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PUBLIC VERSION

In the published version of this decision, some information has been omitted pursuant to Article 17(2) of Council Regulation (EC) No 139/2004 concerning non-disclosure of business secrets and other confidential information. The omissions are shown thus […]. Where possible the information omitted has been replaced by ranges of figures or a general description.

Google LLC
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Subject: **Case M.10796 – GOOGLE / PHOTOMATH**
Commission decision pursuant to Article 6(1)(b) of Council Regulation No 139/2004[1] and Article 57 of the Agreement on the European Economic Area[2]

Dear Sir or Madam,

(1) On 21 February 2023, and following a referral pursuant to Article 4(5) of the Merger Regulation, the European Commission received notification of a proposed concentration by which Google LLC ("Google", USA) will acquire within the meaning of Article 3(1)(b) of the Merger Regulation sole control of the whole of Photomath, Inc. ("Photomath", USA) (the "Transaction")[3]. Google is designated hereinafter as the "Notifying Party" and, together with Photomath, as the "Parties".

[1] OJ L 24, 29.1.2004, p. 1 (the 'Merger Regulation'). With effect from 1 December 2009, the Treaty on the Functioning of the European Union ('TFEU') has introduced certain changes, such as the replacement of 'Community' by 'Union' and 'common market' by 'internal market'. The terminology of the TFEU will be used throughout this decision.

[2] OJ L 1, 3.1.1994, p. 3 (the 'EEA Agreement').

[3] Publication in the Official Journal of the European Union No C 77, 1.3.2023, p. 2-3.

1. THE PARTIES

(2) Google is a company incorporated in the U.S. and wholly owned by Alphabet Inc., equally incorporated in the U.S with headquarters in Mountain View, California. Google operates an online search engine ("Google Search"). It also provides the Android operating system for mobile devices, software and hardware, including Google Play, an Android app store. Google also operates across a number of other sectors including online advertising and cloud computing. Google offers a range of education products and digital literacy tools. Google can assist users looking for homework and study help ("HSH") through (i) its multiple-subject homework app ("Socratic"), and (ii) Google Search, which is accessible through desktop and mobile browsers, and the Google Search App ("GSA"). The GSA also utilises Google 'Lens', an image-based entry point to Google Search to address HSH queries.

(3) Photomath is a company incorporated in the U.S. and based in San Mateo, California. Photomath provides free and premium versions of an online HSH maths app that utilises a smartphone's camera to scan and recognise 'symbolic maths' problems. These include pre-algebra through to calculus problems that use mathematical notation to represent a mathematical idea or relationship between two ideas, such as roots, quotients, indices or powers. Photomath provides users with step-by-step explanations to symbolic maths problems utilising its own technology set of 'solver' solutions. Photomath derives its revenue from subscription fees (for Photomath's premium version) and does not offer any advertising services.

2. THE OPERATION

(4) Pursuant to a merger agreement signed on 10 May 2022, Google will acquire sole control over Photomath by acquiring the entire issued share capital. Therefore, the Transaction constitutes a concentration within the meaning of Article 3(1)(b) of the Merger Regulation.

3. UNION DIMENSION

(5) The Transaction does not have a Union dimension within the meaning of Article 1(2) or Article 1(3) of the Merger Regulation as the EU turnover of one of the Parties (Photomath) in the last financial year for which data is available at the date of the notification amounted to less than EUR 100 million.

(6) Nonetheless, the Transaction fulfils the two conditions set out in Article 4(5) of the Merger Regulation since it is a concentration within the meaning of Article 3 of the Merger Regulation and it is capable of being reviewed under the national competition laws of at least three Member States, namely Austria, Cyprus, Germany and Ireland.

(7) On 30 August 2022, the Notifying Party informed the Commission by means of a reasoned submission that the Commission should examine the Transaction pursuant to Article 4(5) of the Merger Regulation. The Commission transmitted a copy of that submission to the Member States on 31 August 2022.

(8) As none of the Member States competent to review the Transaction expressed its disagreement as regards the request to refer the case, the Transaction is deemed to have a Union dimension pursuant to Article 4(5) of the Merger Regulation.

4. RELEVANT MARKETS

(9) The Transaction mainly concerns three related markets: (i) online HSH tools that include a maths offering (where both Google and Photomath are active); (ii) Android app stores (where only Google is active); and (iii) General search services (where only Google is active).

4.1. Online HSH tools that include a maths offering

(10) The word “online" in “online HSH tools” refers to both web-only and app-only tools as well as to those that are available both in a web and in an app version.

4.1.1. The Parties’ activities

(11) Both Google and Photomath operate online HSH tools with a maths offering.

(12) Photomath provides free and premium versions of a single subject homework app that utilises a smartphone’s camera to scan and recognise symbolic maths problems. This function is based on optical character recognition (“OCR”). Photomath provides users with step-by-step solutions. In 2021, the app achieved turnover in all EEA countries except Liechtenstein. It is also available outside the EEA. While Photomath’s worldwide turnover was EUR […] million in 2021, the EU-wide turnover accounted for only EUR […] million[4].

(13) Google operates the multiple-subject homework app Socratic and the online search engine Google Search. Google Search is available both as web and app versions. Both Socratic and Google Search provide free of charge HSH solutions including maths offerings that allow users to use their camera to upload a picture via Google Lens, which utilises OCR functionality to convert images to text. Google Lens then provides the same result that appears if the user enters the recognized text in Google Search. Google Search can address simple maths problems and provide a direct answer and relevant solution steps, and links to alternative HSH sources in an easily accessible format on the search engine results page (the “OneBox”), while Socratic generates the solution and step-by-step instructions from its own maths solver and provides the most relevant resources within its app.

(14) Google also offers other online learning and education solutions Google Workspace and Google Classroom. Google Workspace essentially functions as a digital classroom manager that includes tools such as Google Meet, Sheets, Slides, Forms, Docs, Drive, and the like[5]. Meanwhile, Google Classroom provides a central site for teachers to communicate with students, provide and receive assignments and send feedback and grades[6]. These online learning and education solutions are generally produced as software packages and sold via individual

[4] Photomath started with the monetisation of English language content in 2019, whereas non-English content is only being monetised since 2022.

[5] Form CO, paragraph 322.

[6] Form CO, paragraph 320.

licenses to schools, universities, and other academic organizations. Google offers Google Workspace and Google Classroom in both free of charge and paid versions[7].

4.1.2. Product market definition

4.1.2.1. Past Commission decisions

(15) The Commission has not previously considered the market for online HSH tools or online learning and education solutions more generally.

4.1.2.2. The Notifying Party's views

(16) The Notifying Party considers that the relevant product market should encompass online HSH tools that include a maths offering, but exclude other kinds of online learning and education solutions[8]. As regards other kinds of online learning and educational solutions, the Notifying Party does not consider it appropriate to include in the relevant market virtual education management tools (e.g. Google Workspace), virtual learning environment solutions (e.g. Google Classroom), or online courses that do not address school curricula, as their functionalities are tailored to different audiences and are not substitutable for those of online HSH tools that include a maths offering.

(17) According to the Notifying Party, online HSH tools covering single and multiple academic subjects are highly substitutable from the supply-side due to the low marginal cost of developing an additional subject. In view of a high degree of substitutability, the Notifying Party does not consider it appropriate to define the product market by the reference to the number of academic subjects and considers that the market encompasses online HSH tools that cover one or more academic subjects, including maths offering[9].

(18) The Notifying Party considers that there is no reason to further segment online HSH tools that include a maths offering on the basis of the distribution platforms (mobile app or web browser) through which they are accessed[10]. According to the Notifying Party, there is a high substitutability between online HSH tools that include a maths offering regardless of the format through which these services are provided to end users as they can move easily between different distribution platforms of any given online HSH tool and receive the same level of support. Suppliers provide the same features regardless of whether they reach users through an app, a website, or both.

(19) The Notifying Party does not consider it appropriate to segment online HSH tools that include a maths offering on the basis of either free of charge or subscription-based pricing model. According to the Notifying Party, online HSH tools that include a maths offering are subject to competitive constraints from competing tools regardless of their pricing model (free of charge, subscription-based or freemium)[11].

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7 Form CO, paragraph 440 b.
8 Form CO, paragraph 77.
9 Form CO, paragraph 78.
10 Form CO, paragraph 79.
11 Form CO, paragraph 80.

(20) The Notifying Party does not consider it appropriate to segment online HSH tools that include a maths offering on the basis of their type (e.g. forum, quiz, instant maths solver etc.) or other product characteristics (e.g. OCR function, step-by-step solutions). The Notifying Party submits that there is a high degree of demand- and supply-side substitutability between online HSH tools that provide different specific features. For instance, HSH tools without OCR functionality or step-by-step solution capabilities that provide only user-generated answers to maths problems (e.g. forum-type tools, which often simply refer to similar questions asked previously by users), exercise direct and significant pressure on HSH tools that provide instant maths solutions (as opposed to user-generated answers) and offer OCR functionalities and step-by-step solutions[12].

(21) The Notifying Party further submits that the exact scope of the relevant product market for online HSH tools can be left open as the Transaction does not raise any competitive concerns under any plausible market definition[13].

4.1.2.3. The Commission's assessment

(22) In line with the Notifying Party's submission and the results of the market investigation, the Commission considers that online HSH tools that include a maths offering constitute a plausible relevant product market. For the purposes of this decision, it can be left open whether the relevant product market should comprise all online learning and education tools or be further segmented on the basis of: (i) HSH tool types; (ii) functionalities; or (iii) different means through which HSH services are provided.

(23) First, the Commission considers, for the purposes of this decision, that Google Search and other HSH tools offering maths belong to the same product market given that Google Search provides both a maths offering and general search service. In particular, Google Search can be considered to be an online HSH tool for those maths search queries that it directly answers, and can be considered a general search service for those maths search queries that it does not directly answer but instead for which it provides links to other online HSH tools. Regarding the demand-side perspective, the majority of respondents indicated that users consider other general learning and education solutions, in particular Google Workspace or Google Classroom, as substitutes for online HSH tools[14]. However, the Commissions considers, that from a user's perspective, learning and education tools without a maths offering are not a reasonable alternative if the user wishes to solve maths homework or wants to improve his or her maths skills. The Commission considers that it can be left open whether the relevant product market should be broader, consisting of all online learning and education tools, as the Transaction does not raise serious doubts as to its compatibility with the internal market regardless of whether such a broader product market is considered instead of online HSH tools that include a maths offering[15].

12 Form CO, paragraph 98-115.

13 Form CO, paragraph 81.

14 Question C.A.1. of the questionnaire to providers of online HSH tools.

15 The Commission notes that it would not be plausible to exclude tools without the discussed functions in such a broader product market, as non-math tools would be explicitly included.

(24) Second, in the market investigation, a majority of the respondents suggested that customers consider online HSH tools that do not provide an OCR functionality, solution steps, and instant maths solution (e.g. forum type tool) as an alternative to those tools that offer such functionalities[16]. However, a majority of respondents to the market investigation indicated that users does not consider quiz-type tools as an alternative to first party content that provide instant maths solutions[17]. However, the Commission considers at least for certain users, particular functions are so important that these users would not consider tools without the same functions as a credible alternative. For instance, for some maths problems that use symbols that are not available on normal keyboards, OCR functionality is a key feature. Moreover, students might need a step-by-step explanation to understand the problem and also to receive credits from their teacher when handing in the solution. Furthermore, time could also be an issue and, therefore, users might strongly prefer tools that provide an instant solution and therefore consider that a quiz and forum-only tools are not an alternative to the first party tool providing instant solution. However, the Commission considers that the question of whether the market for the supply of online HSH tools that include a maths offering should be further segmented by excluding tools that are only a forum[18], without OCR functionality or without solution steps, or any combination thereof can be left open, as the Transaction does not raise serious doubts as to its compatibility with the internal market under any plausible product market definition.

