



EUROPEAN COMMISSION
Competition DG

CASE AT.40099

Google Android

(Only the English text is authentic)

ANTITRUST PROCEDURE
Council Regulation (EC) 1/2003

Article 7 Regulation (EC) 1/2003

Date: 18/07/2018

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EUROPEAN
COMMISSION

Brussels, 18.7.2018
C(2018) 4761 final

**COMMISSION DECISION
of 18.7.2018**

**relating to a proceeding under Article 102 of the Treaty on the Functioning of the
European Union (the Treaty) and Article 54 of the EEA Agreement**

(AT.40099 – Google Android)

(Only the English text is authentic)

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COMMISSION DECISION

of 18.7.2018

relating to a proceeding under Article 102 of the Treaty on the Functioning of the European Union (the Treaty) and Article 54 of the EEA Agreement

(AT.40099 – Google Android)

(Only the English text is authentic)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,¹

Having regard to the Agreement on the European Economic Area,

Having regard to Council Regulation (EC) No 1/2003, of 16 December 2002 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty,² and in particular Articles 7, 23(2) and 24(1) thereof,

Having regard to the Commission decisions of 15 April 2015 and 20 April 2016 to initiate proceedings in this case,

Having given the undertaking concerned the opportunity to make known its views on the objections raised by the Commission pursuant to Article 27(1) of Regulation No 1/2003 and Article 12 of Commission Regulation (EC) No 773/2004 of 7 April 2004 relating to the conduct of proceedings by the Commission pursuant to Articles 81 and 82 of the Treaty,³

After consulting the Advisory Committee on Restrictive Practices and Dominant Positions,

Having regard to the final report of the hearing officer in this case,

Whereas:

1. INTRODUCTION

- (1) This Decision is addressed to Google LLC (formerly Google Inc.) ("Google") and to Alphabet Inc. ("Alphabet").
- (2) This Decision establishes that conduct by Google with regard to certain conditions in

¹ OJ, C 115, 9.5.2008, p. 47.

² OJ L 1, 4.1.2003, p. 1. With effect from 1 December 2009, Articles 81 and 82 of the EC Treaty have become Articles 101 and 102, respectively, of the Treaty on the Functioning of the European Union ("TFEU"). The two sets of provisions are, in substance, identical. For the purposes of this Decision, references to Articles 101 and 102 of the TFEU should be understood as references to Articles 81 and 82, respectively, of the EC Treaty where appropriate. The TFEU also introduced certain changes in terminology, such as the replacement of "Community" by "Union" and "common market" by "internal market". Where the meaning remains unchanged, the terminology of the TFEU is used throughout this Decision.

³ OJ L 123, 27.4.2004, p. 18.

agreements associated with the use of Google's smart mobile operating system, Android, and certain proprietary mobile applications ("apps") and services constitutes a single and continuous infringement of Article 102 of the Treaty on the Functioning of the European Union ("TFEU") and Article 54 of the Agreement on the European Economic Area ("EEA Agreement").

- (3) This Decision also establishes that Google's conduct constitutes four separate infringements of Article 102 TFEU and Article 54 of the EEA Agreement, each of which is also part of the single and continuous infringement referred to in recital (2).
- (4) Google is or has been:
 - (1) tying the Google Search app with its smart mobile app store, the Play Store;
 - (2) tying its mobile web browser, Google Chrome, with the Play Store and the Google Search app;
 - (3) making the licensing of the Play Store and the Google Search app conditional on agreements that contain anti-fragmentation obligations, preventing hardware manufacturers from: (i) selling devices based on modified versions of Android ("Android forks"); (ii) taking actions that may cause or result in the fragmentation of Android; and (iii) distributing a software development kit ("SDK") derived from Android; and
 - (4) granting revenue share payments to original equipment manufacturers ("OEMs") and mobile network operators ("MNOs") on condition that they pre-install no competing general search service on any device within an agreed portfolio.
- (5) This Decision is structured as follows:
 - (1) Section 2 deals with the undertaking concerned by the Decision;
 - (2) Section 3 outlines the procedure leading to the adoption of this Decision;
 - (3) Section 4 addresses Google's allegations that the Commission's investigation suffers from procedural errors;
 - (4) Section 5 describes the products concerned by this Decision;
 - (5) Section 6 describes Google's activities in the mobile industry;
 - (6) Section 7 describes the relevant product markets affected by this Decision;
 - (7) Section 8 describes the relevant geographic markets affected by this Decision;
 - (8) Section 9 concludes that Google has a dominant position in the worldwide market (excluding China) for the licensing of smart mobile OSs (Section 9.3), the worldwide market (excluding China) for Android app stores (Section 9.4) and in each national market for general search services in the EEA (Section 9.5);
 - (9) Section 10 outlines general principles on abuse of dominant position;
 - (10) Section 11 concludes that Google has abused its dominant position in the worldwide market (excluding China) for Android app stores by tying the Google Search app with its smart mobile app store, the Play Store, and by tying its mobile web browser, Google Chrome, with the Play Store and the Google Search app;

- (11) Section 12 concludes that Google has abused its dominant position in the worldwide market (excluding China) for Android app stores and the national markets for general search services by making the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations in the anti-fragmentation agreements;
- (12) Section 13 concludes that Google has abused its dominant position in the national markets for general search services by granting portfolio-based revenue share payments conditional on the pre-installation of no competing general search service;
- (13) Section 14 concludes that the four infringements of Article 102 TFEU and Article 54 of the EEA Agreement described in Sections 11 to 13 constitute a single and continuous infringement of Article 102 TFEU and Article 54 of the EEA Agreement;
- (14) Section 15 concludes that the Commission has jurisdiction to pursue this case;
- (15) Section 16 concludes that Google's conduct has an effect on trade between Member States;
- (16) Section 17 describes the addressees of this Decision;
- (17) Section 18 outlines the remedies imposed by this Decision;
- (18) Section 19 describes the periodic penalty payments necessary to compel Google and Alphabet to bring effectively to an end the separate infringements of Article 102 TFEU and Article 54 of the EEA Agreement described in Sections 11 to 13 and the single and continuous infringement of Article 102 TFEU and Article 54 of the EEA Agreement described in Section 14, if they have not already done so;
- (19) Section 20 sets out the method for calculating the fine and the amount of the fine imposed; and
- (20) Section 21 presents the Commission's conclusions.

2. UNDERTAKING CONCERNED

- (6) Google is a multinational technology company specialising in Internet-related services and products that include online advertising technologies, search, cloud computing, software and hardware. It offers various services in the territories of all the Contracting Parties to the EEA Agreement. Google is a wholly-owned subsidiary of Alphabet.
- (7) In August 2015, Google announced its intention to create a new holding company, Alphabet. The reorganisation was completed on 2 October 2015. Consequently, Google became a subsidiary of Alphabet on 2 October 2015.
- (8) On 30 September 2017, Google converted from an incorporated entity (Google Inc.) to a limited liability company (Google LLC). In addition, a new holding company (XXVI Holdings Inc.) is now the sole shareholder of Google. XXVI Holdings Inc. is

itself a wholly owned subsidiary of Alphabet.⁴

- (9) According to the consolidated financial statements of Alphabet,⁵ its turnover for the fiscal year running from 1 January 2017 to 31 December 2017 was USD 110 855 million (approximately EUR 98 127 million).⁶

3. PROCEDURE

- (10) On 25 March 2013, FairSearch lodged a complaint with the Commission against Google. On 13 June 2013, the Commission sent Google a non-confidential version of that complaint. On 23 August 2013, Google provided comments on the same complaint. On 5 December 2014, the Commission sent FairSearch a non-confidential version of Google's comments. On 7 February 2015, FairSearch provided observations on Google's comments.
- (11) Between 12 June 2013 and 11 March 2016, the Commission sent requests for information pursuant to Articles 18(2) and 18(3) of Council Regulation (EC) No 1/2003 ("Regulation (EC) No 1/2003") to Google, its customers, competitors and other parties active in the smart mobile environment.
- (12) On 16 June 2014, Aptoide S.A. ("Aptoide") lodged a complaint with the Commission against Google. On 27 June 2014, the Commission sent Google a non-confidential version of that complaint. On 8 August 2014, Google provided comments on the same complaint. On 5 December 2014, the Commission sent Aptoide a non-confidential version of Google's comments. On 30 January 2015, Aptoide provided observations on Google's comments.
- (13) On 15 April 2015, the Commission initiated proceedings against Google pursuant to Article 2(1) of Commission Regulation (EC) No 773/2004 ("Regulation (EC) No 773/2004") in relation to a number of Google's practices.
- (14) Also on 15 April 2015, Yandex N.V. ("Yandex") lodged a complaint with the Commission against Google. On 6 May 2015, the Commission sent Google a non-confidential version of that complaint. On 7 August 2015, Google provided comments on the same complaint.
- (15) On 1 June 2015, Disconnect Inc. ("Disconnect") lodged a complaint with the Commission against Google. On 22 June 2015, the Commission sent Google a non-confidential version of that complaint. On 7 August 2015, Google provided comments on the same complaint.
- (16) On 9 June 2015, 8 July 2015, 30 September 2015 and 14 March 2016, the Commission met with Google. The Commission also held a number of meetings with third parties during the proceedings.
- (17) On 19 April 2016, the Commission held a state-of-play meeting with Google.

⁴ See Google's response to Question 4 of the request for information of 5 April 2018 (Doc ID 8850). Google LLC is therefore the same legal entity as, and the legal successor of, Google Inc.

⁵ Alphabet's 2017 consolidated statements of income, available at https://abc.xyz/investor/pdf/20171231_alphabet_10K.pdf, printed and saved on 3 May 2018.

⁶ Amount converted from USD into EUR using the average annual reference exchange rate published by the European Central Bank for the year 2017, i.e. 1 USD = 0.8870 EUR (https://www.ecb.europa.eu/stats/policy_and_exchange_rates/euro_reference_exchange_rates/html/euro_fxref-graph-usd.en.html).

- (18) On 20 April 2016, the Commission initiated proceedings against Alphabet pursuant to Article 2(1) of Commission Regulation (EC) No 773/2004 and adopted a Statement of Objections addressed to Google and Alphabet.⁷
- (19) On 22 April 2016, after having informed Google, the Commission transferred certain documents in the case file in Case AT.39740 – *Google Search* to the case file in Case AT.40099.
- (20) Following the adoption of the Statement of Objections on 20 April 2016, the Commission granted Google access to its file. To this end, on 3 May 2016, the Commission provided Google with access to part of the case file. Access to the remaining part of the file was granted to Google's external legal and economic advisers subject to twenty-six Non-Disclosure Agreements ("NDAs"), under which such advisers undertook, with Google's agreement, not to reveal to Google any information relating to third parties derived from this part of the file, without the Commission's prior consent. In this context, documents were disclosed to Google's external legal and economic advisors under confidentiality ring arrangements, or access was provided pursuant to five data room procedures, under which Google's external legal and economic advisors accessed the information relating to third parties only at the Commission premises.
- (21) Between 21 September 2016 and 2 October 2017, the Commission sent a non-confidential version of the Statement of Objections to seventeen complainants and interested third parties.
- (22) Between 21 October 2016 and 16 October 2017, the Commission received comments on the Statements of Objections from eleven complainants and interested third parties.
- (23) On 10 November 2016, Google submitted a provisional response to the Statement of Objections. On 23 December 2016 Google submitted a final version of its response to the Statement of Objections (the "Response to the Statement of Objections").
- (24) Google did not request the opportunity to develop its arguments at an oral hearing.
- (25) On 25 January 2017, Google submitted a letter concerning a decision of the Canadian Competition Bureau and provided a copy of an industry report on trends in the mobile apps sector.
- (26) On 6 March 2017, Open Internet Project ("OIP") lodged a complaint against Google. On 15 March 2017, the Commission sent Google a non-confidential version of the complaint. On 14 April 2017, Google provided comments on the complaint.
- (27) Between 8 March 2017 and 10 April 2017, the Commission sent further requests for information pursuant to Articles 18(2) and 18(3) of Regulation (EC) No 1/2003 to Google, its customers, competitors and other parties active in the smart mobile

⁷ Hereinafter in this Decision, all references to Google's Response to the Statement of Objections and to other submissions made by Google after the opening of proceedings against Alphabet should be taken to refer to the joint Response to the Statement of Objections submitted by Google and Alphabet and other joint submissions made by Google and Alphabet. Expressions such as "Google argues", "Google submits" or "Google claims" should also be intended as referring to joint submissions made by Google and Alphabet. Equally, expressions such as "provided to Google" and "informed Google" should be intended as referring jointly to information or access to documents provided by the Commission to Google and Alphabet jointly.

environment, such as app developers and providers of web-based services.

- (28) On 31 August 2017, the Commission sent Google a letter (the "First Letter of Facts") informing it about pre-existing evidence to which Google already had access but which was not expressly relied upon in the Statement of Objections but which, on further analysis of the Commission's file, could be relevant to support the preliminary conclusions reached in the Statement of Objections. The Commission also informed Google in the First Letter of Facts about additional evidence obtained by the Commission after the adoption of the Statement of Objections.
- (29) Following the adoption of the First Letter of Facts, the Commission granted access to the file to Google. To this end, on 1 September 2017, the Commission provided Google with access to part of the documents added to the case file since 3 May 2016 and access to the remaining part of the documents added to the case file since 3 May 2016 was granted subject to four additional NDAs and two further data room procedures.
- (30) On 15 September 2017 Google submitted a letter requesting full records of the Commission's meetings with third parties relating to the investigation.
- (31) On 23 October 2017, Google submitted a response to the First Letter of Facts (the "Response to the First Letter of Facts").
- (32) On 1 December 2017, Google submitted a letter and term sheet describing changes that it would be ready to implement in the framework of commitments pursuant to Article 9 of Regulation (EC) No 1/2003. After assessing Google's letter and term sheet, the Commission informed Google on 12 February 2018 that it intended to continue the procedure under Article 7 of Regulation (EC) No 1/2003.
- (33) On 28 February 2018, the Commission provided Google with minutes of the meetings and calls that the Commission had with third parties concerning the subject matter of the investigation. The Commission also provided Google with new documents that had been added to the Commission file since the issuing of the First Letter of Facts.
- (34) On 14 March 2018, Google submitted a letter concerning factual and legal developments since the Statement of Objections. In addition, on 14 March 2018 Google sent a letter requesting that Commission investigate whether FairSearch still has a legitimate interest in Case AT.40099 with a view to: (i) rejecting its complaint; and (ii) discounting submissions made by FairSearch since at least November 2015.
- (35) On 27 March 2018, the Commission met with Google.
- (36) On 5 April 2018, the Commission sent a request for information pursuant to Article 18(2) of Regulation (EC) No 1/2003 to Google, concerning Google's corporate structure, value of sales and turnover during the previous full business year.
- (37) On 11 April 2018, the Commission sent Google a letter (the "Second Letter of Facts") informing it about pre-existing evidence to which Google already had access but which was not expressly relied upon in the Statement of Objections or First Letter of Facts but which, on further analysis of the Commission's file, could be relevant to support the preliminary conclusions reached in the Statement of Objections. The Commission also informed Google in the Second Letter of Facts about additional evidence obtained by the Commission after the adoption of the First Letter of Facts.
- (38) Following the adoption of the Second Letter of Facts, the Commission granted access

to the file to Google. To this end, on 12 April 2018, the Commission provided Google with access to the non-confidential documents in the file added since 1 September 2017. Access to one document was provided subject to an existing NDA.

- (39) On 30 April 2018, Google submitted a response to the Commission's request for information.
- (40) On 7 May 2018, Google submitted a response to the Second Letter of Facts (the "Response to the Second Letter of Facts"). On the same day, Google also requested the opportunity to develop its arguments at an oral hearing.
- (41) On 18 May 2018 the Commission refused Google's request for an oral hearing.
- (42) On 11 June 2018, Google submitted a letter entitled "the Commission has failed to assess Google's Android agreements in their relevant economic and legal context".
- (43) On 20 June 2018, Google submitted a letter requesting that it be afforded at least 90 days to comply with any remedies that the Commission may impose.
- (44) On 21 June 2018, at Google's request, the Commission provided Google with two letters received from third parties.
- (45) On 27 June 2018, Google submitted its observations on these letters.

4. GOOGLE'S ALLEGATIONS THAT THE COMMISSION'S INVESTIGATION SUFFERS FROM PROCEDURAL ERRORS

- (46) Google claims that the Commission's investigation suffers from a number of procedural errors.
- (47) First, the Commission granted access to file in a fragmented, time-consuming and difficult manner that was completed one day before the deadline for the Response to the Statement of Objections. Moreover, the Commission failed to provide Google with direct access to 142 documents.
- (48) Second, the Commission has breached Google's rights of defence by not providing it with adequate access to minutes of meeting with third parties.⁸
- (49) Third, the Commission has failed to assess the evidence properly by: (i) relying on documents and data that contradict the Commission's findings, (ii) ignoring exculpatory material that has been added to the file, (iii) misrepresenting and mischaracterising the meaning of documents in the case file, (iv) quoting selectively from the documents, (v) relying on speculation and unsupported conjecture as evidence, and (vi) failing to investigate matters that are central to the Commission's case.⁹
- (50) Fourth, the Commission should discount submissions made by FairSearch since at least November 2015 because they "*were made on behalf of an entity whose members had no relevant knowledge of the matters at issue and were motivated solely by a common desire to harm Google*".¹⁰
- (51) For the reasons set out in recitals (52) to (61) the Commission's investigation does

⁸ Google's Response to the Statement of Objections, Part Eight, pages 336-348 (Doc ID 7117).

⁹ Google's Response to the First Letter of Facts, Executive Summary, pages iv-xii (Doc ID 8598).

¹⁰ Google's letter of 14 March 2018 concerning FairSearch (Doc ID 8773).

not suffer from any of the alleged procedural errors mentioned in recitals (47) to (50).

4.1. The Commission's alleged failure to grant access to the file in a timely and complete manner

- (52) For the reasons set out in this Section, the Commission granted access to the file in a timely and complete manner.
- (53) First, the Commission struck an appropriate balance between the proper exercise of Google's rights of defence and the right of information providers to protect their business secrets and other confidential information.¹¹
- (54) On the one hand, the Commission granted Google access to non-confidential versions of the documents in the Commission's file. The Commission also granted Google's advisors access to entirely unredacted or less redacted versions of documents in the case file subject to thirty NDAs by disclosing documents to Google's advisors subject to confidentiality ring arrangements or pursuant to seven data room procedures.¹²
- (55) On the other hand, the 142 documents mentioned by Google to which the Commission granted Google's advisors access subject to NDAs, contained business secrets and other confidential information within the meaning of Article 339 of the Treaty, Article 27(2) of Regulation (EC) No 1/2003, and Articles 15(2) and 16(1) of Regulation (EC) No 773/2004. Access by Google's advisors was in this case a sufficient and proportionate means to ensure the respect of Google's rights of defence.
- (56) Second, between 3 May and 26 August 2016, the Commission gave Google, directly or through its advisors, access to confidential or non-confidential versions of the documents on the file. Google therefore had a period of almost four months to prepare its Response to the Statement of Objections, which it submitted on 23 December 2016.
- (57) Third, the period of approximately eight months that the Commission granted Google to prepare its Response to the Statement of Objections was, in light of the complexity of the case,¹³ sufficient to allow Google to exercise its rights of defence. In particular, Google gave a detailed exposition of its views on each essential allegation made by the Commission.¹⁴
- (58) Fourth, the Commission's conclusion is not affected by Google's claim that the

¹¹ Case T-30/91 *Solvay v Commission*, EU:T:1995:115, paragraph 88; Case T-36/91 *ICI v Commission*, EU:T:1995:118, paragraph 98; Joined Cases T-305/94 *LVM v Commission*, EU:T:1999:80, paragraph 1016; Joined Cases T-25/95 etc *Cimenteries and Others v Commission*, paragraph 147; Case T-203/01 *Michelin v Commission*, EU:T:2003:250, paragraph 125; Case T-410/03 *Hoechst v Commission*, EU:T:2008:211, paragraph 153; Case C-450/06 *Varec v Belgian State*, paragraph 52.

¹² Data rooms took place on 30 August 2016 to 2 September 2016, 7 and 10 October 2016, 3 November 2016, 2 to 6 December 2016, 12 December 2016, 6 September 2017 and 4 October 2017.

¹³ Joined Cases 40/73 etc *Suiker Unie and Others v Commission*, EU:C:1975:174, paragraphs 94 to 99; Case 27/76 *United Brands v Commission*, EU:C:1978:22, paragraphs 270 to 273; Joined Cases T-25/95 etc *Cimenteries and Others v Commission*, paragraph 653; Case T-9/99 *HFB and Others v Commission*, EU:T:2002:70, paragraph 344; Case T-16/99 *Lögstör Rör v Commission*, EU:T:2002:72, paragraph 178; Case T-44/00 *Mannesmannröhren-Werke v Commission*, EU:T:2004:218, paragraph 62.

¹⁴ See, by analogy Case T-62/98 *Volkswagen v Commission*, EU:T:2000:180, paragraph 313.

Commission provided it with less redacted non-confidential versions of certain documents between 26 August 2016 and 22 December 2016.

- (59) In the first place, prior to 26 August 2016, the Commission had provided Google, directly or through its advisors, with access to confidential or non-confidential versions of all documents on the file. The additional information provided to Google between 26 August and 22 December 2016 was limited.
- (60) In the second place, any delay in providing access to certain non-confidential versions of documents was taken into account when granting extensions of the time-limit for Google to respond to the Statement of Objections.
- (61) In the third place, the fact that, following Google's requests, the Commission provided it on an ongoing basis with less redacted non-confidential versions of certain documents is not out of the ordinary in investigations in competition matters.¹⁵

4.2. The Commission's alleged failure to provide Google with adequate access to minutes of meetings with third parties

- (62) For the reasons set out in this Section, the Commission provided Google with adequate access to minutes of meetings with third parties.
- (63) First, on 28 February 2018 the Commission provided Google with minutes of the meetings and calls that the Commission had with third parties concerning the subject matter of the investigation. These minutes were obtained by agreement with the third parties concerned.
- (64) Second, there are no other documents in the Commission's possession that contain any further account of the meetings concerned.
- (65) Third, Google has not brought forward specific arguments as to how and why the alleged failure of the Commission to provide fuller meeting notes has impeded the effective exercise of its rights of defence.

4.3. The Commission's alleged failure to assess the evidence properly

- (66) For the reasons set out in this Section, the Commission has properly assessed the evidence in this case.
- (67) As a preliminary point, Google's claims are in effect a challenge to the merits of the Commission's assessment of its conduct and are therefore irrelevant to the question of whether the Commission's investigation suffers from a number of procedural errors.
- (68) First, in relation to points (i) to (iv) of Google's claim outlined in recital (49), the fact that the Commission does not make use of all the information contained in a submission does not imply that the submission is, in its entirety, of weak probative value. This is because it is normal that some information is irrelevant or that certain information is supported more convincingly by other evidence.¹⁶

¹⁵ Commission Notice on the rules for access to the Commission file in cases pursuant to Articles 81 and 82 of the EC Treaty, Articles 53, 54 and 57 of the EEA Agreement and Council Regulation (EC) No 139/2004 (Text with EEA relevance) OJ C 325/7, 22.12.2005, p. 7, paragraph 47.

¹⁶ Case T-112/07 *Hitachi v Commission*, EU:T:2011:342, paragraph 144; Case T-133/07 *Mitsubishi Electric v Commission*, EU:T:2011:345, paragraph 114.

- (69) Second, in relation to point (ii) of Google's claim outlined in recital (49), the Commission has not ignored exculpatory material that has been added to the file. Google has had the opportunity to draw the Commission's attention to allegedly exculpatory evidence in the file and to make arguments based on such allegedly exculpatory evidence.
- (70) Third, in relation to points (i) to (v) of Google's claim outlined in recital (49), it is not necessary for every item of evidence adduced by the Commission to be sufficiently precise and consistent to establish every aspect of the separate infringements of Article 102 TFEU and Article 54 of the EEA Agreement described in Sections 11 to 13 and the single and continuous infringement of Article 102 TFEU and Article 54 of the EEA Agreement described in Section 14. It is sufficient that the body of evidence relied on by the Commission, viewed as a whole, meets that requirement.¹⁷ In that regard, the Commission may take into account all types of evidence,¹⁸ including evidence submitted by market players, parties to the administrative procedure¹⁹ and non-technical evidence.²⁰
- (71) Fourth, in relation to point (vi) of Google's claim outlined in recital (49), the Commission is not required to reply to all the arguments of an undertaking under investigation or to carry out further investigations, where it considers that its investigation of a case is sufficient.²¹

4.4. The Commission's alleged obligation to discount FairSearch's submissions since at least November 2015

- (72) The Commission considers that there are no grounds for discounting FairSearch's submissions since at least November 2015. This is because, irrespective of whether FairSearch still has an ongoing legitimate interest in Case AT.40099, the Commission is entitled to take into account all types of evidence in its investigations.²²

5. PRODUCTS CONCERNED BY THIS DECISION

- (73) This Decision concerns the following products:

- (1) smart mobile devices;
- (2) operating systems for smart mobile devices;
- (3) apps;
- (4) smart mobile app stores;
- (5) application programming interfaces;
- (6) general search services; and

¹⁷ Case T-321/05 *AstraZeneca v Commission*, EU:T:2010:266, paragraph 477.

¹⁸ Case T-343/06 *Shell Petroleum and Others v Commission*, EU:T:2012:478, paragraph 171.

¹⁹ Case T-321/05 *AstraZeneca v Commission*, EU:T:2010:266, paragraph 79.

²⁰ Case T-342/07 *Ryanair v Commission*, EU:T:2010:280, paragraph 136; Case T-175/12 *Deutsche Börse v Commission*, EU:T:2015:148, paragraph 133.

²¹ Case T-141/94 *Thyssen Stahl v Commission*, EU:T:1999:48, paragraph 110; Case T-758/14 *Infineon v Commission*, EU:T:2016:737, paragraph 110.

²² Case T-343/06 *Shell Petroleum and Others v Commission*, EU:T:2012:478, paragraph 171.

(7) web browsers.

5.1. Smart mobile devices

- (74) Smart mobile devices are mobile devices with advanced Internet browsing, multimedia and app capabilities. Smart mobile devices are available in a variety of designs, and with a range of different features and hardware components. There are, broadly speaking, two types of smart mobile devices: smartphones and tablets.²³
- (75) Smartphones are wireless telephones with advanced Internet browsing and app capabilities. Smartphones incorporate hardware and software features that enable them to fulfil many of the functions traditionally associated with state of the art computing.²⁴ There is no industry standard definition of a smartphone, but rather a spectrum of functionalities.²⁵ Smartphones vary in terms of size, weight, durability, screen size, audio quality, camera size/zoom, web speed, computer processing power, memory, ease-of-use, optical quality, casing quality/design, and additional multimedia offerings.²⁶
- (76) Tablets are mobile devices in the spectrum between a smartphone and a personal computer ("PC"). Tablets are generally operated using a touch screen. Tablets are based on similar hardware to advanced touch-screen based smartphones, and provide a rich multimedia experience along with many of the functions of a PC.²⁷
- (77) The distinction between smartphones and tablets is not necessarily clear-cut. Devices combining the characteristics of both smartphones and tablets have been launched. These devices have both full voice transmission capabilities and a relatively large screen size, and are commonly called "phablets".²⁸
- (78) Smart mobile devices are sold by OEMs either directly to users or to MNOs, who in turn sell them to users under their respective brands.

5.2. Operating systems for smart mobile devices

- (79) Smart mobile devices need an operating system ("OS") to run on.²⁹ OSs are system software products that control the basic functions of a computer and enable users to make use of such a computer and run software on it.³⁰ OSs that are designed to support the functioning of smart mobile devices and the corresponding apps are hereinafter referred to as "smart mobile OSs".
- (80) Smart mobile OSs typically provide a graphical user interface ("GUI"), application programming interfaces ("APIs"), and other ancillary functions. These are required for the operation of a smart mobile device and enable new combinations of functions to offer richer usability and innovations.

²³ Commission decision in Case M.6381 – Google / Motorola Mobility, footnote 13.

²⁴ Commission decision in Case M.7202 – Lenovo / Motorola Mobility, paragraph 14.

²⁵ For example, in addition to mobile voice and text message communication, the latest smartphones include advanced hardware (e.g. touch-screen interfaces, flash storage, GPS navigation, WI-FI) and software (rich web browsers, full-featured e-mail accounts, a sophisticated user interface etc.), and a range of other functions (including music and video streaming; downloading; playback; video calling; cameras and camcorders; GPS; radio receiver; personal digital assistant functions; USB, Bluetooth etc.).

²⁶ Commission decision in Case M.7202 – Lenovo / Motorola Mobility, paragraph 14.

²⁷ Commission decision in Case M.7202 – Lenovo / Motorola Mobility, paragraph 15.

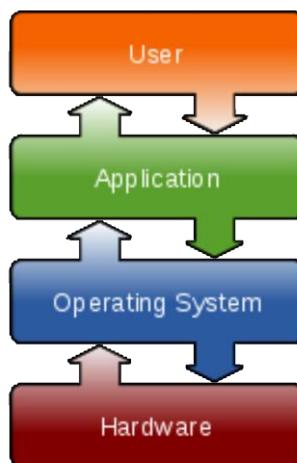
²⁸ Commission decision in Case M.7047 – Microsoft / Nokia, paragraph 12.

²⁹ Commission decision in Case M.6381 – Google / Motorola Mobility, paragraph 22.

³⁰ Commission decision in Case COMP/C-3/37.792 – Microsoft, paragraph 37.

- (81) Apps written for a given smart mobile OS will typically run on a smart mobile device using the same OS, regardless of the manufacturer. Figure 1 shows the functions of the smart mobile OS.

Figure 1: Functions of a smart mobile OS³¹



- (82) Smart mobile OSs combine the features of a PC OS with touchscreen, cellular, Bluetooth, WiFi, GPS mobile navigation, camera, video camera, speech recognition, voice recorder, music player, near field communication, personal digital assistant ("PDA") and other features. While certain features of a smart mobile device are not dependent upon a technical interface with the smart mobile OS, others require a more substantial technical interface with it. Moreover, certain characteristics such as speed and memory size are at least partially influenced by the quality of the smart mobile OS.³²
- (83) Smart mobile OSs are developed by vertically integrated OEMs such as Apple Inc. ("Apple") or BlackBerry Limited ("BlackBerry") for captive use in their own smart mobile devices ("non-licensable smart mobile OSs"), or by providers such as Google or Microsoft Corp. ("Microsoft"), which then license their smart mobile OS to OEMs ("licensable smart mobile OSs"). The licensing of a smart mobile OS therefore constitutes an economic activity upstream from the level of sales of smart mobile devices to users.

5.3. Apps

- (84) Apps are types of software through which users can access World Wide Web ("web") content and services on their smart mobile devices. Apps can be "standalone" and serve offline tasks (such as games or photography) or incorporate some form of online service (such as geolocation or integration with social networks).³³ Apps are optimised for the characteristics of smart mobile devices, as compared with PCs, such as reduced text input, limited screen size or convenience of touch-based interfaces.³⁴
- (85) Apps can principally be divided into native and non-native ones. Native apps are

³¹ Commission decision in Case M.6381 – Google / Motorola Mobility, paragraph 22.

³² Commission decision in Case M.6381 – Google / Motorola Mobility, paragraph 23.

³³ Non-confidential version of the complaint by FairSearch of 25 March 2013 (Doc ID 17), paragraph 25.

³⁴ Non-confidential version of the complaint by FairSearch of 25 March 2013 (Doc ID 17), paragraph 25.

apps written in a specific programming language of a given device – for example Java for the Android OS.³⁵ Non-native apps are developed for several smart mobile OSs using a cross-platform SDK.³⁶

5.4. Smart mobile app stores

- (86) The development of smart mobile devices has led to the emergence of a new type of software: digital distribution platforms, constituted by online services and related apps that are dedicated to enabling users to download, install and manage a wide range of diverse apps from a single point in the interface of the smartphone.³⁷ These digital distribution platforms are called smart mobile app stores ("app stores").³⁸
- (87) The most widely used app stores are specific to a smart mobile OS ("Play Store" for Google Android,³⁹ "App Store" for the OS of Apple, iOS, "Windows Mobile Store" for the OS of Microsoft, Windows Mobile,⁴⁰ and "BlackBerry World" for the OS of BlackBerry, BlackBerry OS).⁴¹
- (88) App stores are generally available to users for free. Users only pay to download certain apps or acquire paid content within apps ("in-app purchases"). Developers of revenue-generating apps pay an app store a fixed percentage of their app-related revenues when users pay for the download of apps or make in-app purchases.

5.5. Application programming interfaces (APIs)

- (89) An API is a particular set of rules and specifications that a software program follows in order to access and make use of the services and resources provided by another software program or hardware that also implements that API.
- (90) In essence, APIs allow software programs and hardware, or different software programs, to communicate with each other.
- (91) In the smart mobile device environment, APIs are important as they allow app developers to integrate "cloud" web services directly in their apps. This allows app developers to offload computationally challenging or data intensive tasks to cloud computers,⁴² in order not to impact the storage, performance or battery of a smart mobile device.⁴³ Due to the technical limitations of smart mobile devices compared

³⁵ Non-confidential responses to Question 17.1 of the request for information of 12 June 2013 to app developers and non-confidential responses to Question 23.1 of the request for information of 12 June 2013 to OEMs.

³⁶ Yandex's non-confidential response to Question 17.1 of request for information of 12 June 2013 to app developers (Doc ID 4601) and Nokia's non-confidential response to Question 23.1 of the request for information of 12 June 2013 to OEMs (Doc ID 764).

³⁷ Non-confidential version of the complaint by Aptoide of 16 June 2014 (Doc ID 874), page 6, and non-confidential version of the complaint by FairSearch of 25 March 2013 (Doc ID 17), paragraph 85.

³⁸ There are also certain app stores developed exclusively for PCs. Those app stores serve a different purpose compared to mobile app stores, as they allow users to download software for PCs rather than smart mobile devices. For this reason, they are not relevant for the purposes of this investigation, which focusses on app stores for Android.

³⁹ See Section 6.2.2.1.II.

⁴⁰ In this Decision, references to "Windows Mobile" include all versions and iterations of Microsoft's smart mobile OS, including Windows Phone, Windows RT, Windows Mobile and Windows 10 Mobile.

⁴¹ Non-confidential version of the complaint by FairSearch (Doc ID 17), paragraph 85.

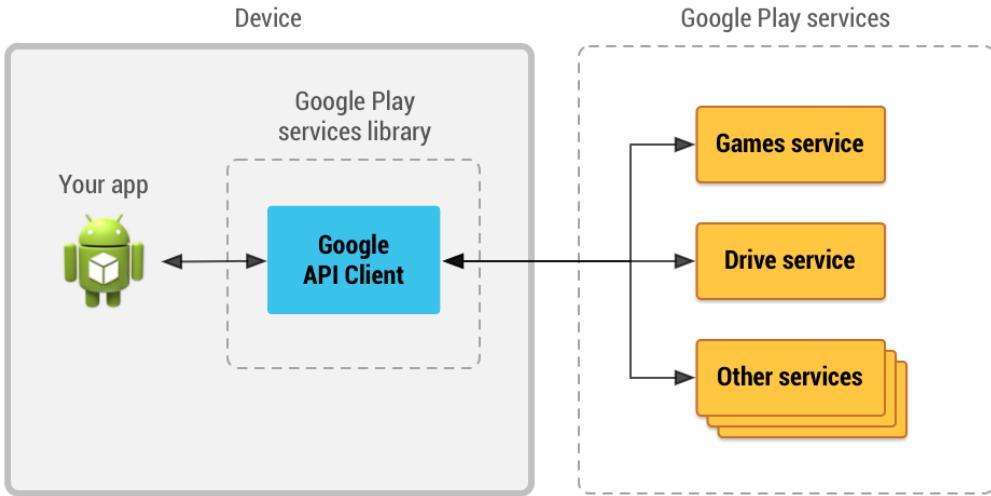
⁴² Cloud computing is the practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer.

⁴³ See Jonathan Strickland, "How the Google Cloud Works" (8 August 2011), available at <http://computer.howstuffworks.com/cloud-computing/google-cloud1.htm>, printed and saved on 11

to PCs, cloud services and related APIs have a particularly important role in the smart mobile environment.⁴⁴

- (92) Google offers APIs that allow app developers to integrate within their apps a number of Google's services. Figure 2 shows how the Google API Client provides an interface for connecting to any of the available Google services such as those related to online games ("Google Play Games") and cloud storage ("Google Drive").

Figure 2: Google API Client⁴⁵



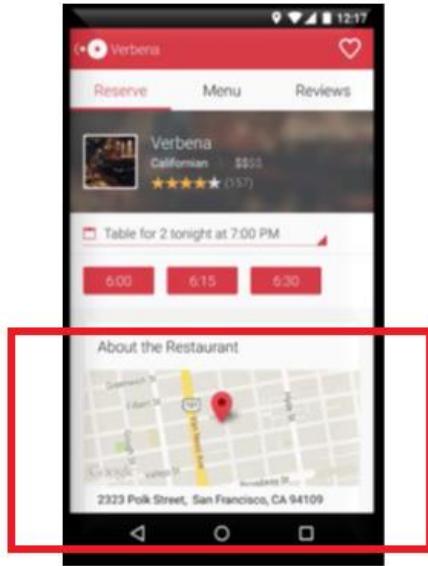
- (93) Another example is the integration of Google's mapping, navigation and geolocation service ("Google Maps") within a third party app. This is shown in Figure 3.

April 2016 and Preston A. Cox, "Mobile cloud computing" (11 March 2011), available at <http://www.ibm.com/developerworks/cloud/library/cl-mobilecloudcomputing/>, printed and saved on 11 April 2016.

⁴⁴ See Jonathan Strickland, "How the Google Cloud Works" (8 August 2011), available at <http://computer.howstuffworks.com/cloud-computing/google-cloud1.htm>, printed and saved on 11 April 2016, and see the comment by Dianne Hackborn, "Android developer at Google", available at <http://arstechnica.com/information-technology/2014/02/neither-microsoft-nokia-nor-anyone-else-should-fork-android-its-unforkable/?comments=1&post=26199423#>, printed and saved on 11 April 2016.

⁴⁵ See "Accessing Google APIs" (23 February 2016), available at <https://developers.google.com/android/guides/api-client>, printed and saved on 11 April 2016.

Figure 3: Integration of Google Maps within a third party app⁴⁶



5.6. General search services

- (94) General search⁴⁷ services allow users to search for information across the entire Internet. Alternative ways of discovering content include specialised search services, social networks and content sites.
- (95) While the user interface of a general search service may vary depending on whether they are accessed via PCs or smart mobile devices, the underlying technology is essentially the same.
- (96) General search services are generally provided on the basis of search engines. A search engine is a coordinated set of programmes that normally includes: (i) a spider (also called a "crawler" or a "bot") that goes to every page or representative pages on a web site that wants to be searchable and reads it; (ii) a programme that creates an index (sometimes called a "catalogue") from the pages that have been read; and (iii) a programme that allows users to enter a keyword or a string of keywords ("query"), compares it to the entries in the index, and returns the results which are relevant to the query.
- (97) The latter programme is called a search algorithm, which contains processes and formulas that rely on unique signals or "clues" that make it possible to come up with results that are relevant to the query.⁴⁸

⁴⁶ See "Accessing Google APIs" (23 February 2016), available at <https://developers.google.com/android/guides/api-client>, printed and saved on 11 April 2016 and Google's presentation to the case team "AOSP and APIs" (July 2015) (Doc ID 4740).

⁴⁷ "General search" is also known as "online search" or "horizontal search". The Commission uses the terms "general search" throughout this Decision.

⁴⁸ These signals include things like the terms on websites, the freshness of content, the user's location, and the ranking of the website, see "Algorithms", available at <https://www.google.com/insidesearch/howsearchworks/algorithms.html>, printed and saved on 11 April 2016. They can also include signals coming out of an in-built artificial intelligence system that interprets queries, see, e.g., Jack Clark, "Google Turning Its Lucrative Web Search Over to AI Machines" (26 October 2015), available at <http://www.bloomberg.com/news/articles/2015-10-26/google-turning-its-lucrative-web-search-over-to-ai-machines>; printed and saved on 11 April 2016; or

- (98) There are three main categories of search algorithms: general search algorithms, specialised search algorithms and search advertisement algorithms. General search algorithms run across all types of pages. Specialised search algorithms are specifically optimised for identifying relevant results for a particular type of information,⁴⁹ such as news, local businesses or product information. Specialised search algorithms are used for specialised search services,⁵⁰ which are different from general services for a variety of reasons beyond their nature and technical features.
- (99) In addition to the general and specialised search algorithms, a general search service can run a third category of search advertisement algorithms that provides search advertisements matching a user's search query.
- (100) A number of different companies offer general search services. Some of them use their own search engine, such as Google, Microsoft (Bing),⁵¹ Seznam.cz, a.s. ("Seznam")⁵² and Orange S.A. ("Orange").⁵³ Others show results of a third party general search engine (often Google or Bing) with which they have an agreement. This is the case for example of Yahoo Inc. ("Yahoo"),⁵⁴ AOL Inc. ("AOL")⁵⁵ and InterActiveCorp ("Ask")⁵⁶, which return results powered by other general search engines.
- (101) General search services can be accessed on smart mobile devices via a number of different entry points. For instance, for Android, these include the following:

Matthew Richardson, Amit Prakash & Eric Brill, "Beyond PageRank: Machine Learning for Static Ranking" (23-26 May 2006), <http://www2006.org/programme/files/pdf/3101.pdf>, printed and saved on 12 April 2016.

⁴⁹ Google's submission of 7 September 2010, "*Comparing apples with oranges – How Google ranks Universal results from specialized content-specific search algorithms within web search*", paragraph 2 (Doc ID 4774).

⁵⁰ "Specialised search" is also referred to as "vertical search" or "universal search". The Commission uses the terms "specialised search" and "specialised search results" throughout this Decision.

⁵¹ See Danny Sullivan, "The Microsoft-Yahoo Search Deal, In Simple Terms" (30 June 2009), available at <http://searchengineland.com/microsoft-yahoo-search-deal-simplified-23299>, printed and saved on 11 April 2016.

⁵² Seznam's non-confidential response to Question 2 of the request for information of 3 October 2011 and its updated response of 26 February 2016 (Doc IDs 4076 and 4371).

⁵³ Orange's non-confidential response to Question 1 of the request for information of 3 October 2011 (Doc ID 4594).

⁵⁴ See Danny Sullivan, "The Microsoft-Yahoo Search Deal, In Simple Terms" (30 June 2009), available at <http://searchengineland.com/microsoft-yahoo-search-deal-simplified-23299>, printed and saved on 11 April 2016.

⁵⁵ See "About AOL Search", available at http://search.aol.com/aol/about?v_t=na#webhome, printed and saved on 11 April 2016, which reads: "*Web search results are Websites listed in order of relevance, with listings with the highest relevance appearing first. These listings are administered, sorted and maintained by Google.*" See also AOLs non-confidential response to Question 8 of the request for information of 19 November 2015 to Search providers (Doc ID 3177).

⁵⁶ Ask operated its own search technology until November 2010. See Tom Krazit, "IAC bows to Google, kills search at Ask.com" (9 November 2010), available at http://news.cnet.com/8301-30684_3-2002253-265.html?tag=mncol;4n, printed and saved on 31 May 2018. Since then, its search results have been fed by a third party. See Charles Arthur, "Ask.com gives up on search on Google takes over-adieu Jeeves" (9 November 2010), available at <https://www.theguardian.com/technology/blog/2010/nov/09/ask-com-search-engine-gives-up>, printed and saved on 11 April 2016.

- (1) search widget⁵⁷ (or Quick Search Bar);
- (2) search app;
- (3) URL line (also called "Omnibox") in web browser;
- (4) search bar in notification area;
- (5) search bar on the lock screen;
- (6) default home page of browser;
- (7) hardware search button;
- (8) soft search button;
- (9) long-press of the home button;
- (10) voice search; and
- (11) search bookmark in browser.

5.7. Web browsers

- (102) Web browsers are software used by users of client PCs, smart mobile devices and other devices to access and interact with web content hosted on servers that are connected to networks such as the Internet.
- (103) Users can access web content through a web browser by typing the relevant Uniform Resource Locator ("URL") into the browser. Alternatively, they can search for specific content via an embedded general search service, either in the same box where the URL can be typed, or in a dedicated "search box".⁵⁸
- (104) In addition, web browsers typically offer a set of additional features. These include the following:
- (1) proxy configuration⁵⁹ (to specify how the web browser accesses web content);
 - (2) management of plug-ins to handle additional content types (such as Flash or Java programs);
 - (3) bookmarking (to keep track of useful web page addresses);
 - (4) HTML⁶⁰ (Hypertext Markup Language) pre-processing (to filter out unwanted

⁵⁷ Widgets are accessible on a user's home screen and offer an at-a-glance view of an app's most important data and functionality. See "Widgets", available at <http://developer.android.com/design/patterns/widgets.html>, printed and saved on 11 April 2016.

⁵⁸ Whereas on a PC the significant majority of access to web content takes places via the web browser as the general entry point, web content on smart mobile devices is mostly consumed via apps. See Sarah Perez, "Majority of Digital Media Consumption Now Takes Place In Mobile Apps" (21 August 2014), available at <http://techcrunch.com/2014/08/21/majority-of-digital-media-consumption-now-takes-place-in-mobile-apps/>, printed and saved on 11 April 2016.

⁵⁹ Proxy settings are used to tell the web browser the address of the proxy server. Microsoft describes a proxy server as a "[...] computer that functions as an intermediary between a web browser (such as Internet Explorer) and the Internet. Proxy servers help improve web performance by storing a copy of frequently used webpages. When a browser requests a webpage stored in the proxy server's collection (its cache), it is provided by the proxy server, which is faster than going to the web. Proxy servers also help improve security by filtering out some web content and malicious software. Proxy servers are used mostly by networks in organizations and companies." See "What is a proxy server?", available at <http://windows.microsoft.com/en-us/windows-vista/what-is-a-proxy-server>, printed and saved on 11 April 2016.

- or dangerous content);
- (5) cookie management (allowing users to keep control of small text files deposited by many web pages into web browsers in order to enable recognition of previous visitors);
 - (6) pop-up blocker (to manage web page window behaviour);
 - (7) tabbed browsing interface (to keep open several web pages at once);
 - (8) website certificate checker (to ascertain web page credentials and to protect against phishing);⁶¹
 - (9) offline cache (to keep a copy of accessed online content for later offline usage); and
 - (10) history (of visited locations on the web).

6. GOOGLE'S ACTIVITIES IN THE MOBILE INDUSTRY

6.1. Overview of Google's business activities

- (105) Google's business model is based on the interaction between, on the one hand, online products and services it offers free of charge to users and, on the other hand, its online advertising services, from which it derives the majority of its revenues.⁶²
- (106) Google's flagship online service for users is its general search service ("Google Search"). When a user enters a query in Google Search, Google's general search results pages return different categories of search results, including generic search results⁶³ and specialised search results.⁶⁴ In addition, Google Search may return a third category of results, namely online search advertisements drawn from Google's auction-based online search advertising platform, AdWords.
- (107) Google offers a number of other products and services free⁶⁵ of charge to users. In addition to the smart mobile OS, Android, these include for example a web-based app store ("Play Store"), a web browser ("Google Chrome"), a web-based email account service ("Gmail"), a file storage and editing service offering a suite of office apps (Google Drive), an online mapping, navigation and geolocation service (Google Maps), an online video streaming service ("YouTube") and a social networking

⁶⁰ HTML is a standard approved by the International Organisation for Standardisation (ISO/IEC 15445:2000) for the creation of web pages.

⁶¹ "Phishing" is a fraudulent means used by cybercriminals to obtain sensitive information, such as credit card numbers or bank account numbers, for example by sending emails in which they disguise themselves as a company with which the recipient might have an online account and try to get the recipient to enter his login and password on a fake login page.

⁶² Google's response to the complaint by FairSearch, paragraph 4 (Doc ID 1584). In 2016, online advertising accounted for 88.7% of Google's total revenues, 80% of which was generated via Google's own websites, in particular Google Search's homepage. Source: "Google's Form 10-K Annual Report for the US fiscal year ending 31 December 2016", available at https://abc.xyz/investor/pdf/20161231_alphabet_10K.pdf, printed and saved on 13 June 2017.

⁶³ "Generic search results" are also known as "organic search results" or "natural search results". The Commission uses the term "generic search results" throughout this Decision.

⁶⁴ "Specialised search results" are also known as "vertical search results" or "universal search results". The Commission uses the term "specialised search results" throughout this Decision.

⁶⁵ Google offers also some paid services, such as Google Play Music and Movie and for some of the free products there exists also a paid premium version, such as YouTube or Google Drive.

website ("Google Plus").

- (108) A number of these products and services are also search-driven, such as YouTube and Maps, and thus are of importance for the machine learning aspects of Google's general search service. The latest iteration of Google's machine learning technology used in its search services is called "RankBrain".⁶⁶ RankBrain uses mathematical processes and an advanced understanding of language semantics to gradually learn more about how and why people search and apply those conclusions to future search results.⁶⁷ It has become an important signal contributing to the result of a general search query.⁶⁸
- (109) Google also collects data via its products and services, such as Chrome, Google Maps, YouTube and Gmail. This ensures that Google receives a steady stream of user information that it can feed back into its search and search advertising business.⁶⁹
- (110) For example, an Android user signed into a Google account and running Google's apps generates a stream of varied signalling information – ranging, for example, from where a user lives, works and commutes to work and which phone numbers on web advertisements it dials.⁷⁰ The consumer behaviour and device use data that Google collects from smart mobile devices using Android OS, its proprietary applications and APIs for Android includes:⁷¹
- contact information (name, address, email address, telephone number);
 - account authentication data (username and password);
 - demographic information (gender and date of birth);
 - information generated by the user through the use of the service (e.g. Gmail messages, user's query including audio, G+ profile, photos, videos and other Google-hosted content);
 - credit or debit card details or bank/payment account numbers and associated details (e.g. expiry date/CVV used for Google Payments or identity

⁶⁶ See Jack Clark, "Google Turning Its Lucrative Web Search Over to AI Machines" (26 October 2015), available at <http://www.bloomberg.com/news/articles/2015-10-26/google-turning-its-lucrative-web-search-over-to-ai-machines>, printed and saved on 11 April 2016; or Cade Metz, "AI is transforming Google Search. The rest of the web is next" (02 April 2016), available at <http://www.wired.com/2016/02/ai-is-changing-the-technology-behind-google-searches/>, printed and saved on 11 April 2016.

⁶⁷ See Jayson DeMers, "What Is Google RankBrain and Why Does It Matter?" (12 November 2015), available at <http://www.forbes.com/sites/jaysondemers/2015/11/12/what-is-google-rankbrain-and-why-does-it-matter/#6771c1bc301a>, printed and saved on 11 April 2016.

⁶⁸ Jack Clark, see footnote 66, quoting Greg Corrado, a senior research scientist with Google.

⁶⁹ See "Google Product Privacy Guide", available at <http://www.google.com/intl/en/policies/technologies/product-privacy/>, printed and saved on 11 April 2016. In light of the wide-spread integration of Google's services into third-party apps (see recital (142), data will be even collected if users do not use a Google app).

⁷⁰ See Benedict Evans, "What does Google need from Android? (20 January 2013), available at <http://ben-evans.com/benedictevans/2013/1/20/what-does-google-need-from-android>, printed and saved on 11 April 2016. Data is also important for the machine learning aspects of search-based services, see e.g. Ben Geier, "This Is Google's Plan to Save YouTube" (18 May 2015), available at <http://time.com/3882422/google-youtube/>, printed and saved on 12 April 2016.

⁷¹ Google's response to Question 25 of the request for information of 24 March 2017 (Doc ID 7790).

- verification);
- transactional records from app, in-app and content purchases on the Play Store; Identity documents (e.g. government issued identity card/passport/bank statements);
- standard information sent to the web host by the browser software (IP address; URL, including referral terms;
- timestamp;⁷²
- browser attributes, including browser and OS version;
- information about the content served to the user (advertisement, pages visited, etc.);
- interaction data, such as clicks;
- user preferences and other settings;
- location data;
- cookie data;
- device event information including crashes, system activity, hardware settings; Mobile device data (Hardware and OS version);
- unique device identifiers (e.g. International Mobile Equipment Identity, or "IMEI");
- unique advertising identifier, such as the Android Advertising ID;
- mobile network operator;
- battery and volume state;
- telephony log information, such as phone number, calling-party number, forwarding numbers, time and date of calls, SMS routing information and types of calls (used for Google Voice and Hangouts only); and
- device configuration information, such as installed applications, and app usage data.

(111) The ability to collect and combine different valuable user data from its apps and services allows Google to strengthen its ability to present relevant search responses and relevant search advertisements.⁷³

6.2. The shift to mobile and Google's response

(112) Google developed its business model in a PC environment where the web browser was the core entry point to the Internet.

⁷² Timestamps are typically used for logging events or in a sequence of events (SOE), in which case each event in the log or SOE is marked with a timestamp. In filesystems, timestamp may mean the stored date/time of creation or modification of a file.

⁷³ See "Welcome to the Google Privacy Policy" (version of 19 August 2015), available at <https://www.google.com/policies/privacy/>, printed and saved on 11 April 2016: "*We use the information we collect from all of our services to [...] offer you tailored content – like giving you more relevant search results and ads.*"

- (113) When in the mid-/late 2000s the Internet industry began to shift its focus from PCs to smart mobile devices, Google recognised the opportunities and risks that this shift could bring about for its search-advertising business model.
- (114) In terms of opportunities, Google recognised the potential for a significant increase in the use of Google's services⁷⁴ on smart mobile devices and the collection of valuable user data,⁷⁵ in particular related to location.⁷⁶ Smart mobile devices are a particular source of valuable user data, in particular in combination with other user data.⁷⁷ As Google's CEO, Eric Schmidt, explained: "*We are at the point where, between the geolocation capability of the phone and the power of the phone's browser platform, it is possible to deliver personalized information about where you are, what you could do there right now, and so forth—and to deliver such a service at scale.*"⁷⁸
- (115) In terms of risks, the increase in the number of searches on smart mobile devices

⁷⁴ See for example, e-mail of 26 May 2009, 5:pm, from [Google Executive] to Sergey Brin and other Google executives in relation to the 2008 Founders' Letter (Doc ID 1305-39872): "It's hard to believe, but we are on the verge of a tipping point. It is possible that in 2009, more internet capable smartphones will ship than desktop PCs. [...] These changes are opening up opportunities for Google. Today, almost a third of all Google searches in Japan are coming from mobile devices. This is leading indicator of where the rest of the world will be soon. We are committed to optimizing our products (particularly Search!) for the most popular mobile platforms to take advantage of this trend."

⁷⁵ See the substantial amounts of consumer behaviour and device use data that Google acquires from Google Android devices, its proprietary applications and APIs for Android, summarised in recital (110).

⁷⁶ See email of 29 May 2010 from [Google Executive] to various Google executives, including [Google Executive] (Doc ID 1305-36754): "We absolutely do care about this because we need wifi data collection in order to maintain and improve our wifi location service (especially after having Street View wifi data collection discontinued). Our wifi location database is extremely valuable to Google because it is not a competitive market, even worse than the map data market. Skyhook is the only other viable alternative and there would be incredible risk to depend on them." Another indication for the importance of location data is that in its Android developer guide material, Google strongly encourages developers to use its proprietary Google Location Services APIs instead of the AOSP location APIs, see <https://developer.android.com/guide/topics/location/index.html>, printed and saved on 17 August 2017. For more information on how Google collects location data, including via APIs, see the sources in the next footnote.

⁷⁷ Google's response to Question 25 of the request for information of 24 March 2017 (Doc ID 7790). As Oracle points out in its non-confidential response to Question 1 of the request of information of 24 March 2017 and respective Annex C (Doc IDs 7835 and 7838), Google, collects current and historical location data even from devices not connected to a network; see also Keith Collins, "Google collects. Android users' locations even when location services are disabled" (21 November 2017), available at <https://qz.com/1131515/google-collects-android-users-locations-even-when-location-services-are-disabled/> (printed and saved on 23 February 2018), Google's location data not only allows it to improve the relevance of its search results and search advertising. It also allows Google to offer additional services, such as allowing advertisers to measure their geographic performance or (physical store visit) ad conversion tracking, see e.g. the entries on "Measuring geographic performance" and "All conversions" on Google AdWords website, available at <https://support.google.com/adwords/answer/2453994?hl=en> (printed and saved on 13 June 2017) and <https://support.google.com/adwords/answer/3419678?hl=en> (printed and saved on 11 April 2016). Another indication of the value of location data is that it is traded over marketing platforms similar to the way keywords are traded on search platforms, see "xAd Unveils MarketPlace, the First Self-Service, Fully Transparent Platform for the Buying and Selling of Locations" (23 February 2016), available at <http://www.xad.com/press-releases/xad-unveils-marketplace-the-first-self-service-fully-transparent-platform-for-the-buying-and-selling-of-locations/> (printed and saved on 13 June 2017).

⁷⁸ See Eric Schmidt, "Google: Preparing for the Big Mobile Revolution" (20 January 2011), available at <http://www.mobileworldlive.com/google-preparing-for-the-big-mobile-revolution/>, printed and saved on 11 April 2016.

provided competing general search services with a chance to increase the numbers of search queries and data gathering. Google's 2007 annual report pointed out: "*If we are unable to attract and retain a substantial number of alternative device users to our web search services or if we are slow to develop products and technologies that are more compatible with non-PC communications devices, we will fail to capture a significant share of an increasingly important portion of the market for online services, which could adversely affect our business.*"⁷⁹

- (116) Another risk was that users would use apps rather than web browsers to access content. Accessing content via apps rather than browsers meant that users would not use Google's general search service to discover content.⁸⁰
- (117) When developing a strategy for responding to the shift to mobile, Google also had to take into account the fact that it was a relatively late entrant in the mobile space and that it was not vertically integrated in the production of smart mobile devices (like Apple).⁸¹

6.2.1. *Google Search as default on smart mobile devices*

- (118) One step that Google took was to enter into agreements with OEMs and MNOs whereby Google Search became the default general search service on one or more entry points on their smart mobile devices.
- (119) For example, in 2007, Google entered into an agreement with Apple whereby Google Search became the default general search service on all Apple's smart mobile devices since the launch of the iPhone.⁸² In 2010, Google Search accounted for more than half of the traffic on the iPhone and almost a third of all mobile Internet traffic.⁸³

⁷⁹ See "Google Inc. SEC Form 10-K for Fiscal Year Ended December 31, 2007", page 28, available at <http://www.sec.gov/Archives/edgar/data/1288776/000119312508032690/d10k.htm>, printed and saved on 18 April 2016. On page 31 the report further states: "*More individuals are using non-PC devices to access the internet. If users of these devices do not widely adopt versions of our web search technology developed for these devices, our business could be adversely affected.*" Similar language about the risk that the shift away from PCs to non PC-devices could bring about for Google's business can be found in all of Google's 10-K reports since 2004 until today.

⁸⁰ See Sarah Perez, "Majority of Digital Media Consumption Now Takes Place In Mobile Apps" (21 August 2014), available at <http://techcrunch.com/2014/08/21/majority-of-digital-media-consumption-now-takes-place-in-mobile-apps/>, printed and saved on 11 April 2016. See "Google Inc. SEC Form 10-K for Fiscal Year Ended December 31, 2012", page 28: "*In addition, search queries are increasingly being undertaken via "apps" tailored to particular devices or social media platforms, which could affect our share of the search market over time*", available at <http://www.sec.gov/Archives/edgar/data/1288776/000119312513028362/d452134d10k.htm>, printed and saved on 18 April 2016.

⁸¹ Google's response to the complaint by FairSearch, paragraph 30 (Doc ID 1584).

⁸² Apple's non-confidential response to Question 16 of the request for information of 17 July 2014 (Doc ID 1453). According to Morgan Stanley's "The Mobile Internet Report" (December 2009), page 35, the iPhone held a share of 65% of HTML mobile page views and 50% of mobile Internet and apps usage of all smartphones globally. See Cliff Edwards & Peter Burrows, "Apple, Microsoft Discuss Giving Bing Top iPhone Billing" (20 January 2010), available at http://www.bloomberg.com/bw/technology/content/jan2010/tc20100119_759795.htm, printed and saved on 11 April 2016.

⁸³ See Ramu Nagappan, "Report: Google commands more than half of iPhone's Web traffic" (27 January 2010), available at http://www.macworld.com/article/1145926/google_iphone_traffic.html, printed and saved on 11 April 2016.

6.2.2. The development of Android and the Android ecosystem

- (120) Another step that Google took was the acquisition and development of the mobile operating system, Android (Section 6.2.2.1).
- (121) Google also tried to garner support of a critical mass of OEMs, MNOs and other industry players willing to adapt a new operating system by developing the Android ecosystem, in particular via the Open Handset Alliance ("OHA") (Section 6.2.2.2).⁸⁴

6.2.2.1. The development of Android

I. Android Open Source Project

- (122) Android⁸⁵ is an operating system based on the Linux kernel and built on the programming language Java, albeit with important modifications. This has led to the fact that, while app developers could still use the Java language to write apps for Android, their apps would not run on the Java platform.⁸⁶

Figure 4: Android stack⁸⁷



- (123) Google acquired the original developer of Android, Android, Inc., in 2005.⁸⁸ It released the first Android version inside Google and the OHA in 2007, with the first

⁸⁴ Google's response to the complaint by FairSearch, paragraphs 30 et seq. (Doc ID 1584).

⁸⁵ For an explanation of how "Android" is used in this Decision, please see recital (131).

⁸⁶ See Ruling by the Court of Appeals for the Federal Circuit of 9 May 2014 in *Oracle America, Inc. v. Google Inc.*, page 10, available at <http://www.cafc.uscourts.gov/sites/default/files/opinions-orders/13-1021.Opinion.5-7-2014.1.PDF>, printed and saved on 18 April 2016.

⁸⁷ See "The Android Source Code", available at <https://source.android.com/source/>, printed and saved on 11 April 2016.

⁸⁸ Google's response to the complaint by FairSearch, paragraph 19 (Doc ID 1584).

commercial Android phones coming out in 2008/9.⁸⁹

- (124) Google makes the source code of Android available for free via the Android Open Source Project ("AOSP")⁹⁰ and under an open source⁹¹ licence ("AOSP licence").⁹² This means that anybody can access the AOSP source code and create modified versions of it (so-called "Android forks"). These were major selling points to get OEMs and MNOs to join the OHA.⁹³
- (125) However, at the same time, Google has an important influence on the key steps of the development of Android.
- (126) First, Google does most of the development of the source code of the Android platform.⁹⁴
- (127) Second, the governance model of Android is run by Google, which determines the roadmap, decides on features and new releases and tightly controls the compatibility of derivatives. Source code contributions by developers other than Google are verified and approved by people in the AOSP governance structure that are typically Google employees.⁹⁵ A part of the development of the code is also done privately by

⁸⁹ See Kent German, "A brief history of Android phones" (2 August 2011), available at <http://www.cnet.com/news/a-brief-history-of-android-phones/>, printed and saved on 11 April 2016.

⁹⁰ See "Google and the Open Handset Alliance Announce Android Open Source Availability" (21 October 2008), available at http://www.openhandsetalliance.com/press_102108.html, printed and saved on 13 April 2016.

⁹¹ "Open Source" denotes a specific way of developing and distributing software. A distribution of open source software (OSS, sometimes augmented as FOSS = Free and Open Source Software) contains at least the source code of the distributed software. It often additionally contains binary versions of the software, that is to say the result of compiling (translating) the source code into a language understood by the machine on which the binary version of the software is supposed to run. For developing software, in many settings this approach has the advantage that it is simple for users to adapt software to their needs. The availability of source code also facilitates the treatment of software bugs (that is to say programming errors) by essentially enlisting many of the software's users as co-developers. The Open Source Initiative operates a license review process to determine whether a given software license complies with the Open Source Definition (<http://opensource.org/docs/osd> printed and saved on 1 June 2018): there are several dozen approved open source licenses (<http://opensource.org/licenses/alphabetical>). In addition to the requirement of openly available source code the Open Source Definition also ensures that OSS can be modified and redistributed under the same license terms by its users.

⁹² See "The Benefits & Importance of Compatibility" (14 September 2012), available at <http://officialandroid.blogspot.be/2012/09/the-benefits-importance-of-compatibility.html>, printed and saved on 13 April 2016. This licence – the "Apache Software License, Version 2.0" – is also the preferred licence for the AOSP, see "Licenses", available at <http://source.android.com/source/licenses.html>, printed and saved on 13 April 2016.

⁹³ See, e.g., Google internal presentation by [Google Executive], "Android – Answers to strategy questions for BOD", 8 October 2010, slide 3 (Doc ID 1790-397): "*Because of its Apache licensing model, we sent a strong signal that we are not controlling the platform;*" "*Because Google was historically seen as threat to operators, giving up control was a key component of operators adopting Android;*" email of 16 January 2012, 09:25 pm, from [Executive] at Orange, to [Google Executive], regarding the intended configuration of Orange devices (ID 1751-764): "*Android's positioning is as an open ecosystem, allowing operators and manufacturers to customise and differentiate, has played a major role in its success.*"

⁹⁴ As of early 2012, Google had already invested over USD [500-600] million in developing Android, see email of 16 January 2012, 09:25 pm, from [Google Executive] to [Executive] at Orange, regarding the intended configuration of Orange devices (ID 1751-764).

⁹⁵ See "Open Governance Index- Measuring the true openness of open source projects from Android to Webkit" (July 2011), page 16, available at <http://www.visionmobile.com/product/open-governance->

Google.⁹⁶

- (128) Third, Google unilaterally decides when the source code of the Android platform is made available. Until October 2016, Google generally worked on the next version of the Android platform and released the source code of the Android platform in tandem with the launch of a flagship device,⁹⁷ which between 2010 and 2016 was a Google Nexus device developed together with a chosen OEM.⁹⁸ Google has confirmed that it releases the source code of the Android platform only after it has been developed and the first flagship devices have been launched: "*code updates (...) become available shortly after the launch of the newest Android lead device*".⁹⁹ However, Google can delay (and has delayed) the release of the source code further. For example, in March 2011, Google announced that, for the time being, it would not be providing public access to the source code of the then latest version of Android – Honeycomb.¹⁰⁰
- (129) On 4 October 2016, Google unveiled its Pixel phones as the launch device for Android 7.1 Nougat.¹⁰¹ Google's Pixel phones are no longer developed together with a chosen OEM but rather designed and marketed by Google. Google also declared that it currently has "no plans" to continue to develop Nexus devices together with a chosen OEM.¹⁰²
- (130) Google's important influence on the key steps of the development of Android is confirmed by evidence on the Commission's file. According to a report by the Open Governance Index analysing eight open source projects, "[a]ll in all, *Android is the most closed open source project, whilst also the most commercially successful mobile software platform to date.*"¹⁰³ In its internal documents, Google states that it "*define[s] the standard and shape[s] the [Android] ecosystem*".¹⁰⁴ [OS provider] indicates that Google holds "*the copyright to source code not released under open source licence, and decides when and to whom to disclose the new versions of*

⁹⁶ See "Project Roles", available at <http://source.android.com/source/roles.html>, printed and saved on 11 April 2016.

⁹⁷ See "Codelines, Branches, and Releases", available at <https://source.android.com/source/codelines.html>, printed and saved on 11 April 2016: "*Deep development' on the next version of the platform will happen in private [...].*"

⁹⁸ See "Frequently Asked Questions", available at <http://source.android.com/source/faqs.html#how-is-the-android-software-developed>, printed and saved on 18 April 2016.

⁹⁹ Google's response to the complaint by FairSearch, paragraph 98 (Doc ID 1584).

¹⁰⁰ Google's response to the complaint by FairSearch, paragraph 98 (Doc ID 1584).

¹⁰¹ See Sean Hollister, "Google keeping Honeycomb source code on ice, says it's not ready for other devices" (24 March 2011), available at <http://www.engadget.com/2011/03/24/google-keeping-honeycomb-source-code-on-ice-says-its-not-ready/>, printed and saved on 11 April 2016.

¹⁰² See Brian Rakowski, VP Product Management, "Introducing Pixel, our new phone made by Google" (4 October 2016), available at <https://blog.google/products/pixel/introducing-pixel-our-new-phone-made-google/>, printed and saved on 13 June 2017.

¹⁰³ See Dieter Bohn, "The Google Phone – The inside story of Google's bold bet on hardware", available at <http://www.theverge.com/a/google-pixel-phone-new-hardware-interview-2016>, printed and saved on 14 June 2017.

¹⁰⁴ The other open source projects analysed include (in increasing order of openness): Qt, Symbian, MeeGo, Mozilla, WebKit, Linux and Eclipse. VisionMobile, "Open Governance Index. Measuring the true openness of open source projects from Android to WebKit" (July 2011), page 17, available at <http://www.visionmobile.com/product/open-governance-index/>, printed and saved on 11 April 2016.

¹⁰⁴ Google internal presentation by [Google Executive], "Android – Answers to strategy questions for BOD", 8 October 2010, slide 4 (Doc ID 1790-397).

Android source code".¹⁰⁵ Apple states that Google has a "*tight control of Android*".¹⁰⁶ Amazon.com, Inc. ("Amazon") submits that not all versions of Android are made available under an open source licence.¹⁰⁷

- (131) In this Decision, smart mobile devices that run on any version of Android, including Android forks,¹⁰⁸ are referred to as "Android devices". The versions of Android running on these devices are collectively referred to as "Android". In addition, smart mobile devices approved explicitly or tacitly¹⁰⁹ by Google as "Android compatible" are referred to as "Google Android devices". The versions of Android running on Google Android devices are collectively referred to as "Google Android". The term Google Android, therefore, excludes Android forks. Lastly, smart mobile devices which in addition to running on Google Android also pre-install the mandatory Google apps as defined in Section 6.3.2 are referred to as "GMS devices".

II. Play Store

- (132) Google has offered an app store for Google Android since 2008. An early version of its app store was called Android Market, which in March 2012 was integrated into Google Play and became the Play Store.¹¹⁰
- (133) The Play Store is part of Google Mobile Services ("GMS"), the bundle of Google apps and services that Google licenses together.¹¹¹
- (134) Unlike other Google apps, the Play Store is not downloadable and thus needs to be pre-installed by OEMs in order for users to have access to it. While Google does not prohibit the pre-installation of other app stores, developers cannot distribute alternative app stores via the Play Store.¹¹²
- (135) In order to have access to the Play Store, users need to have a Google Account. A

¹⁰⁵ [OS provider]'s non-confidential response to Question 6 of the request for information of 12 June 2013 to OS providers [...].

¹⁰⁶ Apple's non-confidential response to Question 6 of the request for information of 12 June 2013 to OS providers (Doc ID 749).

¹⁰⁷ Amazon's non-confidential response to Question 6 of the request for information of 12 June 2013 to OS providers (Doc ID 4187).

¹⁰⁸ Technically, any modified version of the AOSP code can be considered a fork. Such fork, however, can be either compatible or incompatible with Google's CDD and CTS (see Section 6.3.1). For the purposes of this Decision, any reference to an Android fork is to a non-compatible fork, unless otherwise specified.

¹⁰⁹ As discussed in footnote 436, the large majority of Google Android devices sold outside of China is accounted for by GMS devices. These devices can only be launched after Google has granted an explicit final approval (see, e.g., the MADAs referred to in footnote 165). In the case of devices that do not pre-install GMS, instead, hardware manufacturers need to send Google a CTS report, but do not need to receive Google's explicit approval before the launch (see, e.g., the MADAs referred to in footnote 164). "Tacit approval", therefore, refers to situations where hardware manufacturers send Google CTS reports for a device, and where Google does not react by disputing that device's compatibility.

¹¹⁰ Together with Google Music and the Google eBookstore Android Market became part of the Play Store at that time, see "Introducing Google Play: All your entertainment, anywhere you go" (6 March 2012), available at <https://googleblog.blogspot.be/2012/03/introducing-google-play-all-your.html>, printed and saved on 12 April 2016.

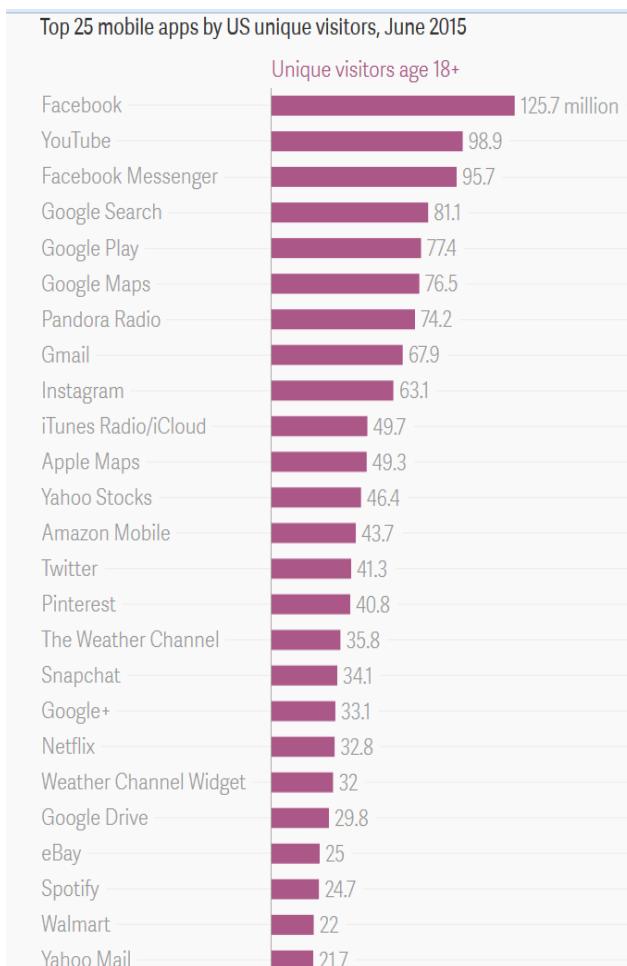
¹¹¹ For more detail, see Section 6.3.2.

¹¹² See section 4.5 of the "Google play developer distribution agreement" (last modified 5 May 2015), available at https://play.google.com/intl>All_uk/about/developer-distribution-agreement.html, printed and saved on 13 April 2016.

Google Account requires the creation of a Gmail account, unless the user already has a Google Account.¹¹³

- (136) Apart from allowing users to download apps, the Play Store allows users to rate apps from one to five and is important for other functions, such as payments or the updating of apps.¹¹⁴
- (137) The Play Store is amongst the most widely used apps for smart mobile devices and the only app store in the list of 25 most visited apps in the US in June 2015.

Figure 5: Top 25 apps in the US by unique visitors¹¹⁵



III. Google Play Services

- (138) Google Play Services is a Google proprietary software layer that provides background services and APIs for apps integration with Google's proprietary cloud services.
- (139) Google Play Services was launched in 2012¹¹⁶ and its main components are the

¹¹³ [...] non-confidential briefing paper of 28 January 2016, paragraph 11.4 [...].

¹¹⁴ See "Welcome to the Google Play Help Center", available at https://support.google.com/googleplay#topic_, printed and saved on 11 April 2016.

¹¹⁵ Source: Dan Frommer, "These are the 25 most popular mobile apps in America" (18 August 2015), available at <http://qz.com/481245/these-are-the-25-most-popular-2015-mobile-apps-in-america/>, printed and saved on 11 April 2016.

Google Play Services APK and the Google Play Services client library.¹¹⁷

- (140) The Google Play Services APK contains the various Google services and runs as a background service in Android. The Google Play Services client library contains the interfaces to the individual Google services and allows Google's proprietary and third party apps to obtain authorisation from users to gain access to these services with their credentials.
- (141) Almost all of Google's proprietary apps use Google Play Services.¹¹⁸
- (142) The Google Play Services library is also integrated in a large number of third party apps that embed Google's services in their apps for functionalities, such as push notifications, location and maps.¹¹⁹ According to AppBrain, more than 60% of the most downloaded apps in the Play Store use the cloud messaging service of Google through the Google Cloud Messaging library.¹²⁰ 45% of all Android apps also contain the library for AdMob, Google's mobile advertising service.¹²¹ Without access to these services, many apps would either crash, or lack important functions.¹²²
- (143) While Google Play Services and the Play Store are technically two distinct products, they are closely interlinked in a number of ways.
- (144) First, the Play Store and Google Play Services are licensed together as part of the GMS bundle, and Google does not license them separately.
- (145) Second, at its launch, Google Play Services was automatically delivered through the Play Store on all Android devices on which the Play Store was installed.¹²³
- (146) Third, any update to Google Play Services automatically comes through the Play

¹¹⁶ See "Google play services", available at <https://plus.google.com/+AndroidDevelopers/posts/J1A5hc1ZnS1>, printed and saved on 13 April 2016.

¹¹⁷ See "Overview of Google Play Services" (24 September 2015), available at <https://developers.google.com/android/guides/overview>, printed and saved on 11 April 2016. APK is the abbreviation for Android Application Package and a file format used for installing software on Android (similar to an ".exe" file on Windows).

¹¹⁸ See Ron Amadeo, "Balky carriers and slow OEMs step aside: Google is defragging Android" (3 September 2013), available at <http://arstechnica.com/gadgets/2013/09/balky-carriers-and-slow-oems-step-aside-google-is-defragging-android/>, printed and saved on 11 April 2016.

¹¹⁹ See Benedict Evans, "Amazon and Android forks" (22 June 2014), available at <http://ben-evans.com/benedictevans/2014/6/21/amazon-and-forks?rq=android%20forks%20amazon>, printed and saved on 11 April 2016. According to estimates by Yandex, approximately 65% of the most popular free Android apps use at least one of the API's of Google Play Services; see Yandex's non-confidential response to Question 3 of the request for information of 29 June 2015 to app developers (Doc ID 2031).

¹²⁰ See Rachel King, "I/O 2013: more than half of apps in Google Play now use Cloud Messaging" (16 May 2013), available at <http://www.zdnet.com/article/io-2013-more-than-half-of-apps-in-google-play-now-use-cloud-messaging/>, printed and saved on 11 April 2016.

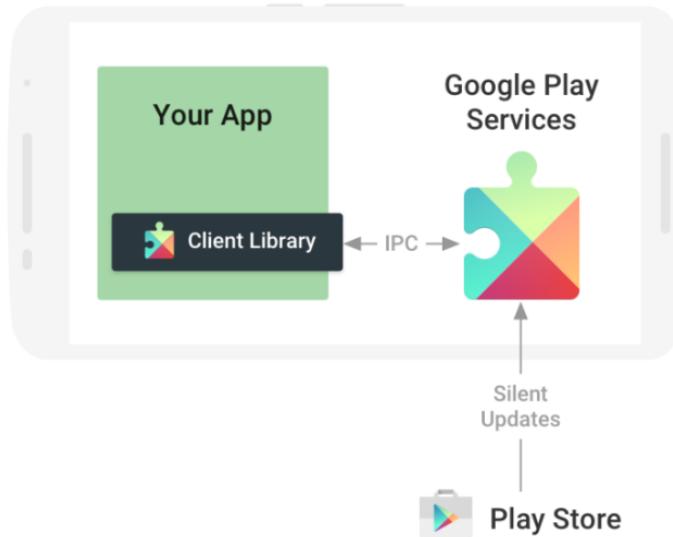
¹²¹ See "Android ad networks" (status: 11 April 2016), available at <http://www.appbrain.com/stats/libraries/ad>, printed and saved on 11 April 2016. The figures are even higher if you consider new apps or top apps (both 57%), see "Android libraries(/stats/libraries) > "Admob" (status 11 April 2016), available at <http://www.appbrain.com/stats/libraries/details/admob/admob>, printed and saved on 11 April 2016.

¹²² See, LG Electronics' non-confidential response to Question 24 of the request for information of 21 October 2015 on app stores (Doc ID 2377).

¹²³ See Eric Ravenscraft, "Why Google Play Services Are Now More Important Than Android" (31 July 2013), available at <http://lifehacker.com/why-google-play-services-are-now-more-important-than-an-975970197>, printed and saved on 11 April 2016.

Store, without the need for any action by the user or OEM, as shown in Figure 6.

Figure 6: The interplay between apps, the Play Store and Google Play Services¹²⁴



- (147) Fourth, as discussed in Section 9.4.4, a substantial proportion of apps downloaded through the Play Store would not function properly unless Google Play Services is pre-installed on a smart mobile device.

6.2.2.2. Development of the Android ecosystem

- (148) In order to compete with established companies in the mobile industry, Android needed the support of other industry players, in particular OEMs, MNOs and app developers.¹²⁵
- (149) Accordingly, in 2007, Google established the Open Handset Alliance ("OHA") and tried to convince other companies to join the alliance.
- (150) Among the 34 original founding members of the OHA were a number of important OEMs (e.g. Samsung Electronics ("Samsung"), Motorola, Inc. ("Motorola")), MNOs (e.g. T-Mobile International AG ("T-Mobile"), Telefónica S.A. ("Telefonica")) and other leading technology and mobile industry companies (e.g. Qualcomm Inc. ("Qualcomm"), Intel Corporation ("Intel"), eBay Inc. ("eBay")).¹²⁶
- (151) As the lead developer of the Android platform, Google has implemented a strategy based on different degrees of involvement from OEMs, MNOs and app developers:¹²⁷
- (1) *OEMs.* Google provides Android for free under the AOSP licence, which allows OEMs to customise their devices to some extent – as long as they still

¹²⁴ See "The Android Source Code", available at <https://source.android.com/source/>, printed and saved on 11 April 2016.

¹²⁵ Google's response to the complaint by FairSearch, paragraphs 27-33 (Doc ID 1584).

¹²⁶ See "Industry Leaders Announce Open Platform for Mobile Devices" (5 November 2007), available at http://www.openhandsetalliance.com/press_110507.html, printed and saved on 13 June 2017. According to its website, the OHA currently has 84 members but it is not obvious to which extent the OHA is still active. The last recorded news date from July 2011, see "Open Handset Alliance", available at <http://www.openhandsetalliance.com/index.html>, printed and saved on 11 April 2016.

¹²⁷ Google's response to the complaint by FairSearch, paragraph 32 (Doc ID 1584).

- qualified as "compatible" and did not lead to fragmentation as defined by Google.¹²⁸
- (2) *MNOs.* Google allows MNOs to add apps to devices in order to generate additional revenue in addition to mobile subscription fees. Certain MNOs also receive a share of the revenues that Google achieves with Google Search – subject to exclusivity.¹²⁹
 - (3) *App developers.* Google ensures¹³⁰ that app developers have incentives to participate in the Android ecosystem as when developers write apps for Android, a positive feedback loop ensues: Android becomes more attractive to users, which in turn, makes Android more attractive to developers. For example, a week after the announcement of the establishment of OHA in 2007, the Android SDK was released to enable developers to create apps for the Android platform¹³¹ free of charge, but solely to be used to develop apps that run on Google Android devices.

6.2.2.3. Google's activities at the level of smart mobile devices

- (152) As mentioned in Section 6.2.2.1, while Google is active at the level of smart mobile devices with its Nexus and Pixel devices, the majority of smart mobile devices are sold by OEMs that run Android with GMS installed. OEMs compete amongst each other, with Google's Nexus and Pixel devices and with the manufacturers of smart mobile devices powered by different smart mobile OSs.
- (153) The extent to which competition at the level of smart mobile devices has an impact on Google is explained in detail in Sections 7.3 and 9.3.4. However, in order to understand properly the impact of such competition on Google, it is important to keep in mind Google's business model. Unlike Apple, whose business model is based on vertical integration and the sale of higher-end smart mobile devices, Google's business model is based first and foremost on increasing the audience for its online services so that it can sell its search advertising.¹³²
- (154) This is why Google has, *inter alia*, entered into an agreement with Apple to become the default general search service for the Safari browser on Apple's smart mobile devices.¹³³ This agreement allows Google to also achieve substantial revenues on

¹²⁸ See Section 6.3.1.

¹²⁹ See Section 6.3.3.

¹³⁰ See, e.g., the description of the "ecosystem"/"virtuous cycle" by Andy Rubin, Senior Vice President of Mobile and Digital Content, in the post "The Benefits & Importance of Compatibility" (14 September 2012), available at <http://officialandroid.blogspot.com/2012/09/the-benefits-importance-of-compatibility.html>, printed and saved on 11 April 2016. See also [Google Executive], "Android Strategy and Partnerships Overview" (June 2009), page 31 (Doc ID 1348-570): "*Applications aren't just important for direct monetization- we need them to make the ecosystem work [...].*"

¹³¹ See "Open Handset Alliance Releases Android SDK" (12 November 2007), available at http://www.openhandsetalliance.com/press_111207.html, printed and saved on 13 April 2016.

¹³² See Ben Bajarin, "iOS, Android, and the Dividing of Business Models" (30 June 2014), available at <https://techpinions.com/ios-android-and-the-dividing-of-business-models/32237>, printed and saved on 11 April 2016; Bill Gurley, "Above the crowd" (24 March 2011), available at <http://abovethecrowd.com/2011/03/24/freight-train-that-is-android/>, printed and saved on 11 April 2016; and Liz Laffan, "[Report] A new way of measuring openness, from android to webkit the open governance index [updated]", available at <http://www.visionmobile.com/blog/2011/07/the-open-governance-index-measuring-openness-from-android-to-webkit/>, printed and saved on 11 April 2016.

¹³³ See Section 6.2.1.

Apple devices (see Table 16).

6.3. Google's agreements with members of the Google Android ecosystem

- (155) Google has entered into a number of agreements with members of the Google Android ecosystem, in particular:
- (1) *Anti-fragmentation Agreements ("AFAs");*
 - (2) *Mobile Application Distribution Agreements ("MADAs"); and*
 - (3) *Revenue share agreements for Google Search.*
- (156) The relationship between the AOSP licence, AFAs, MADAs and Google's proprietary apps and intellectual property related to Android can be summarised as follows:
- (1) The AOSP licence does not grant hardware manufacturers the right to distribute Google's proprietary apps such as Google Search, Google Chrome, the Play Store and Google Play Services. The AOSP licence further does not grant members of the Android ecosystem the right to use the Android logo and other Android related trademarks that Google owns.¹³⁴
 - (2) In order to obtain those rights, Google requires hardware manufacturers to enter into a MADA. In order, however, to be eligible to enter into a MADA, Google requires hardware manufacturers first to enter into an AFA.

6.3.1. Anti-Fragmentation Agreements

- (157) Pursuant to an AFA, hardware manufacturers commit to the following:
- (1) "*[COMPANY] will only distribute Products that are either: (i) in the case of hardware, Android Compatible Devices; or (ii) in the case of software, distributed solely on Android Compatible Devices";*
 - (2) "*[COMPANY] will not take any actions that may cause or result in the fragmentation of Android"; and*
 - (3) "*[COMPANY] shall not distribute a software development kit (SDK) derived from Android or derived from Android Compatible Devices and [OEM] shall not participate in the creation of, or promote in any way, any third party software development kit (SDK) derived from Android, or derived from Android Compatible Devices".¹³⁵*
- (158) These clauses of the AFA referred to in recital (157) are hereinafter referred to as the "anti-fragmentation obligations".
- (159) The stated objective of the AFAs "*is to define a baseline implementation of Android that is compatible with third-party apps written by developers.*"¹³⁶ As explained on

¹³⁴ See "Google Mobile Brand Guidelines", available at <https://source.android.com/source/brands.html>, printed and saved on 11 April 2016: "*The use of "Android" on hardware, packaging or marketing materials of device is restricted to Android-compatible devices only*" and "*Android*" should never be used in the name of your product or as the primary or dominant mark on your packaging or device" However, the Android robot is made available under a Creative Commons licence and can be used, reproduced and modified with proper attribution.

¹³⁵ See for example Doc ID 1306-164.

¹³⁶ See "Frequently Asked Question", available at <http://source.android.com/source/faqs.html#how-does-the-aosp-relate-to-the-android-compatibility-program>, printed and saved on 18 April 2016.

the Google Android website, "*only devices that are 'Android compatible' may participate in the Android ecosystem, including Google Play; devices that don't meet the compatibility requirements exist outside that ecosystem.*"¹³⁷

- (160) In its internal documents, Google also refers to the fact that AFAs are meant to "*Stop [...] our partners and competitors from forking Android and going alone*".¹³⁸ In other words, members of the Android ecosystem "*didn't just commit to ship Android-compatible devices; they committed to *not* ship incompatible devices*".¹³⁹
- (161) In order to build an Android compatible device, hardware manufacturers must comply with the Android Compatibility Definition Document ("CDD") and pass the Compatibility Test Suite ("CTS") (together the "Android compatibility tests").¹⁴⁰ The CDD enumerates the software and hardware requirements of a compatible Android device.¹⁴¹ The CTS is an automated testing tool that can be run on a target device or simulator to determine compatibility.¹⁴² Both are available via the Android webpage and developed, amended and adopted by Google.¹⁴³
- (162) Only hardware manufacturers that pass the Android compatibility tests can use the "Android" name on hardware, packaging or marketing materials of devices.¹⁴⁴ In addition, only those hardware manufacturers can make use of the Android logotype and the Android compatibility trademark.¹⁴⁵
- (163) The conditions for the Android compatibility tests are determined at Google's sole discretion: "*Yandex states that the CDD is "adopted and amended at the sole discretion of Google". This is correct. [...] The fact that Google has the last word on how to define compatibility in the CDD, however, does not mean that Android partners cannot update compatibility criteria with incompatibilities and bugs they discover. In fact, since the CDD and CTS are open source, everybody can contribute. Google considers these contributions carefully, many of which concern bug fixes in the CTS or additional tests for CDD requirements or new Android features.*"¹⁴⁶
- (164) Google has entered into AFAs with hardware manufacturers active throughout the world, including OEMs, contract manufacturers (also known as original design manufacturers, or "ODMs") and chipset manufacturers.

¹³⁷ See "Frequently Asked Questions", available at <https://source.android.com/source/faqs.html#how-does-the-aosp-relate-to-the-android-compatibility-program>, printed and saved on 18 April 2016.

¹³⁸ Presentation by [Google Executive] (Doc ID 1305-50462).

¹³⁹ See email from [Google Executive] of 14 September 2012 (Doc ID 1754-355).

¹⁴⁰ See "Android compatibility", available at <https://source.android.com/compatibility/>, printed and saved on 11 April 2016.

¹⁴¹ See "Compatibility Program Overview", available at <https://source.android.com/compatibility/overview.html>, printed and saved on 11 April 2016.

¹⁴² See "Compatibility Test Suite", available at <https://source.android.com/compatibility/cts/index.html>, printed and saved on 11 April 2016. The CTS is supplemented by an additional tool, the Compatibility Test Suite Verifier (CTS Verifier), see "Compatibility Program Overview", available at <https://source.android.com/compatibility/overview.html#compatibility-test-suite-verifier-cts-verifier>, printed and saved on 11 April 2016.

¹⁴³ Google's response to the complaint by Yandex, paragraphs 56-61 (Doc ID 2118). For more detail, see also Section 6.3.2.

¹⁴⁴ See "Brand Guidelines", available at <https://source.android.com/source/brands.html>, printed and saved on 11 April 2016. In order to obtain the right to use such brand and trademark, hardware manufacturers need to enter into a MADA with Google first.

¹⁴⁵ Google's response to the complaint by FairSearch, paragraph 99 (Doc ID 1584).

¹⁴⁶ Google's response to the complaint by Yandex, paragraph 59 (Doc ID 2118).

- (165) Figure 7 shows the AFAs that Google has entered into since 2009 with the top 30 hardware manufacturers in terms of sales. It also shows the duration of those agreements.¹⁴⁷

¹⁴⁷ As discussed in Section 6.3.2, Google has also entered into MADAs with certain hardware manufacturers that contain certain anti-fragmentation clauses which are the same as or similar to the ones indicated in this section.

Figure 7: List and duration of AFAs entered into by Google and the top 30 hardware manufacturers in terms of sales¹⁴⁸



(166) All the largest OEMs active in the EEA¹⁴⁹ have confirmed that, at present, they have

¹⁴⁸ Source: Google's response to Question 39 of the request for information of 11 July 2014 and to Question 15 of request for information of 24 March 2017 (Doc ID 1271 and 7894-6) and [...] data (Doc IDs 7866 and 7867). The data indicated by Google in its response appears to be incomplete and underestimates the duration of many AFAs. As regards [AFA signatory], the 2011 AFA remains in force until negotiations for its amendment are finalised. Source: [AFA signatory] response to Question 1 of the request for information of 28 February 2018 [...].

¹⁴⁹ Apart from Apple that only uses its own iOS operating system and Nokia, whose mobile division was purchased by Microsoft in 2013.

ongoing AFAs with Google.¹⁵⁰

- (167) OEMs that have an AFA with Google have, since at least 2011, accounted for a significant proportion of smart mobile device sales. Given that Google requires hardware manufacturers to enter into an AFA as a condition for entering into a MADA, the percentage of smart mobile devices on a worldwide basis (excluding China) based on a licensable smart mobile OSs sold by OEMs that have entered into AFAs with Google corresponds at the very least¹⁵¹ to the percentage of devices covered by MADAs, as shown in Table 1.¹⁵²

Table 1: Coverage of AFAs with OEMs¹⁵³

Year	AFA coverage
2011	[70-80%]
2012	[80-90%]
2013	[90-100%]
2014	[90-100%]
2015	[90-100%]
2016	[90-100%]

- (168) While the duration of the first AFAs with hardware manufacturers was two years, AFAs now have a typical duration of [5-10] years.¹⁵⁴
- (169) In addition, Google requires that a hardware manufacturer must have at least three years remaining on the term of an AFA before it can enter into a MADA or a Platform Development Kit ("PDK") agreement.¹⁵⁵ As confirmed by [Google Executive], "[...] we should renew AFA for any new PDK partner (or MADA) that falls under [0-5] years. We need predictability around compatibility to ensure developers continue to invest in the platform to the benefit of users and everyone involved."¹⁵⁶ As a result, once a hardware manufacturer has entered into an AFA, the AFA is normally extended beyond its original duration well before expiry.

¹⁵⁰ In particular, BlackBerry (Doc ID 3510), Dell (Doc ID 3485), HP (Doc ID 3477), HTC (Doc ID 3519), Huawei (Doc ID 3495), Lenovo (Doc ID 3503), LG Electronics (Doc ID 3430), Samsung (Doc ID 3501), Sony (Doc IDs 3458), Toshiba (Doc ID 3472) and ZTE (Doc ID 3488) have confirmed that they have ongoing AFAs with Google.

¹⁵¹ The actual coverage is likely to be significantly higher, particularly in 2011 and 2012. This is because, while the figures in Table 1 consider Windows Mobile devices as not covered by AFAs, a large portion of these devices is likely to be sold by OEMs that manufacture both Windows Mobile and Google Android devices and which are thus prohibited by the AFAs to sell devices based on Android forks for the totality of their output (e.g. Samsung, HTC and Sony).

¹⁵² The Commission concludes the percentage of GMS devices as a better proxy for the coverage of the AFAs than [...] sales data. This is because: (i) Google did not provide a complete list of all the AFAs that it entered into with OEMs and (ii) there are a number of inconsistencies of coverage values based on [...] data (e.g. sales that were registered as sales by an MNO in the [...] database did not appear as covered by an AFA since there is no contract between Google and those MNOs).

¹⁵³ Source: Commission's calculations based on [...] data (Doc IDs 7866 and 7867).

¹⁵⁴ See for example AFA with [AFA signatory] of 15 April 2013 [...].

¹⁵⁵ A PDK allows hardware manufacturers to port a smart mobile OS to their hardware. The Android PDK is normally made available to hardware manufacturers between two and three months before major Android updates (see T.C. Sottek, "Google will release an Platform development Kit for hardware developers ahead of each major Android upgrade" (27 June 2012), available at <http://www.theverge.com/2012/6/27/3120980/google-announces-platform-development-kit>, printed and saved on 11 April 2016).

¹⁵⁶ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1366-2119) and [AFA signatory]'s non-confidential response to Question 46 of the request for information of 17 July 2014 [...].

- (170) On 28 March 2017, Google informed the Commission of its intention to notify hardware manufacturers of the option to enter into an "Android Compatibility Commitment" ("ACC") in place of an AFA.¹⁵⁷
- (171) Contrary to the AFA, the ACC option would permit hardware manufacturers to:
 - (1) Manufacture incompatible Android devices for a third party that are marketed under a third-party brand;¹⁵⁸ and
 - (2) Supply components to a third party to be incorporated into incompatible Android devices that are marketed under a third-party brand.¹⁵⁹

6.3.2. *Mobile Application Distribution Agreements*

- (172) The MADA grants hardware manufacturers a number of rights.
- (173) First, hardware manufacturers have the right to pre-install and distribute a number of Google apps on their Google Android devices.¹⁶⁰
- (174) Second, hardware manufacturers can sublicense the Google apps to MNOs, other distributors and contractors responsible for testing, evaluation and development.¹⁶¹
- (175) Third, hardware manufacturers have the right to use Google's trademarks, subject to the Google Mobile Branding Guidelines.¹⁶²
- (176) The MADA also imposes a number of obligations on hardware manufacturers.
- (177) First, hardware manufacturers "*may not, and may not allow or encourage any third party to: [...] (e) take any actions that may cause or result in the fragmentation of Android*".¹⁶³
- (178) Second, all devices running Android, including those on which hardware manufacturers do not pre-install Google's apps, must pass the CTS. Hardware

¹⁵⁷ See letter of Google to the Commission of 28 March 2017 (Doc ID 7579).

¹⁵⁸ See copy of the ACC template provided by Google on 28 March 2017, clause 2.2(A) (Doc ID 7580).

¹⁵⁹ See copy of the ACC template provided by Google on 28 March 2017, clause 2.2 (B) (Doc ID 7580).

¹⁶⁰ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Sections 1.1(t) and 2.1 [...]. The agreement provided [MADA signatory] with a license regarding the following Google apps: Google Play Client, Calendar Sync, Contacts Sync, Gmail, Google+ (including Google+ Photos), Google Play Books, Google Calendar, Google Maps, Google Play Music, Google Partner Setup, Google Search (including Google Now), Google Chrome, Google Services Framework, Google Street View, Google Talk, Google Play Movies, Google Play Newsstand, Google Play Games, Google Drive, Google Backup and Restore, Google Voice Search, Media Uploader, Network Location Provider, Set Up Wizard, YouTube, Google WebView Component, Widevine, Orkut, Google Wallet, Google Shopper, Google Earth, Finance, News & Weather, and Google Voice.

¹⁶¹ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 2.2 [...].

¹⁶² See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 7.2 [...], and the "Google Mobile Branding Guidelines" available at <https://source.android.com/source/brands.html>, printed and saved on 11 April 2016.

¹⁶³ Such actions include, for example, "*distribution of a software development kit (SDK) derived from Android or derived from Android Compatible Devices.*" See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 2.3(e) [...]. This requirement has been part of the MADA since 2009. See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 July 2009, Section 2.2(g) [...].

- manufacturers must also send the CTS report to Google.¹⁶⁴
- (179) Third, hardware manufacturers must send the final software build of their GMS devices for final approval by Google.¹⁶⁵
- (180) Fourth, once a hardware manufacturer decides to pre-install one or more Google proprietary apps on its devices, it must pre-install all mandatory Google apps.¹⁶⁶
- (181) While each MADA lists the mandatory and optional Google apps, there may be variations of such lists at country level, since Google may not make all such apps available to hardware manufacturers for pre-installation in every country at the same time (e.g. due to language differences). The variations at country level of the mandatory and optional apps that are available for pre-installation are reflected in the "Google Product Geo-Availability Chart", with which hardware manufacturers should comply and which "*may be updated by Google from time to time*".¹⁶⁷
- (182) The number of mandatory Google apps has increased at least until 2014. For example, while the MADA entered into by [MADA signatory] in 2009 required the pre-installation of twelve Google apps,¹⁶⁸ [MADA signatory]'s latest MADA, dated 1 March 2014, required the pre-installation of thirty Google apps.¹⁶⁹
- (183) Pursuant to each MADA, Google has discretion to change the list of mandatory

¹⁶⁴ "[E]ach of its employees that are designated by Company ... is authorized to submit and upload CTS Reports on behalf of Company". See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 2.7 [...]. This requirement has been part of the MADA since at least 2011 (for GMS devices) and 2013 (for Google Android devices on which a hardware manufacturer does not pre-install Google's apps). See Mobile Application Distribution Agreement between Google and [MADA signatory], Section 2.7 [...] and Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 January 2013, Section 2.7 [...].

¹⁶⁵ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 4.3 [...]. This requirement has been part of the MADA since at least 2011. See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 January 2011, Section 4.3 [...].

¹⁶⁶ The MADA refers to mandatory Google apps as "Google Applications", whereas optional apps are referred to as "Optional Google Applications". The Decision refers to mandatory apps as "mandatory Google apps" and optional apps as "optional Google apps". Hardware manufacturers are free to decide whether or not to install optional Google apps. See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Sections 1.1(m), 1.1(t) and 3.3(a) [...]. The MADA has referred to optional Google apps since at least January 2011. See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 January 2011 [...].

¹⁶⁷ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 4.3 [...].

¹⁶⁸ Set-up Wizard, Google Phone-top Search, Gmail, Google Calendar, Google Talk, YouTube, Google Maps for Mobile, Google Street View, Contact Sync, Android Market Client, Google Voice Search and Google Street View. See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 March 2009, Exhibit A [...].

¹⁶⁹ Google Play Client, Calendar Sync, Contacts Sync, Gmail, Google+ (including Google+ Photos), Google Play Books, Google Calendar, Google Maps, Google Play Music, Google Partner Setup, Google Search (including Google Now), Google Chrome, Google Services Framework, Google Street View, Google Talk, Google Play Movies, Google Play Newsstand, Google Play Games, Google Drive, Google Backup and Restore, Google Voice Search, Media Uploader, Network Location Provider, Set Up Wizard, YouTube, Google WebView Component and Widevine. See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 March 2014, Section 1.1(m) [...]. This Decision examines only the requirement that hardware manufacturers must pre-install Google Search and Google Chrome.

Google apps that must be pre-installed.¹⁷⁰ For example, in June 2015, Google decided that a number of mandatory Google apps (Google+, Google Play Books, Google Play Games, Google Play Newsstand, Google Calendar and Google Contacts) should become optional in relation to all hardware manufacturers that had a MADA in place.¹⁷¹

- (184) Fifth, hardware manufacturers must place on the device's default home screen¹⁷² the icons which give access to the Google Search app, the Play Store and a folder labelled "Google" ("Google folder") that provides access to a collection of icons for a number of mandatory Google apps.¹⁷³ Any other pre-installed Google apps should be placed no more than one level below the home screen.¹⁷⁴
- (185) Sixth, hardware manufacturers are required to "*set Google Search as the default search provider for all Web search access points, [...]*".¹⁷⁵ In October 2014, Google

¹⁷⁰ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 1.1(m) [...]: *"Google Applications" means the machine-readable binary code version of the Google applications listed below which are provided to Company in connection with this Agreement, and any modifications or updates thereto that Google may make available to Company hereunder from time to time in its sole discretion. List of Google Applications (may be changed by Google from time to time)".* Google's discretion to change the list of mandatory Google apps has been foreseen in the MADA since at least January 2011. See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 January 2011, Section 1.12 [...].

¹⁷¹ See "GMS 3.0 for Android Partners", submitted as annex to [MADA signatory] non-confidential response to the request for information of 17 June 2015 to developers of email applications [...]. This document distinguishes between mandatory apps (Google Chrome, Gmail, Google Search, Google Maps, YouTube, the Play Store, Google Drive, Google Play Music, Google Play Movies, Google Hangouts, Google Photos) and mandatory services (Android System WebView, AndroidForWork, Brower Provider, ConfigUpdater, Google Account Manager, Google Backup Transport, Google Calendar Sync, Google Contacts Sync, Google One Time Init, Google Partner Setup, Google Play Services, Google Services Framework, Google Text-to-speech Engine, Market Feedback Agent, Partner Bookmarks, Setup Wizard and Widevine).

¹⁷² The default home screen is the default display of the device, prior to any changes made by users, that appears without scrolling in both portrait and landscape modes when the device is in active idle mode (i.e. not in sleep mode). See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 1.1(i) [...].

¹⁷³ For example, the latest MADA entered into between Google and [MADA signatory] determined that the Google folder should include Google Chrome, Gmail, Google+, Google Maps, Google Play Music, Google Play Movies, Google Play Books, Google Play Newsstand, Google Play Games, Google Drive, YouTube, Google Plus Photos and Hangouts. See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 3.3(b) [...]. The first MADA provided Google with ample discretion regarding the placement of the Google apps: *"3. Placement Requirements: Google search box on phone top, and other Google Application placement requirements to be defined by Google."* See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 March 2009, Exhibit A [...]. Since at least 2011, the MADAs have usually required Google Search and the Play Store to be placed *"at least on the panel immediately adjacent to the Default Home Screen."* See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 January 2011, Section 3.4 [...].

¹⁷⁴ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 5 January 2014, Section 3.3(c) [...]. Since at least 2011, the MADAs have usually required these apps to be placed no more than one level below the home screen or the "device top" (which *"means with respect to the default navigation hierarchy of a Device UI, the top-most level screen from which applications can be launched by an End User"*). See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 January 2011, Sections 1.17 and 3.4 [...].

¹⁷⁵ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 5 January 2014, Section 3.3(d) [...]. The first MADA containing this provision dated from 1 June 2010: Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 June

began to remove the wording of certain MADAs requiring Google Search to be set as the default general search service.¹⁷⁶ However, as of April 2017, there remained a number of MADAs in place with language requiring hardware manufacturers to set Google Search as the default general search service.¹⁷⁷

- (186) Seventh, hardware manufacturers must ensure that direct access to Google Search is provided by either "(a) long pressing the "Home" button on Devices with physical navigation buttons, or (b) swiping up on either the navigation bar or "Home" button on Devices with soft navigation buttons".¹⁷⁸
- (187) Eighth, hardware manufacturers must "*configure the appropriate Client ID for each Device as provided by Google*".¹⁷⁹ The "Client ID" is a unique alphanumeric code¹⁸⁰ that is incorporated in every GMS device and enables the tracking of usage of Google's apps (e.g. the Google Search app) on the device.
- (188) Ninth, the MADA typically foresees that Google may terminate the MADA and stop licensing its apps if the hardware manufacturer breaches any obligation in the MADA relating to device compatibility.¹⁸¹ Such obligations include the obligation not to "*take any actions that may cause or result in the fragmentation of Android*"¹⁸² and the obligation for all devices running Android, including those on which a hardware manufacturer does not pre-install Google's apps, to pass the CTS.¹⁸³
- (189) The first hardware manufacturer with which Google entered into a MADA was [MADA signatory] in March 2009.¹⁸⁴ Between March 2009 and April 2017, Google entered into MADAs with at least [200-300] further hardware manufacturers, including major hardware manufacturers such as HTC, Huawei Technologies Co. Ltd. ("Huawei"), Lenovo Group Ltd. ("Lenovo"), LG Electronics Inc. ("LG

2010 [...], which stipulated that "Google Phone Top Search must be set as the default general search service for all search access points on devices". As of 2013 the section on placement requirements in new MADAs states that the OEM shall "ensure that Google Search must be set as the default search provider for all Web search access points, [...] on the Device".

¹⁷⁶ Google's Response to the Statement of Objections, Part Four, page 174, paragraph 44 (Doc ID 7117).

¹⁷⁷ For a list of agreements where the wording was changed and when, see Annex Q15-16 to Google's response to the request for information of 24 March 2017 (Doc ID 7894-6).

¹⁷⁸ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 5 January 2014, Section 3.3(e) [...]. This requirement was first implemented with the so-called "GMS 2.0", i.e. as of November 2013. See Mobile Application Distribution Agreement between Google and [MADA signatory] of 26 November 2013 [...].

¹⁷⁹ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 5 January 2014, Section 4.4(e) [...]. This requirement has been part of the MADA since 2009. See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 March 2009, Exhibit A [...].

¹⁸⁰ Client IDs are unique for each company rather than for each device, see Google's response to Question 48 of the request for information of 11 July 2014 (Doc ID 1263).

¹⁸¹ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 5.2(b) [...].

¹⁸² See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 2.3(e) [...].

¹⁸³ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Section 2.7 [...].

¹⁸⁴ See Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 March 2009 [...].

Electronics"), Samsung and Sony Corporation ("Sony").¹⁸⁵

(190) The duration of a MADA is typically been between [0-5] years, after which Google and the hardware manufacturers have negotiated a new MADA or an extension.¹⁸⁶

(191) Google has sought to ensure consistency across the MADAs signed with hardware manufacturers. [Licensing practice].¹⁸⁷ One major set of changes, labelled "GMS 2.0", was implemented as of November 2013.¹⁸⁸

6.3.3. *Portfolio-based revenue share agreements*

(192) Between 1 May 2010¹⁸⁹ and 31 October 2015,¹⁹⁰ Google was a party to agreements with at least six OEMs ([revenue share partner], [revenue share partner], [revenue share partner], [revenue share partner], [revenue share partner] and [revenue share partner]) and at least four MNOs ([revenue share partner], [revenue share partner], [revenue share partner] and [revenue share partner]) pursuant to which it shared with them search advertising revenues provided that the OEMs and MNOs did not pre-install any competing general search service on any device within an agreed portfolio ("portfolio-based revenue share agreements"). If an OEM or MNO had pre-installed such a service on any device, it would have foregone the revenue share payments not only for that particular device but also for all the other devices in its portfolio on which another general search service may not have been pre-installed.¹⁹¹

(193) A given device could fall within the scope of [...] portfolio-based revenue share agreement with [...] an OEM or an MNO. If the OEM that manufactured a device and the MNO that distributed that same device both had portfolio-based revenue share agreements with Google, the OEM and the MNO [explanations concerning revenue share agreements with OEMs and MNOs].¹⁹² In practice, the OEM or MNO [explanations concerning revenue share agreements with OEMs and MNOs].¹⁹³

¹⁸⁵ Google's response to Questions 39 and 47 of the request for information of 11 July 2014 (Doc ID 1263) and Annex 39 to Google's response to the request for information of 11 July 2014 (Doc ID 1271) as well as Google's response to Question 15 of the request for information of 24 March 2017 (Doc ID 7892) and Annex Q15-16 to Google's response to the request for information of 24 March 2014 (Doc ID 7894-6).

¹⁸⁶ See for example Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 February 2014 [...] and Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014 [...].

¹⁸⁷ See for example Annex to Google's response to the request for information of 11 July 2014, email discussion between [Google Executives], 'Yet another MADA', between 30 April 2013 and 6 June 2013 (Doc ID 1751-818).

¹⁸⁸ See document "GMS 2.0" (Doc ID 1404-1851). See also Mobile Application Distribution Agreement between Google and [MADA signatory] of 26 November 2013 [...].

¹⁸⁹ The effective date of the portfolio-based revenue share agreement between Google and [revenue share partner] (see Section 6.3.3.2).

¹⁹⁰ The end of the term of the portfolio-based revenue share agreement between Google and [revenue share partner] (see Section 6.3.3.1).

¹⁹¹ See e.g. [revenue share partner]'s non-confidential response to Question 20 of the request for information of 17 July 2014 [...].

¹⁹² Google's response to Question 48 of the request for information of 11 July 2014 (Doc ID 1263).

¹⁹³ [Revenue share partner]'s non-confidential response to Question 27 of the request for information of 17 July 2014 [...]; [Revenue share partner]'s non-confidential response to Question 27 of the request for information of 17 July 2014 [...].

