸ Based on £ [redacted] development costs plus minimum order volumes of either [redacted] or [redacted] units at £ [redacted] each.

²²⁹ [redacted]

- (a) establishing a network of resellers, as there are typically a small number of potential resellers with the requisite understanding of the AAC industry and they may be tied into long-term supplier and commercial relationships;²³⁰
- (b) developing its brand reputation;
- (c) developing an effective repairs and service network; and
- (d) supplying software and content, as customers generally prefer to purchase hardware, software and content from a single supplier.²³¹

8.18 Smartbox told us that a less expensive way to develop a dedicated AAC hardware product would be to adapt existing tablet technology, which would include sourcing appropriate tablet computers (which Smartbox suggested would be likely to be rugged industrial tablets) and adding the functionality required for AAC (such as switch input, amplified speakers and environment control). However, such devices would need to compete against bespoke devices that were made for purpose.²³²

8.19 Regarding barriers to entry in AAC software, Smartbox told us that there was a substantial difference between supplying AAC software which supports a single content product (eg Proloquo2Go) and ‘fully featured’ software such as Smartbox’s Grid 3 or Tobii’s Communicator 5. Smartbox told us that fully featured software operated as a ‘platform’ for content with a large number of setups, each designed and configured to provide different functionality to individual users.²³³

8.20 Smartbox told us that the biggest challenge to the creation or improvement of AAC software, [REDACTED]²³⁴ ²³⁵ Smartbox told us that the underlying technology supporting the software of its rival suppliers Tobii, PRC and Jabbla [REDACTED]²³⁶

²³⁰ Based on the evidence that we have seen, standard Tobii reseller agreements appear to apply for a period of three years. We note that one reseller (Microlink) told us that it was “restricted in its freedom to offer alternative AAC solutions to its customers utilising non-Tobii hardware”.

²³¹ [REDACTED]

²³² [REDACTED]

²³³ [REDACTED]

²³⁴ [REDACTED]

²³⁵ For example, Smartbox told us that it [REDACTED] to develop Grid 3 (the latest version of the Grid that is supplied on dedicated AAC solutions), even with the experience and expertise that Smartbox had gained from developing the preceding iterations. Smartbox also told us that there are many components to the software, and each takes time to develop. [REDACTED]

²³⁶ [REDACTED]

- 8.21 In addition, Smartbox told us that, to compete with the market leaders in AAC software (such as the Grid), it is crucial that the quality of content matches that of the software. In this context, Smartbox told us that:
- (a) The development of a robust AAC language system was a highly specialised skill and required a deep understanding of language and grammatical conventions.
 - (b) A new entrant would need to build relationships and contract with third-party suppliers of necessary technologies (such as speech engines, symbol libraries, integration with alternative access methods such as eye gaze cameras).²³⁷
- 8.22 In addition to the requirements around hardware, software and content described in paragraphs 8.15 to 8.21, Smartbox told us that an effective competitor in the supply of dedicated AAC solutions in the UK would also require a dedicated support operation comprising staff with both technical and AAC knowledge, and sales and marketing services (including relationships with the major purchasers of AAC products in the UK, and approval for NHS supply contracts).²³⁸

Parties' internal documents

- 8.23 As described in Chapter 6 (Horizontal unilateral effects), in the Parties' internal documents that we reviewed, we found that the Parties' benchmarking of performance and monitoring of competitors focuses on each other, PRC/Liberator and Jabbla/Techcess. Tobii's internal documents indicate that Tobii was increasingly concerned by the competitive threat posed by Smartbox, but none of the documents that we have reviewed otherwise refer to, or reflect, a significant threat to Tobii from expansion or entry in the supply of dedicated AAC solutions or in the provision of comparable AAC software.²³⁹ Similarly, our review of Smartbox's internal documents does not indicate that Smartbox perceived a significant threat from entry or expansion in the supply of dedicated AAC solutions or AAC software alternatives to the Grid.

²³⁷ [REDACTED]

²³⁸ [REDACTED].

²³⁹ [REDACTED]. See paragraph 7.17 for further detail on these companies and our reasoning for our view that they are not credible alternatives to the Grid.

8.24 [REDACTED]²⁴⁰ [REDACTED]. Tobii told us that, as mainstream providers were already competing in the market with their current offerings, they would have no incentive to develop purpose-built devices.²⁴¹

Views of third parties

8.25 In this section we summarise the views expressed to us by other suppliers of dedicated AAC solutions and other third parties. Where applicable, we also summarise views of third parties on their own intentions and/or ability to enter or expand in the supply of dedicated AAC solutions or the supply of AAC software.