(25) Third, as regards web- and app only- HSH maths tools, the majority of respondents indicated that users consider web-and app only- tools as substitutes given their characteristics, prices and intended use[19]. In any event, the Commission considers that the question of whether the market for the supply of online HSH tools that include a maths offering should exclude web-only tools can be left open, as the Transaction does not raise serious doubts as to its compatibility with the internal market regardless of whether web-only tools are excluded from the product market's scope.

(26) Further, for the purposes of this decision, the Commission considers the relevant product market should not be further segmented based on (i) whether other academic subjects are offered (in addition to maths), or (ii) whichever pricing model is used.

(27) First, as regards the online HSH tools covering single- and multiple- subjects, the majority of the respondents to the market investigation further suggested that multiple subject tools that include other academic subjects in addition to maths are relevant alternatives[20]. The Commission considers that students seeking help with maths can use the HSH tool offering maths only, or consult the maths section of the HSH tool offering multiple academic subjects or use a combination thereof and therefore considers single-and multiple- subjects tools as credible alternatives.

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16 Questions C.A.4.; C.A.5.; C.A.6. of the questionnaire to providers of online HSH tools.

17 Question C.A.7. of the questionnaire to providers of online HSH tools.

18 Forum-type tools are defined as tools that provide only user-generated answers to mathematical problems. Whereas some tools include a forum, only a few tools are only a forum.

19 Question C.A.3 of the questionnaire to providers of online HSH tools.

20 Question C.A.2 of the questionnaire to providers of online HSH tools.

(28) Second, in respect of different pricing models, the Commission considers that free of charge HSH tools contain similar functionalities (i.e. OCR, solution steps etc.) as the tools available on payment of a subscription fee. Although paid HSH tool often include additional features or greater use (i.e. live tutoring, forum feature, animated tutorials, learning tips, maths dictionary etc.), it appears that HSH tools with or without these additional features may exercise a direct constraint on each other given that both provide solutions to the maths problems regardless of the pricing model.

(29) In light of the above, and for the purposes of this decision, the Commission considers that online HSH tools that include a maths offering constitute a plausible relevant product market. For the purposes of this decision, it can be left open, since the Transaction does not raise serious doubts as to its compatibility with the internal market, whether the relevant product market should comprise all online learning and education tools or be further segmented on the basis of: (i) HSH tool types; (ii) functionalities or (iii) different means through which HSH services are provided. Further, for the purposes of this decision, the Commission considers the relevant product market should not be further segmented based on (i) whether other academic subjects are offered (in addition to maths), or (ii) whichever pricing model is used.

4.1.3. Geographic market definition

4.1.3.1. Past Commission decisions

(30) As the Commission has not previously considered the market for online HSH tools that include a maths offering, it has also not yet considered the geographic market definition of this market.

4.1.3.2. The Notifying Party's views

(31) The Notifying Party submits that the geographic market for the supply of online HSH tools that include a maths offering is worldwide or at least EEA wide in scope, given the global presence of almost all significant providers, the general lack of country specific variation in the content and features of HSH tools, the absence of geographic barriers to entry and the generally global approach to the development, marketing and supply of such tools[21]. In any event, the Notifying Party submits that the exact scope of the relevant geographic market for online HSH tools can be left open as the Transaction does not raise competitive concerns under any plausible market definition.

4.1.3.3. The Commission's assessment

(32) Based on the results of the market investigation, the Commission considers the geographic scope of the market for online HSH tools that include a maths offering or potential segments of this market to be global.

(33) The vast majority of respondents to the market investigation indicated that they supply their online HSH tool that includes a maths offering globally. Further, all respondents except one consider that the "conditions of competition" (e.g. prices,

[21] Form CO, paragraphs 131-144.

consumption habits, number and identity of suppliers, their market strength) are sufficiently similar/homogenous at the global level. Several respondents reasoned that, since these tools are online (either on the web or as an app), they can be accessed anywhere in the world. In addition, several respondents confirmed that their product is available in multiple languages. This is consistent with the Notifying Party's own analysis which was able to confirm that multiple languages were available amongst nine competitors, and that some of these have added languages recently[22].

(34) Regarding the potential broader market for online learning and education tools, the Commission considers that it can be left open whether this market would be EEA-wide or global, as the Transaction does not raise serious doubts as to its compatibility with the internal market under any plausible geographic scope.

4.2. Android app stores

4.2.1. The Parties' activities

(35) Google operates Google Play, an Android app store. Photomath does not operate an Android app store.

4.2.2. Product market definition

4.2.2.1. Past Commission decisions

(36) The Commission concluded in *Google Android* and *Google/Fitbit* that Android app stores constitute a separate relevant product market[23].

4.2.2.2. The Notifying Party's views

(37) The Notifying Party considers that since the Transaction does not raise competitive concerns under any plausible product market definition, the exact scope of the relevant market can be left open[24].

4.2.2.3. The Commission's assessment

(38) The market investigation in this case did not provide any new elements indicating a departure from past Commission decisions was necessary.

(39) In line with its previous decisional practice, for the purpose of this decision, the Commission considers that the supply of Android app stores constitutes a separate relevant product market.

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22 Form CO, paragraphs 140-141.

23 Commission decision of 18 July 2018 in Case AT.40099 – *Google Android*, paragraphs 268-322. And, Commission decision of 24 February 2015 in Case M.9660 – Google / Fitbit ("**Google/Fitbit**"), paragraph 125.

24 Form CO, paragraphs 127-128.

4.2.3. Geographic market definition

4.2.3.1. Past Commission decisions

(40) In *Google Android* and *Google/Fitbit*, the Commission concluded that the market for Android app stores is worldwide in scope, excluding China[25].

4.2.3.2. The Notifying Party's views

(41) In line with the Commission's practice in *Google Android* case, the Notifying Party considers Google Play and Android app stores to compete at the worldwide level. However, the Notifying Party considers that since the Transaction does not raise competitive concerns under any plausible geographic market definition, the exact scope of the geographic market for app stores can be left open[26].

4.2.3.3. The Commission's assessment

(42) The market investigation in this case did not provide any new elements indicating a departure from past Commission decisions was necessary.

(43) In line with its previous decisional practice, for the purpose of this decision, the Commission considers the geographic scope of the market for the supply of Android app stores to be worldwide, excluding China.

4.3. General search services

4.3.1. The Parties' activities

(44) Google operates the general search engine Google Search, which provides free of charge search results. Google Search is monetised through advertisement. Google's offering is the same in the GSA and in Google Search on mobile or desktop browser. Photomath does not operate a general search service.

4.3.2. Product market definition

4.3.2.1. Past Commission decisions

(45) Two main categories of search services have been considered in previous Commission decisions:

(a) general search services, which search the entire internet and therefore generally return diverse, more wide-ranging results; and

(b) specialised search services, which focus on providing specific information or purchasing options in their respective fields of specialisation, also often covering a content category which is possible to monetise.

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25 Commission decision of 18 July 2018 in Case AT.40099 – *Google Android*, paragraphs 412-421. And, Commission decision of 24 February 2015 in Case M.9660 – Google / Fitbit, paragraph 131.

26 Form CO, paragraph 149.

(46) In particular, in the *Google Shopping*, *Google Android* and *Google/Fitbit* decisions, the Commission concluded that the provision of general search services constitutes a separate relevant product market[27].

(47) The Commission found that general search services on static devices such as desktop and laptop PCs and on mobile devices belong to the same relevant product market due to supply-side substitutability[28].

4.3.2.2. The Notifying Party's views

(48) The Notifying Party notes that the Commission found in particular that the provision of general search services constitutes a separate relevant product market and that general search services on static devices such as desktop and laptop PCs and on mobile devices belong to the same relevant product market due to supply-side substitutability[29]. In the Form CO, the Notifying Party adopted this definition.

4.3.2.3. The Commission's assessment

(49) The market investigation in this case did not provide any new elements justifying a departure from past Commission decisions.

(50) The Commission notes that search results on Google Search can be distinguished between branded and non-branded general search services[30], as well as between organic and paid general search services[31]. However, this is not relevant for the purposes of product market definition in this decision.

(51) In line with its previous decisional practice, for the purpose of this decision, the Commission considers that the supply of general search services belongs to a separate relevant product market.

4.3.3. Geographic market definition

4.3.3.1. Past Commission decisions

(52) In the *Google Shopping*, *Google Android* and *Google/Fitbit* decisions, the Commission concluded that the market for the provision of general search services is national in scope[32].

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27 Commission decision of 18 July 2018 in case AT.40099 – Google Android, paragraphs 323-366 and 422-425; Commission decision of 27 June 2017 in case AT.39740 – Google Shopping, paragraphs 155-190 and 252-255; And, Commission decision of 24 February 2015 in Case M.9660 – Google / Fitbit, paragraph 142.

28 Commission decision of 27 June 2017 in case AT.39740 – Google Shopping, paragraphs 186-190.

29 Form CO, paragraphs 129-130.

30 Branded search results consist of searches for a specific known/named item, e.g. in this case a specific online HSH tool that includes a maths offering. Non-branded search results consist of searches using generic search terms that are not necessarily specific to an item (e.g. in this case a search for an online HSH tool that includes a maths offering without specifying which tool).

31 Organic search results on Google Search corresponds to general search services. Meanwhile, paid search results on Google Search corresponds to a separate market for online search advertising.

32 Commission decision of 18 July 2018 in case AT.40099 – Google Android, paragraphs 323-366 and 422-425; Commission decision of 27 June 2017 in case AT.39740 – Google Shopping, paragraphs 155-190 and 252-255; And, Commission decision of 24 February 2015 in Case M.9660 – Google / Fitbit, paragraph 146.

4.3.3.2. The Notifying Party's views

(53) Google submitted that the exact geographic scope of the market can be left open as the Transaction would not raise any competitive concerns under any plausible market definition[33].

4.3.3.3. The Commission's assessment

(54) The market investigation in this case did not provide any new elements justifying a departure from past Commission decisions.

(55) Therefore, for the purpose of assessing the Transaction, the Commission considers that the geographic scope of the supply of general search services is national.

5. COMPETITIVE ASSESSMENT

(56) The Transaction results in horizontal overlaps between the activities of the Parties in the worldwide market for the supply of online HSH tools that include a maths offering (and potential segments thereof, including a potential broader market for online learning and education tools). However, the Transaction does not result in horizontally affected markets because the combined worldwide market shares of the Parties remain below 20% regardless of the segmentation of the market for the supply of online HSH tools that include a maths offering[34].

(57) The Transaction results in vertically affected markets between the upstream market for (i) the supply of general search services; and (ii) the supply of Android app stores (where Google is active) and the downstream market for the supply of online HSH tools that include a maths offering (and potential segments thereof, including a potential broader market for online learning and education tools) (where both Google and Photomath are active). Given that Google is already present in the upstream and downstream markets pre-Transaction, this is an existing vertical relationship. The Transaction brings an increment on the downstream market. The assessment of these two vertical relationships is set out in Sections 5.4.1 and 5.4.2.

(58) The Commission has also assessed whether the Transaction could lead to a strengthening of Google's position in the market for general search services. This is set out in Section 5.3.1.

5.1. Analytical Framework

(59) The Horizontal Merger Guidelines describe two main ways in which horizontal mergers may significantly impede effective competition, in particular by creating or strengthening a dominant position: (i) by eliminating important competitive constraints on one or more firms, which consequently would have increased market power, without resorting to coordinated behaviour (non-coordinated effects); and (ii) by changing the nature of competition in such a way that firms that previously

33 Form CO, paragraph 151.

34 The Commission has also assessed the Parties' standalone plans absent the Transaction. In any event, the Commission observes that the merged entity will continue to face competition from a large number of rivals following the Transaction. For instance, in the worldwide market for online HSH tools, Annex 8 of the Form CO lists 125 competitors. The rivals with a market share above [0-5]% in 2021 are named in Table 1.

were not coordinating their behaviour, are significantly more likely to coordinate and raise prices or otherwise harm effective competition (coordinated effects) as a result of the proposed concentration[35]. For the purpose of this decision, only the potential non-coordinated effects are assessed, as the lack of transparency and the large number of market participants would already make collusion very difficult to sustain.