- (194) In this regard, [revenue share partner], stated that: "[explanations concerning revenue share agreements with OEMs and MNOs]".¹⁹⁴ Similarly, [revenue share partner] stated that "*The [client ID] specifies to whom Google will pay revenue share. Some of [revenue share partner]'s customers in the EEA, e.g. [revenue share partner], have their own client ID and their own revenue share agreement with Google and will receive revenue share on the Android devices sold*".¹⁹⁵
- (195) Search traffic and revenues generated on OEM and MNO devices were tracked via the Client ID incorporated in every GMS device pursuant to the portfolio-based revenue share agreement.
- (196) The geographic scope of the portfolio-based revenue share agreements with OEMs was worldwide. As for MNOs, the portfolio-based revenue share agreements either applied to all the countries of operation of the given MNO or to those countries where the relevant subsidiaries of the MNO opted into a framework agreement negotiated by the mother company through separate accession agreements with Google.
- (197) As of March 2013, Google began to gradually replace portfolio-based revenue share agreements in the European Union and the Republic of Korea by agreements pursuant to which the payment of revenue shares by Google was conditional on OEMs and MNOs pre-installing no competing general search service on a given device for which revenue shares were paid ("device-based revenue share agreements").¹⁹⁶
- (198) For the purposes of this decision, any reference to "pre-install" and "pre-installation" refers not only to the pre-installation of the app of a general search service but also to any other means of making available a general search service to users by OEMs and MNOs immediately after the purchase of a device.
- (199) A non-exhaustive list of Google's portfolio-based revenue share agreements with

¹⁹⁴ [Revenue share partner]'s non-confidential response to Question 27 of the request for information of 17 July 2014 [...].

¹⁹⁵ [Revenue share partner]'s non-confidential response to Question 27 of the request for information of 17 July 2014 [...].

¹⁹⁶ These agreements include: a device-based revenue share agreement with [revenue share partner] as of 1 October 2014 until [date] (see Google Search Revenue Share Agreement between Google and [revenue share partner] [...], and extensions to Google Search Revenue Share Agreement between Google and [revenue share partner] as from [date] [...]); a device-based revenue share agreement with [revenue share partner] signed in March 2013, amending the existing portfolio-based revenue share agreement, and which remained in place until [date] (see Amendment Agreement between Google and [revenue share partner] [...], Amendment No. 10 to Mobile Services Distribution Agreement between Google and [revenue share partner] [...], Amendment No. 17 to Mobile Services Distribution Agreement between Google and [revenue share partner] [...], [revenue share partner]'s non-confidential response to the follow-up to the 8 March 2017 request for information [...] and [revenue share partner]'s non-confidential response to Question 8 of the 28 February 2018 request for information [...]; a device-based revenue share agreement with [revenue share partner] from 1 September 2014 for a period of [duration] years, then extended until [date] (see Google Search Revenue Share Agreement between Google and [revenue share partner] [...] and extensions [...])); a device-based revenue share agreement with [revenue share partner] as of 1 December 2013 for a period of [duration] years (see Google Android Search Revenue Share Agreement between Google and [revenue share partner] [...])); a device-based revenue share agreement with [revenue share partner] as of 1 August 2013 for a period of [duration] years (see Google Android Search Revenue Share Agreement between Google and [revenue share partner] [...]).

OEMs and MNOs is outlined in the following two Sections.

6.3.3.1. Portfolio-based revenue share agreements with OEMs

- (200) Google and [revenue share partner] entered into a portfolio-based revenue share agreement on 1 August 2012.¹⁹⁷ The agreement was initially for a period of two years but was later extended to 31 July 2015.¹⁹⁸ Pursuant to the agreement, Google agreed to share [revenue share terms]¹⁹⁹ of its net ad revenues²⁰⁰ in return for [revenue share partner] committing that it "*will not, and will not allow any third party to implement*" on any Wi-Fi only tablet GMS devices with a screen size of 7" or more and that are configured with [revenue share partner]'s Client ID "*any application, product or service which is the same as or substantially similar to Google Search Widget or the Google Mobile Search Service (or any part thereof)*".²⁰¹ [Revenue share partner] was, however, entitled to pre-install apps that did not include general search functionality and downloads by users of competing general search services were permitted.²⁰²
- (201) Google and [revenue share partner] entered into a portfolio-based revenue share agreement on 1 November 2013 for a period of two years until 31 October 2015.²⁰³ Google agreed to share [revenue share terms] of its net ad revenues in return for [revenue share partner] committing that it "*will not, and will not instruct or encourage any third party to implement*" on GMS devices that are configured with [revenue share partner]'s Client ID "*any application, product or service which is the same as or substantially similar to the Google Search Widget or the Google Mobile Search Service (or any part thereof)*".²⁰⁴ [Revenue share partner] was, however, entitled to pre-install apps whose primary functionality was not general search and downloads by users of competing general search services were permitted.²⁰⁵
- (202) Google and [revenue share partner] entered into a portfolio-based revenue share agreement on 1 February 2011 for a period ending on 31 December 2012.²⁰⁶ Google agreed to share [revenue share terms]²⁰⁷ of its net ad revenues in return for [revenue share partner] committing that it "*will not, and will not allow any third party to implement*" on Google Android devices "*any application, product or service which is the same as or substantially similar to Android Market, Google Phone-top Search or the Google Mobile Search Service (or any part thereof)*".²⁰⁸ [Revenue share

¹⁹⁷ See Android Search and Google Play Revenue Share Agreement between Google and [revenue share partner] [...].

¹⁹⁸ See Amendment No.1 to Android Search and Google Play Revenue Share Agreement between Google and [revenue share partner] [...].

¹⁹⁹ [Revenue share terms].

²⁰⁰ Ad revenues after appropriate deductions.

²⁰¹ See Android Search and Google Play Revenue Share Agreement between Google and [revenue share partner], Clause 3.6 [...].

²⁰² See Android Search and Google Play Revenue Share Agreement between Google and [revenue share partner], Clause 3.6 [...].

²⁰³ See Search Revenue Share Agreement between Google and [revenue share partner] [...].

²⁰⁴ See Search Revenue Share Agreement between Google and [revenue share partner], Clause 3.6 [...].

²⁰⁵ See Search Revenue Share Agreement between Google and [revenue share partner], Clause 3.6 [...].

²⁰⁶ See Mobile Revenue Sharing Agreement between Google and [revenue share partner] [...].

²⁰⁷ [Revenue share terms].

²⁰⁸ See Mobile Revenue Sharing Agreement between Google and [revenue share partner], Clause 4.10 [...].

terms].²⁰⁹

- (203) Google and [revenue share partner] entered into a portfolio-based revenue share agreement on 1 January 2013 for a period of one year until 31 December 2013.²¹⁰ Payments under the agreement were subsequently informally extended until March 2014.²¹¹ Google agreed to share [revenue share terms] of its net ad revenues in return for [revenue share partner] committing that it "*will not, and will not allow any third party to implement*" on Google Android mobile phones, tablets and WiFi-only devices that are configured with [revenue share partner]'s Client ID "*any application, product or service which is the same as or substantially similar to Google Search Widget or the Google Mobile Search Service (or any part thereof)*".²¹² [Revenue share partner] was, however, entitled to pre-install apps whose primary functionality was not general search and downloads by users of competing general search services were permitted.²¹³ In addition, the payment of revenue shares was conditioned on [revenue share partner] setting Google Chrome as the default browser on its devices.²¹⁴
- (204) Google and [revenue share partner] entered into a portfolio-based revenue share agreement on 1 January 2011 for a period of two years ending on 31 December 2012.²¹⁵ Google agreed to pay [revenue share terms]²¹⁶ of its net ad revenues in return for [revenue share partner] committing that it will not "*pre-install, install, incorporate or otherwise make available*" on any Google Android or non-Android devices, excluding [...] devices²¹⁷ that are sold with Google Search, "*any application, product, or service which is the same or substantially similar to a Search Client or the Google Search Services*".²¹⁸ [Revenue share partner] also committed not to: (i) pre-install access points to competing general search services; (ii) set the website of a competing general search service as the home page of a pre-installed browser; and (iii) pre-install any app that provides access to a competing general search service. This was a "*non-exhaustive list of activities prohibited*".²¹⁹ [Revenue share terms].²²⁰
- (205) Google and [revenue share partner] entered into a portfolio-based revenue share

²⁰⁹ See Mobile Revenue Sharing Agreement between Google and [revenue share partner], Clause 4.10 [...].

²¹⁰ See Android Search Revenue Share Agreement between Google and [revenue share partner] [...].

²¹¹ [Revenue share partner] non-confidential response to Question 30 of the request for information of 17 July 2014 [...].

²¹² See Android Search Revenue Share Agreement between Google and [revenue share partner], Clause 3.6 [...].

²¹³ See Android Search Revenue Share Agreement between Google and [revenue share partner], Clause 3.6 [...].

²¹⁴ See Android Search Revenue Share Agreement between Google and [revenue share partner], Clause 2.2 (c) (5) [...].

²¹⁵ See Mobile Services Distribution Agreement between Google and [revenue share partner] [...].

²¹⁶ [Revenue share terms].

²¹⁷ See Mobile Services Distribution Agreement between Google and [revenue share partner], Schedule 3 [...].

²¹⁸ See Mobile Services Distribution Agreement between Google and [revenue share partner], Section 12 [...].

²¹⁹ See Mobile Services Distribution Agreement between Google and [revenue share partner], Clause 12.1 [...].

²²⁰ See Mobile Services Distribution Agreement between Google and [revenue share partner], Clause 14.1 [...].

agreement on 1 October 2011 for a period ending on 30 September 2013.²²¹ Google agreed to share [revenue share terms]²²² of its net ad revenues²²³ in return for [revenue share partner] committing that it "*shall not pre-install, install, incorporate or otherwise make available*" on any Google Android or non-Android devices that are sold with Google Search "*any application, product or service (or links to any of the foregoing) which is the same or substantially similar to a Search Client or the Google Search Services*".²²⁴ [Revenue share partner] also committed not to: (i) pre-install access points to competing general *search* services; and (ii) set the website of a competing general search service as the home page of a pre-installed browser. This was a "*non-exhaustive list of activities prohibited*".²²⁵ [Revenue share terms].²²⁶

6.3.3.2. Portfolio-based revenue share agreements with MNOs

- (206) Google and [revenue share partner] entered into a portfolio-based revenue share agreement on 1 September 2011 until 30 November 2013.²²⁷ Google agreed to share [revenue share terms]²²⁸ of its app sales revenues made through the Play Store on [revenue share partner]'s devices, and in return for the shares of net ad revenues and app revenues, [revenue share partner] committed that "*[n]o widget, pointer, bookmark or application that is substantially similar to Google Search, Google Maps or Android Market may be preloaded on any [...]*".²²⁹ This portfolio-based revenue share agreement applied to all [revenue share partner] subsidiaries in the EEA.²³⁰
- (207) Google and [revenue share partner] entered into a portfolio-based revenue share agreement on 1 September 2010 for a period of two years until 31 August 2012.²³¹ Google agreed to share [revenue share terms] of its net ad revenues²³² in return for [revenue share partner] committing that it "*shall not (and shall ensure that Authorised Android OEMs do not and shall use best endeavours to ensure that [...] OEMs do not) pre-install, install, incorporate or otherwise make available*" on any GMS or Symbian device on which Google Search is pre-installed "*any application, product or service (or links to any of the foregoing) which is the same as or substantially similar to the Google Search Client [...] or to the Google Search*

²²¹ See Mobile Services Distribution Agreement between Google and [revenue share partner] [...].
²²² [Revenue share terms].

²²³ See Mobile Services Distribution Agreement between Google and [revenue share partner], Schedule 1 [...].

²²⁴ See Mobile Services Distribution Agreement between Google and [revenue share partner], Clause 12 [...].

²²⁵ See Mobile Services Distribution Agreement between Google and [revenue share partner], Clause 12.1 [...].

²²⁶ See Mobile Services Distribution Agreement between Google and [revenue share partner] Clause 12.2 [...].

²²⁷ See Global Cooperation Agreement between Google and [revenue share partner], Clause 5.1 [...].
²²⁸ [Revenue share terms].

²²⁹ See Amendment No.5 to Global Cooperation Agreement between Google and [revenue share partner], Exhibit D [...].

²³⁰ [Revenue share partner]'s non-confidential response to Question 48 of the request for information of 22 July 2014 [...].

²³¹ See Mobile Services Distribution Agreement between Google and [revenue share partner] [...].

²³² See Mobile Services Distribution Agreement between Google and [revenue share partner], Clause 15 [...].

Services".²³³ The limitation applied only to (links to) applications, products, services that had web search as their primary function.²³⁴ The agreement applied to [revenue share partner]'s subsidiaries in [various EEA Member States].²³⁵

- (208) Google and [revenue share partner] entered into a portfolio-based revenue share agreement on 1 September 2011 for a period of two years, which was subsequently extended for an additional year until 31 August 2014.²³⁶ Google agreed to share [revenue share terms] of its net ad revenues achieved by Google on Android smartphones and tablets that bear [revenue share partner]'s Client ID in [revenue share terms] and [revenue share terms]²³⁷ afterwards²³⁸, in return for [revenue share partner] committing that it "*shall not, and shall not allow any* [revenue share partner] *or any third party [...] to pre-install or preload*" on any Android device "*any Similar Application*".²³⁹ For the purposes of the agreement, Similar Application is defined as an "*application which is the same as or substantially similar to a Google Search Client or the Google Search Services*".²⁴⁰ The agreement applied to [revenue share partner]'s subsidiaries in [various EEA Member States].²⁴¹
- (209) Google and [revenue share partner] entered into a portfolio-based revenue share agreement on 1 May 2010 for a period of three years.²⁴² Google agreed to share [revenue share terms] of its net ad revenues in return for [revenue share partner] committing that it "*shall ensure that [...] Google will be the exclusive provider of search and search advertising services presented in response to a Query*" on (i) devices on which Google's general search service is pre-installed,²⁴³ and (ii) other mobile phones distributed by [revenue share partner] that are "*technically capable of running the Google Search Client or Hosted Mobile Search*".²⁴⁴ The agreement applied to all [revenue share partner] subsidiaries in the EEA.²⁴⁵

²³³ See Mobile Services Distribution Agreement between Google and [revenue share partner], Clause 13.1 [...].

²³⁴ See Mobile Services Distribution Agreement between Google and [revenue share partner], Clause 13.2 [...].

²³⁵ [Revenue share partner]'s non-confidential response to Question 22 of the request for information of 22 July 2014 [...].

²³⁶ See Google Mobile Search Client Distribution Agreement between Google and [revenue share partner] [...].

²³⁷ [Revenue share terms].

²³⁸ See Google Mobile Search Client Distribution Agreement between Google and [revenue share partner], Schedule 1, Clause 1.5 [...].

²³⁹ See Google Mobile Search Client Distribution Agreement between Google and [revenue share partner], Clause 14.2 [...].

²⁴⁰ See Google Mobile Search Client Distribution Agreement between Google and [revenue share partner], Clause 14.1 [...].

²⁴¹ [Revenue share partner]'s non-confidential response to Question 22 of the request for information of 22 July 2014 [...].

²⁴² See Mobile Services Agreement between Google and [revenue share partner] [...].

²⁴³ See Mobile Services Agreement between Google and [revenue share partner], Schedule E [...].

²⁴⁴ See Mobile Services Agreement between Google and [revenue share partner], Clause 14 [...].

²⁴⁵ [Revenue share partner]'s non-confidential response to Question 22 of the request for information of 22 July 2014 [...].

7. RELEVANT PRODUCT MARKETS

7.1. Principles

- (210) The definition of the relevant product and geographic market in the context of the application of Article 102 TFEU is useful when assessing whether an undertaking has a dominant position and whether that dominant position enables it to prevent effective competition from being maintained on the relevant market by giving it the power to behave to an appreciable extent independently of its competitors, its customers and, ultimately, consumers.²⁴⁶
- (211) The concept of the relevant market implies that there can be effective competition between the products or services which form part of it and this presupposes that there is a sufficient degree of interchangeability between all the products or services forming part of the same market in so far as a specific use of such products or services is concerned.²⁴⁷
- (212) An examination to that end cannot be limited solely to the objective characteristics of the relevant products and services, but the competitive conditions and the structure of supply and demand on the market must also be taken into consideration.²⁴⁸
- (213) The identification of relevant product markets by the Commission derives from the existence of competitive constraints. Undertakings are subject to three main sources of competitive constraints: demand-side substitution, supply-side substitution and potential competition. From an economic point of view, for the definition of the relevant market, demand-side substitution constitutes the most immediate and effective disciplinary force on the suppliers of a given product.²⁴⁹
- (214) Supply-side substitution may also be taken into account when defining markets in those situations in which its effects are equivalent to those of demand-side substitution in terms of effectiveness and immediacy. There is supply-side substitution when suppliers are able to switch production to the relevant products or services and market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices. When these conditions are met, the additional production that is put on the market is expected to have a disciplinary effect on the competitive behaviour of the companies involved.²⁵⁰
- (215) Supply-side substitution is, however, not taken into account at the stage of defining the relevant market when it would entail each time the need to adjust significantly existing tangible and intangible assets, additional investments, strategic decisions or

²⁴⁶ Case 27/76 *United Brands v Commission*, EU:C:1978:22, paragraph 10-11; Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraphs 38-39; Case 322/81 *Nederlandse Banden Industrie Michelin v Commission*, EU:C:1983:313, paragraph 37; Case T-83/91 Tetra Pak II, EU:T:1994:246, paragraph 63.

²⁴⁷ Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 28; Case C-179/16 *F. Hoffmann-La Roche and Others*, EU:C:2018:25, paragraph 51. See also the Commission's Notice on the definition of relevant market for the purposes of Community competition law ("Notice on market definition"), OJ C 372, 9.12.1997, p. 5.

²⁴⁸ Case 322/81 *Nederlandse Banden Industrie Michelin v Commission*, EU:C:1983:313, paragraph 37; Case T-556/08 *Slovenská pošta v Commission*, EU:T:2015:189, paragraph 112; Case C-179/16 *F. Hoffmann-La Roche and Others*, EU:C:2018:25, paragraph 51.

²⁴⁹ Notice on market definition, paragraph 13.

²⁵⁰ Notice on market definition, paragraph 20.

time delays.²⁵¹

- (216) If certain economic operators are specialised and are active solely on a secondary product or after-market of a primary market, that constitutes in itself a strong indication of the existence of a specific market.²⁵²

7.2. Application to this case

- (217) The Commission concludes that the relevant product markets are:

- (1) the market for the licensing of smart mobile OSs;
- (2) the market for Android app stores;
- (3) the market for the provision of general search services; and
- (4) the market for non OS-specific mobile web browsers.

7.3. The licensing of smart mobile OSs

- (218) The Commission concludes that the licensing of smart mobile OSs constitutes a separate relevant product market.

- (219) This conclusion is based on the following considerations:

- (1) PC OSs do not belong to the same product market as smart mobile OSs (Section 7.3.1);
- (2) basic and feature phone OSs do not belong to the same product market as smart mobile OSs (Section 7.3.2);
- (3) smart mobile OSs for smartphones and for tablets belong to the same product market (Section 7.3.3);
- (4) all licensable smart mobile OSs belong to the same product market (Section 7.3.4); and
- (5) non-licensable smart mobile OSs do not belong to the same product market as all licensable smart mobile OSs (Section 7.3.5).

7.3.1. PC OSs and smart mobile OSs

- (220) The Commission concludes that PC OSs do not belong to the same product market as smart mobile OSs.

- (221) From a demand-side perspective, OEMs require smart mobile OSs to power their smart mobile devices, and cannot use PC OSs for that purpose. Amazon, for example, stated that "[...] a PC OEM cannot install a mobile OS on its devices. PC OEMs therefore require a PC OS and mobile handset OEMs require a mobile OS."²⁵³ Apple stated that: "From a demand perspective, the OS used in most, if not all, mobile devices is different from the OS used in PCs. Today, separate OSs have been developed for mobile devices that are simpler and have certain features that are different from OSs for PCs and desktops. Furthermore, apps developed for a mobile OS may not function (or may not function as well) on a device using an OS for PCs

²⁵¹ Notice on market definition, paragraph 23.

²⁵² Case T-427/08 *Confédération européenne des associations d'horlogers-réparateurs (CEAHR) v Commission*, EU:T:2010:517, paragraph 108; and Notice on market definition, paragraph 56.

²⁵³ Amazon's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS providers (Doc ID 4187).

(and vice versa)."²⁵⁴ BlackBerry also confirmed that: "[...] most mobile device OSs cannot be used by consumers to operate computers and most computer OSs cannot be used by consumers to operate mobile devices".²⁵⁵

- (222) From a supply-side perspective, it is true that PC OS suppliers could in principle switch to the development and supply of smart mobile OSs. For example, Apple stated that: "[...] there is clearly a relationship between OSs for mobile devices (mobile phones and tablets) and OSs for PCs and desktops and the computer programming skills needed to develop a mobile OS are similar to those needed to develop an OS for PCs."²⁵⁶
- (223) Smart mobile OSs, however, require functionalities that are specific to smart mobile devices and are different from those of PC OSs. For example, Nokia Corporation ("Nokia") stated: "*The hardware requirements for a mobile OS are significantly different from a PCs OS e.g., in terms of processors, memory, display, and power management. In most cases, the applications developed in the mobile environment are also specific to the mobile domain and not shared with the personal computer environment, and vice versa.*"²⁵⁷ Samsung also indicated that "*Smart mobile device OSs constitute a separate market from PC and Desktop OSs. Smart mobile device OSs are customized for smaller screen sizes, mobile functions, wireless functions, and apps that are better suited for simpler mobile devices rather than PC OSs, which are designed for higher performance CPUs and larger screens, and greater drive storage capabilities.*"²⁵⁸
- (224) As a result of those specific functionalities, any switch from PC OSs to smart mobile OSs would require substantial time and investment. This was confirmed by a number of developers of PC OSs. For example, Microsoft stated: "*Total development costs for the modern Windows Phone platform through the end of June 2013 are approximately [in the millions of dollars]. [...] Windows Phone 7, Microsoft's first release of its modern smartphone OS, took more than [0-4] years to develop.*"²⁵⁹ Apple also indicated that: "*[the] development of iOS required a substantial amount of time and resources (financial and engineering). Apple continually invests significant resources improving iOS, adding new features and functionality.*"²⁶⁰
- (225) This was also confirmed by Deutsche Telekom that stated as follows: "*[w]hereas smartphones and tablets are using almost identical OS, PC OS have different*

²⁵⁴ See Apple's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 690).

²⁵⁵ See BlackBerry's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 3763).

²⁵⁶ See Apple's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 690). See also Huawei's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 3998).

²⁵⁷ See Nokia's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 764). See also Jolla's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS providers (Doc ID 3981) and Mozilla's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS providers (Doc ID 3951).

²⁵⁸ See Samsung's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 4117).

²⁵⁹ See Microsoft's non-confidential response to Question 19.1 of the request for information of 12 June 2013 to OS developers (Doc ID 3794).

²⁶⁰ See Apple's non-confidential response to Question 19.1 of the request for information of 12 June 2013 to OS developers (Doc ID 749).

*performance capacities. Thus, different market leaders evolved in the OS segment for the different OS product markets. On the market for PC OS Microsoft Windows is still the market leader, whereas it plays only a subordinate role on the mobile and tablet OS market.*²⁶¹

- (226) Google does not contest the Commission's conclusions as outlined in this Section.

7.3.2. *Basic and feature phone OSs and smart mobile OSs*

- (227) The Commission concludes that basic and feature phone OSs do not belong to the same product market as smart mobile OSs.²⁶²

- (228) From a demand-side perspective, basic and feature phone OSs cannot be installed on smart mobile devices because of their reduced functionalities. For example, Microsoft stated: "*The ability to install and use applications is a defining characteristic for a smartphone OS that distinguishes it from other types of mobile phones. Indeed, users regularly access all of their most important applications from any one of a number of devices, such as smartphones, tablets, and other computer form factors. Since this activity is not possible with an OS for a feature or basic mobile phone, it is unlikely that they compete in the same market as smartphone OSs.*"²⁶³ Nokia also confirmed that: "[...] mobile OSs for smart mobile devices, unlike basic and feature phones, are designed to support computer-like features and the ability to install and make use of applications with rich capabilities – something that basic or feature phone OSs typically lack."²⁶⁴

- (229) From a supply-side perspective, those differences in functionalities mean that the development of a smart mobile OS requires significant time and resources, regardless of whether the developer in question has already developed a basic and feature phone OS. This is confirmed by the fact that no developer of basic and feature phone OSs has successfully launched a smart mobile OS in the last five years.

- (230) Google does not contest the Commission's conclusions as outlined in this Section.

7.3.3. *Smartphone OSs and tablet OSs*

- (231) The Commission concludes that smartphone OSs and tablet OSs belong to the same product market.

- (232) From a demand-side perspective, the same OS, or similar versions of it, power both

²⁶¹ See Deutsche Telekom's non-confidential response to Question 3 of the request for information of 12 June 2013 to MNOs (Doc ID 625). See also Amazon's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS developers (Doc ID 4187) and Jolla's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 3981).

²⁶² Basic phone is a category of mobile phone only capable of voice calling and text messaging. Feature phone is a category of mobile phones that adds minimal smartphone features to those of a basic phone, such as rudimentary web browsing capabilities.

²⁶³ See Microsoft's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 377).

²⁶⁴ See Nokia's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 764). See also Amazon's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS developers (Doc ID 4187), Jolla's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS providers (Doc ID 3981), Mozilla's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS developers (Doc ID 3951), Huawei's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 3998) and Microsoft's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 377).

smartphones and tablets. Mozilla Foundation ("Mozilla") stated: "[...] given that many mobile OSs are designed to run on both smartphones and tablets, mobile OSs for these devices are part of the same market. There are, of course, somewhat different use cases for smartphones and tablets – for example, one would not normally use a tablet to make a voice call – but even so, their underlying platforms remain largely identical."²⁶⁵ Deutsche Telekom also indicated: "[...] smartphones and tablets are using almost identical OS."²⁶⁶

- (233) From a supply-side perspective, all main OS developers use the same OS to power both smartphones and tablets, or easily adjust a smartphone OS to allow it to run on a tablet (and vice-versa). For example, Apple has confirmed that "Apple has developed and implemented a single operating system for both its iPhone and iPad products. There are no significant differences from Apple's perspective."²⁶⁷

- (234) Google does not contest the Commission's conclusions as outlined in this Section.

7.3.4. *Licensable smart mobile OSs*

- (235) The Commission concludes that all licensable smart mobile OSs belong to the same product market.

- (236) This is because, from a demand-side perspective, OEMs are free to choose between different licensable smart mobile OSs, such as Android and Windows, to power their devices.

- (237) Google does not contest the Commission's conclusions as outlined in this Section.

7.3.5. *Licensable smart mobile OSs and non-licensable smart mobile OSs*

- (238) The Commission concludes that non-licensable smart mobile OSs such as iOS and BlackBerry OS do not belong to the same product market as licensable smart mobile OSs.

- (239) From a demand-side perspective, OEMs cannot obtain a licence to use iOS or BlackBerry OS because Apple and BlackBerry do not grant licences to third parties.²⁶⁸

²⁶⁵ See Mozilla's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS developers (Doc ID 3951).

²⁶⁶ See Deutsche Telekom's non-confidential response to Question 3 of the request for information of 12 June 2013 to MNOs (Doc ID 625). See also Amazon's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS developers (Doc ID 4187), Apple's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS developers (Doc ID 749) and HP's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 4162).

²⁶⁷ See Apple's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS developers (Doc ID 749). See also Amazon's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS developers (Doc ID 4187), Mozilla's non-confidential response to Question 3 of the request for information of 12 June 2013 to OS developers (Doc ID 3951), HP's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEMs (Doc ID 4162) and Nokia's non-confidential response to Question 3 of the request for information of 12 June 2013 to OEM's (Doc ID 764).

²⁶⁸ See Apple's non-confidential response to Question 23 of the request for information of 12 June 2013 to OS developers (Doc ID 749) and BlackBerry's non-confidential response to Question 23 of the request for information of 12 June 2013 to OS developers (Doc ID 733). In addition, see Huawei's non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 3998); LG Electronics' non-confidential response to Question 4 of the request for information of 12

- (240) From a supply-side perspective, neither Apple nor BlackBerry has licensed or announced its intention to license its smart mobile OS to any third party. In addition, Nokia stated that: "[...] even in the extremely unlikely scenario that Apple would in fact start to license its iOS to competing OEMs, it would probably take at least two years to make all of the required changes in the chipset architecture as well as hardware and software configurations that would be necessary for the OEM to migrate to iOS. Furthermore, iOS has not been designed to be licensed out but to be a part of a closed vertical offering which could make the business case technically unsound and would in any case lead to high development and switching costs both in terms of transition time needed and necessary investments."²⁶⁹
- (241) The Commission's conclusion that non-licensable smart mobile OSs do not belong to the same product market as licensable smart mobile OSs is not affected by Google's claim that the Commission fails to recognise competition between non-licensable and licensable mobile OSs, and in particular from Apple iOS, from the relevant market. In particular, according to Google:
- (1) the Commission itself recognised in the Statement of Objections that non-licensable mobile OSs such as iOS are "competing" against Android;²⁷⁰
 - (2) Apple iOS competes with Android to attract users and app developers;²⁷¹
 - (3) the judgment of the General Court in Case T-310/01 *Schneider Electric* and the Commission's past decisions indicate that integrated and non-integrated operators compete, and must be included, in the same product market. This is why the Commission defined a single market for smart mobile OSs in the *Google/Motorola Mobility* merger decision,²⁷²
 - (4) respondents to requests for information indicate that licensable and non-licensable smart mobile OSs compete with each other;²⁷³
 - (5) the Commission has ignored the relevance of four internal Google documents that identify iOS as a competitor to Android;²⁷⁴
 - (6) the Commission has considered user substitution as a constraint when defining the relevant markets for app stores and mobile web browsers, but not when defining the relevant market for smart mobile OSs;²⁷⁵
 - (7) the Commission's assessment conflicts with findings by competition authorities

²⁶⁹ June 2013 to OEMs (Doc ID 584); and Sony Mobile Communications non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 4389).

²⁷⁰ See Nokia's non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 764). See also HP's non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 4162) and LG Electronics' non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 584).

²⁷¹ Google's Response to the Statement of Objections, Part Two, page 41, paragraph 8 (Doc ID 7117).

²⁷² Google's Response to the Statement of Objections, Part Two, pages 41-42, paragraphs 10-13 (Doc ID 7117).

²⁷³ Google's Response to the Statement of Objections, Part Two, pages 42-44, paragraphs 14-18 (Doc ID 7117); and Google's Response to the First Letter of Facts, Part One, page 4, paragraph 9 (Doc ID 8598).

²⁷⁴ Google's Response to the Statement of Objections, Part Two, pages 44-47, paragraph 19 (Doc ID 7117).

²⁷⁵ Google's Response to the Statement of Objections, Part Two, page 47, paragraph 20 (Doc ID 7117).

²⁷⁵ Google's Response to the Statement of Objections, Part Two, page 47, paragraph 21 (Doc ID 7117).

- and courts in Australia, Canada and the US;²⁷⁶
- (8) the release dates of Android and iOS versions closely track each other;²⁷⁷ and
 - (9) the Commission fails to apply a SSNIP test.²⁷⁸
- (242) First, the two references in the Statement of Objections to the fact that non-licensable mobile OSs such as iOS and BlackBerry OS "compete" with Android simply reflect the fact that non-licensable mobile OSs may exercise a degree of constraint on Google's position in the worldwide (excluding China) market for licensable smart mobile OSs because of possible competition between iOS/BlackBerry devices and Google Android devices both at the level of users of smart mobile devices and of app developers (referred hereinafter as "indirect constraint").
- (243) Second, for the reasons explained in Section 9.3.4, the Commission concludes that iOS exercises an insufficient indirect constraint on Google's dominant position in the worldwide (excluding China) market for licensable smart mobile OSs. These reasons confirm that iOS should not be included in the relevant market for licensable smart mobile OSs.
- (244) Third, neither the judgment of the General Court in *Schneider Electric*²⁷⁹ nor the past Commission decisions cited by Google²⁸⁰ indicate that integrated and non-integrated players should necessarily be included in the same product market. Moreover, the Commission has never defined a single market for smart mobile OSs, in particular in the *Google/Motorola Mobility* merger decision.
- (245) In the first place, neither the judgment of the General Court in *Schneider Electric* nor any of the past Commission decisions cited by Google indicates that integrated and non-integrated players should necessarily be included in the same product market. Rather, integrated and non-integrated players were included in the same market because: (i) integrated players were also selling their upstream products to third parties; and (ii) the downstream markets were bidding markets featuring large and sophisticated buyers. By contrast, in this case, Apple and BlackBerry do not license their smart mobile OS to any third party. Moreover, the downstream market is the market for end-users where buyers are neither large nor sophisticated.
- (246) Moreover, in a number of the decisions quoted by Google,²⁸¹ the Commission only assessed the indirect constraint from integrated players in the competitive assessment, which is in line with the Commission's approach in this case.
- (247) In the second place, the Commission has never defined a single market for smart mobile OSs. In a number of the decisions quoted by Google, including the *Google/Motorola Mobility* merger decision, the Commission left open the question whether licensable and non-licensable smart mobile OSs should be considered part of

²⁷⁶ Google's Response to the Statement of Objections, Part Two, page 48, paragraphs 22-23 (Doc ID 7117), Google's letter of 25 January 2017 (Doc ID 7135) and Google's letter of 24 April 2017 (Doc ID 7862).

²⁷⁷ Google's Response to the Statement of Objections, Part Two, pages 48-49, paragraphs 24-25 (Doc ID 7117).

²⁷⁸ Google's Response to the Statement of Objections, Part Two, pages 49-50, paragraph 26 (Doc ID 7117).

²⁷⁹ Case T-310/01, EU:T:2002:254.

²⁸⁰ Cases M.3653 – *Siemens / VA Tech* and M.7342 – *Alcoa / Firth Rixon*.

²⁸¹ See Cases M.6439 – *Agrana / RWA / JV*, recital 115, and M.4533 – *SCA / P&G* (European tissue business), recital 169.

the same market.²⁸²

- (248) In the third place, in the *Microsoft / Nokia* decision not only did the Commission leave open the question whether licensable and non-licensable smart mobile OSs should be considered part of the same market but it stated that "*Android was in 2012 by far the dominant OS with upwards of 80-90% of the market*".²⁸³
- (249) Fourth, while respondents to the requests for information may have acknowledged the existence of a degree of competition between iOS and Google Android devices at the level of users of smart mobile devices, they did not indicate that licensable and non-licensable smart mobile OSs can be seen as substitutes from an OEM perspective. For example:
- (1) Apple stated: "*OSs that are not available for licensing by third-party OEMs should not be included in the relevant market. The non-licensable OSs do not constrain the competitive behaviour of licensable OSs. OEMs would not be able to switch to these non-licensable OSs in response to a SSNIP.*"²⁸⁴
 - (2) [...] stated: "[...] mobile OSs that are not available for licensing should not be included in a mobile OS market for OEMs because proprietary systems like Apple's iOS are not open to third party OEMs."²⁸⁵
 - (3) Sony stated: "*From the perspective of an OEM the only relevant mobile OSs are those which it can competitively license and/or implement, and as for example Apple iOS is proprietary and unavailable for third party OEMs, it should be disregarded in the competitive equation when seen from the OEM's perspective.*"²⁸⁶
- (250) Fifth, the four internal Google documents quoted by Google do not support its claim that iOS and Android should be part of the same relevant market for smart mobile OSs.
- (251) In the first place, two of the four documents are from 2010, which is before Google became dominant in the market for licensable smart mobile OSs.
- (252) In the second place, the other two documents (an internal email dated 6 May 2012 and an internal presentation dated October 2011)²⁸⁷ indicate only that there is a degree of competition between Android and iOS devices at the level of users. These documents do not indicate that licensable and non-licensable smart mobile OSs are part of the same relevant market from an OEM perspective.
- (253) Sixth, the indirect constraint exercised by non-licensable mobile OSs on Android can be relevant when assessing both market definition and dominance. The Commission's

²⁸² See Cases M.6381 – Google / Motorola Mobility, M.7047 – Microsoft / Nokia, AT.37792 – Microsoft and AT.39530 – Microsoft (Tying).

²⁸³ See Case M.7047 – Microsoft / Nokia, recital 102.

²⁸⁴ See Apple's non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 690).

²⁸⁵ See [...]’s non-confidential response to Question 4 of the request for information of 12 June 2013 [...].

²⁸⁶ See Sony's non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 4389). See also Nokia's non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 764) and LG Electronics' non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 584).

²⁸⁷ Google mistakenly stated that this document is from 2012 (see Google's Response to the Statement of Objections, page 47, paragraph 20 (Doc ID 7117)).

conclusions that non-licensable smart mobile OSs do not belong to the same product market as licensable smart mobile OSs, and that Google holds a dominant position since 2011 in the worldwide market (excluding China) for the licensing of smart mobile OSs are therefore not dependant on whether user substitution and the corresponding indirect constraint exercised by non-licensable mobile OSs on Android is assessed at the stage of market definition or dominance. This is confirmed by the fact that Google responded to the Commission's preliminary conclusions on market definition and dominance in a single section of its Response to the Statement of Objections.

- (254) Seventh, the Commission's assessment is not contradicted by the findings of competition authorities and courts in Australia, Canada and the US quoted by Google.
- (255) In the first place, the 2017 decision of the Australian Competition and Consumer Commission ("ACCC") in the context of the Apple Pay investigation²⁸⁸ and the 2017 Canadian Competition Bureau ("CCB") Position Statement in the context of the investigation to the obligations on MNOs relating to the sale and marketing of the iPhone in Canada²⁸⁹ were focussed on Apple's behaviour. Given that Apple does not licence iOS to OEMs, there was no need for the ACCC or the CCB to assess the possible existence of a market for licensable smart mobile OSs.
- (256) In the second place, the 2010 statement of the US Federal Trade Commission ("FTC") in the *Google/AdMob* case²⁹⁰ relates to in-app advertising rather than to licensable smart mobile OSs. In addition, the statement refers to the fact that "*[i]n any nascent market there will be uncertainty about the path of competition and the durability of early leads in market share*". However, as noted in Section 9.3.1, Google's market shares in the market for licensable smart mobile OSs have been stable and above 90% since 2012.
- (257) In the third place the 2015 judgment of the US Court of Appeals for the Federal Circuit in the *Apple/Samsung* case²⁹¹ relates to competition between Apple and Samsung at the level of downstream sales of smart mobile devices. The judgment does not therefore concern competition at the level of licensable smart mobile OSs.
- (258) Eighth, the release dates of Android and iOS versions do not support the existence of an overall market for licensable and non-licensable smart mobile OSs.
- (259) In the first place, release dates of Android and iOS versions are not necessarily indicative of competition between the two OSs. The timing of version releases is likely to be determined by a number of different factors, including the time needed to develop a new OS version.
- (260) In the second place, contrary to what Google claims, release dates of Android and iOS versions do not closely track each other between December 2008 and December 2011. Google misleadingly included in the table at page 48 of its Response to the

²⁸⁸ See ACCC's determination on applications for authorisation A91546 & A91547 of 31 March 2017.

²⁸⁹ See CCB's statement of 6 January 2017 on <http://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/04182.html> printed and saved on 5 June 2018.

²⁹⁰ Statement of the Commission Concerning Google/AdMob, May 21, 2010. Available at: https://www.ftc.gov/sites/default/files/documents/closing_letters/google-inc./admob-inc/100521google-admobstmt.pdf printed and saved on 5 June 2018.

²⁹¹ *Apple Inc. v. Samsung Elecs. Co.*, 809 F.3d 633, December 16, 2015, paragraph 644.

Statement of Objections certain intermediate versions only for iOS (for example iOS 4.1 and 4.2) but not for Android. When one removes these intermediate versions, there were seven releases of Android versions and only three releases of iOS versions between December 2008 and December 2011.

- (261) In the third place, the frequency of Android releases decreased after December 2011. This is consistent with the conclusion that, as of 2011, Google achieved a dominant position in the market for licensable smart mobile OS (see Section 9.3) rather than Google's claim that there is an overall market for licensable and non-licensable smart mobile OSs.
- (262) In the fourth place, any comparison based only on release dates of OS updates is not meaningful because, as discussed in Section 9.3.4.1, iOS users generally update their OS faster than Android users.
- (263) Ninth, the Commission is not required to carry out a SSNIP test.
- (264) In the first place, the SSNIP test is not the only method available to the Commission when defining the relevant product market.²⁹²
- (265) In the second place, the Commission is required to make an overall assessment of all the evidence and there is no hierarchy between the types of evidence that the Commission can rely upon.²⁹³
- (266) In the third place, a SSNIP test would not have produced a different outcome in this case because OEMs cannot switch to non-licensable smart mobile OSs, regardless of the magnitude of a potential price increase or quality degradation in licensable smart mobile OSs.
- (267) In the fourth place, notwithstanding the fact that SSNIP test may prove unsuitable,²⁹⁴ when assessing the indirect constraint exercised by non-licensable smart mobile OSs on Android, the Commission has analysed the extent of switching of users (see Sections 9.3.4.1, 9.3.4.2 and 9.3.4.3) and developers (see Section 9.3.4.2.IV) in the event of a small but significant, non-transitory quality degradation of the licensable smart mobile OS.

7.4. Android app stores

- (268) The Commission concludes that Android app stores constitute a separate relevant product market.
- (269) This conclusion is based on the following considerations:
 - (1) other apps do not belong to the same product market as app stores (Section 7.4.1);
 - (2) different app stores for Google Android devices belong to the same product market (Section 7.4.2);
 - (3) app stores for other Android devices belong to same product market as app stores for Google Android devices (Section 7.4.3);

²⁹² Case T-699/14 *Topps Europe v Commission*, EU:T:2017:2, paragraph 82.

²⁹³ Case T-342/07 *Ryanair v Commission*, EU:T:2010:280, paragraph 136; Case T-175/12 *Deutsche Börse v Commission*, EU:T:2015:148, paragraph 133.

²⁹⁴ Case T-699/14 *Topps Europe v Commission*, EU:T:2017:2, paragraph 82.

- (4) app stores for other licensable smart mobile OSs do not belong to the same product market as app stores for Android devices (Section 7.4.4); and
- (5) app stores for other non-licensable smart mobile OSs do not belong to the same product market as app stores for Android devices (Section 7.4.5).

7.4.1. Other apps and app stores

- (270) The Commission concludes that other apps do not belong to the same product market as app stores.
- (271) From a demand-side perspective, app stores serve different purposes than other apps. App stores work as distribution channels, allowing users to search for and download a wide array of other apps. App stores cannot, therefore, be replaced by other apps for such purposes. This is why OEMs need to pre-install on their smart mobile devices at least one app store to allow users to download other apps.²⁹⁵ Lenovo, for example, stated: "*Devices must have a pre-installed app store with a competitive catalog of apps in order to be relevant. It is not commercially viable to sell a smart phone without an app store.*"²⁹⁶ Microsoft also stated: "*We believe that it is impossible to compete without an appstore, and OEMs find it very important to include an appstore on their mobile devices.*"²⁹⁷ According to Nokia: "*A pre-installed app store is an absolute requirement for any device marketed as a mobile device. While technically there are other ways to get apps on mobile devices, such as via certain websites, most consumers are not aware of this and would likely find the device close to unusable without a pre-loaded app store that offered quick access to their personal favorites (apps).*"²⁹⁸
- (272) From a supply-side perspective, the development of an app store requires significant time and resources, regardless of whether the developer in question has already developed other apps. In particular, developers of other apps have stated that the time and resources to develop an app store are significant. Microsoft, for example, stated: "*Using [R&D data] for fiscal years 2007 to 2014, we roughly estimate that we spent [millions of dollars] over this time period to develop appstores for Windows Phone 7, 8 and 8.1.*"²⁹⁹
- (273) Google does not contest the Commission's conclusions as outlined in this Section.

7.4.2. Different Google Android app stores

- (274) There are a number of different app stores available for Google Android devices.

²⁹⁵ The installation of apps directly from a website, i.e. without the use of an app store (so-called "sideloading") is allowed on some smart mobile devices, and in particular on Android devices. However, sideloading is technically complex and does not constitute a satisfactory distribution channel (see Section 9.4.5).

²⁹⁶ See Lenovo's non-confidential response to Question 5 of the request for information of 21 October 2015 on app stores (Doc ID 2602).

²⁹⁷ See Microsoft's non-confidential response to Question 5 of the request for information of 21 October 2015 on app stores (Doc ID 2493).

²⁹⁸ See Nokia's non-confidential response to Question 5 of the request for information of 21 October 2015 on app stores (Doc ID 3991). See also SFR's non-confidential response to Question 5 of the request for information of 21 October 2015 (Doc ID 3975) and Deutsche Telekom's non-confidential response to the Question 5 of the request for information of 21 October 2015 (Doc ID 2556).

²⁹⁹ See Microsoft's non-confidential response to Question 9 of the request for information of 21 October 2015 on app stores (Doc IDs 4557). See also Amazon's non-confidential response to Question 8 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

- These include the Play Store, the Amazon AppStore, Samsung's Galaxy Apps store, Aptoide, the Opera Software ASA's ("Opera") Mobile Store and the Yandex Store.
- (275) The Commission concludes that these different app stores for Google Android devices ("Google Android app stores") belong to the same product market.
- (276) From a demand-side perspective, an OEM can, in principle, choose from a number of different Google Android app stores for its Google Android devices. For example, Samsung indicated that its Galaxy Apps store is a substitute to the Play Store: "*In terms of features and functionalities, OEM or third party preloaded appstores, such as Galaxy Apps, could be a viable substitute to Google Play.*"³⁰⁰ As for Amazon's Appstore, Lenovo, for example, stated: "*Amazon's app store is comparable to Google's in terms of its features and functionality. Amazon's app store is also comparable to Google's in terms of price, since OEMs do not have to pay to install the app store. Both Amazon and Google offer the same terms to developers. Amazon app store's quality controls and test process is best in class.*"³⁰¹
- (277) Other OEMs have, however, stated that other Google Android app stores can only be seen as limited substitutes for the Play Store. ZTE Corporation ("ZTE"), for example, stated: "*Currently Play Store is open for ZTE to preload and it makes android apps available worldwide. It serves as the official appstore for the Android operating system. As OEM, currently we will not consider any other pre-installable appstore as substitutable to the Play Store in terms of usage, features, functionalities and price.*"³⁰² Huawei has also stated: "*From our perspective, Google Play Store is the main pre-installed appstores in EEA market, other pre-installed stores like Amazon App Store have very limit usage. They can be considered as complements to Google Play Store rather than substitutes.*"³⁰³ In addition, LG Electronics stated: "*We think that [Play Store] cannot be replaced with another App Store because any other app store does not have more contents than the Google play store.*"³⁰⁴
- (278) From a supply-side perspective, even if there is a certain degree of substitutability between different Google Android app stores, it would be difficult for a developer to replicate the features of the Play Store. Those features are discussed in Sections 9.4.4 and 9.4.5.
- (279) In any event, if all Google Android app stores were not part of the same market, such an approach would be less favourable to Google.
- (280) Google does not contest the Commission's conclusions as outlined in this Section.

7.4.3. App stores for other Android devices and app stores for Google Android devices

- (281) The Commission concludes that app stores for other Android devices and app stores for Google Android devices belong to the same product market for app stores for

³⁰⁰ See Samsung's non-confidential response to Question 6 of the request for information of 21 October 2015 on app stores (Doc ID 2805).

³⁰¹ See Lenovo's non-confidential response to Question 6 of the request for information of 21 October 2015 on app stores (Doc ID 4095).

³⁰² See ZTE's non-confidential response to Question 6 of the request for information to app store developers of 21 October 2015 (Doc ID 2840).

³⁰³ See Huawei's non-confidential response to Question 6 of the request for information to app store developers of 21 October 2015 (Doc ID 2455).

³⁰⁴ See LG Electronics' non-confidential response to Question 6 of the request for information to app store developers of 21 October 2015 (Doc ID 2377).

Android devices ("Android app stores").

- (282) This is because, from a supply-side perspective, app stores developed for other Android devices can be easily modified so as to make them function on Google Android devices, due to similarities in the source code between different Android OSs. For example, Amazon has developed an app store for its own Android OS (Fire OS), in addition to the Google Android one.³⁰⁵

- (283) Google does not contest the Commission's conclusions as outlined in this Section.

7.4.4. *App stores for other licensable smart mobile OSs and Android app stores*

- (284) The Commission concludes that app stores for other licensable smart mobile OSs do not belong to the same product market as Android app stores.

- (285) From a demand-side perspective, once an OEM has decided to install Android on its devices, it cannot, for technical reasons, pre-install an app store that has not been developed for Android. An OEM would only be able to pre-install a non-Android app store by installing a non-Android OS.

- (286) OEMs would be unlikely to switch to other licensable smart mobile OSs in the event of either a small but significant, non-transitory increase in the percentage of app-related revenues that app developers have to share with an Android app store or a small but significant, non-transitory deterioration of the quality of Android app store (e.g. search functions within the store, presentation of the results, offer of special deals, update features, etc.).³⁰⁶ This is for a number of reasons.

- (287) First, OEMs would not have any incentive to switch to another licensable smart mobile OS, even on the assumption that all app developers would fully pass on to users a small but significant, non-transitory increase in the percentage of app-related revenues that app developers have to share with an Android app store. This is because users would be unlikely to switch to another smart mobile device with a different OS as (i) the price increase for users would be negligible as Android users spend on average only USD 5 per year on apps³⁰⁷, and (ii) switching costs and the degree of OS loyalty are high (see recital (471)). As Deutsche Telekom explained, "*The cost of purchasing apps is likely to be comparatively small compared to the cost of changing to a new mobile OS (which might entail a new handset) and time needed to move to another mobile OS for most users. This is because most apps are either free or charge or have a low price. Therefore the price of apps would have to increase very substantially in order to cause switching of users to other OS*".³⁰⁸

- (288) Second, OEMs would not have any incentive to switch to another licensable smart mobile OS, even on the assumption of a small but significant non-transitory deterioration of the quality of the Play Store. This is for the reasons set out in recitals

³⁰⁵ See Amazon's non-confidential response to Question 2 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

³⁰⁶ Google's survey to developers list several performance parameters important for developers: [Google internal communications on commercial relationships and business strategy]. Source: Google's internal document "Google Play Developer Sentiment Survey, Topline Report", August 2016 (Doc ID 6555-68).

³⁰⁷ See Philip Elmer-DeWitt, "Apple's users spend 4X as much as Google's" (27 June 2014), available at <http://fortune.com/2014/06/27/apples-users-spend-4x-as-much-as-googles/>, printed and saved on 12 June 2018.

³⁰⁸ See Deutsche Telekom's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2556).

(289) and (290).

- (289) In the first place, users would be unlikely to switch from an Android device to another smart mobile device with a different licensable smart mobile OS because: (i) the number and quality of apps available for a given smart mobile OS is a more important factor than the features of the app store³⁰⁹ and Google Android is currently the smart mobile OS with the largest number of available apps³¹⁰; and (ii) switching costs and the degree of OS loyalty are high (see recital (471)).
- (290) In the second place, app developers would be unlikely to switch from developing apps for Google Android devices to developing apps for smart mobile devices with a different licensable smart mobile OS because, in doing so, they would forego access to a large number of users of smart mobile devices. Android devices represented 48% of the smart mobile devices sold worldwide in 2011, 65% in 2012, 75% in 2013, 78% in 2014, 78% in 2015 and 81% in 2016.³¹¹ This was further confirmed by the majority of respondents to Question 17 of the request for information of 21 October 2015 on app stores. Respondents indicated the number of users/coverage of users to be the most important factor that app developers consider when choosing for which mobile OS to develop apps, since this allows them the best monetisation opportunities:
- (1) ZTE: "*Coverage of consumers: Because app developers earn their profits mainly by app downloads, mobile OSs with a large user base are considered more attractive by app developers*".³¹²
 - (2) Nokia: "*The most important factors for app developers when choosing which mobile OS to develop apps for are the app store, the market share and the user reach of the OS, as app developers are looking for the best monetization opportunities*".³¹³
 - (3) HTC: "*The most important is number of users of the mobile OS*".³¹⁴
 - (4) BlackBerry: "*1. Size of user base and potential addressable market; 2. Revenue/monetisation opportunities*".³¹⁵
 - (5) Microsoft: "*In our experience, the most important factor for an app developer*

³⁰⁹ See Canonical's non-confidential response to Question 7.3 of the request for information to OS developers of 12 July 2013 (Doc ID 268); Mozilla's non-confidential response to Question 7.3 of the request for information of 12 June 2013 to OS developers (Doc ID 3951); LG Electronics' non-confidential response to Question 7.3 of the request for information to OEMs of 12 June 2013 (Doc ID 584); and Samsung's non-confidential response to Question 7.3 of the request for information of 12 June 2013 to OEMs (Doc ID 4117).

³¹⁰ See Section 9.4.2.

³¹¹ Source: Commission's calculations based on [...] data (Doc IDs 7866 and 7867) using sales of smartphones and tablets. For the calculation of Google Android sales, Android fork sales were excluded (namely sales of Fire OS, Flyme, Nokya X and Yun). The tablet sales classified as "Windows&Android" were divided equally between the two mobile OSs.

³¹² See ZTE's non-confidential response to Question 17 of the request for information of 21 October 2015 on app stores (Doc ID 2840).

³¹³ See Nokia's non-confidential response to Question 17 of the request for information of 21 October 2015 on app stores (Doc ID 3991).

³¹⁴ See HTC's non-confidential response to Question 17 of the request for information of 21 October 2015 on app stores (Doc ID 2519).

³¹⁵ See BlackBerry's non-confidential response to Question 17 of the request for information of 21 October 2015 on app stores (Doc ID 2666).

- is the ability to monetize their apps to the largest base of users".³¹⁶*
- (6) Yandex: "*The most critical factor considered by an app developer is the number of end consumers who could potentially be able to download the application of such developer".³¹⁷*
- (291) Third, there is in any event only a limited number of alternative licensable smart mobile OSs that OEMs could switch to. As noted in Section 9.3.1, Microsoft's Windows is the only other licensable smart mobile OS that has an appreciable presence. Windows has, however, only a small share of the worldwide market (excluding China) for licensable smart mobile OSs, which accounted to less than 6% in any year between 2011 and 2016.³¹⁸ Windows has also failed to attract nearly as many developers as Android. For example, in September 2015, there were only 669 000 apps available on Windows Mobile Store, which accounted for approximately 30% of the apps available on the Play Store at that time.³¹⁹
- (292) App store providers and OEMs have confirmed that Windows and other licensable smart mobile OSs such as Firefox OS and Tizen do not exercise a significant constraint on Android due to the scarcity of apps available for their OSs:
- (1) ZTE stated: "*Other mobile OSs, such as Windows Phone OS, Firefox OS, Tizen etc. which lack adequate consumers and high-quality apps are very difficult to attract consumer's attention.*"³²⁰
 - (2) Nokia stated: "[...] *when many people purchased Windows Phone and so-called "must have" apps, such as YouTube, were not available on the platform; consumers noted lack of app-availability as a reason why they did not purchase a Windows phone as their next phone, and this was despite the fact that consumers could access YouTube via the browser on the phone.*"³²¹
 - (3) Telefonica stated: "*In other Ecosystems like Windows Phone and Firefox OS, the lack of a proper ecosystem of apps has biased the perception of the overall ecosystem on the benefit of the 2 main players (iOS and Android) due to the lack of proper support for the most successful apps like WhatsApp, Facebook,*

³¹⁶ See Microsoft's non-confidential response to Question 17 of the request for information of 21 October 2015 on app stores (Doc ID 2493).

³¹⁷ See Yandex's non-confidential response to Question 17 of the request for information of 21 October 2015 on app stores (Doc ID 4228).

³¹⁸ Source: Commission's calculations based on [...] data (Doc IDs 7866 and 7867) using sales of smartphones and tablets. The tablet sales classified as "Windows&Android" were divided equally between the two mobile OSs.

³¹⁹ See Liam Tung, "Microsoft by the numbers 2015: 700k Windows Store Apps, 1.2 bn Office users"(30 September 2015), available at <http://www.zdnet.com/article/microsoft-by-the-numbers-2015-700k-windows-store-apps-1-2bn-office-users/>, printed and saved on 11 April 2016. In March 2017, the number of apps available in the Windows Mobile Store accounted for approximately only 25% of the apps available in the Play Store. Source: "Number of apps available in leading app stores as of March 2017", available at <https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/>, printed and saved on 16 August 2017.

³²⁰ ZTE's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2840).

³²¹ Nokia's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 3991).

*Instagram, etc..."*³²²

- (4) Opera stated: "*Windows Phone has been available since late 2011, yet it only commands a very limited global market share. While reviews of Windows Phone-equipped devices and even the Windows Phone platform as such are often favorable, more often than not, the lack of apps is cited as a detriment*".³²³
 - (5) Yandex stated: "*Windows OS is much less popular among consumers, which results in only a small number of OEMs producing devices which run on the platform, which in turn leads to: incomparably low number of mobile device users and therefore much poorer audience reach; and a limited offering of applications at the application store in comparison to the Play Store and Apple App Store.*"³²⁴
- (293) Fourth, a number of other factors influence the incentives of OEMs to install a certain smart mobile OS on their devices. According to Apple, "*The number and quality of apps available is one of several factors (including design, user-friendliness, speed, etc.) that contribute to the success of an OS*".³²⁵ In addition, Samsung states that a relevant factor, at least for users, appears to be "[...] *cross compatibility, i.e. sharing data with their desktop or laptop computer*",³²⁶ whereas for Sony, a factor is the "*maturity of the platform*".³²⁷
- (294) Fifth, as discussed in Section 9.3.2, OEMs face costs when switching to alternative licensable smart mobile OSs.
- (295) From a supply-side perspective, developers of app stores for other licensable smart mobile OSs are unlikely to switch to Android as the development of an app store for a given OS requires significant time and resources.³²⁸ For example, Microsoft, the largest developer of an app store for a non-Android licensable smart mobile OS, has neither developed nor announced any plan to develop an app store for Android.
- (296) The Commission's conclusion that app stores for other licensable smart mobile OSs do not belong to the same product market as Android app stores is not affected by Google's claims that:
- (1) "*users and app developers will switch to a different mobile platform in the case of a decline in the quality of the app store*" because app stores and smart mobile OSs compete together as a system against other "*mobile platforms*" on

³²² Telefonica's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2658).

³²³ Opera's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 3534).

³²⁴ Yandex's non-confidential response to Question 19 of the request for information of 21 October 2015 on app stores (Doc ID 4228).

³²⁵ See Apple's non-confidential response to Question 7.3 of the request for information of 12 June 2013 to OEMs (Doc ID 690). See also BlackBerry's non-confidential response to Question 7 of the request for information of 12 June 2013 to OEMs (Doc ID 3763) and LG Electronics' non-confidential response to Question 7.3 of the request for information of 12 June 2013 to OEMs (Doc ID 584).

³²⁶ See Samsung's non-confidential response to Question 7 of the request for information of 12 June 2013 to OEMs (Doc ID 4117).

³²⁷ See Sony Mobile Communications' non-confidential response to Question 7 of the request for information of 12 June 2013 to OEMs (Doc ID 4389).

³²⁸ See Section 9.3.2.

- price and quality;³²⁹
- (2) When discussing the impact of a small but significant, non-transitory deterioration in quality of Android app stores, the Commission: (i) does not define what it means by a deterioration in quality, (ii) does not compare the gains and losses of a deterioration in quality, (iii) ignores the effect of a deterioration in quality on app developers;³³⁰
 - (3) Respondents such as HTC, Microsoft, Yandex, Nokia, ZTE and BlackBerry on which the Commission relies in recital (290) indicate that the different app stores are substitutable from the perspective of app developers and users;³³¹ and
 - (4) The Commission's approach implies that each app store of a smart mobile OS developer would hold a dominant position in its own market.³³²
- (297) First, in the event of a small but significant, non-transitory deterioration in the quality of the Play Store, users and app developers would not switch to another "*mobile platform*".
- (298) In the first place, this is for the reasons set out in recitals (288) to (290).
- (299) In the second place, there are a number of reasons why app stores and smart mobile OS do not compete together as a system:
- (1) app stores and smart mobile OS are only components of the smart mobile device and the spending on apps is small compared to the costs of a smart mobile device, as described in Section 9.4.7.
 - (2) a user's choice of an app store is determined by its choice of a smart mobile device and the corresponding mobile OS³³³ and a user cannot, for technical reasons, install an app store that has not been developed for that OS;
 - (3) app stores and smart mobile OSs are separate products satisfying different user needs: a smart mobile OS is a system software that controls the basic functions of a smart mobile device and enables users to make use of new combinations of functions, while an app store is an online platform dedicated to enabling users to download, install and manage apps;
 - (4) Google gives access to Android without the Play Store (namely for those OEMs that did not sign the MADA) (see Section 6.2.2); and
 - (5) there are several players that offer only one of these products (for example Aptoide, LG Electronics, Opera, SFR and Yandex offer an app store but not a smart mobile OS).
- (300) Second, when discussing the impact of a small but significant, non-transitory deterioration in quality of Android app stores, the Commission:

³²⁹ Google's Response to the Statement of Objections, Part Two, pages 67-72, paragraphs 76-83 and 85-86 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part One, pages 22-23, paragraphs 59-62 (Doc ID 8598).

³³⁰ Google's Response to the Statement of Objections, Part Two, page 70, paragraphs 83-84 (Doc ID 7117).

³³¹ Google's Response to the First Letter of Facts, Part One, page 25, paragraph 67 (Doc ID 8598).

³³² Google's Response to the Statement of Objections, Part Two, pages 72-73, paragraphs 87-89 (Doc ID 7117).

³³³ Google's Response to the Statement of Objections, Part Two, pages 68, paragraph 78 (Doc ID 7117).

- (1) does define what it means by a deterioration in quality (see recital (286));
 - (2) does consider the potential losses associated with a deterioration in quality as regards user switching (see recital (289));
 - (3) does not ignore the effect of a deterioration in quality on app developers (see recital (290)); and
 - (4) has, in any event, also assessed the impact of a small but significant, non-transitory price increase in the percentage of app-related revenues that app developers have to share with Android app stores (see recital (286)).
- (301) Third, HTC, Microsoft, Yandex, Nokia do not state that the different app stores are substitutable from the perspective of app developers and users.
- (302) In the first place, the statements quoted by Google are irrelevant for assessing the substitutability of app stores for other licensable smart mobile OSs and Android app stores. This is because they refer to substitutability between app stores for non-licensable smart mobile OSs and Android app stores.
- (303) In the second place, and in any event, HTC, Microsoft, Yandex and Nokia refer to the importance of user reach and that, as a result, app developers focus on the two largest app stores (Apple AppStore and the Play Store). This is in line with Google's acknowledgment that app developers generally multi-home between the Play Store and the AppStore and do not need to switch away from Google Android.³³⁴
- (304) In the third place, ZTE and BlackBerry state that users may switch, or have switched, smart mobile device OS but only in the context of large differences in terms of app quality and price.³³⁵
- (305) Fourth, the Commission's approach does not imply that each app store of a smart mobile OS developer would hold a dominant position in its own market. An assessment of dominance would need to take into account a number of factors specific to each app store that potentially differ from the ones regarding Android app stores, such as the penetration of the respective smart mobile OS.

7.4.5. App stores for non-licensable smart mobile OSs and Android app stores

- (306) The Commission concludes that app stores for non-licensable smart mobile OSs such as Apple's AppStore and BlackBerry's BlackBerry World do not belong to the same product market as Android app stores.
- (307) From a demand-side perspective, the app stores of Apple and BlackBerry have been specifically developed for iOS and BlackBerry OS and cannot run on Android.
- (308) From a supply-side perspective, developers of app stores for non-licensable smart mobile OSs are unlikely to start developing app stores for Android due to their vertically integrated business model. For example, neither Apple nor BlackBerry has, developed or announced any plan to develop and licence an app store for Android.³³⁶
- (309) The Commission's conclusion that app stores for non-licensable smart mobile OSs do

³³⁴ Google's Response to the First Letter of Facts, Part One, page 26, paragraph 70 (Doc ID 8598).

³³⁵ BlackBerry's and ZTE's non-confidential responses Question 16 of the request for information of 21 October 2015 on app stores (ID 2666 and ID 2840)

³³⁶ Apple's and BlackBerry's non-confidential response to Question 2(i) of the request for information of 21 October 2015 on app stores (Doc IDs 2881 and 2666).

not belong to the same product market as Android app stores is not affected by Google's claims that:

- (1) three internal Google documents, Apple's communication to investors and the findings of competition authorities in Australia and the US confirm the substitutability of the Play Store and Apple's AppStore;³³⁷
 - (2) the Play Store and the Apple AppStore have similar characteristics, prices and intended use;³³⁸ and
 - (3) the Commission wrongly ignores competition at the level of users and app developers when defining the relevant product market.³³⁹
- (310) First, the three internal Google documents quoted by Google, Apple's communication to investors and the findings of competition authorities and courts in Australia and the US do not demonstrate the substitutability of the Play Store and Apple's AppStore.
- (311) In the first place, two of the internal documents quoted by Google are from 2010. They are not informative on the degree of competition between, and thus the substitutability of, the Play Store and Apple's AppStore as of 2011 when Google started to hold a dominant position in the worldwide market (excluding China) for Android app stores.
- (312) In the second place, as regards Google's survey of developers in 2016, the fact that Google asked developers in 2016 to compare the performance of the Play Store with Apple's AppStore on various parameters (e.g. testing, guidance, feedback, distribution and payment) does not demonstrate the substitutability of the two app stores. Rather, it simply indicates that, given the absence of significant competitors in the worldwide market (excluding China) for Android app stores, Google uses the AppStore as one of the main references to benchmark the performance of the Play Store, given the AppStore's number of users and app developers and the fact that many app developers multi-home between the Play Store and the AppStore (see recitals (553), (555) and (610)).
- (313) In the third place, as regards Apple's communication of its growth rate and revenues to investors in 2016, the fact that Apple compares the results of its AppStore with those of the Play Store does not demonstrate the substitutability of the two app stores. Rather, it simply indicates that Apple uses the Play Store as one of the main references to benchmark the growth and revenues of the AppStore, given the former's number of users and app developers.
- (314) In the fourth place, the Commission's assessment is not contradicted by the findings of competition authorities and courts in Australia and the US quoted by Google.
- (315) As regards the findings of the ACCC in the context of the Apple Pay investigation,³⁴⁰ they were focussed on Apple's behaviour. Given that Apple does not licence its AppStore to OEMs, the existence of a market for Android app stores is irrelevant for

³³⁷ Google's Response to the Statement of Objections, Part Two, pages 69-76, paragraphs 82, 93 and 97 (Doc ID 7117), Google's letter of 6 February 2017 (Doc ID 7147), and Google's letter of 24 April 2017 (Doc ID 7862).

³³⁸ Google's Response to the First Letter of Facts, Part One, page 24, paragraphs 63-65 (Doc ID 8598).

³³⁹ Google's Response to the Statement of Objections, Part Two, page 75, paragraph 94 (Doc ID 7117).

³⁴⁰ See ACCC's determination on applications for authorisation A91546 & A91547 of 31 March 2017.

the purposes of the ACCC's Determination.

- (316) As regards the findings of the US Federal Trade Commission, the focus of its investigation was the mobile advertising market and thus the existence of a market for Android app stores is irrelevant.
- (317) Second, Google's claim about the Play Store and the AppStore having similar characteristics, prices and intended use does not demonstrate that they are in the same market.
- (318) In the first place, the fact that two products may have similar features does not necessarily mean that they are part of the same market. For example, while all spare parts of a product may have similar features, this does not necessarily mean that they are all part of a same relevant market. This would depend, for example, on the compatibility of the different spare parts with the product.
- (319) In the second place, while the Play Store and the AppStore have certain similar characteristics, there are also several differences between these two app stores as described in recital (661), such as regards ratings and data reporting.
- (320) In the third place, the AppStore and the Play Store do not have the same pricing policies. For example, while Google charges developers a one-off registration fee of USD 25, Apple charges a yearly fee of USD 99.³⁴¹ In addition, the pricing policies of the AppStore and the Play Store have evolved differently over time. For example, whilst Apple implemented a 15/85 revenue split with certain app developers in June 2016,³⁴² Google implemented such a split only in January 2018.³⁴³
- (321) In the fourth place, the intended use of the AppStore and the Play Store are different. Whilst both app stores have the main function of downloading apps, the intended use of the AppStore is to allow users to download apps on iOS devices and intended use of the Play Store is to allow users to download apps on Google Android devices.
- (322) Third, the Commission does not ignore competition at the level of users and app developers. For the reasons explained in Section 9.4.7, the Commission concludes that app stores for non-licensable smart mobile OSs exercise an insufficient indirect constraint on Google's dominant position in the market for Android app stores. These reasons confirm that app stores for non-licensable smart mobile OSs should not be included in the relevant market for Android app stores.

7.5. General search services

- (323) The Commission concludes that the provision of general search services constitutes a separate relevant product market.
- (324) This conclusion is based on the following considerations:
 - (1) the provision of general search services constitutes an economic activity (Section 7.5.1);
 - (2) general search services and other online services belong to different product

³⁴¹ See <https://support.google.com/googleplay/android-developer/answer/6112435?hl=en> and <https://developer.apple.com/support/purchase-activation/>, printed and saved on 2 July 2018.

³⁴² See <https://appleinsider.com/articles/16/06/08/apple-announces-it-will-offer-app-store-subscriptions-take-smaller-15-cut>, printed and saved on 2 July 2018.

³⁴³ Google's Response to the First Letter of Facts, Part One, page 27, paragraph 70 (Doc ID 8598).

- markets (Section 7.5.2);
- (3) the product market for general search services encompasses searches via PCs and smart mobile devices (Section 7.5.3);
 - (4) the product market for general search services encompasses searches via different OSs (Section 7.5.4); and
 - (5) the product market for general search services encompasses all entry points on smart mobile devices (Section 7.5.5).
- 7.5.1. *The provision of general search services constitutes an economic activity***
- (325) The Commission concludes that the provision of general search services constitutes an economic activity for the purposes of the competition rules of the Treaty.
- (326) First, even though users do not pay a monetary consideration for the use of general search services, they contribute to the monetisation of the service by providing data with each query.³⁴⁴
- (327) In most cases, a user entering a query enters into a contractual relationship with the operator of the general search service. For example, Google's Terms of Service provide: "*By using our Services, you agree that Google can use such data in accordance with our privacy policies*".³⁴⁵ In accordance with its privacy policies, Google can store and re-use data relative to user queries.³⁴⁶ The terms and conditions of competing general search services contain similar provisions.³⁴⁷ The data which users agree to allow a general search service to store and re-use is of value to the provider of the general search service as it is used to improve the relevance of the search service and to show more relevant advertising.³⁴⁸
- (328) Second, offering a service free of charge is an advantageous commercial strategy for two-sided platforms such as general search platforms that connect distinct but interdependent demands. General search services and online search advertising constitute the two sides of a general search platform. Monetisation only occurs on the online search advertising side of the platform, therefore advertisers indirectly fund the general search services offered to users. The level of advertising revenue that a general search platform can obtain is related to the number of users of its general search service: the higher the number of users of a general search service, the wider the audience advertisers can reach and therefore the more the online search advertising side of the platform will appeal to advertisers.

³⁴⁴ Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market, OJ L 149/22.

³⁴⁵ See "Google Terms of Service" ('Privacy and Copyright Protection' section) (14 April 2014), available at <http://www.google.com/intl/en/policies/terms/>, printed and saved on 11 April 2016.

³⁴⁶ See "Welcome to the Google Privacy Policy" ('Information we collect' and 'How we use information we collect' sections), available at <http://www.google.com/intl/en/policies/privacy/>, printed and saved on 13 June 2017.

³⁴⁷ See "Microsoft Privacy Statement" (January 2016), available at <http://www.microsoft.com/PrivacyStatement>, printed and saved on 11 April 2016 and "Yahoo Terms of Service", available at <https://policies.yahoo.com/us/en/yahoo/terms/utos/index.htm>, printed and saved on 11 April 2016.

³⁴⁸ See "Welcome to the Google Privacy Policy" ('Information we collect' and 'How we use information we collect' sections), available at <http://www.google.com/intl/en/policies/privacy/>, printed and saved on 13 June 2017.

- (329) Third, even though general search services do not compete on price, there are other parameters of competition between general search services. These include the relevance of results, the speed with which results are provided, the attractiveness of the user interface and the depth of indexing of the web.

7.5.2. *General search services and other online services*

- (330) The Commission concludes that general search services belong to a different product market than other online services such as content sites, specialised search services and social networks.

7.5.2.1. General search services and content sites from a demand-side perspective

- (331) General search services and content sites serve a different purpose. On the one hand, a general search service primarily seeks to guide users to other sites. As Google indicates on its website: "[O]ur goal is to have people leave our website as quickly as possible."³⁴⁹ On the other hand, while content sites may contain references to other sites, their primary purpose is to directly offer the information, the products or the services users are looking for. Well-known examples of content sites include Wikipedia, IMDb, and websites of newspapers and magazines such as The New York Times or Nature.

- (332) Google does not contest the Commission's conclusions as outlined in this Section.

7.5.2.2. General search services and specialised search services from a demand-side perspective

- (333) While search results provided by a general search service may sometimes overlap with the results provided by a specialised search service, the two types of search services are complements rather than substitutes.
- (334) First, specialised search services focus on providing specific information or purchasing options in their respective fields of specialisation. By contrast, general search services search the entire Internet and therefore generally return different and more wide-ranging results.
- (335) Second, specialised search services and general search services often rely on different sources of data: the main input for general search services originates from an automated process called "web crawling",³⁵⁰ whereas many specialised search services rely on user input or information supplied by third parties.
- (336) Third, specialised search services and general search services rely on different algorithms for determining and ranking the relevance of search results.³⁵¹
- (337) Fourth, specialised search services are usually monetised in a different way; in addition to relying on online search advertising, they generate revenue from, for

³⁴⁹ See "ten things we know to be true", available at <http://www.google.com/about/company/philosophy/>, printed and saved on 11 April 2016.

³⁵⁰ See Sergey Brin and Larry Page, "The PageRank Citation Ranking: Bringing Order to the Web"(19 January 1998), available at <http://ilpubs.stanford.edu:8090/422/1/1999-66.pdf>, printed and saved on 11 April 2016.

³⁵¹ Google's submission of 7 September 2010, "Comparing apples with oranges – How Google ranks Universal results from specialised content-specific search algorithms within web search" (Doc ID 4774).

- example, paid inclusion, service fees or commissions (pay-per-acquisition fees).³⁵²
- (338) Fifth, a number of companies offer specialised search services on a standalone basis, without offering general search services.³⁵³
- (339) Sixth, Google offers and describes its specialised search services as a service distinct from its general search service. Google has a help page on its website which purports to list its different products and services. The page includes a list of Google products and services. It distinguishes between, on the one hand, "*Web Search - Search billions of web pages*", with a link to Google's general search service, and, on the other hand "*Specialized Search*", which includes several different services, including for example "*Google Shopping - Search for stuff to buy*".³⁵⁴
- (340) Seventh, reports of specialised market observers such as comScore distinguish between general search services and other search services.³⁵⁵
- (341) The Commission's finding that general search services and specialised search services belong to different relevant markets is not affected by Google's claims that:
- (1) specialised search services exercise a constraint on general search services for the categories of queries for which their search functionalities overlap;³⁵⁶ and
 - (2) the Commission should have taken into account the constraints from specialised search services in each major query category, which, taken as a whole, constitute a constraint for general search services.
- (342) First, as Google itself admits, specialised search services exercise a constraint on general search services only for the categories of queries for which their search functionalities overlap.
- (343) Second, even for the categories of queries for which their search functionalities overlap, specialised search services offer specific search functionalities for the queries on which they specialise which do not exist, or not to the same extent, on general search services. For example, on search services specialised in travel, users may look for hotels with a certain number of stars, or within a certain range of a city, or they may read user reviews of these hotels. These functionalities are not available to the same extent on a general search service for the same queries.
- (344) Third, the constraints from specialised search services in each major query category taken as a whole do not exercise a sufficient constraint:
- (1) even though there are several categories of specialised search services, there are many types of queries which are not covered by any of them; and

³⁵² See "Glossary" available at <http://www.searchenginesales.com/glossary/>, printed and saved on 6 June 2018.

³⁵³ Examples include services specialised in search for products such as Shopzilla, LeGuide, Idealo, in search for local businesses such as TripAdvisor and Yelp, in search for flights such as Kayak and EasyVoyage, and in search for financial services such as MoneySupermarket or confused.com.

³⁵⁴ See "About Google", available at <https://www.google.co.uk/intl/en/about/products/>, printed and saved on 11 April 2016.

³⁵⁵ See "comScore Releases October 2015 U.S. Desktop Search Engine Rankings" (13 November 2015), available at <http://www.comscore.com/Insights/Market-Rankings/comScore-Releases-October-2015-U.S.-Desktop-Search-Engine-Rankings>, printed and saved on 11 April 2016.

³⁵⁶ Google's Response to the Statement of Objections, Part Two, pages 82-87, paragraphs 122-129 (Doc ID 7117).

- (2) general search services are the only online services on which users can seek potential relevant results from all categories at the same time.

- 7.5.2.3. General search services and social networking sites from a demand-side perspective
- (345) While social networking sites are a source of traffic to other websites, they are not a substitute for general search services.
- (346) First, general search services and social networking sites perform different functions. While general search services help users to find content they are looking for, social networks lead users to content they might be interested in by offering a means for users to connect and interact with people who, for example, share interests or activities.
- (347) Second, while certain social networks offer a general search function on their websites, so that users do not need to leave the sites to perform a general search, none of these sites uses its own general search technology. Instead, they rely on existing third party search services to power these searches. For example, Facebook previously relied on Microsoft's Bing to provide search results.
- (348) Third, the volume of general searches performed on social networks represents only a small share of the total volume of general searches. For example, in 2011, the number of general searches performed via Facebook in Europe³⁵⁷ was equivalent to only 3.2% of the number of general searches performed on Google Search, even though Facebook is by far the largest social network.³⁵⁸ Moreover, Facebook no longer offers a general search function on its website.³⁵⁹
- (349) Fourth, [...].³⁶⁰
- (350) Google does not contest the Commission's conclusions as outlined above.

7.5.2.4. General search services and other online services from a supply-side perspective

- (351) Providers of other online services would need to undertake substantial investments in order to provide general search services. This is primarily due to the costs associated with the development of general search algorithms (see further Section 9.5.2).
- (352) Google does not contest the Commission's conclusion as outlined above.
- 7.5.3. *General search services on PCs and smart mobile devices*
- (353) The Commission concludes that the product market for general search services encompasses searches via PCs and smart mobile devices.
- (354) First, from a demand-side perspective, users expect to receive the same general search services regardless of whether they access them via PC or smart mobile devices.

³⁵⁷ ComScore's definition of Europe does not coincide with the Union or the EEA. In particular, it includes the Russian Federation and Switzerland. However, the Commission concludes that this difference in scope is not substantial enough to significantly alter the meaning of the statistics.

³⁵⁸ See Joe Nguyen, "search is Dead! Long Live Search!" (14 June 2011), available at http://www.clickz.asia/3592/search_is_dead_long_live_search, printed and saved on 11 April 2016.

³⁵⁹ Facebook's non-confidential response to Question 2 of the request for information of 9 December 2014 (Doc ID 3947).

³⁶⁰ Facebook's non-confidential response to Question 4 of the request for information of 9 December 2014 (Doc ID 3947).

- (355) Second, from a supply-side perspective, while the user interface is different, the underlying technology is the same.³⁶¹ The infrastructure and volume of data necessary to execute the general search service are also the same irrespective of the point of access.
- (356) Third, and from a supply-side perspective, general search services on PC and smart mobile devices are offered by the same undertakings. For example, Google Search, Bing, Yandex, Yahoo Search and DuckDuckGo are available on PCs and smart mobile devices.

Table 2: Shares of general searches on PCs and smart mobile devices in Europe, 2016

	Mobile	PC
Google	96.7%	90.08%
Yahoo Search	1.36%	1.86%
Bing	0.92%	4.77%
Yandex	0.73%	2.00%
DuckDuckGo	0.11%	0.2%
Seznam	0.07%	0.22%
Baidu	0.03%	0.02%
Mail.ru	0.02%	0.28%

- (357) Google does not contest the Commission's conclusions as outlined in this Section.
- 7.5.4. General search services on different smart mobile OSs*
- (358) The Commission concludes that the product market for general search services encompasses searches on all smart mobile OSs.
 - (359) First, from a demand-side perspective, users expect to receive the same general search services regardless of the smart mobile OS via which they access them.
 - (360) Second, from a supply-side perspective, while the user interface is different, the underlying technology is the same.³⁶² The infrastructure and volume of data necessary to execute the general search service are also the same irrespective of the point of access. Moreover, the cost of developing an app to run on a different smart mobile OS is small compared to the overall investment required to develop a general search service (see Section 9.5.2).
 - (361) Third, and also from a supply-side perspective, general search services on different smart mobile OSs are offered by the same undertakings. For example, Google Search, Yahoo Search and DuckDuckGo are available on Android, iOS and Windows Phone.
 - (362) Google does not contest the Commission's conclusions as outlined in this Section.
- 7.5.5. All entry points on smart mobile devices*
- (363) The Commission concludes that the product market for general search services

³⁶¹ Deposition of Andrew Rubin in the Matter of Google, Inc. on 23 August 2012, p. 232. (Doc ID 4772).

³⁶² Deposition of Andrew Rubin in the Matter of Google, Inc. on 23 August 2012, p. 232. (Doc ID 4772).

encompasses searches via all entry points on smart mobile devices.

- (364) First, from a demand-side perspective, users access entry points interchangeably, depending on which entry point they consider most convenient to use. For example, Yahoo explained that "*In general, the search entry points likely to generate the highest traffic are the ones that are most accessible to the user, such as the quick search bar and "omnibox" in browser*" and that the traffic generated through an entry point "*depends on [...] placement of apps*".³⁶³
- (365) Second, from a supply-side perspective, although the user interfaces may be slightly different, the underlying technology used across entry points is the same. Each entry point provides the same functionality by allowing users to enter their query in a search box and returning a list of results in response to that query.³⁶⁴
- (366) Google does not contest the Commission's conclusions as outlined in this Section.

7.6. Non OS-specific mobile web browsers

- (367) The Commission concludes that non OS-specific mobile web browsers constitute a separate relevant product market.
- (368) This conclusion is based on the following considerations:
- (1) web browsers for PCs ("PC web browsers") do not belong to the same product market as mobile web browsers (Section 7.6.1);
 - (2) other apps do not belong to the same product market as mobile web browsers (Section 7.6.2);
 - (3) mobile web browsers developed for different smart mobile OSs belong to the same product market (Section 7.6.3);
 - (4) OS-specific mobile web browsers do not belong to the same product market as non OS-specific mobile web browsers (Section 7.6.4).

7.6.1. PC web browsers and mobile web browsers

- (369) The Commission concludes that PC web browsers do not belong to the same product market as mobile web browsers.
- (370) From a demand-side perspective, PC web browsers and mobile web browsers rely on different technology because of the differences between OS for PCs and smart mobile devices. Amazon observed that "[...] *Web browsers generally have a version which is designed for the desktop and a version which is designed for the mobile device (in the form of an application). This is because the mobile device's small screen will require certain adjustments to be made to maintain user-friendliness. Further, given the greater processing power of desktop PCs, desktop web browsers tend to be quicker than mobile device applications [...].*"³⁶⁵ Samsung also indicated that "*The two types of browsers are designed for different input methods (mouse events vs. touch events), screen sizes, and different web contents (PC version web*

³⁶³ Yahoo's non-confidential response to Question 2 of the request for information of 20 November 2015 to search providers (Doc ID 3411).

³⁶⁴ See Microsoft's non-confidential response to Question 1 of the request for information of 9 December 2015 to search providers (Doc ID 2973).

³⁶⁵ See Amazon's non-confidential response to Question 3 of the request for information of 19 October 2015 to web browser providers (Doc ID 3645).

contents vs. Mobile version web contents".³⁶⁶

- (371) From a supply-side perspective, while developers of PC web browsers can switch, and indeed have switched, to the development and supply of mobile web browsers, such a switch takes significant time and requires substantial investments.³⁶⁷
- (372) In any event, even if PC web browsers were to belong to the same product market as mobile web browsers, this would not alter the Commission's assessment of Google's conduct (see Section 11.4.4.IV).
- (373) The Commission's conclusion that PC web browsers do not belong to the same product market as mobile web browsers is not affected by Google's claims that:
 - (1) almost all developers offer both PC and mobile versions of their web browsers,³⁶⁸ and
 - (2) web browser developers that responded to requests for information indicate that development costs would be low for porting a web browser from PC to mobile.³⁶⁹
- (374) First, it is incorrect that almost all developers offer both PC and mobile versions. While developers that originally offered a PC version of their web browsers generally also offer a mobile version, the opposite is not true. For example, Samsung, Huawei, Amazon, BlackBerry, HTC, LG and Sony have never offered a PC web browser. They are also unlikely to do so because they offer their mobile browsers only on their mobile devices.
- (375) Second, a number of web browser developers that responded to requests for information indicate that development costs for porting a mobile web browser from PC to mobile are not low. For example, Samsung observed that "*significant costs are required to build and maintain cloud infrastructure required for mobile browsers and convergence features, and for marketing*".³⁷⁰
- (376) The Commission's approach is also consistent with the approach that it took in its *Microsoft (Tying)* decision³⁷¹ in which it defined the relevant product market as web browsers for client PC operating systems and excluded web browsers for smart mobile and embedded devices from that market.

7.6.2. *Other apps and mobile web browsers*

- (377) The Commission concludes that other apps do not belong to the same product market as mobile web browsers.

³⁶⁶ See Samsung's non-confidential response to Question 3 of the request for information of 19 October 2015 to web browser providers (Doc ID 3930).

³⁶⁷ See non-confidential responses to Question 5 of the request for information of 19 October 2015 to web browser providers.

³⁶⁸ Google's Response to the Statement of Objections, Part Two, page 92, paragraph 149 (Doc ID 7117).

³⁶⁹ Google's Response to the Statement of Objections, Part Two, page 92, paragraph 151 (Doc ID 7117).

³⁷⁰ See Samsung's non-confidential response to Question 5 of the request for information of 19 October 2015 to web browser providers (Doc ID 3930). See also the responses to Question 5 of the request for information of 19 October 2015 to web browser providers by Access, Alibaba and BlackBerry (Doc IDs 2560, 2898 and 2335).

³⁷¹ Case AT.39530 *Microsoft (Tying)*, Commission decision of 16 December 2009, recitals 17-22.

- (378) From a demand-side perspective, despite the increased use of apps,³⁷² demand remains for a web browser as a general entry point for accessing and interacting with web content on smart mobile devices. While there is a certain level of substitutability between accessing content via a mobile web browser and a respective dedicated native app, users do not download an app for each web page they visit. As Sony confirmed: "*The market expectation and compliance requirements stipulate that mobile products must include a browser.*"³⁷³
- (379) From a supply-side perspective, the development of a mobile web browser requires time and resources.³⁷⁴ It is also unlikely that a developer of other apps would start developing mobile web browsers in response to a small but significant, non-transitory quality deterioration of mobile browsers. This is because it does not make sense for the developer of an app, whose strategy will be dedicated to that specific app, to develop a general purpose mobile web browser.

(380) Google does not contest the Commission's conclusions as outlined in this Section.

7.6.3. Mobile web browsers for different smart mobile OSs

- (381) The Commission concludes that mobile web browsers developed for different smart mobile OSs belong to the same product market.
- (382) On the one hand, from a demand-side perspective, mobile web browsers are specific to the OS for which they are developed to run on.³⁷⁵ OEMs and MNOs can, therefore, only pre-install web browsers that are developed for the OS on which their devices are running. Moreover, users can only either obtain mobile web browsers together with their smart mobile devices or download those developed for the OS running on their devices.
- (383) On the other hand, from a supply-side perspective, web browsers developed for different smart mobile OSs seem to belong to the same product market.
- (384) First, a number of developers of mobile web browsers offer their web browsers for different mobile OSs, such as Google (Chrome on Android and iOS), Mozilla (Firefox for Android and iOS), Alibaba, Access, and Opera.
- (385) Second, while a certain investment is required to port an app, such as a mobile web browser to a different OS from the one it was originally designed for,³⁷⁶ such an investment appears to be relatively limited for mobile web browsers. This is because all major OSs include an HTML rendering engine that is designed to be reused in apps on that platform. Moreover, by building on these reusable system components,

³⁷² See above Section 6.2 and, for example, Opera's non-confidential response to Question 3 of the request for information of 19 October 2015 to web browser providers (Doc ID 4111): "*The most used websites are increasingly replaced with native applications.*"

³⁷³ See Sony's non-confidential response to Question 3 of the request for information of 19 October 2015 to web browser providers (Doc ID 4122).

³⁷⁴ It already requires time and resources to adapt an existing mobile browser to a PC OS or another smart mobile OS; see the non-confidential responses to Question 6 of the request for information of 19 October 2015 to web browser providers.

³⁷⁵ See Amazon's non-confidential response to Question 4 of the request for information of 19 October 2015 to web browser providers (Doc ID 3645): "*Web browser applications will generally only function successfully if the device in question has a mobile OS for which the web browser provider has developed a compatible application.*"

³⁷⁶ See the non-confidential responses to Question 1 of the request for information of 29 June 2015 to app developers.

it is relatively easy to build a mobile web browser for any mainstream OS.³⁷⁷ Contrary to switching from the supply of a PC web browser to a mobile web browser, some significant costs, in particular related to building a cloud infrastructure, do not apply when porting a mobile web browser to a different OS.³⁷⁸

(386) Google does not contest the Commission's conclusions as outlined in this Section.

7.6.4. *OS-specific mobile web browsers and non OS-specific mobile web browsers*

(387) A number of developers of non-licensable smart mobile OSs (for example Apple and BlackBerry) have developed mobile web browsers that are unavailable on any other smart mobile OS ("OS-specific mobile web browsers").

(388) The Commission concludes that OS-specific mobile web browsers that are available only as part of a non-licensable smart mobile OS do not belong to the same product market as non OS-specific mobile web browsers.

(389) From a demand-side perspective, OS-specific mobile web browsers that are available only as part of a non-licensable smart mobile OS are not an alternative for OEMs and MNOs as developers of these mobile web browsers do not grant licences to third parties.

(390) In addition, as the value of a mobile web browser compared to the value of a smart mobile device is small, in the event of a small but significant non-transitory deterioration of the quality of a non OS-specific mobile web browser, it is unlikely that a user would switch to a different smart mobile OS in order to use the corresponding OS-specific mobile web browser.³⁷⁹

(391) From a supply-side perspective, developers of OS-specific mobile web browsers that are available only as part of a non-licensable smart mobile OS are unlikely to start licensing their browsers in the event of a small but significant non-transitory deterioration of the quality of non OS-specific mobile web browsers available on more than one smart mobile OS. This is because the strategy of these developers is based on the tight integration of hardware and software rather than on the licensing of their software to third parties.

(392) The Commission's conclusion that OS-specific mobile web browsers that are available only as part of a non-licensable smart mobile OS do not belong to the same product market as non OS-specific mobile web browsers is not affected by Google's claims that:³⁸⁰

- (1) users do not need to switch mobile OS in the event of a small but significant non-transitory deterioration of the quality of the non OS-specific web browsers because both types of mobile web browsers appear on the same platforms;

³⁷⁷ See Microsoft's non-confidential response to Question 5 of the request for information to web browser providers of 19 October 2015 (Doc ID 2413) as well as Access' (Doc ID 2560), Apple's (Doc ID 2890) and Samsung's (Doc ID 3930) non-confidential responses to Question 6.iii of the request for information of 19 October 2015 to web browser providers.

³⁷⁸ See Samsung's non-confidential response to Question 5 of the request for information of 19 October 2015 to web browser providers (Doc ID 3930).

³⁷⁹ See the non-confidential responses to Question 4 of the request for information of 29 June 2015 to app developers.

³⁸⁰ Google's Response to the Statement of Objections, Part Two, pages 89-92, paragraphs 140-147 (Doc ID 7117).

- (2) given that Chrome is largely present across all smart mobile OSs, Google cannot afford to degrade Chrome because it would face the threat of users switching, for example, to Safari on the iOS platform or to Edge on the Windows platform;
 - (3) both respondents to the requests for information and the Commission's Internet Explorer decision³⁸¹ confirm that there is a single market for OS-specific mobile web browsers and non OS-specific mobile web browsers;³⁸²
 - (4) it is technically straightforward to create different versions of web browsers for different smart mobile OSs; and
 - (5) Microsoft launched its Edge browser for iOS and Android in October 2017.³⁸³
- (393) First, as explained in recital (390), as the value of a mobile web browser compared to the value of a smart mobile device is small, in the event of a small but significant non-transitory deterioration of the quality of a non OS-specific mobile web browser, it is unlikely that a user would switch to a different smart mobile OS in order to use the corresponding OS-specific mobile web browser.
- (394) Second, the fact that Chrome is largely present across all smart mobile OSs does not remove any incentive that Google may have to degrade Chrome on Android. This is because, as Google admits,³⁸⁴ a different version of Chrome exists on each smart mobile OS, with the result that Google could degrade the Chrome version for the Android OS, while keeping the version for iOS the same.
- (395) Third, respondents to requests for information did not confirm that there is a single market for OS-specific mobile web browsers and non OS-specific mobile web browsers.
- (396) In the first place, the fact that companies with OS-specific web browsers that are available only as part of a non-licensable smart mobile OS may experience competition from non OS-specific web browsers (and not necessarily the opposite) helps to explain why respondents to the requests for information that have developed an OS-specific web browser consider Chrome as a competitor to their web browser.
- (397) In the second place, the replies cited by Google refer to the perspective of users, not OEMs and MNOs. While users can choose which device and OS-specific or non OS-specific web browser they want to use, OEMs and MNOs cannot pre-install an OS-specific browser (other than those available for the OS that they pre-install) on a device (see recital (389)).
- (398) Fourth, it is irrelevant that it is technically straightforward to create different versions of web browsers for different smart mobile OSs. What is, however, relevant is that it is unlikely that developers of OS-specific web browsers (e.g. Apple) would start developing and making available their web browsers for other smart mobile OSs in the event of a small but significant non-transitory deterioration of the quality of mobile web browsers available on more than one smart mobile OS (see recital (391)).

³⁸¹ Case AT.39530 *Microsoft (Tying)*, Commission decision of 16 December 2009.

³⁸² See also Google's Response to the First Letter of Facts, Part One, pages 33-34, paragraph 94 (Doc ID 8598).

³⁸³ Google's Response to the First Letter of Facts, Part One, page 34, paragraph 95 (Doc ID 8598).

³⁸⁴ Google's Response to the Statement of Objections, page 91, footnote 324 (Doc 7117).

(399) Fifth, Microsoft's launch of Edge for Android and iOS confirms the Commission's conclusions. This is because Microsoft launched Edge for Android and iOS in October 2017 only after Microsoft announced in July 2017 its intention to discontinue active development of its smart mobile OS. By contrast, Microsoft never granted any license to its OS-specific mobile web browser when it was part of its non-licensable smart mobile OS. Since July 2017, Edge has therefore become a non OS-specific mobile web browser.

8. RELEVANT GEOGRAPHIC MARKETS

8.1. Principles relating to geographic market definition

(400) The relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which area the conditions of competition are similar or sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different.³⁸⁵

(401) The definition of the geographic market does not require the conditions of competition between traders or providers of services to be perfectly homogeneous. It is sufficient that they are similar or sufficiently homogeneous and, accordingly, only those areas in which the conditions of competition are 'heterogeneous' may not be considered to constitute a uniform market.³⁸⁶

8.2. Application to this case

(402) The Commission concludes that the relevant product markets for the purpose of these proceedings are:

- (1) the worldwide market (excluding China) for the licensing of smart mobile OSs;
- (2) the worldwide market (excluding China) for Android app stores;
- (3) national markets for general search services; and
- (4) the worldwide market for non OS-specific mobile web browsers.

8.3. Licensing of smart mobile device operating systems

(403) The Commission concludes that the market for the licensing of smart mobile OSs is worldwide in scope, excluding China.

(404) First, barriers to entry are low in most of the regions of the world. Apple, for example, stated: "*There are no significant limitations that would prevent an OS from being made available on a worldwide basis, or that would prevent an OEM from licensing an OS for use on a worldwide basis.*"³⁸⁷ Samsung stated: "*Language specific demand characteristics regarding the relevant OS exist but, in so far as the supply side is concerned, do not constitute an obstacle to swift supply on a global*

³⁸⁵ Case 27/76 *United Brands v Commission*, EU:C:1978:22, paragraph 44; Case 322/81 *Michelin v Commission*, EU:C:1983:313, paragraph 26.

³⁸⁶ Case 27/76 *United Brands*, EU:C:1978:22, paragraphs 11 and 53.

³⁸⁷ Apple's non-confidential response to Question 5 of the requests for information of 12 June 2013 to OEMs (Doc ID 690).

basis in accordance with language-related preferences."³⁸⁸

- (405) Second, the agreements between OEMs and OS developers are generally worldwide in scope.³⁸⁹ Jolla Oy ("Jolla") confirmed: "*OEMs typically license a mobile OS for worldwide use, not for a certain geographical area*".³⁹⁰ Similarly, BlackBerry stated: "*a single world-wide licence agreement is often entered into between negotiating parties, and [...] mobile devices are often sold on a world-wide scale.*"³⁹¹
- (406) Third, conditions of competition are different in China. This is for the following reasons.
- (407) In the first place, Google's activities in China are limited.³⁹² For example, most Google apps, including Google Search, Google Maps, YouTube and the Play Store, are not available in China.³⁹³
- (408) In the second place, a number of OEMs that are active only or predominantly in China have pre-installed Android forks on their devices sold in China. These include OEMs that either have entered into an AFA but do not respect the anti-fragmentation obligations or have never entered into an AFA.³⁹⁴ An example of an Android fork that has been pre-installed on devices sold in China is Alibaba's Aliyun.³⁹⁵
- (409) These differences in the competitive landscape in China have been confirmed by OEMs and MNOs. Jolla, for example, stated: "*Android forks are popular especially in China, where there are heavy restrictions to access Google services.*"³⁹⁶ Nokia also referred to the "[...] governmental influence on OEM's OS choices being significant in certain regions (e.g. China)."³⁹⁷ BlackBerry stated that: "*Many Chinese vendors (e.g. Meizu) use a forked and heavily customized version of Android for devices that are sold in China. The customization removes many of Google's services, (e.g. replacing Google search with Baidu).*"³⁹⁸ Equally, Deutsche Telekom referred to Chinese players such as "Alibaba, Baidu or OPhone from China Mobile" and made clear that "*these products are not relevant in Western European and the*

³⁸⁸ Samsung's non-confidential response to Question 5 of the requests for information of 12 June 2013 to OEMs (Doc ID 4117).

³⁸⁹ See non-confidential responses to Question 5 of the requests for information to MNOs, OEMs, OS providers and app developers of 12 June 2013.

³⁹⁰ Jolla's non-confidential response to Question 5 of the requests for information of 12 June 2013 to OS developers (Doc ID 3981).

³⁹¹ BlackBerry's non-confidential response to Question 5 of the requests for information of 12 June 2013 to OEMs (Doc ID 3763).

³⁹² See "A new approach to China: an update" (22 March 2010), available at <https://googleblog.blogspot.be/2010/03/new-approach-to-china-update.html>, printed and saved on 11 April 2016; see Alexa Olesen, "Google China FALLOUT: Google's Exit Angers China"(23 Mai 2010), available at http://www.huffingtonpost.com/2010/03/23/google-china-news-googles_n_509550.html, printed and saved on 11 April 2016.

³⁹³ See non-confidential Annex Q52 to Deutsche Telekom's response to the request for information of 22 July 2014 for details of Google's activities in China (Doc ID 4636).

³⁹⁴ [Google internal communications on commercial relationships and business strategy].

³⁹⁵ Google's response to the complaint by FairSearch, paragraphs 66 and 91 (Doc ID 1584).

³⁹⁶ Jolla's non-confidential response to Question 7.1 of the requests for information of 12 June 2013 to OS developers (Doc ID 3981).

³⁹⁷ Nokia's non-confidential response to Question 5 of the requests for information of 12 June 2013 to OEMs (Doc ID 764).

³⁹⁸ BlackBerry's non-confidential response to Question 7.1 of the requests for information of 12 June 2013 to OEMs (Doc ID 3763).

USA".³⁹⁹

- (410) Fourth, it is unlikely that OEMs active in China would successfully sell devices based on a forked version of Android outside of China.⁴⁰⁰ This is because the OEMs selling in China that have gained a notable market presence outside China are those which sell Google Android devices, and which have entered into AFAs and MADAs covering their devices sold outside of China. Such OEMs include Huawei, Lenovo, ZTE and Xiaomi.⁴⁰¹

- (411) Google does not contest the Commission's conclusions as outlined in this Section.

8.4. Android app stores

- (412) The Commission concludes that the market for Android app stores is worldwide in scope, excluding China.
- (413) First, barriers to entry are low in most of the regions of the world.⁴⁰² SFR, for example, stated: "*appstores are developed, installed and distributed on a global scale, by companies that intend to offer their services on an international basis.*"⁴⁰³ Similarly, Amazon indicated that "[...] outside of China, there are no technological differences, trade barriers or legal barriers that would mean that some providers only compete on a narrower basis."⁴⁰⁴ Aptoide also stated that "*Mobile App Stores operate globally except in markets where there are some restrictions (China).*"⁴⁰⁵ Nokia also stated that "[...] select countries may have trade compliance issues or certain technical and/or business requirements that make it challenging to enter such markets (e.g. China)."⁴⁰⁶
- (414) Second, the fact that there are language differences between different geographic areas does not appear to create obstacles for app store developers. As stated by ZTE, "*Although providers will customize some apps to meet the local requirements, it does not contradict their identity as worldwide operators. Consumers don't care about provider's operation method as long as their requirements are satisfied.*"⁴⁰⁷ In addition, according to Huawei, "*Generally speaking, competition takes place at a worldwide level because this is at that level that most of the apps in the appstore*

³⁹⁹ Deutsche Telekom's non-confidential response to Question 7.1 of the requests for information of 12 June 2013 to MNOs (Doc ID 625). See also HP's non-confidential response to Question 7.1 of the request for information of 12 June 2013 to MNOs (Doc ID 4162).

⁴⁰⁰ See Ruadhan O'Donoghue, "Android forks: why google can rest easy for now" (9 October 2014), available at <https://mobiforge.com/news-comment/android-forks-why-google-can-rest-easy-for-now>, printed and saved on 11 April 2016.

⁴⁰¹ See with regard to the latter Amit, "Differences Between MiUi Global and Chinese Version"(5 January 2016), available at <http://xiaomimarketing.com/differences-between-miui-global-and-chinese-version/>, printed and saved on 11 April 2016.

⁴⁰² See responses to Question 27 of the request for information of 21 October 2015 on app stores.

⁴⁰³ See SFR's non-confidential response to Question 27 of the request for information of 21 October 2015 on app stores (Doc ID 3975).

⁴⁰⁴ See Amazon's non-confidential response to Question 27 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

⁴⁰⁵ See Aptoide's non-confidential response to Question 27 of the request for information of 21 October 2015 on app stores (Doc ID 2396).

⁴⁰⁶ See Nokia's non-confidential response to Question 27 of the request for information of 21 October 2015 on app stores (Doc ID 3991).

⁴⁰⁷ See ZTE's non-confidential response to Question 27 of the request for information of 21 October 2015 on app stores (Doc ID 2840).

*compete. For instance, customers in UK and USA will download the same version of gaming applications, such as Angry Birds. Some of applications like news-related ones may compete at a regional level, but their number is limited."*⁴⁰⁸

- (415) Third, OEMs can sell smart mobile devices with the same app stores pre-installed in most regions of the world. Android manufacturers, for example, sign a MADA which allows them to sell devices with the Play Store on a worldwide basis, with some limited exceptions.⁴⁰⁹
- (416) Fourth, conditions of competition are different in China. This is for the reasons described in recitals (417) to (419).
- (417) In the first place, as noted above, Google's activities in China are limited. For example, most Google apps, including Google Search, Google Maps, YouTube and the Play Store, are not available in China.
- (418) In the second place, a number of other OEMs and MNOs active in China have successfully developed and commercialised their own app store. For example, in November 2015, the top five app stores in China according to Newzoo and TalkinData were: Myapp (market share: 24%), 360 Mobile Assistant (21%), Baidu Mobile Assistant (19%), MIUI app store (13%) and Wandoujia (7%).⁴¹⁰ These app stores are not available outside China, or have built no significant presence there.
- (419) These differences in the competitive landscape in China were confirmed by OEMs, MNOs and competing app store developers (see recital (413)).
- (420) Fifth, it is unlikely that Chinese app stores would be able to expand successfully to other geographic regions. This is because the OEMs that pre-install their own app stores on devices sold in China pre-install the Play Store on all devices sold outside of China. Examples of these OEMs include Huawei, ZTE, Lenovo, Sony and Xiaomi.⁴¹¹ In addition, no Chinese app store developer has managed to achieve a meaningful market presence outside of China, and in particular in the EEA.
- (421) Google does not contest the Commission's conclusions as outlined in this Section.

8.5. General search services

- (422) The Commission concludes that the markets for general search services are national in scope.
- (423) First, even though general search services can be accessed by users anywhere in the world, the main general search services offer localised sites in different countries and in a variety of language versions. For example, Google has national sites for each EEA country and in nearly every official language of the Union. Moreover, the

⁴⁰⁸ See Huawei's non-confidential response to Question 27 of the request for information of 21 October 2015 on app stores (Doc ID 2455).

⁴⁰⁹ See MADA, clause 4.3, and non-confidential Annex Q52 to Deutsche Telekom's response to the request for information of 22 July 2014 (Doc ID 4636).

⁴¹⁰ See "Top 10 android app stores China", available at <http://www.newzoo.com/free/rankings/top-10-android-app-stores-china/>, printed and saved on 11 April 2016.

⁴¹¹ See responses by Huawei, ZTE, Lenovo and Sony to Question 2 of the request for information of 21-29 October 2015 on app stores (Doc IDs 2455, 2840, 3908 and 4121). For Xiaomi, see Amit, "Differences Between MiUi Global and Chinese Version"(5 January 2016), available at <http://xiaomiupdate.com/differences-between-miui-global-and-chinese-version/>, printed and saved on 11 April 2016.

majority of users make use of the site of their own country/language when making searches.⁴¹²

- (424) Second, there are barriers to the extension of search technology beyond national and linguistic borders.⁴¹³ These barriers are one of the reasons why certain smaller general search services in the EEA use their own search technology mainly for websites from their own country and in their own native language, while returning the search results of Google or Bing for their websites in other countries or different languages.⁴¹⁴ Moreover, even for large multinational companies, the costs associated with upsizing search technology to cover sites in other countries and in different languages can be prohibitive.⁴¹⁵

- (425) Google does not contest the Commission's conclusions as outlined in this Section.

8.6. Non OS-specific mobile web browsers

- (426) The Commission concludes that the market for non OS-specific mobile web browsers is worldwide in scope.
- (427) First, the technical framework, functionality and application of mobile web browsers are the same throughout the world.⁴¹⁶ As BlackBerry confirmed: "*Browser competition is global.*"⁴¹⁷
- (428) Second, barriers to entry in terms of import restrictions, transportation costs or technical requirements for mobile web browsers are low.⁴¹⁸
- (429) Third, to the extent there are language-specific demand characteristics, the related costs appear to be insignificant.⁴¹⁹
- (430) Google does not contest the Commission's conclusions as outlined in this Section.

9. DOMINANCE

9.1. Principles

- (431) The purpose of Article 102 TFEU is not to prevent an undertaking from acquiring, on its own merits, a dominant position on a market.⁴²⁰ The dominant position referred to

⁴¹² Annex 2.1 to Google's response to Question 2 of the request for information of 13 July 2010 (Doc IDs 4794 and 4786). Cyprus, Liechtenstein and Luxembourg are the only three countries in the EEA where fewer than 50% of searchers on Google use the Google website of their country.

⁴¹³ Orange's non-confidential response to Question 1 of the request for information of 3 October 2011 (Doc ID 4594). See also Seznam's non-confidential response to Question 2 of the request for information of 3 October 2011 and its updated response of 26 February 2016 (Doc IDs 4076 and 4371).

⁴¹⁴ Orange's non-confidential response to Question 1 of the request for information of 3 October 2011 (Doc ID 4594).

⁴¹⁵ Orange's non-confidential response to Question 1 of the request for information of 3 October 2011 (Doc ID 4594).

⁴¹⁶ See non-confidential responses to Question 7 of the request for information to web browser providers of 19 November 2015.

⁴¹⁷ BlackBerry's non-confidential response to Question 7 of the request for information to web browser providers of 19 November 2015 (Doc ID 2335).

⁴¹⁸ See non-confidential responses to Question 7 of the request for information to web browser providers of 19 November 2015.

⁴¹⁹ See Amazon's non-confidential response to Question 7 of the request for information to web browser providers of 19 November 2015 (Doc ID 3645).

⁴²⁰ Case C-52/09 *Konkurrensverket v TeliaSonera Sverige AB*, EU:C:2011:83, paragraph 24.

in Article 102 TFEU relates to a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of its consumers.⁴²¹

- (432) A finding of dominance does not require that an undertaking has eliminated all opportunity for competition in the market.⁴²² A finding of dominance is also not precluded by the existence of competition on a particular market, provided that an undertaking is able to act without having to take account of such competition in its market strategy and without, for that reason, suffering detrimental effects from such behaviour.⁴²³
- (433) The existence of a dominant position derives in general from a combination of several factors which, taken separately, are not necessarily determinative.⁴²⁴ One important factor is the existence of very large market shares, which are in themselves, save in exceptional circumstances, evidence of the existence of a dominant position.⁴²⁵ That is the case where a company has a market share of 50% or above.⁴²⁶ Likewise, a share of between 70% and 80% is, in itself, a clear indication of the existence of a dominant position in a relevant market.⁴²⁷
- (434) A comparison between the market shares of the undertaking concerned and of its competitors is also an important. For example, an undertaking which holds a very large market share for some time, without smaller competitors being able to meet rapidly the demand from those who would like to break away from that undertaking, is by virtue of that share in a position of strength which makes it an unavoidable trading partner and which, already because of this, secures for it, at the very least during relatively long periods, that freedom of action which is the special feature of a dominant position.⁴²⁸ Similarly, an undertaking that enjoys a market share that is much more important than that of its competitors is a valid indicia of a dominant position.⁴²⁹

⁴²¹ Case 27/76 *United Brands and United Brands Continental v Commission*, EU:C:1978:22, paragraph 65; Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 38; and Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 229.

⁴²² Case 27/76 *United Brands and United Brands Continental v Commission*, EU:C:1978:22, paragraph 113.

⁴²³ Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 70; and Case T-340/03 *France Télécom SA v Commission*, EU:T:2007:22, paragraph 101.

⁴²⁴ Case 27/76 *United Brands and United Brands Continental v Commission*, EU:C:1978:22, paragraph 66.

⁴²⁵ Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 41; and Case T-65/98 *Van den Bergh Foods v Commission*, EU:T:2003:281, paragraph 154.

⁴²⁶ Case C-62/86 *Akzo v Commission*, EU:C:1991:286, paragraph 60; Case T-340/03 *France Télécom SA v Commission*, EU:T:2007:22, paragraph 100; and Case T-336/07 *Telefónica SA v Commission*, EU:T:2012:172, paragraph 150.