Current suppliers of dedicated AAC solutions to the UK

PRC/Liberator

8.26 As part of our phase 1 investigation, PRC told us that:

The solutions offered by PRC have been fine-tuned over many years. While a new entrant could enter relatively easily and provide solutions for individuals with simpler disabilities, solutions would need to be fine-tuned over many years to function effectively and consistently for individuals (particularly for individuals with more complex needs). As such, it would be difficult for someone new to enter and target the same breadth of users as PRC, Smartbox and Tobii.²⁴²

8.27 With regard to the provision of AAC software, Liberator told us that its parent company, PRC, had recently launched a new version of its software and that it would be launched in the UK [REDACTED]. Liberator told us that the initial launch would be a 'cut-down' version and would not include some features such as computer access or text messaging. [REDACTED].²⁴³

8.28 [REDACTED].²⁴⁴ Liberator told us that, even if it were to develop software that closely matched the Grid, the strength of the Grid brand and user familiarity with the Grid would mean that the Grid would likely remain the preferred choice of customers.²⁴⁵

²⁴⁰ [REDACTED]

²⁴¹ [REDACTED]

²⁴² [REDACTED]

²⁴³ [REDACTED]

²⁴⁴ [REDACTED]

²⁴⁵ [REDACTED]

8.29 Liberator [redacted] noted challenges in competing against the Grid as:

- (a) Many users had used the Grid for a long time and there was inertia to switching as users were generally happy with the Grid (which, among other things, users may have adapted for their own specific vocabulary).
- (b) Users would be required to invest significant time and effort in learning a new software.
- (c) The NHS was typically reluctant to invest time and resources into incorporating new software solutions into their range and it would take time to train assessors.²⁴⁶

8.30 Liberator told us that, while there were low barriers to the creation of certain types of software (for example, new apps that can be purchased through app stores such as iTunes or Google Play), providing a 'full-service solution' requires investment in consultant and technical support as well as ongoing customer service. Liberator told us that the costs of providing such a service are significant and represent a different proposition from simply creating software and making it available for purchase.²⁴⁷

8.31 More generally, Liberator told us that the main barriers faced by new providers or firms seeking to expand in the supply of AAC solutions were:

- (a) building awareness of products, demonstrating efficacy to the market and establishing a support infrastructure;
- (b) building relationships with 'gatekeepers' to the market (for example, assessors and therapists who prescribe solutions to users). Liberator told us that, as a result of resource and funding constraints among 'gatekeepers', it is becoming more difficult for providers to gain the access required to introduce them to new products and new solutions.²⁴⁸

8.32 Liberator told us that its plan to introduce new products were part of its ongoing product strategy rather than a response to the Merger. In implementing its new product plans, Liberator told us that it would face challenges in:

- (a) purchasers being 'locked-in' to particular systems already (eg as a result of users' familiarity with particular devices/software).

²⁴⁶ [redacted]

²⁴⁷ [redacted]

²⁴⁸ [redacted]

- (b) competing on price as NHS funding cuts lead prescribers to focus more on the cost of solutions.
- (c) a lack of marketing strength and economies of scale in comparison to, especially, Tobii Dynavox and also to Smartbox.

8.33 [✂]

Jabbla/Techcess

8.34 Techcess told us that:

- (a) A new entrant would require significant financial resources to build a presence in the UK AAC market and may be discouraged from entry by the small size of the market.
- (b) Any new entrant would require expertise 'on the ground', either by establishing its own presence or by operating through a locally-based partner.
- (c) The focus from the UK Government and the NHS on cost-effective solutions meant that there is pressure to drive down prices in the UK. Techcess told us that lower prices in the UK, as compared with other markets (eg in the Netherlands), may discourage expansion from international providers.
- (d) Suppliers were required to invest heavily in marketing their products to AAC prescribers and other customers in order to be successful.

8.35 Techcess told us that, due to the small size of the market for AAC solutions in the UK, any new entry would likely only take place from neighbouring product markets (for example, Microsoft's Surface tablets being enhanced with accessibility features). Techcess said that it did not consider it likely that a new entrant would be a strong competitor to the Parties and that Tobii was able to use its history, experience and financial resources to expand in the market.

8.36 [✂].

Abilia

8.37 Abilia supplies a specific type of mid-tech dedicated AAC solution, including hardware and software that transforms text into oral speech. Therefore, this product is targeted at literate users who are unable to speak but are able to type into a keyboard directly or alternatively switch scan to a keyboard. Abilia

told us that it is not in the eye control market and has no plans to expand its product range to introduce eye tracking technology.

Inclusive Technology

- 8.38 Inclusive Technology told us that it did not develop its own hardware products or access devices and developed software solutions that compete with content products such as Smartbox's 'Look to Learn'. However, it told us that it did not develop software which could be considered an alternative to Smartbox's Grid or Tobii's Communicator and [✂].
- 8.39 [✂].