(60) A merger giving rise to horizontal non-coordinated effects might significantly impede effective competition by creating or strengthening the dominant position of a single firm, one which, typically, would have an appreciably larger market share than the next competitor post-merger. Moreover, also mergers that do not lead to the creation of or the strengthening of a single firm's dominant position may create competition concerns under the substantive test set out in Article 2(2) and Article 2(3) of the Merger Regulation. Regarding mergers in oligopolistic markets, the Merger Regulation clarifies that "*under certain circumstances, concentrations involving the elimination of important competitive constraints that the merging parties exerted upon each other, as well as a reduction of competitive pressure on the remaining competitors, may, even in the absence of a likelihood of coordination between the members of the oligopoly, result in a significant impediment to effective competition*"[36].

(61) The Horizontal Merger Guidelines list a number of factors which may influence whether significant horizontal non-coordinated effects are likely to result from a merger[37], such as the large market shares of the merging firms or the fact that the merged entity would be able to hinder the expansion of competitors. Not all those factors need to be present to make significant non-coordinated effects likely and it is not an exhaustive list. Further, the Horizontal Merger Guidelines state that, "*according to well-established case law*" very large market shares of 50% or more may in themselves be evidence of the existence of a dominant market position[38].

(62) Specifically as regards the merged entity's ability to hinder expansion by competitors, the Horizontal Merger Guidelines state that some proposed mergers would significantly impede effective competition by leaving the merged firm in a position where it would have the ability and incentive to make the expansion of smaller firms and potential competitors more difficult or otherwise restrict the ability of rival firms to compete. This could be the case, for example, where the merged entity exercises control over certain types of inputs, or intellectual property making the expansion or entry of rival firms more costly[39].

(63) According to the Non-Horizontal Guidelines,[40] non-coordinated effects may significantly impede effective competition as a result of a vertical merger if such merger gives rise to foreclosure. Foreclosure occurs where actual or potential

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35 Commission Guidelines on the assessment of horizontal mergers under the Merger Regulation, OJ C 31, 5 February 2004 ("Horizontal Merger Guidelines"), paragraph 22.

36 Merger Regulation, paragraph 25. Similar wording is also found in Horizontal Merger Guidelines, paragraph 25.

37 Horizontal Merger Guidelines, paragraphs 26 and further.

38 Horizontal Merger Guidelines, paragraphs 17.

39 Horizontal Merger Guidelines, paragraph 36.

40 Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings (2008/C 265/07) ("Non-Horizontal Guidelines"), paragraphs 29 *et seq*.

competitors' access to supplies or markets is hampered or eliminated as a result of the merger, thereby reducing those companies' ability and/or incentive to compete[41]. Such foreclosure may discourage entry or expansion of competitors or encourage their exit[42].

(64) The Non-Horizontal Guidelines distinguish between two forms of foreclosure. Input foreclosure occurs where the merger is likely to raise the costs of downstream competitors by restricting their access to an important input. Customer foreclosure occurs where the merger is likely to foreclose upstream competitors by restricting their access to a sufficient customer base[43].

(65) Foreclosure may also take more subtle forms, such as the degradation of the quality of input supplied. In its assessment, the Commission may consider a series of alternative or complementary possible strategies[44].

(66) In assessing the likelihood of an anticompetitive foreclosure scenario, the Commission examines, first, whether the merged entity would have, post-merger, the ability to substantially foreclose access to inputs or customers, second, whether it would have the incentive to do so, and third, whether a foreclosure strategy would have a significant detrimental effect on competition. In practice, these factors are often examined together as they are closely intertwined[45].

5.2. Market Shares

(67) According to the Horizontal Merger Guidelines[46] and the Non-Horizontal Merger Guidelines[47], market shares provide useful first indications of the market structure and of the competitive importance of the merging parties and their competitors in the relevant markets.

(68) The Notifying Party provided estimates of market shares for all market definitions that the Commission considers[48].

5.2.1. Online HSH tools that include a maths offering

(69) As described in Section 4.1, the exact scope of the market regarding the product market on which Photomath and Google are both active can be left open in this case. Therefore, the following tables display market shares for all plausible market definitions in relation to online HSH tools that include maths offerings.

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41 Non-Horizontal Guidelines, paragraph 18.

42 Non-Horizontal Guidelines, paragraph 29.

43 Non-Horizontal Guidelines, paragraph 30.

44 Non-Horizontal Guidelines, paragraph 33.

45 Non-Horizontal Guidelines, paragraph 32.

46 Horizontal Merger Guidelines, paragraph 14.

47 Non-Horizontal Merger Guidelines, paragraph 24.

48 The methodology is described in detail in Annex 7 of the Form CO. The Parties did not provide market shares for the plausible segmentations in which two out of the three following groups are excluded: (i) tools that are only a forum; (ii) tools without OCR functionality; (iii) tools without solution steps. However they provided market shares for the case where one of these groups is excluded and for excluding all three groups. Excluding any of the groups leads to equal or higher market shares for the Parties. Therefore, the results of excluding two groups are necessarily in between the results of excluding one group and excluding all three groups. Thus, the exact market shares for these segmentations are not needed for the competitive assessment.

(70) The given market shares are provided in terms of total usage[49].

Table 1: Worldwide market shares for online HSH tools that include maths offerings

Company	2019	2020	2021
Google	[0-5]%	[0-5]%	[0-5]%
Photomath	[0-5]%	[0-5]%	[0-5]%
Combined	**[5-10]%**	**[5-10]%**	**[0-5]%**
Brainly	[20-30]%	[20-30]%	[20-30]%
Quizlet	[5-10]%	[5-10]%	[5-10]%
Kahoot!	[5-10]%	[5-10]%	[5-10]%
Quizizz	[0-5]%	[0-5]%	[5-10]%
BYJU's	[0-5]%	[0-5]%	[0-5]%
Toppr	[0-5]%	[0-5]%	[0-5]%
Chegg	[0-5]%	[0-5]%	[0-5]%
Khan Academy	[0-5]%	[0-5]%	[0-5]%
Vedantu	[0-5]%	[0-5]%	[0-5]%
Coursehero	[0-5]%	[0-5]%	[0-5]%
Doubtnut	[0-5]%	[0-5]%	[0-5]%
Others[50]	[30-40]%	[20-30]%	[20-30]%

Source: Form CO, Annex 8

Table 2: Worldwide market shares for online HSH tools that include maths offerings, excluding web-only tools

Company	2019	2020	2021
Google	[0-5]%	[0-5]%	[0-5]%
Photomath	[5-10]%	[5-10]%	[0-5]%
Combined	**[5-10]%**	**[5-10]%**	**[5-10]%**
Brainly	[30-40]%	[30-40]%	[30-40]%
Quizlet	[10-20]%	[5-10]%	[5-10]%
Kahoot!	[10-20]%	[5-10]%	[5-10]%
Quizizz	[0-5]%	[5-10]%	[5-10]%
BYJU's	[0-5]%	[0-5]%	[5-10]%
Chegg	[5-10]%	[5-10]%	[5-10]%
Khan Academy	[5-10]%	[5-10]%	[0-5]%
Vedantu	[0-5]%	[0-5]%	[0-5]%
Doubtnut	[0-5]%	[0-5]%	[0-5]%
Others[51]	[10-20]%	[10-20]%	[10-20]%

Source: Form CO, Annex 8

Table 3: Worldwide market shares for online HSH tools that include maths offerings, excluding forum-only tools

Company	2019	2020	2021
Google	[0-5]%	[0-5]%	[0-5]%
Photomath	[0-5]%	[0-5]%	[0-5]%
Combined	**[5-10]%**	**[5-10]%**	**[0-5]%**

[49] That means a combination of monthly active users (for apps) and monthly unique visitors (for websites). Details on the methodology are described in the Form CO, Annex 7.

[50] Individually below [0-5]% in 2021.

[51] Individually below [0-5]% in 2021.

Company	2019	2020	2021
Brainly	[20-30]%	[20-30]%	[20-30]%
Quizlet	[5-10]%	[5-10]%	[5-10]%
Kahoot!	[5-10]%	[5-10]%	[5-10]%
Quizizz	[0-5]%	[0-5]%	[5-10]%
BYJU's	[0-5]%	[0-5]%	[0-5]%
Toppr	[0-5]%	[0-5]%	[0-5]%
Chegg	[0-5]%	[0-5]%	[0-5]%
Khan Academy	[5-10]%	[0-5]%	[0-5]%
Vedantu	[0-5]%	[0-5]%	[0-5]%
Coursehero	[0-5]%	[0-5]%	[0-5]%
Doubtnut	[0-5]%	[0-5]%	[0-5]%
Others[52]	[30-40]%	[20-30]%	[20-30]%

Source: Form CO, Annex 23.1

Table 4: Worldwide market shares for online HSH tools that include maths offerings, excluding forum-only and web-only tools

Company	2019	2020	2021
Google	[0-5]%	[0-5]%	[0-5]%
Photomath	[5-10]%	[5-10]%	[0-5]%
Combined	**[5-10]%**	**[5-10]%**	**[5-10]%**
Brainly	[30-40]%	[30-40]%	[30-40]%
Quizlet	[10-20]%	[5-10]%	[5-10]%
Kahoot!	[10-20]%	[5-10]%	[5-10]%
Quizizz	[0-5]%	[5-10]%	[5-10]%
BYJU's	[0-5]%	[0-5]%	[5-10]%
Chegg	[5-10]%	[5-10]%	[5-10]%
Khan Academy	[5-10]%	[5-10]%	[5-10]%
Vedantu	[0-5]%	[0-5]%	[0-5]%
Doubtnut	[0-5]%	[0-5]%	[0-5]%
Others[53]	[10-20]%	[10-20]%	[10-20]%

Source: Form CO, Annex 23.1

Table 5: Worldwide market shares for online HSH tools that include maths offerings, excluding tools without solution steps

Company	2019	2020	2021
Google	[0-5]%	[0-5]%	[0-5]%
Photomath	[5-10]%	[5-10]%	[5-10]%
Combined	**[5-10]%**	**[5-10]%**	**[5-10]%**
Brainly	[30-40]%	[40-50]%	[30-40]%
BYJU'S	[0-5]%	[5-10]%	[5-10]%
Toppr	[0-5]%	[0-5]%	[5-10]%
Chegg	[5-10]%	[5-10]%	[5-10]%
Vedantu	[0-5]%	[0-5]%	[0-5]%
Coursehero	[5-10]%	[0-5]%	[0-5]%
Doubtnut	[0-5]%	[0-5]%	[0-5]%

[52] Individually below [0-5]% in 2021.
[53] Individually below [0-5]% in 2021.