⁴²⁷ Case T-30/89 *Hilti v Commission*, EU:T:1991:70, paragraph 92; Joined Cases T-191/98, T-212/98 to T-214/98 *Atlantic Container Line and Others v Commission*, EU:T:2003:245, paragraph 907; Case T-66/01 *Imperial Chemical Industries v Commission*, EU:T:2010:255, paragraph 257; and Case T-336/07 *Telefónica SA v Commission*, EU:T:2012:172, paragraph 150.

⁴²⁸ Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 41; Case T-139/98 *AAMS v Commission*, EU:T:2001:272, paragraph 51; Case T-65/98 *Van den Bergh Foods v Commission*, EU:T:2003:281, paragraph 154; and Case T-336/07 *Telefónica SA v Commission*, EU:T:2012:172, paragraph 149.

⁴²⁹ Case 27/76 *United Brands v Commission*, EU:C:1978:22, paragraph 111; Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 48; Case T-395/94 *Atlantic Container Line and Others*

- (435) While in recent and fast-growing sectors characterised by short innovation cycles, large market shares may sometimes turn out to be ephemeral and not necessarily indicative of a dominant position,⁴³⁰ the fact that an undertaking may enjoy high market shares in a fast-growing market cannot preclude application of the competition rules, in particular Article 102 of the Treaty, especially if a fast-growing market does not show signs of marked instability during the period at issue and, on the contrary, a rather stable hierarchy is established.⁴³¹
- (436) Even the existence of lively competition on a particular market does not rule out the possibility that there is a dominant position on that market, since the predominant feature of such a position is the ability of the undertaking concerned to act without being materially constrained by this competition in its market strategy and without for that reason suffering detrimental effects from such behaviour. Thus, the fact that there may be competition on the market is a relevant factor for the purposes of ascertaining whether a dominant position exists, but it is not in itself a decisive factor in that regard.⁴³²
- (437) The fact that a service is offered free of charge is also a relevant factor to take into account in assessing dominance. Another relevant factor is whether there are technical or economic constraints that might prevent users from switching providers.⁴³³
- (438) Other important factors when assessing dominance is the existence of countervailing buyer power and barriers to entry or expansion, preventing either potential competitors from having access to the market or actual ones from expanding their activities on the market.⁴³⁴ Such barriers may result from a number of factors, including exceptionally large capital investments that competitors would have to match, network externalities that would entail additional cost for attracting new customers, economies of scale from which newcomers to the market cannot derive any immediate benefit and the actual costs of entry incurred in penetrating the market.⁴³⁵ Switching costs are therefore only one possible type of barrier to entry and expansion.

9.2. Application to this case

- (439) For the purpose of this Decision, the Commission concludes that Google holds a

^v *Commission*, EU:T:2002:49, paragraph 341; Joined Cases T-191/98, T-212/98 to T-214/98 *Atlantic Container Line and Others v Commission*, EU:T:2003:245, paragraph 967; Case T-219/99 *British Airways v Commission*, EU:T:2003:343, paragraph 210; Case T-340/03 *France Telecom v Commission*, EU:T:2007:22, paragraph 109; Case T-336/07 *Telefónica v Commission*, EU:T:2012:172, paragraph 163.

⁴³⁰ Case T-79/12 *Cisco Systems, Inc. and Messagenet SpA v European Commission*, EU:T:2013:635, paragraph 69.

⁴³¹ Case T-340/03 *France Telecom v Commission*, EU:T:2007:22, paragraphs 107-108.

⁴³² Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 70; Case T-340/03 *France Télécom v Commission*, EU:T:2007:22, paragraph 101; Case T-336/07 *Telefónica v Commission*, EU:T:2012:172, paragraph 162.

⁴³³ Case T-79/12 *Cisco Systems, Inc. and Messagenet SpA v European Commission*, EU:T:2013:635, paragraph 73.

⁴³⁴ Case 27/76 *United Brands and United Brands Continental v Commission*, EU:C:1978:22, paragraph 122; and Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 48.

⁴³⁵ Case 27/76 *United Brands and United Brands Continental v Commission*, EU:C:1978:22, paragraphs 91 and 122.

dominant position in the following relevant markets since 2011:

- (1) the worldwide market (excluding China) for the licensing of smart mobile OSs;
- (2) the worldwide market (excluding China) for Android app stores; and
- (3) each national market for general search services in the EEA.

9.3. Worldwide market (excluding China) for the licensing of smart mobile OSs

- (440) For the purpose of this Decision, the Commission concludes that Google holds a dominant position in the worldwide market (excluding China) for the licensing of smart mobile OSs since 2011. This conclusion is based on:
- (1) the market shares of Google and competing developers of licensable smart mobile OSs (see Section 9.3.1);
 - (2) the existence of barriers to entry and expansion (see Section 9.3.2);
 - (3) the lack of countervailing buyer power (see Section 9.3.3); and
 - (4) the insufficient indirect constraint from non-licensable smart mobile OSs (see Section 9.3.4).
- (441) Moreover, the Commission's conclusion holds notwithstanding Google's making the source code of Android available for free via the AOSP licence (see Section 9.3.5) and Google's other claims (see Section 9.3.6).

9.3.1. Market shares

- (442) For the purpose of calculating shares in the worldwide market (excluding China) for the licensing of smart mobile OSs, the Commission has attributed to Google the share of all Google Android devices.⁴³⁶ This is because Google: (i) has an important influence on the key steps of the development of Android (see Section 6.2.2.1.I); (ii) controls the licensing of the Android trademarks and brand (see Section 6.3.2); and (iii) controls the implementation of Android on smart mobile devices through the Android compatibility tests (see Section 6.3.1).
- (443) The Commission has, however, not attributed to Google the share of Android devices: (i) running on Android forks developed by third parties regardless of whether these forks pass the Android compatibility tests; and (ii) where the fork

⁴³⁶ Google has not submitted data regarding the number of smart mobile devices sold with the pre-installed mandatory Google apps. However, evidence in the file shows that in the relevant geographic market, which is worldwide excluding China, practically all Google Android devices are sold with GMS. Therefore, the market shares would have been similarly high if solely GMS devices were taken into account. For example, according to Samsung, "*GMS is pre-installed in full on all of [Samsung's] Android-based devices*". See Samsung's non-confidential response to Question 7 of the request for information of 21 October 2015 on app stores (Doc ID 2805). Sony also stated that "*Sony Mobile has only shipped Android Compatible Devices. All devices shipped have had the mandatory GMS applications installed in all countries where GMS is supported.*" See Sony Ericsson's non-confidential response to Question 46 of the request for information of 12 June 2013 to OEMs (Doc ID 4389). Furthermore, LG Electronics indicated that "*Android compatible device without GMS: This category has not existed in our models thus far*". See LG Electronics' non-confidential response to Question 46 of the request for information of 12 June 2013 to OEMs (Doc ID 584). See also HTC's non-confidential response to Question 46 of the request for information of 12 June 2013 to OEMs (Doc ID 3841). Yandex also estimated that the share of Android smartphones sold in Europe with GMS between 2008 and 2015 was close to 100%. See Yandex's non-confidential presentation "Exclusionary Effects of Google's Tying Practices in Contracts with OEMs", slide 24 (Doc ID 4217).

developer willingly decides not to apply for the Android compatibility tests. This is because the development of such forks is not generally subject to the monitoring and control of Google. This is the case, for example, for devices based on Amazon's Fire OS.⁴³⁷

- (444) The Commission has calculated shares in the worldwide market (excluding China) for the licensing of smart mobile OSs by volume and not by value. This is because, as described in Sections 6.1 and recital (514), Google's mobile business model is based on ensuring the widest distribution possible for GMS devices and Google does not earn any royalties from the sale by OEMs of GMS (or Google Android) devices.
- (445) Since 2011, Google has enjoyed strong and stable market shares by volume and there has been no effective entry in any EEA country. This provides a good indication of Google's economic strength in the worldwide market (excluding China) for the licensing of smart mobile OS.
- (446) As shown in Table 3, Google has been the market leader since 2011 (when its volume-based share was 72%) and its share has since increased to 96.4% in 2016.⁴³⁸ As explained by [Google Executive]: "*Android is poised for world domination — the success story of the decade.*"⁴³⁹

Table 3: Worldwide (excluding China) market shares for licensable smart mobile devices OSs (in volume)⁴⁴⁰

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Google Android	0.0%	0.7%	7.2%	38.0%	72.0%	87.4%	91.8%	93.3%	94.2%	96.4%
Firefox OS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%
Linux	12.3%	15.4%	9.0%	4.8%	4.2%	1.8%	0.6%	0.3%	0.1%	0.1%

⁴³⁷ According to Google's internal document submitted in response to the request for information of 11 July 2014, "Meet Android. Android Core Troubleshooting Training" (Doc ID 1348-557), slide 22; an Amazon Kindle Fire device is a non-compatible device. See also Google's Response to the Statement of Objections, Part Three, page 105, paragraph 22 (Doc ID 7117).

⁴³⁸ Even if non-licensable smart mobile device OSs were included in the relevant market, the Commission's finding of Google's economic strength in the worldwide market (excluding China) for licensing of smart mobile OS would not be altered because Google's share would still be significant throughout the period 2011-2016: (i) in 2011, Google's share would have been 45.9%, Apple's share would have been 25.2%; and BlackBerry's share would have been 11.1%; (ii) in 2012, Google's share would have been 59.5%, Apple's share would have been 26.6% and BlackBerry's share would have been 5.2%; (iii) in 2013, Google's share would have been 69.4%, Apple's share would have been 22.1% and BlackBerry's share would have been 2.3%; (iv) in 2014, Google's share would have been 74.9%, Apple's share would have been 19.2% and BlackBerry's share would have been 0.5%; (v) in 2015, Google's share would have been 77.1%, Apple's share would have been 17.9% and BlackBerry's share would have been 0.3% and (vi) in 2016, Google's share would have been 79.3%, Apple's share would have been 17.6% and BlackBerry's share would have been 0.1%. Source: Commission's calculations based on [...] data (Doc ID 7866 and 7867) using sales of smartphones and tablets. For methodology, see footnote 440.

⁴³⁹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1305-47118).

⁴⁴⁰ Source: Commission's calculations based on [...] data (Doc IDs 7866 and 7867) using sales of smartphones and tablets. For the calculation of Google Android market shares, Android forks sales were excluded (namely sales of Fire OS - Amazon.com sales -, Flyme, Nokya X and Yun). The tablet sales classified as "Windows&Android" were divided equally between the two mobile OS. This methodology was applied in all the calculations in this Decision using Google's Android number of devices worldwide (excluding China), in China and in the EEA.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Maemo/MeeGo	0.0%	0.0%	0.1%	0.4%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
Palm OS	2.2%	2.6%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Sailfish OS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Symbian	73.0%	63.5%	67.2%	48.6%	18.9%	4.3%	0.4%	0.3%	0.2%	0.1%
Tizen	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%
webOS	0.0%	0.0%	1.6%	1.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Windows	12.5%	17.8%	14.4%	7.1%	2.8%	4.0%	5.7%	5.0%	4.5%	1.9%
Fire OS ⁴⁴¹	0.0%	0.0%	0.0%	0.0%	1.6%	2.4%	1.5%	0.4%	0.6%	1.3%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%

- (447) Google's volume based market shares would not be very different (and most of the times would even be higher) if China were included in the worldwide market for the licensing of smart mobile OSs. This is because OEMs that sell both inside and outside of China such as Huawei, Lenovo, Xiaomi and ZTE have entered into AFAs that cover Android devices, and are enforced, in relation to devices sold within China.⁴⁴² The share of supply of Android devices for these OEMs in China, which represent the large majority of devices sold in China, would therefore have to be attributed to Google.⁴⁴³
- (448) Google Android also enjoys the largest installed base of licensable smart mobile OSs. In 2014 there were 1.6 billion Google Android smartphones in the world, compared with 46 million Windows Mobile smartphones.⁴⁴⁴ In addition, as evidenced by Figure 8, in July 2016 there were 2.156 billion Google Android smartphones in the world, compared with 24 million Windows Mobile smartphones.

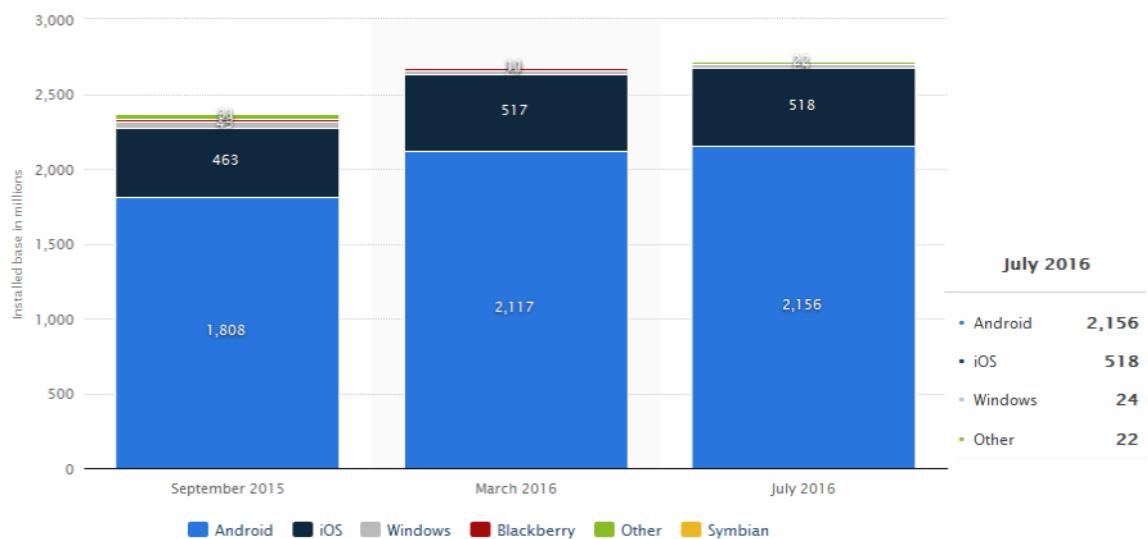
⁴⁴¹ The Commission has also included the market shares of Amazon in the worldwide market (excluding China) for the licensing of smart mobile OSs even though Amazon does not currently license its Fire OS. This is because at least in 2012 and 2013 Amazon sought to license its Fire OS to a number of OEMs (see Section 12.6.3.3).

⁴⁴² See the examples of Acer, Huawei, K-Touch and Lenovo mentioned in Section 9.3.4.

⁴⁴³ Google's shares in China were: (i) 65.6% in 2011, (ii) 91.5% in 2012; (iii) 96.8% in 2013; (iv) 97.3% in 2014; (v) 94.9% in 2015 and (vi) 94.3% in 2016. Source: Commission's calculations based on [...] data (Doc IDs 7866 and 7867).

⁴⁴⁴ See "Installed base of smartphones by operating system in 2015 (in million units), available at <http://www.statista.com/statistics/385001/smartphone-worldwide-installed-base-operating-systems/>, printed and saved on 11 April 2016.

Figure 8: Smartphone OS worldwide by installed base in 2015-2016 (in millions)⁴⁴⁵



- (449) Google Android has been therefore by far the leading OS since 2011 in terms of market shares in the worldwide (excluding China) market for licensable smart mobile devices OSs and the alternative OS included in the relevant market do not exercise a significant constraint on Google Android.
- (450) The Commission's conclusion that since 2011, Google has enjoyed strong and stable market shares by volume and there has been no effective entry in any EEA country is not affected by Google's claims that those market shares:
 - (1) incorrectly exclude Apple;
 - (2) should not attribute to Google, market shares relating to Android devices that it does not manufacture⁴⁴⁶ as Android implementations by OEMs/MNOs are not controlled by Google; and
 - (3) should not be based on volume but value of either of the Google Android devices sold by OEMs, advertising revenues made on Google Android or app revenues derived from Google Android.⁴⁴⁷
- (451) First, the Commission has properly excluded Apple from the market share calculations as iOS is not part of the relevant market for licensable smart mobile OSs (see Section 7.3.5). In any event, as discussed in footnote 438, even if non-licensable smart mobile device OSs were included in the relevant market, the Commission's finding of Google's economic strength in the worldwide market (excluding China) for licensing of smart mobile OS would not be altered.
- (452) Second, the Commission has properly attributed to Google, market shares relating to Google Android devices built by OEMs and commercialised by OEMs and MNOs. This is because Google: (i) has an important influence on the key steps of the

⁴⁴⁵ See "Installed base of smartphones by operating system from 2015 to 2016 (in million units)", available at <https://www.statista.com/statistics/385001/smartphone-worldwide-installed-base-operating-systems/>, printed and saved on 13 June 2017.

⁴⁴⁶ An example of a device manufactured by Google is the Pixel phone, see <https://madeby.google.com/phone/>, printed and saved on 13 June 2017.

⁴⁴⁷ Google's Response to the Statement of Objections, Part Two, pages 59-63, paragraphs 47-57 (Doc ID 7117); Google's Response to the First Letter of Facts, Part One, pages 20-21 (Doc ID 8598).

development of Android (see section 6.2.2.1.I), (ii) controls the licensing of the Android trademarks and brand (see Section 6.3.2) and (iii) controls the implementation of Android on smart mobile devices through the Android compatibility tests (see Section 6.3.1).

- (453) Third, market shares based on the value of Google Android devices sold by OEMs do not provide a good indication of Google's economic strength in the worldwide market (excluding China) for the licensing of smart mobile OS.⁴⁴⁸ This is for the reasons set out in recitals (454) and (455).
- (454) In the first place, Google does not derive any revenue from the sale of a Google Android device by a third party OEM and MNOs are free to set their pricing policy independently from Google.
- (455) In the second place, Google has no interest in OEMs and MNOs increasing the price of their devices. If anything, Google would have an interest in OEMs and MNOs maintaining or lowering the price of their devices in order to increase the distribution of Android and its profit-generating services (see as described in Sections 6.1 and 9.3.4, Google's mobile business model is based on ensuring the widest possible distribution for GMS devices).
- (456) Fourth, market shares calculated by value of advertising revenues do not provide a good indication of Google's economic strength in the worldwide market (excluding China) for the licensing of smart mobile OS.
- (457) In the first place, advertising revenues made on the Android platform provide only a limited insight into Google's economic strength because these revenues are only one of the ways that Google monetises its economic strength relating to Android.
- (458) For example, Google obtains substantial amounts of data on consumer behaviour and device use from Google Android devices, its proprietary applications and APIs for Android.⁴⁴⁹ Google itself states that "*Google Services collect user data, which are used to provide the Services, to improve the Services and to help show ads that users are more likely to find useful.*"⁴⁵⁰ These data can be valuable for Google, even in the absence of direct monetisation through advertising. For example, Amazon stated: "*The behavioural information Google collects via Google Android, the Google APIs, the GMS suite, and other Google services tied to Android would provide tremendous value in improving Google's internet search, online advertising, and other businesses.*"⁴⁵¹ In addition, Oracle stated: "*In addition to allowing Google to maintain and deepen its dominance in online advertising, its data collection has allowed Google to entrench its dominance in search. As the EC is well aware, the advantage conferred to Google by its scale in data – combined with the anti-*

⁴⁴⁸ In any event, the shares of Google by value were not substantially different from those by volume. On the basis of [...] data (Doc IDs 7866 and 7867), Google's share by value in 2016 was 94.8% while the share of Windows was 4.5%. The value share of Google has been constantly increasing since 2011 when it was 77.8% (for methodology, see footnote 440). The value based market shares have been calculated by the Commission on the basis of [...] data on average selling price of the mobile devices per OS.

⁴⁴⁹ Google's response to Question 25 of the request for information of 24 March 2017 (Doc ID 7790). See also footnote 75.

⁴⁵⁰ See Google's response to Question 25 of the request for information of 24 March 2017 (Doc ID 7790).
⁴⁵¹ See Amazon's non-confidential response to Question 5 of the request for information of 9 March 2017 (Doc ID 8247).

*competitive conduct Google employs to protect its position – has raised insurmountable barriers to entry in the markets for general search and in particular specialized search services. [...] In addition to giving Google an advantage in search and online advertising, the data Google collects gives it an advantage in optimizing its mobile (and PC) services such as YouTube and Maps, as well as in predictive technologies such as Google Now. For example, one way Google can gain competitive insight into user behaviour is to understand which apps are installed, or removed, by users on its platform.*⁴⁵²

- (459) In the second place, and in any event, the advertising revenue estimates provided by Google whereby it attributes to Google and Apple the revenues made by advertisers on Google Android and iOS respectively do not provide a proper indication of Google's economic strength in the worldwide market (excluding China) for the licensing of smart mobile OS. This is because (i) advertisers (and not smart mobile OS developers) earn these revenues; and (ii) Google fails to take into account the fact that a large proportion of advertising revenues made on iOS devices (as well as on Google Android devices) are earned by Google through Google Search and other services.⁴⁵³
- (460) Fifth, market shares calculated by value of app sales do not provide a good indication of Google's economic strength in the worldwide market (excluding China) for the licensing of smart mobile OS. This is because those shares would relate to the Play Store revenues and, if anything, would provide an indication of Google's economic strength at the level of Android app stores, not at the level of licensable smart mobile OSs.

9.3.2. *Barriers to entry and expansion*

- (461) The worldwide market (excluding China) for the licensing of smart mobile OSs is characterised by the existence of a number of barriers to entry and expansion.
- (462) First, developing a smart mobile OS is a costly and time-consuming process. Costs result both from the initial investment in research and development to bring a smart mobile OS to the market and the need to finance the ongoing development of the OS, its new features and releases.
- (463) This has been confirmed by OS developers and by OEMs:
- (1) BlackBerry "has historically made billions of dollars in ongoing investments to develop the BlackBerry OS and BlackBerry 10 mobile OSs. These investments include thousands of employees and manhours."⁴⁵⁴
 - (2) Jolla noted with respect to MeeGo "... Nokia and Intel cumulatively invested hundreds of millions euros and thousands of man working years in the

⁴⁵² See Oracle's non-confidential response to Question 1 of the request for information of 24 March 2017 (Doc ID 7835).

⁴⁵³ While Google stated that it is unable to allocate how much of the revenues on iOS would need to be attributed to Google (Google's response to Question 21 of the request for information of 24 March 2017, Doc ID 7790), this amount is likely to be substantial. Until 2016, iOS was [sources of Google Search revenues]. In 2016, [sources of Google Search revenues], Google still generated more than EUR [...] in advertising revenues on iOS (see Google's response to Question 3 of the request for information of 24 March 2017, Doc ID 7955).

⁴⁵⁴ BlackBerry's non-confidential response to Question 9.3 of the request for information of 12 June 2013 to OEMs (Doc ID 3763).

*development of Linux-based next generation mobile OS until mid-2011."*⁴⁵⁵

- (3) Microsoft has spent "[millions of dollars] on R&D to develop the Windows client and RT operating systems. Development time varies between versions and is usually between one and three years. Total development costs for the modern Windows Phone platform through the end of June 2013 are approximately [in the millions of dollars]. These costs cover [a range of expenditures]. Windows Phone 7, Microsoft's first release of its modern smartphone OS, took more than [0-4] years to develop."⁴⁵⁶
 - (4) According to Apple, Google cross-subsidised the development of Android with revenues from mobile advertising, mobile apps and in-app purchases in the Play Store.⁴⁵⁷
- (464) Second, the worldwide market for the licensing of smart mobile device OSs is characterised by network effects. Such network effects arise because, when deciding which licensable smart mobile OS to develop for, app developers consider the revenue potential of that OS⁴⁵⁸ and since they "*earn their profits mainly by app downloads, mobile OSs with a large user base are considered more attractive by app developers.*"⁴⁵⁹
- (465) Google's market share and the installed base of Android (see Section 9.3.1) create strong incentives for developers of apps for licensable smart mobile OSs to concentrate their development efforts on Android⁴⁶⁰ and not develop apps for other licensable smart mobile OSs ("multi-home").⁴⁶¹ This is for three main reasons.
- (466) In the first place, most app developers have limited resources.⁴⁶²
 - (467) In the second place, the conversion of apps from one licensable smart mobile OS to another ("porting") is costly and time-consuming.⁴⁶³ Only few developers would be

⁴⁵⁵ Jolla's non-confidential response to Question 19.1 of the request for information of 12 June 2013 to OS providers (Doc ID 3981).

⁴⁵⁶ Microsoft's non-confidential response to Question 19.1 of the request for information of 12 June 2013 to OS providers (Doc ID 3794).

⁴⁵⁷ Apple's non-confidential response to Question 7 of the request for information of 12 June 2013 to OS providers (Doc ID 749).

⁴⁵⁸ Non-confidential responses to Question 17 of the request for information of 21 October 2015 on app stores.

⁴⁵⁹ ZTE's non-confidential response to Question 17 of the request for information of 21 October 2015 on app stores (Doc ID 2840).

⁴⁶⁰ Responses to Question 18 of the request for information of 21 October 2015 on app stores.

⁴⁶¹ See Economic Reports submitted by Google on 21 May 2014 (Doc ID 854).

⁴⁶² See Nokia's non-confidential response to Question 17 of the request for information on app stores of 21 October 2015 (Doc ID 3991): "*application developers usually have limited resources and thus a need to prioritize the leading platforms with larger user audiences*".

⁴⁶³ See DailyMotion's non-confidential response to Question 5 of request for information 29 June 2015 to app developers (Doc ID 2003), which states: "*Converting an application to iOS or Windows phone is a completely different process and will require a full rewrite of [the] application. Most of the time, the application will look and behave differently so we cannot really say that it is possible to convert an Android application to iOS or windows phone.*", Yahoo's non-confidential response to Question 5 of request for information 12 June 2015 to app developers (Doc ID 2079), which states: "*Converting an application for another operating system, on the other hand, requires rewriting the vast majority of the code from scratch, thus requiring more resources, costs, and time*" and Amazon's non-confidential response to Question 5 of request for information 12 June 2015 to app developers (Doc ID 4188), which states: "*If an app is written directly in native code, the effort required to convert an app from Android to*

ready to add a third platform to their portfolio, besides Android and iOS (see Section 9.3.4.2.IV), as emphasised by the difficulties of Microsoft to attract developers.⁴⁶⁴

- (468) In the third place, no other licensable smart mobile OS has the same reach as Android.⁴⁶⁵ For example, in November 2015, there were 1.8 million apps available on the Play Store, the main app store on Google Android devices, compared to 700 000 on Windows in September 2015⁴⁶⁶ and 400 000 on Fire OS in September 2015⁴⁶⁷.
- (469) The existence of network effects in smart mobile OSs and the barriers to entry resulting from them has been confirmed by OS developers, OEMs, app store developers, other app developers, Google's internal documents and a study by an independent consultant:
- (1) Regarding OS developers, Canonical noted that "*there is not yet an OS which can sufficiently compel manufacturers to create devices with an alternative OS. Microsoft is an organisation that is comparable to Google in size and importance, but the Windows mobile OS has consistently failed to compete with Android because it is not able to create a cost efficient manufacturing process, nor is it a scalable OS which will allow manufacturers to create different devices across different retail price points.*"⁴⁶⁸
 - (2) Regarding OEMs:⁴⁶⁹
 - 2.1 Sony stated that "*[t]he main reason for consumer uptake is the availability of apps on each platform and the maturity of the platform. In Android's case the vast number of devices and span of price points [contribute] to the uptake*".⁴⁷⁰
 - 2.2 According to Lenovo, "*[a]ny new mobile OS would need to reach a certain critical mass of apps in its primary apps store to be appealing to*

an operating system like iOS is high because the developer will need to repeat the development process for each operating system – recode the app, integrate with the services available on that operating system and perform testing."

⁴⁶⁴ According to Hutchison 3G: "Windows OS has a lower priority due to the low market share in the mobile world" - Hutchison 3G's non-confidential response to Question 18 of request for information of 21 October 2015 on app stores (Doc ID 2383).

⁴⁶⁵ According to a survey conducted by Vision Mobile in the third quarter of 2015, "Android's reach is too large to ignore. (...) Android remains by far the most popular platform overall, targeted by 71% of all mobile developers with 28% only using Android". – Vision Mobile, State of the Developer Nation Q3 2015, p. 19 (Doc ID 2746).

⁴⁶⁶ See Liam Tung, "Microsoft by the numbers 2015: 700k Windows Store Apps, 1.2 bn Office users"(30 September 2015), available at <http://www.zdnet.com/article/microsoft-by-the-numbers-2015-700k-windows-store-apps-1-2bn-office-users/>, printed and saved on 11 April 2016.

⁴⁶⁷ Amazon's non-confidential response to Question 4 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

⁴⁶⁸ Canonical's non-confidential response to Question 8.1 of the request for information of 12 June 2013 to OS providers (Doc ID 268).

⁴⁶⁹ The majority of OEMs consider that no other smart licensable mobile OS can provide features or characteristics equivalent to the Android OS – Non-confidential responses to Question 8.2 of the request for information of 12 June 2013 to OS providers.

⁴⁷⁰ Sony Mobile Communications' non-confidential response to Question 7 of the request for information of 12 June 2013 to OEMs (Doc ID 4389).

developers/customers which is why it will be difficult for newcomers to enter at this point."⁴⁷¹

2.3 According to Acer Inc. ("Acer"), "*The Android OS is important for our smart mobile device business because it is a very popular, reliable and attractive OS for mobile devices that has been very successful in attracting end-users to Android-based devices. This has been in large part due to the steadily growing availability of quality applications, often for free*".⁴⁷²

2.4 According to Huawei, "*Developers pay a lot of attention to the ability and efficiency of the mobile OS in producing revenues for their applications.*"⁴⁷³

- (3) Regarding app store developers, according to Aptoide, "*Google Android has become the de facto standard in this market and manufacturers or carriers face considerable barriers to using other operating systems. They would have not only to build their own software (which may not be difficult if they fork the Android source code) but then convince application developers to build software for their new system (which would require developers to rebuild their software and duplicate software maintenance and support tasks). In consequence, the current market situation is that Google's Android is the dominant product in this market, having no significant pressure from competitors.*"⁴⁷⁴
- (4) Regarding other app developers, WP Technology, Inc. ("Wattpad") stated: "*iOS and Android OS both have mass adoption, for our application type is crucial to support these platforms.*"⁴⁷⁵ According to Skyhook Wireless ("Skyhook"), "*[i]t is critical to develop client software that will operate on mobile OSs with a large market share, such as the Android OS.*"⁴⁷⁶
- (5) [Google Executive], acknowledged the existence of indirect network effects: "*for every app written for Android, the value of the platform (and in turn the value to consumers who adopt phones based on the platform) increases. As more developers build great apps for Android, more consumers are likely to buy Android phones because of the availability of great software content (Angry Birds, anyone?). As more delighted consumers adopt Android phones, it creates a larger audience for app developers to sell more apps.*"⁴⁷⁷ [Google Executive] also said: "*Android now supports a hardware and services ecosystem worth over [...] a year. Our apps and ads services have made this possible and work to protect our position. [...] These services inherently rely on*

⁴⁷¹ Lenovo's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 4095).

⁴⁷² Acer's non-confidential response to Question 8 of the request for information of 12 June 2013 to OEMs (Doc ID 507).

⁴⁷³ See Huawei's non-confidential response to Question 17 of the request for information to app store developers of 21 October 2015 (Doc ID 2455).

⁴⁷⁴ Non-confidential version of the complaint by Aptoide of 16 June 2014 (Doc ID 874), page 5.

⁴⁷⁵ Wattpad's non-confidential response to Question 27.1 of the request for information of 12 June 2013 to app developers (Doc ID 537).

⁴⁷⁶ Skyhook's non-confidential response to Question 27.1 of the request for information of 12 June 2013 to app developers (Doc ID 542).

⁴⁷⁷ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1752-532).

scale to succeed – no one partner can easily fragment and replicate the complete platform".⁴⁷⁸

- (6) The study by the independent consultancy Vision Mobile noted that indirect network effects create "*black oceans*" which make competition with Android "*impossible*".

Figure 9: Vision Mobile – Assessment of mobile app ecosystem competition⁴⁷⁹

MOBILE APP ECOSYSTEMS CREATE BLACK OCEANS



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Inspired by "Blue Ocean Strategy" (2005) by W. Chan Kim and Renée Mauborgne (INSEAD)

Copyright VisionMobile 2014



- (470) Third, OEMs wishing to switch to other licensable smart mobile OSs face switching costs. This is because implementing a smart mobile OS requires lead time and investment from an OEM. For example, Sony has estimated that the initial development cost "*to implement the Android OS on our devices was approximately 50 million Euro, with lead time of 1.5-2 years*".⁴⁸⁰ OEMs also invest more in developing Android devices than devices operating on any other licensable smart mobile OS.⁴⁸¹
- (471) Fourth, the incentives of OEMs to switch to other licensable smart mobile OS providers are further reduced by the fact that users of Android devices face significant costs when switching to another smart mobile OS and exhibit loyalty to their smart mobile OS.⁴⁸²

⁴⁷⁸ Google's internal document submitted in response to the request for information of 19 December 2014, Presentation by [Google Executive], 8 October 2010, slide 4, Doc ID 1790-397.

⁴⁷⁹ Vision Mobile "Mobile Megatrends 2014", 25 July 2014, slide 28 (Doc ID 2745).

⁴⁸⁰ Sony's non-confidential response to Question 10.1 of the request for information of 12 June 2013 to OEMs (Doc ID 4389).

⁴⁸¹ Amazon's non-confidential response to Question 8 of the request for information of 12 June 2013 to OS providers (Doc ID 4187).

⁴⁸² See in more detail recitals (522) to (551).

(472) Fifth, no alternative provider of licensable smart mobile OSs has been able to enter and expand successfully in the worldwide market (excluding China) for the licensing of smart mobile OSs. The share of the second most important player in this market – Microsoft - dropped below 2% in 2016. Microsoft exited the market shortly afterwards (see recital (399)). Other providers including Firefox OS, Tizen or Sailfish have also been unable to gain more than 0.2% market share since their entry in 2012, 2015 and 2013 respectively.

(473) Except for the elements discussed in Section 9.3.5 and 9.3.6, Google does not contest these findings.

9.3.3. *Lack of countervailing buyer power*

(474) The Commission concludes that OEMs have insufficient countervailing bargaining power.

(475) First, whereas Google accounts for almost the totality of the sales of smart mobile device outside China of the largest OEMs that pre-install Google Android,⁴⁸³ most of these OEMs individually account for only a relatively small proportion of sales of Google Android outside China.⁴⁸⁴

(476) Second, the barriers to entry and expansion mean that a threat by the OEMs to promote entry of a supplier of an alternative OS that could be a credible competitive threat to Google, would not be realistic. Such entry or expansion in order to be successful would require significant investments to overcome these barriers and it is unlikely that OEMs would commit to such investments.

(477) Third, lack of countervailing buyer power is evidenced by the limited negotiations that appear to take place in relation to recent AFAs, which are now "*signed online*"⁴⁸⁵, with Google's partners needing only to provide the contact details of the representative signing the AFA on their behalf and click the relevant box in the on-line form to accept the terms of the agreement.⁴⁸⁶ This suggests that Google's partners can choose only if they agree to enter into an AFA and are unable to influence any of its terms and conditions.

(478) Except for the elements discussed in Section 9.3.4, Google does not contest these findings.

9.3.4. *Non-licensable smart mobile OSs*

(479) The Commission concludes that non-licensable smart mobile OSs, such as iOS and BlackBerry OS,⁴⁸⁷ exercise an insufficient indirect constraint on Google's dominant position in the worldwide (excluding China) market for licensable smart mobile OSs.

⁴⁸³ For example, in 2015, Google Android accounted for approximately 99% of the sales outside China of the five largest Android OEMs (Samsung, Huawei, LG Electronics, Sony and ZTE). Source: [...] data (Doc IDs 3098, 4632, 4633 and 4710).

⁴⁸⁴ Apart from Samsung, which accounted in 2015 for approximately 36% of the sales of Google Android devices out of China, all other OEMs account for a percentage that is below 10% (Huawei for 5%; LG Electronics for 6%; Sony for 3%; and ZTE for 3%). Source: [...] data (Doc IDs 3098, 4632, 4633 and 4710).

⁴⁸⁵ See Huawei's response to the request for information of 11 January 2016 (Doc ID 3493).

⁴⁸⁶ See [AFA signatory]'s AFA of 2015 [...].

⁴⁸⁷ iOS and BlackBerry OS are the only non-licensable smart mobile OSs to have been installed on a non-negligible number of smart mobile devices between 1 January 2011 and the date of adoption of this Decision.

(480) First, users obtain smart mobile OSs as part of a wider bundle with a smart mobile device and take into account a range of factors other than the smart mobile OS when purchasing a smart mobile device (Section 9.3.4.1).

(481) Second, iOS exercises an insufficient indirect constraint on Google's dominant position in the worldwide (excluding China) market for licensable smart mobile OSs (Section 9.3.4.2).

(482) Third, BlackBerry OS exercises an insufficient indirect constraint on Google's dominant position in the worldwide (excluding China) market for licensable smart mobile OSs (Section 9.3.4.3).

9.3.4.1. Users obtain smart mobile OSs as part of a wider bundle with a smart mobile device and take into account a range of factors other than the smart mobile OS when purchasing a smart mobile device

(483) Users obtain smart mobile OSs as part of a wider bundle with a smart mobile device and take into account a range of factors other than the smart mobile OS when purchasing such a device. These factors include, for example, price of the device, battery life, quality of the device screen, quality of the camera, design of the device, and data storage available on the device. As such, it is unlikely that users would change their purchase behaviour and switch to devices based on non-licensable smart mobile OSs in the event of a small but significant, non-transitory deterioration of the quality of Google Android.⁴⁸⁸ This has been confirmed by OEMs and MNOs:

(1) According to Nokia: "[...] *the operating system is only one relevant factor among many that affect the customer choice (other factors include, inter alia, the overall price of the product, available third-party applications, various hardware elements like screen, camera, radio, available utility software on the product, available services, available operator subsidies, brand, form and style factors.)*"⁴⁸⁹

(2) According to Microsoft: "*Customers base their purchasing decisions on many factors, including but not limited to operating system features, apps and services, hardware quality and characteristics, reputation, third-party application availability, and price. Every customer is unique, and ranks these factors, or others, differently. Mobile carriers also play a substantial role in driving customer demand and purchasing decisions for smartphones at the point of sale.*"⁴⁹⁰

(3) According to Samsung: "*In general, consumers consider a number of different factors including device information as exemplified above, as well as the manufacturer's brand image:[...].*"⁴⁹¹

⁴⁸⁸ The Commission considered user switching behaviour in the event of a small but significant, non-transitory deterioration of the quality of Google Android because Google is unlikely to increase the price of Google Android, given that its business model is based on OEMs accessing Google Android on the basis of a royalty-free licence.

⁴⁸⁹ See Nokia's non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 764).

⁴⁹⁰ See Microsoft's non-confidential response to Question 17.1 of the request for information of 12 June 2013 to OEMs (Doc ID 377).

⁴⁹¹ See Samsung's non-confidential response to Question 17.1 of the request for information of 12 June 2013 to OEMs (Doc ID 4117).

- (4) According to HTC: "*In UK & Germany, OS is 7th most important factor in purchasing decision.*"⁴⁹²
 - (5) According to Eircom Limited ("Eircom"), "[...] *a customer's purchasing decision is based mainly on the hardware as opposed to the mobile OS or mobile services available.*"⁴⁹³
- (484) This has also been confirmed by consumer surveys. For example, Nielsen data from an international survey conducted in 2012 indicate that for users in Italy and the United Kingdom, having a "good operating system" is only one factor among other criteria such as "stylish design" and "ease of use."⁴⁹⁴ Furthermore, a 2013 report by Accenture confirms that users are equally or more likely to mention a long range of other factors than the "Operating System" as an important feature when determining which smartphone to purchase, including price, security, screen resolution, screen size, design – look/feel and touchscreen.⁴⁹⁵
- (485) The Commission's conclusion that users take into account a range of factors other than the smart mobile OS when purchasing a smart mobile device is not affected by Google's claim that respondents to the requests for information, the Commission's past decisions and the evidence on file indicates that the smart mobile OS is an important factor, if not the most important factor, in user purchasing decisions.⁴⁹⁶
- (486) First, contrary to what Google claims, the Commission does not conclude that a smart mobile OS is an unimportant component of user purchasing decisions. Rather, the Commission concludes that a smart mobile OS is one important factor in the success of a smart mobile device but that other features are also important, if not more important (see recitals (483) and (484)).⁴⁹⁷
- (487) Second, users of Google Android devices are not sensitive to variations in the quality of their smart mobile OS and would not change their device purchasing behaviour in the event of a small but significant, non-transitory deterioration of the quality of Google Android.
- (488) In the first place, while Google claims that, since 2011, it has been "*relentlessly*" releasing new Android versions,⁴⁹⁸ it also recognises that OEMs have consistently failed to deliver punctual updates of the Google Android OS to users.⁴⁹⁹ This is also

⁴⁹² See HTC's non-confidential response to Question 17.1 of the request for information of 12 June 2013 to OEMs (Doc ID 3841).

⁴⁹³ See Eircom's non-confidential response to Question 14.1 of the request for information of 12 June 2013 to MNOs (Doc ID 437).

⁴⁹⁴ Hammerhead Market Research, "Nexus", May 2013, slide 19, (Doc ID 1372-1450).

⁴⁹⁵ See "Accenture Consumer Electronics Products and Services Usage Report", available at https://www.accenture.com/be-en/~/media/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Technology_6/Accenture-Consumer-Electronics-Products-and-Services-Usage-Report.pdf, printed and saved on 18 April 2016.

⁴⁹⁶ Google's Response to the Statement of Objections, Part Two, page 50, paragraphs 28-33 (Doc ID 7117); Google's Response to the First Letter of Facts, Part One, page 10, paragraphs 26-29 (Doc ID 8598).

⁴⁹⁷ See also Commission decision in Case M.6381 – Google / Motorola Mobility, paragraph 83; and in Case M.7047 – Microsoft / Nokia, paragraph 104.

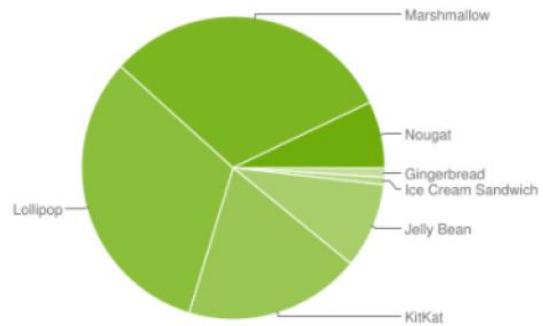
⁴⁹⁸ Google's Response to the First Letter of Facts, Part One, page 12, paragraph 29 (Doc ID 8598).

⁴⁹⁹ Google Android OEMs need to adapt OS updates to the specific version of Google Android that is installed on their Google Android devices. As such, OS updates need to be released by individual OEMs after Google releases the code. See for example Google's Response to the Statement of Objections, Part Three, page 123, paragraphs 79 and following (Doc ID 7117).

confirmed by Figure 10 according to which a significant proportion of Google Android users do not use devices running the latest version of the Google Android OS. As of May 2017, only 7.1% of Google Android devices were operating on the latest version of Google Android ("Nougat") that had been released already in October 2016 while more than half were operating on the third newest or older OS.⁵⁰⁰ In spite of OEMs consistently failing to deliver punctual updates of the Google Android OS to users, during the period 2011-2016, as shown in Table 3, Google Android's share of devices has consistently increased.

Figure 10: Breakdown of Google Android devices by releases of OS as of May 2017⁵⁰¹

Version	Codename	API	Distribution
2.3.3 - 2.3.7	Gingerbread	10	1.0%
4.0.3 - 4.0.4	Ice Cream Sandwich	15	0.8%
4.1.x	Jelly Bean	16	3.2%
4.2.x		17	4.6%
4.3		18	1.3%
4.4	KitKat	19	18.8%
5.0	Lollipop	21	8.7%
5.1		22	23.3%
6.0	Marshmallow	23	31.2%
7.0	Nougat	24	6.6%
7.1		25	0.5%

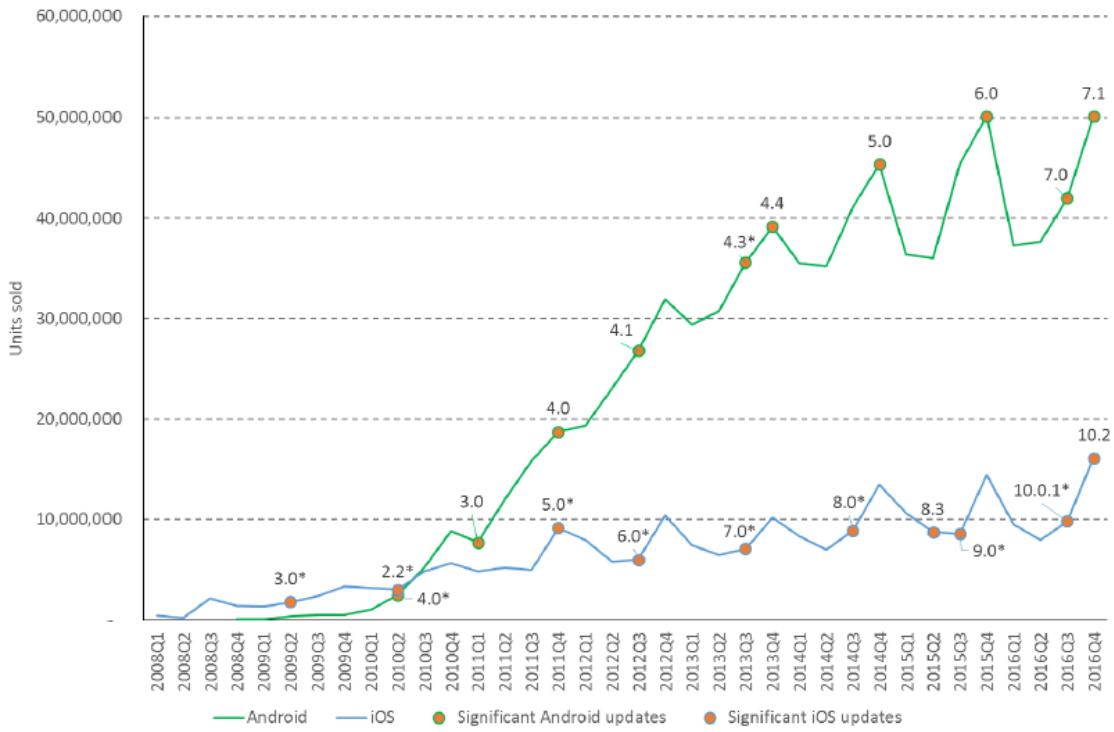


- (489) In the second place, according to a study submitted by Yandex, handset sales do not appear to be related to Google Android updates. In fact, as shown by Figure 11, there is a general upward trajectory of sales of Google Android devices with no evidence that this trend accelerates when a new Google Android OS update is launched or decelerates when a new iOS update is launched.

⁵⁰⁰ These findings are also confirmed by the graph included in Google's Response to the First Letter of Facts, Part One, page 12, paragraph 29 (Doc ID 8598).

⁵⁰¹ See Figure of "Further evidence on the competitive interaction between licensable and non-licensable OS", CRA study on behalf of Yandex submitted on 16 June 2017 (Doc ID 8031) extracted from <https://developer.android.com/about/dashboards/index.html>. The dates of the major releases of Android were as follows: Nougat 2016, Marshmallow 2015, Lollipop 2014, Kitkat 2013, Jelly Bean 2012, Ice Cream Sandwich 2011 and Gingerbread 2010.

Figure 11: Units sold of Android and iOS phones in Europe, and significant Android and iOS updates⁵⁰²



- (490) Third, contrary to what Google claims,⁵⁰³ Figure 11 does not confirm that the release of an update by Google drives Google Android device sales. This is because, as Google concedes, users cannot immediately benefit from an Android release ("the average time for OEMs and carriers to deliver Android updates ranges from [...] months to [...] months; and some OEMs/ carriers never update their devices").⁵⁰⁴ As such, the fact that as of 2013 sales of devices peaked each year in Q4 is because of other factors than yearly Android releases, such as seasonality.
- (491) Moreover, contrary to what Google claims, Figure 11 does not confirm the "innovation race" between Google and Apple. Any comparison based only on release dates of OS updates is not meaningful given that updates on Google Android devices take much more time to reach user devices than iOS updates.⁵⁰⁵

⁵⁰² An Android or iOS update was deemed to be significant and therefore worth being included in the graph if it fell in the top ten, in terms of the number of features added to the OS. Data labels corresponding to a significant Android or iOS updates have an asterisk besides them if they coincided with the introduction of a new model of the Samsung Galaxy S or iPhone respectively (this analysis focused on releases of the Samsung Galaxy S, as Samsung enjoyed the greatest market share among producers of Android phones over the period in question, and Galaxy S is its flagship series). Source: "Further evidence on the competitive interaction between licensable and non-licensable OS", CRA study on behalf of Yandex submitted on 16 June 2017 (Doc ID 8031).

⁵⁰³ Google's Response to the First Letter of Facts, Part One, page 12, paragraph 29 (Doc ID 8598)

⁵⁰⁴ Google's Response to the Statement of Objections, Part Three, page 123, paragraphs 79 and following (Doc ID 7117). See also Google's Response to the First Letter of Facts, Part One, page 12, paragraph 28 (Doc ID 8598) and Figure 10, as well as Google's chart "*Proportion of Android versions installed on devices over time*", which shows that [timing of adoption of Android versions].

⁵⁰⁵ Google's Response to the Statement of Objections, Part Three, page 126, footnote 472 (Doc ID 7117);

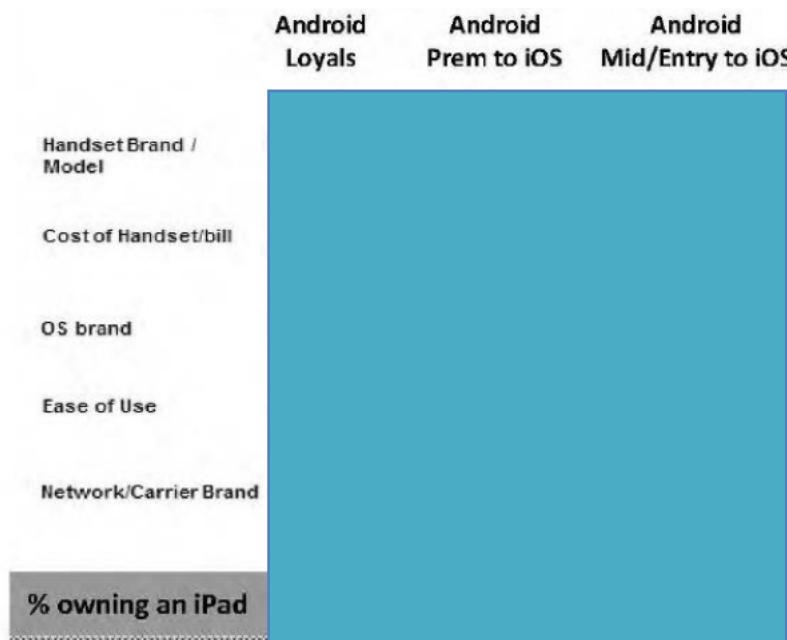
- (492) Fourth, a survey submitted by Yandex (the "Yandex Survey")⁵⁰⁶ indicates that Google Android users are not sensitive to quality variations in Google Android as 59% of Android users do not know which version of Android their devices are running. When asked to identify recently-added features in the Android OS their phone was running, only 37% indicated they were aware of new features. When these 37% of respondents were asked to identify the most important new feature of which they were aware, approximately a third did not provide an answer or said "don't know".
- (493) Fifth, Google's claim that the Yandex Survey shows that certain users consider the smart mobile OS to be the most important factor in choosing a smart mobile device⁵⁰⁷ further confirms the Commission's conclusions. This is because the users concerned have already purchased a Google Android device. Given that Google Android users would face substantial costs when switching to iOS devices (see Section 9.3.4.2.II) and show a significant degree of loyalty to Google Android (see Section 9.3.4.2.III), it is not surprising that those users consider it important that their future device is based on Google Android.
- (494) Sixth, an internal Google presentation, prepared by the business consultancy Kantar dated from April 2016⁵⁰⁸ and focussed on the United Kingdom, a Member State where Apple has a relatively large share of device sales, indicates that the smart mobile OS brand is only a small factor among those triggering user purchase decisions, [Google internal communications on business strategy]. The same document indicates that the top trigger by far in terms of popularity is the handset brand/model.

⁵⁰⁶ "Further evidence on the competitive interaction between licensable and non-licensable OS", CRA study on behalf of Yandex submitted on 16 June 2017 (Doc ID 8031), page 8 and following and Google's letter of 14 March 2018 (Doc ID 8768).

⁵⁰⁷ Google's Response to the First Letter of Facts, Part One, page 11, paragraph 28 (Doc ID 8598).

⁵⁰⁸ Appendix 8 to Google's Response to the Statement of Objections (Doc ID 6555-69).

Figure 12: Top purchase triggers among Google Android Loyals vs. Switchers⁵⁰⁹



- (495) Moreover, [Google internal communications on business strategy].⁵¹⁰ This shows that: (i) hardware and not OS features are the main reasons why users switch; and (ii) the hardware defects referred to are not dependent on the OS, as Google claims,⁵¹¹ because higher-end Google Android devices are not said to be affected by the same defects.
 - (496) Seventh, Google's claim that Figure 12 points at ease of use as the second most important purchase trigger for premium Google Android switchers to iOS⁵¹² does not contradict the Commission's conclusions as: (i) ease of use is not only related to the smart mobile OS of a certain device but also to hardware and the apps pre-installed on the device; and (ii) in any event, the handset brand/model remains by far the main triggering factor.
- 9.3.4.2. iOS exercises an insufficient indirect constraint on Google's dominant position in the worldwide (excluding China) market for licensable smart mobile OSs
- (497) For the reasons set out in this Section, the Commission concludes that iOS exercises an insufficient indirect constraint on Google's dominant position in the worldwide (excluding China) market for licensable smart mobile OSs.
 - (498) First, there are significant price differences between Google Android and iOS devices.
 - (499) Second, users of Google Android devices would face substantial costs when switching to iOS devices.
 - (500) Third, users show a significant degree of loyalty to their existing smart mobile OS.

⁵⁰⁹ Appendix 8 to Google's Response to the Statement of Objections (Doc ID 6555-69).

⁵¹⁰ Appendix 8 to Google's Response to the Statement of Objections (Doc ID 6555-69). More specifically, according to this document, the main factors for switching are [list of factors related to hardware].

⁵¹¹ Google's Response to the Statement of Objections, Part Two, page 50, paragraph 30 (Doc ID 7117).

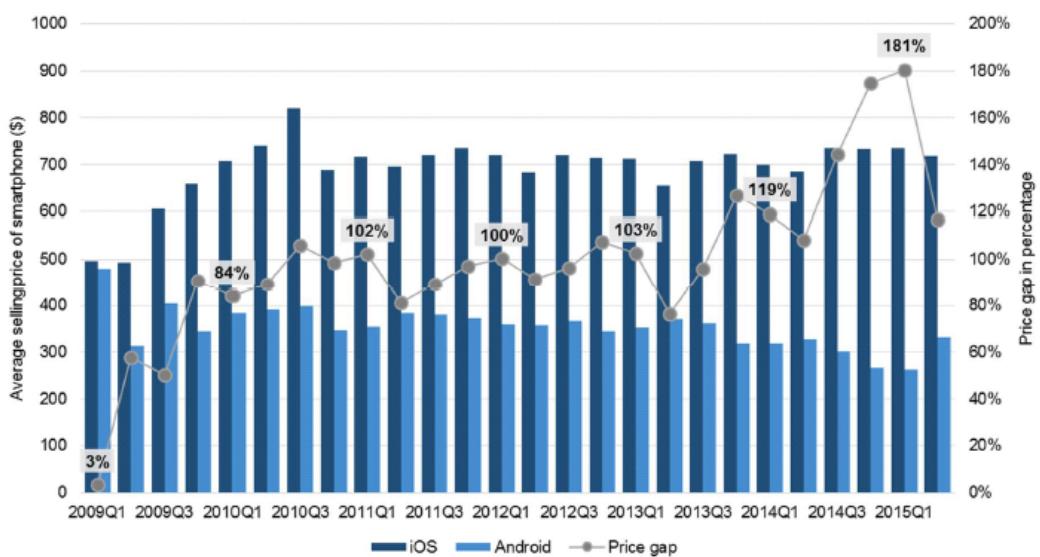
⁵¹² Google's Response to the First Letter of Facts, Part One, page 13, paragraph 29 (Doc ID 8598).

- (501) Fourth, app developers are unlikely to stop developing for Google Android and develop exclusively for iOS.

I. *There are significant price differences between Google Android and iOS devices*

- (502) More than half of Google Android devices are priced below USD 350, whereas all Apple smartphones have until recently been priced above this threshold. Users that wanted to purchase less expensive smart mobile devices, could not, therefore, switch to iOS devices. It was only in March 2016 that Apple announced the launch of a lower priced device – iPhone SE.⁵¹³
- (503) Figure 13 shows the evolution of the average selling price of Google Android and Apple smartphones in Europe between 2009 and 2014.

Figure 13: Average selling price of iOS and Android smartphones in Europe, 2009-2014⁵¹⁴



- (504) In the period taken into account in Figure 13, Apple smartphones have, on average, cost twice as much as Google Android devices. In addition, the average price difference between Google Android and iOS devices has been increasing, reaching a peak of 181% of Google Android devices average price in the first quarter of 2015. In the second quarter of 2015, the price difference decreased due to the launch of certain higher-end Google Android devices,⁵¹⁵ while remaining in the region of 120% of Google Android devices average price.
- (505) With regard to the differences in prices for devices running on different smart mobile OSs, Google confirmed: "Almost a quarter of all Android smartphones sold in the EU belong to the lowest price range of USD 50-149. In comparison, iOS and BlackBerry are not present in this segment and Windows Phone has a negligible

⁵¹³ See "iPhone SE a big step for small", available at <http://www.apple.com/iphone-se/>, printed and saved on 12 April 2016.

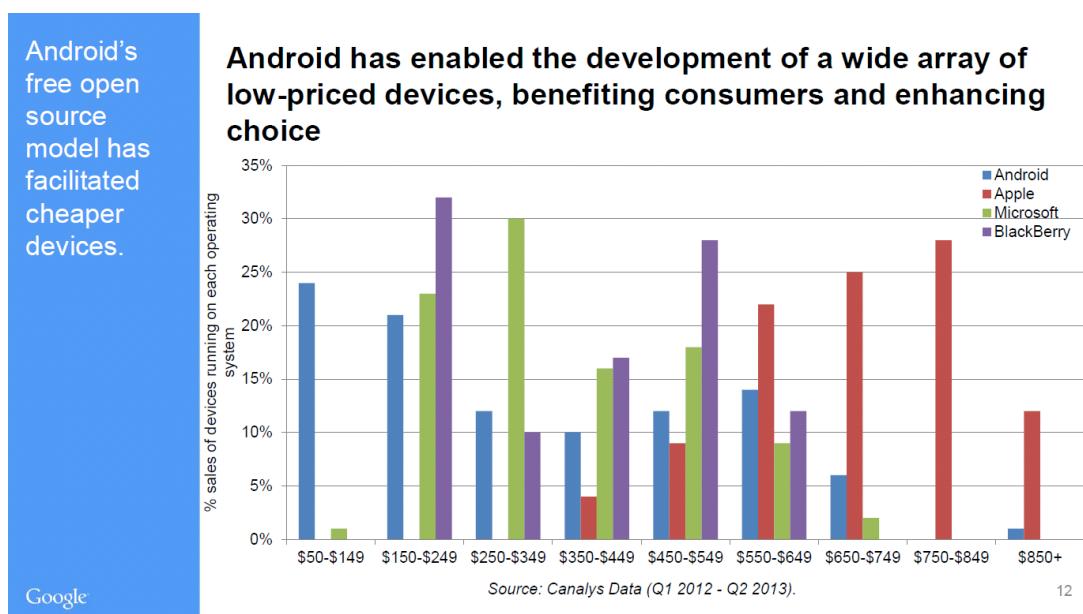
⁵¹⁴ Yandex's memorandum 'Why retail competition between Android and Apple does not eliminate Google's ability and incentive to engage in anticompetitive bundling in its dealings with Android device makers' (Doc ID 3828).

⁵¹⁵ Notably the Samsung Galaxy S6. See Yandex's memorandum 'Why retail competition between Android and Apple does not eliminate Google's ability and incentive to engage in anticompetitive bundling in its dealings with Android device makers' (Doc ID 3828).

presence of 0.5%. Another 21.4% of all Android-based smartphones are sold in the second lowest price range of USD 150-249, whereas no iPhones can be found in this category and only 23.2% of all Windows Phone smartphones and 31.7% of all BlackBerry phones belong to this segment. Taken together, almost half of all Android-based smartphones are sold within the two lowest price ranges, whereas Apple is completely absent and less than a quarter of all Microsoft phones and less than a third of all BlackBerry phones belong to these two price categories. A similar pattern is seen among tablets. The majority of Android-based tablets are sold at a price less than USD 300, while a trivial share of Microsoft tablets (less than 1%) and no Apple tablets are even sold in that price range.⁵¹⁶

- (506) Google also provided Figure 14, which shows that more than 80% of Apple's sales are concentrated on sales of smart mobile devices priced above USD 550 whereas only approximately 20% of Google Android devices are sold with prices above USD 550.

Figure 14: Device price comparison submitted by Google⁵¹⁷



- (507) The difference in price ranges between Google Android and iOS devices reflects the different commercial strategies pursued by Apple and Google.
- (508) On the one hand, Apple's strategy is based on vertical integration and the sale of higher-end smart mobile devices.⁵¹⁸

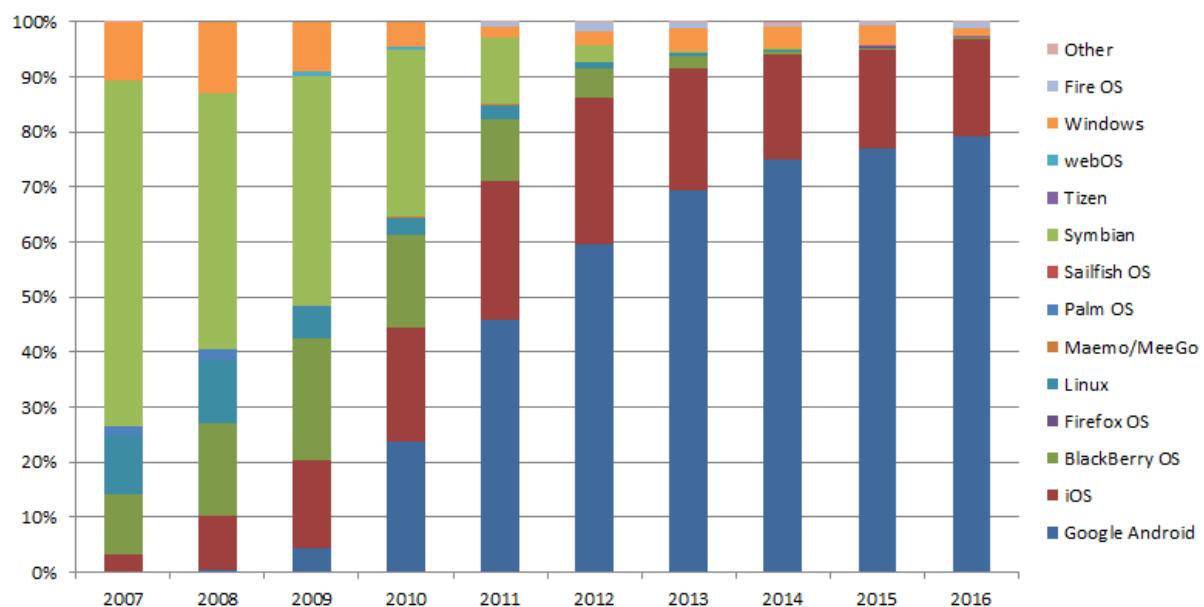
⁵¹⁶ Google's response to the complaint by FairSearch, paragraph 45 (Doc ID 1584).

⁵¹⁷ Presentation by [Google Executive], of 9 June 2015, "Android", slide 12 (Doc ID 4712).

⁵¹⁸ See Apple's 2015 Annual Report (Form 10-K). For the fiscal year ended on 26 September 2015, Apple reported total net sales of USD 234 billion. iPhone sales were USD 155 billion (66.33 % of total net sales), and iPad sales were USD 23 billion (9.93% of total net sales). Apple's strategy is confirmed by business analysts. For example, it has been noted that: "*Microsoft is focused on market share. Samsung is focused on market share. BlackBerry is focussed on market share (and trying to survive). Read any coverage of the smartphone 'wars' and the key metric is market share. Apple is measuring itself in another way... margins.*" (see Ewan Spence, "*Nine Business And Strategy Lessons From Apple and The iPhone 5c and 5s*", 14 September 2013, available at <http://www.forbes.com/forbes/welcome/%20202715e4857a0b51cd36950324>, printed and saved on 11 April 2016).

- (509) On the other hand, Google's strategy is to ensure that Google Android is installed on as many smart mobile devices as possible as a way to ensure market penetration for its services and the collection of data used for the purposes of search advertising.⁵¹⁹ As stated in an internal presentation to the Google Board of Directors [Google Executive], "[Google internal communications on business strategy]"⁵²⁰
- (510) The different commercial strategies pursued by Apple and Google are reflected in the evolution of share of supply of smart mobile devices using iOS and Google Android.
- (511) As can be seen from Figure 15, Apple's share of supply of smart mobile devices worldwide (excluding China) remained relatively constant between 2009 and 2016, ranging between 15% and 26%, despite the share of devices based on Google Android in the same time period increasing from 4% in 2009 to 80% in 2016.

Figure 15: OS shares of supply of smart mobile devices worldwide (excluding China)⁵²¹



- (512) The Commission's conclusion that there are significant price differences between Google Android and iOS devices is not affected by Google's claims.⁵²² that

⁵¹⁹ See Liz Laffan, "[Report] A new way of measuring openness, from android to webkit the open governance index [updated]", available at <http://www.visionmobile.com/blog/2011/07/the-open-governance-index-measuring-openness-from-android-to-webkit/>, printed and saved on 11 April 2016, which states: "Google has made Android available at "less than zero" cost, since Google's core business is not software or search, but driving eyeballs to ads. As is now well understood, Google's strategy has been to subsidise Android such that it can deliver cheap handsets and low-cost wireless Internet access in order to drive more eyeballs to Google's ad inventory." See Ben Bajarin, "iOS, Android, and the Dividing of Business Models" (30 June 2014), available at <https://techpinions.com/ios-android-and-the-dividing-of-business-models/32237>, printed and saved on 11 April 2016 and see Bill Gurley, "above the crowd" (24 March 2011), available at <http://abovethecrowd.com/2011/03/24/freight-train-that-is-android/>, printed and saved on 11 April 2016.

⁵²⁰ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1305-46984).

⁵²¹ Source: [...] data (Doc IDs 7866 and 7867).

⁵²² Google's Response to the Statement of Objections, Part Two, pages 57-59, paragraphs 43-46 (Doc ID 7117); Google's Response to the First Letter of Facts, Part One, pages 17-19 (Doc ID 8598).

- (1) Google Android devices are spread across all price ranges and up to half of Google Android devices users would switch to Apple as a result of a small but significant, non-transitory deterioration of the quality of Google Android;
 - (2) [Google confidential sales plans and marketing strategy];
 - (3) Android's competition with iOS for users of higher-end devices protects users of lower-end Android devices because Google does not release degraded versions of Android for lower-end devices;
 - (4) Apple has started to target heavily users of lower-end Google Android devices with its iPhone C & SE; and
 - (5) [Google confidential sales plans and marketing strategy].
- (513) First, Google acknowledges that at least 50% of Google Android devices are sold at prices below those of iOS devices. As a result, the users of those Google Android device are unlikely to switch to iOS devices given that would generally not spend 5-10% more than what they spent on their previous device.⁵²³ As regards the remaining users, they would be unlikely to switch to iOS devices for the reasons set out in Sections 9.3.4.I, 9.3.4.II and 9.3.4.III. This is confirmed by Opera, which explained that "*The only comparable OS in terms of app quantity, variety, and quality is iOS; however, Apple's devices may nonetheless be too expensive for many Android users to consider switching to iOS/Apple*".⁵²⁴
- (514) Second, users of lower-end devices are equally valuable for Google because it collects valuable user data from those devices and uses that data to improve its products and serve advertisements on all users.⁵²⁵ This is confirmed by Google's statement in its internal documents that it has decided to take "[Google internal communications on business strategy]".⁵²⁶
- (515) Third, competition between Android and iOS for users of higher-end devices would not protect users of lower-end Android devices. This is because the impact on Google of higher-end Android users switching to iOS would be limited, given that such users would still run searches on Google Search and Google would retain the large majority of revenues from such searches:
- (1) Google Search is set as default on the Safari browser on each smart mobile devices sold by Apple pursuant to a [commercial] agreement between Apple and Google;⁵²⁷
 - (2) [Information about the compensation Apple receives from Google in connection with that agreement]; and

⁵²³ Whilst there may be exceptions to this principle, this assumption is in line with the rationale of a SSNIP test.

⁵²⁴ Opera's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 3534).

⁵²⁵ See footnote 75.

⁵²⁶ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1305-46984).

⁵²⁷ Apple's non-confidential response to Question 16 of the request for information of 17 July 2014 (Doc ID 1453).

- (3) Google share of searches on iOS devices is above [90-100]%.⁵²⁸
- (516) Fourth, significant price differences remain between Google Android and iOS devices, notwithstanding Apple's launch of the iPhone C & SE.
- (517) In the first place, the cheapest version of Apple's iPhone C launched in September 2013 was priced at USD 550,⁵²⁹ which was higher than most Google Android devices.⁵³⁰
- (518) In the second place, the cheapest version of the iPhone SE as of 18 April 2017 was priced at USD 399,⁵³¹ which was still higher than the majority of Google Android devices.⁵³² In any event, the iPhone SE was launched only in March 2016.
- (519) Fifth, the evidence submitted by Google does not support its claim that [Google confidential sales plans and marketing strategy].
- (520) In the first place, Google bases its claim only on an unrepresentative study carried out in the United Kingdom, where iOS devices are used by a significantly higher percentage of users than in the rest of the EEA.⁵³³
- (521) In the second place, the study confirms that users of both lower-end and higher-end Google Android devices are unlikely to switch because of customer loyalty. [...]% of all users of Android devices in the United Kingdom are unlikely to switch compared to [...]% of higher-end users.⁵³⁴
- II. Users of Google Android devices would face substantial costs when switching to iOS devices*
- (522) Users of Google Android devices would face substantial costs when switching to iOS devices.
- (523) These include the need to download and purchase existing apps for the new smart mobile OS, the need to learn and become familiar with a new interface and the need to transfer a large amount of data through often inconvenient and imperfect mechanisms.⁵³⁵
- (524) The existence of substantial switching costs has been confirmed by OEMs and

⁵²⁸ Source: [...] data provided by Microsoft in response to Question 13 of the request for information of 10 April 2017 (Annex 5) (Doc ID 8101).

⁵²⁹ See "The iPhone 5C Helps Make a Strong Argument for the iPhone 5S" (10 September 2013), available at <http://techland.time.com/2013/09/10/iphone-5c-C-stands-for-cake/>, printed and saved on 17 August 2017. Values indicated are without subsidies. Using a non-subsidised price allows more direct comparisons as it removes the effect of any potential carrier-specific discount. This is also the approach taken by Kantar in a survey submitted by Google, see Appendix 8 to Google's Response to the Statement of Objections (Doc ID 6555-69).

⁵³⁰ See Figure 13.

⁵³¹ See <https://www.apple.com/shop/buy-iphone/iphone-se/32gb-silver#00,20,30,40,60> (Doc ID 8152).

⁵³² See Figure 13.

⁵³³ See Annex 20, attached to Google's response to the request for information of 24 March 2017, slide 5, according to which iOS's share of smartphones in the United Kingdom was between 30% and 41% in the time period from January 2014 to January 2016 (Doc ID 7791). This compares to a share in the EEA in the time period 2014-2016 of between 19% and 20% (source: [...] data (Doc IDs 7866 and 7867).

⁵³⁴ See Appendix 8 to Google's Response to the Statement of Objections, page 7 (Doc ID 6555-69).

⁵³⁵ Yandex's memorandum 'Why retail competition between Android and Apple does not eliminate Google's ability and incentive to engage in anticompetitive bundling in its dealings with Android device makers' (Doc ID 3828).

MNOs:

- (1) Telefónica stated: "*Once any customer has been using an ecosystem and has purchased several apps for it, it is very unlikely that the specific customer would jump to another ecosystem unless it had a bad experience with it or because of aggressive counter offers from the different devices manufacturers. Most of them, keep loyal to the ecosystem after 1 year of use. The main reason for that loyalty is that there are costs of switching to alternative platforms for end users. These costs include, in addition to that of replacing the device (if it has not been amortized), the following:*
- *cost of replacing (or [losing]) paid-for native apps and music that has been already acquired by the user, and cannot be transferred to any different platform;*
 - *potential loss of network externalities, at least in the case of native apps that are used jointly with other users in the same ecosystem;*
 - *switching costs are higher for users of multiple appliances for the same OS (smartphone, tablet, TV and/or PC) who share content through Cloud services due to stickiness inherent to the ecosystem services.*"⁵³⁶
- (2) Jolla stated: "*There is a strong lock-in effect in mobile OSs. If a consumer starts using a certain mobile OS, (s)he is likely to buy the next device based on the same mobile OS. This consumer behaviour is logical because typically switching to next device with the same mobile OS is very easy, and consumer can transfer e.g. contact information, messages, settings, and media content (like pictures or music) easily to the next device. However, switching to device with other mobile OS is usually difficult, requires technical knowledge, time and effort, and results only part of the device content to be transferred. In addition, if a user has purchased applications and change the device with the same OS, (s)he typically can move the applications to the new device without need to purchase them again. However, this is not possible when changing to a device with a different mobile OS. Also the consumer needs to invest in learning the different user logic when switching to another mobile OS.*"⁵³⁷
- (3) Sony Mobile Communications Inc. ("Sony Ericsson") stated: "*It is not very likely as most people will not want to learn a new system or re-purchase apps (and for the increasingly large community of mobile gamers, risk losing all the attributes or points they have won over time as they cannot be ported) if they are happy with what they have used.*"⁵³⁸
- (4) PT Portugal SGPS SA ("Portugal Telecom") stated: "*The purchase of applications for a specific mobile OS creates loyalty to the OS. The fact that when a user changes from one device to a new one with the same OS the downloaded applications, for free or purchased, are almost automatically available in the new smartphone without any extra effort and cost is of course*

⁵³⁶ See Telefonica's non-confidential response to Question 14.3 of the request for information of 12 June 2013 to MNOs (Doc ID 4142).

⁵³⁷ See Jolla's non-confidential response to Question 11.3 of the request for information of 12 June 2013 to OS providers (Doc ID 3981).

⁵³⁸ See Sony Mobile Communications' non-confidential response to Question 17.3 of the request for information of 12 June 2013 to OEMs (Doc ID 4389).

a way of turning the customers loyal to an OS."⁵³⁹

(5) Yandex stated: "apps that were purchased in Google Play for usage on an Android phone would have to be purchased again in the Apple App store after a switch to iPhone. Migrating contacts can be a more straightforward process when the consumer follows a detailed guideline and photos and videos can be transferred using specific data-transferring apps. However, even then significant transaction costs are involved, which many consumers prefer to avoid. A number of other items cannot be transferred at all, as a recent switching guide describes, including:

- *The Android phone case is not going to be compatible with an iPhone (and the dock might not be either)*
- *Android apps cannot be transferred*
- *Home screen customization is not available to the same extent on iOS*
- *Text messages are not easy to transfer and will likely involve premium software options.*⁵⁴⁰

(6) Nokia stated: "Apps also contribute to consumer lock-in to an OS, owing to the lack of interoperability between the OS from different vendors. The threshold of switching becomes greater the more time and money the consumer spends on purchasing and getting accustomed to apps that are only compatible with their relevant platform. This is amplified by the fact that even if the applications were compatible with the new device, there is a tight connection with the application store both on re-installation to a new device (i.e. user account) and updates to the application already purchased from one store."⁵⁴¹

(525) The existence of substantial switching costs is also confirmed by Apple's launch in September 2015 of a "Move to iOS" app as part of its iOS 9 release, as an attempt to make switching easier.⁵⁴²

(526) Furthermore, the substantial switching costs are not negated by the alleged low cost of repurchasing existing Android apps on an iOS device or the short life span of apps.⁵⁴³

(527) On the one hand, the price paid for the purchase of apps is only one barrier to switching. Other barriers, as described in recitals (523) and (524), include the costs and time of learning to use a new smart mobile OS (including a new set of apps), of porting data, settings and content, of downloading apps on a new device, and of

⁵³⁹ See Portugal Telecom's non-confidential response to Question 14.3 of the request for information of 12 June 2013 to MNOs (Doc ID 365).

⁵⁴⁰ Yandex's memorandum 'Why retail competition between Android and Apple does not eliminate Google's ability and incentive to engage in anticompetitive bundling in its dealings with Android device makers' (Doc ID 3828).

⁵⁴¹ Nokia's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 3991).

⁵⁴² Source: see "*It's easy to make the switch to iPhone*", available at <http://www.apple.com/iphone/switch-to-iphone/>, printed and saved on 11 April 2016.

⁵⁴³ See Section 4 of the RBB economic report and response to the FairSearch complaint "Annex 1 – Assessment of competition between smart mobile platforms", 21 May 2014 (Doc ID 854).

reconfiguring app settings.⁵⁴⁴

- (528) On the other hand, because Google Android users download on average 10 apps per month,⁵⁴⁵ even if the life span of a majority of apps were to be short,⁵⁴⁶ there would still remain a large number of apps that users would need to transfer to a newly purchased smart mobile device.
- (529) The Commission's conclusion that users of Google Android devices would face substantial costs when switching to iOS devices is not affected by Google's claims that:⁵⁴⁷
- (1) switching costs are irrelevant because competition takes place at the point of purchasing a new smart mobile device;
 - (2) Apple strives to make switching from Android to iOS easy via its "Move to iOS" app and by offering users, since May 2017, up to USD 260 credit if they traded in their Android device for an iOS device⁵⁴⁸; and
 - (3) switching costs equally exist between licensable OSs, such as Android and Windows, that are part of the same market.
- (530) First, the fact that competition takes place at the point of purchasing a new smart mobile device does not mean that switching costs are irrelevant. On the contrary, switching costs are relevant at the point of purchasing a new mobile device because the fact that a user currently uses a Google Android device influences its purchasing decision when it comes to a new device.
- (531) Second, the Move to iOS app has not eliminated the costs of switching from Android to iOS:
- (1) user reviews as of 19 April 2017 indicate that the Move to iOS app has an average rating in the Play Store of less than 2.8 (out of 5). Furthermore, of the total 93 368 user reviews that the "Move to iOS" app has received, more than 50% (i.e. 47 478 users) rated the app 1 out of 5;⁵⁴⁹
 - (2) as the "Move to iOS" app was launched in September 2015, the existence of such an app cannot alter the Commission's conclusion in recital (522) above for the period between January 2011 and August 2015; and
 - (3) Google has not submitted any evidence to support its claim that in the US Apple has started offering users a USD 260 credit for switching from Android

⁵⁴⁴ See Sony Mobile Communications' non-confidential response to Question 17.3 of the request for information of 12 June 2013 to OEMs (Doc ID 4389); See Portugal Telecom's non-confidential response to Question 14.3 of the request for information of 12 June 2013 to MNOs (Doc ID 365).

⁵⁴⁵ See Benedict Evans, "How many apps do Android and iOS users download?" (16 may 2013), available at <http://ben-evans.com/benedictevans/2013/5/16/how-many-apps-do-android-and-ios-users-download>, printed and saved on 11 April 2016.

⁵⁴⁶ "*30 days after installation only 54% of apps are still in use by the user. After 60 days this figure falls to 43% and after 90 days only 35% of installed apps are still in use*". See Section 4.3 of the RBB economic report and response to the FairSearch complaint "Annex 1 – Assessment of competition between smart mobile platforms", 21 May 2014 (Doc ID 854).

⁵⁴⁷ Google's Response to the Statement of Objections, Part Two, pages 52-53, paragraph 35 (Doc ID 7117).
⁵⁴⁸ Google's letter of 6 June 2017 (Doc ID 7969).

⁵⁴⁹ See "Move to iOS", available at <https://play.google.com/store/apps/details?id=com.apple.movetoios&hl=en>, printed and saved on 13 June 2017.

to iPhone devices. If anything, Google's claim that Apple would offer such credit in the US would confirm that the "Move to iOS" app has not successfully eliminated the costs of switching from Android to iOS.

- (532) Third, the fact that other licensable OSs are part of the same relevant market as Android does not imply that users do not face certain costs when switching between licensable OSs. This is because the Commission has assessed the scope of the relevant product markets starting from the level of the OEMs, i.e. the counterparties that have entered into the AFAs, MADAs and portfolio-based revenue share agreements with Google (see Section 7.2) and, from the perspective of such counterparties, Android and other licensable smart mobile OSs, are substitutable, irrespective of the switching costs faced by users.

III. Users show a significant degree of loyalty to their existing smart mobile OS

- (533) Users show a significant degree of loyalty to their existing smart mobile OS. For example, it has been estimated that in 2015, 82% of Google Android smartphone users purchasing a new smartphone decided to purchase a Google Android device. These figures are slightly higher than the equivalent figure for iOS users (78%).⁵⁵⁰
- (534) A number of app developers, OEMs and MNOs have confirmed such a high degree of customer loyalty:
- (1) according to the Yandex Survey,⁵⁵¹ more than 90% of Google Android smartphone users in the United Kingdom would most likely consider purchasing a new Google Android smartphone;
 - (2) Telefónica stated: "*Once any customer has been using an ecosystem and has purchased several apps for it, it is very unlikely that the specific customer would jump to another ecosystem unless it had a bad experience with it or because of aggressive counter offers from the different devices manufacturers. Most of them, keep loyal to the ecosystem after 1 year of use. The main reason for that loyalty is that there are costs of switching to alternative platforms for end users.*"⁵⁵²
 - (3) Archos S.A. ("Archos") stated: "*There is a great deal of fidelity to the mobile OS. The main reason may not be the fact that applications have been purchased and that consumers want to preserve their investment. This is a very small factor. The main factor is the difficulty to port one's personal data (eg contacts) from a mobile OS to the next. The other factor is that users get used to the way their smart device works and do not want to re-learn a new system.*"⁵⁵³ These additional factors have also been mentioned by Yandex,

⁵⁵⁰ See Don Reisinger, "*Android users more loyal than iOS counterparts, data shows*"(11 August 2015), available at <http://www.cnet.com/news/android-users-more-loyal-than-ios-owners-study-shows/>, printed and saved on 11 April 2016.

⁵⁵¹ Results of online survey of Android users in the United Kingdom conducted by Ipsos MORI. The questionnaire was completed by 1,001 Android users aged 16-75 across Great Britain from its online panel of respondents. Source: "*Further evidence on the competitive interaction between licensable and non-licensable OS*", CRA study on behalf of Yandex submitted on 16 June 2017 (Doc ID 8031), page 8 and following.

⁵⁵² See Telefonica's non-confidential response to Question 14.3 of the request for information of 12 June 2013 to MNOs (Doc ID 4142).

⁵⁵³ See Archos' non-confidential response to Question 17.3 of the request for information of 12 June 2013 to OEMs (Doc ID 3717).

- Telefónica and Jolla, as mentioned in Section 9.3.4.2.II.
- (4) Belgacom SA/NV ("Belgacom") stated: "*When the customer does not choose to change [OS], which mostly is the case, given the relatively high loyalty both for iOS and for Android, the purchased apps can be transferred to the new device with the same OS, because it is linked to the account of the customer. The mere fact of being able to transfer the purchased apps to a device with the same OS makes this loyalty even higher.*"⁵⁵⁴
 - (5) Wind stated: "*Customer stickiness to a specific Oss is in our view strictly related to applications the customer has already bought.*"⁵⁵⁵
- (535) The conclusion that users show a significant degree of loyalty to their existing smart mobile OS is not affected by Google's claims that:
- (1) the Commission ignores evidence that a substantial number of users have switched, or would be willing to switch, between Android and iOS;
 - (2) the degree of competition for first time buyers of smart mobile devices would be sufficient to protect existing Android device users as Google cannot discriminate between these customer categories;⁵⁵⁶
 - (3) with regard to the Yandex Survey, 18% of surveyed customers stated that they did not know which device they were most likely to purchase.⁵⁵⁷ Had the Commission considered these customers, it would have concluded that a lower percentage than 90% of users would most likely consider purchasing a new Google Android smartphone; and
 - (4) the Commission's reasoning conflicts with the Klemperer economic model, which, according to Google, suggests that when first-time buyers represent a large portion of demand, switching costs can increase competition because firms compete aggressively to win first-time buyers.⁵⁵⁸
- (536) First, the body of evidence does not demonstrate that a substantial number of users have switched, or would switch, between Android and iOS.
- (537) In the first place, the fact that, in the period between 2013 and 2015, 16% of iOS users may have previously used Android confirms that only a minor proportion of Android users have actually switched to iOS.
- (538) In the second place, the fact that, in late 2015 30% of new iPhone buyers may have previously been users of Android⁵⁵⁹ is based on a limited period of observation (three months) and represents the highest ever rate of Android switchers. Furthermore,

⁵⁵⁴ See Belgacom's non-confidential response to Question 14.3 of the request for information of 12 June 2013 to MNOs (Doc ID 608).

⁵⁵⁵ See Wind's non-confidential response to Question 14.3 of the request for information of 12 June 2013 to MNOs (Doc ID 440).

⁵⁵⁶ Google's Response to the Statement of Objections, Part Two, pages 53-56, paragraphs 36-42 (Doc ID 7117).

⁵⁵⁷ Google's Response to the First Letter of Facts, Part One, page 16, paragraph 38 (Doc ID 8598).

⁵⁵⁸ See Google's Response to the Statement of Objections, Part Two, pages 56-57, paragraphs 41-42 (Doc ID 7117).

⁵⁵⁹ See: <http://www.zdnet.com/article/apple-ceo-android-to-iphone-switchers-will-help-us-smash-74-million-sales-record/>, printed and saved 17 August 2017 and Google's Response to the Statement of Objections, Part Two, page 53, paragraph 37 (Doc ID 7117).

given that this period coincides with the launch of a new iPhone, it is likely that switching was influenced by factors related to the hardware elements of that device (e.g. design, camera, screen and battery life), and not only by factors related to the OS (see recital (494)). Moreover, and in any event, even those 30% of new iPhone buyers corresponded to less than 5% of Google Android smartphone sales in that quarter, given that the number of devices sold by Apple in the third quarter of 2015 accounted for a much smaller number as compared to Android sales (i.e. in Q3-2015, iOS sales corresponded only to 48 million smartphones whilst Android sales corresponded to close to 300 million smartphones).⁵⁶⁰

- (539) In the third place, the 2013 report by Accenture referred to in recital (484)⁵⁶¹ does not support Google's claim because it assesses only the importance for users of owning different devices with the same smart mobile OS, and not the costs of switching from one smart mobile OS to another. Moreover, the report assesses the costs of switching between a PC OS and a smart mobile OS and not only between different smart mobile OSs.
- (540) In the fourth place, the statement in the internal Google document entitled "Switcher insights"⁵⁶² that [...] Samsung Galaxy S5 users in the US switched to iOS in the second half of 2015 does not support Google's claim:
- (1) Samsung Google Android devices are generally higher-end Android devices and therefore more exposed to competition from iOS devices;
 - (2) the period of observation coincides with the launch of a new iPhone, so it is likely that switching was influenced by factors related to the hardware of such device (e.g. design, camera, screen and battery life) and not only by factors related to the OS; and
 - (3) sales of Apple devices are relatively higher in the US than in the EEA.⁵⁶³ As such, it is likely that data related to the US would overestimate the competitive constraint exercised by iOS devices on Google Android.
- (541) In the fifth place, the statement in an internal Vodafone document⁵⁶⁴ that 20% to 30% of Android users with a Vodafone contract that were due to change device switched to iOS or BlackBerry is based on a limited period of observation (one month). Moreover, even during that one month, around 70% of Android users that were due to change their device purchased an Android device.
- (542) In the sixth place, Orange did not confirm in its response to a request for information⁵⁶⁵ the readiness of users to switch from one smart mobile OS to another regardless of the licensable or non-licensable nature of the smart mobile OS. The

⁵⁶⁰ Source: [...] data (Doc IDs 7866 and 7867).

⁵⁶¹ See Google's Response to the Statement of Objections, Part Two, page 53, paragraph 37 (Doc ID 7117).

⁵⁶² See Google's Response to the Statement of Objections, Part Two, page 53, paragraph 37 (Doc ID 7117); Appendix 20, Data Room Report (6 December 2016), paragraph 38 (Doc ID 7119).

⁵⁶³ In 2016, Apple accounted for 44% of smartphone sales in the US, according to Comscore. See "comScore Releases June 2013 U.S. Search Engine Rankings" (12 July 2013), available at <https://www.comscore.com/Insights/Rankings/comScore-Reports-January-2016-US-Smartphone-Subscriber-Market-Share>, printed and saved on 15 June 2017.

⁵⁶⁴ See Google's Response to the Statement of Objections, Part Two, page 54, paragraph 37 (Doc ID 7117); Appendix 8 to Google's Response to the Statement of Objections (Doc ID 6555-69).

⁵⁶⁵ See Orange's non-confidential response to Question 7 of the request for information of 12 June 2013 to app developers (Doc ID 671).

figures quoted by Google do not refer to switching rates but simply to "loyalty" rates, as measured by Orange on a scale from [0-20%] (minimum, assigned to Windows) to [80-100%] (maximum, assigned to iOS). Moreover, Orange also stated in that same response to a request for information that "*iOS, Android and WP8 have shown high customer loyalty for various reasons amongst which: - Appealing features set including apps, multimedia functionalities, cloud services... - Proposition of brands/form factors*".

- (543) In the seventh place, other respondents to requests for information referred to by Google also did not confirm that users can and do switch between mobile OSs:⁵⁶⁶
- (1) a number of respondents indicated that only a large decrease in the number, range and quality of apps available on Android could trigger a switch to iOS:
 - (a) Hutchison 3G: "*We believe that, in a very few cases, the range, quality, number or cost of apps available on pre-installed or downloadable appstores may make consumers switch between OSs.*"⁵⁶⁷ (emphasis added)
 - (b) ZTE: "*If the quality of the apps cannot meet the needs of consumers, or prices of those apps are significantly higher than other mobile OSs, then consumers would consider switch to other mobile OSs.*"⁵⁶⁸ (emphasis added)
 - (c) Aptoide: "*The quality and range of apps as well as the huge portfolio of free apps is a key asset to the Android ecosystem. Diversity of apps and services is also a key factor. A drastic change on this would surely affect the Android ecosystem and would allow other OSs to emerge.*"⁵⁶⁹ (emphasis added)
 - (d) Deutsche Telekom: "*DT considers the switching to another mobile OS caused by changes in the range or quality of apps available in pre-installed and downloadable app stores, or in the price of those apps to be insignificant.*"⁵⁷⁰ (emphasis added)
 - (e) Huawei: "*if users can easily obtain common apps and the experience meets their requirements, the number of other less common apps and changes in price are unlikely to make them switch to another OS.*"⁵⁷¹ (emphasis added)
 - (2) Apple stated that: "*non-licensable OSs do not constrain the competitive*

⁵⁶⁶ See Google's Response to the Statement of Objections, Part Two, page 55, paragraph 37 (Doc ID 7117).

⁵⁶⁷ See Hutchison 3G's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2383)

⁵⁶⁸ See ZTE's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2840).

⁵⁶⁹ See Aptoide's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2396).

⁵⁷⁰ See Deutsche Telekom's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2556).

⁵⁷¹ See Huawei's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2455).

behaviour of licensable OSs."⁵⁷²

- (3) The Microsoft internal email referred to by Google is from 2009 and therefore two years before Google became dominant in the worldwide market (excluding China) for licensable smart mobile OSs. In addition, the evidentiary value of the document is put into question by the same quote, which casts doubt on the reliability of the statement: "*Take that for what it is – I think he meant it AND that doesn't mean anything*".
- (544) In the eighth place, the Statista study submitted by Google (the "Statista Survey"), according to which respectively 15% and 46% of the respondents would "*definitely*" or "*maybe*" switch to a different smart mobile OS in the future, does not support Google's claim. This is because:
 - (1) Google has not submitted the data underlying the survey;
 - (2) the Statista Survey seems to be based on only 517 interviews;
 - (3) the question and optional answers in the Statista Survey were ambiguous. In the Statista Survey, users were asked about the possibility of the future use of a different OS in the future and the most selected answer was "Yes, maybe", which does not necessarily imply that it is likely that user will switch OS in the next smart mobile device purchase.⁵⁷³
 - (4) the Statista Survey appears to cover all users that are planning to purchase a new smartphone, therefore including iOS users as well as users of other OSs such as BlackBerry OS or Windows Mobile; and
 - (5) the Statista Survey covers only users in the United Kingdom, where Apple's share of smart mobile devices is relatively higher than in other Member States.⁵⁷⁴ As such, it is likely that the survey results related to the United Kingdom would overestimate the Apple's competitive constraint exercised by iOS devices on Google Android devices.
- (545) Second, the degree of competition between OEMs for first-time buyers is insufficient to protect existing Android users.
- (546) In the first place, users obtain smart mobile OSs as part of a wider bundle with a smart mobile device and take into account a range of factors other than the smart mobile OS when purchasing such a device (see Section 9.3.4.1).
- (547) In the second place, between January 2009 and December 2013, when Google Android's share at the level of smart mobile devices grew substantially and first-time buyers represented a relatively higher percentage of smart mobile device users, the degree of competition for first-time buyers of smart mobile devices was insufficient to protect existing Google Android users because Apple was focussing exclusively on higher-end devices and only launched the iPhone C priced at USD 550 in September 2013 (see recital (517)).
- (548) In the third place, since January 2014, the degree of competition for first-time buyers of smart mobile devices has also been insufficient to protect existing Android users

⁵⁷² Apple's non-confidential response to Question 4 of the request for information of 12 June 2013 to OEMs (Doc ID 690).

⁵⁷³ Google's Response to the First Letter of Facts, Part One, page 17, paragraph 39 (Doc ID 8598).

⁵⁷⁴ See recital (520).

because first time buyers represent a small and declining portion of smart mobile device users. This is confirmed by:

- (1) estimates by the business consultancy Kantar that in the 3 months ending July 2015, 75% of smartphones sold in Europe were purchased by users that already owned a smartphone;⁵⁷⁵
 - (2) [...] data which indicates that, between 2014 and 2016, the annual growth rate of sales of smart mobile devices has been small or even negative in Europe (between 9% and -5%);⁵⁷⁶ and
 - (3) Emarketer data according to which the majority of users keep their smart mobile devices for three or less years.⁵⁷⁷ This implies that most smart mobile devices sales since January 2014 correspond to the replacement of existing devices.
- (549) In the third place, first-time buyers are less likely to react to a small but significant non-transitory deterioration of the quality of Google Android. This is because these buyers are not familiar with the functioning of a smart mobile device OS and are therefore less likely to perceive differences of the quality of Google Android when purchased as part of a bundle with a Google Android device.
- (550) Third, it is irrelevant that 18% of users responding to the Yandex Survey stated that they did not know which device they are most likely to purchase. This is because, even taking into account these users, Google Android users that responded to the Yandex Survey were more than 10 times more likely to express an intention to purchase a Google Android device than an iOS device.
- (551) Fourth, the Klemperer economic model referred to by Google is not applicable to the facts of this case because that model assumes that initially there are only first-time buyers, whereas this was never the case any point in time since 2011.

IV. App developers are unlikely to stop developing for Google Android and develop exclusively for iOS

- (552) App developers are unlikely to stop developing for Google Android and develop exclusively for iOS in the event of a small but significant, non-transitory deterioration of the quality of Google Android.
- (553) First, developers generally consider it commercially important to develop apps for Google Android as it is only through Google Android that they can reach the large majority of users worldwide (see recital (290)).
- (554) Second, developers that currently develop apps solely for Google Android would not need to cease developing for Google Android if they wished to start developing for

⁵⁷⁵ See <http://www.imore.com/more-android-users-switching-iphone-throughout-europe>, printed and saved on 8 June 2018.

⁵⁷⁶ [...] data (Doc IDs 7866 and 7867). [...] data include in Europe the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, the U.K., Bulgaria, Czech Republic, Hungary, Kazakhstan, Poland, Romania, Russia, Serbia, Slovakia, Ukraine and Rest of Central and Eastern Europe.

⁵⁷⁷ See <https://www.emarketer.com/Article/Smartphone-Owners-Wait-Years-Replace-Handsets/1014149>, printed and saved on 16 August 2017.

iOS, given that, on average, developers build apps for between 2.2 and 2.6 OSs.⁵⁷⁸

(555) Third, a large percentage of Google Android developers already develop apps for both Google Android and iOS. This is confirmed by the following:

- (1) a Google internal document dated August 2016 and authored by [Google Executive] according to which more than [40-50]% of developers for Android also develop apps for iOS.⁵⁷⁹
- (2) a report submitted on behalf of FairSearch, according to which "*the Apple App Store and the Google Play Store have significant overlap among top apps: 92 of the top 100 third party iOS apps are also available on Google Play Store. By the same token, 90 of the top 100 third party Google Play Store apps are available on Apple App Store. This finding suggests that consumers can find the most popular apps on either app store, and that most developers of popular apps multi-home on the Google Play Store and the Apple App Store*";⁵⁸⁰ and
- (3) a submission by Yandex, according to which all but one of the top 50 apps in Apple's App Store are present on the Play Store.⁵⁸¹
- (4) Google's acknowledgment that developers generally multi-home between Google Android and iOS.⁵⁸²

(556) Fourth, the Commission's conclusion that app developers are unlikely to stop developing for Google Android and develop exclusively for iOS is not affected by Google's claims that:

- (1) multi-homing by app developers on Google Android and iOS reduces barriers to users switching from Google Android devices to iOS devices as they make these two type of devices homogeneous;⁵⁸³
- (2) Apple and Google compete to lead app developers to develop first on their respective smart mobile OS and users of iOS and Google Android devices attach value to app developers developing first for the OS of their devices;⁵⁸⁴ and
- (3) Apple attracted the largest number of app developers.⁵⁸⁵

(557) In the first place, multi-homing by app developers on Google Android and iOS is not sufficient to make Google Android and iOS devices homogenous. This is because there remain other differences between Google Android and iOS devices including

⁵⁷⁸ According to Vision Mobile (Vision Mobile, State of the Developer Nation Q3 2015, p. 19 (Doc ID 2746), the average games developers build apps for 2.6 platforms and the average non-game developer for 2.2.

⁵⁷⁹ See Google's internal document "*Google Play Developer Sentiment Survey, Topline Report*", slide 25, August 2016 (Doc ID 6555-68).

⁵⁸⁰ See "*Assessing the relevant markets for licensable mobile operating systems and Google Android compatible app stores*", Marco Iansiti, Harvard University, submitted by FairSearch on 24 January 2017 (Doc ID 8003)

⁵⁸¹ See "*CRA addendum on multi-homing by app developers*", CRA, submitted by Yandex on 28 July 2017 (Doc ID 8270).

⁵⁸² Google's Response to the First Letter of Facts, Part One, page 8, paragraph 20 (Doc ID 8598).

⁵⁸³ Google's Response to the First Letter of Facts, Part One, page 8, paragraph 20 (Doc ID 8598).

⁵⁸⁴ Google's Response to the First Letter of Facts, Part One, pages 9-10, paragraphs 21-25 (Doc ID 8598).

⁵⁸⁵ Google's Response to the First Letter of Facts, Part One, page 8, paragraph 21 (Doc ID 8598).

brand, battery life, quality of the device screen, quality of the camera, design of the device, storage space available on the device (see Section 9.3.4.1), price (see Section 9.3.4.2.I) and availability of apps (such as FaceTime, which is not available on Google Android devices). Moreover, as indicated in Section 9.3.4.2, there remain barriers to switching between Google Android and iOS that are independent of app developers developing for both Google Android and iOS, such as the need for users to learn to use a new OS.

- (558) In the second place, Google has not submitted any evidence to support its claims: (i) that Apple and Google compete to lead app developers to develop first on their respective smart mobile OS and (ii) regarding the value to users of iOS and Google Android devices of app developers developing first for the OS of their devices.

- (559) In the third place, as shown in Figure 15, since 2011, it is Google and not Apple that has attracted the largest number of app developers.

9.3.4.3. BlackBerry OS exercises an insufficient indirect constraint on Google's dominant position in the worldwide (excluding China) market for licensable smart mobile OSs

- (560) For the reasons set out in this Section, the Commission concludes that BlackBerry OS exercises an insufficient indirect constraint on Google's dominant position in the worldwide (excluding China) market for licensable smart mobile OSs.

- (561) First, Google Android users switching to BlackBerry smart mobile devices would face similar costs than when switching to iOS devices (see Section 9.3.4).

- (562) Second, BlackBerry does not constitute a significant constraint on Google given that, as footnote 438 indicates, BlackBerry's share of supply of smart mobile devices has fallen significantly since 2009, and was 0.1% of the worldwide market for smart mobile OSs (excluding China) in 2016.

- (563) Third, only a limited number of apps are available on BlackBerry World (234 500).⁵⁸⁶

- (564) Fourth, in November 2015, BlackBerry launched its first device based on Google Android, the BlackBerry Priv.⁵⁸⁷

- (565) Fifth, in July 2016 BlackBerry confirmed that it has discontinued a large number of BlackBerry OS devices whilst it continues developing future Android devices.⁵⁸⁸

- (566) Sixth, it is unlikely that app developers would switch from Google Android to BlackBerry OS, given that by doing so they would only gain access to an insignificant share of the worldwide market for smart mobile OSs (excluding China).

9.3.5. *The AOSP licence*

- (567) The Commission's conclusion that Google holds a dominant position on the worldwide market (excluding China) for licensable smart mobile OSs is not

⁵⁸⁶ Source: "Number of apps available in leading app stores as of March 2017", available at <https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/>, printed and saved on 16 August 2017.

⁵⁸⁷ See Ron Amadeo, "BlackBerry CEO won't commit to BB10 devices, hints at leaving handset market" (08 October 2015), available at <http://arstechnica.com/gadgets/2015/10/blackberry-ceo-wont-commit-to-bb10-devices-hints-at-leaving-handset-market/>, printed and saved on 11 April 2016.

⁵⁸⁸ See <https://venturebeat.com/2016/07/05/blackberry-confirms-it-will-no-longer-manufacture-the-bb10-blackberry-classic-smartphone/>, printed and saved on 11 June 2018.

precluded by Google's making the source code of Android available for free via the AOSP licence.

- (568) First, the evolution of Google's shares in the worldwide market (excluding China) for licensable smart mobile OSs has shown no rapid variations or fluctuations. On the contrary, since 2011, Google has consistently held very high market shares in the relevant market.
- (569) Second, the barriers to entry and expansion identified in Section 9.3.2 restrict the possibility of OS developers to enter the market and attract sufficient demand. The fact that the Google grants access to Google Android for free means that these barriers are even higher, given that competing OS developers need to compete against Google that does not charge hardware manufacturers any fee.
- (570) Third, the substantial switching costs and OS loyalty – described in Section 9.3.4, mitigate any possible switch of users away from Google Android.
- (571) Fourth, the Commission's conclusion that Google holds a dominant position on the worldwide market (excluding China) for licensable smart mobile OSs, notwithstanding the fact that Google makes the source code of Android available for free via the AOSP licence is not affected by Google's claims⁵⁸⁹ that:
 - (1) Google Android is constrained by instant free availability of perfect substitutes in unlimited quantities;
 - (2) Google cannot charge a price, degrade quality or reduce innovation in relation to Google Android. Due to the open-source nature of Android, there are no barriers to entry in the worldwide (excluding China) market for licensable smart mobile OSs. After an Android version is released, it is available to everyone who wishes to make use of it;
 - (3) OS developers are free to take and build on the latest Android release;
 - (4) the alleged limitations to Android's open-source nature do not make Android any different from other open-source projects (e.g. Linux kernel);
 - (5) Google cannot be considered dominant since Google Android is free; and
 - (6) Google cannot be considered dominant since there are no trading relationships between Google and users, OEMs and MNOs.
- (572) First, Google is not constrained by the availability of the AOSP licence for free given that it: (i) has an important influence on the key steps of the development of Android (see Section 6.2.2.1.I); (ii) controls the licensing of the Android trademarks and brand (see Section 6.3.2); and (iii) controls the implementation of Android on smart mobile devices through the Android compatibility tests (see Section 6.3.1). In addition, the very fact that OEMs are in the large majority of instances required to enter into AFAs and MADAs with Google for the commercialisation of their devices implies that Google cannot be considered as "*constrained by the instant free availability of perfect substitutes.*"⁵⁹⁰
- (573) Second, Google can degrade quality or reduce innovation, given that it controls the

⁵⁸⁹ See Google's Response to the Statement of Objections, Part Two, pages 63-66, paragraphs 59-69 (Doc ID 7117).

⁵⁹⁰ See Google's Response to the Statement of Objections, Part Two, page 63, paragraph 60 (Doc ID 7117).

- development and release of Android versions.⁵⁹¹
- (574) Third, OS developers are not "*free to take and build*" on the latest Android release.
- (575) In the first place, the AFAs mean that OEMs that have entered into these agreements are not "*free to take and build*" on the latest Android release.
- (576) In the second place, developers which intend to "*take over development*" of Android⁵⁹² and "*turn [it] to a non-degraded copy*"⁵⁹³ would also likely need to offer an attractive set of apps and APIs to OEMs. One option to obtain these apps and APIs would be to enter into a licensing agreement with Google in relation to Google's proprietary apps and APIs. However, this would imply that the OS developer would need to enter into an AFA and a MADA and follow the terms of these agreements, which are set by Google. In addition, Google could also refuse the licensing of its apps and APIs. Another option would be to replicate the Google app and APIs ecosystem. That would, however, require time and investment as suggested by the following statements:
- (1) SFR: "*One can estimate that the effort to build something equivalent to GPS is huge, typically hundreds of development man years*".⁵⁹⁴
 - (2) Aptoide: "*Cloning the entire GMS API stack (Maps, Messaging, Games, Billing,...) implicates a enormous amount of resources. We had some contact with such a challenge during the development of Nokia X which targeted that goal. Today, would be even more difficult to try that. Is not only the implementation of the technology, but also the effort of convincing the 1.5M Apps developers to integrate them.*"⁵⁹⁵
- (577) In the third place, the Commission's finding is not affected by Google's claim that OEMs have a broad choice of APIs available that replicate Google Play Services.⁵⁹⁶ This is because respondents to requests for information confirm that Google's APIs are commercially important for OEMs, regardless of whether they could in principle replace them with other competing APIs.⁵⁹⁷
- (578) In the fourth place, it is irrelevant that apps and APIs belong to different relevant markets than smart mobile OSs. This is because, from an OEM's perspective, smart mobile OSs, APIs and apps are complementary goods, each of which is necessary to commercialise a smart mobile device.
- (579) Fourth, it is irrelevant that the alleged limitations to Android's open-source nature do not make Android any different from other open-source projects. The open-source nature of a product does not preclude the application of Union competition rules to that product.

⁵⁹¹ See Section 6.2.2.1.I.

⁵⁹² See Google's Response to the Statement of Objections, Part Two, page 63, paragraph 60 (Doc ID 7117).

⁵⁹³ See Google's Response to the Statement of Objections, Part Two, page 63, paragraph 60 (Doc ID 7117).

⁵⁹⁴ See SFR's non-confidential response to Question 9 of the request for information of 21 October 2015 on app stores (Doc ID 3975).

⁵⁹⁵ See Aptoide's non-confidential response to Question 9 of the request for information of 21 October 2015 on app stores (Doc ID 2396).

⁵⁹⁶ Google's Response to the First Letter of Facts, Part One, page 20, paragraph 48 (Doc ID 8598).

⁵⁹⁷ Samsung's non-confidential response to Question 25 of the request for information of 21 October 2015 on app stores (Doc ID 2805) and Yandex's non-confidential response to Question 25 of the request for information of 21 October 2015 on app stores (Doc ID 4228).

- (580) Fifth, a finding of dominance is not precluded by the fact that it offers Google Android to OEMs free of charge.
 - (581) In the first place, that claim is misleading. While OEMs do not pay a monetary consideration for the use of Google Android, they contribute to the monetisation of Google Android by distributing devices that are used to access Google services.
 - (582) In the second place, and in any event, the free nature of a service is only one "*relevant factor in assessing [...] market power*".⁵⁹⁸ Other equally, if not more, relevant factors in this case include the elements referred in Section 9.3.1, 9.3.2 and 9.3.3.
 - (583) Sixth, there are trading relationships between Google and OEMs. Google licenses Android by means of the Apache Software License 2.0 to Android OEMs.
- 9.3.6. *Other Google arguments on dominance in the market for licensable smart mobile OSs***
- (584) The Commission's conclusion that since 2011, Google holds a dominant position in the worldwide market (excluding China) for the licensing of smart mobile OSs is not affected by Google's claims that:
 - (1) Android's pace of innovation is inconsistent with dominance⁵⁹⁹; and
 - (2) Android did not become dominant instantaneously when it overtook Symbian between 2010 and 2011⁶⁰⁰.
 - (585) First, it is irrelevant whether Android's pace of innovation is inconsistent with dominance. This is because the existence of a degree of innovation does not preclude the existence of dominance, since Google would nonetheless be able to act without having to take account of competition in its market strategy and without for that reason suffering detrimental effects from such behaviour.⁶⁰¹ Moreover, as stated in recital (261), if anything, the decrease in the frequency of Android releases after 2011 is consistent with dominance.
 - (586) Second, this Decision does not conclude that Google became dominant in 2011 simply because Google overtook Symbian.
 - (587) In the first place, Google's market share in 2011 was 72% and approximately four times larger than those of Symbian.
 - (588) In the second place, the Commission's conclusion is based on all the factors referred to in Section 9.3, including barriers to entry, lack of countervailing buyer power and the fact that non-licensable smart mobile OSs such as those of Apple and BlackBerry exercise an insufficient indirect constraint on Google's dominant position in the worldwide market (excluding China) for licensable smart mobile OSs.
 - (589) In the third place, the *Google / Motorola Mobility* decision of February 2012 left

⁵⁹⁸ Case T-79/12, *Cisco Systems Inc. and Messagenet SpA v Commission*, EU:T:2013:635, paragraph 73.

⁵⁹⁹ See Google's Response to the Statement of Objections, Part Two, pages 66-67, paragraphs 70-72 (Doc ID 7117).

⁶⁰⁰ See Google's Response to the Statement of Objections, Part Two, page 62, paragraph 57 (Doc ID 7117).