Suppliers of dedicated AAC solutions outside the UK

8.40 In addition to the Parties' main competitors in the UK, we also contacted some suppliers of dedicated AAC solutions outside the UK which were mentioned by the Parties as potential new entrants in the UK market. We received responses as follows:

- (a) **Forbes Rehab Services**, a manufacturer of dedicated AAC hardware which operates mostly in the US, stated that it competed closer to Tobii than to Smartbox in the market for dedicated AAC solutions worldwide, particularly because Smartbox was not very established in the US. However, it stated that it was unlikely to enter the UK market in the next two years, since its primary objective was to grow in the US. It also noted that it would likely be very difficult as Smartbox and Tobii have an established stronghold in the market place in the UK.
- (b) **Reha Vista**, a reseller of AAC products in Germany, indicated that it did not compete with the Parties and that it did not have any plans to enter the UK market due to its lack of an export infrastructure.
- (c) **Lingraphica**, a US provider of AAC solutions focused on the aphasia segment of the market, told us that, while it would like to explore the option, it did not have specific plans for entering the UK market. Lingraphica told us that it did not have a detailed understanding of the UK market and how it works.
- (d) **LC Technologies (LC)**, a US supplier of AAC devices, AAC software and eye gaze cameras, told us that it was highly interested in developing a strong presence in the UK AAC market and that it had recently met with ACE Centre, a charity providing support to people with complex communication needs in the UK, and Microlink, a UK-based reseller of

AAC products.²⁴⁹ LC told us that it had recently signed a reseller agreement with Microlink. However, LC also told us that:

- (i) It was not in contact with any other organisations in the UK that it might build relationships with and had not identified any such organisations.
- (ii) It did not have estimates for the timing or cost of entering the UK market and that its future plans would depend on the market response as it develops new business relationships in the UK.
- (iii) While it is interested in the prospect of expanding in the AAC market in the UK and has begun to explore possible routes to market, it has not at this point undertaken any formal evaluations of the UK market, developed any formal plans or strategies for UK marketing, or made any financial projections for the UK market.

8.41 We also made attempts to contact Talk To Me Technologies, Ablenet and Humanelektronik but did not receive responses from these companies.²⁵⁰

Other third parties

8.42 As discussed earlier (see chapter 5 – Market Definition) we also sent questionnaires to three technology companies highlighted by Tobii as potential expansion candidates in the AAC market: Google, Apple and Microsoft. Responses can be summarised as follows:

- (a) **Google** told us that it did not see itself as competing with suppliers of dedicated AAC hardware and software such as Tobii or Smartbox. Google told us that it did not have any partnerships with companies that use Android tablets to meet AAC needs, and it did not currently have any specific plans to expand in the market for AAC hardware and software.
- (b) **Apple** told us that, while it was always improving its products to make them accessible to as many consumers as possible, including those with special needs, [redacted].
- (c) **Microsoft** told us that it was invested in meeting the needs of customers who require AAC hardware and software, and it remained open to establishing new partnerships in this area. Microsoft told us that it will

²⁴⁹ We estimate that Microlink has [redacted] [0-5%] of the UK market for dedicated AAC solutions. See Table 6-2.

²⁵⁰ Tobii also mentioned EyeFree as a supplier that could readily enter the UK market from overseas. However, we consider that EyeFree supplies a different type of proposition to the Parties as it offers a head-mounted infrared camera and screen-less technology specifically designed for 'locked-in' patients. See [EyeFree website](#) for further information.

consider partnering when there are opportunities of mutual interest. However, Microsoft clarified that it did not have specific expansion or partnership plans for the AAC market, but that customer and partner feedback helped shape its general investment in technologies that assistive technology providers can take advantage of.²⁵¹

Our assessment

8.43 In this section, we set out our assessment of the evidence and provisional conclusions on recent entry and expansion, barriers to entry and expansion, and finally whether any entry or expansion would be timely, likely and sufficient to prevent an SLC (or SLCs) from arising.

Recent entry and expansion

8.44 Our review of the recent history of entry and expansion in the supply of dedicated AAC solutions and AAC software (in particular, alternative software to the Grid) shows that there have been very limited instances of meaningful entry or expansion. This indicates that entry is difficult or that there are other more profitable opportunities elsewhere for larger well-resourced companies, or both.

8.45 As set out in Chapter 6 (Horizontal unilateral effects), a limited number of customers contacted by the CMA mentioned Logan Technologies, Therapy Box or Dad in a Shed as alternative suppliers to the Parties. The responses that we received indicated that these suppliers provide lower tech and/or niche solutions. We note that each of the main providers of dedicated AAC solutions (Tobii, Smartbox, PRC and Jabbla) has been active in the supply of assistive technology for communication for over ten years and that it has taken them time to refine their products to compete effectively.²⁵²

8.46 We note Tobii's submissions with regard to mainstream consumer tablets, such as those provided by Apple or Microsoft. As discussed in Chapter 5 (Market Definition), in our view the evidence indicates that the competitive constraint exerted by mainstream devices (with peripherals) on suppliers of dedicated AAC solutions is limited and much weaker than that exerted by suppliers of dedicated AAC solutions on each other.

²⁵¹ Such as platform APIs and standard drivers in the Windows platform that allow for plug and play use of peripheral devices. [X]

²⁵² Tobii entered the assistive technology market in 2005, Sensory Software International (which developed AAC software and became Smartbox) was incorporated in 1998, Liberator was established in 1991 and Techcess Communication Ltd was established in 2007, with Techcess Ltd formed in 1997.