Company	2019	2020	2021
Study	[5-10]%	[0-5]%	[0-5]%
ГДЗ: мой решебник	[0-5]%	[0-5]%	[0-5]%
Ruangguru	[0-5]%	[0-5]%	[0-5]%
Brasilescola	[0-5]%	[0-5]%	[0-5]%
Others[54]	[10-20]%	[10-20]%	[10-20]%

Source: Form CO, Annex 23.1

Table 6: Worldwide market shares for online HSH tools that include maths offerings, excluding tools without solution steps and web-only tools

Company	2019	2020	2021
Google	[0-5]%	[0-5]%	[0-5]%
Photomath	[10-20]%	[5-10]%	[5-10]%
Combined	**[10-20]%**	**[10-20]%**	**[5-10]%**
Brainly	[50-60]%	[50-60]%	[50-60]%
BYJU'S	[5-10]%	[5-10]%	[5-10]%
Chegg	[5-10]%	[5-10]%	[5-10]%
Vedantu	[0-5]%	[0-5]%	[0-5]%
Doubtnut	[0-5]%	[0-5]%	[0-5]%
ГДЗ: мой решебник	[0-5]%	[0-5]%	[0-5]%
Ruangguru	[0-5]%	[0-5]%	[0-5]%
Qanda	[0-5]%	[0-5]%	[0-5]%
Symbolab	[0-5]%	[0-5]%	[0-5]%
Others[55]	[0-5]%	[0-5]%	[5-10]%

Source: Form CO, Annex 23.1

Table 7: Worldwide market shares for online HSH tools that include maths offerings, excluding tools without OCR function

Company	2019	2020	2021
Google	[0-5]%	[0-5]%	[0-5]%
Photomath	[10-20]%	[5-10]%	[5-10]%
Combined	**[10-20]%**	**[10-20]%**	**[10-20]%**
Brainly	[50-60]%	[50-60]%	[50-60]%
BYJU'S	[5-10]%	[5-10]%	[5-10]%
Chegg	[10-20]%	[5-10]%	[5-10]%
Doubtnut	[0-5]%	[0-5]%	[0-5]%
Qanda	[0-5]%	[0-5]%	[0-5]%
Symbolab	[0-5]%	[0-5]%	[0-5]%
Others[56]	[0-5]%	[0-5]%	[5-10]%

Source: Form CO, Annex 23.1

[54] Individually below [0-5]% in 2021.
[55] Individually below [0-5]% in 2021.
[56] Individually below [0-5]% in 2021.

Table 8: Worldwide market shares for online HSH tools that include maths offerings, excluding tools without OCR function and web-only tools

Company	2019	2020	2021
Google	[0-5]%	[0-5]%	[0-5]%
Photomath	[10-20]%	[5-10]%	[5-10]%
Combined	**[10-20]%**	**[10-20]%**	**[10-20]%**
Brainly	[50-60]%	[50-60]%	[50-60]%
BYJU'S	[5-10]%	[5-10]%	[5-10]%
Chegg	[10-20]%	[5-10]%	[5-10]%
Doubtnut	[0-5]%	[0-5]%	[0-5]%
Qanda	[0-5]%	[0-5]%	[0-5]%
Symbolab	[0-5]%	[0-5]%	[0-5]%
Others[57]	[0-5]%	[0-5]%	[5-10]%

Source: Form CO, Annex 23.1

Table 9: Worldwide market shares for online HSH tools that include maths offerings, excluding forum-only tools, tools without solution steps and tools without OCR function

Company	2019	2020	2021
Google	[0-5]%	[0-5]%	[0-5]%
Photomath	[10-20]%	[5-10]%	[5-10]%
Combined	**[10-20]%**	**[10-20]%**	**[10-20]%**
Brainly	[50-60]%	[50-60]%	[50-60]%
BYJU'S	[5-10]%	[5-10]%	[5-10]%
Chegg	[10-20]%	[5-10]%	[5-10]%
Doubtnut	[0-5]%	[0-5]%	[0-5]%
Qanda	[0-5]%	[0-5]%	[0-5]%
Symbolab	[0-5]%	[0-5]%	[0-5]%
Others[58]	[0-5]%	[0-5]%	[5-10]%

Source: Form CO, Annex 23.1

Table 10: Worldwide market shares for online HSH tools that include maths offerings, excluding forum-only tools, tools without solution steps, tools without OCR function and web-only tools

Company	2019	2020	2021
Google	[0-5]%	[0-5]%	[0-5]%
Photomath	[10-20]%	[5-10]%	[5-10]%
Combined	**[10-20]%**	**[10-20]%**	**[10-20]%**
Brainly	[50-60]%	[50-60]%	[50-60]%
BYJU'S	[5-10]%	[5-10]%	[5-10]%
Chegg	[10-20]%	[5-10]%	[5-10]%
Doubtnut	[0-5]%	[0-5]%	[0-5]%
Qanda	[0-5]%	[0-5]%	[0-5]%
Symbolab	[0-5]%	[0-5]%	[0-5]%
Others[59]	[0-5]%	[0-5]%	[5-10]%

Source: Form CO, Annex 23.1

[57] Individually below [0-5]% in 2021.
[58] Individually below [0-5]% in 2021.
[59] Individually below [0-5]% in 2021.

Table 11: Worldwide market shares for online learning and education tools

Company	2019	2020	2021
Google	[0-5]%	[5-10]%	[5-10]%
Photomath	[0-5]%	[0-5]%	[0-5]%
Combined	**[5-10]%**	**[10-20]%**	**[10-20]%**
Brainly	[5-10]%	[0-5]%	[10-20]%
Duolingo	[0-5]%	[0-5]%	[0-5]%
Scribd	[5-10]%	[0-5]%	[0-5]%
Quizlet	[0-5]%	[0-5]%	[0-5]%
Kahoot!	[0-5]%	[5-10]%	[0-5]%
Quizizz	[0-5]%	[0-5]%	[0-5]%
Others[60]	[70-80]%	[60-70]%	[60-70]%

Source: Form CO, Annex 8

Table 12: Worldwide market shares for online learning and education tools, excluding web-only tools

Company	2019	2020	2021
Google	[5-10]%	[10-20]%	[10-20]%
Photomath	[0-5]%	[0-5]%	[0-5]%
Combined	**[10-20]%**	**[10-20]%**	**[10-20]%**
Brainly	[10-20]%	[10-20]%	[10-20]%
Duolingo	[5-10]%	[5-10]%	[5-10]%
Quizlet	[5-10]%	[0-5]%	[0-5]%
Kahoot!	[5-10]%	[0-5]%	[0-5]%
Quizizz	[0-5]%	[0-5]%	[0-5]%
BYJU'S	[0-5]%	[0-5]%	[0-5]%
Udemy	[0-5]%	[0-5]%	[0-5]%
Chegg	[0-5]%	[0-5]%	[0-5]%
Others[61]	[40-50]%	[40-50]%	[40-50]%

Source: Form CO, Annex 8

Table 13: EEA market shares for online learning and education tools

Company	2019	2020	2021
Google	[5-10]%	[5-10]%	[5-10]%
Photomath	[5-10]%	[0-5]%	[5-10]%
Combined	**[5-10]%**	**[5-10]%**	**[10-20]%**
Duolingo	[5-10]%	[5-10]%	[5-10]%
Kahoot!	[5-10]%	[5-10]%	[5-10]%
Brainly	[5-10]%	[5-10]%	[0-5]%
Scribd	[5-10]%	[5-10]%	[5-10]%
Others[62]	[70-80]%	[70-80]%	[70-80]%

Source: Form CO, Annex 8

60 Individually below [0-5]% in 2021.
61 Individually below [0-5]% in 2021.
62 Individually below [0-5]% in 2021.

Table 14: EEA market shares for online learning and education tools, excluding web-only tools

Company	2019	2020	2021
Google	[0-5]%	[10-20]%	[10-20]%
Photomath	[0-5]%	[0-5]%	[0-5]%
Combined	**[5-10]%**	**[10-20]%**	**[10-20]%**
Duolingo: Learn Languages	[5-10]%	[10-20]%	[5-10]%
Kahoot!	[5-10]%	[5-10]%	[5-10]%
Brainly	[5-10]%	[5-10]%	[5-10]%
Quizlet	[0-5]%	[0-5]%	[0-5]%
PRONOTE	[0-5]%	[0-5]%	[0-5]%
Didup - Famiglia	[0-5]%	[0-5]%	[0-5]%
Mon EcoleDirecte	[0-5]%	[0-5]%	[0-5]%
Synergia	[0-5]%	[0-5]%	[0-5]%
Udemy	[0-5]%	[0-5]%	[0-5]%
EduPage	[0-5]%	[0-5]%	[0-5]%
Others[63]	[40-50]%	[40-50]%	[40-50]%

Source: Form CO, Annex 8

5.2.2. Android app stores

(71) According to the *Google Android* decision[64], Google's market share by volume in the worldwide (excluding China) market for Android app stores was [90-100]% in 2016[65]. Nothing in the file suggests that Google's market share has substantially changed. Photomath is not active in this market.

5.2.3. General search services

(72) The following table shows Google's 2021 market shares in national markets for general search services. Photomath does not offer a general search service.

Table 15: Market Shares in General search services, 2021 (by revenue)

EEA Country	Google's Market Share
Austria	[90-100]%
Belgium	[90-100]%
Bulgaria	[90-100]%
Croatia	[90-100]%
Cyprus	[90-100]%
Czechia	[80-90]%
Denmark	[90-100]%
Estonia	[90-100]%
Finland	[90-100]%
France	[90-100]%
Germany	[90-100]%

63 Individually below [0-5]% in 2021.

64 Google Android decision, paragraphs 412-421.

65 The Commission notes that the Parties did not provide a more recent market share estimate. For the purpose of this decision, the rather outdated estimate was sufficient, because even the highest possible market share (100% instead of [90-100]%) would not change the assessment.

EEA Country	Google's Market Share
Greece	[90-100]%
Hungary	[90-100]%
Iceland	[90-100]%
Ireland	[90-100]%
Italy	[90-100]%
Latvia	[90-100]%
Liechtenstein	[90-100]%
Lithuania	[90-100]%
Luxembourg	[90-100]%
Malta	[90-100]%
Netherlands	[90-100]%
Norway	[90-100]%
Poland	[90-100]%
Portugal	[90-100]%
Romania	[90-100]%
Slovakia	[90-100]%
Slovenia	[90-100]%
Spain	[90-100]%
Sweden	[90-100]%

Source: Form CO, Table 12 (based on Statcounter)

5.3. Horizontal Assessment

5.3.1. Horizontal overlap in online HSH tools that include a maths offering

(73) Since the combined market share of the Parties is below 20% for all plausible market definitions with an overlap[66], there are no horizontally affected markets[67].

5.3.2. Potential strengthening of Google's dominant position in national markets for general search services

(74) The Transaction also leads to a combination of the capabilities of Photomath and Google to solve maths questions. Internal documents suggest this combined capability may be used as an asset to improve the quality of maths search results in Google Search, which may in turn strengthen Google's position in general search services.

5.3.2.1. The Notifying Party's views

(75) The Notifying Party considers that the Transaction will not lead to a strengthening of Google's alleged dominant position in the market for general search services in the EEA sufficient to create anti-competitive effects in general search services[68].

66 See section 5.2.3.

67 The Commission has also assessed the Parties' standalone plans absent the Transaction. In any event, the Commission observes that the merged entity will continue to face competition from a large number of rivals following the Transaction. For instance, in the worldwide market for online HSH tools, Annex 8 of the Form CO lists 125 competitors. The rivals with a market share above [0-5]% in 2021 are named in Table 1.

68 Form CO, Paragraphs 340-348.

(76) The Notifying Party considers that the Transaction will not generate barriers to entry or expansion in general search services with a number of factors limiting the competitive impact of the integration of Photomath into Google Search.

(77) As limiting factors, the Notifying Party submits Photomath's non-unique and non-outstanding capabilities, available alternatives for general search services competitors, the limited potential increase in market share in the market for general search services due to a very low share of maths search queries and that only a limited number of users would be affected. Moreover, the product improvement would only be marginal.

5.3.2.2. The Commission's assessment

(78) According to paragraph 36 of the Horizontal Merger Guidelines, a merger can significantly impede effective competition if the merged entity gains such a degree of control over an asset that expansion or entry by rival firms may be more difficult.

(79) At the outset, the Commission notes that, in Google Android and Google Shopping, Google has been found to hold a dominant position in many national markets for the supply of general search services[69]. Google's current market shares in many national markets for the supply of general search services are still very high[70].