⁶⁰¹ Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 70; Case T-340/03 *France Télécom v Commission*, EU:T:2007:22, paragraph 101; Case T-336/07 *Telefónica v Commission*, EU:T:2012:172, paragraph 162.

open the possibility that Google might have been dominant in 2011.⁶⁰²

9.4. Worldwide market (excluding China) for Android app stores

(590) For the purpose of this Decision, the Commission concludes that Google holds a dominant position in the worldwide market (excluding China) for Android app stores since 2011. This conclusion is based on:

- (1) the market shares of Google and competing Android app stores market shares (Section 9.4.1),
- (2) the quantity and popularity of apps available on the Play Store (Section 9.4.2),
- (3) the automatic update functionalities of the Play Store (Section 9.4.3),
- (4) the fact that the only way for OEMs to obtain Google Play Services is to obtain the Play Store (Section 9.4.4),
- (5) the existence of barriers to entry and expansion (Section 9.4.5),
- (6) the lack of countervailing buyer power of OEMs (Section 9.4.6) and
- (7) the insufficient constraint from app stores for non-licensable smart mobile OSs (Section 9.4.7).

9.4.1. Market shares

- (591) For the purpose of assessing shares in the worldwide market (excluding China) for Android app stores, the Commission uses two methods.
- (592) The first method consists in calculating the share of smart mobile devices using Android on which a given app store is pre-installed. This method allows for an assessment of the economic strength of an Android app store at the level of OEMs and MNOs which pre-install app stores on their Android devices.
- (593) The second method consists in calculating the share of a given Android app store on the basis of the number of apps downloaded via that store. This method allows for an assessment of the economic strength of an Android app store at the level of users of Android devices.
- (594) The Commission has, however, not calculated shares on the basis of the revenues earned from sales of apps on a given Android app store. This is because each Android app store developer can obtain value from its app store in one or more ways.⁶⁰³ Google, for example, monetises the Play Store in three main ways: (i) by charging a fixed percentage of the revenues of app developers; (ii) by in-app advertising powered by Google's AdMob⁶⁰⁴ and (iii) by promoting the value of the

⁶⁰² Commission decision in Case M.6381 – Google / Motorola Mobility, paragraph 108.

⁶⁰³ See non-confidential responses to Question 2.ii of the request for information of 21-29 October 2015 on app stores. It results from these responses that some of the app store developers apply two or three monetisation strategies simultaneously.

⁶⁰⁴ Google is active in the in-app advertising space since its 2010 acquisition of AdMob, which according to AppBrain is the largest provider of in-app advertising services, with coverage of approximately 43% of Android apps. The second player, Chartboost, provides advertising services on 4.11% of Android apps, whereas the third player, AdColony, only covers 1.71% of Android apps (see "Android ad networks", available at <http://www.appbrain.com/stats/libraries/ad>, printed and saved on 11 April 2016).

Android ecosystem as a whole.⁶⁰⁵ Other Android app store developers may monetise their app stores in different ways.

- (595) Google's share of the worldwide market (excluding China) for Android app stores, whether calculated on the basis of the number of smart mobile devices using Android OS on which a given Android app store is pre-installed or of the number of apps downloaded via each Android app store, provides a good indication of Google's economic strength in that market.
- (596) As shown in Table 4, since 2011, the Play Store has been pre-installed on more than [90-100]% of all smart mobile devices using Android. No other Android app store has achieved such distribution. The second most pre-installed Android app store is Samsung's Galaxy Apps store, which was pre-installed on [30-40]% of Google Android devices during 2014-2016, down from [40-50]% in 2012-2013.

Table 4: Worldwide (excluding China) shares of pre-installation for app stores on total sales of smart mobile devices using Android (units)⁶⁰⁶

App store	2011	2012	2013	2014	2015	2016
Play Store ⁶⁰⁷	[90-100]%	[90-100]%	[90-100]%	[90-100]%	[90-100]%	[90-100]%
Amazon Appstore	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[5-10]%	[5-10]%
Aptoide	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
LG Electronics ⁶⁰⁸	[5-10]%	[5-10]%	[5-10]%	[0-5]%	[0-5]%	[0-5]%
Samsung Galaxy Apps	[30-40]%	[40-50]%	[40-50]%	[30-40]%	[30-40]%	[30-40]%
SFR	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Yandex	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%

- (597) As for the shares of each Android app store on the basis of the number of apps downloaded via that store, as shown in Table 5, since 2011, over [90-100]% of all apps on Android devices have been downloaded via the Play Store.⁶⁰⁹ The market

⁶⁰⁵ Internal Google document submitted in response to the request for information of 11 July 2014 (Doc ID 1367-00750).

⁶⁰⁶ The Commission's calculations on the basis of the data accessible to Google in the data room submitted in response to Question 30 of the request for information of 21 October 2015 on app stores, updated with responses from app store providers to the requests for information of 8 March 2017 ([...] and LG), 9 March 2017 (Amazon), 24 March 2017 (Aptoide and SFR) and 31 March 2017 (Yandex), and Google's response to Question 14 of the request for information of 11 May 2015 (Doc ID 3545) and to Question 8 of the request for information of 24 March 2017 (Doc ID 7894-3). The shares in Table 4 add up to more than 100% given that for some devices more than one app store would be pre-installed.

⁶⁰⁷ The Play Store's share of pre-installation was calculated by assuming that all Google Android devices in the relevant geographic market, which is worldwide excluding China, are sold with GMS, as stated in footnote 436.

⁶⁰⁸ Since LG Electronics did not provide data for the years 2011 and 2012, sales of LG Electronics devices were used as a proxy for the number of pre-installations. Source: [...] data (Doc IDs 7866 and 7867).

⁶⁰⁹ As discussed in Section 7.4.4, Windows Mobile Store, the only app store for another licensable smart mobile OS with an appreciable market presence, is not part of the relevant market for Android app stores. However, even if Windows Mobile Store were to be included in the relevant market, the market shares of Google would not be significantly different. In particular, Google's shares would have still been above [90-100]% for any year of the period 2011-2016. Source: Commission's calculations on the basis of Annex 2 to Microsoft's response to the request for information of 21 October 2015 on app

share of Amazon, the second largest player in the worldwide market (excluding China) for Android app stores, has been decreasing since 2011 and in 2016 was only [0-5]%.

- (598) Moreover, the market share of pre-installed app stores other than the Play Store is insignificant compared to the Play Store, as shown by the example of Samsung's Galaxy Apps, which did not exceed a share of [0-5]%. In addition, no downloadable app store has achieved any meaningful market share. Aptoide, which claims to be the largest "independent" app store outside China, has only achieved a market share of [0-5]% in the period 2011-2016.

Table 5: Worldwide (excluding China) market shares for Android app stores based on app downloads (units)⁶¹⁰

App store	2011	2012	2013	2014	2015	2016
Play Store	[90-100] ⁶¹¹ %	[90-100)%	[90-100)%	[90-100)%	[90-100)%	[90-100)%
Amazon Appstore	[5-10)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%
Aptoide	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%
LG Electronics	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%
Opera ⁶¹²	[0-5)%	[0-5)%	[0-5)%	-	-	-
Samsung Galaxy Apps	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%
SFR	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%
Yandex	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%	[0-5)%

- (599) Google's economic strength in the worldwide market (excluding China) for Android app stores has been confirmed by the evidence in recitals (600) to (605):

- (600) First, it has been confirmed by OEMs and MNOs that responded to requests for information:⁶¹³

- (1) According to Orange: "*Google Play has no real competitors on the market and as an application store is a must-have feature for a smartphone, embedding*

stores and Annex 6 to Microsoft's response to the request for information of 11 April 2017 (Doc ID 8199).

⁶¹⁰ Source: Commission's calculations on the basis of data accessible to Google in the data room submitted in response to Question 30 of the request for information of 21 October 2015 on app stores, updated with responses from app store providers to the requests for information of 8 March 2017 ([...] and LG), 9 March 2017 (Amazon), 24 March 2017 (Aptoide and SFR) and 31 March 2017 (Yandex), and Google's response to Question 14 of the request for information of 11 May 2015 (Doc ID 3545) and to Question 8 of the request for information of 24 March 2017 (Doc ID 7894-3).

⁶¹¹ Google has provided download data only for the last two months of 2011. This means that the 2011 figures included in the Table underestimate Google position, as they are only based on two months.

⁶¹² From November 2013, Opera could no longer complete the download itself but instead was required to redirect users to the Play Store (Doc ID 3893). As regards Vodafone, which was included in the Statement of Objections, its only app store in operation during the relevant period was Vodafone Updates, which is a service offering free Vodafone apps and updates to existing Vodafone apps, and therefore is not included in Table 5 (Doc ID 8253).

⁶¹³ The majority of OEMs and MNOs consider that no other app store is currently a viable substitute to the Play Store - see non-confidential responses to Question 6 and Question 13 of the request for information of 21 October 2015 on app stores.

- Google Play has become de facto mandatory⁶¹⁴ and "Given the two-sided character of this market (attracting enough developers requires having a large user base and users will reciprocally be attracted to shops offering many apps) it is indeed very difficult to offer an app shop in competition with Google Play given (i) its link with Android OS and (ii) its current size".⁶¹⁵*
- (2) According to Samsung it would "not be commercially feasible for an OEM to ship Android devices without Google Play pre-installed due to the variety and number of apps and contents available to users uniquely through the Google Play Store."⁶¹⁶
- (601) Second, it is confirmed by an internal Google document dated 8 October 2010 in which [Google Executive], already stated that Google's app store had become commercially important for OEMs: "*We created the first app store for Android and it got critical mass quickly. The store now has value and partners want access to it because of the number of apps available*".⁶¹⁷
- (602) Third, it is confirmed by the fact that other Android app stores still have difficulty in attracting developers, despite offering more favourable revenue sharing arrangements (for example, Opera Mobile Store and Aptoide offer a 15/85 split⁶¹⁸ compared with 30/70 split offered by the Play Store until January 2018).
- (603) Fourth, the Commission's conclusion that Google's economic strength in the worldwide market (excluding China) for Android app stores provides a good indication of Google's economic strength in that market is not affected by Google's claims that:
- (1) market shares should be based on value and not pre-installations on smart mobile devices, given that: (i) OEMs pre-install several app stores; and (ii) users switch from pre-installed app stores to a downloaded app store;⁶¹⁹ and
 - (2) Apple is the leading app store.⁶²⁰
- (604) In the first place, market shares based on value do not provide a good indication of Google's economic strength in the worldwide (excluding China) market shares for Android app stores. This is because, as explained in recital (594), app store developers monetise their app stores in different ways.

⁶¹⁴ Orange's non-confidential response to Question 5 of the request for information of 19 October 2015 to Email service providers (Doc ID 4598).

⁶¹⁵ Orange's non-confidential response to Question 12 of the request for information of 21 October 2015 on app stores (Doc ID 2479).

⁶¹⁶ Samsung's non-confidential response to Question 7 of the request for information of 21 October 2015 on app stores (Doc ID 2805).

⁶¹⁷ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1374-1156).

⁶¹⁸ See "*Opera Software™ and Forbes Digital Commerce™ forge partnership to offer Android developers more revenue opportunities on the Opera Mobile Store*" (22 April 2014), available at <http://opera-mobile-store.com/tag/in-app-payment/>, printed and saved on 13 June 2017, and <https://www.aptoide.com/page/publishers?lang=en>, printed and saved on 11 June 2018.

⁶¹⁹ Google's Response to the Statement of Objections, Part Two, pages 78-80, paragraphs 108-110 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part One, page 29, paragraph 73 (Doc ID 8598).

⁶²⁰ Google's Response to the Statement of Objections, Part Two, page 78, paragraphs 104-107 (Doc ID 7117) Google's Response to the First Letter of Facts, Part One, page 29, paragraph 74 (Doc ID 8598).

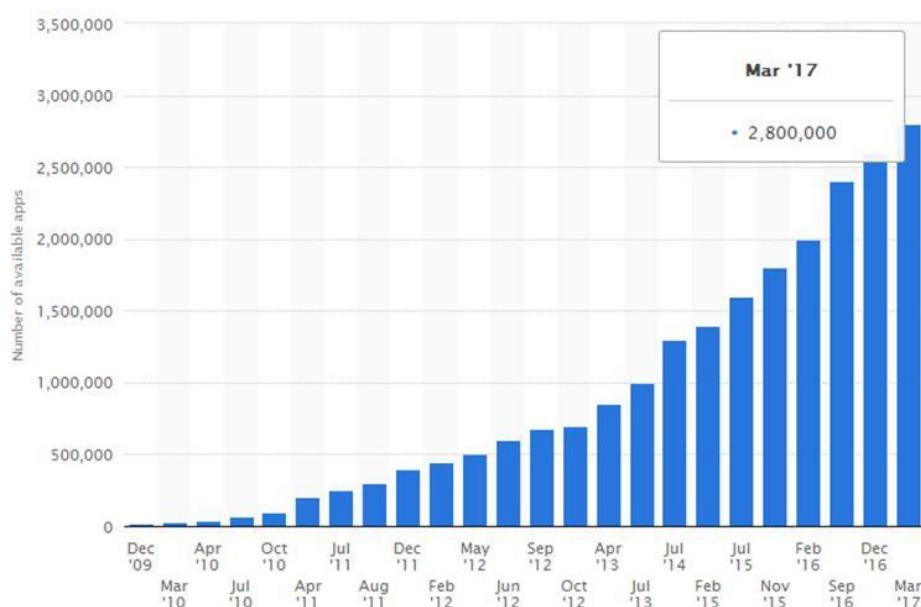
(605) In the second place, Apple's AppStore and Google's Play Store are in different markets and Apple's AppStore exercises an insufficient indirect constraint on Google's dominant position in the worldwide market (excluding China) for Android app stores (see Section 7.4.5 and Section 9.4.7).⁶²¹

9.4.2. *Quantity and popularity of apps available on the Play Store*

(606) Google's economic strength in the worldwide market (excluding China) for Android app stores is reinforced by the quantity and popularity of apps available on the Play Store.

(607) First, as mentioned in Section 6.2.2.1.II, the Play Store is the app store with the largest quantity of apps. As evidenced by Figure 16, the number of apps available in the Play Store has increased rapidly since 2010. The number of apps available reached 1 million in July 2013, 1.8 million in November 2015 and 2.8 million in March 2017.

Figure 16: Number of apps available in the Play Store⁶²²



(608) By contrast, competing Android app stores have consistently offered fewer apps:

(1) Aptoide offered only 500 000 apps in January 2016⁶²³ and 910 000 in June

⁶²¹ If Apple's AppStore was also included in the relevant market, the market shares of Google would still be above 50% for any year in the period 2012-2016, namely [50-60]% in 2012 and 2013, [60-70]% in 2014 and [70-80]% in 2015 and 2016. Source: Commission's calculations on the basis of data accessible to Google in the data room submitted by Apple as response to Question 30 of the request for information of 21 October 2015 on app stores and to Question 6 of request for information of 31 March 2017. Since Google has been able to provide data only for the last two months of that year, the 2011 figures collected by the Commission including Apple would underestimate Google's position.

⁶²² See "Number of available applications in the Google Play Store from December 2009 to March 2017", available at <http://www.statista.com/statistics/266210/number-of-available-applications-in-the-google-play-store/>, printed and saved on 13 June 2017.

⁶²³ See Jon Russell, "Aptoide Lands \$4M To Grow Its Alternative Android App Store In Emerging Markets" (5 January 2016), available at <http://techcrunch.com/2016/01/05/aptoide-series-a/>, printed and saved on 11 April 2016.

- 2017⁶²⁴;
- (2) Amazon Appstore offered only 400 000 apps in September 2015⁶²⁵ and approximately [700 000 – 900 000] in April 2017;⁶²⁶
 - (3) Samsung Galaxy Apps offered [100 000-150 000] apps in September 2015⁶²⁷ and [150 000-200 000] apps in March 2017.⁶²⁸
- (609) OEMs and app store developers have confirmed that the Play Store is the app store with the largest number of apps:
- (1) Lenovo stated: "*The Google Play Store is in leading position in terms of the number and variety of apps offered: it has an app for more or less any purpose.*"⁶²⁹
 - (2) Amazon stated that its app store "[...] lags behind the Play Store [and] [...] it has become increasingly difficult over time to obtain and retain a competitive selection of apps because, as the Play Store continues to grow by virtue of being pre-installed on all licensed Android devices, more and more app developers have focused their development efforts on developing apps that use [Google Play Services]".⁶³⁰
 - (3) Sony stated: "*In our view, Google Play Store holds a unique position due to its large amount of content. The variety of the content offered is wide with apps in all kinds of categories.*"⁶³¹
 - (4) Samsung stated: "*[d]evelopers in general aim to distribute their Android apps through the Google Play Store, because it is the market-leading Android store*".⁶³²
- (610) Second, as can be seen in Figure 17, the Play Store has attracted the largest number of app developers: almost 400 000 developers in 2014 and over 720 000 developers in 2016.⁶³³

⁶²⁴ See "Aptoide Your Android App Store", available at <https://www.aptoide.com/page/apps>, printed and saved on 13 June 2017.

⁶²⁵ Amazon's non-confidential response to Question 4 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

⁶²⁶ See Amazon's non-confidential response to Question 2 of the follow up request for information of 11 April 2017 (Doc ID 8276).

⁶²⁷ Samsung's non-confidential response to Question 2.i of the request for information of 21 October 2015 on app stores (Doc ID 2805).

⁶²⁸ Samsung's non-confidential response to Question 5 of the request for information of 17 April 2017 (Doc ID 7803).

⁶²⁹ Lenovo's non-confidential response to Question 3.i of the request for information of 21 October 2015 on app stores (Doc ID 2602).

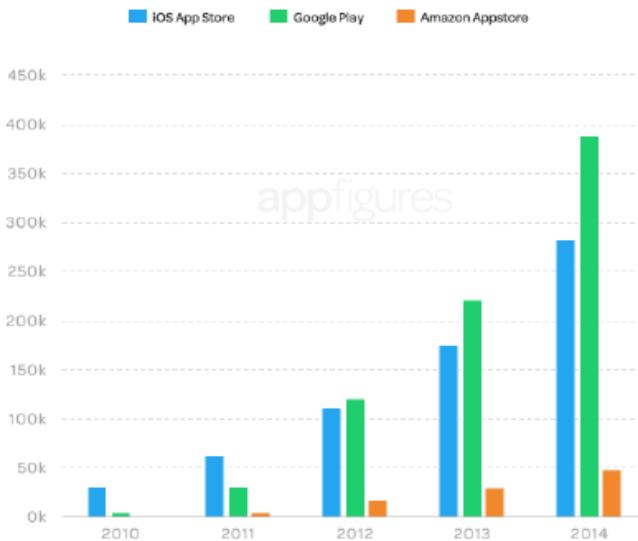
⁶³⁰ Amazon's non-confidential response to Question 4 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

⁶³¹ Sony Mobile Communications' non-confidential response to Question 3 of the request for information of 21 October 2015 on app stores (Doc ID 4121).

⁶³² Samsung's non-confidential response to Question 25 of the request for information of 21 October 2015 on app stores (Doc ID 2805).

⁶³³ See "App Stores Start to Mature – 2016 Year in Review" (24 January 2017), available at <http://blog.appfigures.com/app-stores-start-to-mature-2016-year-in-review/>, printed and saved on 14 June 2017.

Figure 17: Total number of developers by app store⁶³⁴



- (611) As Samsung stated: "*Another important factor for developers is the fact that Google Play is the indisputable market leader for Android apps, in both number of apps and number of users. Developers of Android apps therefore target distribution through Google Play, and have no reason to exclude Google Play as a distribution channel for their apps.*"⁶³⁵
- (612) Third, unlike other Android app stores, the Play Store offers all the most popular apps in terms of number of downloads. These include apps distributed by Facebook, Rovio Entertainment Ltd. ("Rovio Entertainment"), Spotify Ltd. ("Spotify"), Amazon and Netflix Inc. ("Netflix").
- (613) Fourth, OEMs, app developers and users attach significant importance to the quantity of apps available on an app store and whether an app store is able to offer the most popular apps:
 - (1) According to Yandex, "[...] a number of factors such as the number of active users, number of available applications, popularity among developers, etc., [serve] as important criteria for OEMs to decide which app store shall be pre-installed in order to meet consumers' expectations."⁶³⁶
 - (2) Orange stated: "[S]election [of apps] [...] is an essential criterion for customers and for developers".⁶³⁷
 - (3) Sony stated: "The number of applications available in an app store must be

⁶³⁴ See Ariel, "App Stores Growth Accelerates in 2014" (13 January 2015), available at <http://blog.appfigures.com/app-stores-growth-accelerates-in-2014/>, printed and saved on 11 April 2016.

⁶³⁵ Samsung's non-confidential response to Question 20 of the request for information of 21 October 2015 on app stores (Doc ID 2805).

⁶³⁶ Yandex's non-confidential response to Question 5 of the request for information of 21 October 2015 on app stores (Doc ID 4228).

⁶³⁷ Orange's non-confidential response to Question 2.iii of the request for information of 21 October 2015 on app stores (Doc ID 2479).

very high today in order to be relevant and competitive."⁶³⁸

- (614) The Commission's conclusion that Google's economic strength in the worldwide market (excluding China) for Android app stores is reinforced by the quantity and popularity of apps available on the Play Store is not affected by Google's claim that what matters for users is the quality, and not the quality, of available apps⁶³⁹. The Play Store is the Android app store with both the largest quantity and quality of available apps, as measured by popularity.⁶⁴⁰

9.4.3. *Automatic update functionalities of the Play Store*

- (615) Google's economic strength in the worldwide market (excluding China) for Android app stores is reinforced by the fact that other Android app stores that are not pre-installed but which can be downloaded to be used in parallel with the Play Store cannot automatically update apps, as confirmed by OEMs, MNOs and app store developers that responded to requests for information:
- (1) According to Huawei, "*Google fully controls the package installer and permissions management. Other applications and app stores cannot implement automatic application updates. As a result, only Google Play Store can provide automatic application updates.*"⁶⁴¹
 - (2) According to Amazon, "*Software updates, bug fixes and enhancements to apps distributed through the Play Store are also controlled by Google. Google's App Distribution Agreement prohibits developers from updating their apps through any method other than Google Play's update mechanism*"⁶⁴² and "*For example, the version of the Amazon Appstore installed by customers on Google Android devices cannot automatically apply app updates and security fixes for downloaded apps, because it lacks the operating system permissions necessary to do so (in contrast, the Amazon Appstore for Fire OS devices can automatically apply app updates and security fixes).*"⁶⁴³
 - (3) According to Vodafone, "*Currently there is no alternative to update apps outside of the Play Store so the Play Store is extremely important.*"⁶⁴⁴
 - (4) According to Yandex, "*Automatic updating is only available for apps downloaded through the Google Play store. If a user installed an application by downloading the APK file from a website (so called "side-loading"), it cannot be further automatically updated – the only option available for the user in such a case is to install a new APK file manually when one becomes available*" and "*downloadable app stores cannot be integrated in the firmware*

⁶³⁸ Sony's confidential response to Question 61 of the request for information of 12 June 2013 to OEMs (Doc ID 4389).

⁶³⁹ Google's Response to the Statement of Objections, Part Two, pages 79-80, paragraph 110 (Doc ID 7117).

⁶⁴⁰ See recitals (612) and (669).

⁶⁴¹ Huawei's non-confidential response to Question 3.iii of the request for information of 21 October 2015 on app stores (Doc ID 2455).

⁶⁴² Amazon's non-confidential response to Question 3.iii of the request for information of 21 October 2015 on app stores (Doc ID 4067).

⁶⁴³ Amazon's non-confidential response to Question 2 of the request for information of 9 March 2017 (Doc ID 8165).

⁶⁴⁴ Vodafone's non-confidential response to Question 3.iii of the request for information of 21 October 2015 on app stores (Doc ID 2399).

in the same way as a pre-installed app store and cannot therefore offer automatic updates of mobile applications".⁶⁴⁵

- (616) Such an automatic update function is important from the perspective of users, developers and OEMs.
- (617) From the perspective of users, as stated by Deutsche Telekom, "*Regarding the update for Apps the PlayStore is considered to be essential from a consumer perspective as manual updates/downloads are rather cumbersome [...]*"⁶⁴⁶
- (618) From the perspective of developers, Huawei stated: "*Application updates can help developers to push the latest versions of their apps to users of Android phones for automatic installation, which is something valuable for developers.*"⁶⁴⁷ Opera also stated: "*Update functionality is very important for app developers, because it facilitates app maintenance and because it helps efficiently to migrate users to the latest and most engaging version of the app without having to build their own notification engine, or requiring separate permission of end users to update the app.*"⁶⁴⁸
- (619) From the perspective of OEMs, Hutchison 3G stated that "*The update functionalities are very useful. They mean that app developers do not need to include an update mechanism within the app code.*"⁶⁴⁹
- (620) Google does not contest the Commission's conclusions as outlined in this Section.

9.4.4. *Google Play Services*

- (621) Google's economic strength in the worldwide market (excluding China) for Android app stores is also reinforced by the fact that the only way for OEMs to obtain Google Play Services is to obtain the Play Store (see Section 6.2.2.1.III).
- (622) First, as explained in Section 6.2.2.1.III the Play Store and Google Play Services are closely interlinked.
- (623) Second, the Google Play Service libraries are integrated in a large number of third party apps and without access to these libraries, many apps would either crash or not function properly:
 - (1) according to Hutchison 3G, "[...] without [Google Play Services] the Android OS would be more like a feature phone OS than a smartphone OS".⁶⁵⁰
 - (2) according to Yandex: "*all developers of top 500 paid applications and almost 70% of developers for top 500 free applications rely on one or more APIs*

⁶⁴⁵ Yandex's non-confidential response to Questions 3.iii and 15 of the request for information of 21 October 2015 on app stores (Doc ID 4228).

⁶⁴⁶ Deutsche Telekom's non-confidential response to Question 3.iii of the request for information of 21 October 2015 on app stores (Doc ID 2556).

⁶⁴⁷ Huawei's non-confidential response to Question 3.iii of the request for information of 21 October 2015 on app stores (Doc ID 2455).

⁶⁴⁸ Opera's non-confidential response to Question 24 of the request for information of 21 October 2015 on app stores (Doc ID 3534).

⁶⁴⁹ Hutchison 3G's non-confidential response to Question 3.iii of the request for information of 21 October 2015 on app stores (Doc ID 2383).

⁶⁵⁰ Hutchison 3G's non-confidential response to Question 9 of the request for information of 21 October 2015 on app stores (Doc ID 2383).

- provided by Google via [Google Play Services] ".⁶⁵¹*
- (3) according to Deutsche Telekom "[Google's] APIs are an essential input for developers. They offer much of the functionality that make apps attractive to customers (such as displaying your position on a map, or voice search functionality)".⁶⁵²
 - (4) according to LG Electronics: "The Play Store [is] desired as many of the Google apps and third party apps are developed intimately tied with Google Play Services, they do not function without them being available".⁶⁵³
- (624) Third, if a competing Android app store developer sought to replace the Play Store, it would not only have to develop an app store to compete with it, but also "*its own APIs with similar functionality to [Google Play Services]*".⁶⁵⁴ This requires the competing developer to undertake substantial investments to replicate the whole Google ecosystem.⁶⁵⁵ This was confirmed by MNOs, app store developers and competing general search services:
- (1) Amazon stated: "*Amazon could not feasibly replicate the full functionalities provided by [Google Play Services] APIs. Amazon has invested a significant amount of money, time and other resources, yet has developed analogues for just a small number of the [Google Play Services] APIs so that developers may use device messaging, maps, in-app purchasing, mobile advertising, analytics, and games services in their Fire OS apps.*"⁶⁵⁶
 - (2) Deutsche Telekom stated: "*The APIs that Google has developed and the services that stand behind them (e.g. Google Maps) have evolved over years and required substantial input of software developers and other investments. It would be highly speculative to estimate the resources needed to develop an app store including the abovementioned functions (including APIs). As a matter of fact, DT submits that in order to effectively compete against Google's Android ecosystem characterized by strong network effects as well as its underlying data analytics business model, a company needs to replicate almost the whole ecosystem.*"⁶⁵⁷
 - (3) Yandex stated: "*The development of APIs, although possible, requires a substantial amount of resources and time. The development costs (depending on the number of APIs created) may exceed tens and hundreds of millions of Euros.*"⁶⁵⁸ In particular, as regards one of the Google APIs contained in Google

⁶⁵¹ Yandex's non-confidential response to Question 24 of the request for information of 21 October 2015 on app stores (Doc ID 4228).

⁶⁵² Deutsche Telekom's non-confidential response to Question 24 of the request for information of 21 October 2015 on app stores (Doc ID 2556).

⁶⁵³ LG Electronics' non-confidential response to Question 24 of the request for information of 21 October 2015 on app stores (Doc ID 2377).

⁶⁵⁴ Yandex's non-confidential response to Question 10 of the request for information of 21 October 2015 on app stores (Doc ID 4228).

⁶⁵⁵ See responses to Question 10 of the request for information of 21 October 2015 on app stores.

⁶⁵⁶ Amazon's non-confidential response to Question 10 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

⁶⁵⁷ Deutsche Telekom's non-confidential response to Question 9 of the request for information of 21 October 2015 on app stores (Doc ID 2556).

⁶⁵⁸ Yandex's non-confidential response to Question 9 of the request for information of 21 October 2015 on app stores (Doc ID 4228).

Play Services, namely the Google Maps APIs,⁶⁵⁹ Yandex has noted: "*For instance, in order to develop a replacement for Google Maps API, the company needs to have its own maps service and server infrastructure, requiring substantial amount of development time and costs.*"⁶⁶⁰

- (625) Fourth, if a competing Android app store were to replace the Play Store, app developers would have to incur costs when switching to such Android app store. For example, Amazon explained that "[...] while Amazon has sought to develop its APIs in a way that reduces switching costs for developers, Google has architected its APIs in a way that prevents interoperability and has made it impossible for Amazon to provide a solution that allows for switching between Google APIs and Amazon APIs without additional work on behalf of app developers" and added that "if an app is dependent on the Google Maps API (and the developer has not invested the resources necessary to create an alternate version of that app using the Amazon Maps API), that app will not function properly on Fire OS devices and will not be available in the Amazon Appstore for Fire OS".⁶⁶¹

- (626) Fifth, contrary to Google's claim,⁶⁶² developers of competing app stores find Google proprietary APIs commercially important, regardless of whether they could in principle replace them with other competing APIs (see recital (577)).

9.4.5. *Barriers to entry and expansion*

- (627) The worldwide market (excluding China) for Android app stores is characterised by the existence of a number of barriers to entry and expansion.
- (628) First, the establishment of a fully-fledged Android app store (including its development and introduction into the market) requires significant investment:
- (1) According to Amazon: "*Excluding the effort to develop APIs, Amazon has dedicated hundreds of employees and tens of millions of dollars each year over the course of several years to develop and commercialize its app store, including engineering, app store operations, business development, developer and consumer marketing, developer relations and support.*"⁶⁶³
 - (2) According to Sony, "*[t]he cost for developing, marketing and maintaining an app store that is relevant and that can compete with Google Play is prohibitive.*"⁶⁶⁴
 - (3) According to Nokia, "*the required resources, costs and time are very significant all together. Engineering wise it would probably require about tens*

⁶⁵⁹ According to Google: "*Millions of websites and apps use Google Maps APIs to power location experiences for their users.*" - See "Google Maps for every platform", available at <https://developers.google.com/maps/?hl=en>, printed and saved on 11 April 2016.

⁶⁶⁰ Yandex's non-confidential response to question 9 of the request for information of 21 October 2015 on app stores (Doc ID 4228).

⁶⁶¹ Amazon non-confidential response to Questions 1 and 2 of the request for information of 9 March 2017 (Doc ID 8247).

⁶⁶² Google's Response to the Statement of Objections, Part Two, page 81, paragraph 115 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part One, pages 30-31, paragraph 80 (Doc ID 8598).

⁶⁶³ See Amazon's non-confidential response to Question 8 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

⁶⁶⁴ Sony's non-confidential response to Question 61 of the request for information of 12 June 2013 to OEMs (Doc ID 4389).

of millions of euros once all the development work is done".⁶⁶⁵

- (629) In addition to development costs there are also commercialisation costs because "*one would still have to market the store*".⁶⁶⁶ This was confirmed by Deutsche Telekom: "*[w]hile the development of an app store (excluding the proprietary APIs or OS capabilities) is generally feasible, however the commercialisation (e.g. 30% revenue share of app sales and/or in-app payments) seems close to impossible due to significant network effects as well as developer and customer lock-in*".⁶⁶⁷
- (630) Commercialisation costs also result from the need to convince users to try a new Android app store in a market where the Play Store has an established position. According to Opera, since "*Google Play [...] has established itself over the past few years as the default storefront for Android apps [...] [s]ignificant customer education and marketing investment would therefore be required to change this user perception with respect to an alternative appstore*".⁶⁶⁸
- (631) Second, as noted in Section 9.4.3, the establishment of a fully-fledged Android app store requires significant investment in APIs and automatic update functionalities. According to Nokia, developing these functionalities "*[...] would take many man years of effort as this would require other manufacturers to support those APIs in their devices and then developers to use them in their apps*".⁶⁶⁹ According to SFR "*[...] the effort to build something equivalent to [Google Play Services] is huge [...]*".⁶⁷⁰ Aptoide also observed, on the basis of its past experience concerning Nokia's Android fork, Nokia X, that "*[c]loning the entire GMS API stack (Maps, Messaging, Games, Billing...) implicates a[n] enormous [amount] of resources*".⁶⁷¹
- (632) Third, a developer of a new Android app store would find it difficult to distribute its Android app store. This is for reasons described in recitals (633) to (636).
- (633) In the first place, pre-installation is a key requirement for an app store in order to achieve a sufficient scale and a developer of an Android app store would have to pay an OEM or MNO a revenue share or other fee in exchange for pre-installation. This was confirmed by Amazon that stated: "*[i]n an attempt to reach end users Amazon has in the past agreed to pay a share of revenues or other fees to carriers in exchange for the pre-installation of its apps – adding further cost.*"⁶⁷² This is because: "*App stores' owners try as much as possible to have their shop pre-installed in the devices as end users usually use the store which is directly available on the*

⁶⁶⁵ Nokia's non-confidential response to Question 8 of the request for information of 21 October 2015 on app stores (Doc ID 3991).

⁶⁶⁶ Nokia's non-confidential response to Question 8 of the request for information of 21 October 2015 on app stores (Doc ID 3991).

⁶⁶⁷ Deutsche Telekom's non-confidential response to Question 8 of the request for information of 21 October 2015 on app stores (Doc ID 2556).

⁶⁶⁸ Opera's non-confidential response to Question 13 of the request for information of 21 October 2015 on app stores (Doc ID 3534).

⁶⁶⁹ Nokia's non-confidential response to Question 9 of the request for information of 21 October 2015 on app stores (Doc ID 3991).

⁶⁷⁰ SFR's non-confidential response to Question 9 of the request for information of 21 October 2015 on app stores (Doc ID 3975).

⁶⁷¹ Aptoide's non-confidential response to Question 9 of the request for information of 21 October 2015 on app stores (Doc ID 2396).

⁶⁷² Amazon's non-confidential response to Question 8 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

device".⁶⁷³ In addition, "Preloading remains valuable to users, and hence OEMs, despite full unbundling because most users just use what comes on the device. People rarely change defaults."⁶⁷⁴

- (634) In the second place, because other Android app stores cannot be downloaded from the Play Store, the only way for users to download non pre-installed app stores on their devices is by means of "side-loading".⁶⁷⁵ Users that do not necessarily possess a sufficient degree of technical knowledge may, therefore, be under the impression that no alternative app stores to the Play Store exist on Android devices.⁶⁷⁶
- (635) In the third place, users face a number of other restrictions when they wish to side-load a downloadable Android app store:
- (1) According to Amazon, "[...] Google ensures the process for consumers to discover and install a downloadable app store is extremely difficult. First, the primary, and perhaps only, way many consumers know how to download an app to their device is through the Play Store. But downloadable app stores are not available through the Play Store, so consumers searching in the Play Store for alternate stores may be left with the impression that no alternate stores exist. Second, even for consumers who discover and download an alternate store outside of the Play Store, Google has configured Android to block the installation of that store. Consumers are unable to install downloadable app stores unless the consumer first navigates to and changes Android's obscure "Unknown Sources" setting to allow installation of apps from sources other than the Play Store. When consumers attempt to change this setting, Google displays a message warning that "Your [tablet or phone] and personal data are more vulnerable to attack by apps from unknown sources. You agree that you are solely responsible for any damage to your tablet or loss of data that may result from using these apps."⁶⁷⁷
 - (2) According to Deutsche Telekom: "The installation of alternative market place apps is possible but Google discourages their use. If a user wants to install an alternative app store he has to navigate to security-settings and allow installation of "unknown sources" which then shows a security warning. Therefore, "normal" customers tend to not download an alternative app store in addition to the PlayStore. In addition, other factors including (i) significant network effects (ii) number of apps, (iii) convenience of user experience, (iv) number of other users using it (no of reviews), (v) ease of download and (ideally automated background-) updating of apps."⁶⁷⁸

⁶⁷³ Orange's non-confidential response to Question 12 of the request for information of 21 October 2015 on app stores (Doc ID 2479).

⁶⁷⁴ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1361-1060).

⁶⁷⁵ In the context of apps on smart mobile devices side-loading means downloading apps manually from the Internet (through a browser) without using the app store.

⁶⁷⁶ See Amazon's non-confidential response to Question 15 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

⁶⁷⁷ See Amazon's non-confidential response to Question 15 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

⁶⁷⁸ See Deutsche Telekom's non-confidential response to Question 15 of the request for information of 21 October 2015 on app stores (Doc ID 2556). See also Mozilla's non-confidential response to Question 15 of the request for information of 21 October 2015 on app stores (Doc ID 3550).

- (636) In the fourth place, OEMs and app store developers have confirmed that the role played by downloadable Android app stores is minimal.
- (1) According to Lenovo, it "*is not aware of any mainstream alternative app stores for Android devices other than the Amazon app store.*"⁶⁷⁹
 - (2) According to ZTE, "*Under normal circumstances, ordinary consumers will not consider replacing pre-loaded appstores with downloadable appstores, unless they think pre-loaded appstores can't meet their requirement, for example they can't find their favorite apps or user experience of pre-loaded appstore is very bad.*"⁶⁸⁰
 - (3) According to Amazon: "*Currently, consumers rarely download an app store onto their mobile device when another app store was pre-installed. Downloadable app stores struggle to gain traction because the pre-installed app store has the inbuilt advantage of being front and centre of the end user's experience when they first get their device.*"⁶⁸¹
- (637) Fourth, Google has gained a first mover advantage in the worldwide market (excluding China) for Android app stores. According to Samsung, "[c]onsumers tend to be familiar with the interface of the Google Play Store and its features, it being the de-facto standard Android app store".⁶⁸² Nokia has also stated: "It is important to note that app stores have been evolving for almost a decade now. To start over from scratch, developing and commercialising an app store would not take a decade to get on par but it would most likely take a huge team and a considerable amount of time".⁶⁸³
- (638) This first mover advantage coupled with the existence of indirect network effects on both sides of the two-sided market for Android app stores creates an additional barrier to entry. As stated by Nokia, "[d]evelopers do not consider any other Android app store as substitutable for the Google Play Store based on the ability to reach end consumers when considering their expected revenues."⁶⁸⁴ As noted by Amazon, it is therefore "*extremely difficult to establish a meaningful market segment share*" for a new entrant.⁶⁸⁵
- (639) Fifth, a number of players have unsuccessfully tried to enter the worldwide market (excluding China) for Android app stores. For example, in 2010, a number of MNOs created the Android app store, WAC. This project was discontinued, after two years,

⁶⁷⁹ See Lenovo's non-confidential response to Question 15 of the request for information of 21 October 2015 on app stores (Doc ID 4095).

⁶⁸⁰ See ZTE's non-confidential response to Question 15 of the request for information of 21 October 2015 on app stores (Doc ID 2840).

⁶⁸¹ See Amazon's non-confidential response to Question 15 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

⁶⁸² Samsung's non-confidential response to Question 22 of the request for information of 21 October 2015 on app stores (Doc ID 2805).

⁶⁸³ Nokia's non-confidential response to Question 8 of the request for information of 21 October 2015 on app stores (Doc ID 3991).

⁶⁸⁴ Nokia's non-confidential response to Question 22 of the request for information of 21 October 2015 on app stores (Doc ID 3991).

⁶⁸⁵ Amazon's non-confidential response to Question 8 of the request for information of 21 October 2015 on app stores (Doc ID 4067).

in 2012 because it did not attract enough developers.⁶⁸⁶ As summarised by Orange "*...no MNO or OEM has been able to launch a successful app store competing with Google play. They have made several attempts, but none of them has overcome Google.*"⁶⁸⁷

- (640) Sixth, the Commission's conclusion that the worldwide market (excluding China) for Android app stores is characterised by the existence of a number of barriers to entry and expansion is not affected by Google's claims that:
- (1) the costs associated with building the app store, marketing and developing functionality do not constitute a barrier to entry since they are normal costs of doing business;⁶⁸⁸ and
 - (2) competing app stores have successfully entered the market for Android app stores.⁶⁸⁹
- (641) In the first place, the high costs associated with building the app store, marketing and developing functionality constitute a barrier to entry, particularly for an entrant that does not enjoy network and reputation effects and/or that does not have the necessary APIs (see recitals (628) to (630)).
- (642) In the second place, while Samsung and Amazon app stores have been pre-installed on more than 5%, they have not been used in the same proportion as the Play Store to download apps (see Table 5).
- 9.4.6. Lack of countervailing buyer power**
- (643) The Commission concludes that OEMs have insufficient countervailing buyer power.
- (644) First, because of the number and quality of apps available on the Play Store, its automatic update functionalities and close ties with Google Play Services (see Sections 9.4.2, 9.4.3 and 6.2.2.1.III), OEMs cannot switch from Google and rely on competing Android app stores.
- (645) Second, the credibility of any threat by OEMs to switch to competing Android app stores will be weak as users expect that OEMs will pre-install the Play Store on Android devices. This is shown in an email from [OEM] Google's customer to Google: "*Please provide me with information how to proceed. My customers in [...] are forcing me to get Google Play at the device but I need your permission. [...] We are facing a big time-pressure from our customers and already losing big orders and money because of this situation.*"⁶⁹⁰
- (646) Third, a threat by the OEMs to promote entry of a new Android app store would be unrealistic, because the new app store would have to overcome the barriers to entry and expansion to the market (see Section 9.4.5).
- (647) Fourth, Google has been able to impose on OEMs the Android compatibility tests

⁶⁸⁶ Orange's non-confidential response to Question 12 of the request for information of 21 October 2015 on app stores (Doc ID 2479).

⁶⁸⁷ Orange's non-confidential response to Question 43 of the request for information of 22 July 2014 (Doc ID 4575).

⁶⁸⁸ Google's Response to the Statement of Objections, Part Two, page 81, paragraph 116 (Doc ID 7117).

⁶⁸⁹ Google's Response to the Statement of Objections, Part Two, page 82, paragraph 119 (Doc ID 7117).

⁶⁹⁰ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1751-01356).

that OEMs have to pass if they wish to pre-install the Play Store on their devices (see Section 6.3.1). The fact that OEMs have accepted to pass these tests indicates that they have insufficient bargaining power vis-à-vis Google.

- (648) Fifth, the bargaining position that Google has vis-à-vis OEMs (including [OEM]) is confirmed by internal emails exchanged with these OEMs. In particular Google has been able to ensure that the [OEM apps store] would not be a strong competitive force against the Play Store:
- (1) An email from [Google Executive] stated: "[Confidential communication with partner]"⁶⁹¹
 - (2) Another email from [OEM Executive] to Google, stated: "[Confidential communication with partner]".⁶⁹²
- (649) Sixth, the Commission's conclusion that OEMs have insufficient countervailing buyer power is not affected by Google's claims that OEMs can pre-install their own competing app stores⁶⁹³
- (650) In the first place, app stores developed by OEMs are differentiated in their intended use. For example, according to [OEM], "*The purpose of each of these appstores is to serve as a distribution channel for apps, but there are differences in terms of concept and promotional aims. For instance, [OEM] concept is a curated storefront specializing in apps that enable special [OEM] device features as well as promotions for [OEM] device users*".⁶⁹⁴
- (651) In the second place, app stores developed by OEMs do not constitute a sufficient constraint on the Play Store given that they neither offer a similar number of apps (see recital (608)) nor reach an amount of downloads comparable to that of the Play Store (see Table 5).

9.4.7. *App stores for non-licensable smart mobile OSs*

- (652) For the reasons set out in this Section, the Commission concludes that app stores for non-licensable smart mobile OSs exercise an insufficient indirect constraint on Google's dominant position in the worldwide market (excluding China) for Android app stores.
- (653) First, in order to switch to the app stores for non-licensable smart mobile OSs such as Apple and BlackBerry, users of the Play Store would need to purchase a new smart mobile device as developers of non-licensable smart mobile OSs such as Apple and BlackBerry do not license their app stores.
- (654) Second, users of the Play Store are unlikely to switch to Apple or BlackBerry smart mobile devices in the event of a small but significant, non-transitory increase in the price of the apps distributed on the Play Store.
- (655) In the first place, Android users spend on average only USD 5 per year on apps (see recital (287)), which is far smaller than the price of an Apple or BlackBerry smart

⁶⁹¹ See non-confidential Annex [...] to [OEM]'s submission of 2 February 2016 [...].

⁶⁹² Google's internal document submitted in response to the request for information [...].

⁶⁹³ Google's Response to the Statement of Objections, Part Two, page 82, paragraph 120 (Doc ID 7117).

⁶⁹⁴ [OEM]'s non-confidential response to Question 12 of the request for information of 21 October 2015 on app stores [...].

mobile device.⁶⁹⁵

- (656) In the second place, users of the Play Store are unlikely to switch to Apple smart mobile devices because of the price differences between Google Android and Apple devices, the costs of switching to a device based on a different smart mobile OS and the user loyalty to their existing smart mobile OS (see Section 9.3.4). As explained by Opera, "*The only comparable OS in terms of app quantity, variety, and quality is iOS; however, Apple's devices may nonetheless be too expensive for many Android users to consider switching to iOS/Apple*".⁶⁹⁶
- (657) In the third place, users of the Play Store are unlikely to switch to BlackBerry smart mobile devices because of the costs of switching to a device based on a different smart mobile OS and user loyalty to their existing smart mobile OS (see Section 9.3.4) and the fact that BlackBerry accounts for a small part of the worldwide (excluding China) supply of smart mobile devices during 2011-2016.⁶⁹⁷ The limited number of apps available on the BlackBerry World (234 500⁶⁹⁸) also constitutes a disincentive for users to switch to BlackBerry.
- (658) Third, instead of increasing the price of apps, Google can require OEMs, as a condition for obtaining the Play Store, to agree to certain requirements such as the pre-installation of a given Google app, without such requirements leading users or app developers to switch away from Google Android devices. Google can act in such a manner given that OEMs do not have credible alternatives to the Play Store and because those requirements would not alter the cost of Google Android devices.
- (659) Fourth, the Commission's conclusion that app stores for non-licensable smart mobile OSs such as Apple and BlackBerry exercise an insufficient indirect constraint on Google's dominant position in the worldwide market (excluding China) for Android app stores is not affected by Google's claims that:
- (1) It cannot charge supra-competitive prices to app developers because competition between the Apple's AppStore and Google's Play Store would lead to developers switching to Apple. Competition between the Apple's AppStore and Google's Play Store is evidenced by (i) parallel innovation between the two app stores; and (ii) recent changes to developers' share of sales revenues in these two app stores;⁶⁹⁹
 - (2) A 2017 Commission report entitled "*The competitive landscape of online platforms*" and respondents to the requests for information confirm that the

⁶⁹⁵ Android users spend on average USD 5 per year in apps. See Philip Elmer-DeWitt, "Apple's users spend 4X as much as Google's" (27 June 2014), available at <http://fortune.com/2014/06/27/apples-users-spend-4x-as-much-as-googles/>, printed and saved on 12 June 2018.

⁶⁹⁶ Opera's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 3534).

⁶⁹⁷ BlackBerry sales of smart mobile devices corresponded to approximately 11% in 2011, decreasing to less than 0.01% in 2016. Source: [...] data (Doc IDs 7866 and 7867).

⁶⁹⁸ Source: "Number of apps available in leading app stores as of March 2017", available at <https://www.statista.com/statistics/276623/number-of-apps-available-in-leading-app-stores/>, printed and saved on 4 July 2017.

⁶⁹⁹ Google's Response to the Statement of Objections, Part Two, page 73-76, paragraphs 90-100 (Doc ID 7117).

- Play Store and Apple's AppStore are substitutes;⁷⁰⁰
- (3) Microsoft and BlackBerry confirmed in their responses to requests for information that users "*switch mobile platforms if a platform's apps become uncompetitive*";⁷⁰¹
 - (4) The fact that the price of apps is far smaller than the price of a smart mobile devices does not support the finding that Google is dominant in the worldwide, secondary, market (excluding China) for Android app stores;⁷⁰²
 - (5) The Commission considers only the impact of a small but significant non-transitory increase in the price of apps on users of Google Android device that are not considering to purchase a new smart mobile device whereas such an increase would also impact users that are contemplating whether to purchase a new smart mobile device;⁷⁰³
 - (6) The Commission fails to assess the impact that a small but significant, non-transitory increase in the percentage of app-related revenues that app developers have to share with the Play Store would have on app developers and how this would affect user's app purchasing decisions;⁷⁰⁴
 - (7) App developers do not need to switch from the Play Store to the Apple AppStore, but only to prioritise their effort for the Apple AppStore, this being the main element of competition between these two app stores;⁷⁰⁵
 - (8) Opera has stated that users would switch smart mobile devices if the app store on their devices "*does not have a sufficient quantity of high-quality apps compared to the apps available on rival mobile OSs*";⁷⁰⁶ and
 - (9) Switching costs are low given that the increase in Android's share came at the expense of BlackBerry.⁷⁰⁷
- (660) In the first place, the evidence submitted by Google does not support its claim that the alleged parallel innovation between the Apple's AppStore and Google's Play Store results from competitive interaction between Apple's AppStore and Google's Play Store. Indeed, there are several other reasons for the alleged parallel innovation. For example, it may result from a common technological trend and/or of copying features/methods between both.
- (661) Moreover, despite these commonalities, there are also several differences between these two app stores, as confirmed by Google.⁷⁰⁸ For example, as regards ratings, Google shows an interval estimate of the total number of downloads and only one aggregate rating, while Apple shows users the reviews and rating from an app's most

⁷⁰⁰ Google's letter of 14 March 2018 (Doc ID 8768) and Google's Response to the Statement of Objections, Part Two, page 75, paragraph 96 (Doc ID 7117).

⁷⁰¹ Google's Response to the Statement of Objections, Part Two, page 77, paragraph 101 (Doc ID 7117).

⁷⁰² Google's Response to the Statement of Objections, Part Two, page 77, paragraph 101 (Doc ID 7117).

⁷⁰³ Google's Response to the Statement of Objections, Part Two, page 77, paragraph 101 (Doc ID 7117).

⁷⁰⁴ Google's Response to the Statement of Objections, Part Two, page 77, paragraph 101 (Doc ID 7117).

⁷⁰⁵ Google's Response to the First Letter of Facts, Part One, page 26, paragraph 70 (Doc ID 8598).

⁷⁰⁶ Google's Response to the First Letter of Facts, Part One, page 27, paragraph 70 (Doc ID 8598).

⁷⁰⁷ Google's Response to the Statement of Objections, Part Two, pages 77-78, paragraphs 102-103 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part One, page 28, paragraph 70 (Doc ID 8598).

⁷⁰⁸ Google's Response to the First Letter of Facts, Part One, page 27, paragraph 70 (Doc ID 8598).

recent update by default, with aggregate, all-time available in the app's product page. As regards data, Apple provides a cohort analysis of user retention for up to 30 days⁷⁰⁹, a dashboard dedicated to showing subscription data and more comprehensive capabilities in reporting, while Google provides a substantial trending data, such as install/uninstall numbers by user/device by day, the precise number of current installs and ratings data, but provides a more limited breakdown of acquisition sources, when compared to Apple.⁷¹⁰

- (662) Furthermore, as regards recent changes in developers' revenue shares, whilst Apple implemented its 15/85 price split in June 2016⁷¹¹, Google announced the change from a 30/70 price split to a 15/85 split to take place only 15 months later, i.e. on January 2018.⁷¹²
- (663) In the second place, the 2017 Commission study entitled "The competitive landscape of online platforms" does not indicate that the Play Store and Apple's AppStore are substitutes. Rather, the study states that: "*Despite [the app stores'] multiplicity, users' preferences have consolidated around two main OS, and over two main apps stores, making competition extremely difficult for the smaller apps stores. Differentiation beyond the existing app stores seems unlikely (at least within the smartphone market).*"⁷¹³
- (664) Moreover, while certain respondents have pointed to the existence of some degree of competition between Apple's AppStore and Google's Play Store at the level of users, several statements from the same respondents indicated that an insignificant number of users would consider switching away from the Android OS due to changes in the range or quality of apps available on the Play Store or the price of those apps:
- (1) Hutchison 3G: "*We believe that, in a very few cases, the range, quality, number or cost of apps available on pre-installed or downloadable appstores may make consumers switch between OSs.*"⁷¹⁴
 - (2) Deutsche Telekom: "*DT considers the switching to another mobile OS caused by changes in the range or quality of apps available in pre-installed and downloadable app stores, or in the price of those apps to be insignificant.*"⁷¹⁵
 - (3) Huawei stated that "*if users can easily obtain common apps and the experience meets their requirements, the number of other less common apps and changes in price are unlikely to make them switch to another OS.*"⁷¹⁶

⁷⁰⁹ Cohort analysis corresponds to a subset of behavioural analytics that takes the data from a given dataset (e.g. an eCommerce platform, web application, or online game) and rather than looking at all users as one unit, it breaks them into related groups for analysis.

⁷¹⁰ Source: <https://www.mobileaction.co/blog/differences-app-store-vs-google-play/>, printed and saved on 31 May 2018.

⁷¹¹ See <https://appleinsider.com/articles/16/06/08/apple-announces-it-will-offer-app-store-subscriptions-take-smaller-15-cut>, printed and saved on 2 July 2018.

⁷¹² Google's Response to the First Letter of Facts, Part One, page 27, paragraph 70 (Doc ID 8598).

⁷¹³ Source: <https://ec.europa.eu/jrc/sites/jrcsh/files/jrc106299.pdf>, printed and saved on 27 June 2018.

⁷¹⁴ See Hutchison 3G's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2383).

⁷¹⁵ See Deutsche Telekom's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2556).

⁷¹⁶ See Huawei's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2455).

- (665) In the third place, it is irrelevant for the purpose of assessing Google's dominant position in the worldwide market (excluding China) for Android app stores that users switched away from Microsoft and BlackBerry devices to Android devices because the Windows Mobile and BlackBerry World app stores had "*significantly fewer total apps available*".⁷¹⁷ This is because such switching relates to competition between smart mobile OSs, not app stores, given that app developers develop for a given OS, not for a given app store (see Section 7.4.4).
- (666) In the fourth place, the fact that the price of apps is far smaller than the price of a smart mobile device supports the finding that Google is dominant in the worldwide market (excluding China) for Android app stores. This is because the difference in the price of apps and of a smart mobile device is far greater over the lifetime of a device than the examples cited by Google of the difference in the price of coffee consumables and a coffee machine over the lifetime of a coffee machine and in the price of printer ink and a printer over the lifetime of a printer:
- (1) the amount spent on apps over the lifetime of a smart mobile device corresponds to less than 5% of the total spend on a smart mobile device. This is because users spend on average a maximum of USD 5 on apps per year (see recital (287)), which for an average lifetime of a smart mobile device of 2-3 years⁷¹⁸ amounts to an average total expenditure of USD 15, while the average price of a Google Android device is above USD 300 (see Figure 13).
 - (2) the amount spent on coffee consumables over the lifetime of a coffee machine and on printer ink over the lifetime of a printer can equal or even exceed the total cost of the coffee machine and printer.⁷¹⁹
- (667) In the fifth place, the reasons described in recitals (654) to (657) for users not to switch OS as a result of a small but significant non-transitory increase in the price of apps apply equally to users of Google Android devices that are contemplating purchasing a new smart mobile device and to users of Google Android devices that are not contemplating purchasing a new smart mobile device. This is because, in the event of such a price increase, both user groups of Google Android devices would have regard to the costs of switching to a device based on a different smart mobile OS and to the price differences between Google Android and Apple smart mobile devices.
- (668) In the sixth place, app developers would be unlikely to switch from the Play Store in the event of a small but significant, non-transitory increase in the percentage of app-related revenues because they would lose access to a large percentage of users whose smart mobile device OS is Android (see recital (290)).
- (669) Moreover, app developers would not need to switch to the Apple AppStore in the

⁷¹⁷ Microsoft non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2493). See also BlackBerry non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 2666)

⁷¹⁸ See <https://www.emarketer.com/Article/Smartphone-Owners-Wait-Years-Replace-Handsets/1014149> and <https://www.statista.com/statistics/619788/average-smartphone-life/> printed and saved on 31 May 2018.

⁷¹⁹ See Case M.7292 – DEMB/Mondelez/Charger OPCO, Commission decision of 5 May 2015 and Case AT.34330 – Pelikan / Kyocera, Commission decision of 22 September 1995, recital 62 where the Commission concluded that "*the cost of supplies (i.e. toner and inks) can amount to as much as 70% of the total cost of ownership of the equipment*".

event of such small but significant, non-transitory increase in the percentage of app-related revenues because many app developers multi-home between the PlayStore and the Apple AppStore.⁷²⁰ According to a Google internal document from August 2016 by [Google Executive], more than [40-50]% of developers for Android also develop apps for iOS.⁷²¹ A report submitted on behalf of FairSearch also indicates that "*the Apple App Store and the Google Play Store have significant overlap among top apps: 92 of the top 100 third party iOS apps are also available on Google Play Store. By the same token, 90 of the top 100 third party Google Play Store apps are available on Apple App Store. This finding suggests that consumers can find the most popular apps on either app store, and that most developers of popular apps multi-home on the Google Play Store and the Apple App Store*".⁷²² A submission by Yandex also indicates that all but one of the top 50 apps in Apple's App Store is present on the Play Store.⁷²³

- (670) As a result of this, users would also be unlikely to switch to another OS because they would not face a reduction on the number of apps available on Android app stores since developers would not have any incentive to switch to a different smart mobile OS.
- (671) In the seventh place, Google has not submitted any evidence to support its claims:
- (1) regarding the alleged value to Apple or Google of app developers developing first for their OS; and
 - (2) that because of such alleged value, users would switch from Android devices to Apple devices in the event of a delay in the timing for the launch of apps in the Play Store.
- (672) In the eighth place, Opera did not generally state that users would switch smart mobile devices if the app store on their devices were to have an insufficient number of high-quality apps. Rather, Opera simply referred to the example of the Windows Mobile Phone, which has significantly fewer apps compared to Google Android (see recital (291)). Moreover, Opera also stated that "*Apple's devices may nonetheless be too expensive for many Android users to consider switching to iOS/Apple*".⁷²⁴
- (673) In the ninth place, the fact that the increase in the share of Google Android's devices may have come at the expense of BlackBerry devices does not necessarily indicate that switching costs are low. Rather, in the case of BlackBerry, it is more likely that such switching occurred because of overall user dissatisfaction with the BlackBerry devices, including the limited number of available apps (see recital (657)).

9.5. National markets for general search services

- (674) For the purpose of this Decision, the Commission concludes that Google holds a

⁷²⁰ See non-confidential replies to Question 18 of the request for information of 21 October 2015.

⁷²¹ Source: Google's internal document "*Google Play Developer Sentiment Survey, Topline Report*", slide 25, August 2016 (Doc ID 6555-68).

⁷²² "*Assessing the relevant markets for licensable mobile operating systems and Google Android compatible app stores*", Marco Iansiti, Harvard University, submitted by FairSearch on 24 January 2017 (Doc ID 8003).

⁷²³ See "*CRA addendum on multi-homing by app developers*", CRA, submitted by Yandex on 28 July 2017 (Doc ID 8270).

⁷²⁴ See Opera's non-confidential response to Question 16 of the request for information of 21 October 2015 on app stores (Doc ID 3534).

dominant position in each national market for general search services in the EEA since 2011. This conclusion is based on:

- (1) The market shares of Google and competing general search services market shares (Section 9.5.1),
 - (2) The existence of barriers to expansion and entry (Section 9.5.2),
 - (3) The infrequency of user multi-homing and the existence of brand effects (Section 9.5.3) and
 - (4) The lack of countervailing buyer power (Section 9.5.4).
- (675) The Commission's conclusion is not affected by the fact that general search services are offered free of charge (Section 9.5.5) and that users in the EEA may use Google's general search service because of the perceived relevance of the results provided by that service (Section 9.5.6).

9.5.1. *Market shares*

- (676) Since at least 2011, Google has enjoyed strong and stable market shares across the EEA and there has been no effective entry in any EEA country. This provides a good indication of Google's economic strength in each national market for general search services in the EEA.
- (677) The Commission has used market shares by volume⁷²⁵ as a proxy for two reasons. First, market shares by value do not constitute a useful indicator of economic strength in the national markets for general search services because those services are provided free of charge. Second, despite its best efforts, the Commission has been unable to obtain precise and verifiable values regarding the Revenue Per Search ("RPS") of the main general search services. The general search industry relies on RPS to calculate the average cost paid by advertisers for a query made on a given general search service, because this gives a good indication of the revenue that a general search service can generate.
- (678) There are several methods to calculate market shares by volume.⁷²⁶ All the methods indicate that since at least 2011, Google has enjoyed high shares in each national market for general search services in the EEA.
- (679) Data by Nielsen (based on page views) indicates that in 2010, Google's share of the national markets for general search services in the EEA was 84.6% in France, 85.3% in Germany, 85.9% in Italy, 91.3% in Spain and 81.3% in the United Kingdom. No competing general search service had a share exceeding 4.1% in any of these five countries.⁷²⁷
- (680) Data by AT Internet (based on site visits) similarly indicates that in November 2014, Google's share of the national markets for general search services in the EEA was 93.5% in France, 94% in Germany, 96.7% in Spain and 92.9% in the United

⁷²⁵ Market shares by volume may provide a conservative indicator of Google's economic strength, in view of the fact that Google's RPS is higher than that of Yahoo and Microsoft, the only significant competing general search services between 2011 and the date of adoption of this Decision.

⁷²⁶ Including per number of queries, users, page views or per number of sessions.

⁷²⁷ Annex 3.1 to Google's response to Question 3 of the request for information of 13 July 2010, (Doc IDs 4794 and 4787). The Nielsen data includes data until August 2010.

Kingdom.⁷²⁸ No competing general search service had a market share exceeding 3.6% in any of these four countries.

- (681) Data by AT Internet does not cover EEA countries other than France, Germany, Spain and the United Kingdom. The Commission has therefore also looked at data from StatCounter which covers all EEA countries for the period 2008-2016.

Table 6: Google, Bing and Yahoo market shares in general search in EEA countries in 2016⁷²⁹

Country in the EEA	Google	Bing	Yahoo!
Austria	94.2%	3.5%	1.8%
Belgium	94.1%	3.8%	1.1%
Bulgaria	97.8%	1.0%	0.8%
Croatia	97.2%	1.3%	1.2%
Cyprus	95.0%	2.5%	1.6%
Czech Republic	80.5%	1.9%	0.8%
Denmark	95.7%	2.6%	1.4%
Estonia	93.1%	1.8%	0.7%
Finland	96.3%	2.3%	0.9%
France	94.1%	3.5%	2.1%
Germany	93.2%	4.0%	1.6%
Greece	97.6%	1.1%	0.9%
Hungary	97.7%	1.2%	0.8%
Iceland	94.5%	2.9%	1.9%
Ireland	95.0%	2.6%	2.0%
Italy	95.0%	2.9%	1.6%
Latvia	94.7%	1.7%	1.1%
Lichtenstein	93.2%	5.1%	1.2%
Lithuania	96.1%	1.8%	1.0%

⁷²⁸ See "Search Engine Barometer" (December 2014), available at <http://www.atinternet.com/en/resources/resources/search-engine-barometer-december-2014/>, printed and saved on 11 April 2016.

⁷²⁹ StatCounter data for 2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

Country in the EEA	Google	Bing	Yahoo!
Luxembourg	94.2%	3.3%	1.9%
Malta	93.0%	3.8%	2.7%
The Netherlands	93.9%	3.7%	1.3%
Norway	92.6%	4.6%	2.1%
Poland	97.4%	1.4%	0.5%
Portugal	96.8%	1.9%	1.0%
Romania	97.6%	1.0%	1.0%
Slovakia	96.7%	1.9%	0.9%
Slovenia	97.0%	1.7%	0.9%
Spain	95.8%	2.5%	1.4%
Sweden	94.1%	3.9%	1.6%
United Kingdom	90.4%	6.1%	2.9%

- (682) The only EEA country in which Google did not hold a market share above 90% in 2016 was the Czech Republic. Google has, however, been by far the market leader in the Czech Republic since 2011, when it overtook Seznam.⁷³⁰
- (683) Google has also enjoyed high market shares across the EEA for a longer period than the previous market leaders, AltaVista and Lycos, which maintained their leading position for two years (1997 to 1999)⁷³¹ and one year (1999 to 2000), respectively.⁷³²
- (684) Table 7 shows Google's lowest yearly market share since 2008 in each EEA country, as reported by StatCounter.

⁷³⁰ See Bas van den Beld, "An Analysis of The Battle Between Google and Seznam: A Close Call" (14 January 2011), available at <http://www.stateofdigital.com/an-analysis-of-the-battle-between-google-and-seznam-a-close-call/>, printed and saved on 11 April 2016. Other reports suggest that Google overtook Seznam even earlier, at the end of 2009. StatCounter data for 2008-2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

⁷³¹ Google's submission of 14 March 2011, "*Innovation in Search (Version II)*", paragraph 3.9 (Doc ID 4771).

⁷³² Google's submission of 14 March 2011, "*Innovation in Search (Version II)*", paragraph 3.11 (Doc ID 4771). See Hiawatha Bray, "20 years later, Lycos searches for rebirth" (9 November 2015), available at <http://www.betaboston.com/news/2015/09/11/20-years-later-lycos-searches-for-rebirth/>, printed and saved on 11 April 2016, see "The History of Web Search Engines", available at <http://www.whoishostingthis.com/resources/history-search-engines/>, printed and saved on 11 April 2016 and see "Short History of Early Search Engines", available at http://www.thehistoryofseo.com/The-Industry/Short_History_of_Early_Search_Engines.aspx, printed and saved on 18 April 2016.

Table 7: Google's lowest market shares in general search in EEA countries between 2008 and 2016⁷³³

Country in the EEA	Google's market share
Austria	94.2%
Belgium	94.1%
Bulgaria	96.9%
Croatia	96.6%
Cyprus	92.8%
Czech Republic	53.2%
Denmark	95.3%
Estonia	85.4%
Finland	96.3%
France	93.5%
Germany	93.2%
Greece	95.8%
Hungary	97.0%
Iceland	93.4%
Ireland	93.4%
Italy	95.0%
Latvia	94.6%
Liechtenstein	93.2%
Lithuania	95.7%
Luxembourg	93.5%
Malta	88.6%
The Netherlands	93.8%
Norway	90.5%

⁷³³ StatCounter data for 2008-2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>. For Croatia, the reference period includes only the time since Croatia's accession to the Union on 1 July 2013.

Country in the EEA	Google's market share
Poland	96.8%
Portugal	96.4%
Romania	94.4%
Slovakia	96.6%
Slovenia	68.1%
Spain	95.2%
Sweden	94.1%
United Kingdom	90.2%

- (685) The Commission's conclusion that since at least 2011, Google has enjoyed strong and stable market shares across the EEA and there has been no effective entry in any EEA country is not affected by Google's claim that the alleged tying product is not Google's general search service but the Google Search app.⁷³⁴ Dominance is assessed in relation to the general search service, which each undertaking may offer in multiple ways (e.g. search app, default on web browsers, etc.).

9.5.2. *Barriers to entry and expansion*

- (686) The national markets for general search services in the EEA are characterised by the existence of a number of barriers to entry and expansion.
- (687) First, the establishment of a fully-fledged general search engine requires significant investments in terms of time and resources. For example, each year between 2009 and 2014, Microsoft invested over USD [millions of dollars] in R&D and capital expenditure in the development and maintenance of the latest version of its general search service launched in June 2009 under the brand name "Bing".⁷³⁵ Other companies indicate that the costs associated with the establishment of a fully-fledged general search service constitute a barrier to entry. For example, Orange argues that it only operates its own general search technology for French language websites because "*investments are too large to develop such technology for non french language websites*".⁷³⁶
- (688) Second, because a general search service uses data to refine the relevance of its general search results pages, it needs to receive a certain volume of queries order to compete viably. The greater the number of queries a general search service receives, the quicker it is able to detect a change in user behaviour pattern and update and improve its relevance. This is supported by internal Google documents⁷³⁷ and by

⁷³⁴ Google's Response to the First Letter of Facts, Part One, pages 32-33, paragraph 92 (Doc ID 8598).

⁷³⁵ Microsoft's response to Question 1 of the request for information of 8 December 2014 (Doc ID 4717).

⁷³⁶ Orange's non-confidential response to Question 1 of the request for information of 3 October 2011 (Doc ID 4594).

⁷³⁷ Google document with reference 86978 and Google document with reference Texas 213247 annexed to Google's response to Question 43 of the request for information of 13 July 2010 (Doc IDs 4795, 4791

evidence from a number of other general search services.⁷³⁸

- (689) A general search service also needs to receive a certain volume of queries in order to improve the relevance of its results for uncommon ("tail") queries. Tail queries are important because users evaluate the relevance of a general search service on a holistic basis and expect to obtain relevant results for both common ("head") and uncommon tail queries.⁷³⁹ The greater the volume of data a general search service possesses for rare tail queries, the more users will perceive it as providing more relevant results for all types of queries.⁷⁴⁰
- (690) In that regard, there may be diminishing returns to scale in terms of improvements in relevance once the volume of queries a general search service receives exceeds a certain volume.⁷⁴¹ It may also be that the lower success and relevance of a general search service can be explained by other factors, such as the fact that it does not localise its general search results in different countries, that its web index is more limited in depth, or that it is slower in updating its index in order to deliver fresh content to users.⁷⁴² Regardless of the veracity of such arguments, however, they remain of limited relevance for the assessment of barriers to entry and expansion on each national market for general search services in the EEA because of the underlying fact that a general search service has to receive at least a certain minimum volume of queries in order to compete viably.
- (691) The relevance of scale is also not called into question by the fact that in the late 1990s, Google was able to overtake the former market leaders, AltaVista and Lycos. At that time, scale was less of a critical factor because the indexing technology of general search services was not yet able to assess user behaviour.⁷⁴³
- (692) Third, general search services constantly invest to improve their product and a new entrant would have no choice but to attempt to match these investments. Table 8 shows worldwide capital investments made by Google and Yahoo in their general search services between 2009 and 2015.

and 4796). The first document sets out how user behaviour data allowed Google to refine the relevance of search results for "air fares", in a situation where relevant websites did not contain those words. The second document states that users of Google's general search service "*create the first level of network effect for search quality*" and that Google is "*investing in this heavily*".

⁷³⁸ Seznam's non-confidential response to Question 3 of the request for information of 3 October 2011 (Doc ID 4076); Orange's non-confidential response to Question 2 of the request for information of 3 October 2011 (Doc ID 4594); and Ask's non-confidential response to Question 2 of the request for information of 3 October 2011 (Doc ID 4304).

⁷³⁹ Microsoft's complaint of 31 March 2011, p. 14 (Doc ID 216).

⁷⁴⁰ Orange's non-confidential response to Question 3 of the request for information of 3 October 2011 (Doc ID 4594); and Ask's non-confidential response to Question 3 of the request for information of 3 October 2011 (Doc ID 4304).

⁷⁴¹ Google's submission of 29 August 2011, RBB Economics, "*Response to Microsoft on the Importance of Scale*" (Doc ID 4783).

⁷⁴² Google's submission of 29 August 2011, RBB Economics, "*Response to Microsoft on the Importance of Scale*" (Doc ID 4783).

⁷⁴³ See Volker Tresp Siemens, "On the Growing Impact of Machine Learning in Industry", available at http://www.sics.se/~aho/tor/Volker_Tresp_ToR-101125.pdf, printed and saved on 11 April 2016. According to the document, machine learning was only introduced by general search engines in the 2000s, p. 6.

Table 8: Google's and Yahoo's worldwide capital investments in their general search services between 2009 and 2015 in million USD⁷⁴⁴

	2009	2010	2011	2012	2013	2014	2015
Google	810	4 018	3 438	3 273	7 358	10 959	9 915
Yahoo	434	714	593	506	338	396	534

- (693) Fourth, the existence of positive feedback effects on both sides of the two-sided platform formed by general search services and online search advertising creates an additional barrier to entry.
- (694) The positive feedback effects on the online search advertising side are due to the link between the number of users of a general search service and the value of the online search advertisements shown by that general search engine. The higher the number of users of a general search service, the greater the likelihood that a given search advertisement is matched to a user and converted into a sale. This in turn increases the price that a general search engine can charge advertisers if their search advertisements are clicked on. The general search engine can then reinvest that revenue in seeking to attract new users of its general search service.
- (695) As regards the positive feedback effects on the general search side of the two-sided platform, they are of two types.
- (696) The first type stem from the fact that a substantial minority of users of a general search service derive a benefit from search advertisements. The fact that advertisers are willing to bid for AdWords results on Google's general search results pages is evidence that at least some users value these advertisements. This is further supported by an economic analysis commissioned by Google, which indicates that [20-30]% of online search users afford equal consideration to AdWords and generic search results returned in response to a query.⁷⁴⁵ In addition, of the remaining [70-80]% of users, at least a certain number⁷⁴⁶ also consider AdWords results, albeit only after having looked at generic search results.
- (697) The second type stem from the link between the attractiveness of the online search advertising side of a general search platform and the revenue of that platform. The higher the number of advertisers using an online search advertising service, the higher the revenue of the general search platform; revenue which can be reinvested in the maintenance and improvement of the general search service so as to attract more users. Google derives substantial revenue from its online search advertisement business: in 2016, it generated 88.7% of its revenue from its advertisers.⁷⁴⁷

⁷⁴⁴ Sources: Google's and Yahoo's 10-K filings from 2009 to 2015, available at <http://www.sec.gov/edgar/searchedgar/companysearch.html>, printed and saved on 18 April 2016.

⁷⁴⁵ Google's submission of 14 March 2011, "A guide to network effects, switching costs, and competition in online search", paragraph 60, first indent (Doc ID 4785). [70-80]% of relevant users are reported to have either not considered AdWords results returned with a query or looked at them after considering the generic search results returned with that same query. The corollary is thus that [20-30] gave equal consideration to both the AdWords and generic search results returned with a query.

⁷⁴⁶ The figure is not made available by the report.

⁷⁴⁷ See "Google's Form 10-K Annual Report for the US fiscal year ending 31 December 2016", available at https://abc.xyz/investor/pdf/20161231_alphabet_10K.pdf, printed and saved on 13 June 2017.

- (698) Fifth, certain general search services have access to data sources which cannot be indexed by competing general search services, either by their nature or for contractual reasons. For example, Google has scanned the holdings of several libraries and publishers as part of its Google Books and Google Scholar projects. The home page of Google Books offers users the possibility to: "*[s]earch the world's most comprehensive index of full-text books.*"⁷⁴⁸
- (699) The existence of barriers to entry and expansion is supported by a number of additional factors.
- (700) First, in the last ten years, a number of companies have exited the national markets for general search services in the EEA, either completely or by abandoning their general search technology in favour of third party technology. For example, Yahoo! abandoned its general search technology, including in the EEA, in 2009 and now relies on Bing's general search technology to power its portal.⁷⁴⁹ Equally, Ask.com abandoned its general search technology, including in the EEA, in November 2010 and now relies on Google's general search technology to power its portal.⁷⁵⁰
- (701) Second, a number of smaller players still present on certain national markets for general search services in the EEA have been unable to expand and are contemplating interrupting their general search services in the EEA in the near future. This is the case of voila.fr, one of the first general search services in France, which currently offers general search services restricted to French language websites.⁷⁵¹
- (702) Third, since 2007, there has been only one significant entrant on the national markets for general search services in the EEA, Microsoft, which launched the latest version of its general search service, Bing, in 2009.⁷⁵² Since 2009, however, Bing's market shares have never exceeded 6% in any EEA country.⁷⁵³ Microsoft's general search service was [not profitable] for [a period of time].⁷⁵⁴
- (703) While a number of start-ups have attempted to launch competing general search services in the last ten years, none of them has been able to establish a significant market presence. Several have either stopped providing general search services or chosen instead to provide complementary types of services that do not compete with

⁷⁴⁸ See "Google books", available at <http://books.google.com/>, printed and saved on 18 April 2016.

⁷⁴⁹ Google's submission of 14 March 2011, "Innovation in Search (Version II)", paragraph 3.10 (Doc ID 4771).

⁷⁵⁰ See Tom Krazit, "IAC bows to Google, kills search at Ask.com" (9 November 2010), available at http://news.cnet.com/8301-30684_3-20022253-265.html?tag=mncol:4n, printed and saved on 31 May 2018.

⁷⁵¹ Orange's non-confidential response to Question 3 of the request for information of 8 December 2014 (Doc ID 4577). Voila fr's share of the French general search market decreased from 3.6% in 2005 to 0.3% in December 2014. See Nielsen rating's figures as quoted in Google's response to Question 3 of the request for information of 13 July 2010 (Doc ID 4794), and see "Search Engine Barometer" (November 2014), available at <http://www.atinternet.com/en/documents/search-engine-barometer-november-2014/>, printed and saved on 11 April 2016.

⁷⁵² The latest version of Microsoft's general search engine launched in June 2009 is called "Bing". Previous versions were called Live Search, Windows Live Search, and MSN Search.

⁷⁵³ Nielsen rating's figures as quoted in Google's response to Question 3 of the request for information of 13 July 2010 (Doc ID 4794), and StatCounter data for 2009-2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

⁷⁵⁴ Microsoft's response to Question 1 of the request for information of 8 December 2014 (Doc ID 4717).

Google's general search service in the EEA.

- (704) In June 2008, Kosmix, at the time a search service specialised in health matters, was reported to have attempted to start providing a general search service.⁷⁵⁵ Soon after, however, it changed its business model and became a platform integrating a number of specialised search services.⁷⁵⁶
- (705) In July 2008, former employees of Google launched a general search service called Cuil. At launch, Cuil claimed that its index of the web was deeper than Google's⁷⁵⁷ and certain industry observers considered that Cuil had the potential to compete against Google.⁷⁵⁸ Within a few weeks of launch, however, Cuil's share of a hypothetical global general search services market decreased from 0.11% to 0.01%,⁷⁵⁹ and on 17 September 2010, Cuil went offline.⁷⁶⁰
- (706) In April 2010, another general search service called DuckDuckGo, offered only in English, was launched. Its traffic, however, remains marginal. In December 2014, it processed only 221 million searches.⁷⁶¹ This represented less than 0.8% of all general searches performed in the US in December 2014. Because of its US origin and the fact that it is only offered in English, it is likely that DuckDuckGo's shares of the national markets for general search services in the EEA are even lower. In addition, DuckDuckGo is dependent on third party technology for its general search services. As DuckDuckGo explains on its website: "*While our indexes are getting bigger, we do not expect to be wholly independent from third-parties. Bing and Google each spend hundreds of millions of dollars a year crawling and indexing the deep Web. It costs so much that even big companies like Yahoo and Ask are giving up general crawling and indexing. Therefore, it seems silly to compete on crawling and, besides, we do not have the money to do so.*"⁷⁶²
- (707) In October 2010, a general search service called Blekko, offered only in English, was launched. Blekko's distinctive feature was that it allowed users to mark the sites they visit with special attributes ("slashtags") which other users could use to focus their queries. However, similar to DuckDuckGo, its traffic remained marginal. In June

⁷⁵⁵ See Kosmix, available at <https://www.crunchbase.com/organization/kosmix>, printed and saved on 12 April 2016.

⁷⁵⁶ See Greg Sterling, "Walmart Buys Former Search Engine Kosmix To Power Social And Mobile Shopping" (19 April 2011), available at <http://searchengineland.com/walmart-buys-former-search-engine-kosmix-to-power-social-and-mobile-shopping-73599>, printed and saved on 11 April 2016.

⁷⁵⁷ See Michael Liedtke, "Ex-Google engineers debut 'Cuil' way to search" (28 July 2008), available at <http://www.nbcnews.com/id/25884709>, printed and saved on 11 April 2016.

⁷⁵⁸ See Danny Sullivan, "Cuil Launches-Can This Search Start-up Really Best Google?" (28 July 2008), available at <http://searchengineland.com/cuil-launches-can-this-search-start-up-really-best-google-14459>, printed and saved on 11 April 2016.

⁷⁵⁹ See "Cuil - latest stats" (11 August 2008), available at <http://blog.statcounter.com/2008/08/cuil-latest-stats/>, printed and saved on 11 April 2016.

⁷⁶⁰ See Danny Goodwin, "Cuil is Stone Cold-Another 'Google Killer' Bites the Dust" (18 September 2010), available at <https://searchenginewatch.com/sew/news/2050586/cuil-stone-cold-another-google-killer-bites-dust>, printed and saved on 11 April 2016.

⁷⁶¹ See "DuckDuckGo queries per day (1y avg)", available at <https://duckduckgo.com/traffic.html>, printed and saved on 11 April 2016.

⁷⁶² See "Sources", available at <https://duck.co/help/results/sources>, printed and saved on 11 April 2016.

2013, it reported an average of only 5 million searches per day.⁷⁶³ This represented less than 0.8% of all general searches performed in the US in June 2013.⁷⁶⁴ Because of its US origin and the fact that it was only offered in English, it was likely that Blekko's shares of the national markets for general search services in the EEA were even lower. In addition, because it relied on human input to generate and curate slashtags, Blekko could not generate large-scale real time search results comparable to entirely automated general search engines such as Google or Bing. This is supported by an internal Google document.⁷⁶⁵ Blekko stopped providing general search services at the end of March 2015.⁷⁶⁶

- (708) Google does not contest the Commission's conclusions as outlined in this Section.

9.5.3. Infrequency of user multi-homing and existence of brand effects

- (709) Only a minority of users in the EEA that use Google's general search service as their main general search service actually use other general search services (a behaviour known as "multi-homing"). This is confirmed by a number of factors.
- (710) First, a Keystone survey commissioned by Microsoft quantified how often Google users in five EEA countries (France, Germany, Italy, Spain and the United Kingdom) use other general search services.⁷⁶⁷ The survey was performed between December 2010 and April 2011 and defined as a multi-homer a user that conducts at least 5% of all its queries on at least two distinct general search services. Based on that definition, the survey found that only 12% of users in Germany, Italy and Spain multi-home. As for France and the United Kingdom, the percentage of users that multi-home was respectively 15% and 21%.
- (711) The Keystone survey also found that users that use Google as their primary general search service in these five EEA markets are significantly less likely to multi-home than users that use Bing or Yahoo as their primary general search service in those markets. Table 9 summarises the proportion of users that multi-home, depending on their primary general search service.

⁷⁶³ See Greg Sterling, "Blekko Lays Off Eight, Raises \$6 Million More" (5 June 2013), available at <http://searchengineland.com/blekko-lays-off-eight-raises-6-million-more-162122>, printed and saved on 11 April 2016.

⁷⁶⁴ See "comSore Releases June 2013 U.S. Search Engine Rankings" (12 July 2013), available at <http://www.comscore.com/Insights/Press-Releases/2013/7/comScore-Releases-June-2013-US-Search-Engine-Rankings>, printed and saved on 11 April 2016.

⁷⁶⁵ Google document with reference 73538 annexed to Google's response to Question 43 of the request for information of 13 July 2010 (Doc IDs 4795 and 4793). Internal email exchange between 30 July 2010 and 2 August 2010.

⁷⁶⁶ See Matt McGee, "Goodbye Blekko: Search Engine Joins IBM's Watson Team" (27 March 2015), available at <http://searchengineland.com/goodbye-blekko-search-engine-joins-ibms-watson-team-217633>, printed and saved on 11 April 2016.

⁷⁶⁷ Microsoft's submission of 26 May 2011, Keystone, "User Multi-Homing in Europe", p. 7 (Doc ID 4714).

Table 9: Multi-homing by users depending on their primary general search service⁷⁶⁸

Country	France	Germany	Italy	Spain	United Kingdom
Google	12%	9%	10%	10%	16%
Bing	72%	70%	84%	79%	72%
Yahoo	71%	72%	65%	80%	76%

- (712) Second, because of the strength of the Google brand,⁷⁶⁹ users trust in the relevance of search results provided by Google. This further dissuades users of Google from multi-homing. This is supported by internal Google documents⁷⁷⁰ and third party studies.⁷⁷¹
- (713) Third, even if a significant number of users of Google's general search service were to multi-home, switching costs are in any event only one possible type of barrier to entry and expansion. Barriers to entry and expansion can also derive for example from the need for large investments or network effects (see Section 9.5.2).
- (714) Google does not contest the Commission's conclusions as outlined in this Section.

9.5.4. *Lack of countervailing buyer power*

- (715) The Commission concludes that OEMs, MNOs and users of Google's general search services each have insufficient countervailing buyer power.
- (716) First, OEMs and MNOs that pre-install Google's search service in exchange for a share of Google's revenues (see Section 6.3.3) have had to accept the revenue shares offered by Google and the percentage of revenue shares offered by Google has decreased over time.⁷⁷² The fact that OEMs have accepted these shares indicates that they have insufficient bargaining power vis-à-vis Google:
 - (1) According to [revenue share partner], "Google issues template agreements and

⁷⁶⁸ Source: Microsoft's submission of 26 May 2011, Keystone, "User Multi-Homing in Europe" (Doc ID 4714).

⁷⁶⁹ In a 2011 study of the most valuable global brands, WPP company Millward Brown Optimor found Google to be the second strongest brand in the world. In the preceding four years, Google was considered the strongest brand in the world (available at <http://www.wpp.com/wpp/press/2011/may/09/apple-becomes-worlds-most-valuable-brand-says/>, printed and saved on 27 June 2018).

⁷⁷⁰ Google document with reference 144271 annexed to Google's response to Question 43 of the request for information of 13 July 2010, (Doc IDs 4792 and 4795). Internal email exchange between 29 and 30 July 2008 in which Google employees discuss user rating experiments that they had performed to compare Yahoo's and Google's general search results pages after an industry analyst had published a paper in which he stated that Yahoo performed better than Google for certain queries. An employee concludes that "when it comes to branded competitive SxS [side by side comparisons], it's impossible to ask our raters to be impartial - they are much more familiar with Google products and Google results and in general favor Google's UI [User Interface] over the others".

⁷⁷¹ An eye tracking experiment indicated that participants trusted Google's ability to position results by their relevance to the query. When the participants selected a link to follow from Google's general search result pages, they favoured links in a higher position, even if the abstracts themselves were less relevant. See Pan, Bet al, "In Google we trust: Users' decisions on rank, position, and relevance", Journal of Computer-Mediated Communication, 2007.

⁷⁷² See Section 6.3.3.

it is very difficult to negotiate the terms (including the [revenue share terms])".⁷⁷³

- (2) According to [revenue share partner], it had "not been able to increase the [revenue share terms]. According to the Google Search Revenue Share Agreement effective 1 September 2014, [revenue share partner]'s Revenue Share has decreased from [revenue share terms] to [revenue share terms]. [...] [revenue share partner]'s only way of increasing Google's Relevant Revenues has been to sell more devices".⁷⁷⁴
 - (3) According to [revenue share partner], "[it] has not been able to increase the [revenue share terms]. In fact, [revenue share terms] set by Google have consistently decreased over time whilst the obligations placed on the MNO to attain such revenue shares have increased [...] and the obligations on Google decreased."⁷⁷⁵
 - (4) [Revenue share partner]⁷⁷⁶, [revenue share partner]⁷⁷⁷ and [revenue share partner]⁷⁷⁸ have made similar statements.
- (717) Second, users are unable to exercise any bargaining strength vis-à-vis Google as they each represent only a small proportion of the volume of total general search queries.
- (718) Google does not contest the Commission's conclusions as outlined in this Section.
- 9.5.5. *The argument that Google's general search services are offered free of charge*
- (719) The Commission concludes that a finding of dominance is not precluded by the fact that Google offers its general search services free of charge.
- (720) First, the evolution of Google's shares of each national market for general search services in the EEA has shown no rapid variations or fluctuations. On the contrary, since at least 2011, Google has consistently held very high market shares in each national market for general search services in the EEA.
- (721) Second, barriers to entry and network effects make it difficult for actual or potential competing general search services from offering competitive or innovative services in an economically sustainable manner (see Section 9.5.2).
- (722) Third, because of the infrequency of user multi-homing and the existence of brand effects (see Section 9.5.3) it is unlikely that a substantial proportion of its users would switch general search services in the event of a small but significant non-transitory deterioration of the quality of Google's general search services.
- (723) Fourth, the Commission's conclusion that a finding of dominance is not precluded by

⁷⁷³ [Revenue share partner] non-confidential response to Question 26 of the request for information of 22 July 2014 [...].

⁷⁷⁴ [Revenue share partner] non-confidential response to Question 25 of the request for information of 17 July 2014 [...].

⁷⁷⁵ [Revenue share partner] non-confidential response to Question 26 of the request for information of 22 July 2014 [...].

⁷⁷⁶ [Revenue share partner] non-confidential response to Question 26 of the request for information of 22 July 2014 [...].

⁷⁷⁷ [Revenue share partner] non-confidential response to Question 26 of the request for information of 22 July 2014 [...].

⁷⁷⁸ [Revenue share partner] non-confidential response to Question 25 of the request for information 17 July 2014 [...].

the fact that Google offers its general search services free of charge is not affected by Google's claims that:

- (1) the Commission should have assessed instead whether Google could degrade quality and innovation in search without sufficient marginal users switching to competing services to render the degradation unprofitable.
 - (2) a Eurobarometer survey from April 2016, which states that nearly eight in ten users would switch general search services if they were to consider the search results provided not to be useful.⁷⁷⁹
- (724) In the first place, the Commission has assessed and established that it is unlikely that a substantial proportion of its users would switch general search services in the event of a small but significant non-transitory deterioration of the quality of Google's general search service (see recital (722)).
- (725) In the second place, respondents to the April 2016 Eurobarometer survey did not indicate that they would switch general search service in the event of a small but significant non-transitory deterioration of the quality of a general search service. Rather, respondents were asked how they would react if a general search service were to provide results that are "not useful". This would constitute a more fundamental deterioration in the quality of a general search service than that resulting from a small but significant non-transitory deterioration of the quality of the service.
- 9.5.6. *The argument that users in the EEA may use Google's general search service because of the perceived relevance of the results provided by that service*
- (726) A finding of dominance is also not precluded because users in the EEA may use Google's general search service because of the perceived relevance of the results that service provides.
- (727) Rather, this is a factor to be taken into account in assessing whether Google's conduct is abusive. Irrespective of the reasons or the causes for which Google has a dominant position on the national markets for general search in the EEA, this does not relieve it of its special responsibility not to allow its behaviour to impair genuine, undistorted competition on the internal market.⁷⁸⁰

10. ABUSE OF DOMINANT POSITION: GENERAL PRINCIPLES

10.1. Principles

- (728) The concept of abuse is an objective one relating to the behaviour of an undertaking in a dominant position which is such as to influence the structure of a market where, as a result of the very presence of the undertaking in question, the degree of competition is weakened and which, through recourse to methods different from those which condition normal competition, has the effect of hindering the maintenance of the degree of competition still existing in the market or the growth of

⁷⁷⁹ Google's Response to the Statement of Objections, Part Two, pages 87-89, paragraphs 130-136 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part One, pages 32-33, paragraphs 90-91 (Doc ID 8598).

⁷⁸⁰ Case T-228/97 *Irish Sugar v Commission*, EU:T:1999:246, paragraph 112; Joined Cases C-395/96 P and C-396/96 P *Compagnie Maritime Belge Transports and Others v Commission*, EU:C:2000:132, paragraph 37; Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 229.

that competition.⁷⁸¹

- (729) A dominant undertaking has a special responsibility not to impair, by conduct falling outside the scope of competition on the merits, genuine undistorted competition in the internal market.⁷⁸² It follows from the nature of the obligations imposed by Article 102 TFEU that, in specific circumstances, an undertaking in a dominant position may be deprived of the right to adopt a course of conduct or take measures which are not in themselves abuses and which would even be unobjectionable if adopted or taken by non-dominant undertakings.⁷⁸³
- (730) An abuse of a dominant position does not necessarily have to consist in the use of the economic power conferred by a dominant position.⁷⁸⁴ Moreover, Article 102 TFEU gives no explicit guidance as to what is required in relation to where on the markets the abuse took place.⁷⁸⁵ Accordingly, the actual scope of the special responsibility imposed on a dominant undertaking must be considered in the light of the specific circumstances of each case which show that competition has been weakened. It follows that certain conduct on markets other than the dominated markets and having effects either on the dominated markets or on the non-dominated markets themselves can be categorised as abusive.⁷⁸⁶
- (731) Article 102 TFEU and Article 54 of the EEA Agreement list a number of abusive practices. These are merely examples, not an exhaustive enumeration of the sort of abuses of dominant position prohibited by the TFEU and the EEA Agreement.⁷⁸⁷
- (732) Article 102 TFEU and Article 54 of the EEA Agreement prohibit both abusive practices which may cause damage to consumers directly but also those which cause consumers harm through their impact on competition.⁷⁸⁸ Article 102 of the Treaty and Article 54 of the EEA Agreement apply, in particular, to the conduct of a dominant undertaking that, through recourse to methods different from those governing normal competition on the basis of the performance of commercial operators, has the effect, to the detriment of consumers, of hindering the maintenance of the degree of competition existing in the market or the growth of that competition.⁷⁸⁹ Since the structure of competition on the market has already been

⁷⁸¹ Case C-549/10 P *Tomra v Commission*, EU:C:2012:221, paragraph 17; Case C-457/10 P *AstraZeneca v Commission*, EU:C:2012:770, paragraph 74.

⁷⁸² Case 322/81 *Nederlandsche Banden Industrie Michelin v Commission*, EU:C:1983:313, paragraph 57; Case T-228/97 *Irish Sugar v Commission*, EU:T:1999:246, paragraph 112; Case C-209/10 *Post Danmark A/S v Konkurrenserådet*, EU:C:2012:172, paragraph 23; and Case C-457/10 P *AstraZeneca v Commission*, EU:C:2012:770, paragraph 134.

⁷⁸³ Case 322/81 *Nederlandsche Banden-Industrie Michelin v Commission*, EU:C:1983:313, paragraph 57; Case T-111/96 *ITT Promedia v Commission* [1998] EU:T:1998:183, paragraph 139.

⁷⁸⁴ Case 6/72 *Europemballage and Continental Can v Commission*, EU:C:1973:22, paragraph 27; Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 91; and Case T-321/05 *AstraZeneca v Commission*, EU:T:2010:266, paragraph 354.

⁷⁸⁵ Case T-83/91 *Tetra Pak v Commission*, EU:T:1994:246, paragraphs 113-116.

⁷⁸⁶ Case C-333/94 P *Tetra Pak v Commission*, EU:C:1996:436, paragraphs 24-25; Case C-52/09 *Konkurrensverket v TeliaSonera Sverige AB*, EU:C:2011:83, paragraphs 84-85.

⁷⁸⁷ Case 6/72 *Europemballage and Continental Can v Commission*, EU:C:1973:22, paragraph 26; Case C-280/08 P *Deutsche Telekom v Commission*, EU:C:2010:603, paragraph 173; Case C-52/09 *Konkurrensverket v TeliaSonera Sverige AB*, EU:C:2011:83, paragraph 26.

⁷⁸⁸ Case 6/72 *Europemballage and Continental Can v Commission*, EU:C:1973:22, paragraph 26.

⁷⁸⁹ Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 91; Case C-62/86 *Akzo v Commission*, EU:C:1991:286, paragraph 69; Case C-552/03 P *Unilever Bestfoods v Commission*,

weakened by the presence of the dominant undertaking, any further weakening of the structure of competition may constitute an abuse of a dominant position.⁷⁹⁰ It follows that fixing an appreciability threshold for the purposes of determining whether there is an abuse of a dominant position is not justified.⁷⁹¹

- (733) Concerning the effects of the dominant undertaking's conduct, while they must not be of a purely hypothetical nature, they do not necessarily have to be concrete.⁷⁹² It is sufficient that the conduct tends to restrict competition or is capable of having that effect,⁷⁹³ regardless of its success.⁷⁹⁴ The Commission is not therefore required to demonstrate that a particular practice has actual anti-competitive effects.⁷⁹⁵
- (734) It is for a dominant undertaking to provide justification for its conduct to be caught by the prohibition set out in Article 102 TFEU.⁷⁹⁶
- (735) Such an undertaking may demonstrate, for that purpose, either that its conduct is objectively necessary or that the exclusionary effect produced may be counterbalanced, outweighed even, by advantages in terms of efficiency that also benefit consumers.⁷⁹⁷
- (736) In that last regard, a dominant undertaking must demonstrate that four cumulative conditions are met:⁷⁹⁸
 - (1) The efficiency gains likely to result from its conduct counteract any likely negative effects on competition;

EU:C:2006:607, paragraph 129; Case C-95/04 P *British Airways*, EU:C:2007:166, paragraph 66; Case C-171/05 P *Piau v Commission*, EU:C:2006:149, paragraph 37; Case C-52/07 *Kanal 5 and TV 4*, EU:C:2008:703, paragraph 25; Case C-202/07 P *France Télécom v Commission*, EU:C:2009:214, paragraph 104; Case C-280/08 P *Deutsche Telekom v Commission*, EU:C:2010:603, paragraph 174; Case C-52/09 *TeliaSonera Sverige*, EU:C:2011:83, paragraph 27; Case C-457/10 P *AstraZeneca v Commission*, EU:C:2012:770, paragraph 74; Case C-549/10 P *Tomra Systems and Others v Commission*, EU:C:2012:221, paragraph 17; Case C-209/10 *Post Danmark*, EU:C:2012:172, paragraph 24; Case C-170/13 *Huawei Technologies*, EU:C:2015:477, paragraph 45; Case C-23/14 *Post Danmark A/S v Konkurrenserådet*, EU:C:2015:651, paragraph 26.

⁷⁹⁰ Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 123; Case T-65/89 *BPB Industries and British Gypsum v Commission*, EU:T:1993:31, paragraph 95; Case T-83/91 *Tetra Pak v Commission*, EU:T:1994:246, paragraph 114; Joined Cases T-24/93 and others *Compagnie Maritime Belge v Commission*, EU:T:1996:139, paragraph 106; Case C-23/14 *Post Danmark A/S v Konkurrenserådet*, EU:C:2015:651, paragraph 72.

⁷⁹¹ Case C-23/14 *Post Danmark A/S v Konkurrenserådet*, EU:C:2015:651, paragraph 73; Case C-525/16 *Meo- Serviços de Comunicações e Multimédia*, EU:C:2018:270, paragraph 29.

⁷⁹² Case C-52/09 *TeliaSonera Sverige*, EU:C:2011:83, paragraph 64; Case T-336/07 *Telefónica and Telefónica de España v Commission*, EU:T:2012:172, paragraph 268, confirmed on appeal in Case C-295/12 P, EU:C:2014:2062, paragraph 124; Case T-398/07 *Spain v Commission*, EU:T:2012:173, paragraph 90; Case C-457/10 P *AstraZeneca v Commission*, EU:T:2012:770, paragraph 112; Case C-23/14 *Post Danmark A/S v Konkurrenserådet*, EU:C:2015:651, paragraph 65.

⁷⁹³ Case C-549/10 P *Tomra Systems and Others v Commission*, EU:C:2012:221, paragraph 68.

⁷⁹⁴ Case T-321/05 *AstraZeneca v Commission*, EU:T:2010:266, paragraph 347, confirmed on appeal in Case C-457/10 P, EU:C:2012:770, paragraphs 109 and 111.

⁷⁹⁵ Case T-336/07 *Telefónica and Telefónica de España v Commission*, EU:T:2012:172, paragraph 273.

⁷⁹⁶ Case C-209/10 *Post Danmark A/S v Konkurrenserådet*, EU:C:2012:172, paragraphs 40-42; Case C-23/14 *Post Danmark A/S v Konkurrenserådet*, EU:C:2015:651, paragraphs 47-49; Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 688.

⁷⁹⁷ Case C-209/10 *Post Danmark A/S v Konkurrenserådet*, EU:C:2012:172, paragraph 41.

⁷⁹⁸ Case C-209/10 *Post Danmark A/S v Konkurrenserådet*, EU:C:2012:172, paragraph 42; Case C-23/14 *Post Danmark A/S v Konkurrenserådet*, EU:C:2015:651, paragraph 49.

- (2) Those gains have been, or are likely to be, brought about as a result of its conduct;
- (3) its conduct is necessary for the achievement of those gains in efficiency; and
- (4) its conduct does not eliminate effective competition, by removing all or most existing sources of actual or potential competition.

10.2. Application to this case

- (737) In Sections 11 to 13, the Commission applies the principles summarised in Section 10.1 to Google's conduct. Section 11 applies those principles to the tying of the Google Search app with the Play Store and of Google Chrome with the Play Store and the Google Search app. Section 12 applies those principles to the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations in the AFAs. Section 13 applies those principles to revenue share payments conditional on the pre-installation of no competing general search services on any smart mobile device within an agreed portfolio.
- (738) In Section 14, the Commission concludes that the different forms of conduct described in Sections 11 to 13 constitute: (i) separate infringements of Article 102 TFEU and Article 54 of the EEA Agreement; and (ii) a single and continuous infringement of Article 102 TFEU and Article 54 of the EEA Agreement.
- (739) The different forms of conduct described in Sections 11 to 13 constitute a single and continuous infringement of Article 102 TFEU and Article 54 of the EEA Agreement because they:
 - (1) pursue an identical objective. They are part of an overall "carrot-and-stick" strategy vis-à-vis OEMs and MNOs to protect and strengthen Google's dominant position in general search services and thus its revenues via search advertisements. They ensure that Google acquires traffic and valuable user data that it can collect and combine; and
 - (2) are complementary in that Google creates an interlocking interdependence between them. For example, in order to enter into a MADA, an OEM must enter into, and abide by the terms of an AFA and in order to enter into a revenue share agreement, an OEM must first enter into a MADA (and thus also an AFA). Also, if an OEM were to pre-install a competing general search service exclusively on one or more of its Android devices instead of Google Search, it would no longer be able to pre-install on those devices any of the mandatory GMS apps and services, including the Play Store.

11. ABUSE OF GOOGLE'S DOMINANT POSITION: TYING RELATING TO ITS PROPRIETARY MOBILE APPS

- (740) Google's conduct with respect to its proprietary mobile apps involves tying.

11.1. Principles

- (741) The abusive tying of two products or services is a particular form of conduct covered by Article 102 TFEU, in particular Article 102(d) TFEU. In order for tying to be liable to be caught by the prohibition under Article 102 TFEU, it is sufficient that the

following conditions are met:⁷⁹⁹

- (1) the tying and tied products are two separate products;
 - (2) the undertaking concerned is dominant in the market for the tying product;
 - (3) the dominant undertaking does not give its customers or end users a choice to obtain the tying product without the tied product; and
 - (4) the tying is capable of restricting competition.
- (742) If these conditions are met, it is for the dominant undertaking, which bears the burden of proof, to demonstrate the existence of any objective justification for its conduct.⁸⁰⁰
- (743) Regarding the first condition referred to in recital (741), the distinctness of two products has to be assessed by reference to customer demand and not, for example, whether the tying product was regularly offered without the tied product.⁸⁰¹ A range of factors are relevant to this assessment, including the nature and technical features of the products concerned, the facts observed on the market such as the presence of independent companies specialising in the manufacture and sale of the tied product,⁸⁰² the history of the development of the products concerned and the commercial practice of the dominant undertaking.⁸⁰³
- (744) Complementary products can constitute separate products for the purposes of Article 102 TFEU, in particular Article 102(d) TFEU.⁸⁰⁴ This is because, for example, customers may wish to obtain complementary products together, but from different sources.⁸⁰⁵
- (745) Moreover, the technical integration of one product into another does not mean that the two products are no longer separate for the purposes of Article 102 TFEU.⁸⁰⁶ Equally, even when the tying of two products is consistent with commercial usage or when there is a natural link between the two products, such tying may nonetheless constitute an abuse unless it is objectively justified.⁸⁰⁷
- (746) Regarding the third condition referred to in recital (741), a dominant undertaking can apply compulsion or coercion either directly to end users or via its customers that pass on such coercion to end users. Such compulsion or coercion can be of a contractual nature, a technical nature, or both.⁸⁰⁸
- (747) Coercion or compulsion can still exist where the party accepting the tied product is

⁷⁹⁹ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraphs 859, 862, 864, 867, 869, and 1144-1167.

⁸⁰⁰ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraphs 859 and 869.

⁸⁰¹ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraphs 917 and 919.

⁸⁰² Case T-30/89 *Hilti v Commission*, EU:T:1991:70, paragraph 67; Case T-83/91 *Tetra Pak v Commission*, EU:T:1994:246, paragraphs 82 and 137; Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 927.

⁸⁰³ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 925.

⁸⁰⁴ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 921.

⁸⁰⁵ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 922.

⁸⁰⁶ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 935.

⁸⁰⁷ Case C-333/94 P *Tetra Pak v Commission*, EU:C:1996:436, paragraphs 36-37; Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 942.

⁸⁰⁸ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 963.

- not charged a separate price for that product.⁸⁰⁹
- (748) Equally, compulsion or coercion can still exist where the party accepting the tied product is not required to use it or is entitled to use the same product supplied by a competitor of the dominant undertaking.⁸¹⁰
- (749) Regarding the fourth condition referred to in recital (741), Article 102 TFEU does not require demonstration of actual or potential anti-competitive effects in classical tying cases. Indeed, in *Hilti*⁸¹¹ and *Tetra Pak II*,⁸¹² it was sufficient to assume that the tying of a specific product has by its very nature a foreclosure effect. In *Microsoft*, however, the General Court explained that while it is true that Article 102 TFEU as a whole does not contain any reference to the anti-competitive effect of bundling, the fact remains that, in principle, conduct will be regarded as abusive only if it is capable of restricting competition.⁸¹³ As already explained in Section 10.1, the concept of abuse covers not only practices which may prejudice consumers directly but also those which may indirectly prejudice them by impairing an effective competitive structure.⁸¹⁴
- (750) When conducting such an examination, it is relevant to consider whether, *inter alia*, the tying: (i) reduces the incentives of users to choose a product from among those of other suppliers than the dominant undertaking;⁸¹⁵ (ii) creates disincentives for customers of the dominant undertaking to offer the products of other suppliers of the product that is tied;⁸¹⁶ or (iii) encourages third parties to develop products that implement only the underlying technology on which is based the product that is tied.⁸¹⁷
- (751) Regard must also be given as to whether there are technical or economic constraints that prevent users from downloading several apps on their devices or whether such apps may be free, easy to download and take up little space.⁸¹⁸

11.2. Summary of the abusive conduct

- (752) Since at least 1 January 2011, Google has tied the Google Search app⁸¹⁹ with the Play Store. The Commission concludes that this conduct constitutes an abuse of Google's dominant position in the worldwide market (excluding China) for Android app stores.

⁸⁰⁹ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraphs 967-969.

⁸¹⁰ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 970.

⁸¹¹ Case T-30/89 *Hilti v Commission*, EU:T:1991:70, paragraphs 100-101.

⁸¹² Case T-83/91 *Tetra Pak v Commission*, EU:T:1994:246, paragraphs 136-137; and Case C-333/94 P *Tetra Pak v Commission*, EU:C:1996:436, paragraph 37.

⁸¹³ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 867. See also Case T-203/01 *Michelin v Commission*, EU:T:2003:250, paragraphs 237-239.

⁸¹⁴ Case 85/76 *Hoffmann-La Roche*, EU:C:1979:36, paragraph 125; and Case T-228/97 *Irish Sugar v Commission*, EU:T:1999:246, paragraph 232.

⁸¹⁵ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 1041.

⁸¹⁶ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 1043.

⁸¹⁷ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraphs 1060-1077.

⁸¹⁸ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 1044; Case T-79/12 *Cisco Systems and Messagenet v Commission*, EU:T:2013:635, paragraph 79.

⁸¹⁹ The Google Search app can be accessed through the Google Search icon and widget, as well as Google Now. See, for example, Mobile Application Distribution Agreement between Google and [MADA signatory] of 1 May 2014, Sections 1.1(m) and 3.3(b)(i) [...].

(753) Since 1 August 2012,⁸²⁰ Google has tied Google Chrome with the Play Store and the Google Search app. The Commission concludes that this conduct constitutes an abuse of Google's dominant positions in the worldwide market (excluding China) for Android app stores and the national markets for general search services.

11.3. Tying of the Google Search app with the Play Store

- (754) The Commission concludes that the tying of the Google Search app with the Play Store constitutes an abuse of Google's dominant position in the worldwide market (excluding China) for Android app stores because: (i) the Play Store and the Google Search app are distinct products (Section 11.3.1); (ii) Google is dominant in the worldwide market (excluding China) for Android app stores (Section 11.3.2); (iii) the Play Store cannot be obtained without the Google Search app (Section 11.3.3); and (iv) the tying of the Google Search app with the Play Store is capable of restricting competition (Section 11.3.4).
- (755) The Commission further concludes that Google has not demonstrated the existence of any objective justification for the tying of the Google Search app with the Play Store (Section 11.5).⁸²¹

11.3.1. The Play Store and the Google Search app are distinct products

- (756) For the reasons set out in this Section, the Play Store and the Google Search app are distinct products.
- (757) First, the Play Store and the Google Search app provide the following distinct functionalities to users:
- (1) the Play Store enables users to download, install and manage a wide range of diverse apps from a single point in the interface of the smartphone;
 - (2) the Google Search app enables users to search for information across the entire Internet.
- (758) Second, a number of undertakings such as Yahoo and Seznam supply general search services on a stand-alone basis, independently of Android app stores.
- (759) Third, Google develops and markets versions of the Google Search app that are designed to work on other smart mobile OSs such as Apple's iOS or Microsoft's Windows Phone OS.
- (760) Fourth, the Google Search app, as well as other competing general search apps, can be downloaded via other non-Android app stores.
- (761) Fifth, despite the tying of the Google Search app with the Play Store, OEMs sought the installation of the Play Store on their smart mobile devices separately from the Google Search app.⁸²²
- (762) Google does not contest the Commission's conclusions as outlined in this Section.

⁸²⁰ The date when Google Chrome first became a mandatory Google app in a MADA. See Section 1.13 of the Mobile Application Distribution Agreement between Google and [MADA signatory] [...].

⁸²¹ All objective justifications put forward by Google regarding the tying of its proprietary mobile apps are assessed together in Section 11.5.

⁸²² See Google internal email referring to an instance when [MADA signatory] wanted to license only the Play Store and the Gmail app (Doc ID 1374-1937).

11.3.2. Dominance in the worldwide market (excluding China) for Android app stores

(763) As set out in Section 9.4, Google holds a dominant position in the worldwide market (excluding China) for Android app stores since 2011.

11.3.3. The Play Store cannot be obtained without the Google Search app

(764) For the reasons set out in this Section, the Commission concludes that OEMs⁸²³ cannot obtain the Play Store without the Google Search app.

(765) First, OEMs can pre-install the Play Store on their Google Android devices only if they license and pre-install the GMS bundle, including the Google Search app.⁸²⁴

(766) Second, users cannot obtain the Play Store without simultaneously obtaining the Google Search app.

(767) Third, OEMs that wish to install a different general search app on their GMS devices can do so only alongside the Google Search app.

(768) Fourth, it is irrelevant that OEMs may not be required to pay anything extra for the Google Search app.