- 8.47 With regard to AAC software providers, we recognise that the phrase ‘AAC software’ encompasses a range of differentiated products with different features and functionalities. However, as set out in paragraph 7.23, we consider that there are significant functionality differences between ‘fully-featured’ AAC software²⁵³ and software/apps such as Proloquo2Go, Avaz and the software of Therapy Box, each of which offer more limited features (for example touch-based software, software focusing only on text or symbol communication or apps only available on mainstream devices). [redacted]²⁵⁴ [redacted] with a very different positioning from that of AssistiveWare’s Proloquo2Go, CoughDrop and Tobii Dynavox’s own Snap + Core First. The [Tobii Dynavox website](#) also outlines the major differences and similarities between Snap + Core First and Communicator.²⁵⁵
- 8.48 We consider that, while entry may occur more easily in one niche of the AAC software market, for example in the provision of certain AAC content apps through online app stores, such products are unlikely to be close alternatives to, and as such compete strongly with, the ‘fully featured’ AAC software provided by Tobii, Smartbox, PRC and Jabbla on their dedicated AAC solutions.²⁵⁶
- 8.49 The lack of history of successful entry or expansion over recent years, and the lack of evidence that the Parties have considered the threat of entry or expansion by other providers to be a material constraint suggests that potential entry and expansion post-Merger will not be timely, likely or sufficient to prevent any SLC (or SLCs) from arising.

Barriers to entry and expansion

- 8.50 As the provision of dedicated AAC solutions requires a combination of dedicated AAC hardware and AAC software, our assessment of barriers to entry and expansion in the supply of dedicated AAC solutions is set out with reference to these individual components.
- 8.51 In relation to AAC software, we assess potential barriers to entry and expansion in the supply of AAC software that would act as a credible alternative to Smartbox’s Grid. As described in paragraph 8.3, this is relevant

²⁵³ Provided by suppliers of dedicated AAC solutions such as Tobii, Smartbox, PRC and Jabbla.

²⁵⁴ [redacted].

²⁵⁵ See [redacted]

²⁵⁶ We note that, in 2013, there was a change in the funding system for AAC solutions in the UK, with NHS England becoming responsible for the commissioning of services for those with the most complex needs, with the aim of improving access to AAC across England. Before this point, AAC services were commissioned by a variety of commissioners, including health, social care, education, voluntary sector, and private individuals. See [NHS England Guidance for commissioning AAC services and equipment](#), page 6. This change in funding does not appear to have led to increased entry or expansion.

for our assessment of both input foreclosure of Smartbox's Grid software and customer foreclosure of eye gaze camera competitors.

Dedicated AAC hardware

- 8.52 We consider that the challenges in developing hardware cannot easily be overcome without gaining experience and specific expertise in producing dedicated AAC devices. For example, an internal document provided by Smartbox outlines the history of the Grid Pad and notes how the product has developed iteratively since 2015.²⁵⁷
- 8.53 The expertise and experience required to design and develop successful hardware is also reflected in Tobii's marketing brochures for its own devices which describe Tobii products as 'the innovative result of a highly-experienced team from Tobii Dynavox made up of educators, clinicians, engineers, and professionals'.
- 8.54 In addition, Tobii submitted that entry is not profitable at pre-merger prices (see paragraph 8.10). Our Guidelines state that, in assessing the likelihood of post-merger entry or expansion, we will consider whether entry or expansion is likely to take place if the entrant expects post-entry prices to be at pre-merger levels. This is because, if prices were to rise post-merger, only an entrant (or an incumbent) who would find it profitable to operate (or add capacity) in the market at pre-merger prices is likely to enter (or expand) and return prices to pre-merger levels.²⁵⁸ We therefore consider that Tobii's analysis suggests strong disincentives which significantly reduce the likelihood of post-merger entry in the supply of dedicated AAC hardware and, consequently, the supply of dedicated AAC solutions in the UK.

AAC software

- 8.55 Internal documents provided by Tobii indicate that it would be difficult for new and existing competitors to replicate the software offerings of the merged entity, in particular Smartbox's Grid software.
- 8.56 As discussed in Chapter 6 (Horizontal unilateral effects),^[REDACTED] Further, Tobii told us that ^[REDACTED]. This is consistent with the submissions that we received from Liberator regarding the cost and time that would be required for it to develop a rival to the Grid. This demonstrates that, for existing competitors and even for Tobii to upgrade Communicator, which Smartbox told us it considered to be

²⁵⁷ ^[REDACTED] We also note that Smartbox was adapting tablets before the Grid Pad brand was created in 2015 (previous brand names include SB10 and Powerbox).

²⁵⁸ [Merger Assessment Guidelines](#), paragraph 5.8.9.

the closest rival to the Grid, it would take substantial investment and many years of development to create credible alternative software to the Grid.

8.57 We also note that, even with the experience and expertise that Smartbox had gained from adapting tablet computers and developing previous iterations of the Grid, it took five years for it to develop Grid 3.

8.58 We consider that this demonstrates the significant challenges in developing AAC software to rival that of the merged entity (in particular its Grid software), even for an experienced provider, and that significant financial resources and a relatively long period of development would be required to compete effectively with the merged entity.