(80) Therefore, the Commission investigated whether the Transaction strengthens Google's already dominant position in national markets for the provision of general search services, taking the capability to solve maths questions as an asset to improve the quality of maths search results in Google Search. Despite that Photomath does not operate a general search service, it has capabilities that can improve Google Search and thus the Transaction may impact competition between Google Search and other general search services. The Transaction will combine Google and Photomath's capabilities to solve maths problems. The additional capabilities that Photomath would bring are in particular the quality of step-by-step solutions and the ability to provide solutions for more complex maths problems. The Commission assessed whether the Transaction allows Google to improve its offering of general search services to such an extent that it would be even more difficult for rivals to compete with Google Search raising barriers to entry and expansion for Google's rivals in this market, to the detriment of users[71].

(81) For the reasons set out below and based on the results of the market investigation, the Commission considers that the described potential harm is unlikely to materialize. First, the relevance of maths search queries for the market for general search services is low. Second, Photomath's capabilities are neither unique nor scarce.

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69 Commission decision of 18 July 2018 in case AT.40099 – Google Android, Section 9.5; Commission decision of 27 June 2017 in case AT.39740 – Google Shopping, section 6.2.

70 Form CO, Annex 27.

71 The Commission notes that whilst Photomath does have some data relating to maths problems, these do not appear to be exploitable by Google (outside of improving Google's capability to solve maths problems), for example for advertising purposes. As the Photomath app can be used without registration, Photomath has very limited user data.

(82) As regards the relevance of maths search queries, the market investigation has confirmed the very low relevance of maths search queries for general search[72]. In addition, data from the Parties has shown, that maths search queries account for a very low share (less than […]%) of all search queries[73].

(83) As regards Photomath's capabilities, the market investigation confirmed that Photomath's capabilities to solve maths queries are neither unique nor scarce[74]. The majority of Google's rivals in general search services considered it feasible to build maths solving features themselves[75]. The vast majority of competitors (including Bing) already have these capabilities in some form[76].

(84) Moreover, Microsoft's Bing already has similar capabilities. Since Bing already has an integrated maths solver of high quality, the Transaction would only allow Google to catch-up to Microsoft in this specific aspect of general search services, rather than to extend its lead over Microsoft. The existing high barriers to entry and expansion (e.g. scale and data) are not merger specific.

(85) Finally, the existence of several similar offerings[77] by competitors further suggests that Photomath's capabilities are not unique and also not scarce.

(86) The analysis above does not depend on the EEA country, as Google has a rather similar market share in all national markets for general search services in the EEA.

(87) In light of the above, the Commissions considers that the Transaction does not raise serious doubts as to its compatibility with the internal market as regards a potential strengthening of Google's dominant position in general search services.

5.4. Vertical Assessment

5.4.1. Vertical relationship between general search services and online HSH tools that include a maths offering

(88) The Commission notes that a vertical relationship normally presupposes that the product or service in the upstream market in question constitutes an important input to the product or service in the downstream market[78]. However, in this case, the vertical relationship is not a "traditional" one, in the sense that general search services are not a direct input that is used to build an online HSH tool that includes a maths offering; instead, general search services are used by online HSH tools that include a maths offering as one method to source new users.

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72 Question B.7 of the questionnaire to providers of general search services.

73 Reply to RFI 6, Questions 2-5.

74 Questions D.A.18 and D.A.19 of the questionnaire to providers of online HSH tools and Questions C.15 and C.16 of the questionnaire to providers of general search services. The vast majority of respondents did not indicate that Photomath would be scarce or unique. The few respondents that indicated a scarceness or uniqueness mentioned the OCR function and very good step-by-step solutions, but other respondents also explained that these functions are not scarce or unique.

75 Question C.9 of the questionnaire to providers of general search services.

76 Question B.2 of the questionnaire to providers of general search services.

77 Annex 9, Form CO.

78 Non-Horizontal Guidelines, paragraph 34.

(89) The market for general search services can be seen as upstream to the market for online HSH tools that include a maths offering[79]. Specifically, Google Search can be seen as an input for online HSH tools that include a maths offering[80] primarily as one way to source new users (as well as a way to access websites of online HSH tools that include a maths offering). As such, the Commission's assessment proceeds by assuming that there is a vertical relationship between these two markets, whereby (i) Google is active in the upstream market for general search services, with Google Search, and (ii) Google and Photomath are active in the downstream market for online HSH tools that include a maths offering (and potential segments thereof, including a potential broader market for online learning and education tools[81]).

(90) This vertical relationship leads to affected markets within the meaning of the Merger Regulation, as the Parties exceed the 30% threshold on the upstream markets for general search services in light of Google's market share (see Section 5.2.3). The analysis provided below does not differ by EEA country, as Google has a similar market share in all national markets for general search services in the EEA.

(91) The Commission has assessed whether the merged entity would have the ability and incentive to foreclose competing third party providers of online HSH tools that include a maths offering, either by denying access to Google Search (total input foreclosure) or degrading access to Google Search (partial input foreclosure, i.e. self-preferencing). With respect to degrading access to Google Search, the Commission has assessed both (i) absolute degradation of access to Google Search, i.e. lowering the visibility of competitors in the ranking on Google Search, and (ii) relative degradation of access to Google Search, i.e. incorporating Photomath and its capabilities into the OneBox at the top of Google Search[82]. However, the assessment and conclusions outlined below apply to both types of degradation of access to Google Search[83], and therefore this distinction is not made below.

(92) The Commission likewise sought to establish whether such foreclosure strategies may have a negative impact on competition in the market for the supply of online HSH tools that include maths offering (and potential segments thereof as well as a potential broader market for online learning and education tools[84]).

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79 This holds as well for potential segments thereof and for the potential broader market of online education tools (including or excluding web-only tools).

80 This holds as well for tools in potential segments thereof and for tools in the potential broader market of online education tools (including or excluding web-only tools).

81 Including or excluding web-only tools.

82 Google OneBox is a separate display box where certain search results are displayed at the top of Google's search results pages.

83 As outlined in detail in sections 5.4.1.2.1 and 5.4.1.2.3, rival online HSH tools that include a maths offering either do not or do not need to rely on Google Search to source new users. Therefore, it does not matter whether Google degrades rivals' access in absolute or relative terms, since either way the merged entity will unlikely have the ability to foreclose competitors in the market for online HSH tools that include a maths offering by degrading access to Google Search. Similarly, it does not matter for the question of whether there would unlikely be a detrimental effect on competition.

84 Including or excluding web-only tools.

5.4.1.1. The Notifying Party's views

(93) The Notifying Party considers that there would no ability and no incentive to engage in such foreclose. In any event, such a foreclosure would also have no anti-competitive effects[85].

(94) According to the Notifying Party, there is no ability because online HSH offerings do not depend solely on Google Search today (but primarily on promotional campaigns and word-of-mouth). Moreover, other means of advertising and profile-building exist to reach users. In addition, strategies relating to Google Search could have little or no effect on apps' or websites' existing user bases. Further, due to extensive multi-homing in the market, users would not switch away from rivals and only to Google Search. An economic analysis submitted by the Notifying Party shows that Google Search results in response to maths problem queries affected by the Transaction cannot be a significant source of user discovery for the top online HSH tools (since they already do not show on the first page or because Photomath would not be able to provide a relevant response in any case)[86]. Lastly, the Notifying Party submits that the reason Google Search (and in particular non-branded search results) has become relevant as a route to user discovery and traffic acquisition for some of Photomath's rival online HSH tools is because of the possibility of indexation of content on Google Search, which is not essential to compete on the market.

(95) Regarding incentive, the Notifying Party submits that interfering with the presentation of Google Search results would make Google a less attractive destination for users seeking help with maths problems. A strategy of self-preferencing Photomath would generate no meaningful economic gain for Google and would risk damaging the reputation of Google's overall commercial offering, and would run counter to Google's rationale for the Transaction. Google submits that the ranking and presentation of Google Search results will not change post-Transaction, and will continue to apply the same factors as it currently does to determine the most responsive Google Search results to the user's query, i.e., meaning, relevance, quality, usability, and context. Indeed, Google has already acquired and owns an online HSH tool (Socratic), yet Google has not interfered with non-branded search traffic to rival online HSH tools, which continue to derive traffic from this source (even out-performing Socratic)[87]. In addition, the Notifying Party submits an economic analysis confirming that the potential net revenue gain from foreclosure[88], whilst positive, would be limited, and therefore clearly outweighed by the potential reputational damage to Google Search. Lastly, the Notifying Party submits that the Digital Markets Act will prohibit self-preferencing in ranking within Google Search. Being subject to such regulatory obligations would prevent self-preferencing.

(96) Regarding effects, the Notifying Party submits that the ability of Photomath's rivals to continue to attract users would not be meaningfully affected, as the primary routes to the market would involve promotional campaigns and word-of-

85 Form CO, paragraphs 270-283. See also "Follow Up Paper", submitted by the Notifying Party on 20 March 2023.

86 "Search Visibility Paper", submitted by the Notifying Party on 17 March 2023.

87 Form CO, paragraph 270.

88 Form CO, Annex 26.

mouth. Moreover, any online HSH rival meeting Google's existing criteria may appear as an alternative source of help adjacent to the OneBox itself. Lastly, there exists a range of effective counterstrategies which underscores why making the OneBox more visible post-transaction would not foreclose HSH rivals, for example, social media campaigns and product innovations.

5.4.1.2. The Commission's assessment

(97) For the reasons set out below and based on the results of the market investigation, the Commission considers that post-Transaction the merged entity would unlikely have the ability to foreclose its competitors in the market for online HSH tools that include a maths offering (and potential segments thereof as well as in a potential broader market for online learning and education tools including or excluding web-only tools) by either denying or degrading access to Google Search. In light of this, the question whether the merged entity would have the incentive to engage in such foreclosure strategies has been left open for the purposes of the present decision. Moreover, even if the merged entity engaged in such a strategy, there would unlikely be a detrimental effect on competition in the market for the supply of the market for online HSH tools that include a maths offering (and potential segments thereof or in the potential broader market for online learning and education tools including or excluding web-only tools).

(98) The Commission notes that foreclosure strategies involving self-preferencing (as well as the extreme case of complete denial of access) can be problematic and anti-competitive, especially in a situation where one of the merging parties possesses market power. However, in the current case, the Commission considers that, in light of the specific market realities (as outlined in sections 5.4.1.2.1.1 and 5.4.1.2.1.2), the vertical relationship assessed below does not raise any serious doubts as to its compatibility with the internal market.

5.4.1.2.1. Ability to foreclose

(99) The Commission considers that post-Transaction, the merged entity would unlikely have the ability to foreclose competitors in the market for online HSH tools that include a maths offering[89] by either denying or degrading access to Google Search. First, suppliers of online HSH tools that include a maths offering do not rely on Google Search as an input/source of new users and, therefore, cannot be targeted by a foreclosure strategy (see Section 5.4.1.2.1.1). Second, there are several credible alternatives to Google Search to source new users for suppliers (see Section 5.4.1.2.1.2). Therefore, Google Search is not a sufficiently important input (as a source of new users) for suppliers. The Commission notes that this applies equally to both denying and degrading access to Google Search since the importance of Google Search as an input/source of new users is relevant to both. As outlined in the Non-Horizontal Guidelines[90], with regard to ability to foreclose access to inputs, input foreclosure may raise competition problems only if it concerns an important input for the downstream product.

(100) Therefore, despite the fact that Google has market power in the upstream market for general search services and would have the technical ability to deny or degrade

89 Or any segments of this market or a potential broader market.

90 Non-Horizontal Guidelines, paragraph 34.

access to Google Search, there would unlikely be an ability to foreclose competitors of online HSH tools that include a maths offering (and potential segments thereof).

5.4.1.2.1.1. Suppliers do not rely on Google Search

(101) The Commission considers that several suppliers of online HSH tools that include a maths offering do not rely on Google Search as an input/source of new users, and, therefore, cannot be targeted by a foreclosure strategy. Therefore, Google Search cannot be considered to be an important input (as a source of new users) for suppliers of online HSH tools that include a maths offering.