(769) In the first place, while Google does not charge for the Google Search app, it monetises that app through advertising via the general search service offered through the Google Search app.

(770) In the second place, the conclusion that Google ties the Google Search app with the Play Store does not depend on OEMs having to pay for the Google Search app.⁸²⁵

(771) Fifth, it is irrelevant that users may not be obliged to use the Google Search app which they find pre-installed on their GMS devices and that they can download on their devices a competing general search app. The conclusion that Google ties the Google Search app with the Play Store does not depend on users being forced to use the Google Search app or prevented from using a competing general search app.⁸²⁶

(772) Google does not contest the Commission's conclusions as outlined in this Section.

11.3.4. Restriction of competition

(773) The Commission concludes that the tying of the Google Search app with the Play Store is capable of restricting competition because it:

(1) provides Google with a significant competitive advantage that competing general search services providers cannot offset (Section 11.3.4.1); and

(2) helps Google to maintain and strengthen its dominant position in each national market for general search services, increases barriers to entry, deters innovation and tends to harm, directly or indirectly consumers (Section 11.3.4.2).

(774) Moreover, the Commission's conclusion that the tying of the Google Search app with the Play Store is capable of restricting competition is not affected by Google's claims

⁸²³ Insofar as ODMs and chipset manufacturers, which have entered into a MADA, pre-install mandatory Google apps on smart mobile devices, the conclusions reached by the Commission in Sections 11.3 and 11.4 equally apply to them.

⁸²⁴ See Section 6.3.2.

⁸²⁵ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraphs 967-969.

⁸²⁶ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 970.

regarding the need for the Commission to consider that tying in its relevant economic and legal context (Section 11.3.4.3).

11.3.4.1. The tying of the Google Search app with the Play Store provides Google with a significant competitive advantage that competing general search services providers cannot offset

(775) The Commission concludes that, via the tying, Google is able to ensure for its general search service a significant competitive advantage that competing general search services cannot offset by other methods of distributing general search services on smart mobile devices. This is for the following reasons:

- (I) the number of general searches via smart mobile devices has grown significantly;
- (II) pre-installation is an important channel for the distribution of general search services on smart mobile devices;
- (III) it is impossible to uninstall the Google Search app on GMS devices;
- (IV) competing general search services cannot offset the competitive advantage that Google ensures for itself through tying; and
- (V) Google's competitive advantage resulting from the tying and the inability of competing general search services to offset that advantage is consistent with the evolution of market shares.

(776) Moreover, contrary to Google's claims, when assessing the competitive advantage that Google ensures itself via the tying of the Google Search app with the Play Store, the Commission is not required to make a finding of "*indirect network effects*" with respect to the Google Search app or to undertake certain "*empirical work*" (VI).

I. *The number of general searches via smart mobile devices has grown significantly*

(777) The number of general searches via smart mobile devices has grown significantly and since 2015, more general search queries have been undertaken on smart mobile devices than on PCs.⁸²⁷ While general search queries carried out worldwide with Google Search on smart mobile devices accounted for [20-30]% of all Google Search general search queries in 2012, they accounted for [50-60]% in 2015 and [50-60]% in 2016.⁸²⁸

II. *Pre-installation is an important channel for the distribution of general search services on smart mobile devices*

(778) Pre-installation is an important channel for the distribution of general search services on smart mobile devices.

(779) Pre-installation is important for service providers because it can increase significantly on a lasting basis the usage of the service provided by the app. This significant increase in usage is the reason why service providers, including Google, remunerate OEMs and MNOs for pre-installing their apps (on an exclusive or non-exclusive basis), for setting their services as default ("default setting"), and/or placing apps in a premium position on smart mobile devices ("premium

⁸²⁷ Google's response to Question 14 of the request for information of 24 March 2017 (Doc ID 7894-5).

⁸²⁸ Google's response to Question 14 of the request for information of 24 March 2017 (Doc ID 7894-5).

placement").⁸²⁹

- (780) As Google itself acknowledges with respect to the pre-installation of apps:
- (1) "*Pre-loading these apps and placing Search on the home screen is unquestionably valuable to Google.*"⁸³⁰
 - (2) "*In addition to preinstalling their own apps and services, OEMs and carriers also sell preinstallation to app developer to gain additional revenue that lowers their costs.*"⁸³¹
- (781) The reason why pre-installation, like default setting or premium placement, can increase significantly on a lasting basis the usage of the service provided by an app is that users that find apps pre-installed and presented to them on their smart mobile devices are likely to "stick" to those apps. HP described the creation of a "*status quo bias*" in the form of premium placement and default setting as follows: "*Premium placement and default settings give applications and services located in those positions the advantage of being the first things users see when they start to interact with their device. Users are more likely to try these applications/services based on their prominent visibility and once they are using them, they usually continue to do so. It is an easy way to obtain new users and deliver almost automatic stickiness for an application or service.*"⁸³²
- (782) Users are unlikely to look for, download, and use alternative apps, at least when the app that is pre-installed, premium placed and/or set as default already delivers the required functionality to a satisfactory level. As Nokia indicated in relation to pre-installation: "*Where a product is preloaded by default, consumers tend to stick to this product at the expense of competing products – even if the default product is inferior to competing products.*"⁸³³ In order to overcome the *status quo* bias and see users looking for alternatives, service providers need to convince users that their service is significantly better than the alternative that is already pre-installed, premium placed or set as default.⁸³⁴
- (783) Regarding the Google Search app, as a result of the MADA, it is pre-installed on a large number of smart mobile devices. In 2016, approximately 260 million smartphones were sold in Europe,⁸³⁵ of which approximately 197 million smartphones or 76% were Google Android devices.⁸³⁶ Practically all of these Google Android smartphones had the Google Search app pre-installed with the rest of the

⁸²⁹ Appendix 2 of Google's Response to the Statement of Objections, page 17 (Doc ID 8303-12).

⁸³⁰ Appendix 2 of Google's Response to the Statement of Objections, page 17 (Doc ID 8303-12).

⁸³¹ Google's Response to the Statement of Objections, Executive Summary, page xvii (Doc ID 7117).

⁸³² See, for example, HP's non-confidential response to Question 55 of the request for information of 12 June 2013 to OEMs (Doc ID 4162).

⁸³³ Nokia's non-confidential response to Question 17 of the request for information of 29 June 2015 to app developers (Doc ID 4360).

⁸³⁴ See Yandex's non-confidential response to Question 35.1 of the request for information of 12 June 2013 to app developers (Doc ID 4601): "[...] download levels of mobile applications that are competing with preinstalled mobile applications tend to be low if the pre-installed service is of comparable or even (insubstantially) worse quality."

⁸³⁵ Source: [...] data (Doc ID 7866 and 7867).

⁸³⁶ Source: [...] data (Doc ID 7866 and 7867). In 2014, approximately 206.7 million smartphones were sold in Europe, of which approximately 156.6 million smartphones or 75.7% were Google Android devices (Source: [...] (Doc IDs 3098, 4632, 4633 and 4710)).

GMS bundle.⁸³⁷

- (784) Furthermore, in 2016, approximately 1.65 billion smart mobile devices were sold worldwide (including China), of which approximately 1.33 billion or 81% were Google Android devices.⁸³⁸ Approximately 918 million smart mobile devices or 56% of the total number of all smart mobile devices, i.e. practically all Google Android devices outside China, had the Google Search app pre-installed together with the rest of the GMS bundle.⁸³⁹ These 918 million smart mobile devices in 2016 constitute a far higher number than any competing general search service would be able to achieve by way of pre-installation of its app on smart mobile devices. By way of comparison, from the total smart mobile devices sold worldwide (including China) in 2016, only approximately 21 million or 1.3% were sold with Windows Mobile on which Google's main competitor, Bing, was set as the default general search service.⁸⁴⁰
- (785) By tying the Google Search app with the Play Store, Google therefore ensures that distribution of the Google Search app is as wide on smart mobile devices as the number of GMS devices.
- (786) The importance of pre-installation as a channel for the distribution of general search services on Google Android devices is confirmed by (i) internal Google documents, (ii) Google's Response to the Statement of Objections, (iii) responses by third parties to requests for information, and (iv) a comparison of the use and revenues of the Google Search app and other GMS apps on Google Android devices, where they are pre-installed, with their use on other smart mobile devices, where they are not pre-installed.
- (787) First, the importance of pre-installation is confirmed by internal Google documents:
- (1) [Google Executive], stated in an internal email dated 14 November 2008 that "*I guess my biggest concern (and [Google Executive]) is GMA [Google's general search service] because of revenue implications of not getting a pre-load (underlying assumption that GMA prominently [sic] present leads to more searches, particularly with voice). How can we address this concern? Could we minimally require GMA to preload on Android (or all platforms) as a necessary condition for any GMS deals?*"⁸⁴¹
 - (2) [Google Executive], stated in an internal email dated 1 November 2010 that "*Preloading remains valuable to users, and hence OEMs, despite full*

⁸³⁷ See Section 9.3.1.

⁸³⁸ Source: [...] data (Doc ID 7866 and 7867). In 2014, approximately 1.53 billion smart mobile devices were sold worldwide (including China), of which approximately 1.2 billion smart mobile devices or 78.4% were Google Android devices (Source: [...] (Doc IDs 3098, 4632, 4633 and 4710)).

⁸³⁹ Source: [...] data (Doc ID 7866 and 7867) and Section 9.3.1, in particular footnote 436, which explains that (excluding China) practically all Google Android devices in the world are sold with GMS.

⁸⁴⁰ Source: [...] data (Doc IDs 7866 and 7867). The low tablet sales figures classified as "Windows&Android" were divided equally between the two smart mobile OSs. There is no Bing app on Windows Mobile and thus Bing is not pre-installed on Windows Mobile devices. However, Bing is set as default on three entry points on Windows Mobile phones: the hardware button ("HardKey"), the Cortana digital assistant tile on the home screen and the address bar in the native browser (see Microsoft's non-confidential response to Question 2 of the request for information of 20 November 2015 to search providers (Doc ID 2980)).

⁸⁴¹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1305-381).

unbundling [i.e. the fact that Google apps are not only pre-installed but also available for download on the Play Store] *because most users just use what comes on the device. People rarely change defaults*".⁸⁴²

- (3) In another internal Google email dated 26 April 2011, [Google Executive] stated the following: "*Do we really need exclusivity terms? The current [non-US] terms give pretty much the same effect. OEM preinstall default under MADA + carrier revshare incentive with non-duplication + volume targets [search deals] = many hurdles for a carrier seeking to change the default. They'd need >\$ from the alternative search AND EITHER persuade the OEM to seek (and get from us) an exception to their MADA to allow preinstallation of another search provider with preinstall of other GMS, OR ship a device with no GMS presintalled [sic] at all [MADA requirements]. In practice, shipping without all GMS doesn't happen except in edge cases, like (previously) America Movil. All developed markets have users who expect and demand GMS.*"⁸⁴³
- (788) Second, the importance of pre-installation is confirmed by Google's Response to the Statement of Objections, where Google acknowledges that "*Pre-loading these apps and placing Search on the home screen is unquestionably valuable to Google.*"⁸⁴⁴
- (789) Third, the importance of pre-installation is confirmed by third party responses to requests for information:
- (1) Nokia stated that: "*Preloading of apps (as opposed to the availability of apps for downloading) plays a critical role for developers because being prominently visible on a smartphone's home screen or near to the home screen inevitably increases the likelihood of consumers trying out the app.*"⁸⁴⁵
 - (2) Amazon stated that: "*Having an app pre-installed on a device significantly improves that app's discoverability by end users. That benefit increases the more prominently the app appears on the device,*"⁸⁴⁶ and "*[...] premium placement of preinstalled applications has a significant impact on their use [...]. [T]he presence of pre-installed mobile applications in many cases limits user willingness to try competing mobile applications.*"⁸⁴⁷
 - (3) Hutchison 3G stated that: "*It is very powerful to have an application preloaded as opposed to a bootstrap or even a marketing recommendation to use the app. As with any other service, if it is within reach, the likelihood to use it is greater.*"⁸⁴⁸

⁸⁴² Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1361-1060).

⁸⁴³ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1347-1623).

⁸⁴⁴ See Appendix 2 of Google's Response to the Statement of Objections, page 17 (Doc ID 8303-12).

⁸⁴⁵ Nokia's non-confidential response to Question 17.2 of the request for information of 12 June 2013 to OEMs (Doc ID 764).

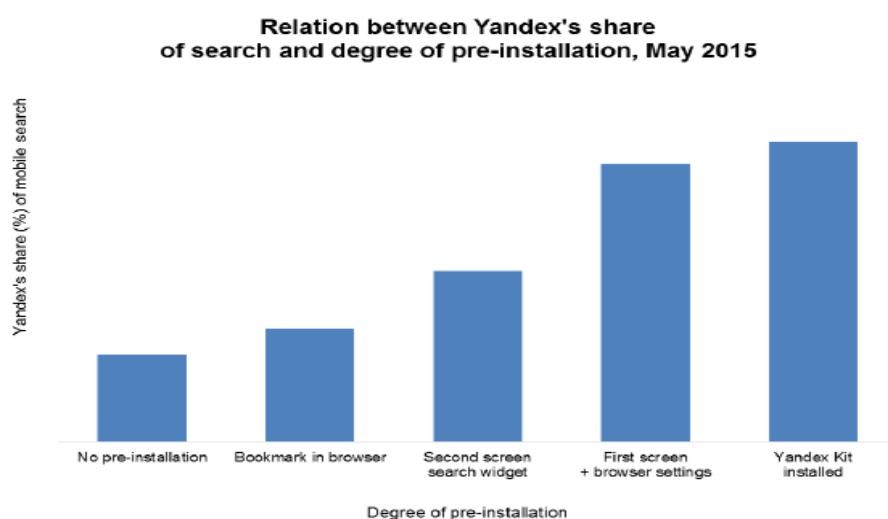
⁸⁴⁶ See Amazon's non-confidential response to Question 17 of the request for information to app developers of 29 June 2015 (Doc ID 8230).

⁸⁴⁷ See Amazon's non-confidential response to Question 35 of the request for information of 12 June 2013 to OS developers (Doc ID 3612).

⁸⁴⁸ See Hutchison 3G's non-confidential response to Question 51 of the request for information of 12 June 2013 to MNOs (Doc ID 392).

- (4) Yandex stated that: "[t]he most efficient distribution channel is pre-installation by the OEM. OEMs mainly pre-install those services that potentially can generate additional revenue for them. [Information about revenues]. Most of our discussions with OEMs [confidential commercial information] concern the pre-installation of Yandex search."⁸⁴⁹
- (5) Yandex submitted an analysis which indicates that Yandex's general search share in Russia in May 2015 was [2-5] times higher on Android devices where its search widget was pre-installed on the home screen and its general search service was set as default in the pre-installed mobile web browser, compared to when Yandex's general search service was not pre-installed at all.⁸⁵⁰

Figure 18: Yandex's share of general search queries on smart mobile devices depending on various scenarios of pre-installation and default setting



- (6) Yahoo stated that it "expects that traffic generated by its search services would be higher if its search services were preinstalled than if not preinstalled, regardless of whether Google's search engine is also preinstalled on the same device."⁸⁵¹
- (7) Qwant stated that: "pre-installation [...] will likely highly increase our traffic."⁸⁵²
- (8) At the end of 2008, Microsoft signed a pre-installation agreement with Verizon, pursuant to which, in the US in 2010 and 2011, its general search service was pre-installed alongside Google on six models of Google Android devices. The traffic resulting from this agreement accounted for [15-25]% of the entire volume of mobile general search queries to Bing in the US during

⁸⁴⁹ Yandex's non-confidential response to Question 25.5 of the request for information of 12 June 2013 to app developers (Doc ID 4601).

⁸⁵⁰ Yandex's presentation of 5 November 2015 (Doc ID 4216, 8193 and 8139).

⁸⁵¹ Yahoo's non-confidential response to Question 10 of the request for information of 20 November 2015 to Search providers (Doc ID 3411).

⁸⁵² Qwant's non-confidential response to Question 9 of the request for information of 20 November 2015 to Search providers (Doc ID 3236).

this period.⁸⁵³

- (790) Fourth, the importance of pre-installation is confirmed by a comparison between the use and revenues of Google's GMS apps on Google Android (where they are pre-installed) with their use and revenues on other smart mobile devices (where they are not).
- (791) In the first place, a study submitted by FairSearch indicates that the usage of each app in the GMS bundle is consistently higher on GMS devices where it is pre-installed than on iOS devices, where users must download each app (see Table 10).⁸⁵⁴ The study looked at monthly usage (one of the industry's usual standard for measuring app usage) in the United Kingdom for February 2016 using [...] data. For the Google Search app, 17% of users of iOS devices used the downloaded Google Search app, whereas 76% of users of Google Android devices had used the pre-installed Google Search app.

Table 10: Comparison of usage of Google apps (Pre-installation vs download on Android/iOS devices), United Kingdom survey, February 2016⁸⁵⁵

Google Applications	iOS % Reach	Android % Reach
<i>Google Applications preinstalled on all smartphones</i>		
Google Drive (Mobile App)	1.873	39.118
YouTube (Mobile App)	50.438	68.918
Google Search (Mobile App)	17.405	75.538
Google Maps (Mobile App)	22.445	59.212
Google Play Movies (Mobile App)	0.263	4.048
Gmail (Mobile App)	11.58	57.521
Google Play Music (Mobile App)	0.436	14.516
<i>Google Applications preinstalled on some smartphones</i>		
Google Photos (Mobile App)	0.679	19.789
Hangouts (Mobile App)	0.879	8.318
Google+ (Mobile App)	0.863	15.215
Google Docs (Mobile App)	0.707	7.702
<i>Google Applications not preinstalled on smartphones</i>		
Google Earth (Mobile App)	1.693	3.103
Google Authenticator (Mobile App)	0.5	0.837

- (792) An alternative way of visualising the importance of pre-installation contained in the figures in Table 10 is to present the figures comparing the usage of GMS apps on Android and on iOS in a graph, with the monthly percentage audience on Android on the y-axis and monthly percentage audience on iOS on the x-axis. As Figure 19 indicates, all of Google's apps are above the 45° line, meaning that for each of them their monthly audience and thus the percentage of users on Android devices that used

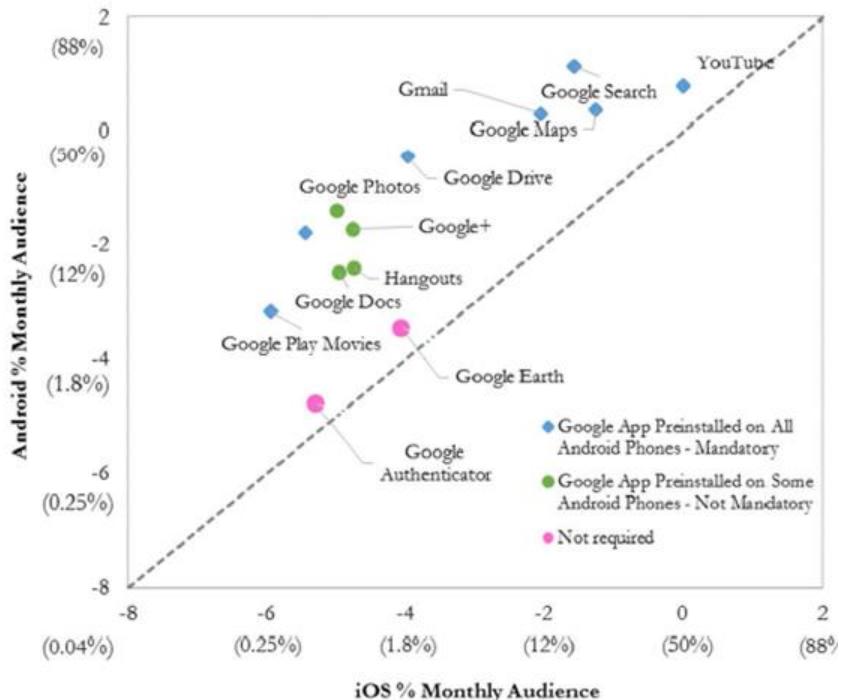
⁸⁵³ Microsoft's non-confidential response to Question 10.1 of the request for information of 20 November 2015 to Search providers (Doc ID 4634).

⁸⁵⁴ "Assessing the relevant markets for licensable mobile operating systems and Google Android compatible app stores", Table 7, Marco Iansiti, Harvard University, submitted by FairSearch on 24 January 2017 (Doc ID 8003).

⁸⁵⁵ "Assessing the relevant markets for licensable mobile operating systems and Google Android compatible app stores", Table 7 and paragraphs 169-179, Marco Iansiti, Harvard University, submitted by FairSearch on 24 January 2017 (Doc ID 8003). "Reach" means percentage of users who use the app at least once a month (monthly audience). The term "smartphones" that is used in connection with pre-installation (or lack thereof) of certain Google apps relates to the Google Android devices that the study uses as a benchmark for measuring the "reach" of the respective app in comparison to iOS devices.

that app at least once a month is higher than the percentage of users on iOS devices that used that app. The apps which are closest to the 45° line are Google apps that are not pre-installed on GMS devices. Google Search is the Google app with the highest absolute difference (see the exact numbers in Table 10).

Figure 19: Percentage of users that used a given pre-installed Google app at least once a month (i.e. monthly audience) on their Google Android/iOS device, United Kingdom survey, February 2016⁸⁵⁶



- (793) In the second place, [...] data comparing general search queries on Google Android and Windows Mobile devices in France, Germany, Italy, Spain and the United Kingdom between 2014 and 2017, indicates that on Windows Mobile devices, where Google Search is not pre-installed and Bing is set as the default general search service, Google Search accounted for [10-20]% to [40-50]% of general search queries. By contrast, on Google Android devices in these countries, where Google Search is practically always pre-installed, it accounted for [90-100]% of general search queries.

⁸⁵⁶

"Assessing the relevant markets for licensable mobile operating systems and Google Android compatible app stores", Figure 6, Marco Iansiti, Harvard University, submitted by FairSearch on 24 January 2017 (Doc ID 8003).

Table 11: General search queries shares for general search services providers on Windows Mobile and Google Android⁸⁵⁷

General search queries shares on Windows Mobile devices for largest EU countries

	2014	2015	2016	2017
AOL	[0-10]%	[0-10]%	[0-10]%	[0-10]%
Ask	[0-10]%	[0-10]%	[0-10]%	[0-10]%
Bing	[50-60]%	[60-70]%	[70-80]%	[80-90]%
Google	[40-50]%	[30-40]%	[20-30]%	[10-20]%
Yahoo	[0-10]%	[0-10]%	[0-10]%	[0-10]%

General search queries shares on Google Android devices for largest EU countries

	2014	2015	2016	2017
AOL	[0-10]%	[0-10]%	[0-10]%	[0-10]%
Ask	[0-10]%	[0-10]%	[0-10]%	[0-10]%
Bing	[0-10]%	[0-10]%	[0-10]%	[0-10]%
Google	[90-100]%	[90-100]%	[90-100]%	[90-100]%
Yahoo	[0-10]%	[0-10]%	[0-10]%	[0-10]%

- (794) In the third place, data provided by Google on worldwide revenues per apps and services included in the GMS suite, summarised in Table 12, indicates that it obtains significantly higher revenues with its general search app on Google Android devices, where its general search app was pre-installed, than on iOS devices where its general search app was not pre-installed. According to that data, Google's worldwide revenues with its general search app on Google Android devices were [...]% higher in 2014, [...]% higher in 2015 and [...]% higher in 2016 than with its general search app on iOS devices. This difference cannot be explained by the fact that the search volume on Google Android devices is higher than on iOS devices, given that Google's total revenues on Android devices were only [...]% higher in 2014, [...]% higher in 2015 and [...]% higher in 2016 than on iOS devices.

⁸⁵⁷

Source: [...] data provided by Microsoft in response to Question 13 of the request for information of 10 April 2017 (Annexes 5 and 5A) (Doc IDs 8101 and 8102). For 2017, the data concerns only the first two months. The data included in the tables covers France, Germany, Italy, Spain and the United Kingdom and relates to smartphone and tablets.

Table 12: Google's worldwide revenues with the Google Search app and other GMS services on Google Android and iOS devices (million EUR)⁸⁵⁸

Revenues from apps	2014		2015		2016	
	Google Android	iOS	Google Android	iOS	Google Android	iOS
Google Search app revenues	[...]	[...]	[...]	[...]	[...]	[...]
Total search revenues	[...]	[...]	[...]	[...]	[...]	[...]
Total GMS apps and services revenues	[...]	[...]	[...]	[...]	[...]	[...]

- (795) Fifth, the importance of pre-installation as a channel for the distribution of general search services on smart mobile devices is not affected by Google's claims that:
- (1) pre-installation on Google Android devices cannot be regarded as an important channel for the distribution of general search services on smart mobile devices because, between 2013 and 2015, queries on Google Search conducted on Google Android devices only accounted for [10-20]% to [20-30]% of the total number of queries on Google Search in the EEA;⁸⁵⁹
 - (2) the Commission should disregard all third party responses to requests for information cited in recitals (787) to (789) that were not accompanied by any internal data or empirical studies;⁸⁶⁰
 - (3) some of the third party responses to requests for information cited in recitals (787) to (789) are incomplete, incorrect or irrelevant;⁸⁶¹
 - (4) the studies and data described in recitals (790) to (794) are unreliable, based on flawed methodology and fail to include data related to general searches via browsers;⁸⁶² and
 - (5) Google Search's high usage share on PCs demonstrates that pre-installation under the MADA is not a cause for its higher shares on Android compared to non-Android devices.⁸⁶³
- (796) In the first place, the fact that Google Android devices accounted for [10-20]% to [20-30]% of general search queries on Google Search in the EEA between 2013 and 2015 confirms the importance of pre-installation as a channel for the distribution of general search services on smart mobile devices. This is because:

⁸⁵⁸ Source: Google's response to Questions 1 to 5 of the request for information of 24 March 2017, Appendix A (Doc ID 7955).

⁸⁵⁹ Google's Response to the Statement of Objections, Part Four, pages 184-185, paragraph 73 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Three, page 63, paragraph 8 (Doc ID 8598).

⁸⁶⁰ Google's Response to the First Letter of Facts, Part Three, page 67, paragraphs 18-19; page 68, paragraphs 20, and 22; page 74, paragraph 29; page 75, paragraph 30; page 78, paragraph 42 (Doc ID 8598).

⁸⁶¹ Google's Response to the First Letter of Facts, Executive Summary, pages ix-x; Part Three, page 67, paragraph 18; Part Three, page 68, paragraphs 21-23 (Doc ID 8598).

⁸⁶² Google's Response to the First Letter of Facts, Part Three, pages 69-73, paragraphs 24-26; see also Google's Response to the Statement of Objections, Part Four, page 187-192, paragraphs 77-89 (Doc ID 7117).

⁸⁶³ Google's Response to the First Letter of Facts, Part Three, page 72, paragraph 25 (Doc ID 8598).

- (1) in almost all national markets for general search services in the EEA, [10-20]% to [20-30]% of general search queries on Google Search was equivalent to [1-6] times more than the combined [5-10]% of queries that all competing general search services achieved in 2016 in total across all platforms. Moreover, consistent with the significant growth in the number of general searches via smart mobile devices (see recital (777)), in 2016, Google Android devices accounted for [20-30]% of general search queries on Google Search in the EEA.⁸⁶⁴
- (2) the vast majority of the remaining [70-80]% to [80-90]% of general search queries on Google Search in the EEA were from browsers on iOS, Google Chrome on PCs, and other browsers on PCs. On all of these browsers, Google Search was set as default:
 - (a) approximately [10-20]% to [20-30]% of Google Search queries carried out in the EEA in 2013-2016 were from iOS devices⁸⁶⁵ and Google Search was set as default on the Safari browser on each smart mobile device sold by Apple (see Section 6.2.1);⁸⁶⁶
 - (b) approximately [20-30]% to [20-30]% of Google Search queries carried out in the EEA in 2013-2016 were from Google Chrome on PCs⁸⁶⁷ and OEMs of PCs were required to set Google Search as the default general search service in Google Chrome;⁸⁶⁸ and
 - (c) approximately [10-20]% to [20-30]% of Google Search queries carried out in the EEA in 2013-2016 were from other PC web browsers, such as Safari, Opera and Firefox and, with the exception of Microsoft's Internet Explorer/Edge, all major PC web browsers were required to set Google Search as the default general search service on their PC web browsers.⁸⁶⁹
- (3) general search queries via smart mobile devices are a particular source of valuable location data (see recital (114)) that allows general search services to

⁸⁶⁴ Google's response to Question 14 of the request for information of 24 March 2017 (Doc ID 7894-5).
⁸⁶⁵ Source: Google's response to Question 14 of the request for information of 24 March 2017 (Doc ID 7894-5).

⁸⁶⁶ Apple's non-confidential response to Question 16 of the request for information of 17 July 2014 (Doc ID 1453).

⁸⁶⁷ This figure is obtained by multiplying, for each year during the period 2013-2016, the usage share of the browser Google Chrome on PCs in the EEA (source: StatCounter data for 2013-2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>) by the percentage of Google general search queries on PCs in the EEA (source: Google's response to Question 14 of the request for information of 24 March 2017, Doc ID 7894-5). This assumes that, generally, searches are done via the general search services pre-set on the web browser and Chrome's usage share for PC web browsers corresponds to the number of search queries via Google Chrome for PC (e.g. for 2016, the estimated percentage of Google general search queries on PCs that were conducted via Google Chrome would be [50-60]%, which corresponds to the usage share of Chrome on PC web browsers in 2016).

⁸⁶⁸ See Google's response to Question 13 of the request for information of 24 March 2017 (Doc ID 7790).

⁸⁶⁹ This figure is obtained by multiplying, for each year of the period 2013-2016, the usage share of the browsers Safari, Opera and Firefox on PCs in the EEA (source: StatCounter data for 2013-2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>) by the percentage of Google general search queries on PCs in the EEA (source: Google's response to Question 14 of the request for information of 24 March 2017, Doc ID 7894-5). As with Google Chrome, this assumes that, generally, searches are done via the general search services pre-set on the web browser and the web browser's usage share for PC corresponds to number of search queries on a given PC web browser.

improve their general search and search advertising results (see recitals (687) to (691) and (693) to (697)).

- (797) In the second place, the third party responses to requests for information cited in recitals (787) to (789) are consistent with a body of evidence of high probative value including internal Google documents and confirm that pre-installation can increase significantly on a lasting basis the usage of the service provided by the Google Search app.
- (798) In the third place, Google's criticisms of certain third party responses to requests for information cited in recitals (787) to (789) are misleading or incorrect:
- (1) Google is wrong to claim that Amazon did not provide any data to support its response to Question 35 of the request for information.⁸⁷⁰ While Google quotes Amazon's statement that "[it] does not have any available data on the extent to which users download mobile applications that compete with mobile applications pre-installed on devices," that statement continues with "[...] except the information provided in response to Questions 36 to 39 below in relation to pre-installed applications with premium placement or default settings".
 - (2) Google is wrong to claim that the fact that Qwant indicated that both pre-installation and being set as default would likely significantly increase traffic indicates that pre-installation is not an important channel for the distribution of general search services on smart mobile devices.⁸⁷¹ Rather, Qwant's response confirms that pre-installation, like being set as default, is one important channel for the distribution of general search services on smart mobile devices. Indeed, as explained in more detail in recital (818) and Section 6.3.3, Google sets Google Search as default on Google Chrome and has entered into agreements with OEMs and MNO to ensure that Google Search was the only pre-installed general search service and set as default on any pre-installed third party mobile web browsers.
 - (3) Google is wrong to claim that Microsoft's pre-installation deal with Verizon indicates that pre-installation is not an important channel for the distribution of general search services on smart mobile devices.⁸⁷² As explained in recital (789)(8), the traffic resulting from Microsoft's agreement with Verizon covering only six phones accounted for [15-25)% of the entire volume of mobile general search queries to Bing in the US. During the two years of the agreement for these six phones, Bing's share of search queries on smart mobile devices in the US market grew from almost zero in 2009 to approximately 1.5% in December 2011.⁸⁷³
 - (4) Google is wrong to claim that the analysis submitted by Yandex, part of which is contained in Figure 18 in recital (789)(5), indicates that pre-installation is not an important channel for the distribution of general search services on smart

⁸⁷⁰ Google's Response to the First Letter of Facts, Part Three, page 67, paragraph 18 (Doc ID 8598), referring to Doc ID 3612.

⁸⁷¹ Google's Response to the First Letter of Facts, Part Three, page 68, paragraphs 21-22 (Doc ID 8598).

⁸⁷² Google's Response to the First Letter of Facts, Part Three, page 68, paragraph 23 (Doc ID 8598).

⁸⁷³ Source: StatCounter data for 2009-2011, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

mobile devices.⁸⁷⁴ The analysis confirms the importance of pre-installation for the amount of traffic achievable by a general search service, notwithstanding the facts that: (i) Yandex may enjoy stronger brand recognition in Russia than in the EEA, (ii) the analysis is based on a comparison of 20-30 OEMs/OSs/models, the majority of which appear only in one pre-installation/default condition, and (iii) it uses a simple average. This is for the following reasons:

- (a) while the analysis is based on information from Russia, it provides a more general insight into the impact of pre-installation on the usage of a well-established general search service (see further recital (814)(3)). The analysis indicates that pre-installation had an impact on Yandex's share of general search queries, even when the comparison across different pre-installation/default conditions is confined to the same OS, or even within the same model;⁸⁷⁵ and
- (b) the fact that the analysis is based on a simple average, by which all entries are given equal weight in the calculation, does not in itself make it biased, not representative or not relevant.

(799) In the fourth place, Google's criticisms, and claims regarding, the studies and data described in recitals (791) to (793) are misleading or incorrect:

- (1) Regarding Google's criticism⁸⁷⁶ that the FairSearch study cited in recitals (791) and (792) fails to take into account the importance of general search queries from web browsers, the importance of such queries does not alter the fact that pre-installation is an important channel for the distribution of general search services on smart mobile devices. According to data submitted by Google,⁸⁷⁷ pre-installation of the Google Search app is the single most important search entry point for general search queries on GMS devices accounting for [40-50]% of all searches in 2016.
- (2) Moreover, Google Search is set as default for all queries not only on Google Chrome but also other major mobile web browsers, including the Safari browser on iOS.
- (3) Regarding Google's claim⁸⁷⁸ that the [...] data cited in recital (793) is contradicted by general search query estimates from the web usage statistics provider NetMarketShare indicating that there is no material difference between Google's share of general search queries on Android devices where the Google Search app is pre-installed and on Windows Mobile devices where the Google Search app is not pre-installed, the NetMarketShare estimates are

⁸⁷⁴ Google's Response to the Statement of Objections, Part Four, page 211, paragraph 127 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Three, pages 65-66, paragraph 17 (Doc ID 8598).

⁸⁷⁵ See non-confidential version of Yandex's data submission of 24 November 2015 "*Additional data on slides 20 and 25 (CRA Draft 2015-11-23).xlsx*" with respect to the data underlying slide 20 of Yandex's presentation of 5 November 2015 (Doc ID 8193), access to the confidential data was given via data room from 30 August to 2 September 2016.

⁸⁷⁶ Google's Response to the First Letter of Facts, Part Three, page 69-70, paragraph 24 (Doc ID 8598).

⁸⁷⁷ Source: Google's response to Question 11 of the request for information of 24 March 2017 (Doc ID 7894-4).

⁸⁷⁸ Google's Response to the Statement of Objections, Part Four, page 211, paragraph 127 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part Three, page 71-72, paragraph 25 (Doc ID 8598).

contradicted by actual internal search user data for 2015 and 2016 provided by Microsoft and Google.⁸⁷⁹ That data confirms that Google's share of general search queries on Android devices, where the Google Search app is pre-installed, is significantly higher than on Windows Mobile devices, where the Google Search app is not pre-installed. Moreover, given that Google has not submitted the data underlying the NetMarketShare estimates, the Commission cannot verify the veracity of these figures and whether they might be the result of a calculation error – similar to that for the download figures for the Google Search app on Windows Mobile submitted by Google.⁸⁸⁰

- (800) In the fifth place, Google is wrong to claim⁸⁸¹ that Google Search's high usage share on PCs demonstrates that pre-installation under the MADA is not a cause for its higher usage shares on Android compared to non-Android devices. As the share figures in Table 2 and Figure 20 indicate, Google's share of general search queries is consistently higher on smart mobile devices than on PC.

III. It is impossible to uninstall the Google Search app on GMS devices

- (801) Only Google, but not OEMs and MNOs, can uninstall the Google Search app on GMS devices. The most that a competing general search service can, therefore, achieve on a GMS device is that its general search app is pre-installed side-by-side with the Google Search app.
- (802) While Google does not contest this fact, it claims that this irrelevant because users can download one or more competing general search apps on their GMS devices and/or set another general search service than Google as default.⁸⁸²
- (803) As explained in Section 11.3.4.1.II, a significant number of users will not, however, download any competing general search app but rather use the general search app which is pre-installed on their GMS devices, Google Search. For example, on Windows Mobile devices –where Google's general search service is neither pre-installed nor set as default – Bing accounted for [50-60]% to [80-90]% of general search queries in 2014-2017 (see recital (793)).

IV. Competing general search services cannot offset the competitive advantage that Google ensures for itself through tying

- (804) The competitive advantage that Google ensures for itself cannot be offset by competing general search services using alternative distribution channels, such as downloads or agreements with developers of mobile web browsers whereby the competing general search service would be set as default in the URL line, the

⁸⁷⁹ Annex 1 to Microsoft's response to the request for information of 10 April 2017 accessible to Google in the data room and Appendix C to Google's response to the request for information of 24 March 2017 (Doc ID 7894-5). The Commission's calculations of general search query shares for Bing based on Microsoft and Google's data are conservative and favourable to Google. This is because when calculating query shares on Windows Mobile devices, with respect to searches via Bing, the Commission has attributed queries on Windows Mobile devices only to Bing. By contrast, with respect to Google Search, the Commission has attributed queries on all smart mobile devices other than Android to Google Search (and, unlike for Bing, not only on Windows Mobile devices). This is because Google was not able to separately report search queries on Windows Mobile devices.

⁸⁸⁰ See footnote 901.

⁸⁸¹ Google's Response to the First Letter of Facts, Part Three, page 72, paragraph 25 (Doc ID 8598).

⁸⁸² Google's Response to the Statement of Objections, Part Four, page 209, paragraph 125 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Three, page 76, paragraph 36 (Doc ID 8598).

browser's home page or appear as a bookmark.⁸⁸³

a) *Downloads cannot offset the competitive advantage that Google ensures for itself*

- (805) Downloads of general search apps cannot be compared in reach and effectiveness to the pre-installation of the Google Search app on GMS devices. This is because, as explained in more detail in Section 11.3.4.1.II, users that find general search apps pre-installed on their GMS devices are, on average, less likely to download alternative general search apps, in particular when the pre-installed app already delivers the required functionality.
- (806) This is confirmed by the elements set out in recitals (807) to (816).
- (807) First, this is confirmed by a number of third-party respondents to requests for information:
- (1) As explained by Yahoo, "[p]re-installation significantly influences adoption and application use, because most users do not uninstall pre-loaded software or replace a pre-loaded choice with a competing application"⁸⁸⁴ and "[o]nly a small percentage of users download applications that compete with the preinstalled choices."⁸⁸⁵
 - (2) As explained by Yandex, "[...] download levels of mobile applications that are competing with preinstalled mobile applications tend to be low if the pre-installed service is of comparable or even (insubstantially) worse quality."⁸⁸⁶
 - (3) As explained by AOL, "Users are more likely to make use of a pre-installed mobile application for email services, which is subject to premium placement, than to search out and separately download a competing mobile application that provides the same service, features or functionality."⁸⁸⁷
 - (4) As explained by Nokia, "[...] when a competing application is already pre-installed on the device, it makes it even less likely that the consumer will seek out an alternative application on an app store, and makes it far less likely that the consumer will use competing apps unless there is a compelling reason to do so"⁸⁸⁸ and "[a]lthough end-users may technically be able to download competing online services from Google Play or another app store or website,

⁸⁸³ Bookmarks are shortcuts to websites which can be set by the web browser vendor and later modified by users.

⁸⁸⁴ Yahoo's non-confidential response to Question 35 of the request for information of 12 June 2013 to app developers (Doc ID 789).

⁸⁸⁵ Yahoo's non-confidential response to Question 35.1 of the request for information of 12 June 2013 to app developers (Doc ID 789).

⁸⁸⁶ Yandex's non-confidential response to Question 35.1 of the request for information of 12 June 2013 to app developers (Doc ID 4601). Contrary to Google's Response to the First Letter of Facts, Part Three, page 78, paragraph 42 (Doc ID 8598), the incidence when Apple decided to pre-install Apple Maps in lieu of Google Maps on iOS devices does not contradict this statement because, despite being regarded as clearly inferior at the time, users continued to use the pre-installed Apple Maps in large numbers, as explained in more detail in recital (931).

⁸⁸⁷ AOL's non-confidential response to Question 29 of the request for information of 17 June 2015 to developers of e-mail applications (Doc ID 2088).

⁸⁸⁸ Nokia's non-confidential response to Question 35 of the request for information of 12 June 2013 to OEMs (Doc ID 763).

*in practice very few do."*⁸⁸⁹

- (808) Second, this is confirmed by the fact that, overall, competing general search apps were downloaded on [0-5]% of the number of new devices sold during 2011-2016 on which the Google Search app was pre-installed.

Table 13: Number of downloads of competing general search apps worldwide from the Play Store in 2011-2016⁸⁹⁰ (in thousands)

General search apps	2011	2012	2013	2014	2015	2016
Naver	[...]	[...]	[...]	[...]	[...]	[...]
Nate	[...]	[...]	[...]	[...]	[...]	[...]
Daum	[...]	[...]	[...]	[...]	[...]	[...]
Yandex	[...]	[...]	[...]	[...]	[...]	[...]
Bing Search	[...]	[...]	[...]	[...]	[...]	[...]
DuckDuckGo	[...]	[...]	[...]	[...]	[...]	[...]
Yahoo Search	[...]	[...]	[...]	[...]	[...]	[...]
Seznam	[...]	[...]	[...]	[...]	[...]	[...]
Others	[...]	[...]	[...]	[...]	[...]	[...]
Total number of downloads of competing general search apps	[...]	[...]	[...]	[...]	[...]	[...]
Total number of Google Search pre-installations⁸⁹¹	215,092	379,425	594,272	808,200	916,293	917,909
Total as % of Google Search pre-installations	[0-5]%	[5-10]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%

- (809) Many of the downloads in Table 13 are of general search apps by Naver, Nate and Daum, which are active almost exclusively in the Republic of Korea. If only the EEA is considered, the number of downloads of competing general search apps is considerably smaller, also in relative terms (see Table 14). Overall, competing general search apps were downloaded on [0-5]% of all GMS devices in the EEA during the period 2011-2016.

⁸⁸⁹ Nokia's non-confidential response to Question 35.1 of the request for information of 12 June 2013 to OEMs (Doc ID 763).

⁸⁹⁰ Source: Annex Q7 to Google's response to Question 7 of the request for information of 24 March 2017 (Doc ID 7894-2) and [...] data (Doc ID 7866 and 7867).

⁸⁹¹ The total number of Google Search pre-installations corresponds to the number of GMS devices, i.e., Google Android devices outside China. See footnotes 436 and 440.

Table 14: Number of downloads of competing general search apps in the EEA from the Play Store in 2011-2016⁸⁹² (in thousands)

General search apps	2011	2012	2013	2014	2015	2016
Naver	[...]	[...]	[...]	[...]	[...]	[...]
Nate	[...]	[...]	[...]	[...]	[...]	[...]
Daum	[...]	[...]	[...]	[...]	[...]	[...]
Yandex	[...]	[...]	[...]	[...]	[...]	[...]
Bing Search	[...]	[...]	[...]	[...]	[...]	[...]
DuckDuckGo	[...]	[...]	[...]	[...]	[...]	[...]
Yahoo Search	[...]	[...]	[...]	[...]	[...]	[...]
Seznam	[...]	[...]	[...]	[...]	[...]	[...]
Others	[...]	[...]	[...]	[...]	[...]	[...]
Total number of downloads of competing general search apps	[...]	[...]	[...]	[...]	[...]	[...]
Total number of Google Search pre-installations⁸⁹³	59,928	119,762	174,217	196,349	203,740	197,375
Total as % of Google Search pre-installations	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%	[0-5]%

(810) The annual number of downloads of competing general search apps from the Play Store in each EEA country was minimal, with the exception of the Czech Republic (see Table 15).

Table 15: Number of annual downloads of competing general search apps per Member State from the Play Store, 2011-2016⁸⁹⁴

Country in the EEA	2011	2012	2013	2014	2015	2016
Austria	[...]	[...]	[...]	[...]	[...]	[...]
Belgium	[...]	[...]	[...]	[...]	[...]	[...]
Bulgaria	[...]	[...]	[...]	[...]	[...]	[...]

⁸⁹² Source: Annex Q7 to Google's response to Question 7 of the request for information of 24 March 2017 (Doc ID 7894-2) and [...] data (Doc ID 7866 and 7867).

⁸⁹³ The total number of Google Search pre-installations corresponds to the number of Google Android devices in the EEA because practically all Google Android devices are sold with GMS, as explained in footnote 436. The percentages may be slightly under-estimated given that the download figures regard the EEA and not Europe.

⁸⁹⁴ Annex Q7 to Google's response to Question 7 of the request for information of 24 March 2017 (Doc ID 7894-2).

Croatia	[...]	[...]	[...]	[...]	[...]	[...]
Cyprus	[...]	[...]	[...]	[...]	[...]	[...]
Czech Republic	[...]	[...]	[...]	[...]	[...]	[...]
Denmark	[...]	[...]	[...]	[...]	[...]	[...]
Estonia	[...]	[...]	[...]	[...]	[...]	[...]
Finland	[...]	[...]	[...]	[...]	[...]	[...]
France	[...]	[...]	[...]	[...]	[...]	[...]
Germany	[...]	[...]	[...]	[...]	[...]	[...]
Greece	[...]	[...]	[...]	[...]	[...]	[...]
Hungary	[...]	[...]	[...]	[...]	[...]	[...]
Iceland	[...]	[...]	[...]	[...]	[...]	[...]
Ireland	[...]	[...]	[...]	[...]	[...]	[...]
Italy	[...]	[...]	[...]	[...]	[...]	[...]
Latvia	[...]	[...]	[...]	[...]	[...]	[...]
Lichtenstein	[...]	[...]	[...]	[...]	[...]	[...]
Lithuania	[...]	[...]	[...]	[...]	[...]	[...]
Luxembourg	[...]	[...]	[...]	[...]	[...]	[...]
Malta	[...]	[...]	[...]	[...]	[...]	[...]
The Netherlands	[...]	[...]	[...]	[...]	[...]	[...]
Norway	[...]	[...]	[...]	[...]	[...]	[...]
Poland	[...]	[...]	[...]	[...]	[...]	[...]
Portugal	[...]	[...]	[...]	[...]	[...]	[...]
Romania	[...]	[...]	[...]	[...]	[...]	[...]
Slovakia	[...]	[...]	[...]	[...]	[...]	[...]
Slovenia	[...]	[...]	[...]	[...]	[...]	[...]
Spain	[...]	[...]	[...]	[...]	[...]	[...]
Sweden	[...]	[...]	[...]	[...]	[...]	[...]
United Kingdom	[...]	[...]	[...]	[...]	[...]	[...]

(811) Third, the Commission's conclusion that downloads of general search apps cannot be

compared in reach and effectiveness to the pre-installation of the Google Search app on GMS devices is not affected by Google's claims that:

- (1) the Play Store allows for the downloading of apps (including of general search apps) for free and in an easy and convenient way;⁸⁹⁵
 - (2) consumer communication and social networking apps such as WhatsApp, Facebook and Instagram have been successful on Android and not been impeded by the pre-installation of competing GMS apps such as Google Hangout, Google Photos and Google+;⁸⁹⁶
 - (3) downloads of competing general search apps can offset any advantage that Google derives from the pre-installation of the Google Search app;⁸⁹⁷ and
 - (4) the low download figures of competing general search apps in the EEA "*can only be plausibly explained*" by user preferences for Google Search and are not the result of the pre-installation requirement under the MADA. This is confirmed by the high daily download figures of the Google Search app and corresponding low download figures for competing general search apps, including Seznam, Naver and Yandex on iOS devices in France, Germany and the UK.⁸⁹⁸
- (812) In the first place, even though the Play Store allows for the downloading of apps (including of general search apps) for free and in an easy and convenient way, this does not alter the fact that competing general search services must expend resources to compete against Google, the dominant general search service with strong brand recognition (see recital (712)). As a result of the MADA, they also need to overcome the *status quo* bias that Google creates through pre-installation of its general search app and convince users that their service is significantly better (see recitals (781) to (782)). Moreover, certain users still remain reluctant to download apps.⁸⁹⁹
- (813) In the second place, unlike competing general search services, developers of competing consumer communication and social networking apps can offset the competitive advantage that Google ensures for itself by the pre-installation of competing GMS apps, such as Google Hangout, Google Photos and Google+. This is because users need to download the consumer communication and social networking apps that are used by their friends or other contacts because otherwise they cannot communicate with them. This is not the case for general search apps.
- (814) In the third place, download figures of general search apps on non-Android smart mobile devices and in geographic areas in which competing local general search services achieve more than a negligible share of queries (the Czech Republic, the

⁸⁹⁵ Google's Response to the Statement of Objections, Part Four, pages 192-193, paragraphs 90-93 (Doc ID 7117); Google's letter of 27 June 2018, page 4 (Doc ID 8949).

⁸⁹⁶ Google's Response to the Statement of Objections, Part Four, pages 197-198, paragraphs 99-100 (Doc ID 7117); Google's letter of 25 January 2017 (Doc ID 7135); and Google's Response to the First Letter of Facts, Part Three, page 79, paragraph 43 (Doc ID 8598).

⁸⁹⁷ Google's Response to the Statement of Objections, Part Four, pages 201-202, paragraphs 109-111 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Three, page 74, paragraph 28 and pages 77-78, paragraphs 40-41 (Doc ID 8598).

⁸⁹⁸ Google's Response to the Statement of Objections, Part Four, pages 205-206, paragraphs 115-116 and also pages 198-199, paragraphs 101-102 (Doc ID 7117).

⁸⁹⁹ See recital (923) and the evidence referred to therein.

Republic of Korea and Russia)⁹⁰⁰ confirm that the downloading of general search apps is incapable of offsetting the advantage that Google derives from pre-installation:

- (1) in the month of February 2016, 17% of users of iOS devices in the United Kingdom had used their downloaded Google Search app, whereas 76% users of Google Android devices had used the pre-installed Google Search app installed (see recital (791));
- (2) between 2013 and 2016, on average [10-20]% of worldwide users of Windows Mobile devices had downloaded the Google Search app;⁹⁰¹
- (3) In Russia and the Republic of Korea, Google faces incumbents, Yandex and Naver, whose general search algorithms are built around the Russian and Korean languages, respectively. This allowed them to become market leaders and to develop strong brands for general search on PCs before Google.⁹⁰² However, in these countries, Google's share of general search queries is also higher on smart mobile devices where it benefits from the importance of pre-installation than on PCs. According to 2016 StatCounter data: (i) in Russia, Google's share of general search queries on PCs was 47% and Yandex's share was 46% while on smart mobile devices Google's share was 65% and Yandex's share was 32%; and (ii) in the Republic of Korea, Google's share of general search queries on PCs was 66% and Naver's share was 24%, while on smart mobile devices Google's share was 71% and Naver's share was 27%.⁹⁰³
- (4) The situation is similar in the Czech Republic where Google faces the incumbent Seznam, whose general search algorithms are built around the Czech language. Google's share of general search is higher on smart mobile devices where it benefits from the importance of pre-installation than on PCs. During the period 2009 to 2016, Google's share of general search queries was between 53% and 80% on PCs, 82% and 98% on smartphones, and 77% and

⁹⁰⁰ Google's Response to the Statement of Objections, Part Four, page 200, paragraph 107 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Three, page 80, paragraph 43 (Doc ID 8598).

⁹⁰¹ Source: Microsoft's response to Question 10 and Annex 4 of the request for information of 10 April 2017 (Doc ID 8103) and [...] data (Doc ID 7866 and 7867). In its Response to the First Letter of Facts, Part Three, pages 81-82, paragraph 47 (Doc ID 8598), Google wrongly claims that in 2016, [90-100]% of all users of Windows Mobile devices had downloaded the Google Search app. Google's claim is based on a calculation error: while Google based its calculations on download figures of the Google Search app on all smart mobile devices, as regards the device sales figures, it did not take the figure for all devices but excluded Windows Mobile tablets. When the sales of tablets are included, the result of the calculation is that in 2016, [20-30]% of all users of all Windows Mobile devices had downloaded the Google Search app.

⁹⁰² For an overview, see, e.g., Alesia Krush, "Google Vs. Naver: Why Can't Google Dominate Search in the Republic of Korea", available at <https://www.link-assistant.com/blog/google-vs-naver-why-can-google-dominate-search-in-korea/>, printed and saved on 13 June 2017; Clay Dillow, "Yandex searches past its language barrier," (13 November 2013), available at <http://fortune.com/2013/11/13/yandex-searches-past-its-language-barrier/>, printed and saved on 13 June 2017.

⁹⁰³ Source: StatCounter data for 2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>. While Google claims that StatCounter for the Republic of Korea is unreliable and provided figures that show higher shares for Naver (Google's Response to the Statement of Objections, Part Four, page 221, footnote 740 (Doc ID 7117)), it did not challenge the fact that Google's share is higher on mobile devices than on PC.

85% on tablets.⁹⁰⁴

- (815) In the fourth place, if user preferences were the only plausible explanation for the low download figures of competing general search apps on Google Android users should download the Google Search app and/or use Google Search on devices where Google Search is not pre-installed and/or set as default. However, as indicated in recital (793), Google's share of general search queries is lower on Windows Mobile devices where the Google Search app is not pre-installed (or Google Search set as the default search engine on the native browser), than on Google Android where the Google Search app is pre-installed.
- (816) Moreover, the allegedly high daily download figures of the Google Search app and low download figures for competing general search apps on iOS devices in France, Germany and the United Kingdom do not contradict the Commission's finding on the importance of pre-installation:
- (1) Pre-installation does not play any role on iOS devices because no general search app is pre-installed on such devices.⁹⁰⁵ Rather, users have to download all general search apps (see recital (791)).
 - (2) Less than 20% of users of iOS and Windows Mobile devices have downloaded the Google Search app (see recitals (791) and (814)(1)).
 - (3) The download figures for the general search apps of Seznam, Naver and Yandex in France, Germany and the UK are not meaningful. As explained in recital (814)(3), the strength of the algorithms of these competing search services are built around the Czech, Korean and Russian languages, respectively and the number of people in France, Germany and the UK that are regularly looking for content in Czech, Korean or Russian and thus might consider downloading the general search apps of Seznam, Naver or Yandex can be assumed to be limited.
- b) *Agreements with mobile web browser developers cannot offset the competitive advantage that Google ensures for itself*
- (817) Agreements with developers of mobile web browsers cannot be compared in reach and effectiveness to the pre-installation of the Google Search app on GMS devices. This is for reasons described in recitals (818) to (822).
- (818) First, in March 2017, Chrome held a usage share of approximately 75% of non OS-specific mobile web browsers in Europe and 58% worldwide (and thus even higher on Google Android devices).⁹⁰⁶ Google does not, however, allow any other general search service than Google Search to be set as default on Chrome.⁹⁰⁷
- (819) Second, as explained in Section 11.4.4.1, by tying Google Chrome to the Play Store and the Google Search app, Google ensures an advantage for Google Chrome that competing mobile web browsers cannot offset.

⁹⁰⁴ Source: StatCounter data for 2009-2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

⁹⁰⁵ Google Search has, however, been the default general search service on all of Apple's smart mobile devices since 2007. See recitals (119) and (796).

⁹⁰⁶ Source: StatCounter data for 2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

⁹⁰⁷ See non-confidential responses to the request for information [...] ([...]; [...]; [...]); Google's response to Question 13 of the request for information of 24 March 2017 (Doc ID 7790).

- (820) Third, as explained in Section 11.3.4.2, several OEMs understood that the MADAs required them to set Google Search as the default general search service on pre-installed mobile web browsers.
- (821) Moreover, even if the MADAs did not require OEMs to set Google Search as default on their pre-installed mobile web browser, Google Search would still be set as default on Google Chrome (see recital (818)).
- (822) In addition, between 2011 and 2016, Google's had revenue share agreements with OEMs and MNOs covering between [50-60]% and [80-90]%^⁹⁰⁸ of all Google Android devices sold in the EEA pursuant to which the OEMs and MNOs were required to set Google Search as the default general search service for all pre-installed mobile web browsers on their GMS devices.
- c) *Pre-installation agreements with OEMs and MNOs cannot offset the competitive advantage that Google ensures for itself*
- (823) Contrary to what Google claims,⁹⁰⁹ pre-installation agreements with OEMs and MNOs cannot be compared in reach and effectiveness to the pre-installation of the Google Search app on GMS devices. This is for the reasons described in recitals (824) to (834).
- (824) First, OEMs are unlikely to pre-install an additional general search app to the mandatory Google Search app. OEMs need to balance the potential upside with the potential downside. In particular, they need to balance the potential revenues that they would get from installing an additional general search app to the Google Search app with the cost of the transaction and other costs related to factors such as user experience and support. That balance generally weighs against OEMs deciding to pre-install an additional general search app to Google's. This is for the reasons described in recitals (825) to (829).
- (825) In the first place, the share of potential revenues that OEM would get from one or more additional general search app services would be low, given that Google has enjoyed shares in most national markets of 90% and as explained at recital (796), Google would still be set as default on the other major entry points, in particular web browsers.
- (826) In the second place, OEMs would have to incur transaction costs when entering into pre-installation agreements with other general search services and such costs are unlikely to be justified for a small volume of devices. Google itself recognised the existence of such transaction costs when contemplating a revenue share agreement with [OEM] regarding Android Market, the predecessor of the Play Store.⁹¹⁰

⁹⁰⁸ As explained in more detail in footnote 1314: (i) in 2011 and 2012, respectively, nearly [70-80]% and [80-90]% of Google Android devices sold in the EEA were covered by revenue share agreements with Google; (ii) in 2013 and 2014, respectively, [70-80]% and [60-70]% of Google Android devices sold in the EEA were covered by revenue share agreements with Google; and (iii) in 2015 and 2016, respectively, [60-70]% and [50-60]% of all Google Android devices sold in the EEA were covered by revenue share agreements with Google. Source: [...] data (Doc IDs 3098, 4632, 4633 and 4710).

⁹⁰⁹ Google's Response to the Statement of Objections, Part Four, page 183, paragraphs 69-70 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Three, page 76, paragraph 36 (Doc ID 8598); Google's letter of 27 June 2018, pages 2 and 4 (Doc ID 8949).

⁹¹⁰ See email from [Google Executive], to [Google Executive], of 9 April 2012 (Doc ID 1373-2125), quoted and explained further in recital (1222)(2).

- (827) In the third place, given that the MADA requires OEMs to take a bundle of 12-30 apps, OEMs would have to be mindful which of Google's mandatory GMS apps to duplicate (if any). This is because the duplication of too many apps can negatively impact user experience, for instance, because users will be repeatedly prompted to make decisions about which app to use or set as default. For example, [OEM] decided in 2014 to stop pre-installing certain apps [...] that duplicated mandatory Google apps, after Google rejected its request to limit the number of mandatory Google apps and exclude from the GMS.⁹¹¹
- (828) Google itself recognised that the duplication of too many Google mandatory apps could be considered as "bloatware" and negatively impact user experience.
- (1) In an internal Google email dated 10 January 2012, [Google Executive], explained that "*Given the extensive user dissatisfaction with "bloatware" on devices, we need to be very cautious about what we allow OEMs to preload;*"⁹¹²
 - (2) In an email of 18 April 2014, [Google Executive], wrote to [OEM] that having the [OEM] widget promoting application downloads from the [app store] rather than the Play Store "*would highlight duplication of services that we're all working so hard to avoid*".⁹¹³
- (829) In the fourth place, the duplication of too many mandatory Google apps can cause issues with the storage space of some devices. For example, Hutchison 3G has indicated that: "*An agreement to pre-install an app is often not concluded with a third party for any one or more of the following reasons (i) the OEM has rejected the request by the MNO because of lack of space in the system memory of the device model [...] The device system memory includes the Operating System (Android), the OEM apps, the GMS apps and the MNO apps (for branded or 3rd party preloads). When an OEM rejects a request to pre-install an app due to lack of space in the memory system, this will be a result of all of these features. In the last few years, the number of pre-installed OEM and GMS apps on Android devices has increased, and there is less opportunity for MNOs to customise devices with other pre-installed apps (third party or proprietary)*".⁹¹⁴
- (830) Second, the MADA prevents OEMs from pre-installing exclusively a competing general search app on their Google Android devices. Exclusive pre-installation increases the value for competing general search app providers, not at least because it allows OEMs to offer competing general search service providers more than being pre-installed side-by-side with Google, the market leader with shares in excess of 90% and strong brand recognition (see recital (712)). As Yandex pointed out, while "*pre-installation alongside Google would be of some benefit to an alternative general search provider such as Yandex [...] given the importance of default status*

⁹¹¹ See the discussion between Google and [OEM] summarised in the e-mail from [Google Executive], to several of its colleague on 17 January 2014, submitted in response to the request for information of 11 July 2014 (Doc ID 1356-165) and [OEM]'s non-confidential response to Question 9 of the request for information of 31 July 2015 [...].

⁹¹² See Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1347-829).

⁹¹³ See non-confidential Annex [...].

⁹¹⁴ Hutchison 3G's non-confidential response to Question 23 of the request for information of 22 July 2014 (Doc ID 4283).

*and pre-installation on home screen, a level playing field will not be established unless there is a meaningful competition for default status instead of Google."*⁹¹⁵

- (831) An OEM that accepts to pre-install exclusively a competing general search app on their Google Android devices can, however, no longer enter into a MADA because the Google Search app is one of the mandatory apps in the GMS bundle. Thus, in order to pre-install exclusively a competing general search app on its devices, an OEM would need to find a replacement for the Play Store, the dominant Android app store as well as for the remaining GMS bundle, including other leading Google apps, such as Google Chrome, Google Maps or YouTube.
- (832) Third, the MADA prevents MNOs from requesting that OEMs pre-install exclusively a competing general search app on Google Android devices. This is because nearly all OEMs have also entered into the MADA, pursuant to which the Google Search app must be pre-installed on the device.
- (833) Fourth, Google's revenue share agreements with OEMs and MNOs require the exclusive pre-installation of the Google Search app for [50-60]% to [80-90]%⁹¹⁶ of all Google Android devices in the EEA, which prevents Google's competitors from even being able to achieve for side-by-side pre-installation of their general search service app on Google Android devices (see Section 13.4.2.1).
- (834) Fifth, even Bing, Google Search's main competitor, has not been pre-installed on any Google Android device between 2011 and 2016, with the exception of one model of device released in the US in 2011 (see recital (789)(8)).⁹¹⁷

V. *Google's competitive advantage resulting from the tying and the inability of competing general search services to offset that advantage is consistent with the evolution of Google's shares of general search queries*

- (835) Google's competitive advantage resulting from the tying and the inability of competing general search services to offset that advantage is consistent with the evolution of Google's shares of general search queries.
- (836) Since at least 2011, Google's share of general search queries is higher on smart mobile devices than on PCs in all the countries in the EEA and the difference between PC and smart mobile devices increased in almost all national markets for general search services.⁹¹⁸ According to StatCounter data,⁹¹⁹ during the period 2009

⁹¹⁵ Yandex's presentation of 5 November 2015 (Doc ID 4216).

⁹¹⁶ With respect to the underlying figures for these coverage numbers, see footnote 908.

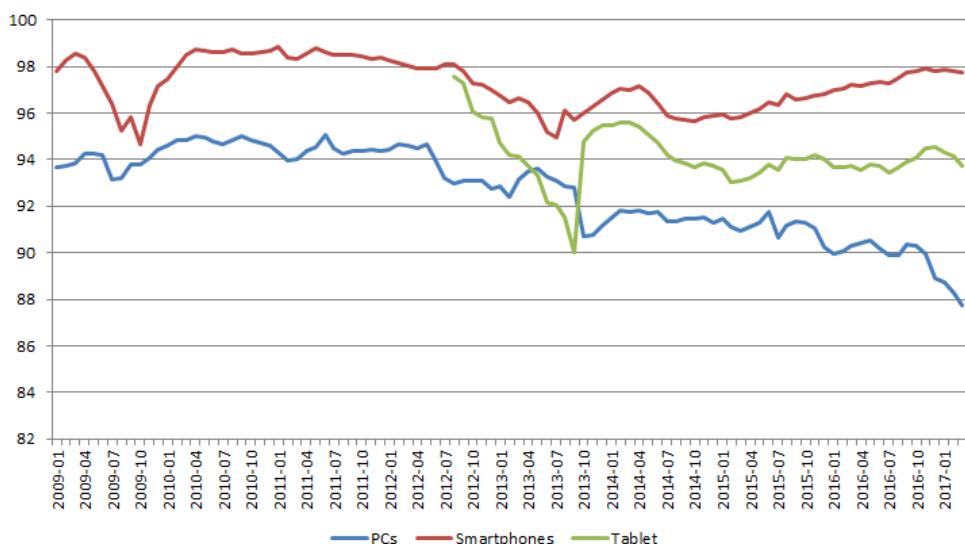
⁹¹⁷ See Microsoft's non-confidential response to Question 10.1 of the request for information of 20 November 2015 to Search providers (Doc ID 4634). In 2017, Microsoft entered into a revenue share agreement with ZTE for the sale of certain Google Android devices worldwide, including the EEA. See Microsoft's non-confidential response to Question 4 of the request for information of 10 April 2017 (Doc ID 8095) and Google's Data Room Report of 4 October 2017, paragraph 14 (Doc ID 8610).

⁹¹⁸ The only exceptions are the Czech Republic, Estonia, Malta, Romania and Slovenia, see StatCounter data for 2009-2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

⁹¹⁹ Source: StatCounter data for 2009-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>. StatCounter definition of Europe does not coincide with the Union or the EEA. In particular, it also includes Albania, Andorra, Belarus, Bosnia and Herzegovina, Macedonia, Moldova, Montenegro, Russia, Serbia, Switzerland, Turkey and Ukraine. However, the Commission concludes that this difference in scope is not substantial enough to significantly alter the meaning of the statistics.

to March 2017, Google's monthly share of general search queries in Europe⁹²⁰ was consistently between 87% and 95% on PCs, 94% and 99% on smartphones and 90% and 98% on tablets.⁹²¹

Figure 20: Google's share of general search queries by type of device in Europe, (2009 - March 2017)⁹²²



- (837) Moreover, Google's share of general search queries on Google Android devices does not seem to be explained by a substantial quality advantage of the Google Search app in the eyes of Android users. In the Play Store, as of April 2017: (i) the Google Search app had an average rating of 4.4 (5.8 million reviews); (ii) the Bing Search app of 4.3 (73 thousand reviews); (iii) the Yahoo Search app of 4.2 (28 thousand reviews); (iv) the Seznam app of 4.3 (39 thousand reviews) and (v) the Yandex app of 4.4 (219 thousand reviews).⁹²³
- (838) The Commission's conclusion that Google's competitive advantage resulting from the tying and the inability of competing general search services to offset that advantage is consistent with the evolution of shares of search queries is not affected by Google's claims that:
- (1) shares of general search queries can change for several reasons and the StatCounter data does not prove that the pre-installation of the Google Search app on practically all Google Android devices is the cause of the increase of Google's share of general search queries on smart mobile devices;⁹²⁴

⁹²⁰ The situation in each EEA country was similar, with Google's monthly share of general search services for the period 2009-2016 oscillating between 86% and 99% on PCs, 94% and 100% on smartphones and 89% and 99% on tablets. The only exception was the Czech Republic where Google's share of general search services was between 53% and 80% on PCs, 81% and 99% on smartphones, and 77% and 85% on tablets. Source: StatCounter data for 2009-2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

⁹²¹ Source: StatCounter data for 2009-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>. Data on tablets is collected by StatCounter only as of 2012.

⁹²² Source: StatCounter data for 2009-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

⁹²³ See data retrieved on April 2017, available at <https://play.google.com/store>.

⁹²⁴ Google's Response to the Statement of Objections, Part Four, pages 220-221, paragraphs 146-148 (Doc ID 7117).

- (2) Google's share of general search queries was at its highest on smart mobile devices in 2009;⁹²⁵
 - (3) the StatCounter data actually confirms that the increase of Google's share of general search queries on smart mobile devices is not caused by the pre-installation of the Google Search app on all GMS devices since the data from January 2011 to December 2015 in Figure 20 indicates: (i) a continuous decrease in Google's share of queries on smart mobile devices; (ii) a parallel development of Google's share of general search queries on PCs and smart mobile devices; (iii) variations in Google's share of general search queries on smart mobile devices in different Member States; and (iv) Google's high market shares on PC show that "*user preference for Google Search over rivals*" and "*marketplace choice is decisive*", rather than the tying, is responsible for the increase of Google's share of general search queries on smart mobile devices;⁹²⁶ and
 - (4) the reason for the increase of Google's share of general search queries on smart mobile devices is Google Search's superior quality, as confirmed by other evidence in the Commission's file, including evidence submitted by Google, responses by third parties to requests for information, and results of surveys.⁹²⁷
- (839) First, the Commission is not required to demonstrate that the pre-installation of the Google Search app on practically all Google Android devices is the sole cause of the increase in Google's share of general search queries. In any event, this Decision demonstrates that the pre-installation of the Google Search app provides a significant competitive advantage that competing general search services cannot offset.
- (840) Second, Google's claim that its share of general search queries was at its highest on smart mobile devices in 2009 is misleading. In 2009, Google Android devices accounted only for 4.4% of all smart mobile devices sold on a worldwide base (excluding China).⁹²⁸ By contrast, Google appears to have had revenue sharing agreements in place with major OEMs of smartphones and MNOs that ensured that Google was set as default on their devices,⁹²⁹ and in particular on the Safari browser on Apple's iPhone, which accounted for a large part of general searches on mobile devices in 2009.⁹³⁰
- (841) Third, the StatCounter data does not confirm that the pre-installation of the Google Search app on practically all GMS devices had no impact on Google's share of

⁹²⁵ Google's Response to the First Letter of Facts, Part Three, page 84, paragraph 53 (Doc ID 8598),
⁹²⁶ Google's Response to the Statement of Objections, Part Four, pages 221-223, paragraphs 149-150 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part Three, pages 82-83, paragraphs 50-53 (Doc ID 8598).

⁹²⁷ Google's Response to the Statement of Objections, Part Four, pages 223-226, paragraphs 151-158 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Three, page 84, paragraph 53 (Doc ID 8598).

⁹²⁸ Source: [...] data (Doc IDs 7866 and 7867).

⁹²⁹ While the Commission did not explicitly investigate agreements prior to 2011, the Commission's file contains several earlier revenue share agreements or agreements that refer to such agreements with major OEMs and MNOs, see e.g. [revenue share partner] [...], [revenue share partner] [...], [revenue share partner] [...], [revenue share partner] [...], and [revenue share partner] [...].

⁹³⁰ Ramu Nagappan, "Report: Google commands more than half of iPhone's Web traffic"(27 January 2010), available at http://www.macworld.com/article/1145926/google_iphone_traffic.html, printed and saved on 11 April 2016.

general search queries of smart mobile devices.

- (842) In the first place, Google's share of queries on smart mobile devices did not decrease continuously during the period between 2009 and March 2017:
- (1) Regarding smartphones, with one exception in the second half of 2009, Google's share in Figure 20 for smartphones moved in a narrow 2-3% bracket between approximately 95% and 98%. Moreover, since December 2015, Google's share of general search queries has remained stable at approximately 98%.
 - (2) Regarding tablets (which accounted for more than 20% of all smart mobile devices in each of the years covered in Figure 20), Google's share decreased from approximately 98% in 2012 to approximately 90% in the second half of 2013, before increasing again to approximately 98% at the beginning of 2014. Since mid-2014, it has remained relatively stable at approximately 94%.
- (843) In the second place, Google's share of general search queries on PC and smart mobile devices has developed differently over time and differed by approximately 10% as of the beginning of 2017:
- (1) Regarding PCs, Google's share remained around 94% for the most part of the period between 2009 and the second half of 2012 before decreasing to approximately 88% during the period between the second half of 2013 and the beginning of 2017;
 - (2) Regarding smartphones, see recital (842)(1); and
 - (3) Regarding tablets (which accounted for more than 20% of all smart mobile devices in each of the years covered in Figure 20), see recital (842)(2).
- (844) In the third place, it is irrelevant that Google's share of general search queries on smart mobile devices varies in different Member States. Such variations reflect the fact that search markets are national in scope and the competitive situation differs somewhat from Member State to Member State. Moreover, national variations do not alter the fact that Google's share of general search queries is higher on smart mobile devices than PCs in all national markets for general search in the EEA and that, unlike on Google Android, the Google Search app is not pre-installed on PCs.
- (845) In the fourth place, contrary to Google's claim,⁹³¹ Google's high shares on PCs are not merely the result of user preferences. Google is also set as default search service on Chrome and all other major PC browsers, with the exception of Microsoft's Internet Explorer/Edge.
- (846) Fourth, the increase in Google's share of general search queries on smart mobile devices cannot solely be explained by Google Search's alleged superior quality.
- (847) In the first place, Google's actual conduct contradicts its claim that the Commission should ignore the ratings on Google Play. Ratings based on user feedback are an important factor for Google's algorithm behind how search results are displayed to users of the Play Store and for the decision of users to download apps.⁹³² Moreover,

⁹³¹ See Google's Response to the First Letter of Facts, Part Three, page 83, paragraph 53 (Doc ID 8598).

⁹³² See "9 Ways to Master the Google Play Store Ranking" (26 November 2015), available at <https://www.mobilecore.com/9-ways-to-master-the-google-play-store-ranking/>, printed and saved on 13 June 2017 and "How mobile users make app install decisions on Google Play and the App Store" (24

Google advertises the importance of such ratings as a factor for being discovered by users in the Play Store.⁹³³

- (848) In the second place, Google Search's alleged superiority is not demonstrated by the fact that Google Search had the highest rating of any available general search service app, aside from Yandex, in April 2016. The average rating of the Google Search app in the Play Store in April 2016 was only 0.1-0.2 points higher than that of the competing general search service apps of Bing, Yahoo and Seznam.
- (849) Moreover, average ratings can change over time. For example, on 11 January 2018, the average rating of the Google Search app on the Play Store was the same as that of Bing and DuckDuck Go (4.4) and lower than that of Yandex (4.5).⁹³⁴
- (850) In the third place, as explained in recital (816), the allegedly high daily download figures of the Google Search app and corresponding low download figures for Seznam, Naver and Yandex on iOS devices in France, Germany and the United Kingdom to which Google refers in support of the alleged superiority of Google Search⁹³⁵ are not meaningful.
- (851) In the fourth place, to the extent Google refers to other evidence in support of Google Search's alleged superiority and user preference, the Decision shows that this alleged superiority or user preference is insufficient to overcome the *status quo* bias resulting from pre-installation (see for example, the data in recitals and (791) and (793), or the statements by Google's own employees in recital (787)).

VI. *Google's other claims and the Commission's response*

- (852) Google also more generally claims that the Commission has failed in two respects to conduct an analysis of the "competitive effects" of the tying of the Google Search app with the Play Store in line with the decisions adopted in Case AT.37792 *Microsoft* and AT.39530 *Microsoft (Tying)* and the judgment in Case T-201/04 *Microsoft*:
 - (1) the judgment in Case T-201/04 *Microsoft* requires the Commission to make a finding of "*indirect network effects*" with respect to the Google Search app;⁹³⁶ and
 - (2) unlike in its decisions in Cases AT.37792 *Microsoft* and AT.39530 *Microsoft (Tying)*, the Commission has failed to: (i) assess the question of alternative means of access and user engagement; (ii) conduct a survey on download figures; (iii) examine the actual development of usage shares; and (iv) examine

⁹³³ January 2017), available at <https://www.tune.com/blog/mobile-users-make-app-install-decisions-google-play-app-store/>, printed and saved on 13 June 2017.

See, for example, "Get discovered on Google Play search": "Google Play search factors in the overall experience of your app based on user behavior and feedback. Apps are ranked based on a combination of ratings, reviews, downloads, and other factors [...]," available at <https://support.google.com/googleplay/android-developer/answer/4448378?hl=en>, printed and saved on 11 January 2018.

⁹³⁴ Data retrieved on 11 January 2018, available at <https://play.google.com/store>.

⁹³⁵ Google's Response to the Statement of Objections, Part Four, pages 225-226, paragraph 157 (Doc ID 7117).

⁹³⁶ Google's Response to the Statement of Objections, Part Four, pages 180-181, paragraph 63 (Doc ID 7117).

carefully alternative explanations for changes in usage.⁹³⁷

- (853) Google's claims are unfounded.
- (854) First, the judgment in Case T-201/04 *Microsoft* does not require the Commission to make a finding of "indirect network effects" with respect to the Google Search app. While the presence of indirect network effects was one factor that the Commission took into consideration in its decision in Case AT.37792 *Microsoft*, nothing in the judgment in Case T-201/04 provides that the Commission is generally required to make such a finding when analysing the effects of tying.
- (855) Moreover, and in any event, contrary to Google's allegation,⁹³⁸ general search services do exhibit network effects. In particular, as explained in more detail in Section 9.5.2, the greater the number of queries a general search service receives, the quicker it is able to detect a change in the pattern of user behaviour and update and improve the relevance of its search results and related search advertising.
- (856) Second, like in Cases AT.37792 *Microsoft* and AT.39530 *Microsoft (Tying)*,⁹³⁹ the Commission has, in this case, assessed the question of alternative means of access and user engagement, such as downloading and access via the web browser, examined the actual development of usage shares on the basis of usage data from third party surveys and data, and examined carefully alternative explanations for changes in usage shares, including alleged qualitative superiority. As for the alleged omission to conduct a survey on download figures, the Commission did not need to conduct such a survey because it obtained actual download figures from Google and third parties.
- (857) Moreover, and in any event, the Commission is not required to apply rigorously an identical framework of assessment in all tying cases. Rather, the Commission must make an overall assessment in each given case and can take account of a range of tools for the purposes of that assessment.⁹⁴⁰

11.3.4.2. Google's conduct helps to maintain and strengthen its dominant position in each national market for general search services, increases barriers to entry, deters innovation and tends to harm, directly or indirectly, consumers

- (858) For the reasons set out in this Section, the Commission concludes that the tying of the Play Store and the Google Search app helps Google to maintain and strengthen its dominant position in each national market for general search services, increases barriers to entry, deters innovation and tends to harm, directly or indirectly, consumers.
- (859) First, Google's conduct makes it harder for competing general search services to gain

⁹³⁷ Google's Response to the Statement of Objections, Part Four, pages 181-182, paragraph 64, and page 292, paragraph 93 (Doc ID 7117).

⁹³⁸ Google's Response to the Statement of Objections, Executive Summary, page xvii, last point in table and same table under Part Four, page 157, paragraph 10; pages 180-181, paragraph 63 (Doc ID 7117).

⁹³⁹ Case AT.39530 *Microsoft (Tying)*, recitals 39-54; AT.37792 – Microsoft, recitals 849-878, 900-926, 947-954.

⁹⁴⁰ Case T-210/01 *General Electric v Commission*, EU:T:2005:456 paragraph 519; Case T-343/06 *Shell Petroleum and Others v Commission*, EU:T:2012:478, paragraph 171; Case T-342/07 *Ryanair v Commission*, EU:T:2010:280, paragraph 136; Case T-175/12 *Deutsche Börse v Commission*, EU:T:2015:148, paragraph 133; Case T-699/14 *Topps Europe v Commission*, EU:T:2017:2, paragraph 82.

search queries and the respective revenues and data needed to improve their services.

(860) Google's conduct does so in a number of ways:

- (1) It makes it harder for competing general search services from gaining a sufficient volume of queries to expand and become or remain viable competitors. As Amazon states with respect to the growing segment of voice related search: "*If Google is [...], its control over Android to harm competition in the voice assistant segment and position itself as the default voice assistant for customers, the large volume of voice inquiries and requests passing through Google's voice service will provide Google with even more behavioural data that it can use to improve its search and advertising services, further reinforcing its position in those market segments.*"⁹⁴¹
- (2) It prevents competing general search services from achieving revenues associated with these search queries.⁹⁴² Such additional revenues would have allowed competing general search services to improve their services and deploy innovative solutions for users.
- (3) It prevents competing general search services from acquiring the valuable user data associated with these search queries.⁹⁴³

(861) Second, Google's conduct increases barriers to entry by shielding Google from competition from general search services that could challenge its dominant position in the national markets for general search services:

- (1) Competing general search services must spend resources to overcome the *status quo* advantage conferred by pre-installation (see recital (812)); and
- (2) Google's conduct prevents competing general search services from bidding for exclusive pre-installation on Google Android devices, despite exclusive pre-installation being the most effective way for competing general search services to obtain queries and compete against Google (see recital (830)).

(862) Third, by making it harder for competing general search services to gain search queries including the respective revenues and data needed to improve their services, Google's conduct reduces the incentives of competing general search services to invest in developing innovative features, such as innovation in algorithm and user experience design.⁹⁴⁴ For example, as explained in recital (1213), some general search services that have a more focused offering in a particular language or targeting a specific group of users and which are important to improve the user

⁹⁴¹ Amazon's non-confidential response to Question 5 of the request for information of 9 March 2017 (Doc ID 8247).

⁹⁴² See "*Comments on the Theory of Harm in the Google Android Statement of Objections*", CRA report submitted on behalf of Yandex on 23 November 2016, paragraphs 28-33 (Doc ID 7330).

⁹⁴³ See, also the 2008 statement by Jonathan Rosenberg, formerly Google's Senior Vice President of Product Management and Marketing, indicates how the positive feedback loop of more users, more information and more advertisers works in Google's favour: "[...] *So more users more information, more information more users, more advertisers more users, more users more advertisers, it's a beautiful thing, lather, rinse repeat, that's what I do for a living. So that's ... 'the engine that can't be stopped'*". See the US Senator Richard Blumenthal, Press Release: Blumenthal Continues to Press Google on Market Power and Competition Policy, 28 September 2011, <https://www.blumenthal.senate.gov/newsroom/press/release/blumenthal-continues-to-press-google-on-market-power-and-competition-policy->, printed and saved on 2 July 2017.

⁹⁴⁴ See presentation by Hubert Burda Media of 20 October 2014, pages 22-42 (Doc ID 3566).

experience. As a consequence of Google's conduct, they may not be able to achieve the scale and access to users that would allow them to invest in research and development with respect to those innovative features.

- (863) Fourth, Google's conduct is capable of harming, directly or indirectly, consumers who, as a result of Google's interference with the normal competitive process, may see less choice of general search services available.⁹⁴⁵
- (864) Sixth, the Commission's conclusion that the tying of the Play Store and the Google Search app helps Google to maintain and strengthen its dominant position in each national market for general search services is not affected by Google's claims that:
 - (1) Android devices accounted for only between [10-20]%-[20-30]% of queries on Google Search between 2013 and 2015;⁹⁴⁶ and
 - (2) Google's conduct coincided with a period of improvement of its general search service.⁹⁴⁷
- (865) In the first place, as explained in recital (796), [10-20]% to [20-30]% of general search queries via Google Search was equivalent to [1-6] times more than the combined [5-10]% of queries in total across all platforms that all competing general search services achieved in 2016. This further hindered the maintenance of the degree of competition still existing in the national markets for general search services, where competition is already weakened as a result of the very presence of Google.
- (866) In the second place, even if Google's conduct were to have coincided with a period of improvement of its general search service, Google neither claims nor demonstrates that its conduct has not affected the incentives and ability of competing general search services to improve their services. Moreover, absent the tying of the Google Search app with the Play Store, Google may have improved its general search service to a greater degree.

11.3.4.3. Google's claims regarding the need for the Commission to consider its conduct in the relevant economic and legal context

- (867) Google claims that its conduct is incapable of restricting competition when assessed in its relevant economic and legal context.
- (868) First, assessing whether Google's conduct is capable of restricting competition requires the Commission to demonstrate that "*there would have been greater competition absent the impugned conduct*" and to "*consider in that context, the interactions among different sides of* the Android platform.⁹⁴⁸
- (869) Second, an assessment of its conduct in the relevant economic and legal context as of 2009 when Google began to enter into MADAs "*would have revealed that this practice is incapable of restricting competition and in fact promoted competition*".⁹⁴⁹

⁹⁴⁵ See presentation by Hubert Burda Media of 20 October 2014, pages 22-42 (Doc ID 3566).

⁹⁴⁶ Google's Response to the Statement of Objections, Part Four, pages 184-185, paragraph 73 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Three, page 63, paragraph 8 (Doc ID 8598).

⁹⁴⁷ Google's Response to the Statement of Objections, Part Four, page 227, paragraph 160 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Three, page 84, paragraph 54 (Doc ID 8598).

⁹⁴⁸ Google's letter of 11 June 2018, paragraphs 6 and 11-15 (Doc ID 8890).

⁹⁴⁹ Google's letter of 11 June 2018, paragraph 20 (Doc ID 8890).

- (870) Google's claims are unfounded.
- (871) First, Google fails to clarify whether the conduct to which it refers is only the tying of the Google Search app with the Play Store⁹⁵⁰ or the MADA as a whole.⁹⁵¹ However, for the purposes of this Decision, the Commission concludes that Google's conduct is only the tying of the Google Search app with the Play Store, and not the MADA as a whole, because only the former constitutes an abuse of Google's dominant position in the worldwide market (excluding China) for Android app stores.
- (872) Second, the Commission is not required to demonstrate in a general manner that "*there would have been greater competition*" absent the tying of the Google Search app with the Play Store. Rather, the Commission is required to demonstrate that the tying is capable of restricting competition on the relevant markets, namely the national markets for general search services.
- (873) Third, when assessing the capability of the tying of the Google Search app with the Play Store to restrict competition on the national markets for general search services, the Commission has *inter alia* analysed whether there could have been greater competition on those markets, absent the tying (see Section 11.3.4). This includes an analysis of Google's share of general search queries and the ability of competing general search services to grow their share of queries by being set as default on smart mobile devices on which the Google Search app is not pre-installed, such as Windows Mobile (see recitals (790) to (794)).
- (874) Fourth, when assessing the capability of the tying of the Google Search app with the Play Store to restrict competition on the relevant markets, the Commission has also taken account of the nature of interactions among the different sides of the Android platform. This includes the facts that: (i) on GMS devices, OEMs cannot obtain the Play Store without the Google Search app (see Section 11.3.3), (ii) pre-installation is an important channel for the distribution of general search services on smart mobile devices, including GMS devices (see Section 11.3.4.I.II); and (iii) competing general search services cannot offset the competitive advantage that Google ensures for itself through the pre-installation of the Google Search app on GMS devices (see Section 11.3.4.I.IV).
- (875) To the extent, however, that Google's claim about the "*interactions among different sides*" of the Android platform relates to whether the tying may give rise to benefits on the national markets for general search services and/or on other markets, the Commission has assessed and dismissed such a claim in its analysis of objective justification and efficiencies (see Section 11.5).
- (876) Fifth, when assessing the capability of the tying of the Google Search app with the Play Store to restrict competition on the national markets for general search services,

⁹⁵⁰ Google's letter of 11 June 2018, paragraph 20 (Doc ID 8890), paragraphs 2-4, 13, 18-21, 28 and 31; Google's Response to the Statement of Objections, Part Four, pages 174-176, paragraphs 45-48 (Doc ID 7117); Google's Response to the Statement of Objections, Executive Summary, Section IV; Part One, page 9, paragraph 15 and page 28, paragraph 69; Part Four, page 157, paragraph 13; and page 180, paragraph 61 (Doc ID 7117).

⁹⁵¹ Google's letter of 11 June 2018, paragraph 20 (Doc ID 8890), paragraphs 14-17 and 24-27; Google's Response to the Statement of Objections, Executive Summary, Section IV; Part One, page 8, paragraph 10; and Part Four, page 175, paragraphs 46-47 (Doc ID 7117).

the Commission is required to undertake such an assessment as of January 2011, when it concludes that Google became dominant in the worldwide market (excluding China) for Android app stores and not as of 2009 when Google began to enter into MADAs.

11.4. Tying of Google Chrome with the Play Store and the Google Search app

- (877) The Commission concludes that the tying of Google Chrome with the Play Store and the Google Search app⁹⁵² constitutes an abuse of Google's dominant position in the worldwide market (excluding China) for Android app stores and in the national markets for general search services because: (i) Google Chrome is a distinct product from the Play Store and the Google Search app (Section 11.4.1); (ii) the Play Store and the Google Search app cannot be obtained without Google Chrome (Section 11.4.2); (iii) Google is dominant in the worldwide market (excluding China) for Android app stores and in the national markets for general search services (Section 11.4.3); and (iv) the tying of Google Chrome with the Play Store and the Google Search app is capable of restricting competition (Section 11.4.4).
- (878) The Commission further concludes that Google has not demonstrated the existence of any objective justification for the tying of Google Chrome with the Play Store and the Google Search app (Section 11.5).⁹⁵³

11.4.1. Google Chrome is a distinct product from the Play Store and the Google Search app

- (879) The Commission concludes that Google Chrome is a distinct product from the Play Store and the Google Search app.
- (880) First, Google Chrome provides distinct functionalities to users as:
- (1) Google Chrome enables users to view web pages through a network such as the Internet or a company intranet;
 - (2) the Play Store enables users to download, install and manage a wide range of diverse apps from a single point in the interface of the smartphone; and
 - (3) Google Search app enables users to search for information across the entire Internet.
- (881) Second, a number of undertakings such as Huawei and LG Electronics supply mobile web browsers on a stand-alone basis, independently of Android app stores and general search services.
- (882) Third, Google develops and markets versions of Google Chrome that are designed to work on other smart mobile OSs such as Apple's iOS or Microsoft's Windows Phone OS.
- (883) Fourth, Google Chrome, as well as other competing non OS-specific mobile web browsers, can be downloaded via other non-Android app stores such as the Apple AppStore.

⁹⁵² The Play Store and the Google Search app are licensed through a single licence agreement, i.e. the MADA. The same reasoning as outlined in Section 11.4 would apply if Google were to make the licensing of either only the Play Store or the Google Search app subject to pre-installing Google Chrome, given that Google is dominant in the worldwide market (excluding China) for Android app stores and each national market for general search services.

⁹⁵³ All objective justifications put forward by Google regarding tying relating to its proprietary mobile apps are assessed together in Section 11.4.4.3.

(884) Fifth, despite the tying of Google Chrome with the Play Store and the Google Search app, OEMs continue to seek to license the Play Store and the Google Search app without Google Chrome.⁹⁵⁴

(885) Google does not contest the Commission's conclusions as outlined in this Section.

11.4.2. Dominance in the worldwide market (excluding China) for Android app stores and in the national markets for general search services

(886) As set out in Sections 9.4 and 9.5, the Commission concludes that since 2011, Google holds a dominant position in: (i) the worldwide market (excluding China) for Android app stores; and (ii) each national market for general search services in the EEA.

11.4.3. The Play Store and the Google Search app cannot be obtained without Google Chrome

(887) The Commission concludes that OEMs cannot obtain the Play Store and the Google Search app without Google Chrome.

(888) First, OEMs can pre-install the Play Store and the Google Search app on their Google Android devices only if they license and pre-install the GMS bundle, including Google Chrome.⁹⁵⁵

(889) Second, users cannot obtain the Play Store and the Google Search app without simultaneously obtaining Google Chrome.

(890) Third, OEMs that wish to install a different mobile web browser on their GMS devices can do so only alongside Google Chrome.

(891) Fourth, it is irrelevant that OEMs may not be required to pay anything extra for Google Chrome.

(892) In the first place, while Google does not charge for Google Chrome, it monetises that app through advertising via the general search service offered through the Google Chrome.

(893) In the second place, the conclusion that Google ties Google Chrome with the Play Store and the Google Search app does not depend on OEMs having to pay a certain price for Google Chrome.⁹⁵⁶

(894) Fifth, it is irrelevant that users are not obliged to use Google Chrome which they find pre-installed on their GMS devices and that they can download on their devices a competing non OS-specific mobile web browser. The conclusion that Google ties Google Chrome with the Play Store and the Google Search app does not depend on users being forced to use Google Chrome or prevented from using a competing non OS-specific mobile web browser.⁹⁵⁷

(895) Google does not contest the Commission's conclusions as outlined in this Section.

⁹⁵⁴ See for example Google internal email referring to an instance in which [MADA signatory] wanted to license only the Play Store and the Gmail app (Doc ID 1374-1937).

⁹⁵⁵ See Section 6.3.2.

⁹⁵⁶ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraphs 967-969.

⁹⁵⁷ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 970.

11.4.4. Restriction of competition

- (896) The Commission concludes that the tying of Google Chrome with the Play Store and the Google Search app is capable of restricting competition because it:
- (1) provides Google with a significant competitive advantage that competing non OS-specific mobile web browsers cannot offset (Section 11.4.4.1); and
 - (2) deters innovation, tends to harm, directly or indirectly, consumers of mobile web browsers and helps to maintain and strengthen Google's dominant position in each national market for general search services (Section 11.4.4.2).
- (897) Moreover, the Commission's conclusion that the tying of Google Chrome with the Play Store and the Google Search app is capable of restricting competition is not affected by Google's claims regarding the need for the Commission to consider that tying in its relevant economic and legal context (Section 11.4.4.3).

11.4.4.1. Tying of Google Chrome with the Play Store and the Google Search app provides Google with a significant competitive advantage that competing non OS-specific mobile web browsers cannot offset

- (898) The Commission concludes that, via the tying, Google is able to ensure for its mobile web browser a significant competitive advantage that competing non OS-specific mobile web browsers cannot offset by other methods of distributing mobile web browsers on smart mobile devices. This is for the following reasons:
- (I) pre-installation is an important channel for the distribution of mobile web browsers on smart mobile devices;
 - (II) it is impossible to uninstall Google Chrome on GMS devices;
 - (III) competing non OS-specific mobile web browser developers cannot offset the competitive advantage that Google ensures for itself through the tying; and
 - (IV) Google's competitive advantage resulting from the tying and the inability of competing non OS-specific mobile web browsers to offset that advantage is consistent with the evolution of market shares.

- (899) Moreover, contrary to Google's claims, when assessing the competitive advantage that Google ensures itself via the tying of Google Chrome with the Play Store and the Google Search app, the Commission is not required to make a finding of "*indirect network effects*" with respect to the Google Chrome or to undertake certain "*empirical work*" (V).

I. *Pre-installation is an important channel for the distribution of mobile web browsers on smart mobile devices*

- (900) Pre-installation is an important channel for the distribution of mobile web browsers on smart mobile devices (see recitals (779) to (782)).
- (901) In 2016, approximately 1.65 billion smart mobile devices were sold worldwide (including China), of which approximately 1.33 billion or 81% were Google Android devices.⁹⁵⁸ Approximately 918 million smart mobile devices or 56% of the total

⁹⁵⁸ Source: [...] data (Doc ID 7866 and 7867). In 2014, approximately 1.53 billion smart mobile devices were sold worldwide (including China), of which approximately 1.2 billion smart mobile devices or 78.4% were Google Android devices (Source: [...] (Doc IDs 3098, 4632, 4633 and 4710)).

number of all smart mobile devices sold in 2016, i.e. practically all Google Android devices outside China, had the GMS bundle pre-installed.⁹⁵⁹ These 918 million smart mobile devices in 2016 constitute a far higher number than any competing non OS-specific mobile web browser would be able to achieve by way of pre-installation on smart mobile devices. By way of comparison, Samsung, the OEM with the highest sales volume of Google Android devices, could pre-install its mobile web browser, Samsung Internet only on the 336 million smart mobile devices it sold in 2016.⁹⁶⁰

- (902) By tying Google Chrome with the Play Store and the Google Search app on Google Android devices, Google therefore ensures that distribution of Google Chrome is as wide on smart mobile devices worldwide as the number of GMS devices.
- (903) The importance of pre-installation as a channel for the distribution of web browsers on Google Android devices is confirmed by: (i) an internal Google document; (ii) responses by third parties to requests for information; (iii) a comparison of the revenues that Google derives on Google Android devices from general search queries via Google Chrome (which is pre-installed) and non-Chrome browsers (which are not pre-installed); (iv) a comparison of the revenues that Google derives on iOS devices from general search queries via Google Chrome (which is not pre-installed) and via the only major non-Chrome browser, Safari (which is pre-installed); and (v) a comparison of the reach of Google Chrome on GMS devices where it is pre-installed with its reach on iOS devices where it has to be downloaded by users.
- (904) First, the importance of pre-installation as a channel for the distribution of mobile web browsers on smart mobile devices is confirmed by an internal Google document dated April 2012 in which [Google Executive], stated that "*I'm not sure if I follow this logic. Are you saying that oems will ship phones without a browser? Surely they'll ship with SOMETHING, and it will take memory. Make chrome mandatory and tackle the engineering problem of making our system smaller. This is precisely what i was talking about in leadership yesterday. The solution to making a great Google product isn't to make our technology optional.*"⁹⁶¹
- (905) Second, the importance of pre-installation is confirmed by responses by third parties to requests for information:
 - (1) According to Mozilla, "[t]he vast majority of users never change the default browser. Even fewer download a second browser. Thus, while the default setting remains the most powerful influence on application usage, being pre-loaded on a device is still of value, because it lowers the barriers to adoption by a user. The hierarchy of commercial significance for default and pre-install options is as follows:
 - 1 - Pre-loaded and default - All but guarantees widespread adoption
 - 2 - Pre-loaded and non-default - Increases adoption

⁹⁵⁹ Source: [...] data (Doc ID 7866 and 7867) and Section 9.3.1.

⁹⁶⁰ Source: [...] data (Doc IDs 7866 and 7867).

⁹⁶¹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1373-2120).

- 3 - Not pre-loaded - Limits adoption to tech-savvy users who are actively seeking an alternative browser. This is a very small user segment.⁹⁶²*
- (2) According to Samsung, "[i]n the example of Safari, the only browser pre-installed on iOS devices, even 90% usage is estimated in some cases."⁹⁶³
 - (3) According to a survey submitted by Opera,⁹⁶⁴ in 2013, 72% of the 1500 respondents in Germany, Poland and the United Kingdom used on a regular basis the mobile web browser that was pre-installed on their smart mobile device. In addition, 16% of the 1500 respondents did not consider any other factor (such as quality, ease of use, speed, security or other features) and continued to use a mobile web browser solely because it was pre-installed.
 - (4) According to Yandex, on a set of otherwise identical [OEM] smart mobile devices, the usage share of the Yandex browser was [5-10]% on the devices in which the Yandex browser was not pre-installed and [20-30]% on the devices in which it was pre-installed.⁹⁶⁵ In addition, the usage share of the Yandex browser was [0-5]% on [device name]⁹⁶⁶ smartphones, where the Yandex browser was not pre-installed, as opposed to [60-70]% on [device name] devices, where the Yandex browser was pre-installed.⁹⁶⁷
- (906) Third, the importance of pre-installation is confirmed by a comparison between the revenues that Google derives on Google Android devices from general search queries via Google Chrome (which is pre-installed) and non-Chrome browsers (which are not pre-installed). According to data on worldwide revenues from general search queries conducted on web browsers provided by Google and summarised in Table 16, the revenues that Google derives on Google Android devices from general search queries via Google Chrome are higher than the revenues that Google derives on Google Android devices from general search queries via other mobile web browsers: [...]% higher in 2014, [...]% higher in 2015 and [...]% higher in 2016. Given that search revenues can be considered as a proxy for the usage of mobile web browsers⁹⁶⁸, this shows that the usage of Google Chrome is higher on devices where it is pre-installed.
- (907) Fourth, the importance of pre-installation is confirmed by a comparison between the revenues that Google derives on iOS devices from general search queries via Safari

⁹⁶² Mozilla's non-confidential response to Question 39 of the request for information of 12 June 2013 to app developers (Doc ID 4166).

⁹⁶³ Samsung's non-confidential response to Question 8 of the request for information of 19 October 2015 to web browser providers (Doc ID 3930).

⁹⁶⁴ See non-confidential Appendix 1 to Opera's response to the request for information of 1 December 2015 (Doc ID 4639). The survey was conducted by On Device in 2013 and covered smartphone users in Brazil, Germany, India, Indonesia, Japan, Mexico, Poland, Russia, South Africa, United Kingdom and US. The data mentioned in recital (905)(3) concerns only the three EEA countries (Germany, United Kingdom and Poland). The respondents that continued to use on a regular basis the mobile web browser that was pre-installed on their smart mobile device were (i) the Android users that indicated that they use more regularly Google Chrome or the default mobile web browser; and (ii) the iOS users that indicated that they use more regularly Safari or the default mobile web browser.

⁹⁶⁵ CRA presentation of 5 November 2015, slide 19. Internal analysis based on [...] (Doc ID 4452).

⁹⁶⁶ [Information about device].

⁹⁶⁷ CRA presentation of 5 November 2015, slide 19. Internal analysis based on [...] (Doc ID 4452).

⁹⁶⁸ The more the users make use of a web browser, the greater the revenues associated with search services via that web browser.

(which is pre-installed) and Google Chrome (which is not pre-installed).⁹⁶⁹ According to data on worldwide revenues from general search queries conducted on web browsers provided by Google and summarised in Table 16, the revenues that Google derives on iOS devices from general search queries via Safari are higher than the revenues that Google derived from search queries via Google Chrome: [...]% higher in 2014, [...]% higher in 2015 and [...]% higher in 2016. Given that search revenues can be considered a proxy for the usage of mobile web browsers, this also shows that the usage of Google Chrome is higher on devices where Google Chrome is pre-installed.

Table 16: Google's worldwide revenues from search queries via mobile web browsers on Android and on iOS (million EUR)⁹⁷⁰

Revenues with browsers	2014		2015		2016	
	Android	iOS	Android	iOS	Android	iOS
Google Chrome	[...]	[...]	[...]	[...]	[...]	[...]
Non-Chrome	[...]	[...]	[...]	[...]	[...]	[...]

(908) Fifth, the reach of Google Chrome on GMS devices where it is pre-installed is much higher than on iOS devices where it is not pre-installed:

- (1) in 2016, Google Chrome was downloaded on approximately [30-40] million iOS devices.⁹⁷¹
- (2) in the same year, approximately 258 million iOS devices, where Safari is pre-installed, were sold worldwide;⁹⁷² and
- (3) Google Chrome was therefore downloaded on only approximately [10-20]% of iOS devices worldwide sold in 2016.

(909) Sixth, the Commission's conclusion that pre-installation is an important channel for the distribution of mobile web browsers on smart mobile devices is not affected by Google's claims that:

- (1) the Opera survey mentioned in recital (905)(3) is not probative given that (i) only a small number of respondents indicated that the pre-installation of a web browser is a factor that they take into account when deciding which mobile web browser to use;⁹⁷³ (ii) the survey did not verify whether the mobile web browser that users reported as being their "default" option was actually the pre-installed mobile web browser;⁹⁷⁴ and (iii) Google Chrome's usage share

⁹⁶⁹ See the importance of Safari and Chrome on iOS devices on <https://www.zdnet.com/article/which-browser-is-most-popular-on-each-major-operating-system/>, printed and saved on 12 June 2018.

⁹⁷⁰ Source: Annex A to Google's response to Questions 1 to 5 of the request for information of 24 March 2017 (Doc ID 7955).

⁹⁷¹ Apple's non-confidential response to Question 4 of the request for information of 31 March 2017 (Doc ID 8091).

⁹⁷² Source: [...] data (Doc ID 7866 and 7867).

⁹⁷³ Google's Response to the First Letter of Facts, Part Three, page 89, paragraph 70 (Doc ID 8598).

⁹⁷⁴ Google's Response to the Statement of Objections (Doc ID 7117), Appendix 20, Data Room Report (6 December 2016) pages 9-10 (Doc ID 7014) and Google's Response to the First Letter of Facts, Part Three, page 89, paragraph 70 (Doc ID 8598).

- worldwide is high even on PCs where it is not pre-installed;⁹⁷⁵
- (2) the difference in revenues that Google derived on Google Android and iOS devices from general search queries via Google Chrome is significantly lower when the fact is taken into account that approximately four times as many Google Android devices as iOS devices were sold worldwide as of July 2016.⁹⁷⁶ Moreover, the difference in Google Chrome's revenues on Android and iOS can be explained by the fact that Google Chrome faces competition from the Safari browser on iOS devices but not on Google Android devices;⁹⁷⁷ and
- (3) downloads on iOS devices of mobile web browsers such as Google Chrome for iOS are limited because of constraints on the design of mobile web browsers that operate on iOS devices, as confirmed by an article from the ArsTechnica website.⁹⁷⁸ Moreover, Apple data from 2012-2016 indicates that Google Chrome represented [...]% of downloads of mobile web browsers on iOS devices.⁹⁷⁹
- (910) In the first place, Google's criticisms of the Opera survey are unfounded:
- (1) the number of respondents replying that the pre-installed mobile web browser was a factor in deciding which web browser to use is not as small as Google suggests. This is because that reply was presented in a list of possible multiple replies as "*None, I just use the brow[s]er that came with my mobile*". Respondents would therefore only select that reply if they did not consider any of the other multiple replies (e.g. speed, ease and simplicity of use, having a list of recently visited sites) as relevant;
- (2) it is irrelevant that the Opera survey did not verify that the mobile web browser that users reported as being their "default" option was actually the pre-installed mobile web browser, rather than the mobile web browser that the user had downloaded and set as the default. This is because 79% of Android and iOS users that responded to the Opera survey replied that the mobile web browser that they use regularly is the one pre-installed on their devices i.e. "Google Chrome" (for Android devices) and "Safari" (for iOS devices); and
- (3) Google Chrome's usage share in the EEA on Google Android devices is higher than on PCs despite Google having launched Google Chrome on Google Android devices four years later than on PCs.⁹⁸⁰ Google Chrome's worldwide share is slightly lower on non OS-specific mobile web browsers than on PC web browsers because of the presence of UC Browser in the non OS-specific mobile web browsers market, the focus of which is mainly on Asian

⁹⁷⁵ Google's Response to the First Letter of Facts, Part Three, page 89, paragraph 70 (Doc ID 8598).

⁹⁷⁶ Google's Response to the First Letter of Facts, Part Three, page 91, paragraph 73 (Doc ID 8598).

⁹⁷⁷ Google's Response to the First Letter of Facts, Part Three, page 91, paragraph 73 (Doc ID 8598).

⁹⁷⁸ Google's Response to the First Letter of Facts, Part Three, page 90, paragraph 71 (Doc ID 8598).

⁹⁷⁹ Google's Response to the Statement of Objections, pages 244-245 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part Three, page 90, paragraph 72 (Doc ID 8598).

⁹⁸⁰ See "*Google Chrome now live*" (2 September 2008), available at <https://googleblog.blogspot.be/2008/09/google-chrome-now-live.html>, printed and saved on 23 June 2017 and "*Introducing Chrome for Android*" (7 February 2012), available at <https://chrome.googleblog.com/2012/02/introducing-chrome-for-android.html>, printed and saved on 23 June 2017.

countries.⁹⁸¹

- (911) In the second place, in relation to Google Chrome's revenues on Android and iOS:
- (1) the difference in revenues that Google derived on Google Android and iOS devices from general search queries via Google Chrome remains significant when the fact is taken into account that approximately four times as many Google Android devices as iOS devices were sold worldwide as of July 2016. Revenues per user that Google derived from general search queries via Google Chrome on Google Android devices were [...]% higher in 2014, [...]% higher in 2015 and [...]% higher in 2016 compared to revenues per user that Google derived from general search queries via Google Chrome on iOS devices;⁹⁸² and
 - (2) the difference in revenues that Google derived on Google Android and iOS devices from general search queries via Google Chrome cannot be solely explained by the fact that Google Chrome faces competition from the Safari browser on iOS devices. This is because, on Google Android devices, Google Chrome also faces competition from other mobile web browsers such as UC Browser, Opera and Firefox (see Figure 21 and Figure 22).
- (912) In the third place, in relation to downloads of Google Chrome on iOS devices in 2016:
- (1) if, as the ArsTechnica article cited by Google suggests, downloads on iOS devices of mobile web browsers are limited because of constraints on the design of mobile web browsers that operate on iOS devices, this should not affect Google Chrome for iOS because as of 2015 at the latest, it already used the best version of Apple's engine which allowed it to improve its design;⁹⁸³ and
 - (2) what is relevant to illustrate the importance of pre-installation is not the relative percentage of downloads of mobile web browsers on iOS devices that Google Chrome represents, but the fact that the absolute number of those downloads ([30-40] million in 2016) remained low as compared to the number of pre-installations of Safari (258 million in 2016).

II. It is impossible to uninstall Google Chrome on GMS devices

- (913) Nobody but Google can uninstall Google Chrome on GMS devices. The most that a competing non OS-specific mobile web browser can achieve on a Google Android device is that its mobile web browser is pre-installed side-by-side with Google Chrome. As explained by Sony, "*It is not possible to uninstall Chrome and for Sony*

⁹⁸¹ See Jon Russel, "Mobile browser-maker UCWeb, another global tech firm under the radar, crosses 500m users", available at <http://thenextweb.com/asia/2014/03/21/mobile-browser-maker-ucweb-another-global-tech-firm-under-the-radar-crosses-500m-users/#!BqGdJ>, printed and saved on 11 April 2016.

⁹⁸² These figures are obtained by dividing the revenues of Google Chrome on Android by four and then by the revenues of Google Chrome on iOS. Source: Annex A to Google's response to Questions 1 to 5 of the request for information of 24 March 2017 (Doc ID 7955).

⁹⁸³ A. Cunningham, ArsTechnica, "New Chrome for iOS is finally as fast and stable as Safari," January 27, 2016, available at: <https://arstechnica.com/gadgets/2016/01/new-chrome-for-ios-is-finally-as-fast-and-stable-as-safari/> printed and saved on 12 June 2018.

*Mobile it is mandatory by contract.*⁹⁸⁴

- (914) While Google does not contest this fact, it claims that this is irrelevant because users can download one or more competing mobile web browsers on their GMS devices and set one of them as the default.⁹⁸⁵
- (915) The Commission does not question that users can download competing non-OS specific mobile web browsers on their GMS devices and set one of them as the default. Rather, it concludes that, because of the importance of pre-installation, a significant number of users will not download any competing non-OS specific mobile web browser but rather use Google Chrome which is pre-installed on their GMS devices (see recitals (917) to (931)).