Our provisional conclusions on barriers to entry and expansion

8.59 Based on our review of the available evidence, we consider that barriers to entry and/or expansion in the supply of dedicated AAC solutions are significant, noting in particular:

- (a) the upfront development cost and time required to develop dedicated AAC hardware and AAC software represents a significant barrier to new entry;
- (b) specific expertise is required to develop successful hardware and software, which each of the main suppliers have acquired over many years;
- (c) Tobii's submission that entry in the supply of dedicated AAC hardware is not profitable at prevailing pre-merger prices;
- (d) the need to provide a comprehensive support operation to meet the needs of users of dedicated AAC solutions, requiring specialist knowledge as well as technical support and ongoing customer service;
- (e) current low awareness of AAC globally and the specialised nature of the market may act as discouragements to entry or expansion; and
- (f) we have been informed by some international providers of dedicated AAC hardware, AAC software and dedicated AAC solutions that it would be difficult for them to expand into the UK market.

8.60 In relation to the supply of AAC software, we note in particular the submissions from the Parties' main competitors which stated that there are significant differences in the provision of 'fully featured' AAC software to rival that of the merged entity (in particular, the Grid) and the provision of AAC apps and other software which offer more limited functionality (eg by focusing

only on text or symbol communication). Submissions from the Parties' competitors as well as the Parties' own internal documents indicate that the development of the former requires significant upfront development costs (with no guarantee of returns), requires specialist expertise and takes many years to develop.

8.61 We consider that existing competitors such as PRC and Jabbla are likely to face similar challenges in developing AAC software that offers a credible alternative to the Grid.[REDACTED], substantial further development, in terms of development time as well as financial investment, would be required for it to offer a rival to Smartbox's Grid. In addition, we consider that, as described in paragraph 7.21(d), user familiarity with existing software also represents a significant barrier to any new entry or expansion in the supply of AAC software.

8.62 Therefore, our provisional view is that barriers to entry and expansion in the supply of AAC software to rival that of the merged entity are significant.

Timeliness, likelihood and sufficiency of entry and expansion

Timeliness

8.63 As stated earlier (see paragraph 8.2(a)), our Guidelines state that new entry (or expansion) must be sufficiently timely and sustained to constrain the merged entity. The CMA's practice usually considers two years to be timely.²⁵⁹

8.64 Given the evidence that we received on the level of investment and time required to develop dedicated AAC hardware and AAC software, we consider it unlikely that a new entrant would be able to develop reliable products with proven efficacy within a two-year period. This could be different for an established international provider of dedicated AAC solutions or for a provider that sought to enter by integrating products of third parties. However, of the 11 competitors and other third parties from which we received responses,²⁶⁰ almost all (ten companies) told us that they had no plans to enter the UK market for dedicated AAC solutions. One company (LC Technologies) mentioned possible expansion plans from the US to the UK. However, based on the information LC submitted and the lack of specific entry/expansion plans or forecasts,²⁶¹ we consider it unlikely that any expansion would occur over

²⁵⁹ [Merger Assessment Guidelines](#), paragraph 5.8.11.

²⁶⁰ PRC/Liberator, Jabbla/Techcess, Abilia, Inclusive Technology, Forbes Rehab Services, Reha Vista, Lingraphica, LC Technologies, Google, Apple and Microsoft.

²⁶¹ [REDACTED] told us it had produced no internal documents regarding expansion plans in relation to the UK AAC market since January 2017.[REDACTED].

the next two years.²⁶² We have therefore not seen evidence of any firm plans to enter or expand to supply the market for dedicated AAC solutions in the UK within the next two years.

- 8.65 With regard to the supply of AAC software, PRC and Jabbla told us that they were each improving their software offerings. However, [X] told us that they expected to face challenges [X]. [X]. We therefore consider that AAC software development by [X], such as to offer a credible alternative to the Grid, is not likely within the next two years.
- 8.66 None of the other companies that we contacted as part of our investigation expressed intentions to develop their own AAC software to rival that of the merged entity in the coming years. We therefore do not consider entry or expansion in the supply of AAC software to be likely within the next two years.

Likelihood

- 8.67 As set out above, we have not seen evidence of any firm plans to enter or expand to supply the market for dedicated AAC solutions in the UK within the next two years, to satisfy us that such an entry or expansion could be considered likely.
- 8.68 We also note the leading position of the Parties and the existence of various barriers to entry outlined above, which suggest that there is limited incentive for providers to embark on a programme of sizeable entry or expansion. This is particularly the case in view of the high upfront research and development cost and the small size of the market for dedicated AAC solutions in the UK (and low penetration globally). We therefore consider that entry or expansion in the supply of dedicated AAC solutions in the UK on a significant scale is unlikely.
- 8.69 In terms of entry or expansion in the supply of AAC software, we are aware of the plans of [X] to develop their software in the coming years. We consider that expansion from [X], in terms of product improvements, is likely following the Merger.

Sufficiency

- 8.70 Our review of the recent history of entry into the market indicates that there have been few recent examples of successful entry.

²⁶² See paragraph 8.44.