(102) First, the market investigation confirmed that organic branded search results on Google Search are relatively unimportant channels for acquiring new users for suppliers of online HSH tools that include a maths offering[91]. Indeed, only one respondent had more than 20% of their customers first find out about their online HSH tool that include a maths offering through branded general search services[92]. The Commission notes that it is unlikely or even impossible for an online HSH tool that includes a maths offering to source new users using organic branded search results, since the user must already know the name of tool to conduct a branded search, and therefore must have already discovered the tool elsewhere.

(103) Second, the market investigation, as well as evidence provided by the Parties, confirmed that organic non-branded search results on Google Search are relatively unimportant channels for acquiring new users for several, if not a majority of, suppliers of online HSH tools that include a maths offering.

(104) With respect to the market investigation, whilst, on the one hand, the majority of respondents submitted statements indicating that organic non-branded search results on Google Search are an important source of new users for their online HSH tools that include a maths offering[93], on the other hand, the data provided by these respondents indicates that a majority of them do not significantly rely on non-branded general search services as a source of new users[94]. The Commission notes that there was a large range and a high degree of variation in the data provided by respondents, and that many respondents did not rely at all on non-branded general search services as a source of new users, and at the same time there were some who

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91 For completeness, the market investigation similarly confirmed that paid (branded and non-branded) search results on Google Search are relatively unimportant channels for acquiring new users for suppliers of online HSH tools that include a maths offering. However, this relates to a separate market for online search advertising, and not the market for general search services. The majority of suppliers of online HSH tools that include a maths offering that provided a view in the market investigation considered that paid search results on Google Search are not an important source of new users for their online HSH tool that include a maths offering (i.e. for product discovery purposes)[91]. In addition, multiple respondents confirmed they did not use paid results on Google Search at all. One provider submitted that *"if you publish good content, working tools and informational pages, and if you keep your website's code updated, you do not need to pay for advertisement in order to have users. In 11 years we never paid for advertisement to gain users."* Questions D.B.7 and D.B.9 of the questionnaire to providers of online HSH tools.

92 Question D.B.8 of the questionnaire to providers of online HSH tools. The question asked about how customers first find out about a tool, but many respondents noted that they could only provide information on how customers first access a tool.

93 Question D.B.4 of the questionnaire to providers of online HSH tools.

94 Question B.9 of the questionnaire to providers of online HSH tools.

relied somewhat and others that relied significantly. The Commission notes that this large range and variation in the reliance on non-branded general search services as a source of new users is consistent with the highly fragmented and differentiated market for online HSH tools that include a maths offering[95]. In addition, the Commission understands that these data provided by respondents were generally based on Google Analytics, which provides insight more about how customers access a website or app, as opposed to how these online HSH tools that include a maths offering source new users (i.e. how they first find out about the website or app). Therefore, since Google Search is more used for the former than the latter, the Commission considers these data provided by respondents may overestimate the reliance on Google Search to source new users.

(105) Data provided by respondents indicates that the sources of new users (other than non-branded general search services) differed between players, but some significant sources include word of mouth (from teachers, family and friends), social media, and branded searches in both general search services and app stores (which implies discovery elsewhere before searching for that brand). The Commission notes that the market appears to be special in that the end users are students who rely on word of mouth and social media, and that these online HSH tools are experience goods where reputation and quality are important factors.

(106) With respect to evidence provided by the Parties, Photomath provided a survey it undertook in September/October 2022. Photomath asked its users directly how they heard about Photomath. [50-60]% replied "*Family and friends (word of mouth)*", [20-30]% replied "*Social media*", [0-10]% replied "*Search within an app store*", [0-10]% replied "*General search services*", [0-5]% replied "*Teachers (word of mouth)*" and [0-5]% replied "*Other*"[96]. In addition, using third party data, Google submitted a quantitative analysis of web and app traffic through which users find or access Photomath's top competitors[97]. According to this analysis, and generally consistent with the market investigation, the majority of Photomath's top 11 competitors do not significantly rely on non-branded search results as a source of traffic. In addition, the Parties submitted an analysis of Google Search results in response to a sample of 52 maths problem queries. The analysis indicated that the majority of the top 20 online HSH tools that include a maths offering do not appear on the first page of Google Search for any of these sample maths problem queries. This is consistent with organic non-branded search results on Google Search not being an important source of new users.

(107) Overall, supplementing the data from the market investigation wherever missing with the data provided by the Parties[98], seven competitors rely on non-branded general search services for less than 20% of its new users/traffic, and nine competitors for less than 30% (including the majority of the largest online HSH tools including a maths offering). These nine competitors represent the majority of competitors for which data was available.

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95 Regarding fragmentation, see market shares for this market in section 5.2.1. Regarding differentiation, the Commission notes that whilst it considers that online HSH tools that include a maths offering constitute a plausible relevant product market, the fact that it leaves open many narrower potential segmentations demonstrates the differentiation in this potential market.

96 These results are consistent with earlier surveys conducted by Photomath; see Form CO, Annex 14, Reply to RFI 10, Annexes 1.7.2, 1.8.3, 1.9.1, 1.19.2, 1.19.3 and 2.

97 Form CO, Annex 11.

98 Question B.9 of the questionnaire to providers of online HSH tools; and Form CO, Annex 11.

(108) Several anecdotal cases demonstrate the use of sources of new users other than non-branded general search services. First, Microsoft, which operates both a general search service, Bing, and an online HSH tools with a maths offering, Microsoft Maths Solver, notes that "*many online HSH tools with a maths offering will pay for advertisements*"[99]. Second, Kahoot, an online HSH tool that include a maths offering, submits "*Kahoot relies on "viral marketing" with new users being acquired by "word-of-mouth". New users find Kahoot by searching for it directly, either by entering Kahoot's URL or by searching for "Kahoot" in a search engine or app store*"[100]. Third, with respect to Photomath's competitor Gauthmath, on 8 September 2021, a TikTok video by a Gauthmath influencer went viral and attracted tens of millions of views; later that month, Gauthmath rolled out a week-long campaign with 50 TikTok influencers, collectively attracting over 200 million views. On 28 September 2021, Gauthmath was the top downloaded app among all apps (not just educational apps) in the Apple Store, and had effectively grown its daily downloads by a factor of five. Fourth, BYJU, a competitor of Photomath, sponsored and advertised during the 2022 FIFA World Cup. By investing in advertising during this period, BYJU managed to grow its monthly active users by 1700%. Fifth, StudySmarter, another competitor of Photomath, ran a TikTok ad campaign, which was even used as a case study by TikTok itself, to deliver 5.1 million video views and a 34.4% conversion rate. TikTok states that they "*delivered a cost-per-active user 44% lower than other channels, proving it can be extremely cost effective too.*"

(109) In light of the above, the Commission considers that several suppliers of online HSH tools that include a maths offering do not rely on Google Search as an input/source of new users, and therefore cannot be targeted by a foreclosure strategy. Therefore, Google Search cannot be considered to be an important input (as a source of new users) for suppliers of online HSH tools that include a maths offering. The Commission notes that this conclusion stems from the specifics of the market for online HSH tools that include a maths offering. The market appears to be special in that the end users are students who rely on word of mouth and social media, and that these online HSH tools are experience goods where reputation and quality are important factors.

5.4.1.2.1.2. Suppliers have alternatives to Google Search to source users

(110) In light of the following, the Commission considers that suppliers of online HSH tools that include a maths offering have multiple alternatives to Google Search to source new users. Therefore, Google Search cannot be considered to be an important input (as a source of new users) for suppliers of online HSH tools that include a maths offering.

(111) As indicated above in paragraph (107), a minority of competitors (for which data was available) indicated that more than 30% of their users/traffic came from Google Search. Of these, five considered that the Transaction would negatively impact them and the market for online HSH tools that include a maths offering.

(112) The market investigation indicated that online HSH tools that include a maths offering would have multiple alternatives for sourcing new users if their access to

99 Minutes of call with Microsoft on 31 January 2023.

100 Question D.A.25 of the questionnaire to providers of online HSH tools.

Google Search were foreclosed. Alternative sources of new users considered by the respondents to the market investigation included word of mouth (from friends, family and teachers), Microsoft Bing, paid advertising (outside of Google), social media and other media coverage, conferences, event and trade shows, and the Apple App Store. Brainly, a competitor of Photomath, submits that "*Brainly is encouraging web users to download the Brainly app to avoid that traffic is predominantly coming via Google Search instead of directly.*"[101]. Indeed, the Commission notes that the fact that several, if not a majority of, online HSH tools that include a maths offering do not currently significantly rely on Google Search to source new users indicates that it is possible to compete on the market without Google Search. The evidence on file did not indicate there was any material difference in the ability to acquire new users between the suppliers of online HSH tools including a maths offering that currently rely on Google Search for new users and the suppliers that do not rely on Google Search.

(113) The Commission notes that a foreclosure strategy of either denying or degrading access to both Google Search and Google Play simultaneously (the latter of which is assessed in Section 5.4.2 below) is also possible. However, the Commission considers that there are sufficient alternatives that would not rely on Google.

(114) In light of the above, the Commission considers that suppliers of online HSH tools that include a maths offering have multiple alternatives to Google Search to source new users. Therefore, Google Search cannot be considered to be an important input (as a source of new users) for suppliers of online HSH tools that include a maths offering. As noted previously in paragraph (109), the Commission notes this conclusion stems from the specifics of the market for online HSH tools that include a maths offering.

(115) Overall, in light of the fact that (i) suppliers of online HSH tools that include a maths offering do not rely on Google Search, and (ii) there are several credible alternatives to Google Search to source new users for suppliers, the Commission considers that post-Transaction, the merged entity would not have the ability to foreclose competitors in the market for online HSH tools that include a maths offering[102] by either denying or degrading access to Google Search.

5.4.1.2.2. Incentive to foreclose

(116) Since the Commission has concluded in Section 5.4.1.2.1 that the merged entity would unlikely have the ability to deny or degrade access to Google Search, the question whether the merged entity would have the incentive to engage in such foreclosure strategies can be left open for the purposes of the present decision.

5.4.1.2.3. Impact on effective competition

(117) The Commission considers that post-Transaction, even if the merged entity engaged in a strategy to foreclose competitors in the market for online HSH tools that include a maths offering[103] by either denying or degrading access to Google Search, there would unlikely be a detrimental effect on competition in that market.

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101 Minutes of call with Brainly on 17 November 2022.

102 Or any segments of this market or a potential broader market.

103 Or any segments of this market or a potential broader market.

(118) First, the Commission considers that, as mentioned above in Section 5.4.1.2.1, even if the merged entity were to engage in degrading or denying access to Google Search, they could only target those downstream competitors that currently rely on Google Search, which represent a limited number of market participants. In addition, the remaining part of the downstream market (i.e. those that do currently rely on Google Search) may also be unaffected as these downstream competitors could use alternatives to source new users. Therefore, even if the merged entity could successfully target and foreclose some downstream competitors, only a subset of this minority, if any, of the market would be affected.

(119) Second, the Commission notes that the market for online HSH tools that include a maths offering is fragmented and differentiated[104]. In addition, there is no evidence on file to suggest that this subset of the minority of the market (that could even be successfully targeted and foreclosed if at all) plays a significant competitive role in the market or compete particularly closely with Photomath. As such, even if the merged entity engaged in a foreclosure strategy, sufficient competition would remain on the market for online HSH tools that include a maths offering, and there would be no anticompetitive effects.

(120) Lastly, the Commission notes that a foreclosure strategy of degrading access to Google Search (i.e. partial foreclosure) would necessarily have a lesser impact on competition (compared to a foreclosure strategy of denying access to Google Search, i.e. total foreclosure), because suppliers would only be partially foreclosed and therefore fewer new users would be affected. However, this distinction is not material in this case, since there is no issue with a foreclosure strategy of denying access, which implies there is also no issue with a foreclosure strategy of degrading access.