III. Competing non OS-specific mobile web browser developers cannot offset the competitive advantage that Google ensures for itself through the tying

- (916) The competitive advantage that Google ensures for itself cannot be offset by competing non OS-specific mobile web browser developers using alternative distribution channels such as downloads or the possibility for OEMs and MNOs to pre-install a competing mobile web browser.
- a) *Downloads cannot offset the competitive advantage that Google ensures for itself*
- (917) Downloads cannot be compared in reach and effectiveness to the pre-installation of Google Chrome on GMS devices. This is because users that find a mobile web browser pre-installed on their GMS devices are, on average, less likely to download alternative mobile web browsers, in particular when the pre-installed mobile web browser already delivers the required functionality.
- (918) First, this is confirmed Mozilla statement that "*The browser is one of those core functional applications that users expect to be preinstalled. The vast majority of user behavior suggests they use what is preinstalled on the device. It requires a tech-savvy user to consider other browsers (including for performance, features available, extensibility, privacy, open source etc.) that are available and know they can be installed and used as an alternative choice. Therefore, the browser that is the default and preinstalled one on the device will automatically get mass majority usage and adoption as lowest barrier to use.*"⁹⁸⁶
- (919) Second, this is confirmed by the number of downloads of competing non OS-specific mobile web browsers from the Play Store (see Table 17). In 2016, none of these mobile web browsers achieved a number of downloads that was comparable to the number of pre-installed Google Chrome browsers: (i) the UC Browser was downloaded on only [20-30]% of GMS devices sold in 2016; (ii) the Opera mobile web browser was downloaded on only [10-20]% of GMS devices sold in 2016; and (iii) the Firefox mobile web browser was downloaded on only [0-10]% of GMS devices sold in 2016. In 2013, 2014 and 2015, the number of downloads of the UC

⁹⁸⁴ See Sony Mobile Communications' non-confidential response to Question 2(v) of the request for information of 19 October 2015 to web browser providers (Doc ID 4122).

⁹⁸⁵ Google's Response to the Statement of Objections, Part Four, pages 237-241, paragraphs 177-187 (Doc ID 7117).

⁹⁸⁶ Mozilla's non-confidential response to Question 35.2 of the request for information of 12 June 2013 to app developers (Doc ID 4166).

Browser and Opera mobile web browser on GMS devices sold in each year was even lower.

- (920) Third, this is confirmed by the fact that the total number of downloads on GMS devices of competing non-OS specific mobile web browsers from the Play Store is low compared with the number of devices on which Google Chrome was pre-installed. In 2016, competing non OS-specific mobile web browsers were downloaded on less than [40-50]% of the GMS devices sold during that year. Similarly, during the period 2013-2016, competing non OS-specific mobile web browsers were downloaded on approximately [30-40]% of GMS devices sold during that period.

Table 17: Number of downloads on GMS devices of competing non OS-specific mobile web browsers worldwide from the Play Store in 2013-2016⁹⁸⁷ (in thousands)

Mobile browsers	2013	2014	2015	2016
UC Browser	[...]	[...]	[...]	[...]
Opera	[...]	[...]	[...]	[...]
Firefox	[...]	[...]	[...]	[...]
Yandex	[...]	[...]	[...]	[...]
VC Browser	[...]	[...]	[...]	[...]
Puffin Browser	[...]	[...]	[...]	[...]
Web Browser	[...]	[...]	[...]	[...]
Dolphin	[...]	[...]	[...]	[...]
Adblock Browser	[...]	[...]	[...]	[...]
Other	[...]	[...]	[...]	[...]
Total number of downloads of competing mobile web browsers	[...]	[...]	[...]	[...]
Total number of Google Chrome pre-installations⁹⁸⁸	594,272	808,200	916,293	917,909
Total as % of Google Chrome pre-installations	[10-20]%	[20-30]%	[30-40]%	[40-50]%

- (921) Fourth, if only the EEA is considered, the number of downloads on GMS devices of competing non OS-specific mobile web browsers from the Play Store is considerably lower in relative terms (see Table 18). The UC Browser, the most downloaded

⁹⁸⁷ Source: Annex Q6 to Google's response to Question 6 of the request for information of 24 March 2017 (Doc ID 7894-1) and [...] data (Doc ID 7866 and 7867).

⁹⁸⁸ The total number of Google Chrome pre-installations corresponds to the number of GMS devices, i.e., Google Android devices outside China. See footnotes 436 and 440.

mobile web browser on GMS devices worldwide, was downloaded on less than [0-5]% of GMS devices sold in the EEA in 2016. This can be explained by the focus of this mobile web browser which is mainly on Asian countries.⁹⁸⁹ Similarly, the Opera mobile web browser was downloaded on less than [0-5]% of GMS devices sold in the EEA in 2016. This can be explained by the focus of this mobile web browser on African countries.⁹⁹⁰ The Firefox mobile web browser, the most downloaded competing non OS-specific mobile web browser in the EEA, was downloaded on [0-10]% of GMS devices sold in 2016.

- (922) Fifth, in the EEA, the total number of downloads on GMS devices of competing non OS-specific mobile web browsers from the Play Store during the period 2013-2016, corresponded to less than [10-20]% of GMS devices on which Google Chrome was pre-installed.

Table 18: Number of downloads on GMS devices of competing non OS-specific mobile web browsers in the EEA from the Play Store in 2013-2016⁹⁹¹ (in thousands)

Mobile browsers	2013	2014	2015	2016
Firefox	[...]	[...]	[...]	[...]
Opera	[...]	[...]	[...]	[...]
Adblock Browser	[...]	[...]	[...]	[...]
UC Browser	[...]	[...]	[...]	[...]
Free Adblocker Browser	[...]	[...]	[...]	[...]
Puffin Browser	[...]	[...]	[...]	[...]
Dolphin	[...]	[...]	[...]	[...]
Web Browser	[...]	[...]	[...]	[...]
Seznam.cz	[...]	[...]	[...]	[...]
Other	[...]	[...]	[...]	[...]
Total number of downloads of competing mobile web browsers	[...]	[...]	[...]	[...]
Total number of Google Chrome pre-installations⁹⁹²	174,217	196,349	203,740	197,375

⁹⁸⁹ See footnote 981.

⁹⁹⁰ See "State of the Mobile Web Africa 2016", available at <https://blogs.opera.com/news/wp-content/uploads/sites/2/2016/11/SMWAfrica-Opera-report-2016-01-WEB-1.pdf> printed and saved on 13 June 2017. Opera's share of queries on smart mobile devices was 55% in Africa in 2016. Source: StatCounter data for 2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

⁹⁹¹ Source: Annex Q6 to Google's response to Question 6 of the request for information of 24 March 2017 (Doc ID 7894-1) and [...] data (Doc ID 7866 and 7867).

⁹⁹² The total number of Google Chrome pre-installations corresponds to the number of GMS devices, i.e., Google Android devices in Europe. See footnote 440.

Total as % of Google Chrome pre-installations	[5-10]%	[5-10]%	[10-20]%	[10-20]%
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- (923) Sixth, certain users remain reluctant to download apps and prefer to use the pre-installed mobile web browser. A survey provided by Opera indicated that, in 2013, 79% of Android and iOS users used regularly the mobile web browser that was pre-installed on their devices.⁹⁹³ Furthermore, when the pre-installed web browser already delivers the required functionality to a satisfactory level, users are less likely to look for, download, and use alternative web browsers (see Section 11.4.4.1.I).
- (924) Seventh, the Commission's conclusion that downloads cannot be compared in reach and effectiveness to the pre-installation of Google Chrome on GMS devices is not affected by Google's claims that:
- (1) users can and do download competing non OS-specific mobile web browsers, as confirmed by Opera⁹⁹⁴ and the 2017 App Annie Report, which indicates that UC Browser was the sixth most downloaded app in 2016;⁹⁹⁵
 - (2) limitations on device storage space do not prevent downloads;⁹⁹⁶
 - (3) downloads of Firefox on Google Android devices have increased significantly since August 2012,⁹⁹⁷ and in 2017, Firefox experienced a strong increase in the number of downloads on smart mobile devices, as confirmed by a blog post by Mozilla;⁹⁹⁸
 - (4) users can freely download mobile web browsers that best suit their individual preferences, as confirmed by the situation in the Republic of Korea, where Samsung Internet and Naver are the leading mobile web browsers;⁹⁹⁹
 - (5) while being pre-installed is no guarantee of usage, being downloaded is a sign that users intend to try out the app and use the download channel;¹⁰⁰⁰ and
 - (6) downloads have proved successful for other categories of apps, such as maps where there have been significant downloads of Google Maps on iOS devices, despite the pre-installation of Apple Maps.¹⁰⁰¹
- (925) In the first place, the Commission does not contest that users can download web browsers from app stores. However:
- (1) such downloading does not offset Google's pre-installation advantage on GMS

⁹⁹³ See non-confidential Appendix 1 to Opera's response to the request for information of 1 December 2015 (Doc ID 4639).

⁹⁹⁴ Google's Response to the Statement of Objections, Part Four, pages 237-241, paragraphs 177-187 (Doc ID 7117), Google's Response to the First Letter of Facts, Part Three, pages 95-96, paragraphs 84-86 (Doc ID 8598) and Google's Response to the Second Letter of Facts, Part One, pages 2-4, paragraphs 1-7 (Doc ID 8876).

⁹⁹⁵ See Google's letter of 14 March 2018 (Doc ID 8768).

⁹⁹⁶ Google's Response to the Statement of Objections, Part Four, pages 238-239, paragraph 181 (Doc ID 7117).

⁹⁹⁷ Google's Response to the Statement of Objections, Part Four, pages 239-240, paragraph 183 (Doc ID 7117).

⁹⁹⁸ See Google's letter of 14 March 2018 (Doc ID 8768).

⁹⁹⁹ Google's Response to the Statement of Objections, Part Four, page 238, paragraph 181 (Doc ID 7117).

¹⁰⁰⁰ Google's Response to the First Letter of Facts, Part Three, page 96, paragraph 86 (Doc ID 8598).

¹⁰⁰¹ Google's Response to the First Letter of Facts, Part Three, page 96, paragraph 86 (Doc ID 8598).

- devices resulting from the tying of Google Chrome with the Google Search app and the Play Store; and
- (2) Opera's statements relied on by Google are contradicted by Opera's previous statements made in response to a request for information by the Commission pursuant to Article 18 of Regulation (EC) No 1/2003:
- "We believe the availability of the Chrome browser as the default browser application, pre-installed and available on the home-screen on Android phones limits Opera's ability to compete for the default position on all Android devices, which in turn would have enabled Opera to achieve on the merits a higher market share, active user number, brand awareness and revenues than is currently the case."¹⁰⁰²*
- "While we strongly believe that OEMs' pre-installation of Chrome has reduced the number of downloads of our mobile browsers from Google Play, we do not have accurate estimates on the magnitude of this effect."¹⁰⁰³*
- (3) In the case of UC Browser, the greater frequency of downloads worldwide can be explained by the focus of this mobile web browser, which is mainly on Asian countries (see recital (910)(3)).
- (926) In the second place, as explained in recitals (827) to (829), duplication of Google apps can cause issues with the storage space of some devices and negatively impact the user experience on smart mobile devices.
- (927) In the third place, while between 2013 and 2016, the total annual number of downloads of Firefox on Google Android devices increased from [0-50] million to [0-50] million, the number of additional GMS devices on which Google Chrome was pre-installed annually increased from 594 million to 918 million.¹⁰⁰⁴
- (928) Moreover, as regards the alleged strong increase in the number of downloads of Firefox on smart mobile devices in 2017, the total number of downloads of Firefox would still remain low compared to the number of GMS devices on which Google Chrome was pre-installed. Moreover, the blog post by Mozilla¹⁰⁰⁵ does not provide any breakdown of the alleged increase in the number of downloads of Firefox between iOS and Google Android devices.
- (929) In the fourth place, according to StatCounter, Google Chrome, and not Samsung Internet and Naver, is the leading mobile web browser in Republic of Korea with a 64% usage share of non OS-specific mobile web browsers in 2016.¹⁰⁰⁶
- (930) In the fifth place, even if being downloaded were a sign that users intend to try out the app, downloads of competing non-OS specific mobile web browsers in the EEA remain insignificant in number (see recitals (921) and (922)). Moreover, this would

¹⁰⁰² Opera's non-confidential response to Question 12 of the request for information of 19 October 2015 to web browser providers (Doc ID 8734-41).

¹⁰⁰³ Opera's non-confidential response to Question 12 of the request for information of 19 October 2015 to web browser providers (Doc ID 8734-41).

¹⁰⁰⁴ See Table 17.

¹⁰⁰⁵ See N. Nguyen, Mozilla Blog, Early Returns on Firefox Quantum Point to Growth, December 12, 2017, available at <https://blog.mozilla.org/press-uk/2017/12/12/early-returns-on-firefox-quantum-point-to-growth/> printed and saved on 13 June 2018.

¹⁰⁰⁶ Source: StatCounter data for 2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

not alter the importance of pre-installation as a channel for the distribution of web browsers on Google Android devices (see Section 11.4.4.1.I).

- (931) In the sixth place, the example of the Apple Maps app on iOS devices confirms the importance of pre-installation as compared to downloads. A significant number of users of iOS devices continue to use the pre-installed Apple Maps app rather than the Google Maps app, notwithstanding the perception that the service offered by the Apple Maps is of lesser quality than that offered by Google Maps.¹⁰⁰⁷
- b) *Pre-installation agreements with OEMs and MNOs cannot offset the competitive advantage that Google ensures for itself*
- (932) Pre-installation agreements with OEMs and MNOs cannot be compared in reach and effectiveness to the pre-installation of Google Chrome on GMS devices. This is for the reasons described in recitals (933) to (946).
- (933) First, OEMs and MNOs are reluctant to pre-install applications when they duplicate services because of issues with the storage space of certain devices (see also recital (829)).
- (934) This is confirmed by the evidence described in Section 11.3.4.1.IV.c) and the following:
- (1) according to [OEM], [information on pre-installation of applications].¹⁰⁰⁸
 - (2) according to Sony, its policy since 2012 is to stop pre-installing its mobile web browser "*to focus on the end-user experience and avoid duplication.*"¹⁰⁰⁹ In addition "*Since 2012 Q3, the internal recommendation has been to include Chrome only, and from 2015 the internal direction is that the Sony Mobile browser is included only when there is a strong justification, i.e. that customer requirements can't be met with the Chrome browser. The number of markets where the [Sony Mobile] browser is provided is declining and the current prediction is that the Sony Mobile browser will not be included in any EEA Member State markets during 2016.*"¹⁰¹⁰ Sony indicated that its "Chrome-only" approach is due to the fact that (i) it is impossible to uninstall Google Chrome and (ii) it is mandatory as a result of the MADA, for Sony to pre-install Google Chrome.¹⁰¹¹
- (935) Second, even if a competing mobile web browser were also pre-installed, it cannot be set as the default web browser:
- (1) according to Orange: "*it's not possible to set a browser by default [...] To avoid such experience, OEM as Sony & Motorola stopped the development of their*

¹⁰⁰⁷ See "*Why 3.5 times more Apple users choose Apple Maps over Google Maps*", available at <http://fortune.com/2015/06/16/apple-google-maps-ios/> printed and saved on 13 June 2017. See "*Apple Maps vs. Google Maps: A year in analysis*" available at <https://www.imore.com/apple-maps-vs-google-maps-year-analysis/> printed and saved on 9 July 2018.

¹⁰⁰⁸ See [OEM]'s non-confidential response to Question 8 of the request for information of 19 October 2015 to web browser providers [...].

¹⁰⁰⁹ See Sony Mobile Communications' non-confidential response to Question 2(v) of the request for information of 19 October 2015 to web browser providers (Doc ID 4122).

¹⁰¹⁰ See Sony Mobile Communications' non-confidential response to Question 2(iv) of the request for information of 19 October 2015 to web browser providers (Doc ID 4122).

¹⁰¹¹ Sony Mobile Communications' non-confidential response to Questions 2(iv) and 2(v) of the request for information of 19 October 2015 to web browser providers (Doc ID 4122).

*browser and use only Chrome. Therefore, when end users click on an URL, they will be prompted to select between different browsers. This may have a negative impact on the customer experience (except advanced users). Therefore, MNOs/OEMs will be incited to accept Google's default setting in order to avoid this hurdle for the user."*¹⁰¹²

- (2) [...], an Android device manufacturer informed [...] in 2013 that it had been "recently notified by Google that we are not allowed to set a default Browser on the device as it breaks their certification rules. Previously, we were able to do this but with their new certification process, this is not allowed. We can currently only preload the app on our device." In the same year, another manufacturer informed [...] of the same issue.¹⁰¹³ [...] also reported discussions with MNOs about pre-installing [web browser] on Android devices in which MNOs have told [...] that they could not pre-install [web browser] because "OEMs have told them that their agreements with Google will not allow for the pre-installation or default setting of any applications that are competitive with applications existing in or applications that may in the future exist as a part of Google Mobile Services (GMS)." ¹⁰¹⁴ As one MNO explained to [...], "we could not pre-load another browser on their android devices. There was no exception to this, as it was the OEM who said this was not possible".¹⁰¹⁵
- (936) Third, the number of pre-installations on Google Android devices of each competing non OS-specific mobile web browser is significantly lower than the number of pre-installations on Google Android devices of Google Chrome.¹⁰¹⁶ As indicated in Table 19:
- (1) the competing non OS-specific mobile web browser with the highest number of pre-installations worldwide is Samsung's browser, being pre-installed on [20-30)% of Google Android devices in 2016, i.e. approximately half of the numbers of pre-installation of Google Chrome;¹⁰¹⁷
 - (2) Opera Browser and UC Browser were pre-installed on respectively [10-20)% and [5-10)% of Google Android devices sold worldwide in 2016.¹⁰¹⁸ Moreover, when considering only the EEA, Opera Browser and UC Browser were pre-installed on less than 5%¹⁰¹⁹ of the Google Android devices in the EEA, given

¹⁰¹² See Orange's non-confidential response to Question 38 of the request for information of 22 July 2014 (Doc ID 4575).

¹⁰¹³ See [...].

¹⁰¹⁴ See [...].

¹⁰¹⁵ See [...].

¹⁰¹⁶ Given that competing non OS-specific mobile web browsers did not distinguish between pre-installations in GMS devices and Google Android devices, for the case of pre-installations, the base value for comparison is the total number of Google Android devices instead of GMS devices (which are used in Table 17 and Table 18). The Commission compares the percentage of pre-installations of Chrome on Google Android devices, which is less than 100%, with the percentage of pre-installations of competing web browsers. See footnote 489.

¹⁰¹⁷ Source: Annex Q6 to Google's response to Question 6 of the request for information of 24 March 2017 (Doc ID 7894-1) and [...] data (Doc ID 7866 and 7867).

¹⁰¹⁸ Source: data accessible to Google in the data room submitted in response to the requests for information of 31 March 2017 (Alibaba) and 3 April 2017 (Opera) and [...] data (Doc ID 7866 and 7867).

¹⁰¹⁹ Source: data accessible to Google in the data room submitted in response to the requests for information of 31 March 2017 (Alibaba) and 3 April 2017 (Opera) and [...] data (Doc ID 7866 and 7867).

- their focus respectively on countries in Africa and Asia,¹⁰²⁰
- (3) Huawei's mobile web browser was pre-installed on [5-10]% of the new Google Android devices in 2016 worldwide; and
 - (4) all the other mobile web browsers were pre-installed on less than 5 % of the Google Android devices sold in 2016 worldwide. For example, Mozilla achieved until mid-2015 only [0-250 000] pre-installations of its Firefox browsers on Google Android devices¹⁰²¹ i.e. less than 1% than the number of Google Android devices.

Table 19: Percentage of pre-installations of mobile web browsers on Google Android devices worldwide in 2013-2016

Mobile browsers	2013	2014	2015	2016
% of Google Chrome on Google Android devices	64.1%	67.3%	71.4%	69.0%
% of non-Chrome on Google Android devices	[50-60]%	[40-50]%	[50-60]%	[50-60]%
Of which:				
HTC	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Huawei	[5-10]%	[5-10]%	[0-5]%	[5-10]%
LG	[5-10]%	[0-5]%	[0-5]%	[0-5]%
Mozilla	[0-5]%	[0-5]%	[0-5]%	[0-5]%
Opera	[0-5]%	[5-10]%	[10-20]%	[10-20]%
Samsung	[30-40]%	[20-30]%	[20-30]%	[20-30]%
Sony	[0-5]%	[0-5]%	[0-5]%	[0-5]%
UC Browser	[0-5]%	[0-5]%	[0-5]%	[5-10]%
Yandex	[0-5]%	[0-5]%	[0-5]%	[0-5]%

- (937) Fourth, the Commission's conclusion that pre-installation agreements with OEMs and MNOs cannot be compared in reach and effectiveness to the pre-installation of Google Chrome on GMS devices is not affected by Google's claims that:
- (1) Table 19 shows that competing non OS-specific mobile web browsers were pre-installed on a similar proportion of Google Android devices;¹⁰²²
 - (2) Table 19 does not include several mobile web browsers (VC browser, Puffin

¹⁰²⁰ As regards Alibaba, see footnote 981. As regards Opera, see footnote 990.

¹⁰²¹ See Mozilla's non-confidential response to Question 9 of the request for information of 21 October 2015 (Doc ID 4165).

¹⁰²² Google's Response to the First Letter of Facts, Part Three, pages 92-93, paragraphs 77 and 79 (Doc ID 8598).

- browser, Dolphin browser, Web Browser and Adblock Browser);¹⁰²³
- (3) Table 19 underestimates the number of pre-installations of Opera on Google Android devices because it does not take into account instances where OEMs pre-installed Opera's browser but users did not activate it;¹⁰²⁴
 - (4) there is no reason why a competing non OS-specific mobile web browser could not obtain even greater pre-installations if they are attractive since neither users nor OEMs would object to the pre-installation of more than one mobile web browser, as confirmed by the fact that Samsung pre-installs its own Samsung Internet browser on the default home screen on its devices alongside Google Chrome;¹⁰²⁵
 - (5) consumer communication and social networking apps such as WhatsApp, Facebook and Instagram have been successful on Android and have not been impeded by the pre-installation of competing GMS apps such as Google Hangout, Google Photos and Google+;¹⁰²⁶
 - (6) data from Vodafone and Orange indicates significant pre-installation by these MNOs on Google Android devices of apps that compete with GMS apps;¹⁰²⁷
 - (7) what matters is not pre-installation but whether users actually try out and use the pre-installed app;¹⁰²⁸ and
 - (8) OEMs do not pre-install competing non OS-specific mobile web browsers for reasons unrelated to the tying of Google Chrome such as low volumes, functionality requirements, localisation and tight production/launch schedules.¹⁰²⁹
- (938) In the first place, Table 19 does not show that, worldwide, competing non OS-specific mobile web browsers were pre-installed on a similar proportion of Google Android devices between 2013 and 2016. Rather, it indicates that, worldwide between 2013 and 2016:
- (1) each competing non OS-specific mobile web browser was pre-installed on a significantly lower number of Google Android devices than Google Chrome; and
 - (2) all competing non OS-specific mobile web browsers were collectively pre-installed on a lower number of Google Android devices than Google Chrome.
- (939) In the second place, the worldwide share of mobile web browsers not included in Table 19 is insignificant. For example, the worldwide share of each non OS-specific

¹⁰²³ Google's Response to the First Letter of Facts, Part Three, pages 92-93, paragraphs 77 and 79 (Doc ID 8598).

¹⁰²⁴ Google's Response to the First Letter of Facts, Part Three, pages 92-93, paragraphs 77 and 79 (Doc ID 8598).

¹⁰²⁵ Google's response to complaint by OIP, paragraphs 55, 65 and 75 (Doc ID 7787) and Google's Response to the Statement of Objections, Part Four, pages 229-236, paragraphs 166-173 (Doc ID 7117).

¹⁰²⁶ Google's Response to the Statement of Objections, Part Four, page 228, paragraph 164 (Doc ID 7117).

¹⁰²⁷ Google's Response to the Statement of Objections, Part Four, pages 227-228, paragraph 163 and 165 (Doc ID 7117).

¹⁰²⁸ Google's Response to the First Letter of Facts, Part Three, page 92, paragraph 78 (Doc ID 8598).

¹⁰²⁹ Google's Response to the Statement of Objections, Part Four, page 236 paragraph 174 (Doc ID 7117).

mobile web browser not included in Table 19 was below 0.2% in 2016.¹⁰³⁰

- (940) In the third place, even though Table 19 does not take into account instances where OEMs pre-installed, but users did not activate, Opera's browser, this does not alter the fact that pre-installation agreements with OEMs and MNOs cannot be compared in reach and effectiveness to the pre-installation of Google Chrome on GMS devices. This is because Opera was pre-installed on less than 5% of the Google Android devices in the EEA.¹⁰³¹
- (941) In the fourth place, given that the MADA requires OEMs to take a bundle of 12-30 apps, OEMs would have to be mindful to avoid duplicating Google apps as this would negatively impact the user experience on their devices (see recital (827)).
- (942) Moreover, regarding the [OEM] browser, [confidential commercial information], [OEM] noted that "Google's requirement imposed on device manufacturers to pre-install Chrome browser as a precondition to accessing the Google apps contained in the Google Mobile Services ("GMS") suite poses a competitive challenge to rival browser developers".¹⁰³²
- (943) In the fifth place, unlike competing mobile web browsers, developers of competing consumer communication and social networking apps can offset the competitive advantage that Google ensures for itself by the pre-installation of competing GMS apps such as Google Hangout, Google Photos and Google + (see recital (813)).
- (944) In the sixth place, the data from Vodafone and Orange concerns the pre-installation of apps in general and not of competing mobile web browsers in particular.
- (945) In the seventh place, Google's claim that the way an app is distributed is not relevant is contradicted by the evidence about the importance of pre-installation as a channel for the distribution of web browsers on Google Android devices (see recitals (903) to (908)).
- (946) In the eighth place, even if there were other reasons why OEMs do not pre-install competing non OS-specific mobile web browsers, this would not alter the fact that Google's conduct makes it more difficult to pre-install competing non OS-specific mobile web browsers. This is because OEMs and MNOs are reluctant to pre-install applications when they duplicate services as explained in recitals (933) and (934).
- IV. *Google's competitive advantage resulting from the tying and the inability of competing non OS-specific mobile web browsers to offset that advantage is consistent with the evolution of market shares*
- (947) Google's competitive advantage resulting from the tying and the inability of developers of non OS-specific mobile web browsers to offset that advantage are consistent with the evolution of Google's general share queries.
- (948) According to StatCounter data,¹⁰³³ Google's usage share on non OS-specific mobile

¹⁰³⁰ Source: StatCounter data for 2016, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

¹⁰³¹ Source: data accessible to Google in the data room submitted in response to the requests for information 3 April 2017 and [...] data (Doc ID 7866 and 7867).

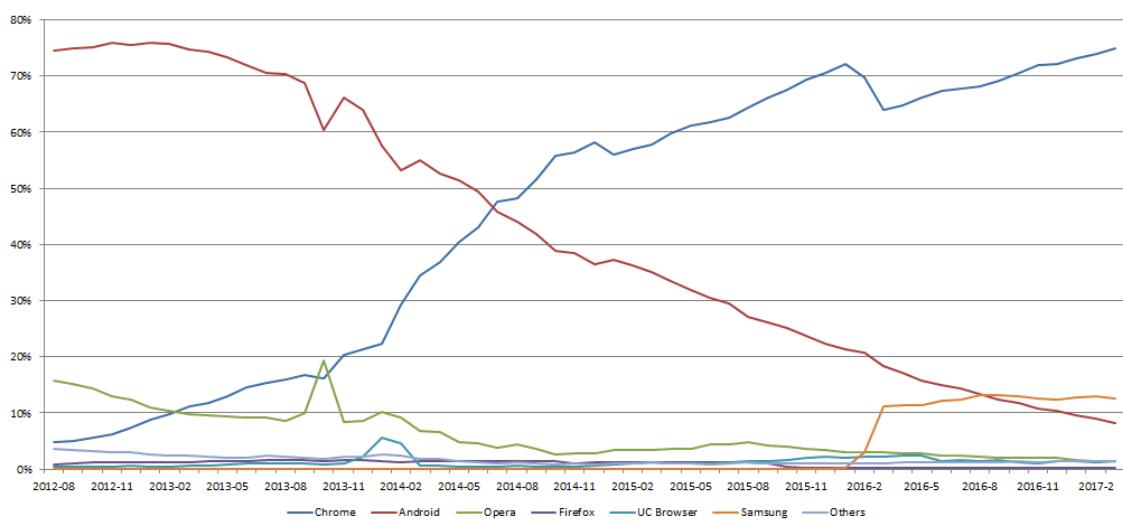
¹⁰³² See [OEM]'s non-confidential response to Question 8 of the request for information of 19 October 2015 to web browser providers [...].

¹⁰³³ Source: StatCounter data for 2012-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>. StatCounter data is based on aggregate data collected by StatCounter on a sample exceeding 15 billion page views per month collected from across the StatCounter network of more than 3 million websites.

web browsers, has increased both in Europe and worldwide between August 2012 (when Google Chrome became a mandatory Google app) and March 2017.

- (949) In Europe, Google Chrome's usage share of non OS-specific mobile web browsers increased from 4.7% in August 2012 to 74.9% in March 2017 whereas the usage share of most other non OS-specific mobile web browsers decreased or remained insignificant: (i) the usage share of AOSP-based browsers¹⁰³⁴ decreased from 74.5% to 8.2%; (ii) the usage share of Opera decreased from 15.9% to 1.4%; and (iii) the usage share of Firefox decreased from 0.9% to 0.2%. The only exception is the Samsung Internet browser, the market share of which increased after its introduction as a pre-installed browser in Samsung devices at the beginning of 2016, but has then stabilised at approximately 12% market share.

Figure 21: Usage share of non OS-specific mobile web browsers in Europe between August 2012 and March 2017



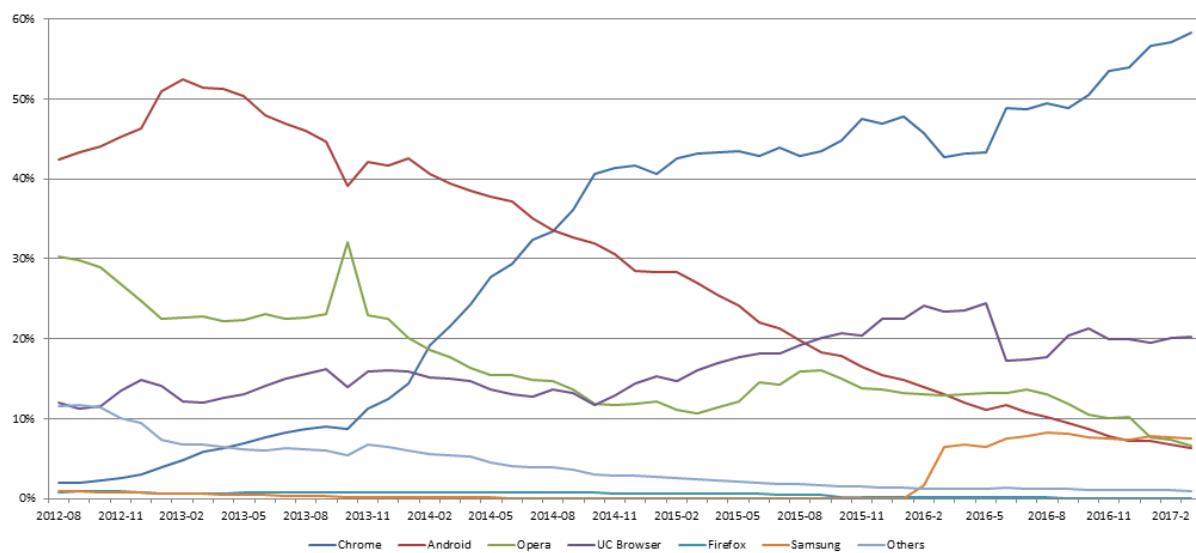
- (950) Worldwide, Google Chrome's usage share of non OS-specific mobile web browsers increased from 2.0% in August 2012 to 58.3% in March 2017 whereas the usage share of most other non OS-specific mobile web browsers either decreased or remained insignificant: (i) the usage share of AOSP-based browsers decreased from 42.4% to 6.4%; (ii) the usage share of Opera decreased from 30.2% to 6.6%; and (iii) Firefox's usage share decreased from 0.8% to 0.1%. The only exceptions are the Samsung Internet browser, the market share of which increased after its launch as a pre-installed browser at the beginning of 2016, but then stabilised at 7%, and UC Browser, the market share of which increased from 12.8% to 20.2%. In the case of UC Browser, its usage and growth is explained by the focus of this web browser on Asian countries.¹⁰³⁵

The Commission calculated the usage share data of non OS-specific mobile web browsers by disregarding the usage share data attributed by StatCounter to OS-specific mobile web browsers.

¹⁰³⁴ AOSP-based browsers are those developed on top of the web browser apps made available through the Android Open Source Project. OEMs such as [OEM], Huawei, LG Electronics, Samsung or Sony have pre-installed this type of browser on their GMS devices. These browsers are referred to by StatCounter as "Android browsers". See non-confidential responses to Question 2(iii) of the request for information of 15 October 2015 to web browser providers.

¹⁰³⁵ See footnote 981.

Figure 22: Usage share of non OS-specific mobile web browsers worldwide between August 2012 and March 2017



- (951) According to StatCounter data, Google Chrome's usage share also increased proportionally more on non OS-specific mobile web browsers than on PC web browsers during that period:
- (1) In Europe, Google Chrome's usage share on non OS-specific mobile web browsers increased from 4.7% to 74.9% from August 2012 to March 2017 on non OS-specific mobile web browsers, whereas usage share on PC web browsers increased from 32.1% to 53.4%.¹⁰³⁶
 - (2) Worldwide, Google Chrome's usage share on non OS-specific mobile web browsers increased from 2.0% to 58.3% from August 2012 to March 2017 on non OS-specific mobile web browsers, whereas usage share on PC web browsers increased from 34.7% to 62.8%.¹⁰³⁷
- (952) According to StatCounter data, between August 2012 and March 2017, Google Chrome also enjoyed an increase in usage share and became the leader in terms of usage on all mobile web browsers, including OS-specific web browsers, both in Europe and worldwide. In Europe, Google Chrome's usage share on mobile web browsers increased from 1.7% to 48.3% from August 2012 to March 2017, and worldwide, Google Chrome's usage share on mobile web browsers increased from 1.0% to 45.0% from August 2012 to March 2017.¹⁰³⁸
- (953) According to StatCounter data, Google's usage share on all web browsers worldwide also increased during that period. Google Chrome's usage share on all web browsers increased from 29.9% in August 2012 to 52.9% in March 2017 whereas the usage share of Internet Explorer and Firefox, the two web browsers that had similar usage shares to Google Chrome in August 2012, decreased from 29.1% to 4.2% and 20.3%

¹⁰³⁶ Source: StatCounter data for 2012-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

¹⁰³⁷ Source: StatCounter data for 2012-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>. See Google's Response to the Statement of Objections, Part Four, pages 238-239, paragraph 181 (Doc ID 7117).

¹⁰³⁸ Source: StatCounter data for 2012-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

to 6.7% respectively.¹⁰³⁹

- (954) The increase in Google Chrome's usage share on non OS-specific mobile web browsers does not seem to be explained by a substantial quality advantage in the eyes of Android users. According to Play Store ratings data as of April 2017: (i) Google Chrome had an average rating of 4.3 (7.4 million reviews); (ii) Opera Browser had an average rating of 4.3 (2.2 million reviews); (iii) Opera Mini had an average rating of 4.4 (3.2 million reviews); (iv) Firefox had an average rating of 4.4 (2.8 million reviews); (v) UC Browser had an average rating of 4.5 (13.9 million reviews); and (vi) the UC Browser Mini had an average rating of 4.4 (2.8 million reviews).¹⁰⁴⁰
- (955) In particular, despite being rated more highly on the Play Store than Google Chrome, Firefox continues to struggle to gain adoption on smart mobile devices (0.1% usage share on mobile web browsers in Europe in March 2017), despite much broader adoption on PCs (20.9% usage share on PC web browsers in Europe in March 2017)
- (956) The Commission's conclusion that Google's competitive advantage resulting from the tying and the inability of developers of non OS-specific mobile web browsers to offset that advantage are consistent with the evolution of Google's general share queries is not affected by Google's claim that:
- (1) Google Chrome's worldwide share on PC web browsers is higher than on non OS-specific mobile web browsers;
 - (2) Google Chrome did not experience an increase in usage share on non OS-specific mobile web browsers between August 2012 and early 2014. It also did not overtake the AOSP browser share until mid-2014, approximately two years after the tying began;
 - (3) Google Chrome's usage share on non OS-specific mobile web browsers decreased from late 2015 to early 2016;¹⁰⁴¹
 - (4) Google Chrome high usage in mobile is due to technical superiority and to the fact that it is the most used PC web browser;¹⁰⁴²
 - (5) the rankings on the Play Store do not reflect quality;¹⁰⁴³ and
 - (6) the reason for Firefox's low share is due to significant drawbacks with the browser, which have not only kept its share on mobile low, but have also caused it to lose significant share on PC web browsers.¹⁰⁴⁴
- (957) First, while Google Chrome's worldwide share on PC web browsers (62.8% in March 2017) is slightly higher than on non OS-specific mobile web browsers (58.3% in March 2017), in the EEA, Google Chrome's market share on non OS-specific mobile

¹⁰³⁹ Source: StatCounter data for 2012-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

¹⁰⁴⁰ See data retrieved on April 2017, available at <https://play.google.com/store>.

¹⁰⁴¹ Google's Response to the Statement of Objections, Part Four, pages 227-249 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part Three, pages 91, 96-97, paragraphs 74 and 90 (Doc ID 8598).

¹⁰⁴² Google's Response to the Statement of Objections, Part Four, pages 227-249 (Doc ID 7117)

¹⁰⁴³ Google's Response to the Statement of Objections, Part Four, pages 225-226, paragraph 157 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part Three, page 98, paragraph 91 (Doc ID 8598).

¹⁰⁴⁴ Source: StatCounter data 2012-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>. Google's Response to the First Letter of Facts, Part Three, page 98, paragraph 92 (Doc ID 8598).

web browsers (74.9% in March 2017), where it is pre-installed, is already higher than on PC web browsers (53.4% in March 2017), despite the fact that Google launched Google Chrome on Google Android devices four years later than on PCs (2012 versus 2008).¹⁰⁴⁵

- (958) Moreover, Google Chrome's worldwide share is slightly lower on non OS-specific mobile web browsers than on PC web browsers because of the presence of UC Browser, the focus of which is mainly on Asian countries (see recital (910)(3)).
- (959) Second, Google Chrome did experience an increase in usage share on non OS-specific mobile web browsers between August 2012 and early 2014 (from 2% to 14.4%). Moreover, after overtaking AOSP web browsers in mid-2014, Google Chrome's usage continued to increase and was nine times higher than that of AOSP web browsers in March 2017.
- (960) Third, the decrease in Google Chrome's usage share on non OS-specific mobile web browsers during the first two months of 2016 was caused by the Samsung Internet browser, the usage share of which increased after Samsung began pre-installing it on its Galaxy devices. However, as of March 2016, the usage share of the Samsung Internet browser worldwide stabilised at approximately 7%, while Google Chrome's share started increasing again in March 2016.¹⁰⁴⁶ By the end of 2016, Google Chrome's usage share was already higher than before Samsung began pre-installing the Samsung Internet browser on its Galaxy devices.¹⁰⁴⁷
- (961) Fourth, Google Chrome's usage share on non OS-specific mobile web browsers cannot be explained by its superior quality. This is because on iOS devices, users do not download Google Chrome to such an extent as to match its presence on GMS devices (see recital (908)). Moreover, Google's share of non OS-specific mobile web browsers developed differently and it is now significantly higher in the EEA than its share on PCs.
- (962) Fifth, Google's actual conduct contradicts its claim that the Commission should ignore the ratings on the Play Store (see recital (847)).
- (963) Sixth, in April 2017 users of Firefox attributed a higher average rating in the Play Store to this mobile web browser than users of Google Chrome.¹⁰⁴⁸ Moreover, on PC, Firefox is still the second most important web browser as regards usage share both in the EEA and worldwide.¹⁰⁴⁹

V. *Google's other claims and the Commission's response*

- (964) Google more generally claims that the Commission has failed in two respects to conduct an analysis of the competitive advantage that Google ensures itself via the tying of Google Chrome with the Play Store and the Google Search app in line with

¹⁰⁴⁵ See "Google Chrome now live" (2 September 2008), available at <https://googleblog.blogspot.be/2008/09/google-chrome-now-live.html>, printed and saved on 23 June 2017 and "Introducing Chrome for Android" (7 February 2012), available at <https://chrome.googleblog.com/2012/02/introducing-chrome-for-android.html>, printed and saved on 23 June 2017.

¹⁰⁴⁶ Samsung's worldwide market share (i.e. 7%) underestimates the share at the level of Samsung devices, the only devices where Samsung Internet is pre-installed.

¹⁰⁴⁷ See Figure 21.

¹⁰⁴⁸ See data retrieved on April 2017, available at <https://play.google.com/store>.

¹⁰⁴⁹ Source: StatCounter data for 2012-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

the decisions adopted in Case AT.37792 *Microsoft* and AT/39530 *Microsoft (Tying)* and the judgment in Case T-201/04 *Microsoft*:

- (1) the judgment in Case T-201/04 *Microsoft* requires the Commission to make a finding of "*indirect network effects*" with respect to the Google Chrome,¹⁰⁵⁰ and
- (2) unlike in its decisions in Cases AT/37792 *Microsoft* and AT/39530 *Microsoft (Tying)*, the Commission has failed to: (i) assess the question of alternative means of access and user engagement; (ii) conduct a survey on download figures; (iii) examine the actual development of usage shares; and (iv) examine carefully alternative explanations for changes in usage.¹⁰⁵¹

(965) Google's claims are unfounded.

(966) First, the judgment in Case T-201/04 Microsoft does not require the Commission to make a finding of "*indirect network effects*" with respect to Google Chrome. While the presence of indirect network effects was one factor that the Commission took into consideration in its decision in Case AT.37792 *Microsoft*, nothing in the judgment in Case T-201/04 provides that the Commission is generally required to make such a finding when analysing the effects of tying.

(967) Second, the Commission has, in this case, assessed the question of alternative means of access and user engagement, such as downloading and pre-installing, examined the actual development of usage shares and examined carefully alternative explanations for changes in usage shares. As for the alleged omission to conduct a survey on download figures, the Commission did not need to conduct such a survey because it obtained actual download figures from Google and third parties.

(968) Third, and in any event, the Commission is not required to apply rigorously an identical framework of assessment in all tying cases. Rather, the Commission must make an overall assessment in each given case and can take account of a range of tools for the purposes of that assessment.¹⁰⁵²

11.4.4.2. Google's conduct deters innovation, tends to harm, directly or indirectly, consumers of mobile web browsers and helps to maintain and strengthen Google's dominant position in each national market for general search services

(969) For the reasons set out in this Section, the Commission concludes that the tying of Chrome with the Play Store and the Google Search app deters innovation in relation to mobile web browsers, tends to harm, directly or indirectly, consumers and helps to maintain and strengthen Google's dominant position in each national market for general search services.

¹⁰⁵⁰ Google's Response to the Statement of Objections, Part Four, pages 180-181, paragraph 63 (Doc ID 7117).

¹⁰⁵¹ Google's Response to the Statement of Objections, Part Four, pages 181-182, paragraph 64, and page 292, paragraph 93 (Doc ID 7117).

¹⁰⁵² Case T-210/01 *General Electric v Commission*, EU:T:2005:456 paragraph 519; Case T-343/06 *Shell Petroleum and Others v Commission*, EU:T:2012:478, paragraph 171; Case T-342/07 *Ryanair v Commission*, EU:T:2010:280, paragraph 136; Case T-175/12 *Deutsche Börse v Commission*, EU:T:2015:148, paragraph 133; Case T-699/14 *Topps Europe v Commission*, EU:T:2017:2, paragraph 82.

- (970) First, Google's conduct deters innovation in relation to mobile web browsers because it prevents the development of non-OS specific mobile web browsers with innovative features. Moreover, as a result of Google's conduct, competing non OS-specific mobile web browsers must spend resources to overcome the advantage conferred by pre-installation (see recital (861)).
- (971) Second, Google's conduct is capable of harming, directly or indirectly, consumers who, as a result of Google's interference with the normal competitive process may see less choice of mobile web browsers.
- (972) Third, Google's conduct helps it to maintain and strengthen its dominant position in each national market for general search services and, thus, its revenues via search advertisements. This is for the reasons set out in recitals (973) to (977).
- (973) In the first place, Google Search is set as the default general search service on Google Chrome and OEMs cannot change this setting. In Google's own words: "*Chrome, as a proprietary Google product, is distributed to OEMs with Google Search as the default search service. Proprietary software is generally licensed for distribution as a machine-readable binary code. Unlike open-source software, where the source code is written in a computer programming language that can be read and modified by software developers before it is compiled by them into binary code to be uploaded onto hardware, proprietary software is already compiled by the licensor into binary code that the distribution partner has to implement as licensed. OEMs cannot modify Chrome's binary code as this would infringe Google's copyright and its position under IP law*".¹⁰⁵³
- (974) In the second place, in 2016, [30-40]% of all general search queries on Google Android devices were conducted via Google Chrome.¹⁰⁵⁴ Moreover, the other main search entry point on Google Android devices is the Google Search app (including the widget), which covered [40-50]% of all general search queries on Google Android devices in 2016.¹⁰⁵⁵ As explained in Section 11.3 Google also ties the Google Search app entry point to the licensing of the Play Store.
- (975) In the third place, the majority of general search services that responded to the request for information to general search services confirmed that the mobile web browser is an important entry point for general search services.¹⁰⁵⁶
- (976) In the fourth place, Google's conduct prevents competing general search services to gain search queries and the respective revenues and data needed to improve their services (see recital (859)).
- (977) In the fifth place, there are several examples of competing general search services that were able to grow their share of general search queries by being set as default in pre-installed or downloadable web browsers:
- (1) In India and Brazil, where Bing was pre-installed and set as the default general

¹⁰⁵³ Source: Google's response to Question 13 of the request for information of 24 March 2017 (Doc ID 7790).

¹⁰⁵⁴ Source: Google's response to Question 11 of the request for information of 24 March 2017 (Doc ID 7894-4).

¹⁰⁵⁵ Source: Google's response to Question 11 of the request for information of 24 March 2017 (Doc ID 7894-4).

¹⁰⁵⁶ See non-confidential responses to Question 2 of the request for information of 20 November 2015 to Search providers.

- search service on the mobile web browser of the Nokia Asha 501, Bing's query share was [20-30]% and [30-40]% respectively on such devices as opposed to less than [0-10]% in any EEA country.¹⁰⁵⁷
- (2) Prior to June 2013 in Mexico, no general search service was pre-installed and set as the default general search service on the mobile web browser of the Nokia Asha 501 and Bing's query share on such devices was less than [0-10]%. By contrast, six months after Bing was pre-installed and set as default on the mobile web browser on those devices in July 2013, Bing's query share was [50-60]% on such devices.¹⁰⁵⁸
- (3) In November 2014, Yahoo's general search service replaced Google as the default provider of general search services in the US for the newest release of Mozilla's PC and mobile web browser, Firefox 34. By contrast, Google Search remained the default general search service in earlier versions of Firefox, including the previous release, Firefox 33. A month after this change, Yahoo's query share on the Firefox 34 browser was 29% compared to 10% on the Firefox 33 browser. This resulted in an increase in Yahoo's share of general search queries in the US from 8.9% in November 2014 to 9.5% in April 2015.¹⁰⁵⁹ As for Google's query share, it was 63% on Firefox 34 and 82 % on Firefox 33.¹⁰⁶⁰ Although Google argues that the increase in Yahoo's market share was minimal and that it lost the market share it had gained after the agreement with Firefox one year after it was implemented,¹⁰⁶¹ the Commission concludes that the decrease in Yahoo's share from 9.5% in April 2015 to 7.6% in October 2015 can be justified in part by the decrease in Firefox's usage share on all web browsers in the US during the same period.¹⁰⁶² In addition, the relevant figure is the increase of Yahoo's share from 10% to 29%, as the evolution of the share in general search services is only a reflexion of the penetration of the devices where Firefox 34 was present.
- (4) In October 2015, the Yandex general search app was pre-installed and set as default on Windows Phone devices in Turkey. On these devices, Yandex's query share was approximately ten times higher than on other smart mobile devices in Turkey during the same time period.¹⁰⁶³
- (978) Fourth, the Commission's conclusion that the tying of Google Chrome with the Play Store and the Google Search app helps Google to maintain and strengthen its dominant position in each national market for general search services is not affected by Google's claims that:

¹⁰⁵⁷ Microsoft's non-confidential internal document submitted in response to the request for information of 17 July 2014 (Doc ID 4176), slides 4 and 21.

¹⁰⁵⁸ Microsoft's non-confidential internal document submitted in response to the request for information of 17 July 2014 (Doc ID 4174), slides 3 and 4.

¹⁰⁵⁹ Source: StatCounter data for 2009-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

¹⁰⁶⁰ See "Report: Yahoo Search Share Up After Firefox Deal, Google Down" (7 January 2015), available at <http://searchengineland.com/report-yahoo-search-share-firefox-deal-google-212288>, printed and saved on 6 April 2016.

¹⁰⁶¹ Google's Response to the First Letter of Facts, Part Three, pages 99-100, paragraph 98 (Doc ID 8598).

¹⁰⁶² Source: StatCounter data, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

¹⁰⁶³ Yandex's non-confidential response to Question 2 of the request for information of 20 November 2015 to Search providers (Doc ID 4219).

- (1) its conduct coincided with a period of improvement of Google Chrome;¹⁰⁶⁴
 - (2) Google Chrome allows users to switch the default of the web browser to competing general search services; and
 - (3) OEMs are free to pre-install other web browsers.¹⁰⁶⁵
- (979) In the first place, even if Google's conduct were to have coincided with a period of improvement of Google Chrome, Google neither claims nor demonstrates that its conduct has not affected the incentives and ability of competing non OS-specific mobile web browsers to improve their browsers.
- (980) Moreover, absent the tying of Google Chrome with the Play Store and the Google Search app, Google may have improved Google Chrome to a greater degree.
- (981) In the second place, users are unlikely to change general search service when the default service on the web browser already delivers the required functionality to a satisfactory level.
- (982) In the third place, as described in recital (933), OEMs and MNOs are reluctant to pre-install applications when they duplicate services.
- 11.4.4.3. Google's claims regarding the need for the Commission to consider its conduct in its relevant economic and legal context
- (983) Google claims that its conduct is incapable of restricting competition when assessed in its relevant economic and legal context.
- (984) First, assessing whether Google's conduct is capable of restricting competition requires the Commission to demonstrate that "*there would have been greater competition absent the impugned conduct*" and to "*consider in that context, the interactions among different sides of* the Android platform.¹⁰⁶⁶
- (985) Second, an assessment of its conduct in the relevant economic and legal context as of 2009 when Google began to enter into MADAs "*would have revealed that this practice is incapable of restricting competition and in fact promoted competition*".¹⁰⁶⁷
- (986) Google's claims are unfounded.
- (987) First, Google fails to clarify whether the conduct to which it refers is only the tying of Google Chrome with the Play Store and the Google Search app¹⁰⁶⁸ or the MADA as a whole.¹⁰⁶⁹ However, for the purposes of this Decision, the Commission

¹⁰⁶⁴ Google's Response to the Statement of Objections, Part Four, page 249, paragraphs 200-202 (Doc ID 7117).

¹⁰⁶⁵ Google's Response to the First Letter of Facts, Part Three, page 99, paragraph 96 (Doc ID 8598).

¹⁰⁶⁶ Google's letter of 11 June 2018, paragraphs 6 and 11-15 (Doc ID 8890).

¹⁰⁶⁷ Google's letter of 11 June 2018, paragraph 20 (Doc ID 8890).

¹⁰⁶⁸ Google's letter of 11 June 2018, paragraphs 2-4, 13, 18-21, 28 and 31 (Doc ID 8890); Google's Response to the Statement of Objections, Part Four, pages 174-176, paragraphs 45-48 (Doc ID 7117); Google's Response to the Statement of Objections, Executive Summary, Section IV; Part One, page 9, paragraph 15 and page 28, paragraph 69; Part Four, page 157, paragraph 13; and page 180, paragraph 61 (Doc ID 7117).

¹⁰⁶⁹ Google's letter of 11 June 2018, paragraphs 14-17 and 24-27 (Doc ID 8890); Google's Response to the Statement of Objections, Executive Summary, Section IV; Part One, page 8, paragraph 10; and Part Four, page 175, paragraphs 46-47 (Doc ID 7117).

concludes that Google's conduct is only the tying of Google Chrome with the Play Store and the Google Search app, and not the MADA as a whole, because only the former constitutes an abuse of Google's dominant position in the worldwide market (excluding China) for Android app stores and the national markets for general search services.

- (988) Second, the Commission is not required to demonstrate in a general manner that "*there would have been greater competition*" absent the tying of Google Chrome with the Play Store and the Google Search app. Rather, the Commission is required to demonstrate that the tying is capable of restricting competition on the relevant markets, namely the worldwide market for non-OS specific web browsers and the national markets for general search services.
- (989) Third, when assessing the capability of the tying of Google Chrome with the Play Store and the Google Search app to restrict competition on the relevant markets, the Commission has *inter alia* analysed whether there could have been greater competition on those markets, absent the tying (see Section 11.4.4). Regarding the worldwide market for non-OS specific web browsers, this includes an analysis of the usage of Google Chrome on smart mobile devices on which it is not pre-installed, such as iOS (see recitals (907) and (908)). Regarding the national markets for general search services, this includes an analysis of the ability of competing general search services to grow their share of general search queries by being set as default in pre-installed or downloadable web browsers (recital (977)).
- (990) Fourth, when assessing the capability of the tying of Google Chrome with the Play Store and the Google Search app to restrict competition on the relevant markets, the Commission has also taken account of the nature of interactions among the different sides of the Android platform. This includes the fact that: (i) on GMS devices, OEMs cannot obtain the Play Store and the Google Search app without Google Chrome (see Section 11.4.3); (ii) pre-installation is an important channel for the distribution of mobile web browsers on smart mobile devices, including GMS devices (see Section 11.4.4.1.I); (iii) competing mobile web browsers cannot offset the competitive advantage that Google ensures for itself through the pre-installation of Google Chrome on GMS devices (see Section 11.4.4.1.III); and (iv) Google Search is set as the default general search service on Google Chrome and OEMs cannot change this setting (see Section 11.4.4.2).
- (991) To the extent, however, that Google's claim about the "*interactions among different sides*" of the Android platform relates to whether the tying may give rise to benefits on the worldwide market for non-OS specific mobile web browsers, the national markets for general search services and/or on other markets, the Commission has assessed and dismissed such a claim in its analysis of objective justification (see Section 11.5).
- (992) Fifth, when assessing the capability of the tying of Google Chrome with the Play Store and the Google Search app to restrict competition on the worldwide market for non-OS specific mobile web browsers and the national markets for general search services, the Commission is required to undertake such an assessment as of August 2012, when Google added Google Chrome as a mandatory app in a MADA and not as of 2009 when Google began to enter into MADAs.

11.5. Objective justification and efficiencies

- (993) Google claims that the tying of the Google Search app with the Play Store and the

tying of Google Chrome with the Play Store and the Google Search app is objectively justified for the following reasons:

- (1) It is a legitimate way for Google to monetise its investments in Android and its non-revenue-generating apps;¹⁰⁷⁰
 - (2) It allows Google to offer the "*consistent out-of-the-box experience that users expect, and facilitates competition with Apple and other vertically integrated or closed mobile platforms*";¹⁰⁷¹ and
 - (3) It allows Google to license the Play Store for free because the value of the Play Store to OEMs and users correlates with the value to Google of the promotion by OEMs of Google's general search service.¹⁰⁷² By contrast, if Google were to charge OEMs a uniform up-front licence fee for the Play Store, such a fee would make lower-end devices [assessment of the impact of a licence fee] and decrease competition with Apple.¹⁰⁷³
- (994) For the reasons set out in recitals (995) to (1008), the Commission concludes that Google has not demonstrated that the tying of the Google Search app with the Play Store and the tying of Google Chrome with the Play Store and the Google Search app is objectively justified.
- (995) First, Google has not demonstrated that the tying of the Google Search app with the Play Store and the tying of Google Chrome with the Play Store and the Google Search app is necessary to monetise its investment in Android and its non-revenue-generating apps.
- (996) In the first place, Google would still have been able to monetise substantially the Play Store. With the Play Store alone, Google already achieved revenues of approximately EUR [...] in 2011, EUR [...] in 2012, EUR [...] in 2013, EUR [...] in 2014, EUR [...] in 2015 and EUR [...] in 2016.¹⁰⁷⁴
- (997) In the second place, Google would still have benefitted from the valuable user data it gathers via Google Android devices, namely the information about the characteristics of the devices, such as hardware identifiers, the information about the device carrier, the device's time zone and which Google Accounts the user chooses to add to the device, location data as well as data from the usage of Google Play Services (e.g. contact information, demographic information, transactional records, etc.).¹⁰⁷⁵
- (998) In the third place, Google would still have benefitted from a significant stream of revenue from search advertising, given its market shares on PCs (see Section 9.5.1).

¹⁰⁷⁰ Google's response to the complaint by FairSearch, para 122 (Doc ID 1584) and Appendix 2 of Google's Response to the Statement of Objections, page 16 (Doc ID 8303-12).

¹⁰⁷¹ Google's Response to the Statement of Objections, Part Four, page 250, paragraph 208 (Doc ID 7117), Appendix 1 of Google's Response to the Statement of Objections, page 11, paragraph 38 (Doc ID 8303-2), and Appendix 2 of Google's Response to the Statement of Objections, page 16 (Doc ID 8303-12); Google's letter of 27 June 2018, page 1-2 (Doc ID 8949).

¹⁰⁷² Appendix 3 of Google's Response to the Statement of Objections, pages 15-17 (Doc ID 8303-13).

¹⁰⁷³ Google's Response to the Statement of Objections, Part Four, pages 250-251, paragraphs 209-210 (Doc ID 7117), Appendix 1, page 12 (Doc ID 8303-2), Appendix 3, page 17-19 and 21 (Doc ID 8303-13) and Appendix 2, page 16 (Doc ID 8303-12).

¹⁰⁷⁴ These include fees charged to developers as well as advertising revenues. Source: Annex A to Google's response to Questions 1 to 5 of request for information of 24 March 2017 (Doc ID 7955) and to Question 20 to 22 of request for information of 11 July 2014 (Doc ID 1268).

¹⁰⁷⁵ See Section 9.3.1.

- (999) In the fourth place, Google has not demonstrated that it would not have had an interest in developing Android in order to counter the risks to its search-advertising business model resulting from the shift to mobile (see Section 6.2).
- (1000) Second, Google has not demonstrated that the tying of the Google Search app with the Play Store and the tying of Google Chrome with the Play Store and the Google Search app is necessary in order to provide a consistent out-of-the-box experience for users.
- (1001) In the first place, while users may benefit from having a general search app or mobile web browser pre-installed on their Google Android devices, they do not benefit from Google requiring OEMs to pre-install the Google Search app and Google Chrome. On the contrary, users would benefit if OEMs had the flexibility to pre-install (exclusively) competitive products for some or all of their devices, allowing them to differentiate their products.
- (1002) In the second place, OEMs can satisfy user demand for an "out-of-the-box" experience by assembling different applications from different providers rather than the tying.
- (1003) In the third place, there are less restrictive means available to Google in order to compete with the "look-and-feel" of vertically integrated competitors, such as design and interface guidelines. In fact, Google itself issues guidelines to improve the integration of third-party apps in the Android OS.¹⁰⁷⁶
- (1004) Third, Google has not demonstrated that the tying of the Google Search app with the Play Store and the tying of Google Chrome with the Play Store and the Google Search app is necessary to avoid the need for Google to charge OEMs a fee for the Play Store.
- (1005) In the first place, given that it achieves substantial revenues through the Play Store Google's interest would be to have the Play Store installed on the largest possible number of Google Android devices.
- (1006) In the second place, the business model of many app stores is to provide their services for free to OEMs, with monetisation resulting from the revenues generated from the download of apps by users.¹⁰⁷⁷
- (1007) In the third place, the value of the Play Store to users is already reflected in the amount that they spend on apps that they download via the Play Store. The greater the amount that users spend on apps that they download via the Play Store, the greater the value to them of the Play Store.
- (1008) In the fourth place, Google could set lower license fees for lower-end devices, instead of setting the same fixed fee for all devices.

11.6. Duration of the infringements

- (1009) With regard to the tying of the Google Search app with the Play Store, the

¹⁰⁷⁶ See "*Up and running with material design*", available at <http://developer.android.com/design/index.html>, printed and saved on 12 April 2016.

¹⁰⁷⁷ See non-confidential replies to Question 2(iii) of the request for information of 21 October 2015 on app stores. Amazon's non-confidential response: "*Both mobile apps are pre-installed on certain Android and Blackberry devices pursuant to arrangements under which Amazon pays the carrier a revenue share or other fee in exchange for the pre-installation*" (Doc ID 8184).

Commission concludes that the start date of the infringement is 1 January 2011, the date as of which the Commission concludes that Google is dominant in the market for Android app stores (see Section 9.4). The infringement is ongoing.

- (1010) With regard to the tying of Google Chrome with the Play Store and the Google Search app, the Commission concludes that the start date of the infringement is 1 August 2012, the date when Google Chrome first became a mandatory Google app in a MADA (see Section 11.1). The infringement is ongoing.

12. ABUSE OF GOOGLE'S DOMINANT POSITION: THE LICENSING OF THE PLAY STORE AND THE GOOGLE SEARCH APP CONDITIONAL ON THE ANTI-FRAGMENTATION OBLIGATIONS IN THE AFAS

12.1. Principles

- (1011) In order for conduct that makes the conclusion of a contract concerning a product or service subject to the acceptance of a supplementary obligation to be liable to be caught by the prohibition under Article 102 TFEU, it is sufficient that the following conditions are met:¹⁰⁷⁸
- (1) the supplementary obligation is unrelated to the subject of the contract;
 - (2) the undertaking concerned is dominant in the market on which it offers the product or service;
 - (3) the supplementary obligation leaves the other party with no choice to obtain the product or service other than by accepting the supplementary obligation; and
 - (4) the supplementary obligation is capable of restricting competition.
- (1012) If these conditions are met, it is for the dominant undertaking, which bears the burden of proof, to demonstrate the existence of any objective justification for its conduct.¹⁰⁷⁹
- (1013) Even when there is a link between the supplementary obligation and the subject of the contract, this does not mean that these two are not dissociable in economic and commercial terms for the purpose of competition rules.¹⁰⁸⁰
- (1014) An undertaking in a dominant position is not entitled to take steps on its own initiative to eliminate products which, rightly or wrongly, it regards as unlawful.¹⁰⁸¹
- ### **12.2. Summary of the abusive conduct**
- (1015) Since at least 1 January 2011, Google makes the licensing of the Play Store and the Google Search app conditional on hardware manufacturers agreeing to the anti-fragmentation obligations in the AFAs.¹⁰⁸²
- (1016) The Commission concludes that this conduct constitutes an abuse of Google's

¹⁰⁷⁸ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraphs 859, 862, 864, 867, 869, and 1144-1167.

¹⁰⁷⁹ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraphs 859 and 869.

¹⁰⁸⁰ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 939.

¹⁰⁸¹ Case T-30/89 *Hilti v Commission*, EU:T:1991:70, paragraph 118; Case T-65/89 *BPB Industries and British Gypsum v Commission*, EU:T:1993:31, paragraph 118; Case T-128/98 *Aéroports de Paris v Commission*, EU:T:2000:290, paragraph 174.

¹⁰⁸² See Section 6.3.1.

dominant positions in the worldwide market (excluding China) for Android app stores and the national markets for general search services. This is because: (i) entering into the anti-fragmentation obligations is unrelated to the licensing of the Play Store and the Google Search app (see Section 12.3); (ii) Google is dominant in the worldwide market (excluding China) for Android app stores, and in the national markets for general search services (see Section 12.4); (iii) the Play Store and the Google Search app cannot be obtained without entering into the anti-fragmentation obligations (see Section 12.5); (iv) the anti-fragmentation obligations are capable of restricting competition (see Section 12.6).

- (1017) The Commission further concludes that Google has not demonstrated the existence of any objective justification for the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations (see Section 12.7).
- (1018) The Commission finally concludes that Google's intention to notify hardware manufacturers of the option to enter into an ACC in place of an AFA does not alter the fact that Google still makes the licensing of the Play Store and the Google Search app conditional on hardware manufacturers agreeing to the anti-fragmentation obligations in the AFAs (see Section 12.8).

12.3. The anti-fragmentation obligations are unrelated to the licensing of the Play Store and the Google Search app

- (1019) The Commission concludes that the anti-fragmentation obligations are unrelated to the licensing of the Play Store and the Google Search app.¹⁰⁸³
- (1020) First, the anti-fragmentation obligations are neither naturally nor by way of commercial usage part of a contract for the licensing of Android app stores or general search apps. For example, Microsoft and Amazon do not provide their app stores and general search app (in the case of Microsoft) to third parties under analogous or even similar obligations related to the use of a certain smart mobile OS.
- (1021) Second, the anti-fragmentation obligations constrain the freedom of action of hardware manufacturers with regard to the whole of their device portfolio and not just the devices on which the Play Store and the Google Search app are pre-installed.
- (1022) Third, hardware manufacturers have requested waivers from the anti-fragmentation obligations.¹⁰⁸⁴
- (1023) The Commission's conclusion that the anti-fragmentation obligations are unrelated to the licensing of the Play Store and the Google Search app is not affected by Google's claims that:
 - (1) the "*commercial norm*" is far more restrictive than the AFAs as Apple, Microsoft and BlackBerry prevent any incompatible variants of their OSs;
 - (2) the anti-fragmentation obligations facilitate the licensing of Google proprietary

¹⁰⁸³ The Play Store and the Google Search app are both licenced through the MADA. The same reasoning would apply if Google were to make the licensing of either only the Play Store or only the Google Search app subject to entering into the anti-fragmentation obligations, given that Google is dominant in the worldwide market (excluding China) for Android app stores and each national market for general search services.

¹⁰⁸⁴ See for example Google's internal documents submitted in response to the request for information of 11 July 2014 (Doc ID 1305-49014 and Doc ID 1751-01365).

- apps; and
- (3) the Commission's position is at odds with its own policy in the digital economy and its decision in *Microsoft* as the AFA's objective is to promote interoperability.¹⁰⁸⁵
- (1024) First, the fact that Apple, BlackBerry and Microsoft have adopted a proprietary business model and do not license their app stores and general search apps does not indicate that anti-fragmentation obligations are by way of commercial norm part of a contract for the licensing of Android app stores or general search apps.
- (1025) Moreover, and in any event, it is difficult to speak of "*commercial norm*" in relation to the licensing of Android app stores and general search apps when such licensing is [90-100]% controlled by Google.¹⁰⁸⁶ A commercial usage which is acceptable in a normal situation, on a competitive market, may not be acceptable in the case of a market where competition is already restricted.¹⁰⁸⁷
- (1026) Second, Google's claim that the anti-fragmentation obligations facilitate the licensing of Google proprietary apps is irrelevant for the assessment of whether the anti-fragmentation obligations are related to the licensing of the Play Store and the Google Search app.
- (1027) In the first place, while a contractual obligation may well facilitate the commercial success of a given product or service, this does not mean that such an obligation is by its nature or according to commercial usage connected to the product or service.
- (1028) In the second place, even if there were a link between the anti-fragmentation obligation, on the one hand, and app stores and general search apps on the other hand, this would not mean that the anti-fragmentation obligations are not dissociable from app stores and general search apps in economic and commercial terms for the purpose of the competition rules.¹⁰⁸⁸ This is confirmed by the following:
- (1) Google has developed a version of its general search app for iOS and Windows devices and does not make its distribution via the Apple AppStore and Windows Mobile Store subject to anti-fragmentation obligations;
 - (2) None of the general search service providers listed in Table 5, apart from Google, make the distribution of their general search apps via the Play Store subject to anti-fragmentation obligations; and
 - (3) The anti-fragmentation obligations cover both devices on which the Play Store and the Google Search app are pre-installed and devices on which the Play Store and the Google Search app are not pre-installed. This confirms that the anti-fragmentation obligations are unrelated to the licensing of the Play Store and the Google Search app, at least as regards devices on which the Play Store and the Google Search app are not pre-installed.
- (1029) In the third place, Google's claim is based on the assumption that anti-fragmentation obligations are necessary to protect the Android ecosystem. As discussed in Section

¹⁰⁸⁵ See Google's Response to the Statement of Objections, Part Three, pages 131-133, paragraphs 105-110 (Doc ID 7117).

¹⁰⁸⁶ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 940.

¹⁰⁸⁷ Case T-83/91 *Tetra Pak v Commission*, EU:T:1994:246, para 137.

¹⁰⁸⁸ Case T-201/04 *Microsoft v Commission*, EU:T:2007:289, paragraph 939.

12.7, this is not the case.

- (1030) Third, Google's anti-fragmentation obligations do not simply promote "interoperability" between Google Android devices. They also prevent AFA signatories from selling devices based on competing Android forks (see Sections 6.3.1 and 12.6.3).

12.4. Google is dominant in the worldwide market (excluding China) for Android app stores, and in the national markets for general search services

- (1031) As set out in Sections 9.4 and 9.5, the Commission concludes that since 2011, Google holds a dominant position in: (i) the worldwide market (excluding China) for Android app stores; and (ii) each national market for general search services in the EEA.

12.5. The Play Store and the Google Search app cannot be obtained without entering into the anti-fragmentation obligations

- (1032) The Commission concludes that hardware manufacturers cannot obtain the Play Store and the Google Search app without entering into the anti-fragmentation obligations.

- (1033) First, hardware manufacturers can pre-install the Play Store and the Google Search app on their Android devices only if they enter into the anti-fragmentation obligations. This is confirmed by the following internal Google documents:

- (1) An internal email by [Google Executive], dated 17 July 2014: "*AFA must always be signed with the MADA and this clearly states that only compatible Android devices can be distributed, regardless of whether GMS is included or not.*"¹⁰⁸⁹
- (2) An internal email by [Google Executive], dated 11 February 2011: "*No support from google without AFA. No access to our [software] without AFA. No GMS agreement without AFA (They want and will need a GMS agreement to enable the low cost project).*"¹⁰⁹⁰
- (3) An internal email by [Google Executive], dated 11 February 2011: "*I've been discussing with Larry [Page, founder of and at the time CEO at Google] what it means to run mobile at Google. Who develops Android apps is really his decision. But I think everyone understands how the android strategy hinges on us licensing a bundle of google apps in order to [...] stop people from forking android [...].*"¹⁰⁹¹

- (1034) Second, Google has acknowledged that it enters into a MADA, which grants a licence to pre-install the Play Store and the Google Search app, only with hardware manufacturers who have entered into the anti-fragmentation obligations. In particular, Google explained that "*Adoption of the AFA and baseline compatibility specifications is encouraged by Google through the offering of its own suite of*

¹⁰⁸⁹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1754-885).

¹⁰⁹⁰ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1754-740).

¹⁰⁹¹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1790-93).

*proprietary apps (i.e., the GMS) royalty-free under the Mobile Application Distribution Agreement ("MADA") to OEMs.*¹⁰⁹² In addition, Google stated that: "Signing the AFA will make commercial incentives available (while still optional), namely the royalty-free licensing of Google's proprietary apps under the terms of a MADA."¹⁰⁹³

- (1035) Google does not contest these findings.

12.6. Restriction of competition

- (1036) The Commission concludes that the licensing of the Play Store and the Google Search app on condition that hardware manufacturers enter into the anti-fragmentation obligations is capable of restricting competition. This is the following reasons:
- (1) Android forks constitute a credible competitive threat to Google (Section 12.6.1);
 - (2) Google actively monitors compliance with, and enforces, the anti-fragmentation obligations (Section 12.6.2);
 - (3) The anti-fragmentation obligations hinder the development of Android forks (Section 12.6.3);
 - (4) Compatible forks do not constitute a credible competitive threat to Google (Section 12.6.4); and
 - (5) The capability of the anti-fragmentation obligations to restrict competition is reinforced by the unavailability of Google's proprietary APIs to fork developers, which makes it more difficult for Android forks to attract app developers (Section 12.6.5);
 - (6) Google's conduct helps to maintain and strengthen Google's dominant position in each national market for general search services, deters innovation, and tends to harm, directly or indirectly, consumers (Section 12.6.6).

- (1037) Moreover, the Commission's conclusion that the licensing of the Play Store and the Google Search app on condition that hardware manufacturers enter into the anti-fragmentation obligations is capable of restricting competition is not affected by Google's claims regarding the need for the Commission to consider that licensing in its relevant economic and legal context (Section 12.6.7).

12.6.1. Android forks constitute a credible competitive threat to Google

- (1038) For the reasons set out in this Section, the Commission concludes that Android forks constitute a credible competitive threat to Google.
- (1039) First, the fact that the source code for AOSP is already available for free¹⁰⁹⁴ means that the investment and time required to fork Android would be lower than the

¹⁰⁹² See Google's response to the complaint by FairSearch, para. 38 (Doc ID 1584).

¹⁰⁹³ See Google's response to the complaint by FairSearch, para. 85 (Doc ID 1584). As explained in Section 6.3.2, in some instances, MADAs have been explicitly made conditional upon the respect of the terms in the AFA. In other cases, obligations equivalent to those contained in the AFAs were also included in the MADAs. The validity of the latter was conditional upon compliance with those obligations.

¹⁰⁹⁴ See "The Android Source Code", available at <https://source.android.com/source/>, printed and saved on 11 April 2016.

investment and time required to develop a completely new smart mobile OS. For example, Amazon stated that the cost of developing its forked version of Android, Fire OS, has been in the range of "*tens of millions of dollars*"¹⁰⁹⁵ and Alibaba's Aliyun, which according to Google is a forked version of Android, required [less than 50 million] of investments.¹⁰⁹⁶

- (1040) These investments, even if considerable, are significantly less than the investments required to develop an entirely new smart mobile OS. For example, Microsoft stated that: "*Total development costs for the modern Windows Phone platform through the end of June 2013 are [in the millions of dollars]. [...] Windows Phone 7, Microsoft's first release of its modern smartphone OS, took more than [0-4] years to develop.*"¹⁰⁹⁷
- (1041) Second, the similarities between Google Android and Android forks mean that many apps can run on Android forks with the need for no or only minor adjustments:
- (1) Microsoft stated: "*If that application exclusively calls APIs that are part of the native AOSP version of Android and also targets the same Android OS version as the fork uses, additional development work should be minimal because most Android forks retain the AOSP APIs.*"¹⁰⁹⁸
 - (2) Nokia also stated that approximately half of Google Android apps could work on devices running on its forked version of Android, Nokia X, without any adjustments: "*[...] our experience from the launch of the Nokia X line of devices, which ran an OS that was based on AOSP, was that while [approximately 90%] of apps developed for Android could be made to work on Nokia X devices, [approximately half] of these apps required modification for full functionality.*"¹⁰⁹⁹
- (1042) Third, for apps that require additional development for porting (see Section 12.6.5), it is generally¹¹⁰⁰ easier to port an app from Google Android to an Android fork than to port an app from Google Android to a different smart mobile OS:¹¹⁰¹
- (1) Rovio Entertainment stated: "*Porting an application from one Android fork to another is generally a relatively small effort, taking from a few man-days to a few man-weeks. However, if the target platform is missing some critical feature that is hard to replace, a port might take considerably longer. Porting from Android to a completely different OS, such as iOS, depends very much on how well the application has been insulated from the OS APIs (for example by using middle-ware). The effort will typically be larger than needed for ports between Android forks, ranging from a few man-days to several man-years*

¹⁰⁹⁵ See Amazon's non-confidential response to Question 19.1 of the request for information of 12 June 2013 to OS developers (Doc ID 4187).

¹⁰⁹⁶ See Alibaba's non-confidential response to Question 19.1 of the request for information of 12 June 2013 to OS developers (Doc ID 3910).

¹⁰⁹⁷ See Microsoft's non-confidential response to Question 19.1 of the request for information of 12 June 2013 to OS developers (Doc ID 3794).

¹⁰⁹⁸ See Microsoft's non-confidential response to Question 3 of the request for information of 29 June 2015 to app developers (Doc ID 2040).

¹⁰⁹⁹ See Nokia's non-confidential response to Question 3 of the request for information of 29 June 2015 to app developers (Doc ID 4360).

¹¹⁰⁰ See, however, Section 12.6.5 in relation to APIs.

¹¹⁰¹ See responses to Questions 1 and 2 of the request for information of 29 June 2015 to app developers.

- [...].¹¹⁰²
- (2) Garmin Ltd. ("Garmin") stated: "*The efforts to write or convert an App in a complete different OS (like iOS or WindowsPhone) varies significantly from OS to OS or case by case. In average it consumes 5 times more cost, efforts and resources than a port to an Android fork.*"¹¹⁰³
- (3) MapQuest stated: "*Converting an app for a fork typically requires an additional 5-10% above the cost /time required to develop the app originally for Android. The process is much the same but uses different services. When "converting" to a different operating system, it takes virtually 100% as long as the development time for the original app, because MapQuest builds its apps and features from scratch.*"¹¹⁰⁴
- (1043) The Commission's conclusion that Android forks constitute a credible competitive threat to Google is not affected by Google's claims that:
- (1) no demand exists for licensing "purpose-built"¹¹⁰⁵ incompatible Android variants such as Amazon Fire OS and Aliyun;¹¹⁰⁶
 - (2) Android licensors would have an incentive to ensure full compatibility with Google's CDD and CTS regardless of the AFAs;¹¹⁰⁷ and
 - (3) "*Nokia recognized the commercial value of CDD compliance and worked with us to make the Nokia X compatible, even though Nokia had no AFA obligations*".¹¹⁰⁸
- (1044) First, there was demand from certain OEMs to commercialise devices running Android forks such as Amazon Fire OS and Aliyun. The anti-fragmentation obligations prevented, however, developers of Android forks from satisfying that demand (see Section 12.6.3).
- (1045) Second, absent the AFAs, OEMs would not necessarily have an incentive to ensure full compatibility with Google's CDD and CTS.
- (1046) In the first place, it is true that Android fork developers have an incentive to limit incompatibilities so as to facilitate the porting by app developers of their apps from Google Android. This is confirmed by the following:

¹¹⁰² See Rovio Entertainment's non-confidential response to Question 5 of the request for information of 29 June 2015 to app developers (Doc ID 4277).

¹¹⁰³ See Garmin's non-confidential response to Question 5 of the request for information of 29 June 2015 to app developers (Doc ID 1997).

¹¹⁰⁴ See MapQuest's non-confidential response to Question 5 of the request for information of 29 June 2015 to app developers (Doc ID 4503).

¹¹⁰⁵ Google defines "purpose built" forks as those which "*deliberately substitute different APIs and hardware requirements for those the CDD specifies and promote those differences to developers and users.*" (see Google's Response to the Statement of Objections, page 122, paragraph 75 (Doc ID 7117)). As examples of these "purpose built" forks, Google refers to Fire OS and Aliyun.

¹¹⁰⁶ See Google's Response to the Statement of Objections, Part Three, pages 135-141, paragraphs 118-135 (Doc ID 7117).

¹¹⁰⁷ Google's Response to the Statement of Objections, Part Three, pages 135-136, paragraph 120 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Two, pages 42-43, paragraphs 17-19 (Doc ID 8598).

¹¹⁰⁸ See Google's Response to the Statement of Objections, Part Three, page 140, paragraph 132 (Doc ID 7117).

- (1) Nokia, which stated that: "*Nokia's goal for the AoL project was to employ AOSP based Linux as the primary low and mid-tier OS, to offer Nokia services as opposed to services of the platform owner like Google, and to maximize compatibility between the AOSP OS on Nokia X devices and proprietary Android, such that applications developed for Android would be able to function (as unchanged as possible) on Nokia's devices*";¹¹⁰⁹
 - (2) Microsoft, which stated that: "*Because OEMs who create Android forks want to make the porting of existing Android applications as easy as possible for third-party developers, OEMs creating Android forks are highly incentivized to retain API compatibility with AOSP Android and their operating systems largely resemble official Android OEM devices (with the exception of Google Play Services support for developers)*";¹¹¹⁰ and
 - (3) The fact that, in July 2013, 75% of the apps in the Play Store were compatible with Fire OS,¹¹¹¹ even though, as recognised by Google, Amazon Fire OS is not a compatible fork.
- (1047) In the second place, however, certain incompatibilities may be desirable as they could allow the creation of innovative features that may be valued by users and app developers. As described in Section 6.2.2.1.I, Google created Android by breaking compatibility with Java.
- (1048) In the third place, if Android licensors did indeed have an incentive to ensure full compatibility with Google's CDD and CTS regardless of the AFAs, it would have been unnecessary for Google to make the licensing of the Play Store and the Google Search app conditional on hardware manufacturers agreeing to the anti-fragmentation obligations. However, Google itself claims that "*AFAs are indispensable for Android to succeed*".¹¹¹²
- (1049) Third, contrary to what Google claims, Nokia did not work with Google to make the Nokia X fully compatible with Google's CDD and CTS, even though Nokia had no AFA obligations. Rather, as Nokia explained: "[...] *Nokia's assessment at the time of developing the Nokia X devices was that meeting Google's compatibility requirements (and signing the agreements) would have put excessive limitations on Nokia's differentiation intent*".¹¹¹³ Indeed, [information concerning bilateral commercial negotiations and discussions].¹¹¹⁴
- 12.6.2. Google actively monitors compliance with, and enforces, the anti-fragmentation obligations**
- (1050) The Commission concludes that Google actively monitors compliance with, and

¹¹⁰⁹ See Nokia's non-confidential response to the request for information to OEMs of 18 July 2014, paragraph 28 (Doc ID 8231).

¹¹¹⁰ See Microsoft's non-confidential response to Question 16 of the request for information to app developers of 29 June 2015 (Doc ID 2040).

¹¹¹¹ See Amazon's non-confidential response to Question 3 of the request for information to app developers of 29 June 2015 (Doc ID 4188).

¹¹¹² Google's Response to the Statement of Objections, Part Three, page 113, Section C (Doc ID 7117).

¹¹¹³ See Nokia's non-confidential response to the request for information of 18 July 2014, paragraph 32 (Doc ID 8231).

¹¹¹⁴ See Nokia's non-confidential response to the request for information of 18 July 2014, paragraphs 33-34 (Doc ID 3993): [information concerning bilateral commercial negotiations and discussions].

enforces, the anti-fragmentation obligations.

- (1051) First, Google has intervened in a number of cases to enforce compliance with the anti-fragmentation obligations. This is because, in the words of [Google Executive], "*Marketing a non-compatible device is literally an act of war in Android-ville.*"¹¹¹⁵
- (1052) For example, at the beginning of 2011, [AFA signatory] launched devices in China based on its own [...] forked version of Android. After "*some serious communication with [AFA signatory] team*",¹¹¹⁶ Google started "*pushing hard to ask [AFA signatory] give up their so called [...]*"¹¹¹⁷ and eventually obtained a commitment from [AFA signatory] to "*remove all the non compatible features in the next build*".¹¹¹⁸
- (1053) In the meantime, Google advised [app developer], one of the most successful games developed for smart mobile devices, to refrain from implementing certain modification to their [...] app requested by [AFA signatory] to ensure compatibility with [...].¹¹¹⁹
- (1054) Similarly, in September 2012, "*Acer (an AFA signatory) adopted Aliyun OS which turned out to be a "forked" version of Android*"¹¹²⁰ for the launch of the A800 smartphone in China. Upon learning of Acer's conduct, Google approached Acer requesting clarifications on what it thought was a potential breach of the AFA.¹¹²¹ In the words of [Google Executive], Acer's reaction was [...].¹¹²² Acer cancelled the upcoming press conference for the launch of the device that was planned to be based on Aliyun, and ultimately abandoned the project.¹¹²³ As a reaction, Alibaba publicly stated: "*Our partner received notification from Google that if the new product launch with Aliyun went ahead, Google would terminate Android product cooperation and related technical authorization with Acer*".¹¹²⁴ Google publicly reacted by stating that: "[Acer has] committed to building one Android platform and to not ship non-compatible Android devices [...]. Non-

¹¹¹⁵ See email from [Google Executive] of 28 February 2011 (Doc ID 1373-1979).

¹¹¹⁶ See Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1751-01365).

¹¹¹⁷ See Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1305-42438).

¹¹¹⁸ See Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1751-01365).

¹¹¹⁹ See Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1305-42438).

¹¹²⁰ Google's response to the complaint by FairSearch, paragraph 91 (Doc ID 1584).

¹¹²¹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1364-2114).

¹¹²² Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1754-355).

¹¹²³ See Bruce Einhorn, "The Acer Smartphone That Never was" (15 September 2012), available at <http://www.bloomberg.com/bw/articles/2012-09-13/the-acer-smartphone-that-never-was>, printed and saved on 11 April 2016.

¹¹²⁴ See Rip Empson, "Alibaba VP In Response To Google Smackdown: "Will Someone Please Ask Google To define Android?" (14 September 2012), available at <http://techcrunch.com/2012/09/14/alibaba-vp-in-response-to-google-smackdown-will-someone-please-ask-google-to-define-android/>, printed and saved on 11 April 2016.

compatible versions of Android, like Aliyun, weaken the ecosystem."¹¹²⁵

- (1055) Second, Google has terminated, or threatened to terminate, its Android-related agreements with hardware manufacturers that do not comply with the anti-fragmentation obligations.
- (1056) A first example was in 2009 when [AFA signatory] sought to include in its AFA wording that would limit the anti-fragmentation obligations. In response, [Google Executive], stated: "*I'd like you and [Google executive] (cc'd) [both Google employees] to sit down with them and explain they would be in violation of the [AFA] if they ship an incompatible device, and if they ship ANY non-compatible device then I'd like the GMS license for all devices to terminate.*"¹¹²⁶
- (1057) A second example was in 2011 when [AFA signatory], began to sell devices based on Aliyun OS in China.¹¹²⁷ In response, Google contacted [AFA signatory] to remind it of its obligations under the AFA. As described by [Google Executive], "*We should work with [AFA signatory] to address the issues, but if they refuse to work with us on this, we should just cut them off. Regardless of whether they knew Alibaba was based on Android, they know now. They need to ensure every Alibaba device they ship is fully compatible. If the devices are not compatible, we'll go through the typical escalation path (myself, [Google Executive]), and if we're unable to reach resolution, we'll have to cut them off.*" [Google Executive] also made clear that "[...] we cut off the partners who don't fulfill their obligations under our agreements: no GMS, no early access, no technical support -- nothing."¹¹²⁸ Eventually, in this case, Google "ended up terminating [AFA signatory] MADA."¹¹²⁹
- (1058) A third example was also in 2011 when [AFA signatory] was considering selling a non-compatible device based on a forked version of Android developed by [AFA signatory]. In response, [Google Executive], noted that if [AFA signatory] proceeded, this would be "*Probably a good opportunity to set an example on what the consequences are if they chose to ignore protecting compatibility in Android*".¹¹³⁰ In response, [Google Executive], instructed: "*Cut them off if they fragment. Including revoking Gms license*".¹¹³¹
- (1059) A fourth example was also in 2011 when Google learned that [AFA signatory] and [AFA signatory] were considering manufacturing as ODMs Amazon's Kindle Fire tablet based on Fire OS. In response, [Google Executive], stated in an internal email:

¹¹²⁵ See James Trew, "Google wants 'better compatibility' for Android, Alibaba says 'Aliyun is separate', Acer takes the brunt of it" (15 September 2012), available at <http://www.engadget.com/2012/09/15/google-wants-better-compatibility-for-android/>, printed and saved on 11 April 2016.

¹¹²⁶ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1760-615).

¹¹²⁷ See Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1370-1585).

¹¹²⁸ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1751-1344).

¹¹²⁹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1364-2114).

¹¹³⁰ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1305-49014).

¹¹³¹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1305-49014).

*"I'd suggest we reach out to [AFA signatory] explaining they are in breach and informally to [AFA signatory] to reinforce what compatibility is about. I met the CEO and Chairmen of both companies at a gathering together with Eric [Schmidt, at the time CEO of Google] in [...] last week and both companies were eager to connect with us in general. I predict they know they have reason to worry, but drool over the amazon volumes as the opportunistic ODMs they are."*¹¹³²

- (1060) Third, since late 2011, Google has included a clause in the MADAs pursuant to which MADA signatories needed to submit CTS reports to prove device compatibility, even for devices that are not GMS devices, i.e. which do not pre-install any of Google's proprietary apps.¹¹³³ Google can use these reports to ensure that no device launched by a MADA signatory is based on a fork.
- (1061) Fourth, Google itself informally tests the compatibility of Android devices. For example, in correspondence with Huawei, Google refers to a device built by [AFA signatory] for the [MNO]. [Google Executive], states "*We bought this device from a shop [...]. I will check the device with our [AFA signatory], the user agent definitely is not compatible with CDD. This is a very serious issue we will push [AFA signatory] to solve this issue.*"¹¹³⁴
- (1062) Fifth, any waiver of the anti-fragmentation obligations is granted sporadically¹¹³⁵ and at Google's full discretion.¹¹³⁶ As confirmed by Google,¹¹³⁷ there is no example of an exempted device which runs on a fork developed by a third party, such as Amazon or Alibaba.
- (1063) The Commission's conclusion that Google actively monitors compliance with, and enforces, the anti-fragmentation obligations is not affected by Google's claims that:
- (1) the language used by Google in its internal and external correspondence simply indicates that Google helps partners to ensure that their devices are compatible and more attractive to developers and users;¹¹³⁸
 - (2) OEMs and app developers have confirmed to the Commission that fragmentation is a threat to the Android ecosystem;¹¹³⁹

¹¹³² See email by [Google Executive] of 19 November 2011 (Doc ID 1305-50364).

¹¹³³ See Google's internal document submitted in response to the request for information of 11 July 2014, Section 2.7 of the MADA template for 2011 attached to [Google Executive] email of 14 December 2014, (Doc ID 1751-287). See also Google's internal documents submitted in response to the request for information of 11 July 2014, emails from [Google Executive] of 14 December 2011 (Doc ID 1751-287), and from [Google Executive] of 10 December 2012 (Doc ID 1751-287).

¹¹³⁴ See Annex XII attached to [AFA signatory]'s non-confidential response to the request for information of 17 July 2014 [...].

¹¹³⁵ See Google's internal documents submitted in response to the request for information of 11 July 2014, email from [Google Executive] of 1 March 2011 (Doc ID 1364-2044) ("we rarely give exemptions"); and email from [Google Executive] of 11 February 2011 (Doc ID 1371-1561) ("This is rather a very serious issue for Google. We treat incompatible devices very seriously and exceptions are rarely given.")

¹¹³⁶ For example, see AFA between Google and [AFA signatory], clause 2.1, "Except as may be specifically authorised by Google in writing and in Google's sole discretion, the following terms shall apply: [...]" [...].

¹¹³⁷ Google's Response to the Statement of Objections, Part Three, page 133, paragraph 109 (Doc ID 7117).

¹¹³⁸ Google's Response to the Statement of Objections, Part Three, page 143, paragraph 141 (Doc ID 7117).

¹¹³⁹ Google's Response to the Statement of Objections, Part Three, pages 111-113, paragraph 40 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Two, page 36-40 (Doc ID 8598).

- (3) Google objected to [AFA signatory], [AFA signatory], [AFA signatory], [AFA signatory] and [AFA signatory] (see recital (1107)) devices because of hardware deficiencies.¹¹⁴⁰ Moreover, Google exceptionally granted AFA exemptions to [AFA signatory] and [AFA signatory] devices;¹¹⁴¹
 - (4) it is irrelevant that, in September 2012, Google approached Acer regarding the latter's intended launch of the A800 smartphone in China based on Alibaba's Aliyun OS because the Aliyun OS is not part of the relevant worldwide (excluding China) market for licensable smart mobile OS;¹¹⁴²
 - (5) Google objected to Aliyun devices because they supported pirated versions of Google apps;¹¹⁴³
 - (6) even if Google were to monitor and enforce compliance with CDD and CTS, the Commission has failed to identify individual CDD/CTS clauses that would restrict competition or to cite examples in which Google modified such clauses to hinder competition;¹¹⁴⁴
 - (7) not only are CDD and CTS public documents, but Google helps OEMs to comply with CDD and CTS requirements by drafting new CDD releases in response to partner feedback and not retroactively making CDD and CTS more restrictive;¹¹⁴⁵
 - (8) any monitoring and/or enforcement by Google of the anti-fragmentation obligations does not prevent AFA signatories from supplying non-Android devices;¹¹⁴⁶ and
 - (9) any monitoring and/or enforcement of the anti-fragmentation obligations does not, in any event, prevent fork developers from referencing to Android and using the Android robot.¹¹⁴⁷
- (1064) First, the language used by Google in its internal and external correspondence is suggestive of Google imposing and enforcing the anti-fragmentation obligations rather than of helping partners to ensure that their devices are compatible and more attractive to developers and users (e.g. "*Marketing a non-compatible device is literally an act of war in Android-ville*"¹¹⁴⁸; "*we cut off the partners who don't fulfill their obligations under our agreements: no GMS, no early access, no technical*

¹¹⁴⁰ See Google's Response to the Statement of Objections, Part Three, page 143, paragraph 141 and footnote 551 (Doc ID 7117).

¹¹⁴¹ Google's Response to the Statement of Objections, Part Three, page 143, paragraph 141 (Doc ID 7117).

¹¹⁴² Google's Response to the Statement of Objections, Part Three, pages 140-141, paragraph 133 (Doc ID 7117).

¹¹⁴³ See Google's Response to the Statement of Objections, Part Three, page 141, paragraph 134 (Doc ID 7117).

¹¹⁴⁴ See Google's Response to the Statement of Objections, Part Three, page 141, paragraph 135 and page 144, paragraph 142 (Doc ID 7117).

¹¹⁴⁵ Google's Response to the Statement of Objections, Part Three, pages 102-104, paragraph 16; page 142, paragraph 140 (Doc ID 7117).

¹¹⁴⁶ Google's Response to the Statement of Objections, Part Three, page 109, paragraphs 32-33 (Doc ID 7117).

¹¹⁴⁷ Google's Response to the Statement of Objections, Part Three, page 108, paragraph 31 (Doc ID 7117).

¹¹⁴⁸ See email from [Google Executive] of 28 February 2011 (Doc ID 1373-1979).

support -- nothing"¹¹⁴⁹).

- (1065) Second, the fact that certain OEMs and app developers have informed the Commission that fragmentation is a threat to the Android ecosystem does not mean that AFAs are the appropriate means to tackle alleged issues relating to fragmentation.
- (1066) Google attached to its Response to the Statement of Objections 36 letters from OEMs and app developers supporting Google's views about the dangers of fragmentation.¹¹⁵⁰ However the probative value of such letters is limited: 20 out of 36 of the letters are based on an identical template and they were not submitted to the Commission independently by their authors, but through the intermediary of Google. It appears likely that the authors of the 36 letters were influenced by Google when drafting or signing those letters.
- (1067) Third, Google has not submitted any evidence to support its claim that it objected to [AFA signatory], [AFA signatory], [AFA signatory], [AFA signatory] and [AFA signatory] devices because of hardware deficiencies:
- (1) In the case of [AFA signatory], the email referred to by Google concedes that "*most of the Android app can run on [[device name] devices]*". The alleged hardware deficiencies do not therefore seem to have prevented most of the Android apps from running on [AFA signatory]'s fork;¹¹⁵¹
 - (2) In the case of [AFA signatory], the statement by a Google employee according to which "*our mutual goal is to have all phones be compatible and able to run applications*" does not demonstrate that [AFA signatory]'s devices were affected by hardware deficiencies.¹¹⁵² It rather only explains that, from Google's perspective, [AFA signatory] should have complied with the anti-fragmentation obligations;
 - (3) In the case of [AFA signatory], the correspondence does not demonstrate that [AFA signatory]'s products were affected by hardware deficiencies. It rather suggests that [AFA signatory]'s choices were due to an intention to differentiate its products from other Google Android devices. This is confirmed by statements by [Google Executive] ("*I think they understand but are culturally inclined to ignore/believe they can wiggle through an unreasonable exception. [...] For the DPF I am not sure what the gap is, they should be able to build it compatibly - but probably commercially chose not to.*") and by [Executive] of [AFA signatory]: ("*[AFA signatory] needs the function to be different [from] others*");
 - (4) In the case of [AFA signatory], Google admits that it did not object to this

¹¹⁴⁹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1751-1344).

¹¹⁵⁰ See Annex I to Google's Response to the SO. See also Google's letter of 27 June 2018, pages 2 and 4 (Doc ID 8949).

¹¹⁵¹ Email from [Google Executive] to [Google Executive], "*Re: [AFA signatory] AFA exception details update*," March 3, 2011, GOOG-ECDRD-00367006.R, pp. 1-2 (Doc ID 1751-1365).

¹¹⁵² See Email from [Google Executive] to [Google Executive] et al., October 23, 2009, GOOG-ECDRD-00404894 (Doc ID 8303-61).

- device due to hardware deficiencies.¹¹⁵³ Rather, Google objected to it because of a differentiated and customised user interface that was implemented upon request of a MNO, [...]; and
- (5) In the case of [AFA signatory], Google has not submitted any evidence to support its claim that [AFA signatory]'s devices were affected by hardware deficiencies. If anything, the internal correspondence quoted at recital (1107) suggests that [AFA signatory]'s intention was to create a tablet to compete against other Android-based tablets (i.e. to "*create anti-Kindle Fire device, e.g. using AOSP code without Google's approval & Android Compatibility, and building our own services & apps on top of it.*")
- (1068) Moreover, it is irrelevant that Google exceptionally granted AFA exemptions to [AFA signatory] and [AFA signatory] devices as those exemptions were only temporary and were explicitly granted under the condition that [AFA signatory] and [AFA signatory] would comply with the anti-fragmentation obligations going forward.¹¹⁵⁴
- (1069) Fourth, the fact that Google approached Acer regarding the latter's intended launch of the A800 smartphone in China based on Alibaba's Aliyun OS is a relevant example of how Google enforces the anti-fragmentation obligations, regardless of the geographic market to which that conduct relates. Moreover, Alibaba had ambitions to develop its Aliyun business across the world, including in the EEA.¹¹⁵⁵
- (1070) Fifth, it is irrelevant that Google objected to Aliyun devices because they supported pirated versions of Google apps. If Google, rightly or wrongly, regarded those devices as infringing its intellectual property rights, it should have pursued those infringements by means of the remedies provided by intellectual property laws and not by means of the anti-fragmentation obligations.
- (1071) Sixth, the Commission is not required to identify specific CDD/CTS clauses that restrict competition or to cite examples in which Google modified such clauses to hinder competition. It is sufficient that the Commission has established that the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations in the AFAs is capable of restricting competition.
- (1072) Moreover, and in any event, Google may change the specific CDD/CTS clauses at any time, given that it has the right to amend them unilaterally.¹¹⁵⁶
- (1073) Seventh, it is irrelevant that: (i) CDD and CTS are public documents; (ii) Google allegedly drafts new CDD releases in response to partner feedback and (iii) Google would not retroactively make CDD and CTS more restrictive. This is for the following reasons:
- (1) Google has the right to amend the CDD/CTS parameters unilaterally, including, in principle, the right to change these parameters retroactively;¹¹⁵⁷
 - (2) Google can and does amend in a more restrictive sense CDD and CTS

¹¹⁵³ See Google's Response to the Statement of Objections, Part Three, page 143, footnote 551 (Doc ID 7117).

¹¹⁵⁴ Google's Response to the Statement of Objections, Part Three, page 143, paragraph 141 (Doc ID 7117).

¹¹⁵⁵ See [...].

¹¹⁵⁶ See Section 6.3.1.

¹¹⁵⁷ See Section 6.3.1.

parameters. For example, it has been reported that in the Android Nougat CDD Google introduced stringent requirements concerning user interface¹¹⁵⁸ and graphics,¹¹⁵⁹ and

- (3) Google has a wide margin in the interpretation of the parameters defining compatibility. An email dated 6 August 2010 from [Google Executive], stated that: "*It's not like it isn't obvious to the OEMs that we are using compatibility as a club to make them do things we want, and that just weakens their motivation to be compatible.*"¹¹⁶⁰
- (1074) Eighth, it is irrelevant that AFAs allow signatories to supply non-Android devices¹¹⁶¹ as competing licensable smart mobile OSs do not constitute a credible alternative to Android.¹¹⁶² Google was only able to point to 21 instances of devices pre-installing a licensable smart mobile OS different from Android.¹¹⁶³ As of 5 May 2017, approximately a third of those devices have been discontinued.¹¹⁶⁴
- (1075) Ninth, it is irrelevant that fork developers can reference Android and use the Android robot.¹¹⁶⁵ This is because, despite their ability to reference Android and use the Android robot, fork developers are in any event prevented by the anti-fragmentation obligations from finding distribution channels that would enable a rapid scaling up of their operations (see Sections 12.6.3.2 and 12.6.3.3).

12.6.3. *The anti-fragmentation obligations hinder the development of Android forks*

- (1076) The Commission concludes that the anti-fragmentation obligations hinder the development of Android forks in a number of ways.

12.6.3.1. Coverage, duration and scope of the AFAs

- (1077) As discussed in Section 6.3.1, Google has concluded AFAs with more than 100 distinct hardware manufacturers, software developers and other entities. The coverage of these agreements is substantial, as all the major players at each level of the smart mobile device supply chain have entered into these agreements.
- (1078) Furthermore, the duration of the AFAs is long, and Google requires that AFAs be renewed as soon as the remaining duration of the agreement falls below [0-5] years (see Section 6.3.1).
- (1079) In addition, in the case where a hardware manufacturer would be interested in selling even only one GMS device, it would have to commit not to pre-install an Android fork on all other devices.

¹¹⁵⁸ See "Sony is not to blame for leaving the Xperia Z3 off the Android Nougat list", available at <http://www.xperiablog.net/2016/08/30/sony-is-not-to-blame-for-leaving-the-xperia-z3-off-the-android-nougat-list/>, saved and printed on 13 June 2018.

¹¹⁵⁹ See "Google Forbids OEMs From Customizing Android Nougat's Notification System", available at <http://wccftech.com/google-nougat-notification-system/>, saved and printed on 10 July 2018.

¹¹⁶⁰ See Google's internal documents submitted in response to the request for information of 11 July 2014, email from [Google Executive] of 6 August 2010 (Doc ID 1305-3564).

¹¹⁶¹ Google's Response to the Statement of Objections, Part Three, page 109, paragraphs 32-33 (Doc ID 7117).

¹¹⁶² See Section 9.3.

¹¹⁶³ See Appendix 13 to Google's Response to the Statement of Objections (Doc ID 8303-6).

¹¹⁶⁴ On the basis of public information, this appears to be the case for the following models: Acer Allegro, HP Palm Pre 2, HTC 7 Surround, Samsung Focus, Sharp FX and Dell Venue Pro.

¹¹⁶⁵ Google's Response to the Statement of Objections, Part Three, page 108, paragraph 31 (Doc ID 7117).

- (1080) Google does not contest these findings.
- 12.6.3.2. The anti-fragmentation obligations prevent developers of Android forks from finding distribution channels that would enable a rapid scaling up of their operations
- (1081) The anti-fragmentation obligations prevent developers of Android forks from finding distribution channels that would enable a rapid scaling up of their operations. Such rapid scaling up is important in view of the indirect network effects which characterise smart mobile OSs (see Section 9.3.2).
- (1082) The most immediate and natural strategy for a developer of an Android fork would be to enter into agreements for the licensing of its fork with OEMs already active in the supply of smart mobile devices. This is because OEMs possess the technical knowledge to develop smart mobile devices, and a recognisable brand in the eyes of users that would increase the likelihood of a successful commercialisation of those devices.
- (1083) A strategy based on the licensing of a fork and the rapid scaling up of the business would, therefore, constitute a serious competitive threat to Google. As pointed out by [Google Executive], in the context of the opportunity to grant a GMS licence to Cyanogen Inc. ("Cyanogen"), the developer of a compatible fork: "*Actually, the more I think about this, [the more] I'm getting nervous. Basically we are allowing a software company to distribute a version of our OS without having to be a hardware manufacturer themselves. Basically, they are operating much like we do, with the goal of getting their software ("unencumbered" by hardware) scaled to as many devices as possible. In some ways doesn't that make them more dangerous than Amazon?*"¹¹⁶⁶
- (1084) The anti-fragmentation obligations prevent, however, the competitive threat of a strategy based on the licensing of a fork and the rapid scaling up of the business from materialising.
- (1085) An example of this is provided by Alibaba's failure to gain traction outside China, in spite of its ambitions to develop its Aliyun business across the world, including in the EEA.¹¹⁶⁷ As discussed in Section 12.6.2, "*In September 2012, Google objected to the launch of the intended Acer A800 product incorporating YunOS*".¹¹⁶⁸ In spite of the wide availability of Aliyun within China, Alibaba has failed to establish a meaningful presence outside China [...].¹¹⁶⁹
- (1086) The Commission's conclusion that the anti-fragmentation obligations prevent developers of Android forks from finding distribution channels that would enable a rapid scaling up of their operations is not affected by Google's claims that:

¹¹⁶⁶ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1751-1058). Eventually, Google decided not to provide a licence to Cyanogen, despite Cyanogen OS being compatible, and to provide a GMS licence to the hardware manufacturer selling phones based on Cyanogen OS instead, as "*We are not comfortable licensing GMS to be distributed as part of other software distributions.*" See Google's internal document submitted in response to the request for information of 11 July 2014, email by [Google Executive] of 5 February 2014 (Doc ID 1751-1058).

¹¹⁶⁷ See [...]

¹¹⁶⁸ See Alibaba's non-confidential response to Question 25.1 of the request for information of 12 June 2013 (Doc ID 6122).

¹¹⁶⁹ See [...].

- (1) AFAs are intended to prevent only "corner cutting"¹¹⁷⁰ by OEMs and not purpose-built incompatible forks;¹¹⁷¹
 - (2) While the Commission recognised in the SO that Cyanogen OS is "*a competitive threat*" to Android, it fails also to recognise that Cyanogen OS, as a compatible fork, is helped, not hindered, by compliance with the CDD and CTS;¹¹⁷² and
 - (3) Notwithstanding the anti-fragmentation obligations and the fact that it is "*notorious for featuring pirated versions of popular apps*"¹¹⁷³, Aliyun has developed a meaningful presence in China.
- (1087) First, as Google acknowledges, the anti-fragmentation obligations actually prevent not only "corner cutting" versions of Android but also purpose-built forks.¹¹⁷⁴ In this regard, Google's alleged intent of preventing "corner cutting" is irrelevant.
- (1088) Second, the Commission did not recognise in the SO that Cyanogen posed "*a competitive threat*" to Google given that Cyanogen pre-installed Google proprietary apps in its devices and had to comply with the terms set by Google.¹¹⁷⁵ Rather, the Commission simply referred to the development of Cyanogen OS as an example confirming that Google is concerned about strategies based on the licensing of a fork and the rapid scaling up of the business. In any event, as of December 2016 Cyanogen stopped operations and ceased developing Cyanogen OS.¹¹⁷⁶
- (1089) Third, it is irrelevant that Aliyun has developed a meaningful presence in China notwithstanding the anti-fragmentation obligations or that Aliyun's devices may be notorious for featuring pirated versions of popular apps.
- (1090) In the first place, as noted in Section 8.2, conditions of competition are different in China.
- (1091) In the second place, as an undertaking in a dominant position, Google is not entitled to take steps on its own initiative to eliminate Aliyun's products which, rightly or wrongly, it considers as featuring pirated versions of popular apps.

12.6.3.3. The example of Amazon Fire OS

- (1092) Another illustration of the fact that the anti-fragmentation obligations prevent developers of Android forks from finding distribution channels that would enable a rapid scaling up of their operations is the example of Fire OS, a forked version of

¹¹⁷⁰ According to Google, "*A corner-cutting OEM, by contrast, does not seek to tap into a distinct ecosystem. Rather, corner cutters seek to maintain compatibility with the CDD except where the OEM decides to jettison a CDD-specified feature as not worth the costs (for example, testing costs).*" (Google's Response to the Statement of Objections, Part Three, page 122, paragraph 75 (Doc ID 7117)).

¹¹⁷¹ Google's Response to the Statement of Objections, Part Three, pages 121-123, paragraphs 72-78 (Doc ID 7117).

¹¹⁷² Google's Response to the Statement of Objections, Part Three, page 106, paragraph 24 (Doc ID 7117).

¹¹⁷³ Google's Response to the First Letter of Facts, Part Two, page 57, paragraphs 71-72 (Doc ID 8598).

¹¹⁷⁴ Google's Response to the Statement of Objections, Part Three, page 133, paragraph 109 (Doc ID 7117).

¹¹⁷⁵ As explained in footnote 1166, Google provided a GMS licence to the hardware manufacturer selling phones based on Cyanogen OS. As such, Cyanogen had to comply with the terms of the AFAs and MADAs when distributing devices manufactured by that hardware manufacturer, even if it had not itself entered into any such agreement with Google.

¹¹⁷⁶ See <https://techcrunch.com/2016/12/24/cyanogen-failed-to-kill-android-now-it-is-shutting-its-services-and-os-as-part-of-a-pivot/>, saved and printed on 13 June 2018.

Android developed by Amazon that is generally considered as a high-quality fork of Android.¹¹⁷⁷ Google considers Fire OS as an example of "purpose built" Android fork, which "*deliberately substitute different APIs and hardware requirements for those the CDD specifies and promote those differences to developers and users.*"¹¹⁷⁸

- (1093) In addition to pre-installing Fire OS on its own branded tablets called "Kindle Fire" and branded smartphones called "Fire phone", Amazon entered into discussions with a number of important OEMs concerning the licensing of Fire OS as of early 2012.¹¹⁷⁹
- (1094) While those discussions continued throughout the course of 2012-2013,¹¹⁸⁰ they did not progress because of the concern of the OEMs that selling devices with Fire OS would be a breach of the provisions of their current or soon to be agreed AFAs with Google:
- (1) [AFA signatory] showed interest in cooperating with Amazon but expressed concerns about the anti-fragmentation obligations in its AFA. As noted in an internal email of 8 January 2013 from an Amazon employee, "[AFA signatory]: [...] *They were forthcoming and open about their concerns. They are interested in pursuing if we can solve for Anti-Fragmentation issues. [...] Anti-Fragmentation Issue: This is the main issue for them. They confirmed they have anti frag agreement for the duration of their Android relationship. They said "We don't want to piss off Google."*¹¹⁸¹ The negotiations with [AFA signatory] did not progress further.
 - (2) [AFA signatory] also raised issues related to the anti-fragmentation obligations in its AFA. As noted in an internal email of 10 January 2013 from an Amazon employee, "[AFA signatory] - *interested, but stated the anti-fragmentation agreement blocks them from working with us and asked us to get Google to consent*"¹¹⁸² The negotiations with [AFA signatory] did not progress further.
 - (3) [AFA signatory] showed initial interest in cooperating with Amazon. However, as stated in an email of 10 January 2013 by an Amazon employee, "*It's unclear if they signed the AFA but there was definitely an Android-based tablet that showed up in the wild and we heard that [Google Executive] vetoed an Android netbook that went through the full CTS testing.*"¹¹⁸³ A few days later, in an internal report dated 21 January 2013, it is stated that: "*They remain interested in the project, and we will follow up next week in the Bay Area. [AFA signatory] did ask about AFA; we said that we knew of other companies*

¹¹⁷⁷ See James Kendrick, "Fire OS: Better than Android for the masses" (20 June 2014), available at <http://www.zdnet.com/article/fire-os-better-than-android-for-the-masses/>, printed and saved on 12 April 2016.

¹¹⁷⁸ Google's Response to the Statement of Objections, Part Three, page 122, paragraph 75 (Doc ID 7117).

¹¹⁷⁹ See Amazon's non-confidential response to Question 1 of the request for information of 29 July 2015 (Doc ID 4063).

¹¹⁸⁰ See Amazon's non-confidential response to Question 1 of the request for information of 29 July 2015 (Doc ID 4063).