- 8.71 We consider that, to be deemed sufficient to offset the SLC that has provisionally been identified in the supply of dedicated AAC solutions, any new entrant or expansion candidate would need to:
- (a) Produce a similar quality of dedicated AAC hardware, AAC software and dedicated AAC solution as the Parties;
 - (b) Establish a reliable support operation, in terms of distribution and repair as well as providing technical expertise and understanding the needs of users of dedicated AAC solutions; and
 - (c) Develop relationships with the major customers of AAC products (dedicated AAC hardware, AAC software and/or dedicated AAC solutions) sufficient to make entry or expansion sustainable. We note that the networks of existing resellers can potentially be leveraged to access this channel to market.
- 8.72 While we are aware of one existing international player (LC Technologies) that might be interested in entering or expanding into the supply of dedicated AAC solutions in the UK, we have not seen any evidence of firm plans for entry or expansion on a sufficient scale to prevent the SLC that has provisionally been identified in the supply of dedicated AAC solutions in the UK. Additionally, we note that LC Technologies estimated that [REDACTED] of sales of its EyeGaze Edge product in 2018 incorporated the Grid.²⁶³ We consider that our SLC finding relating to input foreclosure of Smartbox's Grid software further reduces the likelihood of sufficient expansion by LC Technologies.
- 8.73 With regard to the supply of AAC software, we note the plans of [REDACTED] and [REDACTED], although we consider that the likely challenges highlighted by [REDACTED] indicate that expansion on a sufficient scale is unlikely. In particular we consider that significant financial investment and development time would be required for these companies to upgrade their software sufficiently to rival the Grid.²⁶⁴ [REDACTED]²⁶⁵ and supported by our review of internal Tobii documents [REDACTED].²⁶⁶ In addition, [REDACTED]²⁶⁷, high levels of user and prescriber familiarity with the Grid can make it difficult to establish alternatives. We consider that this acts as a significant barrier to expansion and reduces the likelihood of sufficient expansion from [REDACTED].

²⁶³ See paragraph 7.74(c).

²⁶⁴ See paragraph 8.20.

²⁶⁵ See paragraph 8.28.

²⁶⁶ See paragraph 8.56.

²⁶⁷ See paragraphs 8.28, 8.29, 8.36 and 8.78.

Provisional conclusion on entry or expansion

- 8.74 We have not seen evidence of recent successful entry and/or expansion in the supply of dedicated AAC solutions in the UK or in the supply of 'fully featured' AAC software that would be a credible alternative to the Grid. We have also found that the perceived threat from new entry or expansion by competitors is low. Based on the evidence we have received, we provisionally consider that the barriers to entry or expansion in the supply of dedicated AAC solutions and in the supply of 'fully featured' AAC software are significant.
- 8.75 For these reasons, it is our provisional conclusion that entry or expansion is unlikely to be timely, likely and sufficient such as to prevent an SLC from arising.

Buyer power

Tobii's views

- 8.76 Tobii submitted that the NHS has countervailing buyer power since it is a preponderant purchaser of AAC solutions in the UK and, as such, it can exercise buyer power in various ways, for example by switching to another supplier, sponsoring entry, or using public procurement procedures.²⁶⁸ Tobii has also told us that the Department of Health is encouraging and incentivising NHS hubs, Trusts and Clinical Commissioning Groups to use the EAT Framework Agreement (through its use of fixed monthly fees for using NHS Supply Chain).
- 8.77 Tobii has also argued that the NHS framework agreement acts like a price cap that would protect the NHS against the effects of any SLC. Under this framework, if a supplier wishes to increase its prices (above the agreed contract price), it must provide justification for this to NHS Supply Chain, the NHS organization that administers the framework, which has an absolute discretion as to whether to agree to the increase.

Our assessment

- 8.78 Our provisional view is that buyer power is unlikely to prevent an SLC through horizontal unilateral effects in the supply of dedicated AAC solutions in the UK, for the following reasons.

²⁶⁸ [Tobii response to the CMA's issues statement](#), paragraph 61.

- 8.79 First, as a general proposition, buyer power of particular market participants can only be considered as effective in contexts where they actually bargain over the terms and conditions of transactions. The concept has no obvious relevance in contexts where customers purchase the products at list prices and with standard conditions. The available evidence indicates that in the market for dedicated AAC solutions bilateral negotiations between customers and suppliers only play a minor role, and most purchases are based on list prices. Some suppliers (including the Parties) offer volume-based discounts, but these are generally available to any customer meeting the volume requirements. Indeed, Tobii told us that the bulk of NHS purchases were based on list prices: [REDACTED].
- 8.80 Second, while NHS organisations do indeed account for the majority of purchases in the UK market for AAC solutions, these organisations do not procure dedicated AAC solutions collectively. The NHS has a framework agreement in place for the purchase of electronic assistive technology (EAT), but there are no financial incentives associated with purchasing through the framework,²⁶⁹ and in practice many NHS organisations continue to make purchases outside the framework agreement (the NHS Supply Chain estimates that purchases made outside the framework account for [REDACTED] of all purchases). As explained above, some suppliers offer volume-based discounts, but we have not come across any instances of NHS organisations pooling their purchases to benefit from such discounts. For these reasons, it is not clear that there is any basis for considering the NHS as a single, unitary customer capable of acting strategically to exercise buyer power. The NHS Supply chain told us that they were not aware of any plans to change the procurement process for AAC.
- 8.81 Third, even in a scenario where NHS organizations did attempt to procure AAC products collectively and bargain over the terms, it is not clear that the market context would afford them a large degree of buyer power. AAC products are evidently not a homogeneous product that the NHS can easily purchase from any alternative supplier. They are heavily differentiated products with many complex features. This limits the NHS's ability to quickly switch purchases between different suppliers (existing suppliers or potential suppliers whose entry could be sponsored). One factor that is commonly recognised to affect the relative bargaining power between a buyer and a seller is the nature of their mutual dependency, and notably their relative ability to delay a transaction. It is clear that the ability of a NHS customer to