(121) Overall, in light of the above, the Commission considers that post-Transaction, even if the merged entity engaged in a strategy to foreclose competitors in the market for online HSH tools that include a maths offering[105] by either denying or degrading access to Google Search, there would unlikely be a detrimental effect on competition in that market.

5.4.1.2.4. Conclusion

(122) In light of the above, and for the purposes of the present decision, the Commission concludes that the merged entity is unlikely to have the ability to engage in an input foreclosure strategy by either denying or degrading access to Google Search and even if it did, there would unlikely be a significant detrimental effect on competition on the market for the supply of online HSH tools that include a maths offering[106].

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104 Regarding fragmentation, see market shares for this market in section 5.2.1. Regarding differentiation, the Commission notes that whilst it considers that online HSH tools that include a maths offering constitute a plausible relevant product market, the fact that it leaves open many narrower potential segmentations demonstrates the differentiation in this potential market.

105 Or any segments of this market or a potential broader market.

106 Or any segments of this market or a potential broader market.

5.4.2. Vertical relationship between Android app stores and online HSH tools that include a maths offering

(123) The Commission notes that a vertical relationship normally presupposes that the product or service in the upstream market in question constitutes an important input to the product or service in the downstream market[107]. However, in this case, the vertical relationship is not "traditional" in the sense that Android app stores are not a direct input that is used to build an online HSH tool that includes a maths offering; instead Android app stores are used by online HSH tools that include a maths offering as one method to source new users (via searches within the Android app store), and as a method of distributing their product to Android devices.

(124) The market for Android app stores can be seen as upstream to the market for online HSH tools that include a maths offering. Specifically, Google Play can be seen as an input for online HSH tools that include a maths offering[108] primarily as one way to source new users, via the branded and non-branded searches in Google Play[109], and as a way for users to download app-based online HSH tools that include a maths offering onto Android devices. As such, the Commission's assessment proceeds by assuming that there is a vertical relationship between these two markets, whereby (i) Google is active in the upstream market for Android app stores with Google Play, and (ii) Google and Photomath are active in the downstream market for online HSH tools that include a maths offering (and potential segments thereof, including a potential broader market for online learning and education tools).

(125) This vertical relationship leads to affected markets within the meaning of the Merger Regulation, as the Parties exceed the 30% threshold on the upstream market for Android app stores in light of Google's market share of [90-100]% worldwide excluding China[110].

(126) The Commission has assessed whether the merged entity would have the ability and incentive to foreclose competing third party providers of online HSH tools that include a maths offering, either by denying access to Google Play (total input foreclosure) or degrading access to Google Play (partial input foreclosure, i.e. self-preferencing in the search function within Google Play). The Commission assesses each of these foreclosure strategies separately.

(127) The Commission likewise sought to establish whether such foreclosure strategies may have a negative impact on competition in the market for the supply of online HSH tools that include maths offering (and potential segments thereof, including a potential broader market for online learning and education tools).

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107 Non-Horizontal Guidelines, paragraph 34.

108 This holds as well for tools in potential segments thereof and for tools in the potential broader market of online education tools (including or excluding web-only tools).

109 Branded search results consist of searches for a specific known/named app, i.e. in this case a specific online HSH app that includes a maths offering. Non-branded search results consist of searches using generic search terms that are not necessarily specific to an app (i.e. in this case a specific online HSH app that includes a maths offering).

110 See section 5.2.2.

5.4.2.1. The Notifying Party's views

(128) The Notifying Party considers that there is no risk of input foreclosure by denying or degrading the access of competing online HSH tools that include a maths offering to Google Play. Google would have neither the ability nor incentive to engage in such foreclosure and in any case, there would be no anticompetitive effect[111].

(129) In addition, the Notifying Party submits that a policy of foreclosing or disadvantaging rival HSH apps would entail a broader risk of disengagement by developers of apps outside of the education space, whereas a diverse inventory of apps and other content would contribute to the long-term success of the Android ecosystem.

(130) Moreover, the Notifying Party submits that the Digital Markets Act will prohibit self-preferencing in ranking within Google Play. Being subject to such regulatory obligations would prevent self-preferencing.

(131) The Notifying Party submits that it lacks the ability to foreclose competing online HSH tools including a maths offering because Google Play is not of critical importance to the downstream market of online HSH tools.

(132) The Notifying Party considers that it does not control, through Google Play, the majority of app traffic through which users find or access Photomath's top competitors. This is because "word of mouth" represents an important source of traffic for online HSH tools including a maths offering. The Notifying Party provided evidence from surveys and third party data indicating that many online HSH tools including a maths offering do not source a significant proportion of their users from Google Search and/or Google Play.

(133) The Notifying Party further submits that its objectives in managing Google Play are geared towards enhancing the consumer experience. The fact that Google develops an app would not change the position in which it appears in response to a search query in Google Play, and first and third party apps are subject to the same ranking factors.

(134) The Notifying Party submits that its incentives are validated by its existing practice. Google already owns Socratic and claims that it has not advantaged Socratic in the past. The Notifying Party also submitted data on the number of downloads before and after the acquisition of Socratic and on the development of Socratic as compared to competitors.

(135) The Transaction would not alter Google's incentives. Any strategy of denying or degrading access would mark a fundamental departure from Google's current business model for Android, impair the Android platform and Google Play environment, and undermine the goals of creating a platform to efficiently distribute Google's services to users on mobile devices.

(136) The Notifying Party submits further that the small revenues Google could potentially derive post-Transaction from prioritising Photomath to the detriment of

111 Form CO, paragraphs 198-269.

competing online HSH apps would not outweigh the cost of damaging Google Play by denying or degrading access for the widest possible range of HSH apps.

(137) The low per-download profits of Photomath would make it more profitable to keep receiving service fees for Google Play from Photomath's rivals rather than increasing the market share of Photomath.

(138) The effects would not be anticompetitive, as there is multi-homing and alternative sources to source customers are available to rivals.

5.4.2.2. The Commission's assessment

(139) For the reasons set out below and based on the results of the market investigation, with respect to a partial foreclosure strategy, the Commission considers that post-Transaction the merged entity would unlikely have the ability to foreclose its competitors in the market for online HSH tools that include a maths offering[112] by degrading access to Google Play. In light of this, the question whether the merged entity would have the incentive to engage in such a partial foreclosure strategy has been left open for the purposes of the present decision.

(140) Further, with respect to a total foreclosure strategy, the Commission considers that post-Transaction the merged entity may have the ability to foreclose its competitors in the market for online HSH tools that include a maths offering[113] by denying access to Google Play. However, the Commission considers the merged entity would unlikely have the incentive to engage is such a total foreclosure strategy.

(141) Moreover, even if the merged entity engaged in such foreclosure strategies (i.e. either partial or total foreclosure), there would unlikely be a detrimental effect on competition in the market for the supply of the market for online HSH tools that include a maths offering[114].

(142) As stated previously, the Commission notes that foreclosure strategies involving self-preferencing (as well as the extreme case of complete denial of access) can be problematic and anti-competitive, especially in a situation where one of the merging parties possesses market power. However, in the current case, the Commission considers that, in light of the specific market realities (as outlined in sections 5.4.2.2.1.1 and 5.4.2.2.1.2), the vertical relationship assessed below does not raise any serious doubts as to its compatibility with the internal market.

5.4.2.2.1. Ability to foreclose

(143) With respect to a partial foreclosure strategy, the Commission considers that post-Transaction, the merged entity would unlikely have the ability to foreclose competitors in the market for online HSH tools that include a maths offering[115] by degrading access to Google Play, and in particular branded and non-branded searches within Google Play (which are the ways to source new users in Google Play). First, section 5.4.2.2.1.1 concludes that suppliers of online HSH tools that include a maths offering do not rely on Google Play as an input/source of new

112 Or any segments of this market or a potential broader market.
113 Or any segments of this market or a potential broader market.
114 Or any segments of this market or a potential broader market.
115 Or any segments of this market or a potential broader market.

users, and therefore cannot be targeted by a foreclosure strategy. Second, even if some did rely on Google Play, section 5.4.2.2.1.2 concludes there are several credible alternatives to source new users for suppliers on Google Play. Therefore, Google Play is not a sufficiently important input (as a source of new users) for most, if not all, suppliers. As outlined in the Non-Horizontal Guidelines,[116] with regard to ability to foreclose access to inputs, input foreclosure may raise competition problems only if it concerns an important input for the downstream product.

(144) Therefore, despite the fact that Google has market power in the upstream market for Android app stores and would have the technical ability to degrade access to Google Play, Google would unlikely have the ability to partially foreclose competitors of online HSH tools that include a maths offering[117] by degrading access to Google Play because Google Play cannot be considered to be an important input for HSH tools that include a maths offering.

(145) With respect to a total foreclosure strategy, the Commission notes that the fact that Google Play is not a sufficiently important input (as a source of new users) for most, if not all, suppliers is also relevant to whether the merged entity would likely have the ability to foreclose competitors in the market for online HSH tools that include a maths offering[118] by denying access to Google Play. However, in light of (i) Google's market power in the upstream market for Android app stores, and (ii) the necessity of Google Play for users to download app-based online HSH tools that include a maths offering onto Android devices, the Commission considers that the merged entity may have the ability to foreclose its competitors in the market for online HSH tools that include a maths offering[119] by denying access to Google Play.

(146) The analysis in sections 5.4.2.2.1.1 and 5.4.2.2.1.2 accordingly concerns the issue of potential partial foreclosure by which Google would degrade access to Google Play as a way to source users for online HSH tools that include a maths offering.

5.4.2.2.1.1. Suppliers do not rely on Google Play

(147) The Commission considers that most, if not all, suppliers of online HSH tools that include a maths offering do not rely on Google Play as a way to source of new users, and therefore cannot be targeted by a partial foreclosure strategy. Therefore, Google Play cannot be considered to be an important input (as a source of new users) for suppliers of online HSH tools that include a maths offering.

(148) The market investigation, as well as evidence provided by the Parties, confirmed that Google Play is a relatively unimportant channel for acquiring new users for a majority, if not all, suppliers of online HSH tools that include a maths offering.

(149) With respect to the market investigation, whilst, on the one hand, the majority of respondents submitted that Google Play is an important source of new users for their online HSH tools that include a maths offering; although the results were

116 Non-Horizontal Guidelines, paragraph 34.
117 Or any segments of this market or a potential broader market.
118 Or any segments of this market or a potential broader market.
119 Or any segments of this market or a potential broader market.

mixed for branded search within an app store (as opposed to non-branded search within an app store)[120]; however, on the other hand, the data provided by respondents indicates that the majority of, if not all, them do not significantly rely on branded and/or non-branded searches within an app store as a source of new users[121]. Indeed, only a single respondent indicated that more than 20% of users first found out about their online HSH tool that includes a maths offering via an app store (this respondent reported a figure of 31%, and almost all other respondents indicated that none of their users came via this channel). In addition, the Commission notes that the data provided by respondents do not distinguish between Google Play and the Apple App Store and therefore overestimates the reliance on Google Play. The Commission notes that it is unlikely or even impossible for an online HSH tool that includes a maths offering to source new users using branded search results within an app store, since the user must already know the name of tool to conduct a branded search, and therefore must have already discovered the tool elsewhere.

(150) Data provided by respondents indicates that the sources of new users (other than branded and non-branded search within an app store) differed between players, but some significant sources include word of mouth (from teachers, family and friends), social media, and branded and non-branded searches in third-party general search services (which implies discovery elsewhere before searching for that brand). The Commission notes that the market appears to be special in that the end users are mostly students who rely on word of mouth and social media, and that these online HSH tools are experience goods where reputation and quality are important factors.