¹¹⁸¹ See Amazon's non-confidential Annex 5C in response to the request for information of 28 July 2014 (Doc ID 4069).

¹¹⁸² See Amazon's non-confidential Annex 5C in response to the request for information of 28 July 2014 (Doc ID 4069).

¹¹⁸³ See Amazon's non-confidential Annex 5C in response to the request for information of 28 July 2014 (Doc ID 4069).

*that were operating outside the AFA and encouraged them not to sign AFA. Separately, [AFA signatory] told [Amazon's persons] that they will be launching 7" and 10" Android tablets in the fall. Given this information, we have some concerns that [AFA signatory] may have already signed the AFA, and [the negotiation team] may not have been aware of this.*¹¹⁸⁴ Eventually, after having confirmed that it had entered into an AFA with Google, [AFA signatory] terminated discussions.¹¹⁸⁵

- (4) [AFA signatory] engaged in negotiations with Amazon. After a number of negotiation rounds, an employee of [AFA signatory] wrote to Amazon on 22 November 2013: "*I actually reviewed the existing Anti- Fragmentation Agreement (AFA) with Google. Unfortunately it seems difficult or impossible to collaborate Fire OS based Phone project with Amazon unless you to clarify not to use any Android assets for Fire Os. If you plan to use Fire Os [...], [AFA signatory] can't proceed this project as partner unfortunately. I assume all of Android phone manufactures have same condition.*"¹¹⁸⁶ The negotiations with [AFA signatory] did not progress further.
- (5) As soon as it was contacted by Amazon, [AFA signatory] replied that the AFA prevented it from working with Amazon.¹¹⁸⁷
- (6) [AFA signatory] is the company that engaged for the longest period in negotiations with Amazon. As noted in an internal Amazon report: "*Early in the [licensing] program we believed there was an opportunity to create a FireOS platform with multiple OEMs building devices powered by FireOS. After talking with the major OEMs ([AFA signatory], [AFA signatory], and [AFA signatory]) it's clear that [AFA signatory] is our best and potentially only co-branded partner. Other tier 1 OEMs are unwilling to risk violating Google's Anti-Fragmentation Agreement.*"¹¹⁸⁸

Initially, [AFA signatory] reassured Amazon that "*they [...] are not currently restricted by the Google AFA.*"¹¹⁸⁹ However, at a meeting between Google and [AFA signatory] executives on 19 October 2013, Google reminded [AFA signatory] of the anti-fragmentation obligations in its AFA. As stated in an email by [AFA signatory executive], at [AFA signatory], "*In my meeting with them [Google Executive]. [...] they seems quite sensitive on Windows phone and [Amazon] case. For [Amazon], [Google Executive] said they need to pass*

¹¹⁸⁴ See Amazon's non-confidential Annex 5B in response to the request for information of 28 July 2014 (Doc ID 4069).

¹¹⁸⁵ See Amazon's non-confidential Annex 4 in response to the request for information of 28 July 2014 (Doc ID 4059).

¹¹⁸⁶ See Amazon's non-confidential Annex 5D in response to the request for information of 28 July 2014 (Doc ID 4069).

¹¹⁸⁷ See Amazon's non-confidential Annex 4 in response to the request for information of 28 July 2014 (Doc ID 4059).

¹¹⁸⁸ See Amazon's non-confidential Annex 5A in response to the request for information of 28 July 2014 (Doc ID 4069).

¹¹⁸⁹ See Amazon's non-confidential Annex 5B in response to the request for information of 28 July 2014 (Doc ID 4069).

cts test. They are ok not supporting gms but cts compatibility test must have. Otherwise Google will have a big problem with [AFA signatory]."¹¹⁹⁰

On 22 October 2013, [Google Executive], said: "[AFA signatory] knows that compatibility is a requirement even when they act as an odm. This has been communicated to [AFA signatory executive] who agreed."¹¹⁹¹

In an internal email of 24 October 2013, [AFA signatory executive], elaborated on the anti-fragmentation obligations and Google's interpretation of them and stated: "*In general, Google doesn't want manufacturer to modify Android (although it's an open source) to fit in different platforms [...] and Google has its own plan to control the manufacturers for developing Android products.*"¹¹⁹²

[AFA signatory executive], answered: "*I assume [AFA signatory executive] and everyone else relevant to [Amazon] developments knows about this and won't be fragmenting Android*".¹¹⁹³

Whilst it is possible that at some point [AFA signatory] had the impression that Amazon wanted to pass the Android compatibility tests,¹¹⁹⁴ it subsequently became clear to [AFA signatory] that Amazon Fire OS was an Android fork. Nonetheless, [AFA signatory] decided not to raise the issue with Amazon as pointed out in an internal email of [...] by [AFA signatory executive]: "*[AFA signatory executive] had a meeting with [Amazon] ([Amazon Executive] – who you've met a few times) today, and as I suspected they are not planning CTS certification. We need to make sure we discuss this while we're together to understand what this means and what our next steps are. [AFA signatory executives] – please don't follow up with [Amazon] right now as [Amazon Executive] antenna was raised when [AFA signatory executive] asked and [Amazon Executive] said asked if "there was anything that [Amazon] should be worried about.*"¹¹⁹⁵

Amazon's plan to license its Fire OS was eventually withdrawn before [AFA signatory] could make a final decision.¹¹⁹⁶

- (1095) The Commission's conclusion that the anti-fragmentation obligations prevented Amazon from finding distribution channels is not affected by Google's claims that:
- (1) the Commission has brought forward no evidence that the anti-fragmentation obligations caused the failure of Amazon's efforts to license Fire OS;

¹¹⁹⁰ See [AFA signatory]'s non-confidential Annex [...] in response to the request for information of 17 July 2014 [...].

¹¹⁹¹ See email by [Google Executive] of 22 October 2013, Doc ID 1754-120.

¹¹⁹² See [AFA signatory]'s non-confidential Annex [...] in response to the request for information of 17 July 2014 [...].

¹¹⁹³ See [AFA signatory]'s non-confidential Annex [...] in response to the request for information of 17 July 2014 [...].

¹¹⁹⁴ See [AFA signatory]'s non-confidential Annex [...] in response to the request for information of 17 July 2014 [...].

¹¹⁹⁵ See [AFA signatory]'s non-confidential Annex [...] in response to the request for information of 17 July 2014 [...].

¹¹⁹⁶ See Amazon's non-confidential response to Question 1 of the request for information of 29 July 2015 (Doc ID 4063).

- (2) the fact that Amazon's failure to attract OEMs was not caused by the anti-fragmentation obligations is confirmed by the fact that Amazon was unable to conclude an agreement with two OEMs that had not entered into AFAs;
 - (3) Amazon failed to license Fire OS for reasons that had nothing to do with the anti-fragmentation obligations, namely: (i) Amazon's lack of carrier support; (ii) the high price of Amazon own branded devices such as the Fire Phone; (iii) the lack of Google proprietary apps; (iv) the fact that app developers also found Amazon OS unattractive and (v) the fact that Amazon decided on its own volition not to enter negotiations with an OEM that is not listed in recital (1094); and
 - (4) the Commission has not referred to any example of Amazon trying to license Fire OS after 2013, nor to any exemption request submitted to Google in relation to Fire OS devices. Amazon itself realised that the licensing of Fire OS was a failed business model, as shown by its decision to partner subsequently with BLU and Motorola to launch Google Android devices.¹¹⁹⁷
- (1096) First, the Commission is not required to demonstrate that the anti-fragmentation obligations were the sole cause of the failure of Amazon's efforts to license Fire OS.
- (1097) Moreover, the body of evidence relied on by the Commission, including contemporaneous internal Amazon documents and contemporaneous correspondence between Amazon and OEMs, demonstrates that the anti-fragmentation obligations were an important cause of the failure of Amazon's efforts to license Fire OS. The licensing of Fire OS could have allowed Amazon to build a network of important OEMs, including [AFA signatory], [AFA signatory], [AFA signatory], [AFA signatory] and [AFA signatory]. This would have had a positive impact on the Amazon ecosystem, allowing Amazon to develop better and more efficient OS and apps, capable of competing more effectively with Google proprietary apps. This is confirmed by Amazon's statements that:
- (1) "*In the absence of Google's anti-fragmentation agreements with OEMs, [Amazon's attempts to license Fire OS] would almost certainly have achieved a different outcome*";¹¹⁹⁸ and
 - (2) Due to the existence of indirect network effects, achieving scale is "*absolutely critical*" in successfully distributing a smart mobile OS.¹¹⁹⁹
- (1098) Second, the two OEMs that had not entered into AFAs represented a small share of sales of smart mobile devices and were at the time focussed on selling devices based on their own smart mobile OS rather than on licensable smart mobile OSs.
- (1099) Third, Google's claim that Amazon failed to license Fire OS for reasons that had nothing to do with the anti-fragmentation obligations is incorrect.

¹¹⁹⁷ Google's Response to the Statement of Objections, Part Three, page 137, paragraph 126 (Doc ID 7117); Appendix 5 to Google's Response to the Statement of Objections (Doc ID 8302); Google's Response to the First Letter of Facts, Part Two, pages 57-58, paragraphs 75-76 (Doc ID 8598); Appendix 1 to Google's Response to the First Letter of Facts, Part Two (Doc ID 8599).

¹¹⁹⁸ See Amazon's non-confidential response to Question 3 of the request for information of 29 July 2015 (Doc ID 4063).

¹¹⁹⁹ See Amazon's non-confidential response to Question 2 of the request for information of 29 July 2015 (Doc ID 4063).

- (1100) In the first place, absent the anti-fragmentation obligations, MNOs could have supported devices based on a licensed version of Fire OS at the same time as the Amazon-branded Fire Phone. Such support is common practice in the industry, as exemplified by the fact that MNOs supported at the same time devices manufactured by Google Android OEMs and the "Google-branded" Nexus models.¹²⁰⁰
- (1101) In the second place, absent the anti-fragmentation obligations, OEMs may have priced devices based on a licensed version of Fire OS lower than the Amazon Fire Phone released in 2014. This is confirmed by the fact that [AFA signatory] and [AFA signatory], which were involved in negotiations with Amazon, were focussed at the time on manufacturing and distributing lower-end Google Android devices.
- (1102) In the third place, the fact that Amazon devices lacked Google proprietary apps does not mean that users would find them unattractive. Amazon's Kindle Fire tablet based on Fire OS, which also lacks Google proprietary apps, has generally received positive reviews by industry experts.¹²⁰¹
- (1103) In the fourth place, absent the anti-fragmentation obligations, it is likely that app developers would have found Fire OS even more attractive. This is confirmed by the fact that, notwithstanding the anti-fragmentation obligations, there were approximately [700 000 – 900 000] apps available for Fire OS as of April 2017.¹²⁰²
- (1104) In the fifth place, it is irrelevant that Amazon might have decided by its own volition not to enter negotiations with one specific OEM that is not listed in recital (1094). This is because, in any event, that OEM had entered into an AFA, with the result that its commercial behaviour would likely have been affected by the anti-fragmentation obligations.
- (1105) Fourth, given the anti-fragmentation obligations, it is unsurprising that, after the failure of its attempts to license Fire OS, Amazon chose to devise an alternative strategy to ensure the distribution of its mobile services and launched Google Android devices in cooperation with BLU and Motorola.

12.6.3.4. The anti-fragmentation obligations prevent OEMs from developing their own forked version of Android

- (1106) The Commission concludes that the AFAs prevent OEMs from developing their own forked version of Android. OEMs would be well-placed to develop an Android fork as some of them are, or have been, active in the development of smart mobile OSs (e.g. Samsung with Tizen). OEMs could therefore use their technical knowledge to develop their own forked versions of Android and either license the forks to third parties or incorporate them in their own smart mobile devices.

¹²⁰⁰ See Amazon's non-confidential response to Question 1 of the request for information of 29 July 2015 (Doc ID 4063).

¹²⁰¹ See for example 'Amazon Fire HD 10 review: affordable tablet that's great for Netflix addicts' available at <https://www.theguardian.com/technology/2017/oct/12/amazon-fire-hd-10-review-tablet-affordable-netflix-ipad-pro-hands-free-alex-good-screen-solid-battery>, printed and saved on 13 June 2018; 'Amazon Fire HD 8 (2017)', which rates the Kindle Fire as "*excellent*", available at <https://www.pcmag.com/article2/0,2817,2492123,00.asp>, printed and saved on 13 June 2018; and 'Amazon Fire tablet review: The bargain Alexa tablet', available at <http://www.expertreviews.co.uk/amazon/amazon-fire>, printed and saved on 13 June 2018.

¹²⁰² See Amazon's non-confidential response to Question 2 of the follow up request for information of 11 April 2017 (Doc ID 8276).

- (1107) For example, in 2012, [AFA signatory] was considering building a tablet based on a forked version of Android. As stated by [AFA signatory executive], there was "*some pre-study activity if [AFA signatory] should create anti-Kindle Fire, e.g. using AOSP code without Google's approval & Android Compatibility, and building our own services on top of it.*" As [AFA signatory] recognised, however, "*we [AFA signatory] are also Google licensees. There is a strong concern if we'd violate the agreement by doing Kindle Fire-type product, while doing our Android phone/tablet business as usual.*" Furthermore, "*we cannot make devices based on the Android framework which are not Android Compatible*".¹²⁰³ [AFA signatory] eventually abandoned the project.¹²⁰⁴

12.6.3.5. The anti-fragmentation obligations make it more difficult for fork developers to find ODMs willing to manufacture their own branded devices

- (1108) The Commission concludes that the anti-fragmentation obligations make it more difficult for fork developers to find ODMs willing to manufacture their own branded devices.
- (1109) If a fork developer is unable to license its fork to OEMs due to the anti-fragmentation obligations, an alternative strategy would be for that developer to resort to an ODM for the manufacturing of self-branded smart mobile devices. As indicated by Amazon, however, "*[AFA agreements with ODMs] cause friction in the contracting process and result in critical time delays as partners attempt to work through the business risks of possibly contravening the anti-fragmentation restrictions and facing harsh penalties from Google. Ultimately, the anti-fragmentation agreements force Amazon to pay a higher price, to agree to other contractual concessions, or to assume more risk and expense in the form of providing broad indemnification to partners in order to be able to finalize a deal with a [ODM] partner. Given the importance of time to market in manufacturing smart mobile devices and achieving scale in distributing a mobile OS such as Fire OS, the anti-fragmentation clauses ensure that any potential distributors of forked Android are prevented from becoming credible competitors to Google*"¹²⁰⁵ (see also Recital (1059)).
- (1110) The Commission's conclusion that the anti-fragmentation obligations make it more difficult for fork developers to find ODMs willing to manufacture their own branded devices is not affected by Google's claim that ODMs can still cooperate with fork manufacturers, as long as a device is compatible when transferred by an ODM to a firm such as Amazon.¹²⁰⁶ This is because the anti-fragmentation obligations still prevent ODMs from selling devices that comply with the requirements set by fork developers, when those requirements are different from those set by Google.

12.6.3.6. Besides preventing ODMs and OEMs from selling devices running Android forks, the anti-fragmentation obligations create further obstacles that prevent ODMs and OEMs to support Android forks

- (1111) The Commission concludes that besides preventing ODMs and OEMs from selling

¹²⁰³ See non-confidential Annex 44 to [AFA signatory]'s response to the request for information of 17 July 2014 [...].

¹²⁰⁴ See [AFA signatory]'s response to the request for information of 5 April 2016 [...].

¹²⁰⁵ See Amazon's non-confidential response to Question 7 of the request for information of 29 July 2015 (Doc ID 4063).

¹²⁰⁶ Google's Response to the Statement of Objections, Part Three, page 108, paragraph 29 (Doc ID 7117).

devices running Android forks, the anti-fragmentation obligations create further obstacles that prevent ODMs and OEMs to support Android forks.

- (1112) First, by preventing chipset manufacturers from pre-installing an Android fork and a set of apps inside the chipsets they supply to OEMs or ODMs, the anti-fragmentation obligations make it more difficult for fork developers to convince ODMs and OEMs to sell devices based on their fork. For example, [Google Executive], stated that assisting [ODM] in achieving full compatibility, with a view to leading them to sign an AFA, "*helps to reduce the compatibility issue in China*".¹²⁰⁷
- (1113) Second, the anti-fragmentation obligations prevent OEMs or ODMs from supporting in any other way the development of Android forks, as this would contravene clause 2.1 of the AFA.¹²⁰⁸ Such support could include: (i) cooperating in the development of such forks; (ii) providing technical assistance to the fork developer; and (iii) distributing, participating in the creation of, or promoting in any way, an SDK for the development of apps for a fork.

12.6.4. Compatible forks do not constitute a credible competitive threat to Google

- (1114) The Commission concludes that compatible forks do not constitute a credible competitive threat to Google.
- (1115) On the one hand, in principle, a developer of an Android fork could decide to cooperate with Google and pass the Android compatibility tests in order to avoid facing the restrictions posed by the anti-fragmentation obligations.
- (1116) On the other hand, the need to pass the Android compatibility tests would confer on Google a high degree of control over such a compatible fork.¹²⁰⁹ This would both make the development of compatible forks commercially less attractive and reduce the likelihood that they would exercise a strong competitive constraint on Google.
- (1117) First, it is confirmed by internal Amazon documents and exchanges between Amazon and Google from 2012.
- (1118) In an undated internal document (likely to be from 2014) assessing whether the Fire OS should pass the Android compatibility tests, Amazon stated that "*Google maintains significant control over the Android ecosystem, which means that there is risk that Google could block our ability to launch a product or a new service. For example, Google may interpret the Mobile Application Distribution Agreement (MADA) and Anti-Fragmentation Agreement (AFA) in ways that disadvantage us. Google also sets the rules for Android compatibility through the Compatibility Test Suite (CTS) and the Compatibility Definition Document (CDD) and it could change CTS or the CDD in ways that negatively impact our devices.*"¹²¹⁰ This position was reinforced by the fact that, in Amazon's view, entering into an agreement with Google was a "*one-way door and could give Google significant leverage over our current and future Android-based device programs*".¹²¹¹

¹²⁰⁷ See email by [Google Executive] of 1 September 2011 (Doc ID 1371-00800).

¹²⁰⁸ "[COMPANY] will not take any actions that may cause or result in the fragmentation of Android".

¹²⁰⁹ See Sections 6.3.1 and 6.3.2.

¹²¹⁰ See Amazon's non-confidential Annex 2 in response to the request for information of 28 July 2014 (Doc ID 3942).

¹²¹¹ See Amazon's non-confidential Annex 2 in response to the request for information of 28 July 2014 (Doc ID 8166).

- (1119) Amazon was also concerned that the prospect of having to apply for the Android compatibility tests would have a chilling effect on the development of its fork as "*We could be prohibited from developing new categories of devices using "vanilla" AOSP because Google does not have a clear policy on how to handle compatibility on new device categories.*"¹²¹²
- (1120) Similar concerns were highlighted by an email by [Amazon Executive], to [Google Executive], in which [Amazon Executive] sent on 25 May 2012 when Amazon was exploring the possibility of entering into Google's compatibility programme: "[exchange between Amazon and Google about Google's compatibility programme]."¹²¹³
- (1121) In the same email correspondence, [Amazon Executive] explains that: "[exchange between Amazon and Google about Google's compatibility programme]."¹²¹⁴
- (1122) Second, it is confirmed by a response to a request for information by Nokia, in which Nokia indicates that its "*assessment at the time of developing the Nokia X devices was that meeting Google's compatibility requirements (and signing the agreements) would have put excessive limitations on Nokia's differentiation intent.*"¹²¹⁵
- (1123) Third, it is confirmed by Alibaba, which states that "[information about Aliyun's development]"¹²¹⁶
- (1124) The Commission's conclusion that compatible forks do not constitute a credible competitive threat to Google is not affected by Google's claims that:
- (1) the anti-fragmentation obligations leave sufficient space for intra-brand competition between different variants of Google Android at the level of smart mobile OS,¹²¹⁷ apps and APIs;¹²¹⁸
 - (2) Alibaba's statements cannot support the Commission's position given that Alibaba itself considers that Aliyun is not an Android fork,¹²¹⁹ and
 - (3) the anti-fragmentation obligations have not prevented any specific innovation.¹²²⁰
- (1125) First, it is irrelevant that the anti-fragmentation obligations may leave some space for intra-brand competition between different variants of Google Android. This is because it is sufficient that the anti-fragmentation obligations further hinder the maintenance of the degree of competition still existing in the worldwide market

¹²¹² See Amazon's non-confidential Annex 2 in response to the request for information of 28 July 2014 (Doc ID 3942).

¹²¹³ See email by [Amazon Executive] to [Google Executive] of 25 May 2012 (Doc ID 1366-31).

¹²¹⁴ See email by [Amazon Executive] to [Google Executive] of 25 May 2012 (Doc ID 1366-31).

¹²¹⁵ See Nokia's non-confidential response to the request for information of 18 July 2014, paragraph 32 (Doc ID 8231).

¹²¹⁶ See Alibaba's non-confidential response to Question 25.3 of the request for information of 12 June 2013 (Doc ID 6122).

¹²¹⁷ Google's Response to the Statement of Objections, Part Three, pages 104-108, paragraphs 20-27 and page 144, paragraph 143 (Doc ID 7117); Google's Response to the First Letter of Facts, Part Two, pages 13-14, paragraphs 31-34 (Doc ID 8598).

¹²¹⁸ Google's Response to the Statement of Objections, Part Three, pages 106-107, paragraph 25, page 142, paragraphs 138-140 (Doc ID 7117).

¹²¹⁹ Google's Response to the First Letter of Facts, Part Two, page 49, paragraph 43 (Doc ID 8598).

¹²²⁰ Google's Response to the First Letter of Facts, Part Two, pages 47-49, paragraphs 35-42 (Doc ID 8598).

(excluding China) for licensable smart mobile OSs and the national markets for general search services, where competition is already weakened as a result of the very presence of Google on those markets.

- (1126) Moreover, and in any event, the degree of intra-brand OS competition between different variants of Google Android at the level of smart mobile OSs, apps and APIs is weak.
 - (1127) In the first place, regarding intra-brand competition at the level of smart mobile OSs, Google controls the CDD/CTS parameters and, as such, the degree of variation that a compatible fork may exhibit.¹²²¹ For example, Cyanogen stated: "*To the best of our knowledge, no mobile OEM has explicitly refrained from entering an agreement with Cyanogen or limited the scope or terminated an agreement with Cyanogen due to requirements imposed by Google, but the OEMs have informally expressed concerns about Google's position and attitude towards Cyanogen and wonder whether Google will change its compatibility requirements to make it more difficult or impossible for a Cyanogen OS device to meet Google's compatibility requirements.*"¹²²²
 - (1128) Moreover, developers of compatible forks such as Cyanogen have not achieved any meaningful commercial success outside of China. For example, in 2016, less than 1 million devices running Cyanogen's version of Android were sold on a worldwide basis (excluding China).¹²²³ In addition, as of December 2016, Cyanogen stopped operations and ceased developing its Cyanogen OS.¹²²⁴
 - (1129) In the second place, regarding intra-brand competition at the level of apps and APIs level, such competition is irrelevant for the purposes of assessing the effect of the anti-fragmentation obligations at the level of smart mobile OSs. This is because apps and APIs serve different purposes from smart mobile OSs.
 - (1130) Second, Alibaba's statement at recital (1123) supports the Commission's conclusion that compatible forks do not constitute a credible competitive threat to Google because both the Commission and Google (see recital (408)) consider that Aliyun is an Android fork. In any event, Alibaba's response is provided [...].
 - (1131) Third, in any event, this Decision demonstrates that the anti-fragmentation obligations allowed Google to interfere with the ability of Android fork developers to distribute OSs that presented different and distinctive features (see recitals (1056) to (1059), (1117) to (1123) and (1107)).
- 12.6.5. *The capability of the anti-fragmentation obligations to restrict competition is reinforced by the unavailability of Google's proprietary APIs to fork developers, which makes it more difficult for Android forks to attract app developers*
- (1132) The Commission concludes that the capability of the anti-fragmentation obligations to restrict competition is reinforced by the unavailability of Google's proprietary APIs to fork developers, which makes it more difficult for Android forks to attract app developers.

¹²²¹ See Sections 6.3.1 and 6.3.2.

¹²²² See Cyanogen non-confidential response to Question 27 of the request for information of 21 September 2015 (Doc ID 5275).

¹²²³ Source: [...] data (Doc ID 7866 and 7867).

¹²²⁴ See <https://techcrunch.com/2016/12/24/cyanogen-failed-to-kill-android-now-it-is-shutting-its-services-and-os-as-part-of-a-pivot/>, printed and saved on 13 June 2018.

- (1133) A large number of developers for Google Android make use of Google's proprietary APIs.¹²²⁵ Given that Google's proprietary APIs are not available to fork developers, app developers wishing to port an app from Google Android to an Android fork have to replace all the APIs linking to Google cloud services. Developers of apps that make use of Google proprietary APIs therefore face additional porting costs to develop apps for forks.
- (1) According to Opera: "*As apps begin to rely more and more on Google's extended set of network APIs that are part of Google's Android but not of Android forks, these apps will not work on Android forks. To the extent these apps are the apps that users desire, the appeal of such forks would be reduced and thus their ability to compete with Google's Android. Opera Software uses the Google Cloud Messaging ("GCM") for synchronization. This API is only available on Google-approved devices. It would be prohibitive for Opera to replace this API on devices made by manufacturers that have not signed up for [Google Play Services].*"¹²²⁶
 - (2) According to Facebook: "[...] Porting an app that critically relies on Google cloud services functionality to an AOSP variant without Google cloud services or a comparable framework could be very challenging—despite the "source code similarity" of both operating systems."¹²²⁷
 - (3) According to Amazon: "*It is difficult to estimate the time and cost involved because it is dependent on the functionality and sophistication of the app, as well as the process the developer used to build the app. On one end of the spectrum, Amazon has seen a simple, map-based app take approximately one week to port from Android to Fire OS. On the other end of the spectrum, Amazon has seen a complex game take seven months to port from Android to Fire OS due to its social features, shared economy and other complex elements. On average, Amazon estimates that it would take 1-2 weeks (plus testing time) per API for a developer to switch from Google Play services APIs for in-app purchasing and device messaging to Amazon's corresponding APIs and 2-3 weeks (plus testing time) for a developer to switch from Google's Maps API to Amazon's Maps API. And these are not one-time investments by the developers. Each time a developer updates an app, it must do additional development work to ensure the updated app works with both the Google and*

¹²²⁵

Yandex estimates that approximately 65% of the most popular free Android apps in the Play Store use at least one of Google's proprietary APIs (see Yandex's non-confidential response to Question 3 of the request for information of 29 June 2015 to app developers (Doc ID 2031). In addition, both Yandex and Opera state that Google only permits paid apps to be distributed via the Play Store if they use Google's in-app billing API, and therefore it can be presumed that all paid apps also use at least that API (see Yandex's non-confidential response to Question 3 of the request for information of 29 June 2015 to app developers (Doc ID 2031), and Opera's non-confidential response to Question 3 of the request for information of 29 June 2015 to app developers (Doc ID 2133)). Furthermore, almost the totality of the app store providers that responded to the request for information stated that when developing apps for Google Android devices, developers tend to use Google Play Services APIs instead of potentially competing APIs (see responses to Question 25 of the request for information of 21 October 2015 on app stores).

¹²²⁶

See Opera's non-confidential response to Question 10 of the request for information of 29 June 2015 to app developers (Doc ID 2133).

¹²²⁷

See Facebook's non-confidential response to Question 1 of the request for information of 29 June 2015 to app developers (Doc ID 4395).

*Amazon APIs and must perform testing on both versions.*¹²²⁸

- (1134) The Commission's conclusion that the capability of the anti-fragmentation obligations to restrict competition is reinforced by the unavailability of Google's proprietary APIs to fork developers is not affected by Google's claims that:
- (1) the Commission's argument that Google's proprietary APIs are essential to a fork's success undermines its argument that forks constitute a credible competitive threat for Google;¹²²⁹
 - (2) many alternative APIs, including from Amazon, are available;¹²³⁰ and
 - (3) contrary to allegations by certain third parties, Google has never migrated over time APIs from AOSP to Google Play Services.¹²³¹
- (1135) First, the Commission does not argue that Google's proprietary APIs are essential to a fork's success. Rather, it simply concludes that the unavailability of Google's proprietary APIs on Android forks makes it more difficult for Android forks to attract app developers (see recitals (1132) and (1133)).
- (1136) Moreover, and in any event, porting an app from Google Android to a completely different smart mobile OS remains comparatively more difficult than porting an app from Google Android to an Android fork, even taking into account the absence of Google's proprietary APIs on the Android fork. This is for the following reasons:
- (1) many apps can run on Android forks with the need for no or only minor adjustments (see recital (1041)); and
 - (2) an app developer porting an app from Google Android to another smart mobile OS would have to overcome not only the potential barriers constituted by the absence of Google's proprietary APIs on that OSs, but also the fact that Google Android and other OSs have different source codes (see recital (1042)).
- (1137) Second, the Commission does not argue that alternative APIs, including from Amazon, are not available. Rather, it simply concludes that Google proprietary APIs are commercially important for app developers (see Section 9.4.4). The fact that Amazon developed a complete suite of APIs alternative to Google's is not surprising, given that this was made necessary by the lack of availability of Google proprietary APIs on Android forks.
- (1138) Third, Google's claim that it has never migrated APIs from AOSP to Google Play Services is irrelevant. This is because the unavailability of Google's proprietary APIs on Android forks makes it more difficult for Android forks to attract app developers regardless of whether those APIs previously existed on AOSP.

¹²²⁸ See Amazon's non-confidential response to Question 4 of the request for information of 29 June 2015 to app developers (Doc ID 4188).

¹²²⁹ See Google's Response to the Statement of Objections, Part Three, page 136, paragraph 122 (Doc ID 7117).

¹²³⁰ Google's Response to the First Letter of Facts, Part Two, pages 58-59, paragraphs 80-82 (Doc ID 8598).

¹²³¹ Google's Response to the First Letter of Facts, Part Two, pages 60-61, paragraphs 83-86 (Doc ID 8598).

- 12.6.6. *Google's conduct helps to maintain and strengthen Google's dominant position in each national market for general search services, deters innovation, and tends to harm, directly or indirectly, consumers*
- (1139) For the reasons set out in this Section, the Commission concludes that the anti-fragmentation obligations maintain and strengthen Google's dominant position in each national market for general search services, deter innovation, and tend to harm, directly or indirectly, consumers.
- (1140) First, by hindering the development of Android forks and eliminating a credible competitive threat to Google Android, Google's conduct helps to maintain and strengthen Google's dominant position in each national market for general search services. This is because devices based on Android forks can be used by competing general search services as a channel for the distribution of their search apps and services. For example, Amazon on Fire OS devices and Nokia on Nokia X devices pre-installed Bing instead of Google Search.¹²³² By hindering the development of Android forks, Google raises barriers to the entry or expansion of competing search apps and services and, thus, protects its search advertising revenues.
- (1141) Second, the anti-fragmentation obligations reduce the incentives of market participants to develop Android forks providing smart mobile devices with distinctive features and with additional functionalities (see for example recitals (1056) to (1059), (1117) to (1123) and (1107)).
- (1142) Third, Google's conduct also tends to harm, directly or indirectly, consumers, who as a result of Google's interference with the normal competitive process may see less choice of smart mobile OSs and general search services. An illustration of this is provided by the example of Fire OS, a forked version of Android developed by Amazon that is generally considered as a high-quality fork of Android and which was prevented from finding distribution channels by the anti-fragmentation obligations (see Section 12.6.3.3).
- (1143) Fourth, the Commission's conclusion that the anti-fragmentation obligations help Google to maintain and strengthen its dominant position in each national market for general search services is not affected by Google's claims that there remain distribution channels other than Android forks for competing general search services.¹²³³
- (1144) It is irrelevant that there remain distribution channels other than Android forks for competing general search services. This is because it is sufficient that the anti-fragmentation obligations further hinder the maintenance of the degree of competition still existing in national markets for general search services, competition which is already weakened as a result of the very presence of Google on those markets.
- (1145) In addition, the anti-fragmentation obligations makes it harder for competing general search services to achieve better distribution on smart mobile devices, which would

¹²³² See Austin Carr, "Bing Now default Search Engine on Amazon's Kindle Fire: Is Apple next?" (09 July 2012), available at <http://www.fastcompany.com/3001129/bing-now-default-search-engine-amazons-kindle-fire-apple-next>, printed and saved on 11 April 2016, and see "Microsoft Mobile Apps", available at <https://www.microsoft.com/en/mobile/apps/x/>, printed and saved on 18 April 2016.

¹²³³ Google's Response to the Statement of Objections, Part Three, page 109, paragraph 33 (Doc ID 7117).

allow them to gain additional search queries and the respective revenues and data needed to improve their services (see recitals (859), (860) and (1140)).

- 12.6.7. *Google's claim regarding the need for the Commission to consider its conduct in the relevant economic and legal context*
- (1146) Google claims that its conduct is incapable of restricting competition when assessed in its relevant economic and legal context.
- (1147) First, assessing whether Google's conduct is capable of restricting competition requires the Commission to demonstrate that "*there would have been greater competition absent the impugned conduct*" and to "*consider in that context, the interactions among different sides of*" the Android platform.¹²³⁴
- (1148) Second, an assessment of its conduct in the relevant economic and legal context as of 2008 when Google began to enter into AFAs would indicate that "*AFAs have not restricted, but promoted, competition*".¹²³⁵
- (1149) Google's claims are unfounded.
- (1150) First, the Commission is not required to demonstrate in a general manner that "*there would have been greater competition*" absent the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations. Rather, the Commission is required to demonstrate that the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations is capable of restricting competition in the relevant markets, namely the worldwide (excluding China) market for licensable smart mobile OSs and the national markets for general search services.
- (1151) Second, when assessing the capability of the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations to restrict competition on the relevant markets, the Commission has *inter alia* analysed whether there could have been greater competition on those markets, absent the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations (see Section 12.6). Regarding the worldwide (excluding China) market for licensable smart mobile OSs, this includes an analysis of the likelihood that certain players, such as Amazon, would have developed and commercialised Android forks in the absence of the conduct (see Sections 12.6.1 to 12.6.3). Regarding the national markets for general search services, this includes an analysis of the general search services pre-installed by competing Android forks (see recital (1140)).
- (1152) Third, when assessing the capability of the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations to restrict competition on the relevant markets, the Commission has also taken account of the nature of interactions among the different sides of the Android platform. Regarding the worldwide (excluding China) market for licensable smart mobile OSs, this includes the fact that: (i) the Play Store and the Google Search app cannot be obtained without entering into the anti-fragmentation obligations (see Section 12.5); (ii) many apps can run on Android forks with the need for no or only minor adjustments (see recital

¹²³⁴ Google's letter of 11 June 2018, paragraphs 6 and 11-15 (Doc ID 8890).

¹²³⁵ Google's letter of 11 June 2018, paragraph 23 (Doc ID 8890).

(1041)); and (iii) for apps that require additional development for porting, it is generally easier to port an app from Google Android to an Android fork than to port an app from Google Android to a different smart mobile OS (see recital (1042)). Regarding the national markets for general search services, this includes the fact that devices based on Android forks can be used by competing general search services as a channel for the distribution of their search apps and services (recital (1140)).

- (1153) To the extent, however, that Google's claim about the "*interactions among different sides*" of the Android platform relates to whether the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations may give rise to benefits on the worldwide (excluding China) market for licensable smart mobile OSs, on the national markets for general search services and/or on other markets, the Commission has assessed and dismissed such a claim in its analysis of objective justification (see Section 12.7).
- (1154) Fourth, when assessing the capability of the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations to restrict competition on the worldwide (excluding China) market for licensable smart mobile OSs and the national markets for general search services, the Commission is required to undertake such an assessment as of January 2011, when it concludes that Google became dominant in those markets, not as of 2008 when Google began to enter into AFAs.

12.7. Objective justification and efficiencies

- (1155) Google claims that the licensing of the Play Store and the Google Search app conditional on hardware manufacturers agreeing to the anti-fragmentation obligations is objectively justified for the following reasons:
- (1) the anti-fragmentation obligations are necessary to ensure the interoperability of the Android ecosystem. Moreover, alternative smart mobile OS providers have more restrictive business models;¹²³⁶
 - (2) the anti-fragmentation obligations are necessary to prevent fragmentation that would be detrimental to the Android ecosystem;¹²³⁷
 - (3) the anti-fragmentation obligations are necessary to protect Google's reputation;¹²³⁸
 - (4) the anti-fragmentation obligations are necessary to prevent OEMs from "cutting corners";
 - (5) the anti-fragmentation obligations are necessary to prevent free riding on technical support such as early release of the Android source code or developer boot camps;¹²³⁹

¹²³⁶ Google's Response to the Statement of Objections, Part Three, pages 113-115, paragraphs 42-48 (Doc ID 7117).

¹²³⁷ Google's Response to the Statement of Objections, Part Three, pages 113-115, paragraphs 42-48 (Doc ID 7117).

¹²³⁸ Google's Response to the Statement of Objections, Part Three, pages 148-149, paragraphs 167-171 (Doc ID 7117).

¹²³⁹ Google's Response to the Statement of Objections, Part Three, page 145, paragraph 151 (Doc ID 7117) and Appendix 2, page 20 (Doc ID 8303-12).

- (6) Google introduced the AFA before it became dominant;
 - (7) the anti-fragmentation obligations were not meant to be misleading;
 - (8) the Commission has failed to carry out a balancing of the anti-competitive and pro-competitive effects of the anti-fragmentation obligations.¹²⁴⁰
- (1156) For the reasons set out in recitals (1157) to (1183), the Commission concludes that Google has not demonstrated that the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations is objectively justified.
- (1157) First, Google has not demonstrated that the anti-fragmentation obligations are necessary to ensure the interoperability of the Android eco-system.
- (1158) In the first place, the anti-fragmentation obligations are not limited to promoting "*interoperability*" but also prohibit OEMs from supporting through different means Android forks that could be pre-installed on devices competing with GMS devices (see Section 12.6.3).
- (1159) In the second place, Google profited significantly from the declared open-source distribution of Android, as can be seen from the slide in Figure 23, included in an internal presentation to Google's board of directors by [Google Executive].¹²⁴¹

Figure 23: Google internal document on open source

How do we retain control of something we gave away?

- We credit Android's rapid adoption to the fact that we made it available under an open source license
- Because of its Apache licensing model, we sent a strong signal that we are not controlling the platform (vs. GPL or dual license model)
- Because Google was historically seen as a threat to operators, giving up control was a key component of operators adopting Android
- This is one reason Android is considered one of the most commercially successful Linux distributions

Conclusion: Open source reduces friction

- (1160) Against that background, Google cannot now claim that the anti-fragmentation obligations are necessary to minimise the negative consequences for Google resulting from greater competition from Android forks that are connected to developing an OS in an open source environment.¹²⁴²
- (1161) In the third place, it is irrelevant that alternative smart mobile OS providers may have

¹²⁴⁰ Google's Response to the First Letter of Facts, Part Two, pages 40-41, paragraphs 9-12 (Doc ID 8598).

¹²⁴¹ See Google internal presentation by [Google Executive], "Android – Answers to strategy questions for BOD", 8 October 2010, slide 3 (Doc ID 1790-397).

¹²⁴² As noted in an internal presentation by Google, for example, "*We don't work directly in the open for several reasons (patents, fragmentation, competition...)*" (emphasis added) (Google's internal document submitted in response to the request for information of 11 July 2014, presentation by [Google Executives] of 30 September 2010 (Doc ID 1348-546)).

more restrictive business models¹²⁴³ as:

- (1) Apple, BlackBerry and Microsoft have not decided to adopt an open source business model; and
 - (2) Android was considered the "*most closed*" among the open source software reviewed by VisionMobile.¹²⁴⁴
- (1162) In the fourth place, Google's intention to notify hardware manufacturers of the option to enter into an ACC in place of an AFA confirms that Google could have implemented less restrictive measures than the anti-fragmentation obligations as originally worded.
- (1163) Second, Google has not demonstrated that fragmentation would be detrimental to the Android ecosystem.
- (1164) In the first place, Google itself contributes significantly to the fragmentation of the Android ecosystem. This is primarily because, as discussed in Section 9.4.4, by preventing fork developers from pre-installing its proprietary APIs, Google Play Services, Google has created an artificial distinction between two categories of Android devices: GMS devices that pre-install Google Play Services and other devices that do not pre-install Google Play Services. This is confirmed by:
- (1) A specialised press report, according to which: "[...] *the most commonly used version of Android is actually a fork by Google itself.*"¹²⁴⁵
 - (2) Amazon's statement, according to which: "*The ‘openness’ of Android was one of the key factors that made Android attractive to developers. Google subsequently moved APIs out of open source Android to Google Play services, leading to a significant drop in portability. For example, Google released Google Cloud Messaging for Android in 2012 but then moved it to Google Play services the following year. Since then, all new significant APIs that Google releases are available exclusively through Google Play services. The APIs that remain open source are not updated at the same rate as the corresponding closed source versions. For example, open source Android contains an early version of the Location API that has not been updated to match the more feature-rich Google Play services version. As a result, an app using the open source version of the Location API would offer lower-quality location-based services that consume more battery power than one using the Location API available through Google Play services, an option no developer would choose when given both as options. And apps using the Google Play services version of the Location API will not work on forked versions of Android without modification. [...] Having secured the successful adoption of the Google Android OS, the Google Play app store, and the Google Mobile*

¹²⁴³ Google's Response to the Statement of Objections, Part Three, pages 118-119, paragraphs 57-61 (Doc ID 7117).

¹²⁴⁴ See "Open Governance Index- Measuring the true openness of open source projects from Android to Webkit" (July 2011), page 16, available at <http://www.visionmobile.com/product/open-governance-index/>, printed and saved on 11 April 2016.

¹²⁴⁵ See Michael H, "The Google Android fork: Google Play services, Android 4.4, and the Nexus experience" (14 October 2013), available at http://www.phonearena.com/news/The-Google-Android-fork-Google-Play-services-Android-4.4-and-the-Nexus-Experience_id48229, printed and saved on 11 April 2016.

Services ("GMS") app suite by effectively all OEMs and developers, Google is taking more and more steps to create a closed ecosystem, despite its assertions of an open ecosystem."¹²⁴⁶

- (3) Nokia's statement, according to which: "*Google itself has contributed to its fragmentation by releasing two separate versions of the OS: AOSP and Android OS, as well as releasing such a great number of different successive versions of Android OS, which Google develops in secret, which is unlike common practice in open source software development.*"¹²⁴⁷
 - (4) Opera's statement, according to which: "*Android is additionally prone to fragmentation when the Google proprietary network APIs that are part of GPS are not supported on forks of the open-source components of Android. Therefore, apps designed to run on Google's Android and making use of Google's proprietary network APIs do not run on the Android forks that do not include the proprietary APIs.*"¹²⁴⁸
 - (5) Yandex's statement, according to which: "[...] *an example of this form of fragmentation would be the creation of AOSP-based mobile devices without access to the APIs contained in GPS. This type of fragmentation is caused by Google's approach to distributing its APIs only within a single package, which is available to device manufacturers only if they pre-install GPS on the device (for more details, please see above). Absent these APIs, such applications will simply not operate —despite the similarity of the source code — even on a pure AOSP-based device.*"¹²⁴⁹
- (1165) In the second place, "fragmentation" can be a source of competition and innovative products, as confirmed by the fact that Google itself created Android by breaking compatibility with Sun Microsystem's Java.¹²⁵⁰

¹²⁴⁶ See Amazon's non-confidential response to Question 10 of the request for information to app developers of 29 June 2015 (Doc ID 8230).

¹²⁴⁷ See Nokia's non-confidential response to Question 14 of the request for information to app developers of 29 June 2015 (Doc ID 4360).

¹²⁴⁸ See Opera's non-confidential response to Question 14 of the request for information to app developers of 29 June 2015 (Doc ID 2133).

¹²⁴⁹ See Yandex's non-confidential response to Question 14 of the request for information to app developers of 29 June 2015 (Doc ID 2031).

¹²⁵⁰ See in this regard District Court. Oracle America Inc. v. Google Inc., U.S. Court of Appeals for the Federal Circuit, May 14, 2014, "*Google and Sun began discussing the possibility of Google "taking a license to use and to adapt the entire Java platform for mobile devices."* [...] *They also discussed a "possible co-development partnership deal with Sun under which Java technology would become an open-source part of the Android platform, adapted for mobile devices.*" [...] *The parties negotiated for months but were unable to reach an agreement. The point of contention between the parties was Google's refusal to make the implementation of its programs compatible with the Java virtual machine or interoperable with other Java programs. Because Sun/Oracle found that position to be anathema to the "write once, run anywhere" philosophy, it did not grant Google a license to use the Java API packages. When the parties' negotiations reached an impasse, Google decided to use the Java programming language to design its own virtual machine—the Dalvik virtual machine ("Dalvik VM")—and "to write its own implementations for the functions in the Java API that were key to mobile devices.* [...] *Although Android uses the Java programming language, it is undisputed that Android is not generally Java compatible*". See also US Court of Appeals for the Federal Circuit, Oracle America Inc. v. Google Inc, March 27, 2018, "*In the prior appeal, we noted that "Google's competitive desire to achieve commercial 'interoperability' ... may be relevant to a fair use analysis."* But, although several amici in this appeal discuss interoperability concerns, Google has abandoned the arguments it once

Figure 24: Oracle's view on Google's use of Java

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What is Oracle's interest?
The Determination of fair use does not change the facts.

 Java

- Java is designed so applications developed using Java will run on any operating system.
- Google used Java to develop Android, Google chose not to use open source Java.
- Google modified Java in Android so that mobile apps written for Android would only run on Android.
- Google's Android implementation broke Java interoperability.
- Google now justifies numerous anticompetitive actions on the need to protect Android from "fragmentation."

"The Android platform uses the Java programming language, but petitioner purposely designed Android not to be compatible with the Java platform or interoperable with Java programs."
DONALD B. VERRILLI, JR., United States Solicitor General, May, 2015

- (1166) The fact that fragmentation can bring significant benefits is also confirmed by third-party respondents to requests for information:
- (1) EA, which stated: "*The development of Android forks has provided consumers with more choice and in our view the impact on the fragmentation of the Android ecosystem benefits consumers as a result.*"¹²⁵¹
 - (2) Yandex, which stated: "*Whilst the development of Android forks certainly has an impact on the fragmentation of the Android ecosystem in terms of additional development being required to adapt applications for various versions of the OS, the benefits of fragmentation outweigh the downsides. The creation of forked versions of the Android OS promotes innovation, provides consumers with a wider choice of mobile devices suitable for their needs and ensures that device manufacturers have optionality to make their device stand out from the competition by incorporating innovative features that might have been rejected by the owner of the source code for the original OS.*"¹²⁵²
 - (3) Nokia, which stated: "*The impact [of Android forks] is merely on fragmenting the commercial ecosystem – not so the technical compatibility.*"¹²⁵³
 - (4) Skyhook, which stated: "*The availability of Android forks is important to Skyhook's business, as the proliferation of alternative operating systems*

made about interoperability. This change in course is not surprising given the unrebutted evidence that Google specifically designed Android to be incompatible with the Java platform and not allow for interoperability with Java programs."

¹²⁵¹ See EA Swiss Sarl's non-confidential response to Question 16 of the request for information to app developers of 29 June 2015 (Doc ID 2043).

¹²⁵² See Yandex's non-confidential response to Question 16 of the request for information to app developers of 29 June 2015 (Doc ID 2031).

¹²⁵³ See Nokia's non-confidential response to Question 16 of the request for information to app developers of 29 June 2015 (Doc ID 4360).

increases the markets into which Skyhook can offer its location services."¹²⁵⁴

- (5) Opera, which stated: "*Android forks have certainly increased the level of fragmentation in the Android ecosystem. Two identical devices, one running a Google-approved version of Android including GPS, and another running a version of Android without GPS, will offer different APIs for applications. Also, the two devices may offer access to different search engines and pre-installed applications. As such, fragmentation allows a greater variety of devices and may allow some competition to occur.*"¹²⁵⁵
 - (6) Amazon, which stated: "*Android forks should be a positive development for the community and end users, and should be allowed to evolve and flourish without Google throttling their development by the imposition of wide-sweeping restrictions. If allowed to develop, Android forks increase the diversity of standalone operating systems, features, and functionality, thereby conferring a broad range of benefits on developers and users, including a greater diversity and flexibility in device functionality, and consequently increased ability to cater services to a wider range of mobile devices and users.*"¹²⁵⁶
- (1167) In the third place, Google has never defined precisely what "*fragmentation*" as referred to in the AFAs means. Whilst the obligation to sell only compatible devices could be interpreted in light of the CDD and CTS compatibility requirement,¹²⁵⁷ the same cannot be said for the AFA clause according to which "[COMPANY] will not take any actions that may cause or result in the fragmentation of Android".¹²⁵⁸
- (1168) The fact that Google has never defined the concept of fragmentation is confirmed by an internal Google document and third-party respondents to requests for information:
- (1) [Google Executive], stated in internal correspondence: "*We will not and cannot define fragmentation. Unless [Google Executive] wants to define it (which I doubt), we need to leave the language [of the AFA] as is.*"¹²⁵⁹
 - (2) Sony's stated that: "*The term "fragmentation" is not defined in the AFA, and Google may change its interpretation of "fragmentation" at any time and in its sole discretion.*"¹²⁶⁰
 - (3) Asus stated that "*The definition and scope of Anti-Fragmentation in ASUS' AFA (Document 7) with Google were vague. Google simply stipulated in the AFA entered into by and between ASUS and Google on March 4th, 2011 that ASUS will not take any actions that may cause or result in the fragmentation of*

¹²⁵⁴ See Skyhook's non-confidential response to Question 16 of the request for information to app developers of 29 June 2015 (Doc ID 2114).

¹²⁵⁵ See Opera's non-confidential response to Question 16 of the request for information to app developers of 29 June 2015 (Doc ID 2133).

¹²⁵⁶ See Amazon's non-confidential response to Question 16 of the request for information to app developers of 29 June 2015 (Doc ID 4188).

¹²⁵⁷ In any event, Google maintains a large margin of discretion in the interpretation of these requirements (see recital (163)).

¹²⁵⁸ See Section 6.3.1.

¹²⁵⁹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1760-686).

¹²⁶⁰ See Sony's non-confidential response to Question 44 of the request for information to OEMs of 17 July 2014 (Doc ID 8289).

*Android. However, they failed to make any further interpretation of what may constitute "fragmentation" of Android."*¹²⁶¹

- (4) Amazon stated that "*There is no clear definition of the term "fragmentation" in the context of open source mobile operating systems. [...] The concept of "fragmentation" and the corresponding prohibition against "anti-fragmentation" in the context of open source mobile operating systems seem to be a commercial concept that Google has constructed largely to control how open source Android can be commercialized by its competitors. [...] Google does not provide any explanation or specific example of what constitutes fragmentation".*"¹²⁶²
- (5) Nokia stated that "*Interestingly, Google does not itself give a definition of fragmentation. Google's AFA prohibits any "actions that may cause or result in the fragmentation of Android [OS]", but fragmentation remains undefined in the AFA".*"¹²⁶³
- (1169) In the fourth place, as discussed in Section 12.6.1, one of the benefits of developing an Android fork instead of a full-fledged alternative smart mobile OS would be to have access to the wide pool of apps developed for Google Android. As such, fork developers have an incentive to minimise incompatibilities.
- (1170) In the fifth place, Android fork developers would have an incentive to set up credible and efficient systems to ensure the correct functioning of apps on devices running their Android fork. Amazon, for example, has invested significant resources in ensuring a high level of quality across the apps developed for Fire OS.¹²⁶⁴
- (1171) In the sixth place, as regards Google's claims of technical failures on Amazon devices and in Asia:
- (1) Google cites only one example of a technical failure related to Amazon Fire OS devices¹²⁶⁵ across the [700 000 – 900 000]¹²⁶⁶ apps developed for the Fire OS. This is negligible both in absolute terms and relative to the instances of technical failures reported in relation to Google Android devices;¹²⁶⁷ and

¹²⁶¹ See Asus' non-confidential response to Question 44 of the request for information to OEMs of 17 July 2014 (Doc ID 3703).

¹²⁶² See Amazon's non-confidential response to Question 14 of the request for information to app developers of 29 June 2015 (Doc ID 4188).

¹²⁶³ See Nokia's non-confidential response to Question 14 of the request for information of 21 October 2015 on app stores (Doc ID 4360).

¹²⁶⁴ See Amazon's non-confidential response to Questions 4 and 8 of the request for information of 21 October 2015 on app stores (Doc ID 4067) and Amazon's non-confidential response to Question 3 of the request for information of 9 March 2017 (Doc ID 8247).

¹²⁶⁵ Google's Response to the Statement of Objections, Part Three, page 128, paragraph 92 (Doc ID 7117).

¹²⁶⁶ See Amazon's non-confidential response to Question 2 of the follow up request for information of 11 April 2017 (Doc ID 8276).

¹²⁶⁷ For example, certain Android devices were found transmitting owners' personal data to a server in China (see "Secret Back Door in Some U.S. Phones Sent Data to China, Analysts Say" (15 November 2016), available at https://www.nytimes.com/2016/11/16/us/politics/china-phones-software-security.html?_r=0, printed and saved on 13 June 2017). In addition, common Android technical flaws recently found include: "QuadRooter", which affects devices incorporating Qualcomm chipsets running Android versions 4.3 and earlier and allows low-privileged apps to access sensitive data by invoking permissions that are requested by millions of apps available in the Play Store (see "Critical Qualcomm security bug leaves many phones open to attack" (5 May 2016), available at

- (2) The fact that devices sold in Asia have a relatively higher rate of technical failure than devices sold in Europe and the US may depend on several reasons that are independent from Google's claim¹²⁶⁸ that AFA coverage is allegedly lower in Asia because of the following:
 - (1) According to Google's data,¹²⁶⁹ devices in Europe have a higher failure rate than the US ([30-40]% vs [20-30]%), despite AFAs covering both Europe and the US (see Section 6.3.1);
 - (2) Google has not substantiated its claim that OEMs "*largely*" do not sign AFAs in "*Asia*". It is only in China that certain OEMs do not seem to have signed AFAs (see Section 8.3); and
 - (3) In any event, OEMs such as Huawei, Lenovo, Xiaomi and ZTE, which represent the large majority of devices sold in China (see recital (447)), have entered into AFAs that cover and are enforced for devices sold in China.
- (1172) Third, Google has not demonstrated that the anti-fragmentation obligations are necessary to protect its reputation.
- (1173) In the first place, users of devices running Android forks cannot access Google proprietary apps, given that Google only enters into MADAs with OEMs that commit not to sell Android forks. As such, in the absence of any Google trademark associated with devices running Android forks, there is no basis for users to attribute to Google the responsibility for any technical failures of those devices. Thus, while there may be an objective justification for Google to have in place a reasonable, fair and objective programme for the verification of GMS devices, with a view to ensuring the quality and uniformity of the user experience and the correct functioning of its proprietary apps, there is no such justification for Google's interference with the freedom of OEMs to sell devices based on Android forks that do not pre-install Google proprietary apps.
- (1174) In the second place, any scope for confusion between GMS devices and devices running Android forks is reduced by the fact that the use of the "Android" name, logo and custom typeface is limited by Google's branding guidelines, which for example provide that:
- (1) unless expressly authorised by Google through written agreement, the Android logo and custom typeface may not be used (with or without the Android robot);

<https://arstechnica.com/security/2016/05/5-year-old-android-vulnerability-exposes-texts-and-call-histories/>, printed and saved on 15 June 2017); "Certifi-gate mRST", a flaw in two mobile Remote Support Tool plug-ins used by many OEMs running Android versions up to 5.1. Attackers could exploit it by sneaking a bogus app onto a phone which exploits the flaw in a way that elevates the attacker's permissions. From that point on, the attacker would have complete remote control over the smartphone (see "Certifi-gate flaw in Android remote support tool exploited by screen recording app" (25 August 2015), available at <http://www.pcworld.com/article/2975825/certifi-gate-flaw-in-android-remote-support-tool-exploited-by-screen-recording-app.html>, printed and saved on 13 June 2017); and "Stagefright", which affects a media playback component of Android called Stagefright. Attackers could exploit the issue by sending a malicious video message to almost any Android handset, which would execute automatically (see "The 'Stagefright' exploit: What you need to know (17 August 2015), available at <http://www.androidcentral.com/stagefright>, printed and saved on 15 June 2017).

¹²⁶⁸ Google's Response to the Statement of Objections, Part Three, page 127 (Doc ID 7117).

¹²⁶⁹ Google's Response to the Statement of Objections, Part Three, page 127, paragraph 89 (Doc ID 7117).

- (2) the use of "Android" on hardware, packaging or marketing materials of device is restricted to Google Android devices only; and
 - (3) "Android" should never be used in the name of products or as the primary or dominant mark on packaging or devices.¹²⁷⁰
- (1175) In the third place, to the extent that there would remain scope for confusion between GMS devices and devices running Android forks, Google could put in place revised policies of licensing its "Android" and "Android compatible" trademarks for use on devices meeting the CDD and CTS. Google could also unilaterally decide to use the "Google" brand to identify those devices that are meeting the CDD and CTS or pre-install Google proprietary apps.
- (1176) Moreover, the MADAs already contain mandatory branding requirements that leave significant discretion to Google and that need to be fully implemented by OEMs. For example, the MADAs mandate OEMs to show, upon device boot, an Android brand feature or Google trademark, to be determined by Google in its sole discretion.¹²⁷¹
- (1177) Fourth, Google has not demonstrated that the anti-fragmentation obligations are limited to prevent "corner cutting". On the contrary, and as acknowledged by Google,¹²⁷² the anti-fragmentation obligations also prevent the commercialisation of Android forks, which could constitute a competitive threat to Google.¹²⁷³
- (1178) Fifth, Google has not demonstrated that the AFAs are necessary to prevent free riding on technical support such as early release of the Android source code or developer boot camps.
- (1179) In the first place, it is inherent to open source software that information related to it can be used to develop forked versions of that software.
- (1180) In the second place, Google could identify and address any unauthorised disclosure of information pertaining to pre-release versions of Android. This is because [Google commercial practice].¹²⁷⁴
- (1181) In the third place, mere technical support such as "developer boot camps" that Google offers OEMs cannot justify the imposition of a blanket ban against the commercialisation of Android forks. Google could address any free riding on technical support provided at developer boot camps by less restrictive measures such as contractual non-disclosure obligations that could be limited to the information obtained during developer boot camps.
- (1182) Sixth, it is irrelevant for the purposes of assessing the existence of an objective justification that Google introduced the anti-fragmentation obligations before it was dominant or that the anti-fragmentation obligations may not have been meant to mislead. These factors are incapable of altering the fact that the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations as

¹²⁷⁰ See "Brand guidelines", available at <https://source.android.com/setup/start/brands>, printed and saved on 11 April 2016.

¹²⁷¹ See for example MADA between Google and [MADA signatory] of [...] March 2014, clause 3.3.g. [...].

¹²⁷² Google's Response to the Statement of Objections, Part Three, pages 122-123, paragraphs 72-77 (Doc ID 7117).

¹²⁷³ See Section 12.6.1.

¹²⁷⁴ See Annex Q.22 to Google's response to the request for information of 24 March 2017 (Doc ID 7793).

of 2011 is not objectively justified.

- (1183) Seventh, the Commission is not required to carry out a balancing of the anti-competitive and pro-competitive effects of those obligations because Google has not demonstrated that the anti-fragmentation obligations are necessary.

12.8. Google's intention to notify hardware manufacturers of the option to enter into an ACC in place of an AFA

- (1184) The Commission concludes that Google's intention to notify hardware manufacturers of the option to enter into an ACC in place of an AFA does not alter the fact that Google still makes the licensing of the Play Store and the Google Search app conditional on hardware manufacturers agreeing to the anti-fragmentation obligations in the AFAs.¹²⁷⁵
- (1185) First, while the ACCs would allow OEMs to manufacture Android incompatible devices under a third party brand and AFA signatories to supply components for incorporation in Android incompatible devices under a third party brand, it would still not allow OEMs to manufacture Android incompatible devices under their own brand (alone or in conjunction with the brand of the Android fork developer).
- (1186) Second, and in any event, as of the date of the adoption of this Decision, Google has not submitted any evidence regarding the number of hardware manufacturers that it has notified of the option to enter into an ACC or how many hardware manufacturers have exercised that option.

12.9. Duration of the infringement

- (1187) The Commission concludes that the start date of the infringement is 1 January 2011, the date as of which the Commission concludes that Google is dominant in the worldwide market (excluding China) for Android app stores and the national markets for general search services. The infringement is still ongoing.

13. ABUSE OF GOOGLE'S DOMINANT POSITION: PORTFOLIO-BASED REVENUE SHARE PAYMENTS CONDITIONAL ON THE PRE-INSTALLATION OF NO COMPETING GENERAL SEARCH SERVICE

13.1. Principles

- (1188) An undertaking which is in a dominant position on a market and ties purchasers – even if it does so at their request – by an obligation or promise on their part to obtain all or most of their requirements exclusively from that undertaking, abuses its dominant position within the meaning of Article 102 of the Treaty and Article 54 of the EEA Agreement, whether the obligation is stipulated without further qualification or whether it is undertaken in consideration of the grant of a rebate or payment. The same applies if the undertaking in question, without tying the purchasers by a formal obligation, applies, either under the terms of agreements concluded with these purchasers or unilaterally, a system of loyalty rebates or payments, that is to say, discounts or payments conditional on the customer's obtaining all or most of its requirements — whether the quantity of its purchases be large or small — from the undertaking in a dominant position ("exclusivity rebates" or "exclusivity

¹²⁷⁵

See Section 6.3.1.

payments").¹²⁷⁶ Exclusivity payments are therefore presumed to constitute an abuse of dominant position within the meaning of Article 102 of the Treaty and Article 54 of the EEA Agreement.¹²⁷⁷

- (1189) Where, however, the dominant undertaking concerned seeks to rebut the presumption of abuse by submitting, during the administrative procedure, on the basis of supporting evidence, that its exclusivity payments were not capable of restricting competition and, in particular, of producing the alleged foreclosure effects,¹²⁷⁸ the Commission is not only required to analyse, first, the extent of the undertaking's dominant position on the relevant market and, secondly, the share of the market covered by the exclusivity payments, as well as the conditions and arrangements for granting the payments in question, their duration and their amount, it is also required to assess the possible existence of a strategy aiming to exclude competitors that are at least as efficient as the dominant undertaking from the market.¹²⁷⁹
- (1190) The analysis of the capacity to foreclose is also relevant in assessing whether a system of exclusivity payments which, in principle, falls within the scope of the prohibition laid down in Article 102 of the Treaty and Article 54 of the EEA Agreement, may be objectively justified.¹²⁸⁰
- (1191) The exclusionary effect arising from such exclusivity payments, which is disadvantageous for competition, may be counterbalanced, or outweighed, by advantages in terms of efficiency which also benefit the consumer.¹²⁸¹ That balancing of the favourable and unfavourable effects of exclusivity payments on competition can be carried out only after an analysis of the intrinsic capacity of those payments to foreclose competitors which are at least as efficient as the dominant undertaking.¹²⁸²

13.2. Summary of the abusive conduct

- (1192) The Commission concludes that between 1 January 2011 and 31 March 2014, Google abused its dominant position in the national markets for general search services by granting revenue share payments to OEMs and MNOs on condition that they pre-install no competing general search service on any device within an agreed portfolio.
- (1193) This conclusion is based on the following considerations:
- (1) Google's portfolio-based revenue share payments constituted exclusivity payments (Section 13.3); and
 - (2) the presumption that the grant of such exclusivity payments constitutes an

¹²⁷⁶ Case 85/76 *Hoffmann-La Roche v Commission*, EU:C:1979:36, paragraph 89; Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 137.

¹²⁷⁷ Case 85/76 *Hoffmann-La Roche*, EU:C:1979:36, paragraph 89; Case C-23/14 *Post Danmark A/S v Konkurrenserådet*, EU:C:2015:651, paragraph 27.

¹²⁷⁸ Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 138.

¹²⁷⁹ Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 139.

¹²⁸⁰ Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 140.

¹²⁸¹ Case C-95/04 P *British Airways*, EU:C:2007:166, paragraphs 85 and 86; Case C-209/10 *Post Danmark A/S v Konkurrenserådet*, EU:C:2012:172, paragraphs 40 and 41; Case C-23/14 *Post Danmark A/S v Konkurrenserådet*, EU:C:2015:651, paragraphs 47 and 48; Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 140.

¹²⁸² Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 140.

abuse of dominant position is borne out in the circumstances of the present case by the Commission's analysis of the capability of Google's portfolio-based revenue share payments to restrict competition (Section 13.4).

- (1194) The Commission further concludes that Google has not demonstrated the existence of any objective justification for the grant of portfolio-based revenue share payments, nor that those payments were counterbalanced or outweighed by advantages in terms of efficiency that also benefit the consumer (Section 13.5).

13.3. Google's portfolio-based revenue share payments constituted exclusivity payments

- (1195) Between at least 1 January 2011 and 31 March 2014, Google granted payments to OEMs and MNOs on condition that they pre-installed no competing general search service on any device within an agreed portfolio. With the exception of the agreement between Google and [revenue share partner], the agreed portfolio consisted of at least all GMS devices.
- (1196) As a result, if an OEM or MNO had pre-installed a competing general search service on any device within an agreed portfolio, it would have had to forego the revenue share payments not only for that particular device but also for all the other devices in that portfolio.¹²⁸³
- (1197) In the case of all OEMs to whom Google granted portfolio-based revenue share payments, the number of non-GMS devices outside the agreed portfolio was small and mostly included devices running on Windows Phone.¹²⁸⁴ [Revenue share partner] had the lowest share of devices running on Google Android¹²⁸⁵ of [85-90]%. The portfolio-based revenue share payments made by Google to OEMs except for [revenue share partner] were therefore conditioned on the OEMs obtaining from Google all of their requirements for general search services on an important segment of smart mobile devices, which in turn also constituted all or almost all of their requirements for general search services on smart mobile devices.
- (1198) In the case of [revenue share partner], the portfolio-based revenue share payments were conditioned on [revenue share partner] obtaining from Google all of its requirements for general search services on Wi-Fi only tablet devices with a screen size of 7" or more, which represented [50-60%] and [70-80%] of [revenue share partner]'s Google Android devices in 2012 and 2013, respectively.¹²⁸⁶
- (1199) In the case of all MNOs to whom Google granted portfolio-based revenue share payments, GMS devices were sold alongside other smart mobile devices, including

¹²⁸³ See e.g. [revenue share partner]'s non-confidential response to Question 20 of the request for information of 17 July 2014 [...].

¹²⁸⁴ See Annex 6 to [revenue share partner]'s non-confidential response to Question 29 of the request for information of 17 July 2014 [...]; [revenue share partner] non-confidential response to Question 29 of the request for information of 17 July 2014 [...]; [revenue share partner]'s non-confidential response to Question 29 of the request for information of 17 July 2014 [...]; Annex 4 to [revenue share partner]'s non-confidential response to Question 29 of the request for information of 17 July 2014 [...]; Annex 29 to [revenue share partner]'s non-confidential response to Question 29 of the request for information of 17 July 2014 [...].

¹²⁸⁵ Practically all Google Android devices sold by these OEMs outside China were GMS devices (see footnote 436).

¹²⁸⁶ [...] attached to [revenue share partner]'s non-confidential response to Question 27 of the request for information of 17 July 2014 [...].

devices running Windows Phone and iOS. The portfolio-based revenue share payments were therefore conditioned on the MNOs obtaining from Google all their requirements for pre-installed general search services on devices in the agreed portfolio, which constitutes an important segment of smart mobile devices.

- (1200) Google's internal documents confirm that the purpose of the portfolio-based revenue share payments was to ensure that OEMs and MNOs obtained from Google all of their requirements for general search services on the devices included in their agreed portfolio. This purpose was clearly spelt out in an internal conversation in 2011 relating to the negotiation of a revenue share agreement between Google and [MNO]:
- (1) [Google Executive], explained the following: "*Non-duplication of services is the same as exclusivity as long as it applies across *all* devices (or all Android devices). [...] I think this approach is really important otherwise Bing or Yahoo can come and steal away our Android search distribution at any time, thus removing the value of entering into contracts with them. Our philosophy is that we are paying revenue share *in return for* exclusivity.*"
 - (2) [Google Executive] the Google employee negotiating the contracts with European MNOs, replied "*If it's too constraining, they might prefer not to sign anything. But I get your point.*"
 - (3) In response, [Google Executive], explained to her that "*The exclusive across all the android search entry points is very strategic to mobile search, the nightmare scenario is for [Microsoft] (or others) to come and scoop us by simply paying more, we know they have shown an appetite to do this in the past and will likely do so again to gain traction, as such, [Google Executive's] suggested approach is much preferred if possible, this also sets the desired precedent going forward for other android partnerships in your region.*"
 - (4) Finally, [Google Executive] added "*America Movil, Verizon, and AT&T were all examples of large carriers that wanted to ship without Google [...] and did. AT&T shipped Yahoo on Android phones. Verizon shipped Bing. America Movil shipped Yahoo. We need to incentivize carriers to ship Google by using the same approach we at Google have used for many years: "We will pay you revenue share in return for exclusive default placement". This contract is an exchange. Without the exclusivity, we are not "getting" anything. Without an exclusive search deal, a large carrier can and will ship alternatives to Google (as seen with Verizon, AT&T, and America Movil). [...] Our philosophy is that we are paying revenue share *in return for* exclusivity.*"¹²⁸⁷
- (1201) Google's internal documents also confirm that Google was aware that its portfolio-based revenue share payments may give rise to antitrust concerns. In 2013-2014, following an "*antitrust risk analysis*" Google amended its portfolio-based revenue share agreements in "*countries/markets where [its] search share and that of Android are high and where [it] faces an aggressive antitrust regulator and/or active complainants*".¹²⁸⁸ This amendment resulted in the carve-out of the Union and the

¹²⁸⁷ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1362-440).

¹²⁸⁸ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1753-683).

Republic of Korea of the territorial scope of the portfolio-based revenue share payments.

- (1202) The Commission's conclusion that the portfolio-based revenue share payments constituted exclusivity payments is not affected by Google's claims that:¹²⁸⁹
- (1) OEMs and MNOs are not customers of general search services that have a requirement which is exclusively fulfilled by Google;
 - (2) Google's portfolio-based revenue share payments did not constitute exclusivity payments because users could access competing general search services on devices by downloading competing general search service apps or through mobile web browsers; and
 - (3) only a small portion of general search queries that originated from Google Android devices were covered by portfolio-based revenue share agreements.
- (1203) First, OEMs and MNOs do have requirements for general search services insofar as they provide users with smart mobile devices that offer general search service functionalities.
- (1204) Second, the conclusion that the portfolio-based revenue share payments constitute exclusivity payments does not depend on whether users could access competing general search services by downloading competing general search service apps or through mobile web browsers. This is because had an OEM or MNO pre-installed a competing general search service on any device within an agreed portfolio, it would have had to forego the revenue share payments not only for all the general search queries on that particular device but also on all the other devices in that portfolio.
- (1205) Third, Google's claim that only a small portion of general search queries that originated from Google Android devices were covered by portfolio-based revenue share agreements is in effect a challenge to the Commission's assessment of the capability of the portfolio-based revenue share payments to restrict competition and is addressed in Section 13.4.2.

13.4. Google's portfolio-based revenue share payments were capable of restricting competition

- (1206) The presumption that Google's portfolio-based revenue share payments constituted an abuse of a dominant position is borne out in the circumstances of the present case by the Commission's analysis of the capability of Google's portfolio-based revenue share payments to restrict competition. This is for the following reasons:
- (1) Google's portfolio-based revenue share payments reduced the incentives of OEMs and MNOs to pre-install competing general search services (Section 13.4.1);
 - (2) Google's portfolio-based revenue share payments made access to the national markets for general search services more difficult (Section 13.4.2); and
 - (3) Google's portfolio-based revenue share payments deterred innovation (Section 13.4.3).

¹²⁸⁹ Google's Response to the Statement of Objections, Part Five, pages 262-271, paragraphs 28-58 (Doc ID 7117).

(1207) As part of this assessment, the Commission has *inter alia* assessed and taken into account: (i) the extent of Google's dominant position on the national markets for general search services (see Section 9.5), (ii) the share of the general search services in the EEA covered by the portfolio-based revenue share payments (see Section 13.4.2), and (iii) the conditions and arrangements for Google's portfolio-based revenue share payments, as well as their duration and amount (see Sections 6.3.3 and 13.3).

13.4.1. Google's portfolio-based revenue share payments reduced the incentives of OEMs and MNOs to pre-install competing general search services

(1208) Google's portfolio-based revenue share payments reduced the incentives of OEMs and MNOs to pre-install competing general search services. This is for the following reasons:

- (1) absent the portfolio-based revenue share payments, OEMs and MNOs would have had a commercial interest in pre-installing competing general search services on at least some of their Google Android devices (see Section 13.4.1.1);
- (2) a competing general search service could not have matched Google's portfolio-based revenue share payments to OEMs and MNOs (see Section 13.4.1.2); and
- (3) the portfolio-based revenue share payments were one cause of the OEMs and MNOs refraining from pre-installing competing general search services on their Google Android devices (see Section 13.4.1.3).

(1209) Given that the MADAs were in place during the whole duration of Google's portfolio-based revenue share payments, the Commission's analysis of the capability of the portfolio-based revenue share payments to restrict competition takes account of the requirement under the MADAs that Google Search is pre-installed on all GMS devices.

(1210) Given that practically all Google Android devices sold outside China are GMS devices, this requirement under the MADA meant that the most that a competing general search service could achieve on a Google Android device of an OEM or MNO that received portfolio-based revenue share payments was that its general search service was pre-installed in addition to Google Search.

13.4.1.1. Absent the portfolio-based revenue share payments, OEMs and MNOs would have had a commercial interest in pre-installing competing general search services on at least some of their Google Android devices

(1211) For the reasons set out in this Section, the Commission concludes that, absent the portfolio-based revenue share payments, OEMs and MNOs would have had a commercial interest in pre-installing competing general search services on at least some of their Google Android devices.

(1212) First, competing general search services would have had an interest to offer revenue shares or other monetary compensation in return for pre-installation:

- (1) as Google has acknowledged, "*OEMs and MNOs often look for opportunities to generate additional revenues beyond device sales. These opportunities include monetizing the available screen space of devices by offering exclusive preinstallation to various app developers. Just as supermarkets sell (premium) shelf space to suppliers, so, too, do OEMs and MNOs seek to generate additional revenues by monetizing the 'real estate' of the smartphone's screen.*

*Monetizing this space enables OEMs and MNOs to generate additional revenues that can be used, among others, to invest in their devices or to drive down device prices to the benefit of end users, further promoting competition.*¹²⁹⁰

- (2) in an internal discussion, [Google Executive] explained that "America Movil, Verizon, and AT&T were all examples of large carriers that wanted to ship without Google [...] and did. AT&T shipped Yahoo on Android phones. Verizon shipped Bing. America Movil shipped Yahoo. [...] Without an exclusive search deal, a large carrier can and will ship alternatives to Google (as seen with Verizon, AT&T, and America Movil). [...] Our philosophy is that we are paying revenue share *in return for* exclusivity."¹²⁹¹
- (1213) Second, OEMs and MNOs may have wanted to offer differentiated products and improve user experience. For example, OEMs and MNOs may have wanted to pre-install different general search services because certain services have a more focused offering in a particular language (e.g. Seznam¹²⁹²) or target a specific group of users that devote more attention to certain issues such as privacy (e.g. DuckDuckGo, Qwant), ease of search (e.g. Kikin's "Touch-to-Search" functionality) or lack of adult content (e.g. Qwant Junior).¹²⁹³ This was confirmed by [Google Executive], in an internal discussion in 2007 about Google's distribution agreement with Apple: "*I think we should encourage them to have Yahoo as a choice in the pull down or some other easy option. I don't think it is a good user experience nor the optics is great for us to be the only provider in the browser.*" [Google Executive], responded "*I agree [Google Executive]*".¹²⁹⁴
- (1214) Third, the pre-installation of competing general search services alongside Google would have increased the traffic to those services:
- (1) According to Yahoo, it "*expects that traffic generated by its search services would be higher if its search services were preinstalled than if not preinstalled, regardless of whether Google's search engine is also preinstalled on the same device.*"¹²⁹⁵
 - (2) According to Qwant, "*A pre-installation [...] will likely highly increase our traffic.*"¹²⁹⁶
 - (3) According to Microsoft, at the end of 2008, it signed a pre-installation

¹²⁹⁰ Google's response to the complaint by Yandex, paragraph 36 (Doc ID 2118).

¹²⁹¹ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1362-440).

¹²⁹² Seznam's non-confidential response to Question 8 of the request for information of 20 November 2015 to Search providers (Doc ID 4561).

¹²⁹³ See "*DuckDuckGo Privacy*", available at <https://duckduckgo.com/privacy, printed and saved on 14 April 2016>; "*Your privacy and Qwant*", available at <https://www.qwant.com/privacy, printed and saved on 14 April 2016>; and "Kikin's 'touch to search' service set for Android debut on the Vodafone Smart Tab II" available at <http://blog.vodafone.co.uk/2013/02/18/kikins-touch-to-search>, printed and saved on 14 April 2016.

¹²⁹⁴ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1790-50).

¹²⁹⁵ Yahoo's non-confidential response to Question 10 of the request for information of 20 November 2015 to Search providers (Doc ID 3411).

¹²⁹⁶ Qwant's non-confidential response to Question 9 of the request for information of 20 November 2015 to Search providers (Doc ID 3236).

agreement with Verizon pursuant to which, in the US in 2010 and 2011, its general search service was pre-installed alongside the Google Search service on six models of Google Android devices.¹²⁹⁷ Contrary to Google's claim that the evolution of Bing shares from January 2009 in the US does not show any significant increase,¹²⁹⁸ during the two years in which the agreement was in force, Bing's share of general search queries on smart mobile devices in the US increased from approximately zero in 2009 to approximately 1.5% in December 2011.¹²⁹⁹ Moreover, as explained in recital (789)(8), the traffic resulting from Microsoft's agreement with Verizon covering only six phones accounted for [15-25]% of the entire volume of mobile general search queries to Bing in the US in 2010 and 2011.

- (4) According to Yandex, "*The traffic difference between situations where a search engine is not pre-installed and where it is pre-installed as a secondary search engine (i.e., without being the default search engine) can be up to a factor of 2-3, especially for the markets where the search engine's brand is already widely known.*"¹³⁰⁰
 - (5) According to Seznam, it made significant efforts to achieve pre-installation deals with various players in the market, without success: "*We have been trying to establish cooperation with mobile operators for seven years. Negotiations have been ongoing with all operators, focusing on offers of cooperation in the distribution of our mobile services and search services, subsequently joined by mobile applications. We communicate at all levels, i.e. product – sale – hardware/distribution. We are seeking the opportunity to distribute our own mobile services and applications by way of preinstallation in mobile devices (Android mobiles and tablets [...]).*"¹³⁰¹
- (1215) Fourth, Google was willing to pay for being pre-installed as a second general search service on non-Google Android devices. For example, [revenue share partner] explained that in 2009 it had concluded a revenue share agreement with Google, pursuant to which it added 'Google pointers' to Windows Phones that were sold with Bing set as the default general search service. [Revenue share partner] "didn't have intention to exclude any search engine but to provide Google search as an option in [revenue share partner] Windows phone products".¹³⁰²
- (1216) Fifth, Google acknowledges that, absent the portfolio-based revenue share payments, "*an OEM could [...] promote a rival search provider and deliver no incremental query volume to Google, but collect payment from Google nonetheless*".¹³⁰³ This is also confirmed by an internal discussion at Google in which [Google Executive], explained "*Deals we can close with standard terms are the following: MADA +*

¹²⁹⁷ Microsoft's non-confidential response to Question 10.1 of the request for information of 20 November 2015 to Search providers (Doc ID 4634).

¹²⁹⁸ Google's Response to the First Letter of Facts, Part Three, page 68, paragraph 23 (Doc ID 8598)).

¹²⁹⁹ Source: StatCounter data for 2011-2017, downloaded on 22 May 2017, <http://gs.statcounter.com/>.

¹³⁰⁰ Yandex's non-confidential response to Question 10 of the request for information of 20 November 2015 to Search providers (Doc ID 4219).

¹³⁰¹ Seznam's non-confidential response to Question 19 of the request for information of 30 July 2014 (Doc ID 4289).

¹³⁰² [Revenue share partner]'s non-confidential response to Question 22 of the request for information of 17 July 2014 [...].

¹³⁰³ Google's response to the complaint by Yandex, paragraph 42 (Doc ID 2118).

*search revshare deals with small OEMs [...] What we can lose if we don't sign with carriers and don't do any activity with retailers is difficult to estimate, but as they control the last mile to the customer, it could be significant.*¹³⁰⁴

- (1217) Sixth, the Commission's conclusion that, absent the portfolio-based revenue share payments, OEMs and MNOs would have had a commercial interest in pre-installing competing general search services on at least some of their Google Android devices, is not affected by Google's claims that:
- (1) absent the portfolio-based revenue share payments, OEMs and MNOs would not have had a commercial interest in pre-installing competing general search services on at least some of their Google Android devices because of Google's superior quality. This is confirmed by the fact that OEMs and MNOs, which either never entered into a portfolio-based revenue share agreement with Google or whose agreement expired, have not pre-installed competing general search services on their Google Android devices;¹³⁰⁵
 - (2) the Commission has not demonstrated that pre-installation would have increased the traffic of competing general search services, and relies only on statements by competing general search services;¹³⁰⁶ and
 - (3) had, absent the portfolio-based revenue share agreements, OEMs and MNOs pre-installed a competing general search service in addition to Google Search, this would have reduced their revenues.¹³⁰⁷
- (1218) In the first place, Google is wrong to claim that OEMs and MNOs would not have had a commercial interest in pre-installing competing general search services on at least some of their Google Android devices because of Google's alleged superior quality. This is for three reasons.
- (1219) First of all, certain OEMs, which either never entered into a portfolio-based revenue share agreement with Google or whose agreement expired, have pre-installed competing general search services on at least some of their Google Android devices:
- (1) In February 2017, Microsoft and ZTE entered into a revenue share agreement for the sale of certain Google Android devices worldwide, including the EEA, with Bing set as the default general search service on ZTE's proprietary web browser, as well as for the sale of certain quantities of Google Android devices with the Bing search app pre-installed on those devices.¹³⁰⁸ While Google claims that (i) ZTE has limited presence in the EEA, (ii) the quantity of devices on which Bing will be pre-installed is *de minimis*, and (iii) the agreement is not portfolio-based and was only entered into in February 2017,¹³⁰⁹ none of these factors alters the fact that the agreement shows that, absent the portfolio-based revenue share payments, OEMs and MNOs would have had a commercial

¹³⁰⁴ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1365-1959).

¹³⁰⁵ Google's Response to the Statement of Objections, Part Five, pages 279-291, paragraphs 83-87 (Doc ID 7117).

¹³⁰⁶ Google's Response to the Statement of Objections, Part Five, pages 289, paragraph 86 (Doc ID 7117).

¹³⁰⁷ Google's Response to the Statement of Objections, Part Five, pages 290, paragraph 87 (Doc ID 7117).

¹³⁰⁸ Microsoft's non-confidential response to Question 4 of the request for information of 10 April 2017 (Doc ID 8095) and Google's Data Room Report of October 4, 2017 (Doc ID 8610).

¹³⁰⁹ Google's Response to the First Letter of Facts, Part Four, page 106, paragraph 16 (Doc ID 8598).

- interest in pre-installing competing general search services on at least some of their Google Android devices.
- (2) [Search provider] entered into revenue share agreements with two OEMs whereby the [search provider] mobile search widget and links to the [search provider]'s home page on the default web browser were pre-installed on those OEMs' devices worldwide, including a small number in the EEA.¹³¹⁰ While Google claims that the two OEMs are not obliged to pre-install [search provider]'s services on their devices under the agreements,¹³¹¹ none of these factors alter the fact that the agreement shows that, absent the portfolio-based revenue share payments, OEMs and MNOs would have had a commercial interest in pre-installing competing general search services on at least some of their Google Android devices.
- (1220) In addition, a competing general search service entered into a revenue share agreement with the mobile web browser developer, Mozilla, [terms of the agreement].¹³¹² While Google claims that this agreement is irrelevant since Mozilla is not an OEM or an MNO and [terms of the agreement],¹³¹³ this does not alter the fact that the agreement shows that Mozilla considers that OEMs and MNOs have a commercial interest in pre-installing the Mozilla browser with a competing general search service [terms of the agreement].
- (1221) Further, the fact that Google entered into portfolio-based revenue share agreements indicates that, notwithstanding its alleged superior quality, Google considered that, absent those agreements, OEMs and MNOs would have had a commercial interest in pre-installing competing general search services on at least some of their Google Android devices. This is confirmed by the internal Google evidence cited in recital (1200).
- (1222) Moreover, there are several reasons unrelated to Google's alleged superior quality that can explain why OEMs and MNOs that either never had or ceased to have portfolio-based revenue share agreements with Google did not pre-install competing general search services on their Google Android devices:
- (1) Opportunities for competing general search services to achieve pre-installation on Google Android devices not subject to portfolio-based revenue share payments from Google were limited to smaller OEMs and MNOs because Google had in place portfolio-based revenue share agreements with the most important OEMs.¹³¹⁴ Most of those smaller OEMs accounted, on an individual

¹³¹⁰ [Search provider]'s non-confidential response [...].

¹³¹¹ Google's Response to the First Letter of Facts, Part Four, page 105, paragraph 15 (Doc ID 8598).

¹³¹² Mozilla's non-confidential response to the Questions of the request for information dated 8 May 2017 (Doc ID 8170).

¹³¹³ Google's Response to the First Letter of Facts, Part Four, page 107, paragraph 17 (Doc ID 8598).

¹³¹⁴ In 2011 and 2012, respectively, nearly [70-80]% and [80-90]% of Google Android smartphones sold in Europe were covered by portfolio-based revenue share payments: [revenue share partners and revenue share information]. As of 2013, when portfolio-based revenue share agreements started to be replaced by device-based revenue share payments, nearly [20-30]% of Google Android smartphones were covered by portfolio-based revenue share payments, [revenue share partners and revenue share information]. In 2014, [revenue share partner], portfolio-based revenue share payments accounted for over [0-10]% of Google Android smartphones sold in Europe, [revenue share partners and revenue share information]. As smartphones represent the large majority of Google Android devices sold by the OEMs that entered into a portfolio-based revenue share agreement with Google, the data provides a

basis, for less than 1% of total smart mobile devices sales.¹³¹⁵

- (2) OEMs would have to incur transaction costs when entering into portfolio-based revenue share agreements with competing general search services and such costs would not have been justified for a small volume of devices. Google itself recognised the existence of such transaction costs in an internal Google email dated 9 April 2012 in which [Google Executive] stated the following when discussing whether Google should enter into a revenue share agreement with [OEM] regarding Android Market, the predecessor of the Play Store: "*We have thoroughly reviewed [OEM] - both mobile and TV - for consideration for Android Market revenue share, it seems that the volume is not meaningful for both Google and partner to justify our (legal, business, finance) resources spent on the agreement and payout.*"¹³¹⁶ While Google claims that this email is not probative because it concerned a revenue share agreement for its app store rather than its general search service, it has not explained why there would be any material difference in transaction costs associated with revenue share agreements relating to app stores and general search services.
 - (3) Due to the MADA, OEMs are unlikely to pre-install an additional general search app to the mandatory Google Search app (see recitals (824) to (829)).
- (1223) In the second place, the Commission has demonstrated that pre-installation is an important channel for the distribution of general search services on smart mobile devices (see Section 11.3.4.1.II). This conclusion is based not only on statements by competing general search services, but also on evidence of increases in search queries to Yandex following the pre-installation of Yandex's general search services on Android devices in Russia (see recital (789)(5)) and to Bing following the pre-installation of Bing on six Verizon Google Android devices in the US (see recital (1214)(3)).
- (1224) In the third place, Google has not submitted any evidence to support its claim that, absent the portfolio-based revenue share agreements, had OEMs and MNOs pre-installed a competing general search service in addition to Google Search, this would have reduced their revenues.
- 13.4.1.2. Competing general search services could not have matched Google's portfolio-based revenue share payments to OEMs and MNOs
- (1225) The Commission concludes that a competing general search service could not have matched Google's portfolio-based revenue share payments because it would have been unable to offer an OEM or MNO a sufficient absolute amount of revenues to compensate them for the loss of Google's payments across its entire portfolio of Google Android devices. This is for the reasons set out in this Section.
 - (1226) First, for the reasons set out in recitals (1227) to (1238), an OEM or MNO could not realistically have expected a competing general search service to capture more than the following share of general search queries carried out on Google Search on their

reasonable approximation of the sales of smart mobile devices sold under such agreements. See also footnote 1375. Source: [...] data (Doc IDs 3098, 4632, 4633 and 4710).

¹³¹⁵ Source: [...] data (Doc IDs 7866 and 7867).

¹³¹⁶ Doc ID 1373-2125.

portfolio of Google Android devices:¹³¹⁷

- (1) [0-5%] if an OEM or MNO would have pre-installed an additional general search app, but not set that competing general search service as default on web browsers' entry points;
 - (2) 22.5% if an OEM or MNO would have pre-installed an additional general search app and also set that competing general search service as default on web browsers' entry points.
- (1227) In the first place, pursuant to the MADA, the Google Search app had to be pre-installed on all GMS devices (which includes all devices of the portfolio of each OEM and MNO), and placed on the devices' home screen. Therefore, the app of the competing general search service could only have been pre-installed in addition to the Google Search app, and could not have been displayed more prominently.
- (1228) In the second place, different OEMs and different employees within Google took differing views as to whether the MADA also required OEMs to set Google Search as the default general search service on their pre-installed mobile web browsers.
- (1229) On the one hand, the following internal Google email, responses by OEMs to requests for information and correspondence between, on the one hand, Google and, on the other hand, OEMs indicate that the MADA required OEMs to set Google Search as the default general search service on their pre-installed mobile web browsers:
- (1) An internal Google email of 7 September 2011 from [Google Executive], to [Google Executive] at Google, which states that "*We told [OEM] that Phone-top search (aka Google Search) must be the default search for all Web search access points [per MADA 3.4.(4)]. We defined Default Search as: 1. Search initiated from Q SB (the widget) 2. Search initiated by pressing the physical Search Button on the device 3. Search initiated from URL address bar on Default Browser*".¹³¹⁸
 - (2) Responses by [OEM], [OEM] and [OEM] to requests for information reporting that they effectively interpreted the requirements of the MADA as covering searches carried out on the URL line of the browser:
 - (1) [OEM] indicated that "*Pursuant to paragraph 3.4(4) of the 2011 MADA, Google's Phone Top Search was set as the default search provider on [web browser] during the term of the 2011 MADA. No exceptions were applied during this period*";¹³¹⁹

¹³¹⁷ These figures correspond to the additional queries a competing general search service would have been able to capture as compared to the amount of queries where Google Search was the only pre-installed search app and the default search service on all entry points of a Google Android device.

¹³¹⁸ See Google's internal document submitted in response to the request for information of 11 July 2014, email from [Google Executive] of 7 September 2011 (Doc ID 1371-764).

¹³¹⁹ Google's Phone Top Search is a separate app which displays the Google Search widget, Google's Response to the Second Letter of Facts, Part Two, page 11, paragraph 23 (Doc ID 8876). Notwithstanding that, the usage made by [OEM] in this statement is consistent with the one made in Google's internal email as shown in recital (1229)(1), as a generic reference to Google search services. [OEM]'s non-confidential response to Question 11 of the 28 February 2018 request for information [...].

- (2) [OEM] indicated that "*the said passage [of the 2014 MADA] covers the search entry points of (a) the URL line of the browser(s) (sometimes also referred to as "Omnibox") and (b) any other search entry points within the browser (e.g. homepage or bookmarks)*";¹³²⁰ and
 - (3) [OEM] indicated that "*under Section 3.3(4) of [the 2013] MADA, all web search entry points are set default as Google Search. While this list is not exhaustive, it includes the following search entry points: Android Search Widget, Android Chrome Search, Android device search, the search bar at the home screen that defaults to the Google search engine, the Google search app (part of GMS) that defaults to the Google search engine, the Google Chrome default search that defaults to Google search engine as well as "Omnibox" and homepage and bookmarks*".¹³²¹
 - (3) Correspondence between, on the one hand, Google and, on the other hand, BlackBerry, Huawei, Lenovo and Motorola, dated November 2016 whereby Google informed those OEMs of modifications in the terms of the MADA by which they no longer needed to comply with any provision of the MADA that "*required Google Search to be set as the default search provider for any and all web search access points or intents on the device*" suggesting that the MADA previously required these OEMs to set Google Search as the default general search service on their pre-installed mobile web browsers.¹³²²
- (1230) On the other hand, the following internal Google email and responses by OEMs to requests for information indicate that the MADA did not require OEMs to set Google Search as the default general search service on their pre-installed mobile web browsers:
- (1) An internal Google email of 18 May 2011 from [Google Executive], to [Google Executive], which states that "*Since the browser is a very large source of search traffic for us (relative to the Phone Top Search widget) we really want a commitment to make Google the homepage on the browser if at all possible when we do a search rev share deal*" show that certain Google employees understood the MADA not to include such a requirement.¹³²³
 - (2) Responses to requests for information from [OEM] and [OEM]:
- (1) [OEM] indicated that "*According to [OEM]'s understanding of the 2013 MADA (as amended in 2014), Section 3.3 does not cover (1) the URL line of the browser (also referred to as "Omnibox") and (b) any other search entry points within the browser (e.g. homepage or bookmarks)*",¹³²⁴ and

¹³²⁰ See [OEM]'s non-confidential response to Question 6 of the request for information of 8 March 2017 [...]. [...].

¹³²¹ See [OEM]'s non-confidential response to Question 7 of the request for information of 8 March 2017 [...]. [OEM] indicated that its interpretation of the MADA has not changed over time.

¹³²² See Google's letters to BlackBerry of 8 November 2016 (Doc ID 7745-11), to Huawei of 28 November 2016, as referred to in Huawei's non-confidential response to Question 2 the request for information of 8 March 2017 (Doc ID 7472), to Lenovo of 8 November 2016 (Doc ID 8089-7), and to Motorola of 8 November 2016 (Doc ID 8089-9).

¹³²³ See Google's internal document submitted in response to Statement of Objections, email from [Google Executive] of 18 May 2011 (Doc ID 6555-77).

¹³²⁴ See [OEM]'s non-confidential response to Question 9 of the request for information of 8 March 2017 [...].

- (2) [OEM] indicated that "*the passage* [relevant section of the 2014 MADA] does not cover the URL line of the browser".¹³²⁵
- (1231) Where an OEM interpreted the MADA as requiring it to set Google Search as the default general search service on the pre-installed mobile web browsers on the devices the OEM manufactures and which are distributed by it or by an MNO, the most that a competing general search service could therefore achieve on a GMS device was that its general search service app was pre-installed side-by-side with the Google Search app.
- (1232) By contrast, where an OEM interpreted the MADA as not requiring it to set Google Search as the default general search service on the pre-installed mobile web browsers on the devices the OEM manufactures and which are distributed by it or by an MNO, the most that a competing general search service could therefore achieve on a GMS device was that its general search service app was pre-installed side-by-side with the Google Search app and set as the default on pre-installed mobile web browsers other than Chrome ("Other Browsers").
- (1233) In the third place, where an OEM interpreted the MADA as requiring that OEM to set Google Search as the default general search service on the pre-installed mobile web browsers, that OEM, or an MNO distributing its devices¹³²⁶ could not reasonably have expected such a competing general search service to capture from Google Search more than [0-5]% of the general search queries carried out on the Google Android devices in its portfolio.
- (1234) The figure has been calculated based on the following:
- (1) An OEM or MNO could not reasonably have expected a competing general search app to capture from the Google Search app more than a share of queries that was typically obtained by competing general search services on PCs worldwide during the period in which portfolio-based revenue share agreements were in place.
 - (2) According to StatCounter data,¹³²⁷ the maximum combined annual query share of all competing general search services on PCs worldwide in the period 2011-2014 was 12%.
 - (3) According to data provided by Google, the distribution per entry point of Google Search queries carried out worldwide on Google Android devices in 2014-2016 was the following:¹³²⁸
 - (a) Approximately [30-40]% originated from the Google Search app; and
 - (b) Approximately [60-70]% originated from mobile web browser entry

¹³²⁵ See [OEM]'s non-confidential response to Question 9 of the request for information of 8 March 2017 [...].

¹³²⁶ See recital (193).

¹³²⁷ Source: StatCounter data for 2011-2014, downloaded on 22 May 2017, <http://gs.statcounter.com/>. For tablets, StatCounter provides market share data only as of August 2012.

¹³²⁸ Given that Google was unable to provide data for the period 2011-2013, these calculations are based on data of search queries by entry point during the period 2014-2016. Source: Google's response to Question 11 of the request for information of 24 March 2017 (Doc ID 7894-4). Google does not contest the use of 2014-2016 data and presents its version of the calculations based on this data. See Google's Response to the First Letter of Facts, Part Four, pages 114-116, paragraphs 37-38 (Doc ID 8598).

points. Of these [60-70]% : (i) approximately [20-30]% originated from the URL line of Chrome, on which no competing general search service could be set as default (see recital (796)(2)(b) and (973)); (ii) approximately [10-20]% originated from the URL bar of Other Browsers; and (iii) approximately [20-30]% originated from the Google Search homepage.¹³²⁹

- (4) The figure of [0-5]% therefore corresponds to 12% (the maximum cumulative market share that competing general search services obtained on PCs worldwide in the period 2011 to 2014) of the [30-40]% of the Google search queries carried out worldwide on Google Android devices via the Google Search app.¹³³⁰
- (1235) The figure of [0-5]% is conservative and favourable to Google for the following reasons:
- (1) it reflects the combined share of all competing general search services and not just the share of the largest one;
 - (2) during the period 2011-2014, Google Search queries represented 88% to 91% of all general search queries on PCs worldwide;¹³³¹
 - (3) the combined share of all competing general search services on PCs worldwide in the period 2011-2014 was higher than the combined market share of all competing general search services on smart mobile devices during that same period (Google Search queries represented 94% to 98% of all general search queries on smartphones);¹³³² and
 - (4) for this share to be achieved, an OEM or MNO would have had to pre-install the competing general search app on all devices of its portfolio.
- (1236) In the fourth place, where an OEM interpreted the MADA as not requiring that OEM to set Google Search as the default general search service on Other Browsers an OEM, or an MNO distributing its devices, could not reasonably have expected such a competing general search service to capture from Google Search more than 22.5% of Google Search queries carried out on the Google Android devices in its portfolio.
- (1237) The figure of 22.5% of queries corresponds to the sum of the maximum [0-5]% of Google Search queries that an OEM or MNO could reasonably have expected the competing general search service to capture from Google Search (see recital (1233)) and the maximum [10-20]% of Google Search queries originating from the URL bar of Other Browsers (see recital (1234)(3)(b)) that an OEM or MNO could reasonably

¹³²⁹ These correspond to Google Search queries originating from the mobile web browser with the user navigating to Goolge Search homepage, clicking on a bookmark or in the other ways in which a general search service can be used when a different one is set as default.

¹³³⁰ Because the data provided by Google on the distribution per entry point of Google Search queries does not provide information per search entry point for specific OEMs/MNOs, the Commission assumes that the share of general search queries originating from the general search app for each OEM and MNO is equal to the same share at the aggregate level.

¹³³¹ Source: StatCounter data for 2011-2014, downloaded on 22 May 2017, <http://gs.statcounter.com/>. For tablets, StatCounter provides marker share data only as of August 2012.

¹³³² Source: StatCounter data for 2011-2014, downloaded on 22 May 2017, <http://gs.statcounter.com/>. For tablets, StatCounter provides marker share data only as of August 2012.

have expected the competing general search service to capture from Google Search when set as default on Other Browsers.

- (1238) For the same reasons as explained in recital (1235), the figure of 22.5% is conservative and favourable to Google.
- (1239) Second, each OEM and MNO that entered into portfolio-based revenue share agreements received payments from Google equal to between [revenue share terms] of the revenues that Google derived from search advertisements covered by the portfolio-based revenue share agreements on the OEM's and MNO's devices for the duration of those agreements. This is shown in the last column of Table 20.

Table 20: Percentage ranges of portfolio-based revenue share payments

OEM	Percentage (range) of revenue shares in the agreement	Minimum monthly revenue share actually paid
[Revenue share partner]	[Revenue share terms]	[Revenue share terms] ¹³³³
[Revenue share partner]	[Revenue share terms]	[Revenue share terms] ¹³³⁴
[Revenue share partner]	[Revenue share terms]	[Revenue share terms] ¹³³⁵
[Revenue share partner]	[Revenue share terms]	[Revenue share terms] ¹³³⁶
[Revenue share partner]	[Revenue share terms]	[Revenue share terms] ¹³³⁷
[Revenue share partner]	[Revenue share terms]	[Revenue share terms] ¹³³⁸

¹³³³ [Revenue share partner] non-confidential response to Question 24 of the request for information of 17 July 2014 [...].

¹³³⁴ [Revenue share partner] non-confidential response to Question 24 of the request for information of 17 July 2014 [...].

¹³³⁵ [Revenue share partner] did not report the share of Google's revenue paid under their portfolio-based revenue share agreement, but submitted that payments were made for each month in which the agreement was in place. In light of the terms of the agreement it can be assumed that the payment represented [revenue share terms] of Google's Search revenue on [revenue share partner] devices. Annex 3-Q24 to [revenue share partner]'s non-confidential response to Question 24 of the request for information of 17 July 2014 [...] and Section 6.3.3.1. Google did not contest this assumption.

¹³³⁶ [Revenue share partner] did not report the share of Google's revenue paid under their portfolio-based revenue share agreement, but submitted that payments were made for each month in which the agreement was in place. In light of the terms of the agreement it can be assumed that the payment represented [revenue share terms] of Google's Search revenue on [revenue share partner] devices. See [revenue share partner]'s non-confidential email of 1 April 2016 [...] and Section 6.3.3.1. Google did not contest this assumption.

¹³³⁷ Non-confidential Annex 4 to [revenue share partner]'s response to Question 24 of the request for information of 17 July 2014 [...].

MNO		
[Revenue share partner]	[Revenue share terms]	[Revenue share terms] ¹³³⁹
[Revenue share partner]	[Revenue share terms]	[Revenue share terms] ¹³⁴⁰
[Revenue share partner]	[Revenue share terms]	[Revenue share terms] ¹³⁴¹
[Revenue share partner]	[Revenue share terms]	[Revenue share terms] ¹³⁴²

- (1240) Third, each OEM and MNO that entered into portfolio-based revenue share agreements received payments covering only [70-80]% of Google general search queries.¹³⁴³ This is because Google did not grant portfolio-based revenue share payments for the [20-30]% of queries via mobile web browsers that originated from the Google Search homepage.
- (1241) Fourth, a competing general search service would have been unable to compensate an OEM or MNO for the loss of Google's payments across its entire portfolio of Google Android devices, irrespective of whether an OEM interpreted the MADA as requiring that OEM to set Google Search as the default general search service on the pre-installed mobile web browsers.
- (1242) In the first place, where the OEM interpreted the MADA as not requiring that OEM to set Google Search as the default general search service on Other Browsers, a competing general search service would have never been able to compensate an OEM, or an MNO distributing its devices, for the loss of the Google's payments across its entire portfolio of Google Android devices.
- (1243) In such a scenario, and where an OEM or MNO would have sought to pre-install a

¹³³⁸ [Revenue share partner] did not report the share of Google's revenue paid under their portfolio-based revenue share agreement, but submitted that payments were made for each month in which the agreement was in place. In light of the terms of the agreement it can be assumed that the payment represented at least [revenue share terms] of Google's Search revenue on [revenue share partner] devices. See non-confidential Annex 24 to [revenue share partner]'s response to Question 24 of the request for information of 17 July 2014 [...] and Section 6.3.3.1. Google did not contest this assumption.

¹³³⁹ [Revenue share partner] did not report the share of Google's revenue paid under their portfolio-based revenue share agreement, but submitted that payments were made for each month in which the agreement was in place, at least as of May 2010. In light of the terms of the agreement it can be assumed that the payment represented at least [revenue share terms] of Google's Search revenue on [revenue share partner] devices. See [...] to [revenue share partner]'s non-confidential response to Question 25 of the request for information of 22 July 2014 [...].

¹³⁴⁰ Non-confidential [...] to [revenue share partner]'s non-confidential response to Question 25 of the request for information of 22 July 2014 [...].

¹³⁴¹ [Revenue share partner]'s non-confidential response to Question 25 of the request for information of 22 July 2014 [...] and Annex 25.1 to [revenue share partner]'s response to the request for information of 22 July 2014 [...].

¹³⁴² [...] to [revenue share partner]'s response to Question 25 of the request for information of 17 July 2014 [...].

¹³⁴³ Google's Response to the First Letter of Facts, Part Four, page 115, paragraph 38 (Doc ID 8598).

competing general search service and set it as default on the pre-installed mobile web browsers on all devices in the portfolio:

- (1) for an OEM or MNO that received a [revenue share terms] portfolio-based revenue share payment from Google, a competing general search service would have had to offer a share of its revenues greater than 100% in order to compensate an OEM or MNO for the loss of Google's payments across its entire portfolio of Google Android devices. This is because a revenue share of [140-150]% over the 22.5% of the Google Search general search queries that an OEM or MNO could reasonably have expected the competing general search service to capture from Google Search would have been approximately equal to a revenue share of [revenue share terms] over [70-80]% of Google Search general search queries covered by Google revenue share payments;¹³⁴⁴
- (2) for an OEM or MNO that received a [revenue share terms] portfolio-based revenue share payment from Google, a competing general search service would have had to offer a share of its revenues greater than [70-80]% in order to compensate an OEM or MNO for the loss of Google's payments across its entire portfolio of Google Android devices. This is because a revenue share of [70-80]% over the 22.5% of the Google Search general search queries that an OEM or MNO could reasonably have expected the competing general search service to capture from Google Search would have been approximately equal to a revenue share of [revenue share terms] over the [70-80]% of Google Search general search queries covered by Google revenue share payments;¹³⁴⁵
- (3) for an OEM or MNO that received a [revenue share terms] portfolio-based revenue share payment from Google, a competing general search service would have had to offer a share of its revenues greater than [50-60]% in order to compensate an OEM or MNO for the loss of Google's payments across its entire portfolio of Google Android devices. This is because a revenue share of [50-60]% over the 22.5% of the Google Search general search queries that an OEM or MNO could reasonably have expected the competing general search service to capture from Google Search would have been approximately equal to a revenue share of [revenue share terms] over [70-80]% of Google Search general search queries covered by Google revenue share payments;¹³⁴⁶ and
- (4) for an OEM or MNO that received a [revenue share terms] portfolio-based revenue share payment from Google, a competing general search service would still have had to offer a share of its revenues greater than [30-40]% in order to compensate an OEM or MNO for the loss of Google's payments across its entire portfolio of Google Android devices. This is because a revenue share of [30-40]% over the 22.5% of the Google Search general search queries that an OEM or MNO could reasonably have expected the competing general search service to capture from Google Search would have been approximately equal to a revenue share of [revenue share terms] over [70-80]% of Google Search

¹³⁴⁴ This is based on the assumption that a competing general search service could obtain the same average revenue per search as Google and has the same operational costs as Google.

¹³⁴⁵ Ibid.

¹³⁴⁶ Ibid.

general search queries covered by Google revenue share payments.¹³⁴⁷

- (1244) Moreover, given that a competing general search service would have been unlikely to be pre-installed on all the Google Android devices of the portfolio of an OEM or MNO (see recitals (824) to (832)), in order for a competing general search service to be able to offer an OEM or MNO a stream of revenue greater than Google's:
- (1) for a [revenue share terms] portfolio-based revenue share payment to be profitable, it would have to have been pre-installed on more than [70-80]% of that OEM's or MNO's portfolio of Google Android devices;
 - (2) for a [revenue share terms] portfolio-based revenue share payment to be profitable, it would have to have been pre-installed on more than [50-60]% of that OEM's or MNO's portfolio of Google Android devices;
 - (3) for a [revenue share terms] portfolio-based revenue share payment to be profitable, it would have to have been pre-installed on more than or [30-40]% of that OEM's or MNO's portfolio of Google Android devices.
- (1245) This is because a 100% revenue share payment by a competing general search service over the 22.5% of the Google Search general search queries that an OEM or MNO could reasonably have expected the competing general search service to capture from Google Search on: (i) [70-80]%, (ii) [50-60]% or (iii) [30-40]% of that OEM's or MNO's portfolio of Google Android devices would have matched a portfolio-based revenue share payment by Google of [revenue share terms] of Google search queries covered by Google revenue share payments on that OEM's or MNO's entire portfolio of Google Android devices.
- (1246) In the case of a [revenue share terms] portfolio-based revenue share payment, a competing general search service would have been unable to offer an OEM or MNO a stream of revenue greater than Google's and still make any profit from the agreement, even if it would have been pre-installed on the entirety of the devices of that OEM's or MNO's portfolio of devices. This is because a 100% revenue share payment by a competing general search service over the 22.5% of the Google Search general search queries that an OEM or MNO could reasonably have expected the competing general search service to capture from Google Search would not have matched a portfolio-based revenue share payment by Google of [revenue share terms] over the [70-80]% of Google search queries covered by Google revenue share payments on that OEM's or MNO's entire portfolio of Google Android devices.
- (1247) The percentage of pre-installation on Google Android devices that would have to have been achieved by a competing general search service in order to match Google's portfolio-based revenue share payments would have been significantly higher than the percentage of the OEM's portfolio of Google Android devices on which a competing general search service achieved pre-installation under any of the portfolio-based revenue share agreements concluded between a competing general search services and OEMs described in recital (1219).¹³⁴⁸

¹³⁴⁷

Ibid.

¹³⁴⁸

For example, according to Google's Data Room Report of October 4, 2017 the agreement between ZTE and Microsoft "specifies that ZTE will preload Bing on just [thousands of] devices, [a percentage] of which will be shipped in the US. The remaining [percentage] will moreover be split among EEA countries and Australia". As regards [search provider]'s agreements with OEMs, [search provider]'s

- (1248) In addition, for competing general search services that have a more focused offering in terms of languages or targeting a specific group of users an OEM or MNO would have pre-installed them only on a small sub-set of their portfolio of devices, given that an OEM or MNO would not realistically have expected that such general search service would have captured a substantial share of queries on all devices. Taking the example of Seznam, which is focused on Czech language queries, during the period 2014-2016, even if it had captured all the general search queries on Google Android devices in the Czech Republic, which could only be the case in the absence of the MADA, it could not have achieved more than [0-5)% of worldwide general search queries on Google Android devices,¹³⁴⁹ and therefore would not have been able to match Google's portfolio-based revenue share payments across an OEM's or MNO's portfolio of Google Android devices.
- (1249) Finally, competing general search services would have had to compensate an OEM or MNO for the loss of Google's payments across its entire portfolio of Google Android devices while being pre-installed only on new devices. This is because a competing general search service could not have been pre-installed on the devices already sold to users and on which an OEM or MNO obtained portfolio-based revenue share payments from Google.
- (1250) As a result, a competing general search service would have had to offer a revenue share payment greater than 100% in order to compensate an OEM or MNO for the loss of a:
- (1) [Revenue share terms] portfolio-based revenue share payment from Google once an OEM or MNO had sold more than [20-30)% of the Google Android devices sold during the period in which the portfolio-based revenue share agreement was in place;
 - (2) [Revenue share terms] portfolio-based revenue share payment from Google once an OEM or MNO had sold more than [40-50)% of the Google Android devices sold during the period in which the portfolio-based revenue share agreement was in place; and
 - (3) [Revenue share terms] portfolio-based revenue share payment from Google once an OEM or MNO had sold more than [60-70)% of Google Android devices sold during the period in which the portfolio-based revenue share agreement was in place.
- (1251) This is because a 100% portfolio-based revenue share payment by a competing general search service over the 22.5% of the Google Search general search queries that an OEM or MNO could reasonably have expected the competing general search service to capture from Google Search on the remaining: (i) [70-80]%, (ii) [50-60]% or (iii) [30-40]% of an OEM's or MNO's Google Android devices would have matched a portfolio-based revenue share payment by Google of [revenue share terms] over [70-80]% of Google search queries covered by Google revenue share

non-confidential response [...] indicates that the [search provider]'s mobile search widget and links to the [search provider]'s home page on the default web browser were pre-installed on a small number of devices in the EEA under the revenue share agreements entered into by [search provider] with OEMs. There are no examples of agreements between a competing general search service and a MNO.