²⁶⁹ [REDACTED]

delay a transaction is severely limited as this would involve providing a user with a sub-optimal solution (or indeed, no solution at all).

- 8.82 Fourth, any bargaining power held by the NHS in negotiations with Tobii or Smartbox would be contingent on the availability of good ‘outside options’. The Merger essentially removes one of the most significant outside options available to the NHS when negotiating with each party, and therefore it significantly decreases any bargaining power that the NHS could have.
- 8.83 Finally, even in a scenario where the NHS could exert a degree of buyer power (which seems unlikely given the considerations above), it is not clear that this would protect other customers from the effects of an SLC. In such a scenario, the Parties could potentially offer discounts or service guarantees to NHS buyers and not to other customers. Other customers would still be exposed to the effects of an SLC. In addition, and perhaps more importantly, in such a scenario it is not clear that the effects of an SLC in terms of R&D and innovation would be averted.
- 8.84 We considered whether the NHS framework acted as a price cap. We considered, for the reasons above, it was a relatively weak constraint. Moreover, such a protection, if it were effective, would only be temporary as the framework agreement is only valid until September 2020 (with an option to extend for a further two years). Furthermore, this clause would not protect the NHS against the non-price effects of a SLC (eg any deterioration in quality, range or service levels), nor protect other customers against the effects of a SLC.

Provisional conclusion on buyer power

- 8.85 For the reasons above, it is our provisional conclusion that buyer power is unlikely to prevent any SLC through horizontal unilateral effects which has been provisionally identified in the supply of dedicated AAC solutions in the UK.

Efficiencies

- 8.86 The CMA’s guidelines recognise that, while mergers can harm competition, they can also give rise to efficiencies. The guidelines make a distinction between ‘rivalry-enhancing efficiencies’, which might prevent a SLC from happening, and ‘customer-relevant benefits’ (RCBs), which might not necessarily prevent a SLC from happening but might otherwise generate

benefits to customers that could offset the negative impact of a SLC.²⁷⁰ In both cases, efficiencies must be timely, likely, and merger-specific to be taken into account. In the case of rivalry-enhancing efficiencies, they must also be sufficient to prevent an SLC from arising. In the case of RCBs, the CMA considers both quantitative and qualitative evidence of their likelihood and probability in deciding whether they outweigh the adverse effects of the SLC. In both cases, the guidelines are clear that the parties should provide detailed and verifiable evidence that the claimed efficiencies meet the relevant criteria.²⁷¹

8.87 Our assessment in this section focuses on Tobii's submissions on efficiencies. We will consider RCBs as part of our assessment of any potential remedies.

Tobii's views

8.88 Tobii submitted that the Merger would generate significant efficiencies, notably in terms of: new R&D that neither party was able to undertake before the merger due to a lack of resources ([REDACTED]); improved integration between hardware and software; development of development of enhanced versions of existing software products. Tobii also stated that the Merger would [REDACTED].²⁷²

8.89 Tobii told us that the most important efficiencies are dynamic in nature, which will arise over time as a result of combining the largely complementary R&D capabilities of Tobii Dynavox (in hardware and eye-tracking) and Smartbox (in software) to enable the merged entity to eliminate duplicative R&D and to focus their resources (financial, human or technical) on developing new products that neither could have developed individually. In Tobii's view, combining the two companies would provide the scale, resources and expertise to enable the business to compete with companies such as Apple who it considers to be the main risk to the existence of the Tobii and Smartbox businesses.²⁷³

8.90 Tobii told us that the scale of the merged entity would enable it to lower prices and go for volume, to broaden customer service and to innovate in areas which are not currently served by AAC products. Overall, it told us that the Merger would 'give more people a voice'.

²⁷⁰ [Merger Assessment Guidelines](#), paragraphs 5.7.1 and following. RCBs are discussed more in depth in CMA (2018) 'Mergers: exceptions to the duty to refer' (hereafter 'Exemptions'), paragraphs 67 and following. The most common type of efficiency that is considered as potentially rivalry-enhancing is a reduction in the marginal cost of production.