(151) With respect to evidence provided by the Parties, and as previously stated, Photomath provided a survey it undertook in September/October 2022. Photomath asked its users directly how they heard about Photomath. [50-60]% replied "*Family and friends (word of mouth)*", [20-30]% replied "*Social media*", [0-10]% replied "*Search within an app store*", [0-10]% replied "*General search services*", [0-5]% replied "*Teachers (word of mouth)*" and [0-5]% replied "*Other*"[122]. In addition, using third party data, Google submitted a quantitative analysis of web and app traffic through which users find or access Photomath's top competitors[123]. According to this analysis, and generally consistent with the market investigation, the majority, if not all, of Photomath's top 11 competitors do not significantly rely on Android app stores as a source of traffic.

(152) Overall, supplementing the data from the market investigation wherever missing with the data provided by the Parties[124], nine competitors rely on branded and non-branded search within Google Play for less than 20% of its new users/traffic, which represents the majority of competitors for which data was available, and twelve competitors for less than 40%, which represents all competitors for whom data was available, including the largest online HSH tools including a maths offering.

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120 Questions D.C.3 and B.9 of the questionnaire to providers of online HSH tools.

121 Question B.9 of the questionnaire to providers of online HSH tools.

122 These results are consistent with earlier surveys conducted by Photomath; see Form CO, Annex 14, Reply to RFI 10, Annexes 1.7.2, 1.8.3, 1.9.1, 1.19.2, 1.19.3 and 2.

123 Form CO, Annex 11.

124 Question B.9 of the questionnaire to providers of online HSH tools; and Form CO, Annex 11.

(153) In light of the above, the Commission considers that most, if not all, suppliers of online HSH tools that include a maths offering do not rely on Google Play as an input/source of new users, and therefore cannot be targeted by a foreclosure strategy. Therefore, Google Play cannot be considered to be an important input (as a source of new users) for suppliers of online HSH tools that include a maths offering. The Commission notes that this conclusion stems from the specifics of the market for online HSH tools that include a maths offering. The market appears to be special in that the end users rely on other channels to access online HSH tools, which are experience goods where reputation and quality are important factors.

5.4.2.2.1.2. Suppliers have alternatives to Google Play to source users

(154) The Commission considers that suppliers of online HSH tools that include a maths offering have multiple alternatives other than Google Play to source new users. Therefore, Google Play cannot be considered to be an important input (as a source of new users) for suppliers of online HSH tools that include a maths offering.

(155) The results of the market investigation indicated that online HSH tools that include a maths offering would have multiple alternatives for sourcing new users if their access to Google Play were partially foreclosed[125]. Alternative sources of new users considered by the respondents to the market investigation included word of mouth (from friends, family and teachers), Microsoft Bing, paid advertising (outside of Google), social media and other media coverage, conferences, event and trade shows, and the Apple App Store. Indeed, the Commission notes that the fact that a majority, if not all, of online HSH tools that include a maths offering do not currently significantly rely on Google Play to source new users indicates that it is possible to compete on the market without Google Play.

(156) In light of the above, the Commission considers that suppliers of online HSH tools that include a maths offering have multiple alternatives other than Google Play to source new users. Therefore, Google Play cannot be considered to be an important input (as a source of new users) for suppliers of online HSH tools that include a maths offering. As noted previously in paragraph (153), the Commission notes this conclusion stems from the specifics of the market for online HSH tools that include a maths offering.

(157) Overall, in light of the fact that (i) suppliers of online HSH tools that include a maths offering do not rely on Google Play, and (ii) there are several credible alternatives to source new users for suppliers, the Commission considers that post-Transaction, the merged entity would unlikely have the ability to partially foreclose competitors in the market for online HSH tools that include a maths offering[126] by degrading access to Google Play.

(158) As outlined in paragraph (145), the Commission considers that the merged entity may have the ability to totally foreclose its competitors in the market for online

[125] The Commission notes that a foreclosure strategy of either denying or degrading access to both Google Search and Google Play simultaneously (the former of which is assessed in Section 5.4.1 below) is also possible. Therefore, the Commission takes into account that alternatives that would also rely on Google are far less relevant, and that there are sufficient alternatives that would not rely on Google.

[126] Or any segments of this market or a potential broader market.

HSH tools that include a maths offering[127] by denying access to Google Play as a means to download any app version of online HSH tools that include a maths offering.

5.4.2.2.2. Incentive to foreclose

(159) With respect to a partial foreclosure strategy, since the Commission has concluded in Section 5.4.2.2.1 that the merged entity would unlikely have the ability to partially foreclose competitors in the market for online HSH tools that include a maths offering[128] by degrading access to Google Play, the question whether the merged entity would have the incentive to engage in such a partial foreclosure strategy can be left open for the purposes of the present decision.

(160) With respect to a total foreclosure strategy, the Commission considers that post-Transaction, the merged entity would unlikely have the incentive to foreclose competitors in the market for online HSH tools that include a maths offering[129] by denying access to Google Play.

(161) First, with regard to potential gains, the Commission notes that the only incentive for the merged entity to deny access to Google Play would be to gain new users that may otherwise have downloaded the app from competitors in the market for online HSH tools that include a maths offering. However, as outlined in section 5.4.2.2.1, Google Play is not a sufficiently important input as a source of new users for most, if not all, suppliers in this market. Therefore, the potential gains from such a foreclosure strategy would in any case be limited. In addition, many online HSH tools that include a maths offering are either web-only or are available both in a web and in an app version[130]. As such, potential gains from such a foreclosure would be even more limited, since customers using the web-based versions of rival online HSH tools that include a maths offering would not be foreclosed, and would therefore not switch to the merged entity as a result. Lastly, the Commission notes that the potential gains per user gained from such a foreclosure strategy appear low; Photomath's current average revenue per download is EUR […].

(162) Second, with regard to potential losses, the Commission notes that a foreclosure strategy of completely removing access to Google Play for certain app developers goes against Google's stated policy to provide users on Google Play with an as diverse and broad range of apps as possible, which, according to Google, contributes to the long-term success of the Android ecosystem. Google submits that if Google denied rival apps from Google Play, or otherwise hampered the distribution of these apps on Android, this would represent a fundamental change to the Android business model, and would also harm the reputation of Google Play as an open marketplace for apps.

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127 Or any segments of this market or a potential broader market.

128 Or any segments of this market or a potential broader market.

129 Or any segments of this market or a potential broader market.

130 Question B.5 of the questionnaire to providers of online HSH tools. See also Form CO, paragraphs 116-119, where the Parties' own analysis indicates that "*of the top ten providers in the EEA, and all those listed in Table 1 above, only Photomath does not offer a browser version*".

(163) The Commission notes that the market for online HSH tools that include a maths offering appears fragmented and differentiated[131]. Therefore, Google's incentive to deny access to rival online HSH tools that include a maths offering is weaker than in a situation where the market is more concentrated and homogenous, because engaging in such a foreclosure strategy in a more fragmented and differentiated market would, firstly, deny access to a larger number of more diverse apps on Google Play, and, secondly, result in less switching from rivals to Photomath (because diversion/switching from rivals to Photomath would be lower the more differentiated and fragmented the market is).

(164) The Commission also considers that, unlike a partial foreclosure strategy of degrading access, a total foreclosure of access to Google Play would be noticeable by rival online HSH tools that include a maths offering. Therefore, such a foreclosure strategy may lead to losses in Google Play, as competitors react to being foreclosed, for example, by encouraging users to use the web-based version of their product.

(165) In addition, Google currently makes revenue from users downloading third-party apps, including rival online HSH tools that include a maths offering. Google would lose this revenue if a user did not download the online HSH tools that include a maths offering (and chose not to download Photomath instead). An economic analysis submitted by the Notifying Party, which only accounts for the quantifiable gains and losses related to Google Play revenues from online HSH tools that include a maths offering, indicates that the potential net revenue gain from foreclosure would be positive but limited[132], Therefore, in light of the other potential losses outlined in the two paragraphs above, the Commission considers that the potential losses would likely outweigh the potential gains from a total foreclosure strategy.

(166) Lastly, of the respondents that provided a view, all considered that, to the best of their knowledge, Google has never previously denied access to Google Play for rival online HSH tools that include a maths offering, despite a previous vertical link between Google Play and Google Socratic[133].

(167) Overall, in light of the above, the Commission considers that post-Transaction, the merged entity would unlikely have the incentive to engage in a total foreclosure strategy whereby it would deny access to Google Play to competitors in the market for online HSH tools that include a maths offering[134].

5.4.2.2.3. Impact on effective competition

(168) With respect to both total and partial foreclosure strategies, the Commission considers that post-Transaction, even if the merged entity engaged in a strategy to foreclose competitors in the market for online HSH tools that include a maths

131 Regarding fragmentation, see market shares for this market in section 5.2.1. Regarding differentiation, the Commission notes that whilst it considers that online HSH tools that include a maths offering constitute a plausible relevant product market, the fact that it leaves open many narrower potential segmentations demonstrates the differentiation in this potential market.

132 Form CO, Annex 26.

133 Question D.C.5 of the questionnaire to providers of online HSH tools.

134 Or any segments of this market or a potential broader market.

offering[135] by either denying or degrading access to Google Play, there would unlikely be a detrimental effect on competition in that market.

(169) First, the Commission considers that, as mentioned above in Section 5.4.2.2.1, even if the merged entity were to engage in degrading or denying access to Google Play, it could only target those downstream competitors that rely on Google Play to source new users, which represent a minority, if any, of the market. In addition, this part of the downstream market (if even existent) may also be unaffected as these downstream competitors could use alternatives to source new users. Therefore, even if the merged entity could successfully target and foreclose some downstream competitors, only a subset, if any, of this minority of the market would be affected.

(170) Second, the Commission notes that market for online HSH tools that include a maths offering appears fragmented and differentiated[136]. In addition, there is no evidence on file to suggest that this subset of the minority of the market (that could even be successfully targeted and foreclosed), if even existent, plays a significant competitive role in the market or compete particularly closely with Photomath. As such, even if the merged entity engaged in a foreclosure strategy, sufficient competition would remain on the market for online HSH tools that include a maths offering, and there would be no anticompetitive effects.

(171) Lastly, the Commission notes that a foreclosure strategy of degrading access to Google Play (i.e. partial foreclosure) would necessarily have a lesser impact on competition (compared to a foreclosure strategy of denying access to Google Search, i.e. total foreclosure), because suppliers would only be partially foreclosed and therefore fewer new users would be affected. However, this distinction is not material in this case, since there is no issue with a foreclosure strategy of denying access, which implies there is also no issue with a foreclosure strategy of degrading access.

(172) Overall, in light of the above, the Commission considers that post-Transaction, even if the merged entity engaged in a strategy to foreclose competitors in the market for online HSH tools that include a maths offering[137] by either denying or degrading access to Google Play, there would unlikely be a detrimental effect on competition in that market.

5.4.2.2.4. Conclusion

(173) In light of the above, and for the purposes of the present decision, the Commission concludes that the merged entity is unlikely to have both the ability and the incentive to engage in an input foreclosure strategy by either denying or degrading access to Google Play, and even if it did, there would unlikely be a significant detrimental effect on competition on the market for the supply of online HSH tools that include a maths offering[138].

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135 Or any segments of this market or a potential broader market.

136 Regarding fragmentation, see market shares for this market in section 5.2.1. Regarding differentiation, the Commission notes that whilst it considers that online HSH tools that include a maths offering constitute a plausible relevant product market, the fact that it leaves open many narrower potential segmentations demonstrates the differentiation in this potential market.

137 Or any segments of this market or a potential broader market.

138 Or any segments of this market or a potential broader market.

6. CONCLUSION

(174) For the above reasons, the European Commission has decided not to oppose the notified operation and to declare it compatible with the internal market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of the Merger Regulation and Article 57 of the EEA Agreement.

For the Commission

(Signed)
Margrethe VESTAGER
Executive Vice-President