¹³⁴⁹ Source: Google's response to Question 14 of the request for information of 24 March 2017 (Doc ID 7894-4).

payments on an OEM's or MNO's entire portfolio of Google Android devices.¹³⁵⁰

- (1252) In the case of a [revenue share terms] portfolio-based revenue share payment, a competing general search service would have had to offer a revenue share payment greater than 100% even if no device had already been sold during the period in which the portfolio-based revenue share agreement was in place. This is because a 100% revenue share payment by a competing general search service over the 22.5% of the Google Search general search queries that an OEM or MNO could reasonably have expected the competing general search service to capture from Google Search would not have matched a portfolio-based revenue share payment by Google of [revenue share terms] over the [70-80]% of Google search queries covered by Google revenue share payments on that OEM's or MNO's entire portfolio of Google Android devices.
- (1253) In the second place, where an OEM interpreted the MADA as requiring that OEM to set Google Search as the default general search service on the pre-installed mobile web browsers, a competing general search service would also never have been able to compensate an OEM, or an MNO distributing its devices, for the loss of Google's payments across its entire portfolio of Google Android devices.
- (1254) In such a scenario, even if it had been willing to forego all its revenues from search advertisements and offer an OEM or MNO a revenue share of 100% on the entirety of the devices of the portfolio, a competing general search service would have been unable to offer an OEM or MNO a stream of revenue greater than what Google offered under even a [revenue share terms] portfolio-based revenue payments.¹³⁵¹ This is because a revenue share of 100% over the [0-5]% of the Google Search general search queries that an OEM or MNO could reasonably have expected the competing general search service to have captured from Google Search would not have matched a revenue share of [revenue share terms] over the [70-80]% of Google Search general search queries covered by Google revenue share payments.
- (1255) Moreover, a competing general search service would have had to compensate an OEM or MNO for the loss of Google's payments across its entire portfolio of Google Android devices, while being pre-installed only on a limited number of its devices (see recitals (1244) to (1248)).
- (1256) Fifth, the Commission's conclusion that a competing general search service would have been unable to offer an OEM or MNO a sufficient absolute amount of revenues to compensate an OEM or MNO for the loss of Google's payments across its entire portfolio of Google Android devices is not affected by Google's claims that:
 - (1) the MADA did not require Google Search to be set as the default general search service on the pre-installed mobile web browsers on GMS devices;¹³⁵²
 - (2) when assessing whether a competing general search service could have

¹³⁵⁰ In the case of portfolio-based revenue share payments equal to [Revenue share terms] a competing general search service would have had to offer a revenue share payment of more than 100% in order to compensate an OEM or MNO for the loss of Google's payments across its entire portfolio of Google Android devices even if there were no devices already sold to users.

¹³⁵¹ This is based on the assumption that a competing general search service could obtain the same average revenue per search as Google and has the same operational costs as Google.

¹³⁵² Google's Response to the First Letter of Facts, Part Four, page 109, paragraphs 25-31 (Doc ID 8598) and Google's Response to the Second Letter of Facts, Part Two, pages 6-14, paragraphs 12-30 (Doc ID 8876).

compensated an OEM or MNO for the loss of portfolio-based revenue share payments, the Commission failed to consider the ability of equally efficient competing general search services to match the portfolio-based revenue share payments;¹³⁵³

- (3) a competing general search service that was attractive to users could reasonably have expected to capture from Google Search much higher shares of general search queries than those calculated by the Commission. Such a share of general search queries would have been at least equivalent to that achieved by Seznam in the Czech Republic;¹³⁵⁴
- (4) the Commission's conclusion that a competing general search service would have been able to capture from Google Search only a small proportion of the queries conducted on a Google Android device is inconsistent with the conclusion that Google's conduct has the capability to foreclose competition;¹³⁵⁵
- (5) a competing general search service would have been able to offer a revenue share payment also on the general search queries via mobile web browsers that originate from a general search service's homepage, thereby reducing the percentage of revenue share needed to match Google's portfolio-based revenue share payments;¹³⁵⁶
- (6) the [revenue share terms] portfolio-based revenue share payments are "gross" figures, from which Google deducted [...]%. This resulted in an effective rate of Google's portfolio-based revenue share payments rate of only [revenue share terms], respectively;¹³⁵⁷
- (7) the Commission does not establish the "incremental costs", i.e. the additional costs that Google or a competing general search service would incur when responding to an additional search query;¹³⁵⁸
- (8) the Commission provides no evidence why a competing general search service would have been pre-installed only on a portion of Google Android devices. Moreover, the infrequent pre-installation of competing general search services reflects Google's higher quality,¹³⁵⁹

¹³⁵³ Google's Response to the Statement of Objections, Part Five, page 274, paragraph 65 (Doc ID 7117) and Google's Response to the Second Letter of Facts, Part Two, pages 23-24, paragraphs 65-67 (Doc ID 8876).

¹³⁵⁴ Google's Response to the First Letter of Facts, Part Four, page 116, paragraph 38 (Doc ID 8598) and Google's Response to the Second Letter of Facts, Part Two, page 17, paragraph 44-45 (Doc ID 8876).

¹³⁵⁵ Google's Response to the Statement of Objections, Part Five, pages 268-270, paragraphs 50-52 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part Four, pages 103-105, paragraphs 8-9 and 13-14 (Doc ID 8598).

¹³⁵⁶ Google's Response to the First Letter of Facts, Part Four, page 115, paragraph 38 (Doc ID 8598) and Google's Response to the Second Letter of Facts, Part Two, pages 14-15, paragraphs 33-38 (Doc ID 8876).

¹³⁵⁷ Google's Response to the First Letter of Facts, Part Four, page 115, paragraph 38 (Doc ID 8598).

¹³⁵⁸ Google's Response to the Second Letter of Facts, Part Two, page 21, paragraphs 52-54 (Doc ID 8876).

¹³⁵⁹ Google's Response to the Second Letter of Facts, Part Two, page 17-18, paragraphs 46 and 48 (Doc ID 8876).

- (9) even if an OEM or MNO would have been willing to pre-install a competing general search service only on a portion of its devices, it would have been free to enter into agreements with multiple competing general search services which, collectively, could have matched Google's payments across its entire portfolio of Google Android devices;¹³⁶⁰
 - (10) the Commission fails to analyse the lifespan of devices already sold to users relative to new devices and to consider whether devices already sold to users generate as much revenue as new devices;¹³⁶¹ and
 - (11) in light of points (1) to (10) of this recital, a competing general search service could have matched Google's payments while still earning positive revenues from the general search queries on all the devices within an OEM's or MNO's portfolio.¹³⁶²
- (1257) In the first place, the Commission has demonstrated that a competing general search service could not have matched Google's portfolio-based revenue share payments irrespective of whether an OEM interpreted the MADA as requiring it to set Google Search as the default general search service on the pre-installed mobile web browsers (see recital (1241)).
- (1258) Moreover, for the reasons set out in recital (1228) above, certain OEMs and Google's employees considered that the MADA required Google Search to be set as the default general search service on pre-installed mobile web browsers.
- (1259) In the second place, when assessing whether a competing general search service could have compensated an OEM or MNO for the loss of Google's payments across its entire portfolio of Google Android devices, the Commission has considered the ability of equally efficient competing general search services to match the portfolio-based revenue share payments, namely competing general search services with the same operational costs and generating the same revenue per search as Google.
- (1260) In the third place, the maximum share of queries that a competing general search service could reasonably have expected to capture from Google Search would not have been at least equivalent to the share of general search queries achieved by Seznam in the Czech Republic. That share is an exception in the EEA, due to the fact that Seznam was the incumbent general search service in the Czech Republic before it was overtaken by Google and its general search algorithms are built around the Czech language. Indeed, Seznam enjoys a minimal share of queries in countries other than the Czech Republic.
- (1261) Moreover, a competing general search service that was attractive to users could not reasonably have expected to capture from Google Search a share of general search queries higher than the maximum combined share of general search queries achieved by competing general search services on PCs:
- (1) on PCs, general search services typically compete side-by-side through being set as the default general search service on the different web browsers pre-

¹³⁶⁰ Google's Response to the Second Letter of Facts, Part Two, page 17, paragraph 46 (Doc ID 8876).

¹³⁶¹ Google's Response to the Second Letter of Facts, Part Two, page 17, paragraph 47 (Doc ID 8876).

¹³⁶² Google's Response to the Statement of Objections, Part Four, pages 168-174, paragraphs 37-44 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part Four, pages 109-112 and 114-116, paragraphs 24-31 and 38 (Doc ID 8598).

installed on PCs. On smart mobile devices, a competing general search service app would be competing with the Google Search app in a similar way, by being pre-installed side-by-side with the Google Search app; and

- (2) a competing general search service would not have benefited from the same scale advantage as Google. As explained in Section 9.5.2, because a general search service uses data to refine the relevance of its general search results pages, it needs to receive a certain volume of queries in order to compete viably. In addition, the higher the number of users of a general search service, the greater the likelihood that a given search advertisement is matched to a user and converted into a sale. This in turn increases the price that a general search service can charge advertisers if their search advertisements are clicked on. The general search service can then reinvest that revenue in seeking to attract new users of its general search service. This scale advantage is reflected in the lower share of queries achieved by competing general search services as compared with Google Search.
- (1262) In the fourth place, the Commission's conclusion that a competing general search service would have been able to capture from Google Search only a small proportion of the queries conducted on a Google Android device is consistent with the conclusion that Google's conduct has the capability to foreclose competition. While the [0-5]% of the Google Search general search queries that an OEM or MNO could reasonably have expected a competing general search service to have captured from Google Search would have been a small amount for Google, it would have constituted a significant amount of additional queries for competing general search services, which were, and still are, much smaller than Google.
- (1263) Moreover, what might initially have been a small amount of queries could have been competitively significant in the context of gaining an initial foothold with regard to an OEM or MNO or more generally in terms of achieving scale and/or commercial credibility with a view to future growth.
- (1264) In the fifth place, a competing general search service would also not have offered a revenue share payment on the general search queries via mobile web browsers that originate from a general search service's homepage. This is because: (i) Google did not grant revenue share payments for the [20-30]% of queries via mobile web browsers that originated from the Google Search homepage;¹³⁶³ and (ii) such queries would have originated from the homepage of the competing general search service even in absence of any revenue share agreement between an OEM or MNO and the competing general search service.
- (1265) In the sixth place, the [...]% that Google deducted from the [revenue share terms] portfolio-based revenue share payments was, as Google recognises, to cover Google's operational costs.¹³⁶⁴ It is therefore irrelevant that the [revenue share terms] portfolio-based revenue share payments were "gross" figures from which Google deducted [...]% because a competing general search service which is as-efficient as Google would, by definition, have had to deduct a similar percentage from any payments to cover its operational costs.

¹³⁶³ Google's Response to the First Letter of Facts, Part Four, page 115, paragraph 38 (Doc ID 8598).

¹³⁶⁴ Google's Response to the Second Letter of Facts, Part Two, page 21, paragraph 54 (Doc ID 8876).

- (1266) In the seventh place, the operational costs deducted by Google from its revenue share payments were directly proportional to the volume of queries carried out on an OEM's or MNO's smart mobile device as they were set as a percentage of the revenues associated to those queries (i.e. [...]% of the revenues). Therefore, they provide a good proxy of the "incremental costs" associated with general search queries.
- (1267) Moreover, in order to operate in a sustainable manner, a competing general search service would have to cover not only its operational costs, but also a share of its fixed costs, in particular R&D costs. As described in Section 9.5.2, a fully-fledged general search service requires significant and continuous investments in terms of time and resources. In addition, general search services constantly invest to improve their product and a competing general search service would have no choice but to attempt to match these investments.
- (1268) In the eighth place, as set out in recitals (824) to (829), the lower number of pre-installations of competing general search services does not reflect competition on the merits, but it is the result of the requirements of the MADA on OEMs to take a bundle of 12-30 apps, including the Google Search app.
- (1269) In the ninth place, an OEM or MNO would not have realistically entered into agreements with multiple competing general search services in order to match Google's payments across its entire portfolio of Google Android devices. This is because an OEM or MNO would have:
 - (1) been unlikely to pre-install a competing general search service in addition to Google Search on most of the Google Android devices within its portfolio (see recitals (824) to (829));
 - (2) been unlikely to find a number of competing general search services that would each have wanted to be pre-installed on Google Android devices sold in different geographic areas and/or to different user groups; and
 - (3) had to incur multiple transaction costs that would not be justified for a small volume of devices (see recital (1222)(2)).
- (1270) In the tenth place, smart mobile devices generally continue to generate revenue share payments to OEMs and MNOs for several years after being sold, given that as set out in recital (548), the majority of users replace their devices within three years. In addition, devices already on the market should generate similar revenues as new devices, given that Google has submitted no evidence that the usage of general search services on devices would decline over time.
- (1271) In the eleventh place, for the reasons set out in recitals (1240) to (1249), a competing general search service could not have matched Google's payments across its entire portfolio of Google Android devices, while still earning positive revenues from the search queries on the devices.

13.4.1.3. The portfolio-based revenue share payments were one reason why OEMs and MNOs refrained from pre-installing competing general search services on their Google Android devices

- (1272) For the reasons set out in this Section, the Commission concludes that the portfolio-based revenue share payments were one reason why OEMs and MNOs refrained from pre-installing competing general search services on their Google Android devices.

- (1273) First, [revenue share partner] "considered installing [search service] within the scope of not infringing [revenue share partner]'s contractual obligation with Google. [...] but [revenue share partner] ultimately did not pursue any options other than Google search. This decision was influenced by the terms of the [revenue share agreement] and also by internal strategy."¹³⁶⁵
- (1274) Second, in 2012 [revenue share partner] explored the possibility of making [search service] the default general search service on a mobile web browser that would have been pre-installed in addition to Google Chrome. While this would have allowed [revenue share partner] to "also potentially get the revenue share from [search service]", [revenue share partner] ultimately concluded that "to entitle overall Google revshare [...], the default has to be Google and non-duplication of search service."¹³⁶⁶
- (1275) Third, prior to the amendment of [revenue share partner]'s portfolio-based revenue share agreement in March 2013, [revenue share partner] sought a waiver from Google in order to pre-install [search service] on Google Android devices sold in [geographic area] without losing the benefit of the portfolio-based revenue share payments. After Google rejected such a waiver request, "[Revenue share partner] chose not to pursue the matter further and did not preload [search service]."¹³⁶⁷
- (1276) Fourth, between 2008 and 2014, Seznam unsuccessfully sought to pre-install its general search app on the Google Android devices of MNOs: "Unfortunately, all our efforts generally grind to a halt with the oral off-the-record statement: 'we are unable to change mobile phone firmware for licensing and financial reasons'."¹³⁶⁸
- (1277) Fifth, in 2012 [Partner J] attempted to pre-install the Yandex search widget on the second screen of certain of its Google Android devices. However, [Partner J] subsequently removed the Yandex widget and informed Yandex that this was because it violated its agreement with Google.¹³⁶⁹
- (1278) Sixth, the Commission's conclusion that the portfolio-based revenue share payments were one reason for the OEMs and MNOs refraining from pre-installing competing general search services is not affected by Google's claims that:¹³⁷⁰
- (1) the evidence from [revenue share partner] should be dismissed on the grounds that any discussions were at an early stage;
 - (2) Yandex's submission concerning Partner J should be dismissed on the grounds that there is no evidence to suggest that Partner J was forced to remove Yandex's widget; and

¹³⁶⁵ [Revenue share partner]'s non-confidential response to Questions 22 and 22.1 of the request for information of 17 July 2014 [...].

¹³⁶⁶ Google's internal document submitted in response to the request for information of 11 July 2014 (Doc ID 1372-413).

¹³⁶⁷ [Revenue share partner]'s non-confidential response to Question 23 of the request for information of 17 July 2014 [...].

¹³⁶⁸ Seznam's non-confidential response to Question 19 of the request for information of 30 July 2014 (Doc ID 4289).

¹³⁶⁹ Yandex's non-confidential response to Question 22 of the request for information of 30 July 2014 (Doc ID 4603).

¹³⁷⁰ Google's Response to the Statement of Objections, Part Five, pages 282-291, paragraph 85-87 (Doc ID 7117).

- (3) there are many reasons why OEMs and MNOs refrained from pre-installing competing general search services, unrelated to the portfolio-based revenue share agreements.
- (1279) In the first place, [revenue share partner]’s discussions were not all at an early stage:
- (1) [Revenue share partner]’s discussions with the [search service], were sufficiently advanced that [revenue share partner] and [search service] had entered into a [cooperation agreement];¹³⁷¹ and
 - (2) [Revenue share partner]’s discussions with [search service] were sufficiently advanced that [revenue share partner] sought a waiver from Google in order to pre-install [search service] on Google Android devices sold in [geographic area].¹³⁷²
- (1280) In the second place, Yandex’s statement in response to the Commission’s request for information reports Yandex’s understanding of why Partner J removed the Yandex widget, and the underlying document from Partner J provided by Yandex refers to Partner J’s contractual obligations with Google.
- (1281) In the third place, the fact that there may be other reasons why OEMs and MNOs refrained from pre-installing competing general search services does not alter the fact that the portfolio-based revenue share payments were one such reason.

- 13.4.2. Google’s portfolio-based revenue share payments made access to the national markets for general search services more difficult*
- (1282) The Commission concludes that Google’s portfolio-based revenue share payments made access to the national markets for general search services more difficult.
 - (1283) First, Google’s portfolio-based revenue share payments reduced the incentives of the OEMs and MNOs that received such payments to pre-install competing general search services (see Section 13.4.1).
 - (1284) Second, Google’s portfolio-based revenue share agreements covered a significant part of the national markets for general search services (see Section 13.4.2.1).
 - (1285) Third, competing general search services would have been unable to offset the competitive advantage that Google ensured for itself via the portfolio-based revenue share agreements, by using alternative distribution channels such as downloads (see Section 13.4.2.2).

13.4.2.1. Google’s portfolio-based revenue share agreements covered a significant part of the relevant markets

- (1286) For the reasons set out in this Section, the Commission concludes that Google’s portfolio-based revenue share agreements covered a significant part of the relevant national markets for general search services.
- (1287) First, Google portfolio-based revenue share agreements covered both the most significant OEMs distributing Google Android smartphones in the EEA, in terms of shares of sales, namely [revenue share partner], [revenue share partner] and [revenue

¹³⁷¹ [Revenue share partner]’s non-confidential response to Question 22 of the request for information of 17 July 2014 [...].

¹³⁷² [Revenue share partner]’s non-confidential response to Question 23 of the request for information of 17 July 2014 [...].

share partner], and the major MNOs active in the EEA, namely [revenue share partner], [revenue share partner] and [revenue share partner].

- (1288) In the first place, the sales made by OEMs that had entered into a portfolio-based revenue share agreement with Google covered approximately [80-90)% of the Google Android smartphones sold in Europe 2011-2012. Taking into account that Google Android smartphones represented approximately 56%¹³⁷³ of all the smartphones sold in Europe in 2011-2012, the portfolio-based revenue share agreements with OEMs thus covered approximately [40-50)%¹³⁷⁴ of the smartphones sold in Europe during that period. This represented a significant coverage in terms of smart mobile devices in the EEA.

Table 21: Share of Google Android smartphones sold in Europe by OEM under portfolio-based revenue share payments with Google between 2011 and 2014¹³⁷⁵

OEMs	Revenue share %	2011	2012	2013	2014
[Revenue partner]	[Revenue share terms]	N/A	N/A	[...)%	[...)%
[Revenue partner]	[Revenue share terms]	[...)%	[...)%	N/A	N/A
[Revenue partner]	[Revenue share terms]	N/A	N/A	[...)%	[...)%
[Revenue partner]	[Revenue share terms]	[...)%	[...)%	N/A	N/A
[Revenue partner]	[Revenue share terms]	[...)%	[...)%	[...)%	N/A
Total coverage		[70-80)%	[80-90)%	[20-30)%	[5-10)%

- (1289) In the second place, this estimate of the coverage of the portfolio-based revenue share agreements with OEMs is conservative and favourable to Google. This is because it does not include the additional devices that were covered by the portfolio-based revenue share agreements between Google and MNOs.¹³⁷⁶

¹³⁷³ Source: [...] (Doc IDs 3098, 4632, 4633 and 4710).

¹³⁷⁴ This figure is obtained by multiplying [80-90)% by 56%.

¹³⁷⁵ Source: [...] data (Doc IDs 3098, 4632, 4633 and 4710). As smartphones represent the large majority of Google Android devices sold by the OEMs that entered into a portfolio-based revenue share agreement with Google, the data provides a reasonable approximation of the sales of smart mobile devices sold under such agreements. [Revenue share partner]'s sales, for which the portfolio-based revenue share agreement covered only tablets, are not reported in the table. Finally, devices running on the following, non-Google Android, OSs have been excluded from the calculations: Fire, Flyme OS, and Nokia X.

¹³⁷⁶ The [...] data used in Table 21 included sales data relating to two of the MNOs that received portfolio-based revenue share payments from Google, namely [revenue share partner] and [revenue share

- (1290) Second, Google Search queries originating from smart mobile devices grew constantly in the period between 2012 and 2014 and represented approximately [30-40]% of the Google Search queries carried out in the EEA in 2014.¹³⁷⁷
- (1291) Third, Google was pre-installed on the large majority of the remaining smart mobile devices.
- (1292) In the first place, as of 2013 Google began to replace portfolio-based revenue share agreements with device-based revenue share agreements (namely as regards [revenue share partner], [revenue share partner] and [revenue share partner]).¹³⁷⁸ These device-based revenue share agreements covered [50-60]% and [60-70]% of the GMS smartphones sold in 2013 and 2014, respectively.¹³⁷⁹
- (1293) In the second place, Google Search is set as default on the Safari browser on each smart mobile device sold by Apple, pursuant to a [commercial] agreement between Apple and Google (see recital (515)(1)).¹³⁸⁰
- (1294) Fourth, general search queries from Google Android devices accounted for [10-20]% and [10-20]% of total Google search queries carried out in the EEA in 2013 and 2014 respectively.¹³⁸¹
- (1295) Fifth, the Commission's conclusion that Google's portfolio-based revenue share agreements covered a significant part of the relevant markets for general search services, is not affected by Google's claims that:
- (1) portfolio-based revenue share agreements did not cover a significant part of the markets for general search services since they covered only a portion of the general search queries on Google Android devices while there are other channels to access the market;¹³⁸²
 - (2) on the basis the Commission's assessment as laid out in the Statement of Objections, the impact of Google's portfolio-based revenue share payments would have been minimal as the [0-5]% of queries at the device level a competing general search service could achieve if it had been pre-installed, would have represented only 0.4% to 0.9% of the overall market for general search services;¹³⁸³ and
 - (3) any advantage that resulted from pre-installation of Google's general search services on GMS devices does not amount to anti-competitive foreclosure and that the Commission, contrary to Cases AT.37792 *Microsoft* and AT.39530

partner]. According to the [...] data, these MNOs accounted for approximately [0-5]% of the total Google Android smartphones sold in Europe in 2011, [0-5]% in 2012 and [0-5]% in 2013. Source: [...] data (Doc IDs 3098, 4632, 4633 and 4710).

¹³⁷⁷ Source: Google's response to Question 14 of the request for information of 24 March 2017 (Doc ID 7894-5).

¹³⁷⁸ See recital (197).

¹³⁷⁹ Source: [...] data (Doc IDs 3098, 4632, 4633 and 4710).

¹³⁸⁰ Apple's non-confidential response to Question 16 of the request for information of 17 July 2014 (Doc ID1453).

¹³⁸¹ Google was unable to provide the same level of disaggregation per OS for 2011 and 2012.

¹³⁸² Google's Response to the Statement of Objections, Part Five, pages 293-294, paragraphs 94-99 (Doc ID 7117) and Google's Response to the First Letter of Facts, Part Four, page 113, paragraph 35 (Doc ID 8598).

¹³⁸³ Google's Response to the Statement of Objections, Part Five, pages 294-295, paragraphs 100-101 (Doc ID 7117).

Microsoft (Tying), has not produced any empirical evidence to show that it does.¹³⁸⁴

- (1296) In the first place, Google's portfolio-based revenue share agreements covered a large number of Google Android devices sold in the EEA (see recitals (1287) to (1289)).
- (1297) Moreover, the portion of the general search queries on Google Android devices covered by portfolio-based revenue share agreements was significant both because of the rapidly growing volume of search queries that take place on these devices (see recital (1289) and because such queries are a particular source of valuable location data (see recital (114)) that allows general search services to improve their general search and search advertising results (see recitals (688) to (691) and (693) to (697)).
- (1298) In addition, the vast majority of the remaining general search queries on Google Search in the EEA were originated from entry points where Google Search was pre-installed or set as default, namely (i) Google Chrome browser on PCs, (ii) search app and web browsers default on Google Android devices of [revenue share partner], [revenue share partner] and [revenue share partner] via device-based revenue share payments from 2013 onwards, (iii) Safari browser on iOS via [a commercial] agreement with Apple, and (iv) other browsers on PCs via default agreements with developers (see recital (796)).
- (1299) In the second place, the impact of the portfolio-based revenue share payments was not minimal.
- (1300) First of all, as explained in Section 13.4.1.II, whilst [0-5]% of the Google Search queries on Google Android devices would have been a small amount for Google, it would have constituted a significant amount of additional queries for competing general search services, which were, and still are, much smaller than Google.
- (1301) Moreover, what might initially have been a small amount of queries could have been competitively significant in the context of gaining an initial foothold with regard to an OEM or MNO or more generally in terms of achieving scale and/or commercial credibility with a view to future growth.
- (1302) In addition, the portfolio-based revenue share agreements were offered during the strategically important phase of the shift in the focus of the Internet industry from PCs to smart mobile devices (see Section 6.2).
- (1303) In the third place, as in Cases AT.37792 *Microsoft* and AT.39530 *Microsoft (Tying)*,¹³⁸⁵ the Commission has, in this case, assessed the question of the actual development of usage shares on the basis of usage data from third party surveys and data, and examined carefully alternative explanations for changes in usage shares, including alleged qualitative superiority
- (1304) Moreover, and in any event, the Commission is not required to apply an identical framework of assessment in all cases. Rather, the Commission must make an overall assessment in each given case and can take account of a range of tools for the

¹³⁸⁴ Google's Response to the Statement of Objection, Part Five, pages 291-292, paragraphs 89-93 (Doc ID 7117).

¹³⁸⁵ Case AT.39530 *Microsoft (Tying)*, recitals 39 to 54; AT.37792 – Microsoft, recitals 849 to 878, 900 to 926 and 947 to 954.

purposes of that assessment.¹³⁸⁶

13.4.2.2. Competing general search services would have been unable to offset the competitive advantage that Google ensured for itself via portfolio-based revenue share agreements, by using alternative distribution channels such as download

- (1305) The Commission concludes that competing general search services would have been unable to offset the competitive advantage that Google ensured itself via portfolio-based revenue share agreements by using alternative distribution channels such as downloads.
- (1306) First, pre-installation is an important channel for the distribution of general search services on smart mobile devices (see Section 11.3.4.1.II). Through its portfolio-based revenue share agreements, Google was therefore able to ensure for itself a competitive advantage over competing general services.
- (1307) Second, competing general search services would have been unable to offset this competitive advantage, by using alternative distribution channels such as download (see Section 11.3.4.1.IV).
- (1308) Third, Google's competitive advantage resulting from the portfolio-based revenue share agreements and the inability of competing general search services to offset that advantage is consistent with the evolution of shares of the national markets for general search services (see Section 11.3.4.1.V).
- (1309) Fourth, the Commission's conclusion that competing general search services would have been unable to offset the competitive advantage that Google ensures itself via portfolio-based revenue share agreements by using alternative distribution channels such as downloads, is not affected by Google's claims that:
 - (1) users do not face barriers to downloading competing general search services apps or accessing them via mobile web browsers;¹³⁸⁷
 - (2) Google Search's share during the alleged infringements is not consistent with foreclosure;¹³⁸⁸ and
 - (3) Google Search obtained queries on the basis of the quality of its general search service and thus the vast majority of search queries would have gone to Google Search regardless of the portfolio-based revenue share agreements.¹³⁸⁹
- (1310) In the first place, downloads and accessing competing general search services via mobile web browsers would have been unable to offset the competitive advantage that Google ensured for itself. In particular, as set out in Section 11.3.4.1.IV, downloads of general search apps and agreements with developers of mobile web browsers cannot be compared in reach and effectiveness to the pre-installation of the

¹³⁸⁶ Case T-210/01 *General Electric v Commission*, EU:T:2005:456 paragraph 519; Case T-343/06 *Shell Petroleum and Others v Commission*, EU:T:2012:478, paragraph 171; Case T-342/07 *Ryanair v Commission*, EU:T:2010:280, paragraph 136; Case T-175/12 *Deutsche Börse v Commission*, EU:T:2015:148, paragraph 133; Case T-699/14 *Topps Europe v Commission*, EU:T:2017:2, paragraph 82.

¹³⁸⁷ Google's Response to the Statement of Objections, Part Five, pages 291-292, paragraph 89-93 (Doc ID 7117).

¹³⁸⁸ Google's Response to the Statement of Objections, Part Five, page 297, paragraph 107-109 (Doc ID 7117).

¹³⁸⁹ Google's Response to the First Letter of Facts, Part Four, page 117, paragraph 43 (Doc ID 8598).

Google Search app on GMS devices.

- (1311) In the second place, Google's competitive advantage and the inability of competing general search services to offset that advantage is consistent with the evolution of Google's shares of general search queries. In particular, as set out in Section 11.3.4.1.V, Google's share of general search queries (i) was higher on mobile devices than on PCs and the difference even increased during the period during which the portfolio-based revenue share agreements were in force and (ii) does not seem to be explained by a substantial quality advantage of the Google Search app in the eyes of Android users.
- (1312) In the third place, as set out in recitals (846) to (851), Google's share of general search queries on smart mobile devices cannot solely be explained by Google Search's alleged superior quality.

13.4.3. Google's portfolio-based revenue share payments deterred innovation

- (1313) For the reasons set out in this Section, the Commission concludes that Google's portfolio-based revenue share payments deterred innovation.
- (1314) First, the portfolio-based revenue share payments prevented the launch of Google Android devices pre-installed with general search services other than Google Search. Absent Google's conduct, users would, therefore, have had a wider choice, for example in terms of quality or range of products. For instance, as explained in recital (862), as a consequence of Google's conduct some general search services with a more focused offering may not be able to achieve the scale and access to users that would allow them to invest in research and development with respect to their specific features.
- (1315) Second, by preventing competing general search services from gaining incremental search queries and the respective revenues and data needed to improve their services, Google's conduct reduced the incentives of competing general search services to invest in developing innovative features, such as innovation in algorithm and user experience design.
- (1316) In the first place, Google's conduct made it harder for competing general search services to gain a sufficient volume of queries to expand and become or remain viable competitors (see recital (860)(1)).
- (1317) In the second place, Google's conduct prevented competing general search services from achieving revenues associated with these search queries. Such additional revenues would have allowed competing general search services to improve their services and deploy innovative solutions for users (see recital (860)(2)).
- (1318) In the third place, Google's conduct also prevented competing general search services from acquiring the valuable user data associated with these search queries (see recital (860)(3)).
- (1319) Third, the portfolio-based revenue share payments reduced the incentives of Google to improve the quality of its general search service as it did not need to compete on the merits with competing general search services.
- (1320) Fourth, the Commission's conclusion that Google's portfolio-based revenue share payments deterred innovation is not affected by Google's claim that the Commission

overlooks the improvements that Google made to its general search service during the period in which the agreements were in place.¹³⁹⁰

- (1321) In the first place, even if Google's conduct coincided with a period of improvement of its general search service, Google neither claims nor demonstrates that its conduct has not affected the incentives and ability of competing general search services to improve their services.
- (1322) In the second place, absent Google's portfolio-based revenue share payments, Google may have improved its general search service to a greater degree.

13.5. Objective justification and efficiencies

- (1323) Google claims that the portfolio-based revenue share agreements were objectively justified because they were necessary to:
 - (1) convince OEMs and MNOs to "*produce devices for the nascent Android ecosystem*";¹³⁹¹
 - (2) ensure that Google recouped its investment in Android;¹³⁹² and
 - (3) allow Google Android devices to compete against Apple's devices, by lowering their prices, improving their quality and allowing OEMs and MNOS to invest more in R&D.¹³⁹³
- (1324) For the reasons set out in this Section, the Commission concludes that Google has not demonstrated that the portfolio-based revenue share agreements are objectively justified.
- (1325) First, even assuming that the portfolio-based revenue share agreements may have been necessary at some earlier point to convince OEMs and MNOs to sell devices for the "*nascent Android ecosystem*", they were no longer necessary as of January 2011 when Google Android devices represented already more than 40% of the smart mobile devices sales worldwide and Android was therefore no longer "*nascent*".¹³⁹⁴
- (1326) Moreover, and in any event, via the portfolio-based revenue share agreements, Google was paying OEMs and MNOs to be set as the exclusive general search service on those devices, not to convince them to sell Google Android devices.
- (1327) Second, Google has not demonstrated that the portfolio-based revenue share agreements were necessary to ensure that Google recouped its investment in Android. For the reasons set out in Section 11.4.4.3, absent the portfolio-based revenue share agreements, Google would still have been able to significantly monetise Android.
- (1328) Third, Google has not demonstrated that the portfolio-based revenue share agreements were necessary to allow Google Android devices to compete against

¹³⁹⁰ Google's Response to the Statement of Objections, Part Five, pages 297-298, paragraphs 110-112 (Doc ID 7117).

¹³⁹¹ Google's Response to the Statement of Objections, Part Five, page 298, paragraph 115 (Doc ID 7117) and Appendix 2, page 21 (Doc ID 8303-12).

¹³⁹² Google's response to the complaint by Yandex, paragraph 41 (Doc ID 2118).

¹³⁹³ Google's Response to the Statement of Objections, Part Five, pages 298-300, paragraphs 116, 120-121 (Doc ID 7117) and Appendix 1 of Google's Response to the Statement of Objections, pages 12-13 paragraph 45 (Doc ID 8303-2).

¹³⁹⁴ Source: [...] data (Doc IDs 7866 and 7867).

Apple.

- (1329) In the first place, Google could have offered monetary incentives such as revenue share or lump-sum payments for OEMs and MNOs to pre-install its general search services or prominently place it on the first screen of devices, without requiring exclusive pre-installation. This is confirmed by the fact that Google currently offers OEMs and MNOs monetary incentives to prominently place its general search service on the first screen of devices.¹³⁹⁵
- (1330) In the second place, if Google had not paid for exclusivity, competing general search services would have had an interest in offering revenue shares or other monetary compensation in return for pre-installation (see recital (1212)).
- (1331) In the third place, the portfolio-based revenue share agreements were not necessary to lower the prices of Google Android devices. This is because OEMs and MNOs, which either never entered into a portfolio-based revenue share agreement with Google or whose agreement expired, also offered low-priced devices¹³⁹⁶ and invested substantially in R&D.¹³⁹⁷
- (1332) Moreover, the portfolio-based revenue share agreements were not necessary to (i) convince OEMs to sell Google Android devices, (ii) decrease OEMs' and MNOs' costs, (iii) improve the quality of devices or (iv) induce more investment in R&D. This is because, after the expiry of the portfolio-based revenue share agreements, Google neither claims nor demonstrates that OEMs and MNOs changed their pricing and R&D behaviour.

13.6. Duration of the infringement

- (1333) The Commission concludes that the start date of the infringement was 1 January 2011, the date as of which the Commission concludes that Google is dominant in each national market for general search services in the EEA (see Section 9.5). The infringement ended on 31 March 2014, the date that the portfolio-based revenue share agreement between Google and [revenue share partner] ended (see Section 6.3.3.1).
- (1334) The Commission's conclusion that the end date of the infringement was 31 March 2014 is not affected by Google's claim that the portfolio-based revenue share agreements covered only [20-30]% of Google Android devices as of 2013.¹³⁹⁸
- (1335) In the first place, the agreements continued to cover a significant proportion of Google Android devices, which were an important and growing channel for the distribution of general search services (see Section 13.4.2.1).
- (1336) In the second place, the effects of certain portfolio-based agreements that were in

¹³⁹⁵ See [revenue share partner]'s non-confidential response to Question 2 of the request for information of 8 March 2017 [...]; [revenue share partner]'s non-confidential response to Question 3 of the request for information of 8 March 2017 [...]; Amendment Agreement to the Google Android Search Revenue Share Agreement between Google and [revenue share partner] [...] and Google Mobile Revenue Share Agreement between Google and [revenue share partner] [...].

¹³⁹⁶ According to [...] data, for example, the average price of [OEM] and [OEM]'s smartphones (i.e. respectively USD [100-120] and USD [120-140] in 2016), two of the largest OEMs that have not signed a revenue share agreement with Google, is approximately half of the average price of Google Android devices (Source: [...] data (Doc ID 7866 and 7867)).

¹³⁹⁷ See example of [OEM] R&D investments described in the [...] printed and saved on 2 July 2018.

¹³⁹⁸ Google's Response to the Statement of Objections, Part Six, page 329, paragraph 63 (Doc ID 7117).

place in 2011 and 2012 continued because:

- (1) the majority of users replace their devices within three years (see recital (548)); and
- (2) [revenue share partner] and [revenue share partner] continued to receive portfolio-based revenue share payments with respect to existing Google Android devices on which Google Search was exclusively pre-installed, even after those agreements had been amended to become device-based revenue share agreements respectively in March 2013 and December 2013.¹³⁹⁹

14. SINGLE AND CONTINUOUS INFRINGEMENT

14.1. Principles

- (1337) The concept of a single and continuous infringement relates to a series of actions which form part of an overall plan because their identical objective distorts competition within the internal market.
- (1338) For the purposes of characterising various instances of conduct as a single and continuous infringement, it is necessary to establish whether they complement each other inasmuch as each of them is intended to deal with one or more consequences of the normal pattern of competition and, by interacting, contribute to the realisation of the objectives intended within the framework of that overall plan. In that regard, it is necessary to take into account any circumstance capable of establishing or casting doubt on that complementary link, such as the period of application, the content (including the methods used) and, correlatively, the objective of the various actions in question.¹⁴⁰⁰

14.2. Application to this case

- (1339) For the reasons set out in Sections 11 to 13, the Commission concludes that the following conduct constitute separate infringements of Article 102 TFEU and Article 54 of the EEA Agreement:
- (1) the tying of the Google Search app with the Play Store;
 - (2) the tying of Google Chrome with the Play Store and the Google Search app;
 - (3) the licensing of the Play Store and the Google Search app on condition that hardware manufacturers enter into the anti-fragmentation obligations in the AFAs; and
 - (4) the grant of revenue share payments to OEMs and MNOs on condition that they pre-installed no competing general search service on any device within an agreed portfolio.
- (1340) For the reasons set out in recitals (1341) to (1355), the Commission further concludes that these different forms of conduct described in Sections 11 to 13

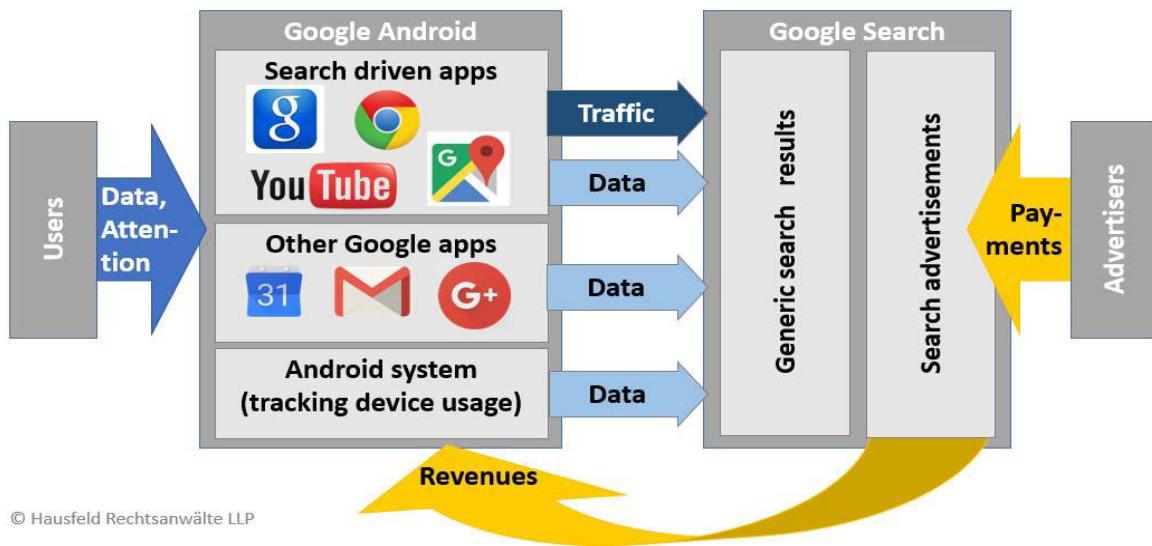
¹³⁹⁹ See Mobile Services Distribution Agreement between Google and [revenue share partner] [...] and Google Android Search Revenue Share Agreement between Google and [revenue share partner] [...].

¹⁴⁰⁰ Case T-321/05 *AstraZeneca v Commission*, EU:T:2010:266, paragraph 892, referring to Joined Cases C-204/00 P, C-205/00 P, C-211/00 P, C-213/00 P, C-217/00 P and C-219/00 P *Aalborg Portland and Others v Commission*, EU:C:2004:6, paragraph 258; Joined Cases T-101/05 and T-111/05 *BASF and UCB v Commission* EU:T:2007:380, paragraphs 179 and 181.

constitute a single and continuous infringement of Article 102 TFEU and Article 54 of the EEA Agreement.

- (1341) First, the different forms of conduct described in Sections 11 to 13 pursue an identical objective, namely to protect and strengthen Google's dominant position in general search services¹⁴⁰¹ and thus its revenues via search advertisements.¹⁴⁰² Figure 25 illustrates the interplay of the different forms of conduct described in Sections 11 to 13 and the related flow of traffic, data and revenues to Google.

Figure 25: Interplay between the different forms of conduct in Sections 11 to 13 and the related flow of traffic, data and revenues to Google¹⁴⁰³



- (1342) The fact that the different forms of conduct described in Sections 11 to 13 pursue an identical objective is confirmed by the elements set out in recitals (1343) to (1348).
- (1343) In the first place, contemporaneous evidence confirms¹⁴⁰⁴ that through the different forms of conduct described in Sections 11 to 13, Google implemented an overall "carrot-and-stick" strategy vis-à-vis hardware manufacturers and MNOs in order to

¹⁴⁰¹ This has also been observed by some industry analysts, which have characterised Google's Android strategy as the "building of moats" to protect "Google's economic castle": search, see Bill Gurley, "above the crowd" (24 March 2011), available at <http://abovethecrowd.com/2011/03/24/freight-train-that-is-android/>, printed and saved on 11 April 2016, see VW Staff, "How Strong Is The Moat Of Google Inc (GOOG)?" (23 January 2013), available at <http://www.valuewalk.com/2013/01/how-strong-is-the-moat-of-google-inc-goog/?all=1>, printed and saved on 12 April 2016; Stijn Schuermans, "Flatten, Expand, Mine: The three pillars of Google's strategy" (21 November 2011), available at <http://www.visionmobile.com/blog/2011/11/flatten-expand-mine-the-three-pillars-of-googles-strategy/>, printed and saved on 12 April 2016 and Vision Mobile, "Open Governance Index" (2011), available at <http://www.visionmobile.com/blog/2011/07/the-open-governance-index-measuring-openness-from-android-to-webkit/>, printed and saved on 11 April 2016.

¹⁴⁰² See presentation by [Google Executive], "Android Strategy and Partnerships Overview" (June 2009), pages 10 and 11 (Doc ID 1348-570): "As a platform, it is not intended to directly generate any revenue for Google" and "Android drives revenues through search ads".

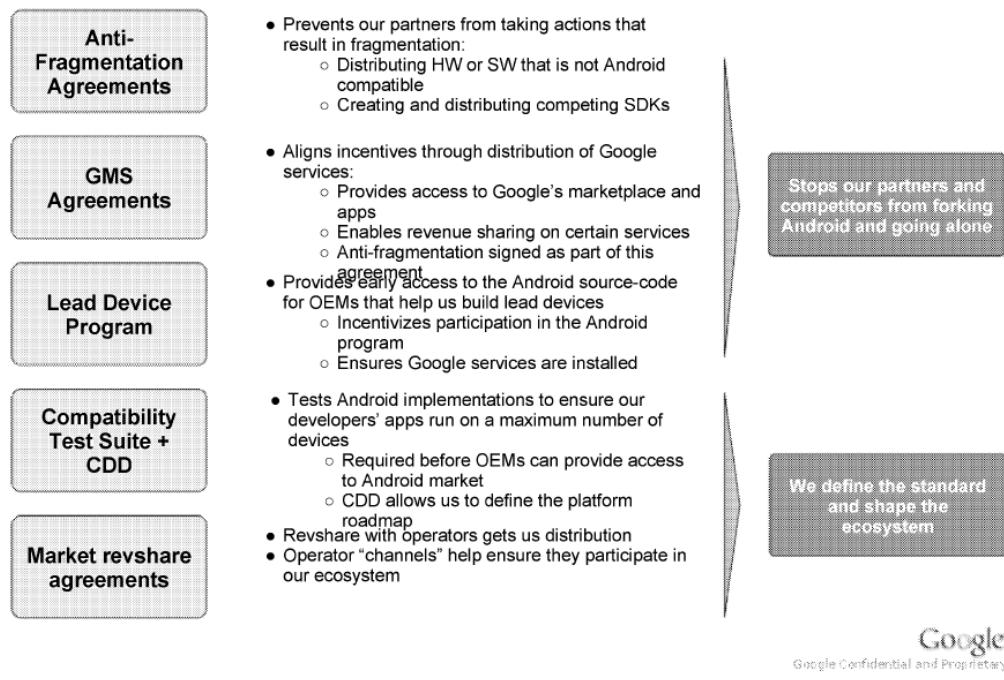
¹⁴⁰³ See complaint by OIP of 6 March 2017, page 19 (Doc ID 7285).

¹⁴⁰⁴ See Google's internal document submitted in response to the request for information of 11 July 2014, Google internal presentation by [Google Executive], "Android – Answers to strategy questions for BOD", 8 October 2010, slides 5 and 6 (Doc ID 1790-397), titled: "Carrots are healthy food, but carrying a stick can save lives". See also Google internal confidential presentation "Android Eng All-hands", 10 November 2010, slides 13 and 14 (Doc ID 1367-1115).

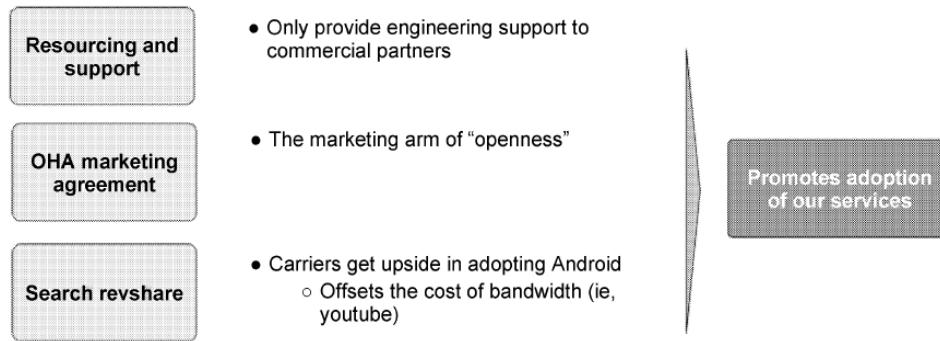
protect and strengthen its dominant position in general search services. Google's carrots-and-stick strategy was summed up in the two slides depicted in Figure 26 taken from a 2010 presentation by [Google Executive]:¹⁴⁰⁵

Figure 26: Summary of Google's carrots-and-stick strategy

Carrots are healthy food, but carrying a stick can save lives



Carrots are healthy food (cont'd)



- (1344) In the second place, as one Google executive explained with respect to the implementation of one aspect of the carrot-and-stick strategy: "*Android is by far the greatest opportunity for Search monetization in mobile over the next years and is very strategic to Google.*"¹⁴⁰⁶ Another Google executive described Google's intention to protect and strengthen its dominant position in general search services as follows:

¹⁴⁰⁵

"Android – Answers to strategy questions for BOD", 8 October 2010, slides 5-6 (Doc ID 1790-397).

¹⁴⁰⁶

Email of 26 April 2011, from [Google Executive] to [Google Executive] both Google business development (Doc ID 1362-440).

*"Every time I see an Android device shipping with Bing I die a little."*¹⁴⁰⁷

- (1345) In the third place, as regards the tying of the Google Search app with the Play Store and the tying of Google Chrome with the Play Store and the Google Search app, this protects and strengthens Google's dominant position in the national markets for general search services because:
- (1) the Google Search app and Google Chrome are the two most important entry points for Google's general search service on Google Android devices;¹⁴⁰⁸ and
 - (2) the tying of the Google Search app with the Play Store and of Google Chrome with the Play Store and the Google Search app ensures that an ever increasing percentage of smart mobile devices within the EEA were sold with the Google Search app and Google Chrome pre-installed (from approximately 46% in 2011 to approximately 80% in 2016).¹⁴⁰⁹
- (1346) In the fourth place, as regards the licensing of the Play Store and the Google Search app on condition that hardware manufacturers enter into the anti-fragmentation obligations, it ensures that Google's partners and competitors cannot develop Android forks outside of Google's control, and on which competing general search services could be pre-installed and set as default.¹⁴¹⁰
- (1347) In the fifth place, as regards the portfolio-based revenue share agreements, they ensure that no competing general search service was pre-installed on Google Android devices in addition to Google Search.¹⁴¹¹ As [Google Executive] described in an internal email to a colleague in Google's business development unit in 2011: "*The exclusive across all the android search entry points is very strategic to mobile search, the nightmare scenario is for [Microsoft] (or others) to come and scoop us by simply paying more, we know they have shown an appetite to do this in the past and will likely do so again to gain traction [...]. This contract is an exchange. Without the exclusivity, we are not "getting" anything. Without an exclusive search deal, a large carrier can and will ship alternatives to Google (as seen with Verizon, AT&T, and America Movil).*"¹⁴¹²
- (1348) In the sixth place, the different forms of conduct described in Sections 11 to 13 prevent competing general search services from acquiring traffic and valuable user data (see recitals (859), (860), (976), (1145) and (1315)). These traffic and valuable user data could be used by general search services to improve their product offering, thereby achieving better opportunities to compete with Google.¹⁴¹³ For example, the

¹⁴⁰⁷ Email of 9 August 2010, 3:56 AM from [Google Executive] to [Google Executive] (Doc ID 1305-1446).

¹⁴⁰⁸ See recitals (799)(1), (973), (974) and (1234)(3).

¹⁴⁰⁹ See footnote 438 (and also recitals (783) and (901)).

¹⁴¹⁰ See Google's internal document submitted in response to the request for information of 11 July 2014, Google internal presentation by [Google Executive], "Android – Answers to strategy questions for BOD", 8 October 2010, slide 5 (Doc ID 1790-397): "*Stop our partners and competitors from forking Android and going alone.*"

¹⁴¹¹ See Section 13.2.

¹⁴¹² Email of 26 April 2011, 16:56, from [Google Executive] to [Google Executive] both Google business development (Doc ID 1362-440).

¹⁴¹³ See Amazon's non-confidential response to Question 5 of the request for information of 9 March 2017 (Doc ID 8247); Oracle's non-confidential response to Question 1 of the request for information of 24 March 2017 (Doc ID 7835). As to the different kind of data that Google collects, see recital (110) and Google's response to Question 25 of the request for information of 24 March 2017 (Doc ID 7790).

combination of different data gathered also through GMS devices helps Google to create "super-profiles" of Internet users in order to improve its behavioural advertising capabilities.¹⁴¹⁴ The advertising, in turn, provides the revenues for Google's efforts to improve its services and collect more data (see recitals (109), (327), (328), (459), (688) to (691) and (695)).

- (1349) Second, the different forms of conduct described in Sections 11 to 13 are complementary in that Google creates an interlocking interdependence between them. This is illustrated by a number of examples.
- (1350) In the first place, in order to enter into a MADA, an OEM must enter into, and abide by the terms of an AFA.¹⁴¹⁵ Hence, in order to be able to pre-install the Play Store and the other Google apps in the GMS, an OEM must enter into, and abide by the terms of both the AFA and the MADA.
- (1351) In the second place, in order to enter into a revenue share agreement, an OEM had first to enter into a MADA (and thus also an AFA). Hence, in order to receive compensation for the pre-installation of the Google Search app on its devices an OEM had to enter into all three agreements: an AFA, a MADA and a revenue share agreement.
- (1352) In the third place, if an OEM were to pre-install exclusively on one or more of its Android devices a competing general search service instead of Google Search, it would no longer be able to pre-install on those devices any of the mandatory Google apps and services, including the Play Store. The interdependence of revenue share agreement and MADA also allowed Google the pre-installation of its other apps and services without needing to pay for their pre-installation. If an OEM wanted to receive a revenue share for Google Search, it could not take Google Search alone but had to also pre-install Google's other mandatory apps and services without being remunerated. In addition, OEMs were prevented from offering exclusivity to any provider of apps and services that competed with the ones in the mandatory GMS bundle.
- (1353) Third, the Commission's conclusion that the different forms of conduct described in Sections 11 to 13 constitute a single and continuous infringement of Article 102 TFEU and Article 54 of the EEA Agreement is not affected by Google's claims that:
 - (1) the objective of the different forms of conduct was to create an "*attractive, compatible, and vibrant*" mobile eco-system,¹⁴¹⁶ and
 - (2) Google uses the data it collects in order to improve its general search service,

¹⁴¹⁴ Oracle's non-confidential response to Question 1 of the request for information of 24 March 2017 (Doc ID 7835); see also complaint by Consumer Watchdog and Privacy Rights Clearing House with the US Federal Trade Commission against Google's change in its privacy policy allowing it to combine data (16 December 2016), available at http://www.consumerwatchdog.org/resources/ftc_google_complaint_12-5-2016docx.pdf, printed and saved on 3 July 2017.

¹⁴¹⁵ See Section 6.3.1, and for example, Google's internal document submitted in response to the request for information of 11 July 2014, email of [Google Executive], of 11 February 2011 (Doc ID 1754-740): "*No support from google without AFA. No access to our [software] without AFA. No GMS agreement without AFA (They want and will need a GMS agreement to enable the low cost project).*"

¹⁴¹⁶ Google's Response to the First Letter of Facts, Part Five, page 119, paragraphs 1-4 and page 121, paragraphs 9-12 (Doc ID 8598); Appendix 1 to Google's Response to the Statements of Facts (Doc ID 6555-2).

which is pro-competitive.¹⁴¹⁷

- (1354) In the first place, there is no incompatibility between the Commission's conclusion that the different forms of conduct described in Sections 11 to 13 pursue the identical objective of protecting and strengthening Google's dominant position in general search services and Google's claim that they pursue the objective of creating an "*attractive, compatible, and vibrant*" mobile eco-system. Google developed Android precisely because it recognised the opportunities and risks that the shift in the focus of the Internet industry from PCs to smart mobile devices could bring about for its dominant position in general search services.¹⁴¹⁸
- (1355) In the second place, it is irrelevant that Google uses the valuable user data it collects in order to improve its general search service. The Commission does not object to Google collecting data in order to improve its general search service but to the fact the different forms of conduct described in Sections 11 to 13 prevent competing general search services from acquiring traffic and valuable user data to expand and become or remain viable competitors.

14.3. Duration of the single and continuous infringement

- (1356) The Commission concludes that the duration of the single and continuous infringement is 2 748 days.
- (1357) The start date of the single and continuous infringement is 1 January 2011. This is because since that date, Google: (i) holds a dominant position in the worldwide market (excluding China) for Android app stores and in each national market for general search services in the EEA; and (ii) was engaged in the following conduct:
 - (1) the tying of the Google Search app with the Play Store;
 - (2) the licensing of the Play Store and the Google Search app on condition that hardware manufacturers enter into the anti-fragmentation obligations in the AFAs; and
 - (3) the grant of revenue share payments to OEMs and MNOs on condition that they pre-installed no competing general search service on any device within an agreed portfolio.
- (1358) The single and continuous infringement is still ongoing as Google continues to engage in the following conduct:
 - (1) the tying of the Google Search app with the Play Store;
 - (2) the tying of Google Chrome with the Play Store and the Google Search app; and
 - (3) the licensing of the Play Store and the Google Search app on condition that hardware manufacturers enter into the anti-fragmentation obligations in the AFAs.
- (1359) While Google contests each of the separate infringements, it does not contest the Commission's conclusions set out in this Section with respect to the duration of the single and continuous infringement.

¹⁴¹⁷ Google's Response to the First Letter of Facts, Part Five, page 120, paragraphs 5-8 (Doc ID 8598).

¹⁴¹⁸ See recitals (113) to (117).

15. JURISDICTION

15.1. Principles

- (1360) The Union competition rules set out in Articles 101 and 102 TFEU are intended to prevent collective or unilateral conduct of undertakings limiting competition within the internal market. While Article 101 TFEU prohibits agreements and practices which have as their object or effect the prevention, restriction or distortion of competition ‘within the internal market’, Article 102 TFEU prohibits the abuse of a dominant position ‘within the internal market or in a substantial part of it’.¹⁴¹⁹
- (1361) In order to justify the Commission’s jurisdiction, it is sufficient that a conduct is either implemented in the EEA (“implementation test”) or is liable to have immediate, substantial and foreseeable effects in the EEA (“qualified effects test”).¹⁴²⁰ These two approaches for establishing the Commission’s jurisdiction are alternative.¹⁴²¹
- (1362) The criterion of implementation is satisfied by mere sale within the Union, irrespective of the location of sources of supply or of production plants.¹⁴²²
- (1363) The qualified effects test allows the application of Union competition law to be justified under public international law when it is foreseeable that the conduct in question will have an immediate and substantial effect in the Union.¹⁴²³ In this regard, it is sufficient to take account of the probable effects of conduct on competition in order for the foreseeability criterion to be satisfied.¹⁴²⁴

15.2. Application to this case

- (1364) The Commission concludes that it has jurisdiction to apply Article 102 TFEU and Article 54 and of the EEA Agreement to Google's conduct as described in this Decision.
- (1365) First, Google's conduct is implemented in the EEA, given that OEMs and MNOs had to comply with the terms of the AFAs, MADAs and portfolio-based revenue sharing agreements when supplying devices in the EEA.
- (1366) Second, Google's conduct is capable of having substantial, immediate and foreseeable effects in the EEA.
- (1367) In the first place, Google's conduct is capable of having substantial effects in the EEA, given that Google Android devices sold into the EEA represented between 45% and 76% of smart mobile devices sold into the EEA between 2011 and 2017.¹⁴²⁵
- (1368) In the second place, Google's conduct is capable of having immediate effects in the EEA given that the AFAs, MADAs and portfolio-based revenue sharing agreements

¹⁴¹⁹ Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 42.

¹⁴²⁰ Joined Cases 89/85, 104/85, 114/85, 116/85, 117/85 and 125/85 to 129/85 *Ahlström Osakeyhtiö and Others v Commission*, EU:C:1988:447, paragraphs 11 to 18; Case T-102/96 *Gencor v Commission* EU:T:1999:65, paragraphs 89 to 101.

¹⁴²¹ Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraphs 40-46.

¹⁴²² Joined Cases 89/85, 104/85, 114/85, 116/85, 117/85 and 125/85 to 129/85 *Ahlström Osakeyhtiö and Others (Wood Pulp) v Commission*, EU:C:1988:447, paragraph 17; Case T-102/96 *Gencor v Commission* EU:T:1999:65, paragraph 87.

¹⁴²³ Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 49.

¹⁴²⁴ Case C-413/14 P *Intel Corp. v Commission*, EU:C:2017:632, paragraph 51.

¹⁴²⁵ Source: [...] data (Doc ID 7866 and 7867).

influenced the behaviour of OEMs and MNOs (see Sections 11, 12 and 13), including those active in the EEA.

- (1369) In the third place, Google's conduct is capable of having foreseeable effects in the EEA, given that OEMs and MNOs had to comply with the terms of the AFAs, MADAs and portfolio-based revenue sharing agreements when supplying devices into the EEA.
- (1370) Third, the Commission's conclusion that it has jurisdiction to apply Article 102 TFEU and Article 54 of the EEA Agreement to Google's conduct described in this Decision is not affected by Google's claims that:
 - (1) the majority of the AFAs, MADAs and portfolio-based revenue sharing agreements were concluded and implemented outside the EEA; and
 - (2) the Commission has not demonstrated that Google's conduct would harm competition immediately, substantially and foreseeably.¹⁴²⁶
- (1371) In the first place, the fact that Google's agreements with OEMs and MNOs were concluded outside the EEA is irrelevant as the AFAs, MADAs and portfolio-based revenue sharing agreements were implemented in the EEA, given that OEMs and MNOs had to comply with the terms of their agreements with Google when supplying devices into the EEA.
- (1372) In the second place, the Commission only has to demonstrate that Google's conduct is capable of having substantial, immediate and foreseeable effects in the EEA, not that Google's conduct would harm competition immediately, substantially and foreseeably.

16. EFFECT ON TRADE BETWEEN MEMBER STATES

- (1373) According to settled case-law, the effect on trade criterion consists of three elements.
- (1374) First, "*trade*" must be affected. The concept of trade is not limited to traditional exchanges of goods and services across borders, but covers all cross-border economic activity. It also encompasses practices affecting the competitive structure of the internal market by eliminating or threatening to eliminate a competitor operating within the territory of the Union.¹⁴²⁷
- (1375) Second, a practice must be capable of having an effect on trade between Member States.¹⁴²⁸ In other words, it must be foreseeable with a sufficient degree of probability on the basis of a set of objective factors of law or fact that the practice in question has an influence, direct or indirect, actual or potential, on the pattern of trade between Member States.¹⁴²⁹ Where a dominant undertaking engages in exclusionary conduct in more than one Member State, such conduct is normally, by

¹⁴²⁶ Google's Response to the Statement of Objections, Part Six, pages 302-306 (Doc ID 7117).

¹⁴²⁷ Joined Cases 6/73 and 7/73 *Istituto Chemioterapico Italiano S.p.A. and Commercial Solvents Corporation v Commission*, EU:C:1974:18, paragraphs 32-33; Joined Cases T-24/93 and others *Compagnie Maritime Belge v Commission*, EU:T:1996:139, paragraph 203.

¹⁴²⁸ Case 322/81 *NV Nederlandsche Banden Industrie Michelin v Commission*, EU:C:1983:313, paragraph 104; Case C-41/90 *Höfner and Elsner v Macrotron*, EU:C:1991:161, paragraph 32; and Case T-228/97 *Irish Sugar v Commission*, EU:T:1999:246, paragraph 170.

¹⁴²⁹ Case 5/69 *Franz Völk v Établissement J. Vervaecke* EU:C:1969:35, paragraph 5/7.

its very nature, capable of affecting trade between Member States.¹⁴³⁰

- (1376) Third, the effect on trade between Member States must be "*appreciable*". This is assessed primarily with reference to the position of an undertaking on a relevant product market.¹⁴³¹ The stronger the position of an undertaking, the more likely it is that the effect on trade between Member States of a practice will be appreciable.¹⁴³²
- (1377) In the present case, the Commission concludes that the different forms of conduct described in Sections 11 to 13 separately and collectively have an appreciable effect on trade between Member States for the reasons set out in recitals (1378) to (1381).
- (1378) First, Google's economic activities related to smart mobile OSs, app stores, general search and browsers are, by their very nature, cross-border in scope.
- (1379) Second, the different forms of conduct described in Sections 11 to 13 affect the competitive structure of the internal market by eliminating or threatening to eliminate competitors operating within the territory of the European Union.
- (1380) Third, the different forms of conduct described in Sections 11 to 13 have been implemented in all Member States.
- (1381) Fourth, since 2011, Google holds a dominant position in the worldwide market (excluding China) for the licensing of smart mobile OSs, the worldwide market (excluding China) for Android app stores and in each national market for general search services in the EEA.
- (1382) Google does not contest the Commission's conclusions as outlined in this Section.

17. ADDRESSEES

17.1. Principles

- (1383) Article 102 TFEU is addressed to undertakings. The concept of an undertaking refers to any entity engaged in an economic activity, regardless of its legal status and the way in which it is financed.¹⁴³³ The term "undertaking" must also be understood as designating an economic unit even if in law that economic unit consists of several persons, natural or legal.¹⁴³⁴
- (1384) When such an economic entity infringes the competition rules, it falls, according to the principle of personal responsibility, to that entity to answer for that infringement.¹⁴³⁵ However, the infringement of competition law must be imputed unequivocally to a legal person on whom fines may be imposed and the statement of objections must be addressed to that person. It is also necessary that the statement of objections indicates in which capacity a legal person is called on to answer the

¹⁴³⁰ Guidelines on the effect on trade concept contained in Articles 81 and 82 of the Treaty, OJ C 101, 27.4.2004, p. 81, paragraph 75.

¹⁴³¹ Case 5/69 *Franz Völk v Établissement J. Vervaecke*, EU:C:1969:35, paragraph 5/7.

¹⁴³² Case T-65/89 *BPB Industries and British Gypsum v Commission*, EU:T:1993:31, paragraph 138.

¹⁴³³ Case C-90/09 P *General Química and Others v Commission*, EU:C:2011:21, paragraph 34 and the case-law cited.

¹⁴³⁴ Case C-90/09 P *General Química and Others v Commission*, EU:C:2011:21, paragraph 35 and the case-law cited.

¹⁴³⁵ Case C-90/09 P *General Química and Others v Commission*, EU:C:2011:21, paragraph 36 and the case-law cited.

allegations.¹⁴³⁶

- (1385) The principle of economic continuity means that liability may be attributed to the legal successor of the legal person responsible for the infringement of the competition rules.¹⁴³⁷
- (1386) A parent company that owns 100% (or almost 100%) of a subsidiary has the ability to exercise decisive control over such subsidiary. In such a case, there exists a rebuttable presumption that the parent company also in fact exercises that control without the need for the Commission to adduce further evidence on the actual exercise of control (the parental liability presumption).¹⁴³⁸

17.2. Application to this case

- (1387) For the reasons set out in this Decision, the Commission concludes that Google LLC, as the legal successor of Google Inc., has directly participated in the separate infringements of Article 102 TFEU and Article 54 of the EEA Agreement described in Sections 11 to 13 and the single and continuous infringement of Article 102 TFEU and Article 54 of the EEA Agreement described in Section 14.2.
- (1388) The Commission also holds Alphabet Inc. jointly and severally liable as of 2 October 2015 for the separate infringements of Article 102 TFEU and Article 54 of the EEA Agreement described in Sections 11 to 13 and the single and continuous infringement of Article 102 TFEU and Article 54 of the EEA Agreement described in Section 14.2.
- (1389) Alphabet Inc. holds 100% of Google since 2 October 2015 and is therefore presumed to exercise decisive influence over Google LLC, the legal successor of Google Inc., since that date. Alphabet has not provided any evidence to rebut the presumption that it has exercised decisive influence over Google since that date.

18. REMEDIES

18.1. Principles

- (1390) Article 7(1) of Regulation (EC) No 1/2003 provides that where the Commission finds that there is an infringement of Article 102 TFEU and Article 54 of the EEA Agreement it may, by decision, require the undertaking concerned to bring such infringement to an end. For this purpose, it may also impose on the undertaking concerned any behavioural or structural remedies which are proportionate to the infringement committed and necessary to bring the infringement effectively to an end.
- (1391) It follows that a decision pursuant to Article 7(1) of Regulation (EC) No 1/2003 may include an order to "*do certain acts or provide certain advantages which have been wrongfully withheld as well as prohibiting the continuation of certain action, practices or situations which are contrary to the Treaty*".¹⁴³⁹ The Commission may

¹⁴³⁶ Case C-97/08 P *Akzo Nobel and Others v Commission*, EU:C:2009:536, paragraph 57.

¹⁴³⁷ Case C-448/11 P *SNIA v Commission*, EU:C:2013:801, paragraph 22.

¹⁴³⁸ Case C-90/09 P *General Química and Others v Commission*, EU:C:2011:21, paragraph 39-40 and the case-law cited.

¹⁴³⁹ Joined Cases 6/73 and 7/73 *Commercial Solvents*, EU:C:1974:18, paragraph 45; Joined Cases C-241/91 P and C-242/91 P *RTE and ITP v Commission*, EU:C:1995:98, paragraph 90.

require the undertaking concerned to submit to it proposals with a view to bringing the situation into conformity with the requirements of the Treaty.¹⁴⁴⁰

- (1392) The requirement that a remedy has to be effective¹⁴⁴¹ empowers the Commission to require an undertaking to refrain from adopting any measures having an equivalent object or effect as the conduct identified as abusive.¹⁴⁴² Any remedy must also apply in relation to the infringement that has been established¹⁴⁴³ and be proportionate to the objective sought, namely re-establishment of compliance with the rules infringed.¹⁴⁴⁴ If anti-competitive effects continue after the practices which caused them have ceased, the Commission remains competent to act with a view to eliminating or neutralising them.¹⁴⁴⁵

18.2. Application to this case

- (1393) Google and Alphabet should be required to bring the separate infringements of Article 102 TFEU and Article 54 of the EEA Agreement described in Sections 11 to 13 and the single and continuous infringement of Article 102 TFEU and Article 54 of the EEA Agreement described in Section 14.2 (together referred to hereinafter as the "Infringement") effectively to an end, if they have not already done so, and to refrain from adopting any practice or measure having an equivalent object or effect.¹⁴⁴⁶ In the event that Google and Alphabet were not to bring the Infringement effectively to an end or were to adopt a practice or measure having an equivalent object or effect, the Commission may by decision impose any remedies which are proportionate and necessary to bring the Infringement or that practice or measure effectively to an end.

18.2.1. Remedies concerning tying relating to Google's proprietary mobile apps

- (1394) Google and Alphabet should refrain from licensing the Play Store to hardware manufacturers only on condition that they pre-install the Google Search app.
- (1395) Second, Google and Alphabet should refrain from licensing the Play Store and/or the Google Search app to hardware manufacturers only on condition that they pre-install Google Chrome.
- (1396) Third, Google and Alphabet should refrain from adopting any practice or measure having an equivalent object or effect. This shall include at least the following:
- (1) Google and Alphabet cannot make the obtaining by hardware manufacturers and users of the Google Search app with the Play Store conditional on any payment or discount that would remove or restrict the freedom of hardware manufacturers and users to pre-install the Play Store without the Google Search app;
 - (2) Google and Alphabet cannot punish or threaten hardware manufacturers and users that pre-install the Play Store without the Google Search app, including by making use of one or more of Google's other proprietary apps, APIs, the

¹⁴⁴⁰ Joined Cases 6/73 and 7/73 *Istituto Chemioterapico Italiano S.p.A. and Commercial Solvents Corporation v Commission*, EU:C:1974:18, paragraph 45.

¹⁴⁴¹ Joined Cases 6/73 and 7/73 *Commercial Solvents*, EU:C:1974:18, paragraph 46.

¹⁴⁴² Case T-83/91 *Tetra Pak v Commission*, EU:T:1994:246 paragraphs 220-21.

¹⁴⁴³ Joined Cases 6/73 and 7/73 *Commercial Solvents*, EU:C:1974:18, paragraph 45.

¹⁴⁴⁴ Joined Cases C-241/91 P and C-242/91 P *RTE and ITP v Commission*, EU:C:1995:98, paragraph 93.

¹⁴⁴⁵ Case C-119/97 P *Ufex and Others v Commission*, EU:C:1999:116, paragraph 94.

¹⁴⁴⁶ Case T-83/91 *Tetra Pak*, EU:T:1994:226, paragraphs 217-222.

- Android SDK or the Android PDK;
- (3) Google and Alphabet cannot make the obtaining by hardware manufacturers and users of Google Chrome with the Play Store and/or the Google Search app conditional on any payment or discount that would remove or restrict the freedom of hardware manufacturers and users to pre-install the Play Store and/or the Google Search app without Google Chrome; and
 - (4) Google and Alphabet cannot punish or threaten hardware manufacturers or users that pre-install obtain the Play Store and/or the Google Search app without Google Chrome, including by making use of one or more of Google's other proprietary apps, APIs, the Android SDK or the Android PDK.
- (1397) Recitals (1394) to (1396) are without prejudice to any proportionate and necessary remedies that the Commission may by decision impose in the event that Google and Alphabet were not to bring the Infringement effectively to an end or would adopt a practice or measure having an equivalent object or effect.
- 18.2.2. Remedies concerning the licensing of the Play Store and the Google Search app on condition that hardware manufacturers enter into the anti-fragmentation obligations in the AFAs*
- (1398) First, Google and Alphabet should refrain from licensing of the Play Store and the Google Search app on condition that hardware manufacturers enter into the anti-fragmentation obligations in the AFAs. This shall not affect Google's ability to put in place reasonable, fair and objective measures that would only be limited in scope to GMS devices and that would not, therefore, affect hardware manufacturers' commercial freedom to sell non-GMS devices based on Android forks.
 - (1399) Second, Google and Alphabet should refrain from adopting any practice or measure having an equivalent object or effect. This shall include at least the following:
 - (1) Google and Alphabet must refrain from licensing the Play Store and the Google Search app on condition that hardware manufacturers enter into the anti-fragmentation obligations contained in any other agreements (e.g. MADAs or revenue sharing agreements);
 - (2) Google and Alphabet cannot make the grant of a royalty-free or discounted licence to the Play Store or the Google Search app conditional on an obligation not to sell devices based on Android forks;
 - (3) Google and Alphabet cannot make the obligation not to sell devices based on Android forks conditional on any payment or discount;
 - (4) Google and Alphabet cannot use one or more of Google's other proprietary apps, APIs, the Android SDK or the Android PDK to remove or restrict the freedom of hardware manufacturers to sell devices based on Android forks;
 - (5) Google and Alphabet cannot impose on hardware manufacturers any obligation to pre-install one or more of Google's proprietary apps that would remove or restrict the freedom of third parties to sell devices based on Android forks; and
 - (6) Google and Alphabet cannot punish or threaten hardware manufacturers that sell devices based on Android forks.
- (1400) Recitals (1398) and (1399) are without prejudice to any proportionate and necessary remedies that the Commission may by decision impose in the event that Google and

Alphabet were not to bring the Infringement effectively to an end or would adopt a practice or measure having an equivalent object or effect.

18.2.3. Remedies concerning revenue share agreements conditional on the exclusive pre-installation of Google Search

- (1401) First, to the extent that Google and Alphabet have not already done so, Google and Alphabet should refrain from granting payments to OEMs and MNOs on condition that they pre-install no competing general search service on any device within an agreed portfolio.
- (1402) Second, Google and Alphabet should refrain from adopting any practice or measure having an equivalent object or effect.
- (1403) This is without prejudice to any proportionate and necessary remedies that the Commission may by decision impose in the event that Google and Alphabet were not to bring the Infringement effectively to an end or would adopt a practice or measure having an equivalent object or effect.

18.2.4. Implementation of the remedies

- (1404) Google and Alphabet are granted 90 days from the date of the notification of this Decision to implement measures that bring the Infringement effectively to an end. A 90 days period is appropriate to implement such measures, given that Google may have to put in place certain technical arrangements, in addition to the removal of the contractual conditions from Google's agreements with OEMs.¹⁴⁴⁷
- (1405) Google and Alphabet should be required to notify the Commission, within 60 days from the date of notification of this Decision, of the measures by means of which they intend to bring the Infringement effectively to an end. That communication should be sufficiently reasoned and detailed to enable the Commission to make a preliminary assessment as to whether those measures will ensure that the Infringement is brought to an end effectively and in accordance with the principles set out in Sections 18.2.1 to 18.2.3. Any statements by the Commission to Google and Alphabet or silence on the part of the Commission between the 60 day deadline and 90 day deadline should not be interpreted as an indication that the intended measures communicated by Google and Alphabet will ensure that the Infringement is brought to an end effectively.
- (1406) The Commission is entitled to monitor the implementation by Google and Alphabet of the remedies ordered in this Decision. For those purposes, it is entitled to use the powers of investigation provided for in Regulation No (EC) 1/2003.¹⁴⁴⁸
- (1407) Considering the variety of the measures that Google and Alphabet may take to bring the Infringement effectively to an end, Google and Alphabet should provide the Commission with periodic reports on the measures taken to ensure compliance with this Decision. The first of those reports should be submitted on the day when Google and Alphabet bring the Infringement effectively to an end. Thereafter, reports should be submitted every six months for a period of five years from the date of submission of the first report.

¹⁴⁴⁷ Google's letter of 20 June 2018 (Doc ID 8906).

¹⁴⁴⁸ Case T-201/04, *Microsoft v Commission*, EU:T:2007:289, paragraph 1265.

19. PERIODIC PENALTY PAYMENTS

19.1. Principles

- (1408) Pursuant to Article 24(1)(a) of Regulation (EC) No 1/2003 and Article 5 of Council Regulation (EC) No 2894/94, the Commission may, by decision, impose on undertakings or associations of undertakings periodic penalty payments not exceeding 5% of the average daily turnover in the preceding business year per day and calculated from the day specified in the decision, in order to compel them to put an end to an infringement, in accordance with a decision taken pursuant to Article 7 of Regulation (EC) No 1/2003.

19.2. Application to this case

- (1409) The Commission concludes that it is necessary to impose periodic penalty payments pursuant to Article 24(1)(a) of Regulation (EC) No 1/2003 and Article 5 of Council Regulation (EC) No 2894/94 if Google and Alphabet were to fail to: (i) implement measures that bring the Infringement effectively to an end within 90 days from the date of notification of this Decision; (ii) notify the Commission within 60 days from the date of notification of this Decision of the specific measures by means of which they intend to bring the Infringement effectively to an end; and (iii) provide the Commission with periodic reports every six months, for a period of five years, on the action taken to comply with this Decision.
- (1410) In setting the level of the periodic penalty payments, the Commission has taken into account the need to impose periodic penalty payments sufficient to ensure compliance by Google and Alphabet with this Decision. The Commission has also taken into account the need to set periodic penalty payments that are sufficient to ensure compliance by other undertakings of a similar size and with similar financial resources.
- (1411) Consequently, if Google and Alphabet were to fail to comply with any of the requirements set out in recital (1409), the Commission hereby imposes a daily periodic penalty payment of 5% of Alphabet's average daily turnover in the business year preceding such failure to comply.

20. FINES

20.1. Principles

- (1412) Pursuant to Article 23(2)(a) of Regulation (EC) No 1/2003 and Article 5 of Council Regulation (EC) No 2894/94 of 28 November 1994 concerning arrangements for implementing the EEA Agreement,¹⁴⁴⁹ the Commission may by decision impose fines on undertakings, where, either intentionally or negligently, they infringe Article 102 TFEU and Article 54 of the EEA Agreement.
- (1413) An infringement of Article 102 of the Treaty or Article 54 of the EEA Agreement is committed intentionally or negligently where the undertaking concerned cannot be unaware of the anticompetitive nature of its conduct, whether or not it was aware that it was infringing the competition rules of the Treaty.¹⁴⁵⁰ Regarding an undertaking in

¹⁴⁴⁹ OJ L 305, 30.11.1994, p. 6.

¹⁴⁵⁰ Case T-83/91, *Tetra Pak v Commission*, EU:T:1994:246, paragraph 239, upheld on appeal in Case C-333/94 P, EU:C:1996:246, paragraph 48; Case T-229/94 *Deutsche Bahn v Commission*,

a dominant position, the undertaking is aware of the anti-competitive nature of its conduct where it is aware of the essential facts justifying both the finding of a dominant position on the relevant market and the finding by the Commission of an abuse of that dominant position.¹⁴⁵¹

- (1414) Where the Commission establishes the existence of a single and continuous infringement consisting of several separate infringements, it may impose a single fine and is not required to break down the amount of the fine between the separate infringements or to state specifically how it took into account each of the separate infringements.¹⁴⁵²
- (1415) Pursuant to Article 23(3) of Regulation (EC) No 1/2003, in fixing the amount of the fines, the Commission must have regard to all relevant circumstances and particularly to the gravity and the duration of the infringement. In doing so, the Commission sets the fines at a level sufficient to ensure deterrence. The Commission ensures that any aggravating or mitigating circumstances are reflected in the fines imposed.
- (1416) In setting the fines to be imposed, the Commission will refer to the principles laid down in its Guidelines on the method of setting fines imposed pursuant to Article 23(2)(a) of Regulation No 1/2003 ("the Guidelines on Fines").¹⁴⁵³
- (1417) First, the Commission defines the basic amount of the fine.¹⁴⁵⁴ That amount is to be set by reference to the value of sales,¹⁴⁵⁵ that is, the value of the undertaking's sales of goods or services to which the infringement directly or indirectly relates in the relevant geographic area in the EEA. The value of sales will be assessed before VAT and other taxes directly related to the sales.¹⁴⁵⁶
- (1418) In determining the basic amount of the fine to be imposed, the Commission takes the value of the undertaking's sales to which the infringement directly or indirectly relates in the relevant geographic area within the EEA.
- (1419) The amount of the value of sales taken into account corresponds to a percentage which may be set at a level of up to 30% of the value of sales.¹⁴⁵⁷ The choice of a

EU:T:1997:155, paragraph 130; Case T-271/03, *Deutsche Telekom v Commission*, EU:T:2008:101, paragraph 295 upheld on appeal in Case C-280/08 P, EU:C:2010:603, paragraph 124; Case T-336/07, *Telefónica SA v Commission*, EU:T:2012:172, paragraph 319, upheld on appeal in Case C-295/12 P, EU:C:2014:2062, paragraph 156; Case C-681/11 *Schenker & Co. and Others*, EU:C:2013:404, paragraph 37; Case T-286/09, *Intel Corp. v Commission*, EU:T:2014:547, paragraph 1601; Case T-472/13 *Lundbeck v Commission*, EU:T:2016:449, paragraph 762.

¹⁴⁵¹ Case 322/81, *NV Nederlandsche Banden Industrie Michelin v Commission*, EU:C:1983:313, paragraph 107; Case T-336/07, *Telefónica SA v Commission*, EU:T:2012:172, paragraph 320; Case T-286/09, *Intel Corp. v Commission*, EU:T:2014:547, paragraph 1601.

¹⁴⁵² Joined Cases 100/80 to 103/80 *Musique Diffusion française and Others v Commission*, EU:C:1983:29, paragraph 127; Case T-83/91 *Tetra Pak v Commission*, EU:T:1994:246, paragraph 236; Joined Cases T 25/95 etc *Cimenteries CBR and Others v Commission*, EU:T:2000:77, paragraph 4761; Case T-203/01 *Michelin v Commission*, EU:T:2003:250, paragraph 265; Case T-73/04 *Carbone-Lorraine v Commission*, EU:T:2008:416, paragraphs 47-48; Case T-321/05 *AstraZeneca v Commission*, EU:T:2010:266, paragraph 906; Case T-446/05 *Amann & Söhne and Cousin Filterie v Commission*, EU:T:2010:165, paragraphs 154-155.

¹⁴⁵³ OJ C 210, 1.9.2006, p. 2.

¹⁴⁵⁴ Paragraph 10 of the Guidelines on Fines.

¹⁴⁵⁵ Paragraph 13 of the Guidelines on Fines.

¹⁴⁵⁶ Paragraph 17 of the Guidelines on Fines.

¹⁴⁵⁷ Paragraph 21 of the Guidelines on Fines.

given percentage will depend on the degree of gravity of the infringement.

- (1420) The proportion of the value of sales resulting from that percentage will then be multiplied by the duration of the infringement.¹⁴⁵⁸
- (1421) The Commission may also include in the basic amount an additional amount of 15% to 25% of the value of sales, irrespective of duration.¹⁴⁵⁹
- (1422) Second, where applicable, the Commission will adjust the basic amount upwards or downwards to take into account aggravating or mitigating circumstances.¹⁴⁶⁰ Those circumstances are listed non-exhaustively in points 28 and 29 of the Guidelines on Fines.¹⁴⁶¹
- (1423) Third, the Commission is particularly concerned with the need to ensure that fines have a sufficiently deterrent effect. To that end, the Commission may increase the fine to be imposed on an undertaking which has a particularly large turnover beyond the sales of goods or services to which the infringement relates.¹⁴⁶²
- (1424) Fourth, pursuant to Article 23(2) of Regulation (EC) No 1/2003, the fine for an infringement shall not exceed 10% of the undertaking's total turnover in the preceding business year.

20.2. Intent or negligence

- (1425) In the present case, the Commission concludes that, contrary to what Google claims,¹⁴⁶³ Google and Alphabet have committed the Infringement intentionally or at least negligently.
- (1426) First, Google and Alphabet could or should not have been unaware of the fact that Google held a dominant position in at least the worldwide market (excluding China) for Android app stores and the national markets for general search services in the EEA (see Section 9).
- (1427) In the first place, Google and Alphabet ought to have been familiar with the principles governing market definition in competition cases and, where necessary, taken appropriate legal advice regarding the definition of the markets for Android app stores and for general search services.¹⁴⁶⁴
- (1428) In the second place, Google and Alphabet ought to have been familiar with the significance of Google's strong and stable market shares in the worldwide market (excluding China) for Android app stores and the national markets for general search services in the EEA.¹⁴⁶⁵
- (1429) In the third place, it is irrelevant that past merger decisions left open the possible existence of a separate market for licensable smart mobile OSs. This is because the Decision does not establish that Google's conduct constitutes an abuse of its dominant position in the worldwide market (excluding China) for the licensing of

¹⁴⁵⁸ Paragraph 19 of the Guidelines on Fines.

¹⁴⁵⁹ Paragraph 25 of the Guidelines on Fines.

¹⁴⁶⁰ Paragraph 27 of the Guidelines on Fines.

¹⁴⁶¹ Paragraph 11 of the Guidelines on Fines.

¹⁴⁶² Paragraph 30 of the Guidelines on Fines.

¹⁴⁶³ Google's Response to the Statement of Objections, Part Six, pages 308-319 (Doc ID 7117).

¹⁴⁶⁴ Case T-336/07 *Telefónica SA v Commission*, EU:T:2012:172, paragraph 323.

¹⁴⁶⁵ Case T-336/07 *Telefónica SA v Commission*, EU:T:2012:172, paragraphs 324-325.

smart mobile OSs, only in the worldwide market (excluding China) for Android app stores and the national markets for general search services in the EEA.

- (1430) Moreover, and in any event:
- (1) in the *Google / Motorola Mobility* merger decision, the Commission left open whether licensable and non-licensable smart mobile OSs should be considered as part of the same market;¹⁴⁶⁶ and
 - (2) In the *Microsoft / Nokia* merger decision, the Commission both left open whether licensable and non-licensable smart mobile OSs should be considered as part of the same market and stated that "*Android was in 2012 by far the dominant OS with upwards of 80-90% of the market*".¹⁴⁶⁷
- (1431) Second, the conduct described in Sections 11 to 13 consists of agreements voluntarily entered into by Google.
- (1432) Third, Google and Alphabet could or should not have been unaware of the fact that the conduct described in: (i) Section 11.3 constitutes an abuse of Google's dominant position in the worldwide market (excluding China) for Android app stores; (ii) Section 11.4 constitutes an abuse of Google's dominant position in the worldwide market (excluding China) for Android app stores and in the national markets for general search services; (iii) Section 12 constitutes an abuse of Google's dominant positions in the worldwide market (excluding China) for Android app stores and the national markets for general search services; and (iv) Section 13 constituted an abuse of Google's dominant position in the national markets for general search services. The Commission and the Court of Justice of the European Union have repeatedly condemned practices by undertakings in a dominant position that abusively tie two products or services,¹⁴⁶⁸ make the conclusion of a contract concerning a product or service subject to the acceptance of a supplementary obligation¹⁴⁶⁹ and make payments conditional on exclusivity.¹⁴⁷⁰

20.3. Calculation of the fine

20.3.1. Joint and several liability

- (1433) The Commission has concluded that Alphabet is jointly and severally liable for the Infringement as of 2 October 2015 (see Section 17.2).
- (1434) The Commission therefore concludes that Google and Alphabet should be held jointly and severally liable to pay the fine insofar as it relates to the period from that date.

20.3.2. Single fine

- (1435) Given that the different forms of conduct constituting the single and continuous infringement, consisting of the infringements of Article 102 TFEU and Article 54 of

¹⁴⁶⁶ Case M.6381 – Google / Motorola Mobility, recital 30.

¹⁴⁶⁷ Case M.7047 – Microsoft / Nokia, recital 102.

¹⁴⁶⁸ Case T-30/89 *Hilti v Commission*, EU:T:1991:70; Case T-83/91 *Tetra Pak v Commission*, EU:T:1994:246; Case C-333/94 P *Tetra Pak v Commission*, EU:C:1996:436; and Case T-201/04 *Microsoft v Commission*, EU:T:2007:289.

¹⁴⁶⁹ *Ibid.*

¹⁴⁷⁰ Case 85/76 *Hoffmann-La Roche*, EU:C:1979:36; Case T-66/01 *Imperial Chemical Industries v Commission*, EU:T:2010:255.

the EEA Agreement described in Sections 11 to 13, pursue an identical objective, namely to protect and strengthen Google's position in general search services and thus its revenues via search advertisements (see recital (1341)), the Commission therefore concludes that a single fine should be imposed on Google and Alphabet.

20.3.3. *Determination of the basic amount of the fine*

20.3.4. *Value of sales*

- (1436) The Commission concludes that the Infringement directly or indirectly relates to at least the gross revenues generated by Google on GMS devices via clicks on search advertisements drawn from Google's auction-based online search advertising platform, AdWords. This is because the Infringement pursues an identical objective, namely to protect and strengthen Google's position in general search services and thus its revenues via search advertisements.
- (1437) For the purpose of the value of sales, the Commission therefore uses the gross revenues generated by Google on GMS devices via clicks on search advertisements when users, located in the EEA, click on such advertisements, irrespective of whether those advertisements are displayed on google.com or a Google national website in the EEA.¹⁴⁷¹
- (1438) The Commission's conclusion that the Infringement directly or indirectly relates to at least the gross revenues generated by Google on GMS devices via clicks on search advertisements drawn from Google's auction-based online search advertising platform, AdWords, is not affected by Google's claims that the Commission ought to exclude from the value of sales:
- (1) revenues generated via clicks on search advertisements when users navigate to Google Search by typing the Google URL into a mobile web browser;¹⁴⁷² and
 - (2) payments made by Google for the placement of its search advertisements on non-Google, third-party, websites ("traffic acquisition costs").¹⁴⁷³
- (1439) First, the Commission is entitled to include in the value of sales revenues generated by Google on GMS devices via clicks on search advertisements when users navigate to Google Search by typing the Google URL into a mobile web browser. This is because the Infringement helps to maintain and strengthen Google's dominant position in each national market for general search services, markets which include all search entry points.
- (1440) Second, the Commission is entitled to include in the value of sales Google's gross revenues including traffic acquisition costs, for the reasons set out in recitals (1441) to (1444).
- (1441) In the first place, the wording of the second subparagraph of Article 23(2) of Regulation No 1/2003 refers to the total turnover of the undertaking concerned, without any deduction.¹⁴⁷⁴
- (1442) In the second place, and in any event, Google's traffic acquisition costs are an

¹⁴⁷¹ The Commission used the revenues provided by Google in response to its request for information of 5 April 2018 (Doc ID 8850).

¹⁴⁷² Google's Response to the Statement of Objections, Part Six, page 321 (Doc ID 7117).

¹⁴⁷³ See Google's response to the request for information of 5 April 2018 (Doc ID 8850).

¹⁴⁷⁴ Case T-410/09 *Almamet v Commission*, EU:T:2012:676, paragraph 225.

integral part of Google's search revenues and a component of the price charged to advertisers for Google's services.¹⁴⁷⁵ Consequently, traffic acquisition costs are a component of the overall sales price.¹⁴⁷⁶

- (1443) In the third place, it is irrelevant whether traffic acquisition costs constitute a significant part of Google's gross revenues¹⁴⁷⁷ or that such costs are predetermined as a specific portion of Google's gross revenues and thus readily identifiable.¹⁴⁷⁸
- (1444) In the fourth place, not to take gross turnover into account in some cases (but to do so in others) would require a threshold to be established, in the form of a ratio between net and gross turnover, which would be difficult to apply and would give scope for endless and insoluble disputes.¹⁴⁷⁹

20.3.5. *The last full year*

- (1445) The Commission concludes that, contrary to Google's claim,¹⁴⁸⁰ there are no exceptional reasons to deviate from the basic principle that the fine should be based on Google's gross revenues generated on GMS devices via clicks on search advertisements in 2017, the last full business year of the single and continuous infringement.¹⁴⁸¹
- (1446) Google's gross revenues generated on GMS devices via clicks on search advertisements in 2017 reflect economic reality because they take into account the size and economic power of Google and Alphabet and the scale of the Infringement.

20.3.6. *Gravity*

- (1447) The Commission concludes that the proportion of the value of sales to be used to establish the basic amount of the fine should be 11%.
- (1448) In reaching this conclusion, the Commission takes into account the factors set out in recitals (1449) to (1460).
- (1449) First, the relevant markets affected by the Infringement are of significant economic importance. This means that any anticompetitive behaviour on these markets is likely to have had a considerable impact.
- (1450) Second, the Commission and the Court of Justice of the European Union have already repeatedly condemned practices by undertakings in a dominant position that make the conclusion of a contract concerning a product or service subject to the

¹⁴⁷⁵ Joined Cases T 25/95 etc *Cimenteries CBR and Others v Commission*, EU:T:2000:77, paragraph 5030.

¹⁴⁷⁶ Case T-406/08 *ICF v Commission*, EU:T:2013:322, paragraphs 175-176; Case T-410/09 *Almamet v Commission*, EU:T:2012:676, paragraph 225.

¹⁴⁷⁷ Case T-254/12 *Kühne + Nagel International and Others v Commission*, EU:T:2016:113, paragraph 247, confirmed on appeal in Case C-261/16 P, EU:C:2018:56, paragraphs 80-85; Case T-265/12 *Schenker v Commission*, EU:T:2016:111, paragraph 263; Case T-267/12 *Deutsche Bahn and Others v Commission*, EU:T:2016:110, paragraph 207; Case T-270/12 *Panalpina World Transport (Holding) and Others v Commission*, EU:T:2016:109, paragraph 131.

¹⁴⁷⁸ Case T-254/12 *Kühne + Nagel International and Others v Commission*, EU:T:2016:113, paragraph 251; Case T-270/12 *Panalpina World Transport (Holding) and Others v Commission*, EU:T:2016:109, paragraph 132.

¹⁴⁷⁹ Case C-272/09 P *KME Germany and Others v Commission*, EU:C:2011:810, paragraph 53; Case C-389/10 P *KME Germany and Others v Commission*, EU:C:2011:816, paragraph 62.

¹⁴⁸⁰ Google's Response to the Statement of Objections, Part Seven, pages 325-326, paragraph 52-54 (Doc ID 7117).

¹⁴⁸¹ Paragraph 13 of the Guidelines on Fines.

acceptance of a supplementary obligation¹⁴⁸² and that make payments conditional on exclusivity.¹⁴⁸³

- (1451) Third, throughout the duration of the Infringement, Google not only held a dominant position in the worldwide market (excluding China) for the licensing of smart mobile OSs, the worldwide market (excluding China) for Android app stores and the national market for general search services in the EEA, but its market shares were generally above 90% in all relevant markets (see Section 9).
- (1452) Fourth, the whole EEA was covered by the Infringement.
- (1453) Fifth, the Commission's conclusion that the proportion of the value of sales to be used to establish the basic amount of the fine should be 11% is not affected by Google's claim¹⁴⁸⁴ that the proportion of the value of sales to be used to establish the basic amount of the fine should be set at "*the lowest end of the gravity scale*" because: (i) the economic importance of the relevant markets is "*in large part*" a result of Google's "*own efforts*" in the "*growth and success of the industry*"; (ii) any assessment that the Infringement is likely to have had a considerable impact on the relevant markets requires "*specific, credible and adequate evidence*"; (iii) Google's market shares were not generally above 90% in all the relevant markets; and (iv) the proportion of the value of sales used to establish the basic amount of the fine in the *Intel* case involving "*naked restrictions*" was 5%.
- (1454) In the first place, it is irrelevant whether the significant economic importance of the relevant markets at stake may be "*in large part*" a result of Google's "*own efforts*" in the "*growth and success of the industry*". The Commission does not generally object to Google's "*efforts*", only to Google's abusive conduct that was not objectively necessary for the "*growth and success of the industry*" (see Sections 11.5, 12.7 and 13.5).
- (1455) In second place, the finding that the Infringement is likely to have had a considerable impact on the relevant markets relates to its capability to restrict competition on the relevant markets (see Sections 11.3.4, 11.4.4, 12.6 and 13.4 for this analysis) in the light of the size of the revenues generated by Google on those markets.
- (1456) In the third place, since at least 2011, Google has enjoyed high shares in each national market for general search services in the EEA (see Section 9.5). In addition, its market shares were indeed above 90% in all relevant markets for most of the years concerned by the infringement (see Table 3, Table 4 and Table 5).
- (1457) In the fourth place, the Commission's earlier decision-making practice does not in itself serve as a legal framework for the imposition of fines in competition matters, since that framework is defined solely in Regulation (EC) No 1/2003 and in the Guidelines on Fines.¹⁴⁸⁵ Accordingly, the fact that the Commission has imposed fines in the past at a specific level for certain categories of infringements does not prevent

¹⁴⁸² See for example Case T-30/89 *Hilti v Commission*, EU:T:1991:70; Case T-83/91 *Tetra Pak v Commission*, EU:T:1994:246; Case C-333/94 P *Tetra Pak v Commission*, EU:C:1996:436; and Case T-201/04 *Microsoft v Commission*, EU:T:2007:289.

¹⁴⁸³ See for example Case 85/76 *Hoffmann-La Roche*, EU:C:1979:36.

¹⁴⁸⁴ Google's Response to the Statement of Objections, Part Six, page 326 and 327 (Doc ID 7117).

¹⁴⁸⁵ Case T-472/13 *Lundbeck v Commission*, EU:T:2016:449, paragraph 810.

it from setting new fines at a higher level, if raising of penalties is deemed necessary in order to ensure the implementation of Union competition policy.¹⁴⁸⁶

- (1458) Moreover, previous decisions imposing fines may be relevant from the point of view of observance of the principle of equal treatment only where the facts of the cases in those other decisions, such as markets, products, the countries, the undertakings and periods concerned, are comparable to those of the present case.¹⁴⁸⁷
- (1459) The facts in the *Intel* case are, however, not comparable to those in this case as the two cases concern different products, undertakings, practices, market coverage and time periods.
- (1460) In the fifth place, a gravity percentage of 11% is considerably below the upper limit of the scale referred to in paragraph 21 of the Guidelines on Fines that can go up to 30%.

20.3.7. Duration

- (1461) The Commission concludes that the single and continuous infringement, consisting of the infringements of Article 102 TFEU and Article 54 of the EEA Agreement described in Sections 11 to 13, started on 1 January 2011 and is still ongoing (see Section 14.3). The Commission therefore uses the date of adoption of this Decision as the end date of the single and continuous infringement for the purpose of calculating the fine. The Commission concludes that the duration of the single and continuous infringement is 2 748 days (approx. 7.52 years).
- (1462) Alphabet is jointly and severally liable with Google for the single and continuous infringement as of 2 October 2015 (see Section 17.2). Therefore, the duration of the single and continuous infringement for which Alphabet is jointly and severally liable is 1 013 days (approx. 2.77 years).
- (1463) The Commission's conclusion regarding the duration of the single and continuous infringement is not affected by Google's claims that:
 - (1) "*the period of dominance for fine calculation purposes ought only to start after its market shares have been high for a long enough period to be treated as stable*";¹⁴⁸⁸ and
 - (2) it has voluntarily "*phased out*" certain practices before or during the Commission's investigation.
- (1464) First, for the reasons discussed at Section 9, the period of dominance for fine calculation purposes ought to start in 2011 and not at a later date. Should the Commission impose a fine on Google with regard to only part of the period of the single and continuous infringement, the objective of applying a deterrent fine would not be fulfilled with regard to the remaining part of the period of the infringement.
- (1465) Moreover, Google could not have been unaware of the fact that it held a dominant position in at least the worldwide market (excluding China) for Android app stores and the national markets for general search services in the EEA (see recitals (1426) to (1428)).

¹⁴⁸⁶ Case C-295/12 P *Telefónica and Telefónica de España v Commission*, EU:C:2014:2062, paragraph 190.

¹⁴⁸⁷ See among others Case T-84/13 *Samsung SDI and Others v Commission*, EU:T:2015:611, paragraph 203; Case T-92/13 *Philips v Commission*, EU:T:2015:605, paragraph 205.

¹⁴⁸⁸ Google's Response to the Statement of Objections, Part Six, pages 328-329 (Doc ID 7117).

(1466) Second, it is irrelevant for the purposes of duration whether Google may have voluntarily "*phased out*" certain practices before or during the Commission's investigation because, as of the date of this Decision, the single and continuous infringement is still ongoing (see Section 14.3).

20.3.8. Additional amount

(1467) The Commission concludes that the basic amount should include an additional amount in order to deter undertakings of a similar size and with similar resources from entering into the same type of infringements as Google and Alphabet.

(1468) In light of the factors set out in recitals (1448) to (1452), the additional amount should be 11% of the value of sales in 2017.

(1469) The Commission's conclusion that the basic amount should include an additional of 11% of the relevant value of sales is not affected by Google's claim that an additional amount "*has never been applied in Article 102 TFEU cases and it is not warranted for cases such as the present.*"

(1470) First, the Commission has applied an additional amount in Article 102 TFEU cases.¹⁴⁸⁹

(1471) Second, point 25 of the Guidelines on Fines provides that the Commission can impose an additional amount in the case of non-cartel infringements.¹⁴⁹⁰

20.3.9. Aggravating and mitigating circumstances

(1472) The Commission concludes that there are no aggravating or mitigating circumstances that should result in an increase or decrease in the basic amount of the fine.

(1473) That conclusion is not affected by Google's claims¹⁴⁹¹ that: (i) there is uncertainty surrounding the legal characterisation of Google's conduct; (ii) Google effectively cooperated with the Commission by arranging meetings with Commission staff and assisting the Commission with respect to access to file; (iii) any infringement was not intentional; and (iv) Google has voluntarily "*changed*" certain of its practices before or during the Commission's investigation.

(1474) First, there is no uncertainty surrounding the legal characterisation of Google's practices (see recital (1450)).

(1475) Second, Google's alleged cooperation cannot be considered an effective cooperation beyond Google's legal obligations.¹⁴⁹² Moreover, it did not assist the Commission in establishing the existence of Google's and Alphabet's single and continuous infringement with less difficulty.¹⁴⁹³

¹⁴⁸⁹ See AT.39740 – Google Search (Shopping), recitals 749-750; AT.39813 – Baltic Rail, recitals 383-384.

¹⁴⁹⁰ Case T-587/08 *Del Monte v Commission*, EU:T:2013:129, paragraph 784; Case T-370/09 *GDF Suez v Commission*, EU:T:2012:333, paragraph 431; Case T-472/13 *Lundbeck v Commission*, EU:T:2016:449, paragraph 824.

¹⁴⁹¹ Google's Response to the Statement of Objections, Part Six, pages 331-332 (Doc ID 7117).

¹⁴⁹² Paragraph 29 of the Guidelines on Fines. Case T-384/09 *SKW v Commission*, EU:T:2014:27, paragraph 186.

¹⁴⁹³ Case T-128/11 *LG Display and LG Display Taiwan v Commission*, EU:T:2014:88, paragraph 215; Case C-411/15 *P Timab Industries et Cie financière et de participations Roullier v Commission*, EU:C:2017:11, paragraph 85.

- (1476) Third, Google and Alphabet have committed the Infringement intentionally or at least negligently.
- (1477) Fourth, the fact that Google has voluntarily changed certain of its practices does not constitute a mitigating circumstance, given that:
 - (1) Google's tying of the Google Search app with the Play Store, tying of Google Chrome with the Play Store and the Google Search app (Section 11) and licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations in the AFAs (Section 12) remain ongoing and abusive; and
 - (2) it was only on 28 March 2017, and not immediately after the Commission launched its investigation, that Google informed the Commission of its intention to notify hardware manufacturers of the option to enter into an ACC in place of an AFA. Moreover, the ACC would not alter the fact that Google still makes the licensing of the Play Store and the Google Search app conditional on hardware manufacturers agreeing to the anti-fragmentation obligations in the AFAs (see recital (1185)).

20.3.10. Deterrence

- (1478) The Commission pays particular attention to the need to ensure that fines have a sufficiently deterrent effect. To that end, the Commission may increase a fine to be imposed on an undertaking which has a particularly large turnover beyond the sales of goods or services to which the infringement relates.¹⁴⁹⁴
- (1479) In this case, the Commission considers that whilst there may be grounds to increase the fine, the level of the fine as calculated above in recitals (1433) to (1477) is already sufficient to ensure deterrence.

20.3.11. Conclusion: final amount of the fine

- (1480) The Commission concludes that the final amount of the fine to be imposed on Google amounts to EUR 4 342 865 000, of which EUR 1 921 666 000 jointly and severally with Alphabet.
- (1481) Alphabet's turnover in the business year ending 31 December 2017 was EUR 98 127 million. As the amount of the fine set out in recital (1480) is below 10% of that figure no adaptation is necessary pursuant to Article 23(2) of Regulation (EC) No 1/2003.

HAS ADOPTED THIS DECISION:

Article 1

1. Google LLC and Alphabet Inc. have infringed Article 102 of the Treaty and Article 54 of the EEA Agreement by participating in a single and continuous infringement consisting of four separate infringements, namely:

- (a) the tying of the Google Search app with the Play Store;
- (b) the tying of Google Chrome with the Play Store and the Google Search app;

¹⁴⁹⁴ Paragraph 30 of the Guidelines on Fines.

- (c) the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations in the anti-fragmentation agreements; and
- (d) the grant of revenue share payments to OEMs and MNOs on condition that they pre-installed no competing general search service on any device within an agreed portfolio.

2. The single and continuous infringement has been taking place since the following dates:

- (a) 1 January 2011 as regards Google LLC;
- (b) 2 October 2015 as regards Alphabet Inc.

The single and continuous infringement is continuing as at the date of adoption of this Decision.

3. The four separate infringements that constitute the single and continuous infringement have been taking place, or took place, since the following dates:

- as regards Google LLC:
 - (a) 1 January 2011 for the tying of the Google Search app with the Play Store, the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations in the anti-fragmentation agreements and the grant of revenue share payments to OEMs and MNOs on condition that they pre-installed no competing general search service on any device within an agreed portfolio; and
 - (b) 1 August 2012 for the tying of Google Chrome with the Play Store and the Google Search app; and
- as regards Alphabet Inc., 2 October 2015 for the tying of the Google Search app with the Play Store, the tying of Google Chrome with the Play Store and the Google Search app, and the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations in the anti-fragmentation agreements.

The infringement regarding the grant of revenue share payments to OEMs and MNOs on condition that they pre-installed no competing general search service on any device within an agreed portfolio ended on 31 March 2014 as regards Google LLC. Alphabet Inc. did not participate in that infringement.

The infringements regarding the tying of the Google Search app with the Play Store, the tying of Google Chrome with the Play Store and the Google Search app and the licensing of the Play Store and the Google Search app conditional on the anti-fragmentation obligations in the anti-fragmentation agreements are continuing as at the date of adoption of this Decision.

Article 2

For the single and continuous infringement consisting of four separate infringements referred to in Article 1, the following fine is imposed:

Google LLC: EUR 4 342 865 000, of which EUR 1 921 666 000 jointly and severally with Alphabet Inc.

The fine shall be paid in euros, within three months of the date of notification of this Decision, to the following bank account held in the name of the European Commission:

BANQUE ET CAISSE D'EPARGNE DE L'ETAT
1-2, Place de Metz
L-1930 Luxembourg

IBAN: LU02 0019 3155 9887 1000
BIC: BCEELULL
Ref.: European Commission – BUFI/AT.40099

After the expiry of that period, interest shall automatically be payable at the interest rate applied by the European Central Bank to its main refinancing operations on the first day of the month in which this Decision is adopted, plus 3.5 percentage points.

Where an undertaking referred to in Article 1 lodges an appeal, that undertaking shall cover the fine by the due date, either by providing an acceptable financial guarantee or making a provisional payment of the fine in accordance with Article 90 of Commission Delegated Regulation (EU) No 1268/2012.¹⁴⁹⁵

Article 3

The undertaking referred to in Article 1 shall within 90 days of notification of this Decision, bring effectively to an end the single and continuous infringement consisting of four separate infringements referred to in that Article insofar as it has not already done so. The undertaking referred to in Article 1 shall also, within 90 days of notification of this Decision, bring effectively to an end each of the four separate infringements referred to in that Article insofar as it has not already done so.

The undertaking referred to in Article 1 shall refrain from repeating any act or conduct described in that Article, and from any act or conduct having the same or equivalent object or effect.

Article 4

The undertaking referred to in Article 1 shall notify the Commission, within 60 days from the date of notification of this Decision, of the specific measures through which it intends to comply with this Decision.

The undertaking referred to in Article 1 shall provide the Commission with periodic reports on the measures taken to comply with this Decision. The first of those reports shall be sent on the day on which the undertaking brings effectively to an end the single and continuous infringement consisting of four separate infringements and each of the four separate infringements referred to in that Article. Subsequent reports shall be submitted every six months from that day, for a period of five years from that day.

Article 5

If the undertaking referred to in Article 1 fails to comply with any of the orders set out in Articles 3 and 4, the Commission hereby imposes a daily periodic penalty payment of 5% of its average daily turnover in the business year preceding such a failure to comply.

¹⁴⁹⁵ Commission Delegated Regulation (EU) No 1268/2012 of 29 October 2012 on the rules of application of Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council on the financial rules applicable to the general budget of the Union, OJ L 362, 31.12.2012, p. 1.

Article 6

This Decision is addressed to Google LLC and Alphabet Inc., both of 1600 Amphitheatre Parkway, Mountain View, CA 94043, United States of America.

This Decision shall be enforceable pursuant to Article 299 of the Treaty and Article 110 of the EEA Agreement.

Done at Brussels, 18.7.2018

For the Commission

*Margrethe VESTAGER
Member of the Commission*