²⁷¹ [Merger Assessment Guidelines](#), paragraph 5.7.5, and Exemptions, paragraph 77.

²⁷² [Tobii Initial submission to phase 1 decision](#), paragraphs 103 to 110, and [Tobii response to issues statement](#), paragraphs 62 to 66.

²⁷³ [REDACTED]

8.91 Tobii has not specified whether it considers these changes to be rivalry-enhancing efficiencies or relevant customer benefits.

Our assessment

8.92 At this stage in our inquiry we have seen insufficient evidence that the efficiencies suggested by Tobii could not be achieved absent the merger, or that any such efficiencies would be sufficient to prevent the harm caused by the SLC provisionally found.

8.93 We note that the efficiencies claimed by Tobii do not feature in the company's internal documents outlining the transaction rationale. [REDACTED]

8.94 [REDACTED].

8.95 In a subsequent submission, [REDACTED].²⁷⁴

8.96 We note There is nothing in the documents put forward by Tobii that indicates that the increase in R&D spend over time would not have happened in the counterfactual scenario. Furthermore, the increase in R&D spend predicted by that document is modest in size [REDACTED]. [REDACTED].^{275 276}

8.97 Tobii describes expected efficiencies in very general terms, and does not provide any details or supporting evidence on the timing of these projects, the likelihood of their success, the significance of the benefits to be expected, and/or the extent to which they are merger-specific. As such, it is not possible for us to conclude that these efficiencies meet the strict criteria set out in our guidelines. It is particularly difficult to comment on their timeliness, likelihood, and sufficiency. At this stage, we can formulate only high-level comments, mainly related to the question of merger-specificity.

8.98 First, it is not clear why we should consider that Tobii would be more likely to undertake any the projects listed in its submission in the merger scenario, compared to the counterfactual scenario. Tobii emphasises that it has significantly greater human and financial resources for R&D than does Smartbox: it states that Tobii's R&D function has over [REDACTED] developers and a budget of [REDACTED], while Smartbox's R&D function has [REDACTED] [REDACTED].²⁷⁷ Tobii does not

²⁷⁴ [Tobii's initial submission to phase 1 decision](#), paragraph 108.

²⁷⁵ Tobii told us that this was due to a projected increase in sales revenues, rather than a decrease in R&D expenditure (which will remain constant from 2019 to 2021), and submitted that an R&D intensity of [REDACTED]% is still very high, even in the technology sector [REDACTED]

²⁷⁶ Tobii submitted that its Business [REDACTED]

²⁷⁷ [Tobii's initial submission to phase 1 decision](#), paragraph 108.

explain why access to Smartbox's smaller resources is essential to the feasibility of all the projects listed. Unless there is something non-replicable about Smartbox's resources, and the projects highlighted by Tobii require the combination of these resources with Tobii's, then in principle Tobii should be able to expand or otherwise re-organise its own resources to deliver these projects. The type of projects described by Tobii – 'the development of enhanced versions of existing software products', 'the improved integration between hardware and software', or 'the development of eye-tracking software' – are not uncommon in the industry.

8.99 [✂] As such, it is far from clear that the Merger would encourage a greater R&D effort.

Figure 8-1 [✂]

8.100 Second, it is not clear why the Merger is necessary for Tobii to improve its customer support or strengthen training resources. Smartbox manages to deliver a level of customer support and training that is praised by most customers while operating at a similar scale to Tobii in the UK.

8.101 Third, as part of our assessment of the timeliness and likelihood of efficiencies, we must pay attention not just to the ability of the merged entity to deliver efficiencies but also to its incentives to do so. Our competitive assessment indicates the Merger would remove a significant competitive constraint on Tobii, and this is likely to impact the incentives of the merged entity to spend on R&D and innovate. This link is made clear in some of Tobii's internal documents: for example, We also note that there will be limited incentives to pass on cost savings to customers if there is a significant diminution of horizontal competition.

Provisional conclusion on efficiencies

8.102 For the reasons above, our provisional conclusion is that the efficiencies claimed by Tobii could countervail or otherwise offset the effects of an SLC in the relevant markets.

9. Provisional Conclusions

9.1 As a result of our assessment, we have provisionally found that the Merger has resulted in the creation of a relevant merger situation.

- 9.2 We have also provisionally found that the creation of that situation has resulted, or may be expected to result, in a substantial lessening of competition (SLC) due to the following:
- (a) Horizontal competition concerns in the supply of dedicated AAC solutions in the UK.
 - (b) Vertical competition concerns with regard to input foreclosure by the merged entity of Smartbox's Grid software to the Parties' rivals in the downstream supply of dedicated AAC solutions in the UK.
 - (c) Vertical competition concerns with regard to customer foreclosure by the merged entity of Tobii's upstream competitors in the supply of eye gaze cameras for AAC applications on a worldwide basis.
- 9.3 We have provisionally found that there is no SLC caused by vertical competition concerns with regard to input foreclosure by the merged entity of Tobii's eye gaze cameras to the Parties' rivals in the downstream supply of dedicated AAC solutions in the UK.